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ICTs as an Aid to Inclusivity?: Barriers to Benefits for Adult Learners in the Ennis Information Age Town

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Barriers to benefits for adult learners

in the Ennis Information Age Town

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Acknowledgements

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Abstract

The subject of this thesis is the potential role of ICTs as a means of addressing social exclusion. ICTs have been recognised for their double-edged promise: while they may open opportunities in work, education and social practices, their benefits may be inaccessible to disadvantaged members of society. This subject is explored by means of a case study of adult learners who have been exposed to a 'social experiment' involving technological endowment of an Irish community: the Ennis Information Age Town project. This large-scale private sector initiative, which ran between 1997 and 2002, has the potential to inform future ICT projects regarding requirements of all community sectors; the following study focuses on experiences of adults with low levels of traditional education and income.

Inclusion and ICTs are brought together in public discourses in the term 'digital divide.' Chapter One considers the concept's value along with public and private responses to it. The nature of ICTs' inclusive potential is reviewed. The second chapter examines technology-community initiatives as an arena in which ICT exclusion may be addressed. Three other initiatives are outlined for contextualised discussion of the Ennis project. The case study is discussed in Chapter Three, in which sixteen VTOS students were subjects of qualitative research.

In Chapter Four's discussion it is found that ICTs provide benefits in educational endeavours, upskilling and maintaining social ties but have little influence on household activities or the size of social networks. Prominent factors moderating use are technical deterrents and the introduction of technologies relatively late in life. Although some respondents' ICTs remained 'unshaped' through lack of use, many had developed a reflexive relationship with ICTs, whereby they appropriated parts of the technology according to specific needs; and most, with increasing familiarity, broadened their expectations of outcomes of ICT use.

The final chapter draws from these findings a series of barriers that need to be addressed by future ICT projects. It concludes that ICTs play a modest though significant role in encouraging social inclusion; the fostering of use among disadvantaged groups requires access to up-to-date ICTs in a familiar, interactive and supported environment, but ultimately it requires a break from the conventions of the current human-computer interface.

Introduction

The following study is concerned with the potential role of Information and Communication Technologies (ICTs) in addressing socio-economic disadvantage and the factors that impede possible benefits from ICT use. It will attempt to explore these areas by means of a case study of adult learners' experience of ICTs in the context of a community ICT project in County Clare in Ireland. The Ennis Information Age Town project (EIAT) was a high profile commercial initiative that entailed €19 million of investment between 1997 and 2002 for projects spanning every major sector of the town's community. This is a timely study as it allows Ennis residents to reflect on the project's influence over its five-year existence. Ennis is an important site for research because the substantial technological provisions for residents and community groups invite exploration of ICTs' potential for increasing social networks and opportunities. 'Social exclusion' has been defined in similar terms, of 'prospects and networks and life chances' (Blair, 1997 quoted in Fairclough, 2001, p.52),[1] and it is this relationship between ICTs and the social inclusion/exclusion concept that forms the central thread of this study. Governments' concerns for full inclusion in ICT use per se appear to be based on the assumption that ICT use is effective, and increasingly necessary, for achieving inclusion in wider society. My aim is to approach this assumption critically and explore it through qualitative research.

To clarify terminology, 'ICTs' will be used because of its direct reference to the aspects of technologies which are of key interest: their roles as conduits for information and facilitators of communication. It is preferred to Livingstone's and others' use of 'new media', for example; her studies have focused on a family of technologies with a common screen-focus, viewing the screen as central to the changing, converging media environment (Livingstone and Bovill, 1999). However, this term suggests that more established technologies such as the television and landline are discarded from analysis. In this study ICTs will be used to refer to the

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[1] Blair's speech on 8th December 1997 for the launch of the Labour government's Social Exclusion Unit contained the following:

> Social exclusion is about income but it is more. It is about prospects and networks and life chances. It's a very modern problem, and one that is more harmful to the individual, more damaging to self-esteem, more corrosive for society as a whole, more likely to be passed down from generation to generation, than material poverty (Blair, 1997 quoted in Fairclough, 2001, p.52).

personal computer and its attendant technologies (CD Rom, printer, scanner, digital camera), the Internet (including email), television of all types, landline and mobile telephones. Focus will lie firmly with PC and Internet use, but for a wider understanding of their significance they will be considered, where necessary, in the context of other established and developing technologies.[2]

The study should be placed in the broad context of the increasing role of new ICTs in everyday life, education and work practices and the attendant debates. The late 1990s saw widespread diffusion among developed societies of PCs and the Internet as significant work, leisure and communication tools. Markets were fuelled by lower retail prices for home PCs and the emergence of new digital products and services. In tandem, mobile communication innovations were met with huge demand. Attending these developments was public commentary on the anticipated development of an Information or Network Society, although the suitability of these terms has been contested as they suggest movement to an era distinct from the last, misrepresenting what have in fact been largely incremental and evolutionary changes. Quantification of the rise of certain new ICTs presents a dramatic picture, yet the distribution of this use is hugely uneven both internationally and nationally: less than 10 percent of the world's population is online, and only around one in three Irish adults are users (Amarach, 2001). In Ireland, three levels of adopters have been identified: early adopters being generally middle to upper class, in managerial positions, and some students; average adopters being middle class, those with second level education, and some skilled working class; and late adopters being farm workers, older people, non-skilled working class, house wives and the unemployed (MRBI report for the Information Society Commission (2000a). Concerns for these disparities in uptake and a drive for 'e-inclusion' have informed market and academic research and government policy, yet the value of ICT use to consumers appears to be at once overstated and under-defined by such discourses.

Parallel to ICTs', particularly the Internet's, increasing presence in the 1990s, Ireland saw economic growth on almost every indicator: formerly the most indebted country in the world, with the shared highest level of unemployment in Europe, Ireland achieved the highest growth of output and employment in

Further descriptions of the concept are presented in Chapter One, pages 10 and 25.

the OECD between 1990 and 2000.[3] Such growth rates have been understood largely as a factor of the surge in inward investment into US-based trans-national companies in chemicals, computers and electrical engineering, and their booming exports.[4] Growth in indigenous technology companies has lagged, and in spite of domestic software companies' successes,[5] weaknesses have left these sectors vulnerable in the wake of withdrawals and cutbacks of US firms.[6] Nevertheless, an image of Ireland as a 'high tech' society and economy characterised by widespread and innovative ICT integration was pursued. Initiatives from the Irish government, Enterprise Ireland, and the Industrial Development Agency (IDA) such as the Digital Hub project in Dublin, the site for *Media Lab Europe,* bolstered efforts.[7] However, the experience of ICT uptake for domestic Irish users has been hampered by high costs: national provider, Telecom Eireann did not face market liberalisation until the end of 1998, and the infrastructure required for building a world-class Information Society in Ireland has been subject to significant delays.[8] Taking the number of Internet hosts as indication of development in national infrastructures, in 2000 the OECD average per 1000 inhabitants was 81.5; the European average was 37.4; in Ireland, the figure was 31.1.[9] Additionally, the lack of indigenous development in the digital 'content' and media industries has been illustrated (see, for example, Preston, 1997, 1998).

[2] See Caron and Caronia, 2001 and English-Lueck, 1998 for the concept of 'ecosystems of technologies.'

[3] National University of Ireland (NUI), Galway, 2000. Gross Domestic Product rates rose to 5.8 percent by 1994, and have remained at least as high since (O'Hearn, 2001). Employment increased by 40 percent between 1990 and 2000, and there has also been a consistent fall in long-term unemployment since 1994. Industrial workers' earnings have risen, though at unsteady rates, since 1990.

[4] In 1999, they accounted for 78 percent of industrial growth. In the computer sector, the securing by the IDA of Intel's European site in 1990 marked the first of a string of investments by major technology sector players in Ireland.

[5] As commonly cited, Ireland became the second largest software exporter in the world after the US (O' Hearn, 2001).

[6] Examples are the closure of Gateway in Summer 2001, and large staff reductions at Xerox in the same year.

[7] €130 million of government funds were committed to the digital hub, in the Coombs/Liberties area of Dublin, which has seen the first tenants move into the site in March 2003. See http://www.thedigitalhub.com. The anchor tenant – the European wing of Massachusetts Institute of Technology's *Media lab* – was secured in 2000 and intends to develop innovations in digital media with sponsorship from private companies. The downturn in the technology sector in recent years has delayed development both in *Media lab* and the Digital Hub. See Smyth, 2002.

[8] See, for example ODTR, 2001.

[9] A host is a domain name that has an IP address record associated with it. See ODTR, 2001.

study – ICT community initiatives – and works towards a typology of such projects; it then provides examples from the Netherlands and the US to lay the ground for discussion of the Ennis project. EIAT's history is discussed with special reference to the residents and community sectors. Chapter Three introduces the sample group: sixteen VTOS students attending Ennis Adult Education Centre. The group are viewed as vulnerable to exclusion because of low education levels in many cases and their long-term unemployed status. The chapter sets out some parameters for and details of methodology. It also provides technological profiles of the respondents for reference during later discussion. Chapter Four discusses the results of the questionnaires and interviews; it revisits the possible means, set out in Chapter One, by which ICTs may aid inclusivity. Similarly, it revisits the idea of barriers to benefits, and sets out some key factors moderating beneficial access to ICTs. In Chapter Five's conclusions ICTs are found currently to have a moderate role in social inclusivity of disadvantaged groups, but their role could be increased with community involvement in ICT production and greater social supports for individual ICT use.

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illustrated by the fact that some of the NAPS targets for 2007, incorporating the global poverty reduction target, were already met by 1997. See Nolan,1999.

Chapter 1

Debates on social inclusivity and ICTs

This chapter looks at patterns of ICT use emerging from recent research in Ireland, Europe and the US to discuss evidence for a digital divide, and it considers the accompanying discourses and government policies that help form its significance. It then presents some possible barriers encountered by users in accessing benefits from use before identifying some possible means by which ICTs can enhance social inclusivity.

A consistently dramatic picture is revealed regarding increases in numbers of Internet users over the last decade: global Internet use is reported by *Nua.com* to have increased from 26 million in 1995 to 580 million in May 2002, with 70 million new users annually (Gronlund, 2002). Statistics from *Nua* also indicate that use in Ireland has risen from around 3 percent of the population to 33 percent in the last 5 years.[1] Although statistics charting Internet uptake are notoriously conflicting,[2] this rise appears to be stark. Moving beyond mere quantification of people who are 'connected,' measurement of volume and nature of use suggests low interest in applications. For example, Internet shopping has remained stubbornly low across many European countries – in 2002, only 40 percent of Irish Internet users had bought goods or services online (ISC, 2003). Behind these figures appears to lie uncertainty amongst many users as to the usefulness of new ICTs for everyday living (Heinonen, 2000). Presvelou's early study of the forerunner to the Internet, Viditel, remains relevant here; it contrasts users who had a specific goal in mind, domestic or work related, at the time of purchase and those who bought more impulsively, often in order to keep up with developments and for 'self-improvement' (1988). Such cases, where domestic uses

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[1] 'How many people online?' survey at Nua.com. Another survey by MRBI, submitted to the Information Society Commission (Ireland) states that Internet access in 2002 is at 49 percent – up from 41 percent in 2000 and from only 5 percent in 1996 (Information Society Commission, 2003).
[2] For example, the reported percentage of Internet use among Irish adults in 1999 varied from 28 percent according to an Information Society Commission MRBI report to only 17 percent according to Amarach Consulting (O'Donnell, 1999). Figures for the number of Irish businesses with websites varied from 77 percent from the Information Society Commission, 25 percent from Ennis Information Age Town research, and 4 percent according to Bank of Ireland (Interview with Helen McQuillan, 26th January 2001). Varying definitions, together with differences in sample base, size, and method of interviewing conspire to create conflicting results. Furthermore, researchers who seek to portray Internet uptake as startlingly fast and widespread tend to compare statistics with those for technologies such as the television and telephone, although the assumed equivalence of these technologies is problematic since the Internet can and does build on established infrastructures for the phone and TV (Cornford, 2001).

have remained underdetermined, suggest that ICT availability has preceded demand, which in turn suggests that ICT manufacturers have held an attitude of 'build it and they will come' (Byrne, 2002). Presvelou states:

> The commercialisation of IT appliances for household use did not stem from social, domestic demand... Producers tend to create additional markets for already available products to increase profits, *before* a socially needed use-recipe is identified. (Presvelou, 1988, p.263).

The claim that ICTs' value lies in their enabling households to save time and money has been backed up by empirical findings (NOIE, 2000), but the inverse has also been reported: that the PC is used as a time 'user', to relieve the boredom of too much time (Presvelou, 1988). By serving functions other than goal-oriented activities, ICTs are following patterns of established technologies such as television. Indeed, a number of studies of ICTs in their domestic setting have resembled television studies such as Morley's later work, whereby analysis of the conditions of consumption of ICTs have provided insights into their political and symbolic function (Jancovich, 1992). In the same way that TV may be watched in order to see and hear nothing, to 'switch off', after a tiring day's work, also used to organise time, generate discussion, suppress conflict, define time for intimacy, and used as a barter tool, similar functions have been applied to computers and the Internet (Sancho, 2000; English-Lueck, 1998).

Qualitative research into the functions of household ICTs has been outweighed by more quantitative attempts to categorise Internet users according to duration and volume of usage.[3] Uneven use across populations increasingly has been framed in terms of early or late adoption (see, for example, the MRBI report for the Information Society Commission (2000a), which entails a suggestion that universal uptake is inevitable. Although this confidence is not supported by recent public attitude surveys – in a 2001 survey, 47 percent of Irish adults said they will never use the Internet (Amarach, 2001) – it is generally supposed that this is the product of low awareness of benefits from Internet use and that promotion of use and positive experiences for existing users will encourage wider uptake. In Rogers' studies of adoption of innovations he has classified populations in terms of innovators, early adopters, the early majority, the late majority, and laggards; thus

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[3] See, for example, Amarach, 1999; NTIA, 1999; *How Many People Online?* Survey; UCLA Internet Report, 2000, 2001.

the graph depicting adoption is bell shaped (1995, cited in Carveth and Kretchmer, 2002).

Inclusion and the Digital Divide

Concerns over uneven use among populations and calls for social inclusion in the Information Age seemed to proliferate faster than technology use itself within national and international contexts and has remained on political agendas – for example, in *New Connections*, the Government of Ireland Action Plan (2002) and the *eEurope* Action Plan (2000).[4] Concerned with the implications of unequal access to information, both within national borders and between developed and developing countries, the digital divide concept evolved from the idea of 'knowledge gaps' or 'information haves and have-nots.'[5] Also related is the long-established 'Universal Service' ethos, which, in the US context, has been traced to the Communications Act of 1934 (Compaine, 2000).[6]

The prevalence of the term 'inclusion' in these discourses requires some attention. Social exclusion is a relatively new term, originating in European Union rhetoric and described by Peter Mandelson after the UK Labour party's 1997 victory as 'about being cut off from what the rest of us regard as normal life' (quoted in Fairclough, 2001, p.52). It has to some extent come to replace the concepts of 'poverty' and 'inequality' that characterised left wing discourses of previous eras, but it differs from poverty in its emphasis on the role of political and social processes: Chapman et al provide clarification:

> Poverty is an outcome, denoting an inability to share in the everyday lifestyles of the majority because of a lack of resources (often taken to be disposable income). Social exclusion is a multi-dimensional, dynamic concept which refers to a breakdown or malfunctioning of the major societal systems that should guarantee the social integration of the individual or household. It implies a focus not only on 'victims' but also on the system

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[4] See Department of Taoiseach (2002) and European Commission (2000) respectively. One prominent body in the US is Digitaldivide.org, created by researchers at Harvard University and MIT Media Lab to inform and promote efforts by government, businesses and NGOs to address disparities in ICT uptake. See http://www.digitaldivide.org

[5] See Dervin, 1980; Tichenor, Donohue and Olien, 1970.

[6] It calls 'to make available, so far as possible, to all people of the United States, a rapid, efficient, nationwide and world-wide wire and radio communication service with adequate facilities and reasonable charges' quoted in Compaine, 2000, p.3.

failures and processes which create advantage and disadvantage (Chapman et al, 1998 cited in Phipps, 2000, p.43).

More recent definitions of poverty incorporate the idea of social exclusion, although reference to systems failures is not always emphasised.[7] With the snowballing of comment on the Information Society the concept of inclusion was given a new lease of life; it was forecast that societal splits, within and between nations, could be deepened through different levels of engagement with information technologies. The term 'digital divide', suited to a cultural appetite for media sound-bites, arguably obscured complexities of uneven technology use, and as these have become increasingly apparent, definitions of this divide have shifted in emphasis. Early definitions focused on differences in access according to demographic categories. Katz, Rice and Aspden defined it as 'differential access to and use of the Internet according to gender, income, race and location' (2001). In their report they tend to use 'digital divide' and 'differences in access' interchangeably. This focus on access was a common trait within earlier discourses regarding social impacts of ICTs. Although tangible benefits from domestic use were hazily defined there was a perceived imperative to keep up with developments. The 1996 *Information Society Ireland: Strategy for Action* report states:

> The speed and scale of the revolution now under way demands that Ireland responds with urgency to the challenges that lie ahead (Information Society Steering Committee, 1996, p.4).

It was believed that 'where access to the technology exists, usage inevitable follows' (p.30). However, as the issue of access began to be addressed through government and business initiatives – Internet access in all public libraries, for example – it was recognised that physical access does not guarantee beneficial use when the benefits remain elusive or users are unable to tap the Internet's resources

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[7]Ireland's National Anti Poverty Strategy, brought out in 1997 and since revised, contains the following definition:

> People are living in poverty, if their income and resources (material, cultural and social) are so inadequate as to preclude them from having a standard of living which is regarded as acceptable by Irish society generally. As a result of inadequate income and resources people may be excluded and marginalised from participating in activities which are considered the norm for other people in society (Combat Poverty Agency, 2002).
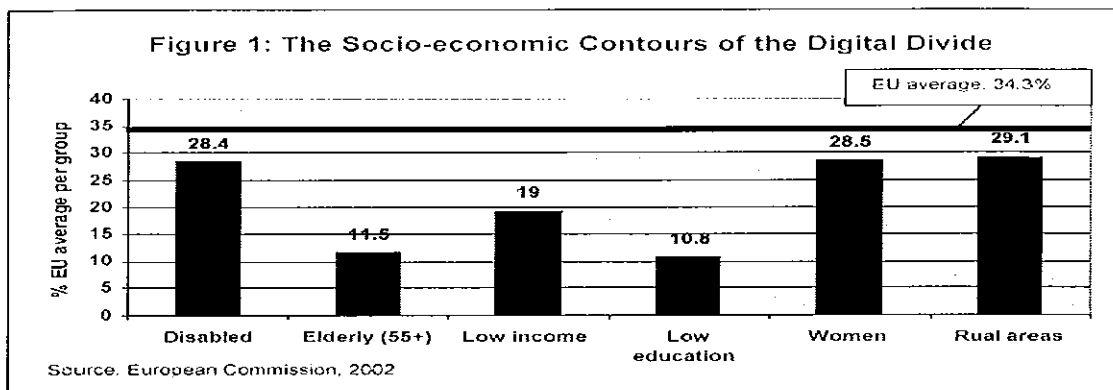
effectively.[8] In this vein, Pinckett, among others defined the divide thus: 'the gap between those who benefit from new technology and those who do not' (2001, p.1). Research clearly shows that differences in Internet use along demographic lines are shifting, but at different rates, and there are conflicting accounts over which demographic characteristics remain most significant in low Internet use.[9] In the US, according to Katz and Aspden's survey, the proportion of female users has increased over time, indeed, gender, race, and age factor less and less in ICT usage, though lower income and education continue to be highly significant factors, and those with lower incomes are more likely to drop out from usage (2001). On the other hand, the Bush administration's A Nation Online Report asserted that income, together with race and geography, are declining in significance: Internet use by individuals in the lowest income group (earning less than $15000 a year) increased at an annual rate of 25 percent, compared to 11 percent per year for the highest income groups (although, of course, they started from a higher base).[10] Carveth and Kretchmer identify income, age and geography as the prominent factors in low use both in the US and Europe, but assert that gender continues to be significant only in Europe (2002). In spite of these variations, the recurrence in most surveys of education and income is so persuasive that they remain key factors in understanding ICT uptake (O Donnell, 2001).[11] Figure 1 shows Internet penetration amongst disadvantaged groups in Europe compared with the EU average.

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[8] Alakeson cites a study in which fifty-four subjects were challenged to find five different types of information online. Time taken varied from two and a half to thirty three minutes; moreover, only half of the group was able to find all types of information (Hargittai, 2002 cited in Alakeson, 2003).
[9] Compared to the US, Europe has a slow Internet penetration rate: 30 percent as opposed to the US's 60 percent in 2000. This is partly consequence of a North-South split in Internet use in Europe, mirroring a similar split in terms of per capita GDP (Wakefield, 2002).
[10] Contention has also arisen over conflicting readings of the same statistics; on the issue of racial divisions, the Falling Through the Net 1998 report stated that the gap between usage in black and white households grew by 39.2 percent between 1994 and 1998. A re-reading of these statistics by Boaz, a member of the Cato Institute, shows that in the same period computer ownership increased 72 percent for whites, compared to 125 percent for blacks (Singleton and Mast, 2000).
[11] 30 percent of the unemployed in Ireland are 'familiar' with computers, contrasted with 84 percent of students, and 64 percent of those in the work force (How Many People Online? Survey).

Figure 1: The Socio-economic Contours of the Digital Divide

EU average. 34.3%

	Disabled	Elderly (55+)	Low income	Low education	Women	Rual areas
% EU average per group	28.4	11.5	19	10.8	28.5	29.1

Source. European Commission, 2002

Source: Alakeson, 2003, p.4

Some Problems with the Digital Divide

The value of discourses informing such research, and emerging from it, has been questioned. They have been viewed as counter-productive in that they may shape public attitudes as well as business and government policy decisions, ultimately augmenting existing disparities amongst users. Digital divide discussions may portray minorities as victims,[12] and they may effectively ignore existing creative work to be found online by ethnic minorities (McPherson, 2001). To counter this criticism, the argument of Gauntlett (1995) and others could be applied: negative media portrayals of circumstances for disadvantaged groups are as likely to encourage a stirring of political consciousness and action as they are to produce a self-fulfilling prophecy in which the disadvantaged adopt the victim image offered to them. It is believed, though, that those who experience severe disadvantage in terms of low education, opportunity and encouragement are unlikely to respond in this way to digital divide discourses.

Alarm over divides in ICT usage has also tended to elevate the importance of Internet technologies to the level of essential good, thus creating an imperative regarding computers in homes and communities.[13] While the benefits of such an imperative may be felt by ICT corporations and in terms of national economic performance, it can be argued that individual and community benefits may be

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[12] David Ellington, the founder of the black online and multimedia service Netnoir, has made this point regarding portrayal of black communities in digital divide discussions (Singleton and Mast, 2000).

[13] Consider Clinton and Gore's introduction of the Information Superhighway metaphor, which conveys an urgency to join something fast moving, on which one can easily be left behind if appropriate measures are not taken (Wyatt, 1998).

more easily sourced in policy decisions and financial commitments unrelated to ICTs (Postman, 1990). Indeed the promotion of ICT use in every aspect of community life has been objected to for deflecting attention away from alarming findings such as low levels of literacy in the Irish population relative to European counterparts. It has been argued that to improve social opportunities children should 'switch off the PC and read books, learn arithmetic, play games and run around in the park' (Jackson, the *Financial Times*, Wednesday, 20th March 2002). This suggestion sets up the computer in opposition to traditional activities, illustrating that ICTs remain fairly unintegrated, conceptually, into every day living, and while such an opposition is unhelpful, it indicates a feeling that the necessity of ICT use was being over-emphasised to the public. Further to this, the prioritising of 'divides' regarding ICT use over more fundamental, traditional disparities displays a kind of de-contextualisation of ICTs from society. It separates ICTs from social practices and fails to recognise the digital divide as a reflection of an array of social and economic divides in the domains of wealth, health, education, housing, and culture among others.

This point brings us to an element of the underpinning theoretical tension within social studies of technology – between so-called technologically determinist positions and those that embed technologies within social contexts in order to understand their significance. In viewing technologies as a force outside of society, technological deterministic analyses have tended to produce bi-polarisation in thought, between highly optimistic, near utopian visions of technologies effects and bleak accounts whereby technologies are viewed as detrimental to human endeavours, values and spirit (see Postman, 1990; Turkle, 1996). A persistent misgiving held by such writers is the prospect of rationalisation via ICTs in the work place, leading to deskilling of jobs and unemployment, which gives the mistaken impression that computers' utility exists independently of human intentions and institutions.[14] Equally deterministic are those accounts that hyperbolise ICT impacts to the point where previous constraints on human effectiveness will be completely removed. The declaration by Vivienne Jupp, Chair of the Information Society Commission Ireland that, 'in the Information Society,

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[14] See, for example, Goodson and Mangan (1996) and Postman's forecast that computers in education will eventually render teachers redundant (1990). De-skilling as an outcome of ICT integration cannot be rejected outright, though; see Barker and Downing (1985) for a considered early account of socially mediated impacts of word-processing on the culture of female typists.

the constraints of time, location, and distance are eliminated' (Jupp, 1997) has not been borne out by experience.

These polarised positions can only be sustained if one assumes that technology is a distinct force that drives social change; if the highly complicating factor of 'the social' in mediating technologies implications is admitted, then clearly effects cannot be predetermined merely by the existence or capacities of technologies, and they will not be uniform in nature either. So it would be overly simplistic to view ICTs as a panacea for social problems or as a creator of them, either through use or non-use. In his study for the EU fifth framework project, *e-Living*, Haisken-DeNew comments

> We can therefore see the value of ICT access and usage as an *indicator* of social exclusion but not necessarily a cause of it. It may simply be that the reasons for exclusion from ICTs are the same as those for more traditional social exclusion...thus focusing on ICT exclusion (the 'Digital Divide') and in particular 'Internet exclusion' alone without trying to directly tackle the more familiar socio-economic barriers will probably have little effect on social exclusion in Europe nor provide much progress against e-Europe objectives. (Haisken-DeNew, 2000, p.27)

The idea of ICTs as a tool for inclusion must be kept in check, and treated with 'positive scepticism,' to borrow Woolgar's phrase (2001).

In collapsing the society-technology distinction, Social Shaping of Technology (SST) theorists seek to understand the political, economic and cultural processes which influence the directions technologies develop, the forms they take and their outcomes (MacKenzie and Wajcman, 1985; Williams and Edge, 1996).[15] Prominent among SST's broad perspectives, the Social Construction of Technology (SCOT) and closely aligned Actor-Network (ANT) schools consider technological development as a series of negotiations between various interested groups – designers, suppliers, funding bodies, end users – termed socio-technical 'ensembles' (Bijker 1993) or 'constituencies' (Molina 1989); ANT includes in this 'network' non-human 'actants' (Law and Callon, 1992). [16] The process of innovation

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[15] There have been tendencies for work within SST to create linear understandings of social influences on the technical – social determinism. To avoid this, the principle of a seamless web of 'socio-technology' is attractive (Hughes, 1987 cited Lohan, 2000, p.899).
[16] Critics have argued that in emphasising interpretative flexibility of technologies and the creativity of the consumer in shaping them, SCOT has found it difficult to account for closure of technologies.

is subject to feedback from the end user; their shaping influence can flow 'upstream.'

The centralisation of *choice* in SST's understanding of the innovation process means that technological development is negotiable, but it is also potentially irreversible, as a technology's interpretative flexibility reaches 'closure' by cumulative design decisions (Williams and Edge, 1996; Kaplan, 1995). There is also an argument that emphasises the 'configuring' influence of technologies on users, whereby designers work with an 'ideal-typical' user in mind rather than real people with specific needs; the resulting design determines to a significant degree whom the user is and what the use is (see Woolgar, 1991; see also discussion of technology 'scripts,' page 45).

From a social inclusion perspective, the influence of marginalised groups' interests in the process of negotiation is, almost by definition, absent; their late adoption of ICTs excludes them from the process and their specific ICT requirements are unlikely to be incorporated into technological design. Furthermore, in the case of the Internet, although interpretative flexibility at the stage of consumption has been noted (see, for example, Ward, 2001), arguably the dominant model of Internet User-as-Consumer[17] limits end-users' shaping influence.[18]

So sensitivity to the social contexts of ICT use shows that the digital divide metaphor is inadequate: it implies a scenario in which citizens are either in or out, either reaping the rewards of ICTs or missing out. Social shaping perspectives problematise this by suggesting that late adoption and low political influence mean that relative disadvantage may be reproduced through socio-technical developments. Also, access to the Internet does not guarantee that it will be used proactively – Internet use can refer to relatively passive media consumption. For this reason, the term 'digital ladder' has been offered (Alakeson, 2003) which allows for the idea of an 'evolving dynamic' of increasing levels of engagement with the Internet's potential.

Actor-Network's focus on individual freedom to mould technologies gives insufficient weight to the constraining power of socio-economic and political structures (Williams and Edge, 1996).

[17] Heinonen writes: 'the average citizen is positioned either as a consumer of IT products, such as computers, Internet accounts and mobile phones, or as a receiver of an exponentially growing amount of information...The citizen seems to be an object rather than a subject in the information society project, even though official policies rhetorically place the citizens at the centre and declare what is good for the IT sector is good for citizens' (2000, p.1).

[18] For a comprehensive exploration of the Social Shaping of Technology terrain, see Williams and Edge, 1996.

Responses to the Divide

In spite of the swell of academic attention to the social and economic nature of technologies, the tendency continues for ICT inequalities to be regarded as a 'divide' and to be disembedded from social contexts. This disembedding appears to render the term malleable, able to serve different ends (O'Donnell, 1999). The laissez-faire attitude to technology markets and to the divide is one that formerly characterised EU and Irish policy (see European Commission, 1994). Behind this approach was the assumption that Internet use will proliferate in the same manner as TV ownership did, but where TV essentially makes no demands on the user, by contrast drawing benefits from new media requires 'the active, informed, literate participation of a user' (Tapscott, 1997 cited in Carveth and Kretchmer, 2002), suggesting that disadvantaged citizens use would need to be actively encouraged. It can also be argued that without intervention, rural communities could easily be excluded by private sector ICT initiatives; for example, the provision of broadband communications to remote Irish communities may be deemed too unprofitable to be worthwhile.[19] Another potent objection is supplied by Preston, when he argues that privatisation at the national level benefits global companies and disadvantages localised initiatives, which effectively stifles innovation and diversity of content on the web (1998). And it is precisely this production of local content which may hold the most potential for benefiting disadvantaged communities, since 'lack of relevance' has been cited as a key barrier to ICT uptake (Amarach, 2001; the Children's Partnership, 2000).

Businesses have recognised the divide as a relevant issue;[20] indeed it has been heralded by certain actors as an entrepreneurial opportunity (Singleton and Mast, 2000; Hanafin, 2002) whereby donations of discounted PCs to inner city communities, for example, will foster brand loyalty amongst late adopters and make inroads into the divide quicker than government intervention will.[21] But there are problems with philanthropic efforts such as donations of hardware: the lived reality of offerings, without follow up support, can be an unused computer in

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[19] Interview with Hugh Baxter, Cerena Consulting, *e-Forum*, Guinness Storehouse, Dublin, 5th November 2002.

[20] 13.3 of the ICT companies in Europe's top 500 companies mentioned the divide in their annual or social reports (Alakeson, 2003).

[21] One interesting development is the Waste Electrical and Electronic Equipment Directive, which makes it obligatory for businesses to recycle and re-use computers, so that they may then be sold or donated to schools and disadvantaged groups.

the home or long un-edifying hours of Internet use and large bills for families under severe financial pressures. Community groups may suffer similar problems: research by O'Donnell (1999) showed that community organisations need a constant, reliable source of funding to incorporate ICTs effectively; charitable donations rarely meet these criteria. [22]

AOL UK was one of the early ICT companies to concretise a Corporate Social Responsibility (CSR) agenda (Alakeson, 2003), and, increasingly, it is being acknowledged that philanthropic efforts alone do not take this agenda far enough: what is required of businesses is '...not spare change, but...sustainable, replicable, institutionalised change' (Kanter, 1999 quoted in Alakeson, 2003) within the activities of ICT manufacturers and content and service providers.[23]

What of governments' roles in 'attending' to the digital divide? A lack of clarity in identifying the form public sector projects should take was previously identified in the Irish context by O'Donnell and Trench (1999) with regard to the Department of Employment and Enterprise's *1996 White Paper on Science and Technology*, and this has remained a problem. One reading of the prevalence of 'inclusion' rhetoric but lack of commitment in policy is that inclusion continues to be used as a euphemism for expansion of the telecommunications market. O' Siochru identified the movement in public discourse, from information infrastructure to Information Society, as a smoke screen for increasing liberalisation (O'Siochru, 1996 in O'Donnell and Trench, 1999). Another reading is that although the terms inclusion-exclusion provide a simple and attractive analogy when speaking about disadvantaged citizens' experience of ICTs, at ground level, so to speak, they refer to highly complex interrelationships between facets of disadvantage. Initiatives taking low ICT use in isolation will always fall far short of addressing exclusion adequately. [24]

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[22] Hewlett Packard's 'Digital Village' project in Dublin is a positive example of how philanthropic efforts can be optimized by working within community partnerships. HP have partnered with Dublin Institute of Technology, the Dublin Inner City Partnership, the National Centre for Technology in Education and the Digital Hub to install up-to-date technologies in disadvantaged schools and flat complexes, mainly in the inner South West of the city. Emphasis has been placed on mentoring, involving DIT students, and 'training the trainers' within schools and community groups. See http://www.dicp.ie.

[23] The Irish CSR 'movement' is spearheaded by Business in the Community – Ireland: a non-profit organisation, founded in 2000, which advises businesses on incorporating a wider range of stakeholders into business strategy to include marginalized groups, emphasising return on investment as a motivation. Projects involve linking employers with homeless people and ex-offenders seeking employment. See http://www.bitc.ie.

[24] The isolation of one aspect of social exclusion is one way in which causal relationships between aspects of disadvantage are masked; another way is to clump them together thus making them equivalent (Fairclough, 2000). These rhetorical manoeuvres can mask how certain members

Governments in Europe and the US have attempted to coordinate efforts to encourage ICT uptake by vulnerable citizens.[25] In the EU context, the Lisbon agenda recognised this need, not only to encourage a competitive, knowledge-based European economy but to foster social cohesion as well (Alakeson, 2003). In Ireland, an Inter-departmental Working Group was formed – one of the recommendations of The Information Society Commission's report, 'IT access for all' (2000a). Measures have included state-funded programmes, tax policies, local government plans, and private/public partnerships. Some prominent activities are set out below.

- State-funded programmes have often focused on schools; for example in the US, the *Kids 2000* programme provided training to 400,000 teachers, and computers to the 2300 clubs around the country. A comparable initiative in Ireland was *Schools IT2000*.[26] Almost all Irish public libraries have been provided with Internet access and relevant staff training. Public access kiosks have also been provided in social welfare and FAS centres. Also the potential for remote and unprofitable areas to be excluded from broadband provision, mentioned above, has been acknowledged and the intention for public funds to address this potential problem is stated in *New Connections* (Department of Taoiseach, 2002).

- Potentially excluded groups have been provided IT equipment under the Community Development programme under the Department of Social, Community and Family Affairs. The Equal Skills project, running between September 2001 and September 2002, focused on ICT literacy in the South West and Shannon regions with the aim of reaching 100,000 people. The CAIT (Community Applications of Information Technology) scheme engages with community and voluntary sectors to attempt to integrate ICTs into disadvantaged sectors of communities. It provided funding of €5 million between July 2001 and December 2002 for 71 community projects

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effectively are excluded by the actions of others: if exclusion is referred to as a condition rather than a process then causal agents, multi-national corporations, for example, are erased from the picture (Fairclough, 2000).

[25] The UN Digital Divide Fund is an example – to which the Irish government contributed €380,000 by 2000 (ISC, 2000).

[26] *Schools IT2000* began with the establishment of the National Center for Technology in Education (NCTE), under the auspices of the Department of Education and Science. IR£40 million (€51 million) was provided, together with IR£15 million (€19 million) from Eircom, to be spent over three years. For more information, see http://www.ncte.ie.

(Department of Taoiseach, 2002).[27] Community and voluntary groups are also the potential beneficiaries of the Muintir na Tire project, funded by the Department of Social and Family Affairs, which saw the building of a portal site for easy online content creation.[28] The Derry Nerve Centre involved disadvantaged groups in promoting cultural heritage.

- Nationwide media initiatives targeting so-called 'laggards' included the Netdays project in November 1999, and the RTE *Dot.what?* series, televised throughout 2000.[29] In Britain, the *UK Online* media campaign is believed to have encouraged fairly high Internet uptake among low-income households (Alakeson, 2003).

- Tax incentives for late adopters and for employers buying PCs for employees have been recognised as a possible avenue of action (see Shadrach, 2001). For example, the 'e-rate' in the US, an initiative of the private, non-profit, Universal Service Administrative Company, allows schools and libraries access to ICTs at hugely reduced rates, using revenue from long-distance telephone charges. $2.25 billion of funds have been raised this way.[30] The Irish Information Society Commission 2000 Report (2000b) recommended tax incentives for purchase of PCs in the home, although no such moves are in place to date.

- Local government's role in promoting ICT uptake was slow initially, but county councils are increasingly using websites to promote their services.[31] To date, attention has focused predominantly on creation of council Intranets, for which the new Local Government Computer Services Board (LGCSB) held awards in April 2003.[32] There are plans, currently delayed, for a Universal Participation initiative, developed through the County and City Development Boards through which 'wider social inclusion objectives' are to be considered (see Department of Taoiseach, 2002; 2003).

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[27] €3 million was made available for CAIT 2, between February 2002 and June 2003, for 50 more community projects (Department of Taoiseach, 2003).
[28] A report was published in November 2002; see http://www.muintir.ie/ict/ict.html.
[29] See http://www.netdaysireland.ie and http://www.rte.ie/tv/dotwhat respectively.
[30] Carveth and Kretchmer, 2002; see also 'Getting online: a guide to the Internet for small town leaders.'
[31] Kildare, Meath and Carlow are cited as examples in the New Connections government report (Department of the Taoiseach, 2002).
[32] For more information on the work of LGSCB and local authorities, see 'Local Revolution,' special supplement in 'Digital Ireland', the *Irish Independent*, Thursday, 27th March 2003.

These government measures have been welcomed but critics have asserted that the level of funding has remained too low. For example, CAIT's funding of €5 million has been contrasted with the Canadian equivalent, VolNet, which has provided 15 million Canadian dollars to 10,000 voluntary organisations (ISC, 2000).[33] The assertions of the 2000 ISC report remain salient:

> ...there is need for a greater focus, energy and resources to be devoted to the issue of social inclusion in the Information Society. Implementation of existing projects must be swifter and larger scale, and more ambitious projects must be introduced (Information Society Commission, 2000, p.70).

This report also called for e-inclusion initiatives to be 'situated within an anti-poverty framework' (ISC, 2000, p.71). The extent to which such a framework is adhered to, and wealth distribution retained as an aspect of policy, is arguably pivotal to success.[34] In the context of New Labour's social inclusion policies, Marquand writes:

> No project for social inclusion will work unless it captures some of the winners' gains and redirects them to the losers. The notion...that the workfare state can turn the trick all by itself, that a mixture of training, education and moral suasion can transform the entire society into winners, and that this can be done at nil cost to those who have already won, is an illusion...(Marquand, 1998 quoted in Fairclough, 2000, p.60).

Aside from these reservations from an anti-poverty perspective, the Irish government has been criticised by business and community groups alike for not being sufficiently proactive in encouraging public Internet use (Proceedings of *E Forum*, 2002). Governments cannot override certain factors influencing ICT uptake: time is necessary for populations to finding their own meaning in participation in ICT practices (Byrne, 2002). Indeed, Rogers has identified 'time' as one of four aspects of the diffusion process (the others being innovation, communication channels, and the social system, 1995). Moreover, it has been contended that a rejection of computers may be a well-informed choice rather than an error forced by disadvantaged circumstances.[35] The means by which uptake may be hindered

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[33] Canada's government has struck early with a number of ICT policies that prioritised social benefits: for example, in an OECD benchmark study of e-economies, Canada had one of the lowest business and community prices for broadband and the highest availability. Its e-Government portal was ranked best in the world in 2001 (Alakeson, 2003).

[34] It has been contended that the New Labour concern with 'poverty of aspiration' served to steer agendas away from plain poverty (Fairclough, 2000).

[35] See Wyatt's paper 'They came, they surfed, they went back to the beach,' 2000; Wyatt, 2000b.

by experience of ICTs, especially with regard to disadvantaged circumstances, is turned to next.

Possible barriers to gaining benefits from ICTs

Perceived barriers to benefits emerging from ICT research include: problems with slow connections and outdated and cumbersome hardware; lack of time to learn; financial constraints; lack of technical support; constraints on access to computers; perceived irrelevance of content; difficulties in locating information; the privatisation and subsequent inaccessibility of information; fears of inappropriate content reaching children, and fears of infringements of privacy (Wyatt, 2000b; UCLA, 2000, Ward, 2001).[36] It can be argued that these factors, taken in the context of broader socio-economic considerations, make patchy uptake a wholly understandable phenomenon. For example, a socio-economic perspective would understand low levels of online purchasing in Ireland partially as a consequence of low levels of credit card ownership: 63 percent of Irish adults do not have the means to purchase online (Amarach, 2001). Similarly, booking flights and holidays online, while popular among more advantaged households, is barely relevant to those who cannot afford holidays abroad. In any case, it has been argued, if the Internet takes considerable time to proliferate through the socio-economic spectrum it is merely following the same pattern as every other domestic technology. Singleton and Mast (2000) take up this point with their assertion that all domestic technologies have undergone a shift from luxury to everyday good;[37] the fact that wealthier people have got online first is no reason to show the kind of pessimism found in, for example, the series of US government reports produced under the Clinton administration: *Falling Through the Net* (National Telecommunications and Information Administration 1995, 1998, 1999, 2001).

Another deterrent to use of computers may be the symbolic meanings attached to them: for example, their dual roles of work tool and domestic artefact may blur the

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[36] For disadvantaged groups' use of the Internet, four particular issues have been found to stand out: lack of relevant, local content; the predominance of the English language (particularly in use of search engines); lack of cultural diversity online, and demands of high literacy levels from the user (Children's Partnership, 2002).

[37] This point can be aligned with Bourdieu's idea of stages of legitimacy of creative objects: ICTs may be said to be passing from 'contested legitimacy' towards 'universal legitimacy' (Jenkins, 1992 cited in Brennan, 2000).

boundaries between home and work. Ward has described users' attempts to address this by designating work and leisure rooms within the home, also distinguishing work-related use from leisure use of the lap-top computer by changing locations for use in the home (Ward, 2001). These measures will clearly fall short of halting the frequently unwanted convergence of the public and the private.[38]

A further potential barrier to new ICT uptake is the endurance of established technologies. It is a consistent outcome of ICT uptake studies that user-unfriendliness of new technologies encourages reinforcement of old ones rather than their often-assumed replacement. Katz and Aspden's five-year research was the first to report the phenomenon of Internet drop outs – those who were once Internet users and had ceased using it – disrupting the commonly held belief that technology uptake is a linear, one-directional process.[39] Their further finding, that use of the Internet was associated with increased use of the phone, suggested a reinforcement of older technology use (2000). Similarly, Sancho (2000) in his study of household integration of ICTs reported that a number of parents who initially bought the PC for their children's education returned to traditional methods of helping them. The 'myth of technological replacement' is also one of the key findings from the *Virtual Society?* Programme.[40] The assertion that old, established technologies endure because people respond to effectiveness with loyalty (Seely Brown and Duguid, 2000) was borne out by their findings: new technologies 'tend to supplement rather than substitute for existing practices and forms of organisation' (Wyatt, 2000b), and '[e]fforts to create virtual systems often reinforce non-virtual practices' (Woolgar, 2001). Such findings encouraged technological change to be regarded in terms of integration rather than substitution, evolution rather than revolution.

Self-exclusion from Information Age practices can be understood by viewing non-use as a reaction to the modern obsession with access to information (Postman,

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[38] Although Morley among others has argued that the domestic-public distinction has already been dissolved through television use (1992), this process is partial; the world of work can still be distinguished, and arguably computers' meanings remain closely aligned to it.

[39] A common reason cited was that access to college or work PCs was terminated, suggesting that use was more tied to circumstance rather than need. See Wyatt's taxonomy of non-use, in which she distinguishes 'resistors'; 'rejectors'; 'excluded' and 'expelled' (2000b).

[40] Set up in 1997 by Brunel University, it was concerned to problematise the Virtual Society myth and repeatedly identified uneven, non-linear patterns of uptake. See http://virtualsociety.sbs.ox.ac.uk.

1990; Seely Brown and Duguid, 2000; Glennon, 2002). Critics such as Postman argue that information retrieved via ICTs is valued in terms of quantity rather than quality, and that the vast amounts of it entering our spheres of experience can resemble a 'deluge of chaos' (Postman, 1990). Problems with comprehension are dealt with by offering more information, thereby compounding the problem.[41] These human struggles in handling information are being overlooked in part because resources are focused instead on developing technologies to provide more information, faster (Postman, 1990). Viewed in this light, the current preoccupation in Ireland with providing broadband technologies to households and businesses could be interpreted as 'embracing dumb power' (Kelly, 1997 cited in Seely Brown and Duguid, 2000).[42] The problem can also be framed in terms of decontextualisation of information, or a 'tunnel-vision' approach to information retrieval via ICTs, whereby cues which provide meaning are lost. Seely Brown and Duguid argue further that the utility of ICTs is often decontextualised from those human agencies and institutions which render them useful, and that the user-friendliness of technologies would be improved by more consideration of agents and structures at the design stages of technology life cycles (2000).

Arguably, it would be helpful if expectations of ICT uptake were tempered, and government actors publicly acknowledged the problematic, even chaotic, nature of the Internet as it is currently experienced. Here the Social Shaping of Technology perspective, relatively unknown outside academic arenas, takes on some political and practical import. From this perspective, the Internet is a prototype whose social utility is not yet fully determined or 'closed;' those concerned to realize the Internet's capacities for increased participation and citizenship, not solely consumption, will need to act swiftly in the negotiations (Heinonen, 2000).

The means by which ICT use is purported to aid social inclusion at a practical level remain elusive in government literature, and it is to these under-determined factors of inclusion that attention turns now.

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[41] The 'help' option in Word is an obvious example. Also, the hyper link has been celebrated for rupturing traditional narrative styles and author-reader dichotomies, yet this disruption equally can bring unwanted diversion and confusion.
[42] Mary Hanafin, minister with responsibility for the Information Society, has acknowledged the 'chicken- egg scenario,' whereby content cannot be improved until infrastructure is improved, yet the motive for bettering infrastructure comes as a consequence of high quality, relevant content (2002).

New technologies as tools for inclusivity

Although the introduction of new practices involving ICTs has been thought to lead to retrenchment in established practices, it is maintained that work, communication, entertainment, education and civic practices are increasingly played out with use of ICTs, and these changing practices constitute a redefinition, or moving of goal posts, regarding what is understood by social inclusion. Focus will be placed on social involvement, employment and education as three potential strands of inclusivity to which ICTs may be helpful or necessary. Democratic participation is of course relevant to an analysis of inclusivity but is outside the parameters of this study.[43]

First it is necessary to establish a working understanding of what constitutes social exclusion; amongst varying interpretations, it is believed that D'Ambrosio (2002) provides an accepted and useful account of inclusion using the following concepts:

- *Financial Difficulties*: being in upper income class with respect to household income.
- *Basic Necessities*: having high education, PC skills, working, having a permanent job, having a job in which one sets one's own schedule.
- *Housing Conditions*: having housing with more than 2 rooms
- *Consumer Durables*: having a car, more than one television, having a clothes washing machine, dish washing machine, microwave oven, CD/stereo, video camera, VCR, digital camera, DVD player
- *(Mental) Health*: overall life satisfaction
- *Social Contact*: talking often on the telephone to friends, satisfaction with communication with friends
- *Dissatisfaction:* satisfaction with free time

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[43] For a list of e-Government services to be progressed see Department of the Taoiseach, 2002, Appendices 2 and 3. Central to these developments is the Public Services Broker, which will serve as a 'single point of contact for accessing all public services.' Advantages are said to include: constant access to information and services; provision of 'joined-up services' heretofore delivered by separate agencies, and avoidance of resubmission of the same information (Department of Taoiseach, 2002, Appendix 2). In terms of inclusivity, it provides another channel of communication between citizens and government, but its usefulness will be highly contingent on its user-friendliness and on levels of ICT literacy amongst vulnerable groups.

These conditions provide an adequate reference point, though some qualifications should be noted: exclusion in a strict sense would mean lack of the above conditions over an extended period of time, requiring longitudinal study. Also, ideally these factors would be weighted according to importance (the ownership of a DVD player cannot be considered as important as having enough rooms to house the family adequately (Haisken-DeNew, 2002)). PC skills are regarded here along side employment and education as basic necessities,[44] suggesting they are an end in themselves rather than a tool.[45] Clearly the list of concepts are thoroughly interrelated, perhaps the nexus of these criteria being adequate financial resources, but, assuming that financial barriers have been sufficiently overcome that substantial ICT use is feasible, what is the nature of the opportunity[46] presented by ICTs?

Community participation

The implications of ICTs for community participation should be considered primarily as complex and contradictory. Nevertheless, some ICT research is reminiscent of many TV 'effects' studies, which sought to identify linear relationships regarding use and behaviours and which tended to treat audiences as uniform and passive (Gauntlett, 1995). Katz, Rice and Aspden's quantitative study suggests that the Internet increases social participation; users are more likely to be part of community organisations, tend to meet up with friends more often, are more likely to be away from home because of social commitments, and their network of friends is more widely dispersed. Furthermore, users are more likely to express satisfaction with communication levels amongst family (2001). The obvious implication of these findings is not that Internet use causes these levels of participation but that individuals who are already socially active would be more likely to take advantage of new means of communication.

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[44] US Secretary of Education Richard Riley referred to technological competence as 'a new basic for education' (Valentine, Holloway and Bingham, 2002, p.300). Michael Wills, British Minister for Learning and Technology has referred to familiarity with ICT skills as 'an essential grammar of modern life' (Research Machines, 2001).
[45] But the distinction between ends and means is also unclear in other cases too; for example, one can question the extent to which a job is an end goal or a means to acquiring a wage.
[46] In a European survey, 93 percent of Internet users said that people who do not access the Internet are missing an opportunity (European Commission, 2001 cited in Alakeson, 2003).

Contradictory results emerged from initial research by Kraut et al (1998). Their research, grounded firmly in the conventions of psychological studies, found that:

> ...greater use of the Internet was associated with declines in participants' communication with family members in the house hold, declines in the size of their social circle, and increases in their depression and loneliness. (Kraut et al, 1998, p.1017).

However, these findings applied only to the first year or two online; a later survey of the respondents showed no evidence of these negative responses (indicating a possible novelty factor affecting earlier behaviours). The second study showed that Internet use was positively associated with face-to-face interaction, and that extroversion and perceived social support were factors in the Internet being positively experienced (see Kraut et al, 2001). It may be accepted from these large surveys that Internet use may be beneficial for strengthening and prolonging social ties, but this is by no means determined by its use; the strongest conviction to be taken is that existing individual traits and behaviours cannot be radically overhauled by technologies.

The exciting possibilities associated with the Internet's capacities for communication, unfettered by real life constraints, have been disputed (see Wajcman, 2000). These disputes are prevalent in feminist discourses, in which debate has centred on the potential for online communication to disrupt conventional gender power relations. It is argued that the spaces provided by chat rooms and MUDs (multi-user dimensions) filter out communicative cues, offering the capacity for gender swapping, or for 'genderless' communication. But this view is countered by the assertion that technologies are bound up in culture, disallowing the possibility that they radically alter cultural norms. Similarly, the embeddedness of human physicality in culture means that physical selves may remain a potent force even online.[47] The 'mythologising of virtual culture' (Ward, p.7, 2001), entailing opposition of the virtual to the real, distinguishes early Internet theory from more recent work, since the newer generation of Internet writers, identified by Ward, work on the basis that:

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[47] It has been suggested that women are more likely than men to identify 'textual gender,' so that a predominance of male Internet contributors may be potentially off-putting to some women (Connolly cited in MacKeogh and Preston, 2002).

> ... the Internet blurs the boundaries of the physical and virtual allowing them to exist along a continuum in a symbiotic rather than diametrically opposed relationship (Ward, 2001, p. 8).

Again, the conclusion to be drawn is that ICT use reproduces and reinforces social trends. Although political participation is not central to this investigation, some of the latter's debates may be drawn on to demonstrate further. Putnam's influential article regarding declines in social capital in the US suggests that lowered involvement with civic organisations such as unions, churches, and parent-teacher associations has been accompanied by more crime and less efficient government (Putnam, 1995). Internet communication has been identified as a factor in disengagement from mainstream politics since alternatives in the form of extremist minority groups thrive online (Castells, 1997) and as a factor in declining social engagement, since there is doubt over the ability of online communication to foster trust and cooperation (Putnam, 1995). Others are more optimistic that democratic communication can develop with the Internet;[48] indeed the Internet has been studied in the context of Habermas's 'public sphere' as a potential means of reversing its decline (Friedland, 1996 cited in O'Donnell and Trench, 1999). However, the suggestion that democracy is intrinsic to the Internet – that it can reverse declining political participation – assumes mistakenly that users are guaranteed to take full advantage of technological capacities (O'Donnell and Trench, 1999).

Implications of ICTs for social participation are difficult to determine in part because what constitutes participation is in fact increasingly individualistic. Dutch researchers Frissen and Bockxmeer acknowledge this paradox (2001) and assert that all kinds of needs and beliefs of the individual are met by community groups, particularly those that are online, resulting in more volatile membership to these groups. They identify:

> ...[a] paradoxical combination of a trend towards individualisation on the one hand and the blossoming of all manner of social involvement on the other (p.226).

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[48] O'Donnell and Trench (1999) identify two relevant examples from the web: the Association for Progressive Communications, a non-profit network; and Handsnet. These networks provide links between worldwide organisations. They class the Internet in the 'small media' bracket, along with video, fax, newsletters, community radio and community TV, and proposes that these media help create a public sphere. The possibilities of community TV are arguably more realisable with broadband technology, since anyone with a digital camera will be able to create video footage (e-City Working Group, 2003).

The types of social involvement to which this refers are arguably insufficiently cooperative to count as building social capital.[49] For example, the increasingly popular online support groups often merely 'provide occasions for individuals to focus on themselves in the presence of others,' as Wuthnow has put it (1994, p.45). The argument that ICT-facilitated communication constitutes an overall decline in meaningful social engagement is particularly salient in discussion of cyberspace (see Baudrillard, 1983; Stoll, 1995; Turkle, 1996).[50] This space is often regarded as a less meaningful domain, one which may be detrimental to the life of physical communities. Computer-mediated communication has been deemed, as Katz and Aspden put it, too 'inherently antithetical to human life' to foster relationships successfully (2001) since, although fluidity of identity may be encouraged, relationships with depth and meaning are not.

Similar concerns for quality of communication have been voiced regarding changing patterns in telephone use. Lohan (1996), for example highlighted the importance of the Irish 'local area network' to day time users of the telephone – mostly women, unemployed, and disabled citizens – for maintaining social networks. She claimed that increased day time phone costs disadvantaged these groups, and women benefited little from cheaper rates at evening time since evenings were often occupied by work in the home (1996). The gendered approach to technology use is worth further attention here: women's appropriation of the telephone for leisure and for strengthening of social ties is one example of how technologies' end use may differ from intended use.[51] But it does not override the 'stable, hegemonic interconnectedness between genders and technologies' (Lohan, 2000, p.909); gender hierarchies are easily reproduced since women's uses of technologies, such as 'chatting' on the phone, are belittled.[52] The explosion in mobile phone ownership and use arguably undermined further traditional gendered use of the telephone, since mobile communication, by financial and

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[49] Social capital refers to 'features of social organisation such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit' (Putnam, 1995, p.67).
[50] The increasing impoverishment of communication has also been attributed to mobile phone use, through which text messages pair down dialogue to a minimum, and, as the numbers of calls made are said to be increasing, the dialogue is getting 'shorter and more banal' (see Glennon, 2002).
[51] In the late 19th century the telephone was intended to increase efficiency in business communications; its potential as a female tool for chat was forecast by Bell, but such use was discouraged as 'it threatened not only the seriousness of the technology but the moral order of society' (Lohan, 1996, p.49. See also Fischer, 1991). The Internet's original function as a communication system for the US military in the event of nuclear attack is, of course, another example of how technologies' end uses can vary from designers' intentions (Sim, 2001).
[52] Moreover, the 'male' construction of other ICTs, particularly computers, symbolically and in design, can deter female use.

practical necessity, reduces the duration and depth of conversations. Added costs of line rental from Internet connection also may constrain landline phone use. In sum, the increased variety in means of communicating certainly does not guarantee strengthening of social ties, and the negative implications for quality of communication are in need of exploration. It should be acknowledged that the weaker, less personal ties created through Internet communication are not necessarily devoid of value. One example offered is the use of neighbourhood watch email lists, which may remain unused for long periods, only activated in the event of burglaries in the area (Resnick, 2000).[53]

Education

The implications of ICT use for learning is another strand of interest. Of course, word-processing skills are now almost imperative for the creation and presentation of academic work, making acquisition of ICT skills an important early step towards gaining recognised qualifications. But what of ICTs as sources of knowledge and learning aids? There is little documentation of ICT uptake in adult education, but studies of ICTs in schools (see, for example, OECD/CERI ICT programme, 2001) suggest that poor or irrelevant content on the net, together with time constraints imposed by demands of the curriculum have to date acted as major barriers to development of learning with ICTs, and a government policy that concretises ICT use in Ireland's educational programmes is not yet established.

Non-traditional learners have been identified potentially as the main beneficiaries of ICT-enhanced learning. E-learning, the term referring to any learning tool accessed through the PC and Internet, is said to embody the premise of life-long learning that, in modern economies and societies characterised by rapidly changing technologies and demands for skills, the process of acquiring and upgrading skills must continue throughout a lifetime. The use of e-learning products has been promoted on the basis of their break from the traditional classroom scenario, and their allowance of individualised learning in a chosen time, pace, and location. John Chambers, President and C.E.O. of Cisco Systems worldwide has stated:

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[53] For another example of beneficial ICT communication to tackle problems within a disadvantaged housing estate see the Manchester Redbricks initiative in the UK (see http://www.redbricks.org.uk).

> There are two fundamental equalisers in life – the Internet and education. E-learning eliminates the barriers of time and distance creating universal, learning in demand opportunities for people, companies and countries.[54]

In contrast to this unequivocal endorsement, Tuijnman has referred to the promise of life-long learning as 'double-edged,' in the sense that new educational opportunities are mostly exploited by already privileged members of society, which reinforces their relative position (1996). This double-edge is recognised in many ICT practices: online self-help has been viewed predominantly as a middle class phenomenon since its effective use requires a degree of 'cultural capacity' (ESRC, 2000). Elements of Bourdieu's conceptual framework for understanding social practices are relevant here. Culture class, referring to levels of resources or capital in economic, educational and social fields, has been used to aid understanding of late adoption of ICTs (see Brennan, 2000.); it is suggested that those with substantial educational and cultural resources are more likely to be open to learning opportunities throughout their lives, so would extract more educational benefit from ICTs.

This self-reinforcing situation is moderated partly by introduction of the concept of 'investment' in fields (Barker and Brooks, 1998): if sufficient benefits are perceived as attainable then disadvantaged individuals can invest resources in particular areas such as education and thereby increase capital. ICT resources present a means by which individuals can invest in education. But, as Brennan points out, benefits from such investment depend on individuals' social capital; if a person's friends, family and colleagues are not engaged with ICTs then relevance is diminished and there are probably few sources of help for optimising ICT use. From this perspective, the claim by Chambers, above, that the Internet can level differences in opportunity appears somewhat simplistic.

Employment

ICTs' significance for inclusivity through employment takes a number of forms, including the high demand for skilled workers in the 'Information sector', particularly software applications and services; the increased need for computer

skills in more traditional employment sectors; the increasing importance of the Internet as a tool for job searching; and for building social capital, which may contribute greatly to employment prospects. With respect to employment in Information Technology, a report from Microsoft and the International Data Corporation forecast an IT skills shortage in Western Europe of 1.7 million people by 2003 (Oliver, 2000). The recruitment of 'non-traditional' IT employees, such as women and the unemployed, was offered as a means to address this. It has also been acknowledged that the volatility and fragility displayed by this sector, alluded to in the term 'dotcom bubble,' has not promised much hope for disadvantaged groups in terms of long-term prospects; what is required is sustainability allowing whole communities to reap benefits (O'Donnell and Duggan, 2001). Initiatives working towards this goal include the FIT (Fast Track to Information Technology) programme in which IT employers have 'outlined key areas of skill shortage and identified appropriate market-led curriculums' to facilitate secure employment for the long-term unemployed.[55] This was an outcome of the Tramlines project, itself a product of the EU EMPLOYMENT initiative, which, between 1995 and 2000, funded 2000 European projects attempting to foster employment opportunities for disadvantaged citizens.[56]

Encouragement of ICT use is based on the perceived imperative of computing skills in all job sectors. Statistics to illustrate the pervasiveness of ICT skills in employment vary; one estimate for the US states that 60 percent of jobs now require technological skills (Benton Foundation in Association with the National Urban League (1998). ESDIS[57] have stated that in Europe, more than half of European workers use computers in their job, with the number growing continuously.[58] The extent to which ICT use in the work place correlates with

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[54] See Education articles, http://www.nightcourses.com/articles/elearning.html

[55] The FIT initiative is led by leading IT sector company actors. By September 2002, it had trained around 2500 unemployed citizens in Dublin and was recognised as a good practice model at the Lisbon EU Heads of State summit in 2000. See http://www.fit.ie

[56] Tramlines involved training 25 long-term unemployed people in the Microsoft Certified Professional (MCP) qualification – with substantial success: an outcome being 81 percent employment in ICT career paths a year later. However marginalisation by employers in terms of salaries was felt even in this 'inclusive' initiative: those with no second level qualification, women, and single parents received lower pay. For accounts of the *Tramlines* and the subsequent *Fountain* project, see Donnell and Duggan, 2001.

[57] ESDIS is The European Commission High Level Group on the Employment and Social Dimension of the Information Society.

[58]ICT skills Monitoring Group, 2002. This group contains representatives of all EU member states and formed as a follow-up to the *eEurope* GoDigital initiative in order to 'analyse and monitor the demand of ICT and e-business skills and the actions aimed at improving the availability of these skills in the Member States' (see http://europa.eu.int/comm/enterprise/ict/policy/ict-skills.htm).

improved circumstances – that is, increased wages – is not clear from empirical data, however. The Economic Policy Institute has estimated that the gap in wages between technologically skilled and unskilled worker rose by 23 percent between 1979 and 1995 (Benton Foundation in Association with the National Urban League, 1998). Findings from Haisken DeNew's study[59] are more complex: they suggest that those who do not use a computer at work are more economically disadvantaged, but use of the *Internet* at work does not seem to indicate higher wages. Furthermore, almost no differences were found between different types of PC use. He deduces that:

> ...the effects for PC use in general have more to do with the kinds of people who tend to have/use PCs in the work place than the fact of PC usage itself. It also suggests that simply training workers in specific PC related skills will not have much effect on their earnings return in most countries (2002, p.27).

The picture is therefore unclear as to the nature of the relationship between PC use and earnings.

But earnings are not the only issue: of special interest is the extent to which success in securing employment is made more likely through acquaintance with and ownership of computers. There is scarce information on a direct relationship between employment success and computer use,[60] but a key factor here is the nature of individuals' social networks, as research suggests that those with more extensive social networks are more likely to find employment. Granovetter's studies in the nineteen seventies supported this: people tended to find jobs through use of weak ties with those outside of immediate friends and family (Granovetter (1973) cited in Alakeson, 2003). These useful weak ties are often formed with colleagues, former colleagues, their friends, members of interest groups etc. and are more prevalent within the middle classes. Disadvantaged groups, especially the unemployed, tend to have smaller social networks made up of strong ties with close friends and family in which few new opportunities arise.

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[59] This study is the first round of findings from a group of longitudinal surveys, *e-Living – Life in a Digital Europe*, an EU Fifth Framework IST Project. Participating countries are the UK, Italy Germany, Norway, Israel and Bulgaria, and one of the most notable findings is the variation between these countries regarding implications of ICT use, confirming that technologies' meanings are contingent on local contexts.

[60] Empirical findings such as that of Katz and Aspden, that Internet users are more likely to have full time jobs than non-Internet users, only suggests that those in employment are financially and educationally advantaged, making Internet use more affordable and beneficial.

ICTs could play a role in a virtuous circle whereby ICT skills increase opportunities for employment, and employment, in turn, enriches and extends social networks, thus increasing the chances of further job opportunities (Alakeson, 2003).

Key Issues Emerging

From consideration of existing research it emerges that the role of ICTs in social participation, education and employment is conflicting, with little empirical evidence of its potency in aiding inclusivity. Indeed Presvelou illustrated the lack of clarity generally in the value of home consumption of ICTs, suggesting that purchase preceded need in many cases (1998). Intuition urges the view that many variables pertaining to social and economic circumstances serve to mediate the implications of ICTs use. Illustration of this would emerge most helpfully from longitudinal studies that map changes in life circumstances with reference to ICT use over time. While the parameters of the study restrict such an approach, qualitative methods can nevertheless be used to give voice to a potentially excluded group to explore ICT uptake and significance.

Engagement with e-inclusion discourses has highlighted that lateness of adoption appears to be strongly associated with low education and income – that the digital divide reflects other social divides. Indications that low uptake *exacerbates* disadvantage was not so evident to date, yet a deterministic aspect to the debate appears to persist, suggesting that negative outcomes for certain sections of society are intrinsic to the technologies. In opposition to this deterministic view sit social shaping discourses, emphasising social contexts for understanding technology integration and end users' ability to shape technologies according to need. The power of end users is probably overemphasised, but accepting the idea tentatively, it will be necessary to ask what hinders users in their attempts to shape technologies according to need.

It was argued that the digital divide could be manoeuvred to serve commercial agendas for market expansion in ICTs, and this may help to explain the seeming slowness to commit substantial government funds to initiatives which addresses

ICT uptake in conjunction with other social disadvantages.[61] Clearly government influence on ICT uptake is limited by such factors as the need for time in technology diffusion and the power of existing social and cultural norms. It is also constrained by the flaws in design of ICTs as they are currently experienced. Evidently, more qualitative research into user needs and behaviours is required by governments and ICT businesses to inform future investment in e-inclusion projects. In particular, lessons are sought from 'best practice' initiatives, of which the Ennis IAT project is cited as one. Lack of assessment of such projects has proved problematic to date,[62] and it is with this shortcoming in mind that this study focuses on the Ennis initiative.

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[61] But there are other concerns for government aside from supporting the private ICT sector: volume of use of Irish government websites is the shared lowest in Europe with Greece in spite of the sites being ranked number one in Europe for accessibility (Byrne, 2002). This indicates in part that a long-running trend – low public interest in party politics – appears to be unaffected by new means of access.

[62] The third report of Ireland's Information Society Commission recommends that the government progress 'the development of qualitative socio-economic Information Society research through the next Information Society Commission' (Information Society Commission, 2000b, p.17).

Chapter 2

EIAT as an ICT Community Project

In the previous chapter's discussion, reference was made to government-led responses to the threat of a digital divide, including tax policies, nationwide schools and library ICT initiatives, and media awareness campaigns. Attention turns now to consideration of initiatives, usually formed of public-private partnerships, which focus investment into particular communities. These community technology projects, as they will be termed, run to thousands across Europe and globally[1] and may span entire cities or be limited to certain districts. Particular attention will be paid to the role of inclusivity as a motivating force in their design and implementation.

Industrialised nations have invested in the idea that all economic futures are pinned to a global Information Society, and to be left behind in ICT developments would be economically and politically disastrous. This helps to explain the worldwide proliferation of ICT trials and the competitive approach to them, which has resulted in a certain level of mimicry of ICT projects across nations, with similar projects producing similar diagnoses and findings. On the other hand, nations and municipal areas within nations have exhibited wide variation in ICT projects' characteristics regarding scale, source of their funding, level of execution, and to whom or what investment is directed. Perceived levels of success have of course also varied, but the intention here is not to provide an evaluation of such experiments, but to offer some dimensions along which a typology of ICT trials can be formed, and to draw out some examples that most usefully provide a context for analysis of the EIAT project.

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[1] Jaeger, Slack and Williams (2000) note that by the end of 1997, the European survey of the Information Society provided an inventory of European Information Society projects that contained over 1100 entries.

Dimensions of ICT projects

It should be noted that in attempting to distinguish various dimensions below, there emerges considerable overlap in their frames of reference,[2] but they provide a move towards creating a typology or taxonomy of ICT projects – an endeavour that has generally been avoided by researchers because of the complexities in delivering ICT community projects and the subsequent problems in presenting them categorically, as well as the lack of in-depth data on their results.[3] Reference will be made to the review of European ICT Trials within the Social Learning in Multimedia (SLIM) framework by Jaeger, Slack and Williams (2000).[4] Six dimensions are provided, constituting what are believed to be the most salient issues.

The first dimension to be considered concerns the nature of technological endowment of communities. The level or quality of technology to which users have access can be viewed as a central factor in a project's success, since outdated computers, a lack of supplementary technologies such as Internet modems or printers, and slowness in Internet connection in particular may undermine the qualities of ICTs which made their use attractive in the first place.

A second dimension may be identified in the level of user-involvement in projects. The latter has been shown to vary considerably; indeed a distinction has been made between social experiments per se and commercial pilots and trials for the former's encouragement of user involvement in design of technologies. Originating from Denmark in the 1980s in a drive to improve the representation of human skills and aspirations in systems design (Jaeger, Slack and Williams 2000), social experiments had democratic concerns in that they sought

> ... to compensate for the predominance of technical specialists and a managerial/ policy elite in decision-making by involving a wider range of actors, including "final" users who were often not technical specialists (Jaeger, Slack and Williams, 2000, p.278).

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[2] For example, the private-public dimension may be superimposed over the issue of technology push and user pull, since pilots of new technologies will almost always be the concern of private ICT companies.

[3] For an early and rare example of a framework for analysis, see Beamish, 1995.

It was intended that this citizen involvement came very early on in the life cycle of the technologies before their meaning and function became stabilised.[5] These experiments made apparent the need for technicians' increased contact with final users, and the imperative of certain levels of cultural competencies within communities in order to make innovative use of the technologies. Such experiments remained rare; meanwhile numbers of commercially driven trials have multiplied, fuelled by the fast rate of change in ICT innovations, and involvement of the user in ICT design appears to have almost disappeared in these trials.[6] Aside from user input in design, there remains scope for user involvement in the implementation of commercial and public/private ICT trials.

Levels of private and public ownership and investment in ICT projects is a third dimension along which projects can be situated. In the Danish model, discussed above, 'centralisation of the user' meant that technologies were regarded as social tools in need of public assessment and involvement. By contrast, in private sector contexts, motives lie in identifying user needs and behaviours for commercial purposes and in fostering brand loyalty as privatisation of national telecommunications has taken place. This should not be viewed entirely negatively: commercial trials may be more sensitised to market realities such as the fact that household uptake of ICTs are subject to more non-rational, emotive factors than adoption of ICTs in the workplace, thereby recognising the challenge of fostering trust in household users regarding, for example, privacy of information. Private ICT companies have also been willing to undertake large-scale, expensive trials because there has been no other appropriate means of

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[4] The SLIM consortium was a group of eight European research centres concerned to investigate ICT's implications within a 'Social Shaping of Technologies' theoretical framework. See their final report: Williams, Slack, and Stewart (2000).

[5] The design stage in technologies' life cycles is given considerable attention by Actor Network Theory; see Wajcman, 2000, for a feminist consideration of this body of work. It is highly salient to feminist studies of technology since it considers that women's absence from design decisions effectively disadvantages female end users (see also Rommes, Oust and Oudshoorn, 1999 for this discussion in the context of the Digital City of Amsterdam). It has also been argued that early adopters of ICTs have greater influence on ICT designs and therefore greater control in the evolution of ICT products than late adopters (Brennan, 2000), signalling greater potential disempowerment for disadvantaged groups.

[6] The value of involvement at the design stage has in any case been disputed since it involves a linear conception of technologies impacts, in which social needs can be inscribed in the design of the artefact, these values then being reproduced by use of the artefacts, a view that tends to overlook market forces and broader social conditions influencing public uptake (Jaeger, Slack and Williams, 2000).

anticipating user requirements.[7] Commercial trials have also been motivated by a desire to encourage new working alliances between actors in different social and industrial sectors to optimise benefits from rolling out technologies, but even where rollout may have been unsuccessful, trials are viewed as valuable learning processes. The main problems with private initiatives, however, may be that their drive for profits may result in their catering for certain social needs over others, for example, entertainment over democratic participation; furthermore, and most importantly for this investigation, they may not reach the highly marginalised sectors of a community, because of the latter's financial, social and cultural restraints. In reality, almost every project consists of private, public, and voluntary sector partnerships, and the extent to which relevant public bodies and voluntary sectors are included will characterise the level of inclusivity of the project.

Distinction can also be made between technology-driven and use-driven projects, providing a fourth level of analysis. In the main, concern has been with integration of established multimedia technologies – PCs and the Internet – rather than introducing groundbreaking innovations, but this has been viewed positively since these technologies may offer the most flexibility and adaptability to needs (Jaeger, Slack and Williams, 2000). The SLIM project's final report supports this with its claim that 'eventual uses and utility of multimedia products are often far removed from supplier presumptions' (Williams, Slack and Stewart, 2000, p.ii). However, the predominant picture is that innovative uses of existing technologies have been scarce, indicating that ICT uptake is incremental, contrary to the unreasonable expectations of community transformation created by media treatments of ICT trials. It also indicates that adaption of ICTs to needs may require guidance from experienced users to provide technical support and to demonstrate relevance of ICT applications (Pinckett, 2000). Thus, a supplementary dimension could be inserted here that refers to the extent of follow up support in ICT use.

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[7] Laboratory or market research is likely to be inaccurate in representing user behaviours regarding new ICT product and services in household and community settings (see Jaeger, Slack and Williams, 2000).

A fifth and related means of analysis is in terms of the level of experimentation allowed in the trials. Under the body of work referred to as social learning,[8] Lieshout has identified the mode of control and the mode of experimentation regarding approaches to ICT projects (2001). A more controlled project may be one which is more technology-driven, that is concerned to introduce a new technological artefact. It should be acknowledged, though, that in spite of any initial intentions of control in a trial, experimentation with use and users is a necessary process through which any technology is integrated into communities.

A final means of conceptualising ICT projects is by their level of comprehensiveness, that is the extent to which ICT integration has a multi-faceted nature, involving combinations of schools, households, community groups, healthcare, public administration and businesses. Jaeger, Slack and Williams' studies of projects within the SLIM framework found that most were hybrid, often concerned with building technological infrastructure as well as concentrating on one area of community activity (2000). The most common focus was education (one fifth of the studies), followed by public administration. Health featured in only 4 percent of projects.[9] Consideration of socially excluded groups are commonly cited in projects' publications, yet the extent to which social inequalities are actively addressed may be partly contingent on the area's history in community activity,[10] and on the level of public and voluntary participation in the project. A point of concern is that certain excluded groups, in particular young people and the unemployed, have received far greater attention from ICT initiatives than, for example, ethnic minorities, those with special physical or mental health needs, lone parents, and remote communities (Gilliat et al. 2000).

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[8] Social learning is the name given to the perspective underpinning the European SLIM project among other studies, and has been defined thus '...the inventive efforts of a wide array of players – including intermediate and final users as well as technological suppliers and promoters and the interactions between them, in which generic technical capabilities are fitted to evolving markets and the needs of different groups of users' (Williams, Slack and Stewart, 2000, p.2). It has been referred to as a 'refinement' of the Social Shaping perspective, through which the reflexive element of socio-technological development is recognised (Lieshout, 1999).

[9] The authors warn that the small sample size may provide a distorting picture, however some national differences in emphasis are notable: Denmark, Germany and the UK were most concerned with economic goals, whereas Norway, Denmark and Belgium figured most prominently in terms of public administration, and Ireland was identified as being most highly concerned with cultural media content (Jaeger, Slack and Williams, 2000).

[10] Bordiga et al. have shown that the civic culture of a community shapes its attitudes to technology diffusion. Their studies in Minnesota considered Grand Rapids, where attitudes to their electronic network, IATSCA, were grounded in a belief in universal access to technology as a basic right, and where, historically, there was a tradition of community responsibility for social inequities. Detroit Lakes, by contrast, had a history more characterised by private enterprise projects and saw its electronic network placed more in the domain of private investment (2002).

With these dimensions in mind, it can be suggested that a project is more likely to provide far-reaching benefits when the following measures are taken:

- Provision of infrastructure and up-to-date hardware and software
- Funding by a partnership of private and public bodies
- Inclusion at decision-making levels of voluntary groups for excluded citizens as well as community representatives
- Concentration of resources into promoting existing ICTs rather than piloting new technologies
- Provision of ongoing support to encourage use, allowing for considerable experimentation in project activity
- A multi-faceted approach, ensuring ICTs reach many areas of community life.

From the social learning perspective, the significance of experiments and trials is in their potential to allow greater interaction and negotiation between diverse players in the deployment and use of ICTs. In this context, every project, including 'failed experiments,' provides some level of learning, and it is urged that learning should be shared at national and European levels,[11] although this is accompanied by a warning that preoccupation with ICT projects, and the construction of boundaries around them, could obstruct important lessons learned from patterns of use across society (Jaeger, Slack and Williams 2000).

Case Studies of ICT projects

Against this background of analysis of ICT trials it is useful to look at some examples; three will now be considered: the Digital City of Amsterdam, Blacksburg Electronic Village, and the Camfield Estates-MIT initiative. These have been selected for discussion as they exhibit variation in circumstances and approaches, providing points of reference for the Ennis project. The Amsterdam project can be considered EIAT's international counterpart in terms of chronology, but focuses on provision of a web presence for the city. Blacksburg is comparable in terms of chronology and size and may be considered a more rural environment

[11] See also Gilliat, MacLean, and Brogden, 2000; in their audit of ICT initiatives for the Scottish Executive they identify great but untapped potential for sharing lessons between projects.

than the other two examples. Its high concentration of residents affiliated with the university characterises the nature of ICT uptake. Camfield Estates-MIT is an entirely urban project and is of special interest for its focus on residents who are socio-economically disadvantaged.

The idea of the digital or wired city[12] has been circulating since Lyndon Johnson's administration in the US, whereby telecommunications were viewed as holding the potential to build the 'Great Society.'[13] Digital cities have been described as 'localised information and communication systems on the Internet' (Rommes, 2002, p.421) and are essentially web portal sites concerned with fostering communities online in order to strengthen social ties and build awareness and participation in local issues. They tend to be supplemented by provision of public Internet kiosks, and, less commonly, free or discounted Internet access for homes. There are now large numbers of Digital Cities, any of which could be studied here,[14] but the city that is regarded as the 'pioneer,' Amsterdam, provides an interesting example of a popular initiative.

Digital City of Amsterdam

The Digital City of Amsterdam, or DDS (see http://www.dds.nl), exemplifies a digital city that was highly experimental in its planning and implementation, and it has been argued that DDS's success can be partly attributed to its experimental nature (Lieshout, 2001). It is also one which centralised inclusivity as one of its ideals. The first of its kind in the Netherlands and one of the earliest globally, the project began in 1994 and was initially intended to run for ten weeks but positive responses, including heavy media exposure, ensured its continuation; in the first

[12] Digital cities should be distinguished from the more recent concept of e-Cities which refers to a wide-ranging set of criteria for cities to fully exploit the benefits of ICTs. The Dublin Chamber of Commerce's e-City Working Group has identified the following dimensions for comparing cities: leadership; infrastructure quality; e-infrastructure competitiveness; labour competitiveness; entrepreneurial; legal/regulatory; capital availability; taxation/incentives; digital divide (see e-City Working Group, 2003).
[13] See Dutton, Blumler and Kraemer, 1987 for further information, and an in-depth treatment of the concept of the wired city.
[14] For example, the Mansetori organisation in Tampere, Finland comprises three interweaving sites: for neighbourhood communication, for citizens' public debate and for journalism. The sites allow important local matter to be aired and for decision makers to come together with citizens without the mediating and contorting influence of journalists (Heinonen, 2000). For more examples of digital cities see Helsinki http://www.hel.fi ; Bologna http://www.iperbole.bologna.it/ ; Barcelona http://www.bcn.es/english/ihome.htm ; Parthenay http://www.district-parthenay.fr/intownnetaccueil.htm.; Kyoto http://www.digitalcity.gr.jp/index-e.html

week, residents' numbers reached 3500, and visitors amounted to 2000 per day (Rommes, van Oost and Oudshoorn 1999).

The project originated with Marleen Stikker, a key actor in De Balie and other cultural and political initiatives in the city, who wanted to create discussion forums similar to Freenet in the US,[15] that appealed to a wide set of users. The Internet was on the verge of going public at this stage. The project had two main concerns: familiarising residents with the information and communication potential in Internet use, and with increasing their political participation. The project was implemented by De Balie and a group of computer hackers known as the Hacktick network; financial support was given by the city council, the Department of Economic Affairs and the Department of Internal Affairs, amounting to ECU 150,000 (€150,000). Notably, city elections were imminent so the council was willing to back any initiative that might combat the alarmingly low voter turnout of previous years.[16] The 'digital town hall' idea had already gained publicity through Ross Perot's use if it during his US presidential campaign, and the metaphor of the 'city' was encouraged, with users of the site being identified either as citizens or tourists,[17] for example.

The ethos of 'access for all' was attended to with the offer of free email accounts and Internet access, and public terminals were set up at strategic points in the town to broaden the user base. This can be considered an effective inclusive measure since Internet costs present an obvious deterrent for poorer residents, but these facilities were discontinued in the second year (Rommes, 2002). As interests of the founding groups began to diverge, the Hacktick network broke with DDS and became a commercial Internet Service Provider: *XS4all*. DDS also made the transition (albeit difficult) to commercial enterprise. With this transition, the emphasis on public debate and public ICT provision diminished (see Lieshout, 1999). The implications of democratic participation had led to problems: online discussions often proved inappropriate for matters of civil debate, with flame wars sometimes occurring. Also the metaphor of the city led to the demand by some

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[15] Freenets – 'gopher-based' communication systems – has been in existence in the US for almost a decade (Lieshout, 1999).
[16] The council even took the remarkable step towards transparency of allowing internal communication within the city's administrative network to be placed on the Internet (Lieshout, 1999).

citizens for city-like institutions such as councils and elections, and these issues provoked disagreement amongst key actors.

It was observed that the general character of use changed with time. In early years, the project was experimental: the boundaries between designers and users were fluid and this led to open communication between users as technological know-how was disseminated;[18] also, there was arguably a sense of political purpose in the virtual community. Later, the designer-user boundaries became more fixed; communication became more closed and insulated within established relationships, and the technology was increasingly used as a portal for accessing the worldwide web (Lieshout, 1999).

The experiment was successful overall, relative to other attempts at Digital Cities, in engaging a diverse range of users. However, it has been argued that the celebrated informal, experimental nature of the project meant that DDS designers incorporated into the design certain biases pertaining to their own desires and competencies regarding ICT use – in short, an 'I-methodology' was employed in representing the user.[19] As a result, the site was not easily accessible to those who had no previous experience of computers or who lacked confidence in exploring through trial and error. Important research focusing on women's participation in DDS (Rommes, van Oost and Oudshoorn, 1999; Rommes, 2002) has argued convincingly that this was a central factor in the considerable gender difference in DDS use: in 1994, only 9 percent of users were female. This ratio has increased with time: to 18 percent in 1996, up to 21 percent in 1998 (Besselaar, Melis and Beckers, 2000 cited in Rommes, 2002), but the especially low number of women users in earlier years has partly been attributed to the lack of discussion spaces specifically for women, in DDS and on the Internet as a whole – both being identified as male-dominated environments. An early chat forum intended for women, DDS.femail, was found to contain many hostile contributions from males.

[17] Entrants had to pass through 'city gates' and receive emails at a 'post office', and journeys into the World Wide Web began from the virtual rail station. This use of metaphor was evidently attractive to the media and the public (Lieshout, 1999)
[18] The technology was initially based on Freeport software and the UNIX system; it was text-based and structured with menus. But this format eventually evolved to being based on the web, with high use of graphics and hyperlinks. The easier interface arguably required less communication between users.
[19] Rommes, van Oost, and Oudshoorn thus identify a gender script in DDS and a consequent gender bias on three levels: structural, whereby employees were selected from those already interested in computers: i.e. young males; symbolic, whereby the design reflected males' attitude of

A 'Women's Square,' for the purposes of allowing communication between women's groups and containing a moderated discussion forum was created two and a half years after DDS's opening, but by this stage, the technology's 'script'[20] had already been set; it was difficult to change the conventions of DDS to meet new needs. It appears that the significant involvement of a number of women, not least Marleen Stikker, the founder and first 'mayor,' in the design and implementation of DDS, did not ensure that the priorities of women were attended to. Rommes has argued that individual women working in a male-dominated ICT environment are unable and unwilling to take such a stance;[21] instead, women's groups who are committed to promoting this agenda would need to have influence early on in the design stages of ICT initiatives.

Blacksburg Electronic Village

A second useful example of a wired city is Blacksburg Electronic Village (BEV) in Blacksburg, southwest Virginia (see http://www.bev.net) and is prominent in its high and early Internet uptake and deployment of broadband. The project is run by a public-private partnership between the town of Blacksburg, Virginia Polytechnic Institute and State University (Virginia Tech) and Bell Atlantic Southwest amongst others. Running since October 1993, it is claimed to be the first initiative to aim for Internet connection in every school, home and business. The organisers have tackled the access issue with 'affordable' Internet connection, and a free email account to citizens, but no discounted hardware was provided for homes. To date, Blacksburg boasts the highest per capita use of the Internet in the world, with more than 87 percent of Blacksburg residents online, and an estimated 60 percent have broadband access at home, at work, or both; also 75 percent of Blacksburg businesses conduct commerce online. These figures should be considered in the light of the town's unusual demographic makeup: out of a

excitement and adventure towards ICT use; and identity, in which masculine learning styles and interests were prioritized in the website's construction (1999).

[20] A technology script has been defined thus: 'technical objects define a framework of actions together with the actors and the space in which they are supposed to act.' (Akrich, 1995 quoted in Rommes, 2002, p.413).

[21] Rommes has offered explanations for this reluctance: firstly, feminist issues were unfashionable in Dutch public discourses in the mid 1990s; secondly, the ethos held by DDS founders was universal access, regardless of demographic characteristics. In this atmosphere there was no perceived need or desire to create 'women' as a category of user in need of special attention (Rommes, 2002). Thirdly, Rommes points to a possible tension in identities of women in ICT, between 'technologically competent person' and 'woman' (see Wajcman, 1991 cited in Rommes, 2002).

population of 36,000 residents, 85 percent are affiliated with Virginia Tech (Kavanaugh, Cohill and Patterson, 2000), and consequently the town entered the initiative with a higher than average computer literacy and a high level of PC use per capita (Beamish, 1995). BEV has extended to include residents of the outlying Montgomery County, an agricultural area that is relatively disadvantaged in social and economic terms, but it has been found that Internet uptake has been estimated at between 20 and 40 percent in Montgomery County contrasted with around 80 percent for Blacksburg town. Inclusion of disadvantaged residents to better their socio-economic position was not cited as a prominent driver for action; rather, organisers described the encouragement of widespread uptake as a means of reaching a critical mass of users to make the area attractive to commercial firms for testing products and services, as well as providing fruitful academic research opportunities.[22]

The initial intention was for BEV to provide opportunities for increased civil participation, with bulletin boards and electronic conferences allowing greater information provision and communication regarding matters in running the city. Although initially there was no discussion forum provided there have been developments opening channels of communication. One example is a school board mailing list, which has led to feelings of greater involvement in school affairs and a small increase in actual involvement such as attendance at school meetings and letters to the school board (Kavanaugh, Cohill and Patterson, 2000). Researchers' assertions that Internet use was associated with higher levels of community participation, especially across different community groups, was tempered by the finding that Internet users were found to be more predisposed to community activities (Kavanaugh, Cohill and Patterson, 2000). In line with national surveys, Internet use in Blacksburg has been found to be valued mostly for diverse and generalised web information searching, and one-to-one communication with more distant friends and family.

When the project began, Virginia Tech was the only Internet service provider in the region, but since 1995, multiple Internet service providers have entered the

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[22] The idea of a critical mass of users is salient within discourses on ICT uptake (see, for example, Carveth and Kretchmer, 2002), and is central to the 'chicken-egg scenario', referred to by Mary Hanafin (2002): once a critical number of users is reached, the practical impetus for creating content and providing infrastructure is in place, however attainment of these numbers is difficult all the time access and content are inadequate.

market.[23] The variation across sectors of the community in quality and speed of Internet access is considerable. The campus of Virginia Tech was endowed with very high-speed connection via Ethernet ports.[24] Apartment units within the town, typically housing technology and engineering students, were also connected using these services. By contrast, homes elsewhere used dial-up connections through local Internet service providers, and later ISDN and DSL connections. Public access was provided by the Montgomery-Floyd Regional Libraries, with support from the US Commerce department's TIIAP program, BEV, and the county schools. Net connection of 1.45 megabits per second was provided for the three libraries, and training given to staff and public, which indicates effective efforts to address uneven uptake. In the wake of IT training at the library, demand for Internet access was so great that the number of terminals was increased. It was found that senior citizens formed a high percentage of public Internet usage, and women were strongly represented. Most users (81 percent) had some college schooling, showing a reasonably high level of education amongst public Internet users (Kavanaugh, Cohill and Patterson, 2000). The Internet trainer asserted that the libraries scheme 'reached many people who would otherwise have never had exposure to either the Internet or computers in general, in a systematic way which increased their skills and awareness' (quoted in Kavanaugh, Cohill and Patterson, 2000).

Camfield Estates-MIT Project

A third example of an ICT community initiative is the 'Camfield Estates-MIT Creating Community Connections Project (see http://www.camfieldestates.net). Though much smaller and focused, it is one of high significance since one of its stated main aims was to address uneven benefits from ICTs across the community, and is fairly uncommon in its creation and utilisation of local content to benefit underserved citizens (Pinckett, 2001).[25] It should be noted that this

[23] By late 1997, 24 new ICT companies had entered the area, offering a wide range of communications and technology services including consultancy and design (http://www.bev.net/about/history.php)
[24] Ethernet ports allow data flow of 10 megabits per second. Students' rooms were also endowed with direct serial data connections.
[25] The potential of ICTs for building social capital, especially through building of websites by disadvantaged community groups, has been found to be largely unexplored by ICT projects (Gilliat et al., 2000), although one can argue that the priority of projects should be to familiarise these groups in basic ICT skills rather than creation of personal web content.

project began in January 2000, three years after the onset of EIAT, so was able to draw on a longer history of ICT initiatives, and benefit from improvements in ICT costs and capabilities. The focus of the project was a low income housing community in Roxbury, Massachusetts and its environs.[26] Camfield estates was a participant in the US Department of Housing and Urban Development (HUD)'s 'demonstration-disposition program,' through which the original buildings in the area, in poor condition, were demolished and 102 units of new town houses were built, with ownership of the properties being handed over from HUD to the Camfield Tenants Association (CTA). The CTA's strong involvement in the 'demo-dispo' program secured Camfield as the site for the MIT project. The project committee included three Camfield residents, two representatives of the Camfield Tenants Association and two members of Williams Consulting Group staff, and two MIT researchers. They availed of new technological developments in MIT to create the Creating Community Connections System, or C3, as a means to strengthen relationships between residents, business, and community organisations through web communication.[27]

Aside from MIT, project partners were mostly private sector, including the W.K. Kellogg foundation, Hewlett Packard, and RCN Telecom services, though the US Department of Commerce also contributed, and these supports enabled the project to offer free of charge to every Camfield family an up-to-date computer, software, high-speed Internet connection via cable modem, and eight weeks of training (Pinckett, 2001). Technological endowment of the area also included a community technology centre providing free public access, technical support, and a site for ICT training.

The first phase of the project concerned assessment of residents' demographic details and their interests and needs regarding their community. A project awareness campaign was also conducted at this time, in which adults were targeted for enrolment more than children since they were thought to be in danger

[26] For another example of an ICT initiative targeting underserved citizens, see the Craigmillar Community Information Service, Edinburgh. In this deprived area, 80 percent of residents receive social welfare payments. The site, initially using BBS (Dial-up systems using telephone lines rather than the Internet) was a bulletin board intended to link community groups together and to link residents with actors in the local authorities. The project arguably had minimal success in stirring local interest; it was recognised that mere provision of information did not constitute access in a participative sense. See http://www.ccis.org.uk/Home_Pages/Craigmillar/CI1.html

of lagging behind. Phase two entailed running computer courses, specifically use of the C3 system. In November 2000, 31 families received the free hardware, software and Internet connection. Disappointing numbers arising from the second recruitment drive led to a door-to-door campaign, increasing the numbers to 60 out of a possible 80 units. Those who remained outside of the initiative cited lack of relevance, too many responsibilities, such as single parenting, and health-related conditions as primary barriers; consequently, individualised training programs were planned to target these cases.

Phases three and four concerned the ultimate aim of the MIT researchers, referred to as 'community building', and was approached from the perspective of community assets (see Kretzmann and McKnight 1993), whereby resources already available in the community are 'mapped and mobilised' in order to raise awareness of what is there and to make optimum use of them.[28] The C3 system was used to this effect, with the Community Intranet allowing exchanges to take place via bulletin boards, chat rooms, forums etc., and the Community Extranet comprising a business database that uses a GIS system to map out business locations within a 1.5 mile radius. Job postings, online CVs and local employment agencies were included. The residents' skills were also mapped from an inventory of 150 skills, so that neighbours could be identified for helping with requirements such as babysitting, plumbing, also design of websites. This also allowed for design of further training programmes according to demand and the matching of job-openings to assets of specific resident skills (Pinckett, 2000). Backed by a theoretical commitment to asset-based community development (see Kretzman and Knight, 1993) and constructionism, which approaches learning with the conviction that people learn best when they are active participants in design activities (Papert, 1993 cited in Pinckett, 2000), researchers placed emphasis on engaging residents in project activities, and centralising them as content creators in order to encourage self-sufficiency and confidence.

Evaluative surveys were conducted with the heads of households on the estates, the average demographic profile being single African-American female. It was

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27 C3 was built using the ArsDigita Community System (ACS), and open-source software platform, and is delivered using an application service provider. Although it was developed by MIT researchers its contents are maintained by Camfield residents (Pinckett, 2001).

28 In parallel to the MIT project, there has been an empowerment-building initiative in the same area, the details and implications of which cannot be entered into here (Pinckett, 2001).

reported that participants had expanded their local ties (concluded from data describing increases in number of residents recognisable by name and contacted by phone and email); residents were said to have a heightened awareness of community resources and local developments. Also perceived were psychological benefits: increased confidence in learning abilities together with increased aspirations to seek out information regarding 'basic needs', particularly using the Internet as a tool (Pinckett and O'Bryant, 2002).

To conclude these case studies, it is clear that there are innumerable variations regarding the dimensions outlined earlier in the chapter, and others besides, but some general findings have emerged that can inform analysis of EIAT. For example, the benefits to communities that are the subject of ICT trials extend beyond the initial technological endowment; networking links are created between the large firms involved in the project, local suppliers of specific goods and services, voluntary bodies and government agencies (Pinckett, 2001; Preston, unpub.). One emerging problem has been the dearth in relevant skills amongst local government and community group staff for the provision of certain ICT-enriched services. Involvement of local communities in design and implementation stages of projects, while evident in some trials, such as Camfield Estates, was often absent, and the importance of their participation beyond mere consultation for maximising benefits has been stressed (Gilliat et al, 2000, Rommes, 2002). It appears that mere provision of information and an absence of coordinated efforts to encourage participation results in lack of local interest. In these conditions, users may gravitate towards individualised communication and web surfing. Recommendations have concerned the need for on-going assessment and for 'baselines' to allow for tracking of developments in ICT integration (Pinckett, 2001); also for feed back loops, in line with the social learning and actor-network approaches, ensuring maximum flow of information between users and those further 'upstream' in technologies' lifecycles. An 'action research' approach, rather than mere monitoring of developments would appear to be desirable, in which the nature of alternative designs are considered and users themselves are asked for ideas for creating a more effective ICT project (Preston, unpub.). With many digital cities such as DDS and BEV already at least two years in operation, the Ennis Information Age Town project was initiated.

History of EIAT project

Though the mid-1990s was characterised in Ireland by strong economic growth sourced primarily in the technology industries, ICT products and services were yet to be integrated into households and businesses on any significant scale. The situation was comparable in other European countries, yet Ireland's uptake was particularly slow arguably hindered by the lack of movement towards deregulation of the national telecoms industry that rendered high prices for Internet access. An OECD report found that Ireland was the most expensive country in the world regarding Internet access.[29] The government's own report, *Information Society Ireland, Strategy for Action*, cited the US research company IDC's pronouncement that Ireland ranked lowest in terms of 'readiness for the Information Age' (Gledhill, 1997). In this context, the semi-state company Telecom Eireann, having acknowledged responsibility for bettering Ireland's competitive position vis-à-vis integration of new ICTs,[30] launched in October 1996 'a flagship project to accelerate Ireland towards the Information Age' (Eircom, 2000). All towns with a population between 5000 and 30,000 in Ireland were allowed to enter; the winning town would receive IR£15 million (€19 million) to invest in IT infrastructure, equipment, training, pilots and trials. In April 1997, the project was officially opened by Alan Dukes, then Minister for Transport, Energy and Communications, amid intense promotion and media attention. The project was claimed to be unique in that '...nowhere in the world have all the available communications technologies and tools been deployed at one time, in one place' (Eircom, 2000, p.15).[31]

Many commentators viewed the project as a costly public relations gimmick that obscured the real issues for Ireland's move into the Information Age: namely, the (much more costly) provision of a high-tech national telecoms infrastructure, and deregulation of the industry, encouraging low-cost Internet access (Gledhill, 1997).[32] Nevertheless, the competition, that saw 51 entries, appeared to galvanise

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[29] The charge was around four times that of US, Canada, Australia, and, significantly, New Zealand – a country of similar population and economy (Gledhill, 1997).

[30] 'Guide to the Information Age: preparing Ireland for the coming age' Interview with Alfie Kane, CEO, Telecom Eireann, *Sunday Tribune*, September 21st, 1997. See also interview with Helen McQuillan, 20th April, 2002.

[31] A time line of events in EIAT's history is provided in Appendix (i).

[32] The idea of a wired town was itself criticised: it was deemed of little use to have one community heavily endowed with technology if a national infrastructure was lacking, as there was no means of networking beyond that community (Gledhill, 1997).

communities to an unexpected degree. President of the Ennis Chamber of Commerce, T.J. Waters commented: 'I do not remember any other campaign gripping the imagination of the people of Ennis to the extent that this project has.'[33] As well as this well-spring of public enthusiasm, Ennis's demographic and economic characteristics should be factored into their success in the competition. Ennis, County Clare is one of three densely populated centres in Ireland's Mid-West region, together with Limerick City (population 80,000) and Shannon (10,000). At the time of the last census in 1996, the Ennis urban area had a population of 15, 333, though it is estimated to have increased dramatically since then to around 20,000[34] due to internal and return migration linked to significant economic growth. The Mid-West became a common site in the 1990s for large technology companies, including AST and Dell, as well as a number of ICT initiatives, both local and European.[35] Furthermore, Ennis was already on the national telecommunications 'frame relay' system, it had a fully digitised telephone exchange, and Clare County Council had also already secured a relatively high level of ISDN connection in the area.[36] These economic and infrastructural factors signalled potentially reduced expenditure for the ICT trial. The town of Ennis also had a young, skilled and growing population and a high level of third level education and training, facilitated by its proximity to Limerick;[37] unemployment in the town matched the national average of 4.3 percent (Eircom, 2000). However, it should also be considered that the region is predominantly rural and has seen population loss and economic and social decline tied with declining agriculture during the same period. Despite more job opportunities in the services sector, long-term unemployment remains a persistent problem in the region[38] and in Ennis; indeed, as return migration has brought individual wealth

[33] T. J. Waters in his opening remarks at the Ennis Information Age Presentation, local notice board *The Clare Advertiser,* September, 1997.

[34] See Ennis Town Council information, http://enniscouncil.clare.ie/cocoon/test/313455.xml

[35] The Shannon Information Society Partnership Project (ShIPP), under the auspices of Shannon Development, sought to promote the area as an ICT hub for addressing ICT awareness, commercial investment and infrastructure. In 2000, Shannon development joined with Microelectronics Centre to brand the area an 'e-region', entailing plans for affordable broadband provision for businesses in local towns (Nolan, 2000). Further ICT initiatives in the region were: COMBAT (Corporate Marketing to overcome Barriers facing disabled Teleworkers) and MITRE (Market Implementation of Teleworking in Urban and Rural areas). 'Guide to the Information Age: preparing Ireland for the coming age' *Sunday Tribune,* September 21st, 1997.

[36] 'Guide to the Information Age: preparing Ireland for the coming age' *Sunday Tribune,* September 21st, 1997.

[37] In a 1999 Irish Marketing Survey, almost one third of the Ennis population were found to have third level education (Eircom, 2000). Nearby educational institutions include Limerick Institute of Technology and the University of Limerick.

[38] Long-term unemployment constitutes about half of the total unemployment rate (Mid West Regional Authority, 2001).

to certain areas of the town, it has served to increase the gap between advantaged and disadvantaged residents.

The Ennis submission for the competition contained a 'strategic partnership' approach, referring to financial investment, participation, and mutual anticipated benefit from Ennis Chamber of Commerce; Ennis Urban District Council; Clare County Council and Shannon Development. A task force was formed comprising eleven men and four women, which included members of industry, commerce and public services, and was headed by T. J. Waters, head of the Chamber of Commerce. In a move which suggests a 'social learning' approach, end users were seen to be incorporated into project execution through the opportunity to give suggestions to the taskforce for innovative uses of technology. The local newspaper, the *Clare Champion*, and *Clare FM* promoted the project, and mobile computer units were set up in the town giving information about the Internet. The essence of the submission comprised a number of planned initiatives: expertise was to be concentrated in three disciplines: life-long learning; healthcare and teleworking; Ennis was to be elevated as a potential site for telecommunications industries and positioned as a 'guinea-pig' for future technologies; the project was to help raise awareness of telecommunications for Ireland; and the town was to develop an 'intranet' which could be accessed for free and without having to enter the world-wide-web. This would entail formation of a website team who would prioritise the site's user friendliness. Community network centres were to be set up, and links were to be made with third level researchers, and with similar projects worldwide (Eircom, 2000).

Committees were set up for each of five sectors identified (community, residents, education, community, public sector and business), consisting of representatives from the public, members of the EIAT project team (twenty members) and members of the council. Their aim, as they put it, was to '...place the tools of the Information Age in the hands of the largest possible number of citizens and teach them how to use them' (Eircom, 2000, p.8). The structure of the EIAT organisation then comprised a task force (fifteen members) with six sub-committees and actors to co-ordinate and promote the project and maintain the Ennis network. The project's evaluation report acknowledged the need for monitoring of the project and cited the service providers as holding responsibility for it. In reality, aside from evaluation and monitoring carried out by researchers within EIAT, there has

been little follow-up by the private sector actors involved,[39] which seems to contradict the belief that EIAT was at core a product-testing initiative.

The goals of the project, in addition to the rather abstract notion of helping to 'accelerate Ireland into the Information Age,' remained under-defined in the brief. The latter was put in the following form:

What happens when....
1. every home has a telephone, with voicemail, caller identification and other advanced services
2. every business has ISDN connection
3. every student has regular access to computers with learning tools
4. public services are equipped to exploit the Information Age
5. households have Internet connection via a PC? (Eircom, 2000, p.24).

Some quantitative goals were set regarding ICT uptake – for example, it was aimed that 75 percent would have availed of the PC offer and be using it on a daily basis – but beyond such quantitative goals pertaining to technological endowment and usage, any hopes regarding *outcomes* from it are unclear.

Ennis received the title of Information Age Town in September 1997 with runners up Castlebar, Kilkenny and Killarney receiving investment of IR£1 million (€1.27 million) each. Two companies were formed: Ennis Taskforce Ltd, headed by Michael Byrne, and Ennis Information Town Ltd, which holds legal and financial responsibility of the project. The latter comprised 51 percent Eircom employees and 49 percent Ennis Task Force Ltd.

Technological infrastructure

Having secured funding until the end of 2002, Ennis's infrastructure was addressed. The resident's sector received IR£6.5 million (€8.3 million) in total. ICTs that were commonly regarded as 'old' were not yet established in many rural areas of Ireland in 1997, so the project arguably facilitated a 'catch up' with many

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[39] There was also minimal evaluation by academic and public bodies. Interview with Helen McQuillan 26th January, 2001.

European towns. From November of that year, Ennis landline telephone penetration was increased to the highest in the country when 600 homes previously without telephones availed of free connection. The option of voicemail was introduced into every Ennis home with a phone. In late 1997, a digital broadband ring carrying 24 fibre-optic cables was installed around Ennis, although the logistics of supplying broadband to the doors of households has been delayed there as anywhere else in the country (e-City Working Group, 2003; ODTR, 2001).

The subsidised PCs offered to residents were perhaps the most notable element of the project in public perceptions. Pentium 2 PCs supplied by *Dell* and installed by *Wang*[40] were given at a subsidised price to 5, 600 households initially. Software included Microsoft Office pro'97, anti-virus software, modems, and Internet software. Residents paid IR£260 (€330), which was to be reinvested into community projects. The decision to put a price on the PCs instead of distributing them free of charge, as commonly expected, was justified by Alfie Kane, then Chief Executive Officer of Telecom Eireann, as a way of instilling some appreciation of the potential of the technology.[41] This cost acted as a deterrent for the least well off in the town, and in a move to promote inclusion a waiver scheme was set up; 110 households applied, allowing them to acquire the PC for free. All qualifying households were also offered Internet connection and one year's line rental free of charge.

Qualification for a subsidised PC required fulfilment of the following criteria: households must live within the Ennis Urban District Boundary; be either home-owners or long-term tenants, and one member of the household must pass a usage test or familiarisation programme. The usage test, carried out by 2200 residents, included demonstration of how to set up and start up a PC, how to open a file and send an email, and it brought 90 percent success rate. For total beginners a familiarisation programme was provided, which comprised 8 hours of free training on Word, Internet and email. There were some complaints about its

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[40] The US firm Wang, founded in 1951, originally built computer hardware and employed at one point 1000 people in manufacturing in Limerick. After various reincarnations it struggled to operate in 1998 as Wang Global, a network and desktop services company, but was bought by the Dutch technology group Getronics NV in May 1999.
[41] 'Guide to the Information Age: preparing Ireland for the coming age' Interview with Alfie Kane, CEO, Telecom Eireann, *Sunday Tribune*, September 21st, 1997.

usefulness; for example Donal Crotty, a task force member, viewed it as a downgraded training programme 'of very little benefit to those participating.' [42]

Residents

As an outcome of these investments in the residents sector, many of the quantitative goals were met or exceeded: by 2000, 83 percent of households owned Internet enabled PCs (compared to, for example, 42 percent in Finland), and 91 percent had activated an Internet account.[43] But regarding usage, the figures give a conflicting picture: for example, the residents survey revealed that of the phone lines provided to previous non-users, only 63 percent are still active.[44] The level of Internet use reached a high in late 1998 but dropped off in 1999, indicating a novelty factor buoying use levels initially. In spite of this, Internet use remained at four times the national average, as shown in the following graph, taken from the Evaluation Report.

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[42] 'Experts Differ in Information Age Progress' in the *Examiner*, Thursday, September 24th 1998
[43] These statistics applied at the time of writing of the Eircom Evaluation Report (Eircom, 2000, p.35).
[44] It may be that former users, possibly older residents, preferred traditional face to face interaction, or they may have moved to a different company or purchased mobile phones in order to bypass bill concerns and to allow for emergency communications, though no research has been carried out to confirm these possibilities.

Figure 2.

NUMBER OF INTERNET SESSIONS PER MONTH

- United States — 19
- United Kingdom — 12
- Ireland — 9
- Ennis (all) — 40
- Ennis (home) — 28
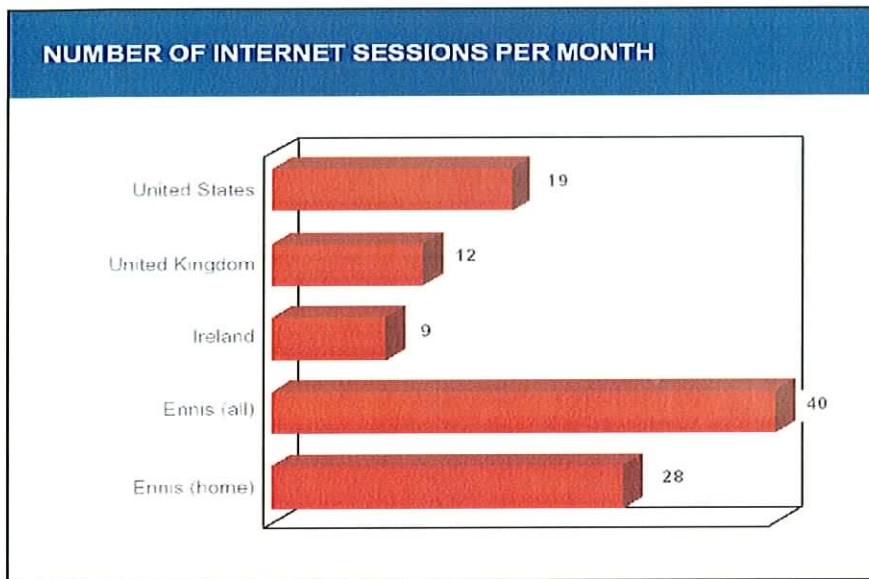
(Eircom, 2001, p.49).

Social class was not found to be a highly significant factor in frequency of Internet use, as shown below in Figure 3. But 'higher' social classes used PCs and the Internet much more in the work setting: 9.3 occasions per week against 1.9 for the lowest socio economic group.

Figure 3.

FREQUENCY OF USE OF INTERNET
(Occasions per week)

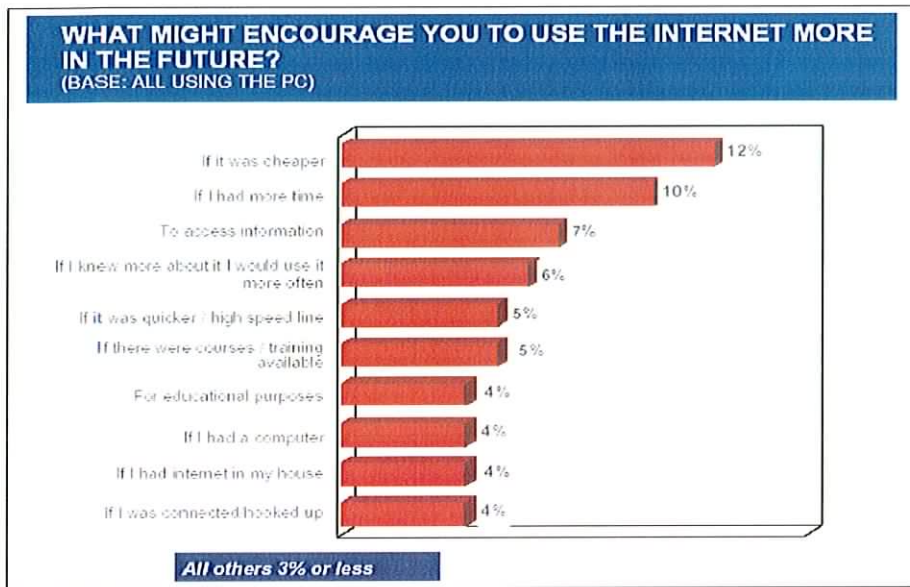|		Home	School/college	Work	At all
Education – Termination					
	Third level	8.6	3.1	7.9	14.1
	Secondary	7.8	1.8	2.5	9.4
	Other	4.5	2.1	0.8	5.8
Social Class	AB	7.8	1.6	9.3	12.3
	C1	7.5	2.6	5.0	11.0
	C2	6.1	2.1	1.1	7.6
	DE	8.2	2.2	1.9	10.0
Home Ownership					
	Owned	7.5	2.5	3.8	10.4
	Rented	6.1	1.2	4.9	8.6

(Eircom, 2001, p.30)

900 qualifying households did not apply for the offer, and the report suggests that community network centres may be the means by which these residents may be included. Applications were more concentrated in areas with young children and in better off areas; furthermore 65 percent of applicants were male, constituting a significant gender gap, which is suggestive, according o the report, that men found PCs more relevant to their lives (Eircom, 2000). Sport was the overwhelming favourite past time of respondents in the survey and a higher level of Internet use amongst men may be linked in part to their use of web sites to look up sporting events.[45]

Other Internet searches by Ennis residents were found to concern travel, stocks and shares, health issues, entertainment, and particularly music, with MP3 music downloads popular. In line with trends in the rest of Ireland and abroad, Internet shopping was very slight, and use of commercial websites mostly allowed cost analysis or 'window shopping' before purchase by more established methods, highlighting the need for visual and verbal cues in most consumer transactions. The benefits to hobbyists, especially for forming links with others was acknowledged; obscure information once virtually inaccessible was now within reach. Email was found to encourage purchasing of scanners so that photos may be sent to friends and relatives, illustrating that the desire to communicate provided the impetus for integrating new technologies into households. The use of home pages to communicate was in its infancy.

When asked what would encourage greater use of the Internet, lower costs were most frequently cited (see figure 4).

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[45] The hugely popular Clare hurlers' website registered 80,000 hits on June 22nd 2000.

Figure 4.

WHAT MIGHT ENCOURAGE YOU TO USE THE INTERNET MORE
IN THE FUTURE?
(BASE: ALL USING THE PC)

Category	Value
If it was cheaper	12%
If I had more time	10%
To access information	7%
If I knew more about it I would use it more often	6%
If it was quicker / high speed line	5%
If there were courses / training available	5%
For educational purposes	4%
If I had a computer	4%
If I had internet in my house	4%
If I was connected/hooked up	4%

All others 3% or less

(Eircom, 2001, p.48).

Changes in volume of usage between 1999 and 2000 are shown in figure 5.

Figure 5.

USAGE VS. A YEAR AGO

	COMPUTER	INTERNET
More often now	27%	21%
Less often now	19%	12%
No change	45%	53%
Don't know	9%	14%
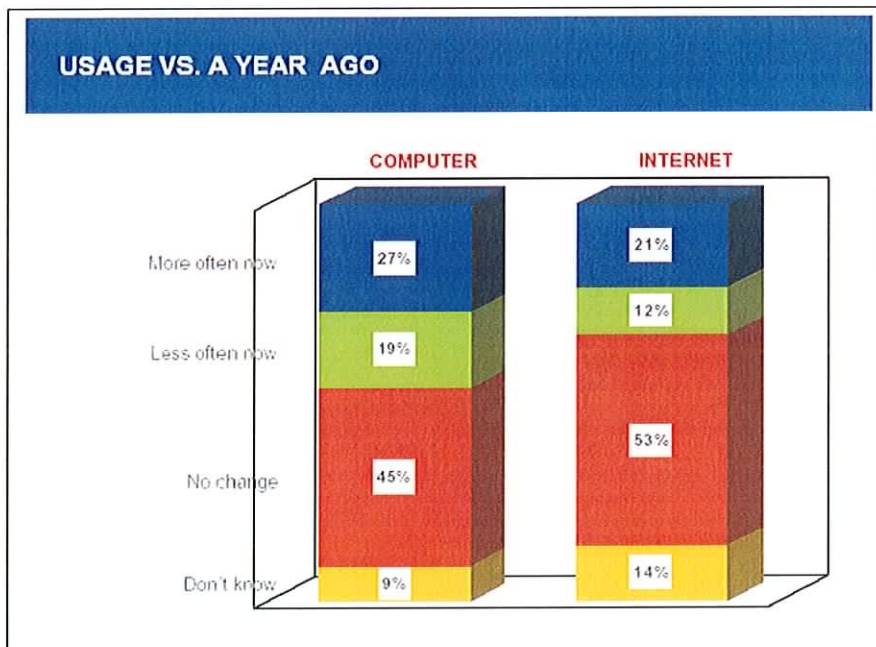
(Eircom, 2001, p.47).

The graph in figure 5 indicates significant growth in use, but it also shows significant unevenness, suggesting non-linear uptake patterns. Almost 20 percent of respondents used the PC less often than one year previously.

Two hundred Best Practice Awards presented in March 2000 served to acknowledge achievements amongst the various community sectors, and to promote awareness among others and encourage further creative use, though it has been stated that the families featured in the awards were not representative of the general public since they were already involved in execution of the project.[46] The Ennis population is reported to have found tangible benefits from ICTs: the PC was viewed by one as 'not just a piece of furniture...but an effective tool' for spending free time more profitably (Eircom, 2000, p.54). Confidence in education and PC-related employment for children has been boosted; and pride has been taken in participation in EIAT and the related achievements.[47] Also emerging from the community were concerns over a perceived lack of progress and inadequate consultation with the public.[48]

The execution of ICT initiatives vis-à-vis the public sector, schools, businesses and industry lie outside the scope of this study, though it is worth exploring briefly the assertion that the schools were the 'jewel in the EIAT crown.' Ennis's four secondary schools, six primary schools and two special schools were given 515 PCs plus free Internet connection and two years' line rental, and they were given the option of having separate PC labs built. ISDN lines were installed and everyone allocated an email address, setting a national precedent. Teachers received some training through the University of Limerick regarding learning applications and maintenance of the Local Area Network. As a direct result of the offer these schools have a ratio of nine students to every computer. The schools project is widely viewed as excellent. Some qualifications can be made, however; March 1998 saw the Department of Education and Science's launch of the *Schools IT2000* policy framework,[49] and it has been argued that because of this

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[46] Interview with Helen McQuillan, 20th April 2002.
[47] It can be argued that positive responses in Ennis may have been boosted by the act of testing and monitoring, as referred to by the Hawthorn effect concept, and without such an experiment the technologies alone would have had has less of an impact. It is likely that the same activities would have emerged but at a slower rate.
[48] 'Experts differ over Information Age progress,' the *Examiner*, Thursday, 24th September 1998.
[49] This framework has been implemented by the National Centre for Technology in Education, established in 1997. The Schools Integration Project (SIP) comprising around 90 pilot projects into ICT integration was one of four main initiatives under Schools IT2000. See http://www.ncte.ie

nationwide initiative, and the fact that Ennis teachers integrated ICTs only on a voluntary basis, Ennis schools are not that far advanced of the rest of Ireland. Complaints also emerged regarding significant financial burdens to schools; it cost IR£60,000 (over €76,000) for three schools to convert schoolrooms into computer labs and to construct prefabs. One teacher described the project as 'traumatic' in that classes were moved, schools were in debt, and teachers put in extra time for no reward.[50] The finding in Ennis that the benefits of ICTs in the classroom were contingent on individual teachers' interest and proficiency in ICTs has been evident across the country in the wake of the Schools IT2000 initiatives,[51] although Ennis drew additional benefit from a scheme which saw local IT companies provide technical support to schools (see Campbell, 2003).

Ennis.ie

The EIAT website, which formed a dominant part of the submission, has been subject to mixed fortunes; it did not become active until late 1998, its delay bringing strong criticism from members of the public. In defense, Michael Byrne, Chief Executive Officer of EIAT, pointed out that at the time of the launch of the site, many more people had Internet access – 4500 as opposed to 500 at the beginning.[52] An Ennis Intranet was described by Byrne initially as central to increasing a sense of community. He stated that the Intranet would encourage online communications such as ordering take-away food or enquiring on a planning application, but these activities are yet to appear. It has been acknowledged that the website remained in disarray until 2000, with only two people working on it, and was not viewed as a particularly successful facet of the project.[53] 2002 saw two more members added to the team, and the site has become substantially more active; as well as hosting local email accounts (ennis.net), the website acts as a portal for local community and business

Parallel to this, Eircom's Information Age Schools Project, 1998, provided IR£ 15 million (€19 million) to equip every state-owned Irish school with an Internet-enabled PC.
[50] Pat Hanrahan of Scoil Chriost Ri quoted in 'Experts differ in Information Age progress', *The Examiner*, 1998.
[51] Brendan Butler of ICT Ireland has claimed that, although Irish schools are well endowed with hardware, 'there aren't always the people to teach the subject and there isn't a consistent approach in terms of maintaining and upgrading equipment' (quoted in Campbell, 2003, p.1). The approach of donating funds to schools for 'individualised' use has been contrasted unfavourably with the Northern Ireland's centralised strategy (see Campbell, 2003).
[52] 'Experts differ over Information Age progress,' the *Examiner*, Thursday, 24th September 1998.
[53] Interview with Helen McQuillan, 26th January 2001.

information, and contains features such as online opinion polls, and chances to enter photographs and comments on an online gallery.[54] Interactivity has not emerged as a strong element to the site; there is no public discussion forum, this absence being cast as a design decision in response to findings that chat forums are often dominated by a handful of users, often to the exclusion of others, and to the detriment of useful public debate.[55] There have been criticisms that the website doesn't reflect local culture in that there is no Irish-speaking section, but it can be argued that features such as the picture gallery act as a powerful re-enforcer of local heritage.

Pilots and trials

Recalling another of the main objectives of EIAT – the promotion of Ennis as a test bed for ICT companies – trials included ADSL (Asymmetric Digital Subscriber Line), and VDSL services, WAP, and ODIN.[56] The most high-profile was the trial of Visa Cash, which was launched in November 1998 by AIB, Bank of Ireland and Eircom and lasted 12 months. The card was intended to replace small cash for everyday transactions; it could hold IR£50 (€63.50) and could be used in 350 retailers, vending machines, payphones and car park machines. There were twenty loading devices around the town to transfer funds from bank to card, and home-loading devices – or personal ATMs – were given to 250 users in the area, whereby money was transferred via telephone line. The trial was extended for another six months in the end of 1999, this time emphasising non-attendant units. A further stage to the trial involved the piloting by Nokia of the use of WAP to transfer cash online via a mobile phone.

The report insists that the basic technological elements of the trial went well, but there were significant problems; usage dwindled until eventually nearly all use was in car parks and vending machines. Retailers also grew less enthusiastic; Visa Cash transactions were multi-stage and there was no integration of cash and

[54] Other popular features include a 'cyber chef' competition and hosting of the celebrated Sunset Group for older residents (see http://sunset.ennis.ie/).
[55] Interview with Helen McQuilllan, 20th April 2002.
[56] ODIN is an EU Fifth Framework project on location-based mobile technologies. Participants are 'developing software to provide citizens, tourists and SMEs with access to dynamic information on map-based, web applications through PDAs.' See EIAS website at http://www.eias.ie/usability_eu_projects_odin.php

Visa Cash systems, making the process time-consuming with no discernible benefits. Furthermore, the card could only be used in the immediate Ennis environs. Common among Ennis public was the view that the exercise was a waste of a very large amount of money on a failed experiment. However, as noted earlier in the context of motives for ICT trials, this failed experiment provided valuable lessons regarding consumer behaviours and needs to the corporations involved. The anticipated use of Ennis as a test bed for future ICT products has been made more likely through the formation of Ennis Information Age Services, which intends to sell its knowledge of technology trials and user behaviours to ICT companies.

Public access and community

Public access to the Internet was provided in part by five Internet kiosks in locations including a shopping centre, hotels and the tourist office, and they were deemed valuable for providing physical evidence of the project.[57] The normal price was IR£2 for 15 minutes, though free use was given on Netd@ys. After only nine months four of the five kiosks were closed. The technology involved in these kiosks was not adequately reliable or user-friendly, and the community network centres have proved substantially more successful in public access provisions.[58]

The aims for the community sector included supporting sports and cultural groups, but this thesis requires focus on the Community Network Centres and the support of agencies involved with marginalized groups. EIAT's Community Network Centres and Community Training Centres refer to the provision of technological infrastructure, support and training to existing community group centres and staff.[59] It was an objective that 'marginalised sectors would have visibly gained from the deployment of IT to the training agencies serving these

[57] EIAT team members reported that visitors interested in the project showed disappointment that the appearance of the town had not altered. (Interview with Triona McInerney, Assistant CPO, EIAT, 26th January, 2001).
[58] It has been a common finding that Public Internet Access Points fail to draw new users in: an OFTEL study suggested that they were more popular among those already with home access (Oftel, 2002 cited in Alakeson, 2003).
[59] The centres were: St Joseph's Travellers training centre; Congress, Information and Opportunities Centre; Dulick Enterprise Centre; Brothers of Charity; Adult Education Centre; Clare Youth Service; Disabled People of Clare; Ennis West Partners; Clare Local Studies Project CLASP, and Cerebral Palsy, Ireland. Five further Community Network Centres were identified: Ennis West Partners;

sectors' (Eircom, 2000, p.91). The specific challenges to ICT adoption for voluntary groups, as outlined by O' Donnell's work, were considered, such as the need to allow self-paced development of ICT use in the groups, and the need to form links between community groups, to 'make social inclusion a reality, not just a metaphor, through the creation of sustainable partnerships' (Eircom, 2000, p.93). Further, capacity building, mentioned only in brief in the report would be crucial to facilitating self-reliance within community groups rather than dependency on the EIAT team.

Ten training centres were involved with EIAT, including centres for travellers, for residents with special physical and learning needs, and for those in need of second chance education.[60] These were intended to become increasingly the public face and drivers of the EIAT project, and it was hoped that they would foster expansion of the 'Eircom Ennis consumer base' by providing easy access and a supportive environment for those without a PC at home. EIAT offered these centres networked PCs, subsidised ISDN/ ADSL lines and an IT support technician. Emphasis was also placed on peer trainers so that dependence on project members did not develop. Support included subsidies of 50 percent for the first IR£1000 spent on hardware or software, and 75 percent funding for special projects within the organisations, and equipment such as scanners, digital cameras, data projectors, and laptops was provided. Subsidised website development training was offered, as well as website templates.[61] The hosting of community group websites on the Ennis main site (free of charge for the first year) has allowed public online access to thirty local organisations. Promotion of inter-community group communication has remained mostly an aspiration rather than common practice, but the submission for EIAT funding required these community groups to cooperate for the first time to create a proposal.[62]

Cloughleigh Development Association; Ennis library; Citizens Information Centre; and Eire Og GAA club.

[60] Although the report distinguishes community training centres from community network centres, in practice, the distinction is somewhat blurred. For example, the Clare Youth Service is identified as a training centre, yet it also provides free public access to the Internet. Also Ennis West Partners is identified as both training and network centre.

[61] The research partners at the University of Limerick Interactive Design Centre proposed to help by interviewing and developing use scenarios.

[62]Interview with Triona McInerney, 26th January 2001.

Unsurprisingly, the centres vary in accessibility and provision.[63] For example, the Citizens Information Centre's provides only two computers for the public; the Ennis West centre's access to ten PCs is limited to between 3 and 5pm. The Ennis library provides twelve PCs for Internet use, with more added recently solely for email use, though connection speeds here and in other public locations are rather slow. In spite of this the centres are heavily used, and EIAT's engagement with community groups has generally been highly praised. Consider the example of the Congress Information and Opportunities Centre;[64] through EIAT's provision of 25 PCs at this centre, 240 students have reached ECDL standard within the last two years, a further 60 people receiving social welfare payments took the course, and it also allowed full computerisation of administrative tasks. The computers have been upgraded, costing €10,000, but half of that cost was recouped by EIAT. Sean Clune, Director of the centre has said he 'couldn't praise them enough' believing they have done 'great ground work for disadvantaged groups.'[65] Greg Duff, from the same organisation, called the PCs a 'God-send to the centre, allowing us to open at night of the first time' and stated that, 'in terms of self-esteem, it has been great for the people involved' (quoted in Deegan, 2001). Similar positive feedback was received from the Clare Youth Service and Ennis West Partners.[66]

ECDL training has proved especially popular, and additionally, at the time of the evaluation report, 53 people had attended a website design course. Forty people from groups such as the Irish Wheelchair Association and the Irish Refugee Council, whose mobility was restricted, received training on their own premises. According to the report, assistive technologies for those with special needs were provided in the home and in training centres, although technological provisions for disabled people have been the subject of criticism by Dermot Hayes, of Disabled People of Clare: there were plans for video conferencing to be set up between homes and doctors surgeries to avoid difficult journeys for the sake of

[63] Experiences in Ennis appeared to echo research from Bremen, Germany, which found that centres providing supported ICT access suffered problems pertaining to vulnerable financial situations, fluctuating staff and outdated ICTs (Alakeson, 2003).

[64] Beginning in 1991 as the Clare Unemployment Resource Centre under the Irish Congress of Trade Unions, the Congress Information and Opportunity Centre became a limited company in 1999. Its primary purpose is to provide information and services for the unemployed, and it also lobbies relevant government bodies to improve conditions for those seeking employment. IT training has become its foremost provision; it runs ECDL courses under the Department of Social Community and Family Affairs and FAS. Recently, eight more computers have been installed specifically for improving literacy. See http://cioc.ennis.ie/ on the ennis.ie website for more information.

[65] Interview with Sean Clune, 19th April 2002.

[66] Interviews with Mary Downey, Ennis West Partners, 16th April, 2002, and Claire Thynne, Clare Youth Service, 16th April, 2002.

very brief appointments, yet this never materialised, and an opportunity to benefit marginalized citizens was thereby missed.[67] There have been further reservations expressed about the EIAT's success in that there has been little evidence of job creation as a consequence of the project, although it has also been acknowledged that the real fruits are likely to appear over a decade from now, when the technological advantages to Ennis school children may begin to show in their entrance to employment markets. In any case PC use has been deemed generally valuable as a means of building confidence in marginalized sections of the community.

Another example of a heavily used training centre is the VEC Adult Education Centre, which provided access to the sixteen VTOS students who constitute the focus for this qualitative research. The next chapter provides a description of its activities, and accounts for its significance for the case study.

Evaluation

EIAT's outcomes can be evaluated both according to the objectives it set itself and against comparable initiatives. Comments will be limited to two of the five sectors identified by the project committees: residents and community. Earlier description of EIAT's history highlighted the initial absence of tangible goals for the project. This may be interpreted as illustrating a highly experimental mode for the project, which constituted one preferable dimension of an ICT project discussed earlier in this chapter, but the extent to which this sense of experimentation filtered down to the end users is debatable. In any case, the inverse point could also be argued: that a more developed idea of qualitative outcomes might have focused resources more effectively.

Although qualitative goals were under-defined, quantitative benchmarks were set, and these were shown in the report to be reached or exceeded. However, the issue was complicated by the finding that only 45 percent of households had at least

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[67] Interview with Dermot Hayes, 20th April 2002. The Dulick Enterprise Centre, providing vocational training for people with disabilities, was intended to provide distance learning through video link, but appears to have struggled with ICT integration (Interview with Triona McInerney, 26th January, 2001) Hayes' disappointing experience of EIAT led him to suggest that the project was geared primarily towards the private sector, but this overlooks the substantial ICT endowments for other community centres.

one active user, illustrating that statistics are unable to provide a useful picture of possible benefits of ICT ownership in Ennis. It may be recalled that benefits cited in the report included feelings of pride in learning ICT skills and confidence about children's education. These small improvements to quality of life are significant, but arguably such benefits have been felt mostly by those with existing creative outlets and educational advantages. No cases are cited of ICTs actively helping disadvantaged residents improve their circumstances; for example, single, working mothers finding their lives more manageable through the addition of Internet communication and information.
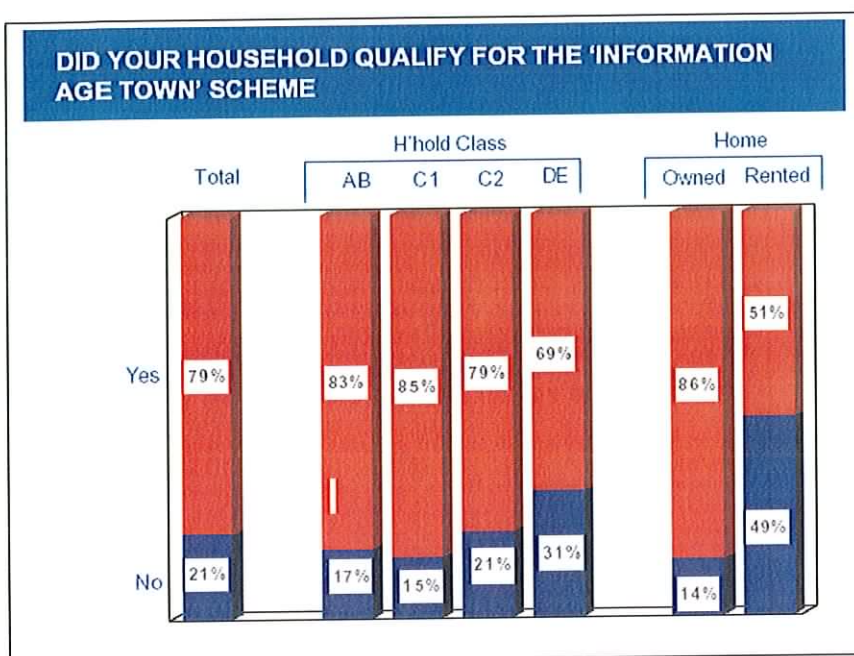
Team members were said to have learned that engagement with residents was required to draw out possible benefits:

> Interest and use increased in response to human contact, explanation and demonstration of the benefits and enjoyment of using ICTs (Eircom, 2000, p.32).

This statement partially attends to criticisms of the project from Hynes (2001), for example, who believed that EIAT constituted a misguided imposition of ICTs on a community. Staff recognised, at least, that their strongest challenge was in showing the potential value of ICT use rather than addressing lack of access. It can be argued that the means by which staff could encourage use remained under-developed; many households have not found value in their ICTs to date whereas more advantaged, already technologically active households made early use of the offer. On the other hand, users' own identification of need for ICTs may be required for external attempts at encouragement of use to have influence – this point will be developed in discussion of the case study.

Turning to the PC offer for residents, the requirement that tenants be renting long-term is understandable as it was important that recipients stay long enough for developments to be monitored; however, it also effectively closed off the project to a significant portion of Ennis residents with lower socio-economic status who may have changed addresses frequently. The 2001 Resident's Survey shows that while 83 percent of professional households qualified, the figure was 69 percent for non-skilled working class families, and this is linked in the report to their housing arrangements (see *figure 6*, below).

Figure 6.

DID YOUR HOUSEHOLD QUALIFY FOR THE 'INFORMATION AGE TOWN' SCHEME

	Total	H'hold Class				Home	
		AB	C1	C2	DE	Owned	Rented
Yes	79%	83%	85%	79%	69%	86%	51%
No	21%	17%	15%	21%	31%	14%	49%

(Eircom, 2001, p.11).

The graph above shows clearly a considerable difference in level of qualification between household classes AB and DE, and between home owners and renters, but lack of access to the offer only partly explains lower uptake by households of lower socio-economic status. The graph below (figure 7) shows that, of those who did qualify, fewer in lower class brackets exploited the offer.

Figure 7.

WHETHER COMPUTER TAKEN IN SCHEME
(Base: All Qualified – 319)

	Total	H'hold Class				Home	
		AB	C1	C2	DE	Owned	Rented
Yes	85%	90%	89%	89%	70%	88%	68%
No	15%	10%	11%	11%	30%	12%	32%
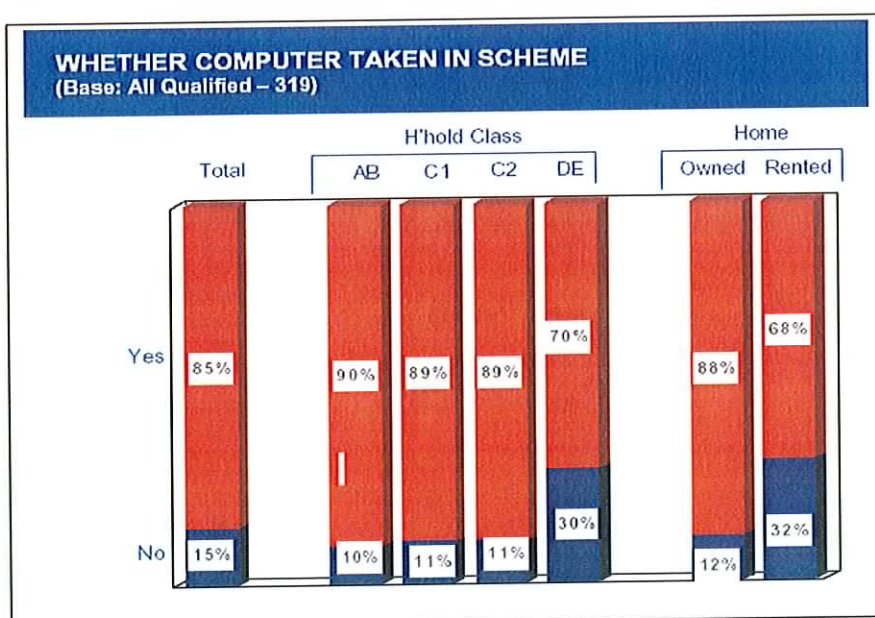
(Eircom, 2001, p.12).

There was criticism that as the project progressed, the PC on offer changed from a 266MHz model to a 350MHz model. This was said to put original recipients at a disadvantage in that they could not upgrade or download new software and applications without buying new hardware (see Galvin, 1998). This illustrates the difficulty in attempting to provide up-to-date technologies on a large scale, as developments in technological capacities continuously threaten to render obsolete existing products. However, it has been argued that the original computers function satisfactorily for applications such as word processing; problems only emerge when attempting to play games as the graphics card was too low.[68] In spite of this qualification, the public perception of the PC offer has been negatively influenced; one Ennis shop owner asserted that the PCs were only given out cheaply because they were 'end of the line models' from Dell.[69]

The chart in Figure 8 below illustrates that over half of those questioned did not know or were unsure how the project had turned out – they could not rate it against their own expectations. This suggests that public levels of awareness and feeling of involvement with EIAT's activities were not particularly high.

Figure 8.

HOW DO YOU THINK THE PROJECT HAS TURNED OUT?
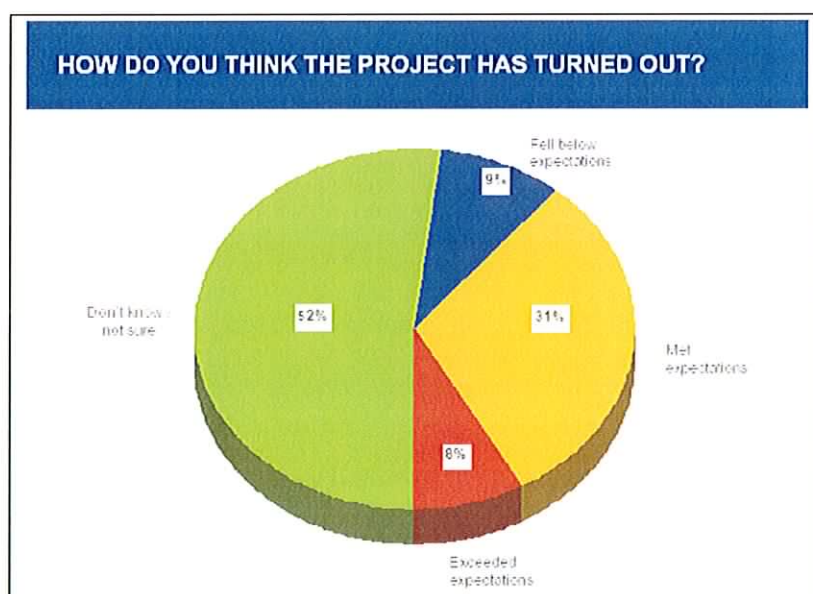
(Eircom, 2001, p.54)

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[68] Interview with Mimi Conroy, The Computer Store, Ennis, 20th April 2002.
[69] Interview with Errol McQueen, Florist, Ennis, 18th April, 2002.

Of those who did have an opinion, reasons are shown below in Figure 9, with those who were disappointed citing lack of follow-up as most common reason. Where expectations were exceeded, gaining computer literacy was the most common reason.

Figure 9.

REASONS FOR PROJECT RATING (Base: Exceeded/Fell below)			
Exceeded		**Fell below**	
	%		%
People are skilled/computer literate	20	Got computer and heard no more about it/no follow up	11
Every household got a computer	15	No great boom in business/expected more Industry to the town	10
It is great for the town itself/puts the town on the map/prosperity for the town	14	Disappointing nothing special	9
Happy with scheme	8	Expected more courses/not enough training	9
Good for schools	7	No IT jobs created	9
Everything can be done on computer	7	It has fizzled out a bit	8
Educational	7	Need more backup	8
Great to keep accounts	7		
People did courses	6		

(Eircom, 2001, p.55).

EIAT objectives for the community focused on creation of community network or training centres, the provision of technical support and advice, and the hosting of community group sites on ennis.ie.[70] EIAT engaged successfully with many community groups, with website hosting, support and especially with regard to computer hardware provisions, allowing significant numbers of users to gain ICT qualifications. Integration of ICTs into certain community group practices proved problematic since sometimes staff members were lacking skills and interest. Further, deep-rooted problems such as poverty and illiteracy were found to undermine the significance of ICTs in many circumstances, although there were examples of ICTs starting to be used to tackle illiteracy. Also there was disappointment over more experimental technological applications such as video conferencing for appointments for disabled citizens. Overall, though, the community sector appeared to have profited substantially from EIAT.

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[70] It was intended that 'marginalized sectors would have visibly gained from the deployment of IT to the training centres serving these sectors' (Eircom, 2000, p.91).

Against comparable initiatives EIAT compares favourably, although it is questionable whether the initial claim that '...nowhere in the world have all the available communications technologies and tools been deployed at one time, in one place' (Eircom press release in EIAT, 2000, p.15) is accurate; for example, broadband developments were still in trial stages for around 250 Ennis homes in the last year of the project, contrasted with widespread provision of very high speed connection in the BEV initiative. Nevertheless, the application of ICTs to five broad sectors of the community, residents, education, community, public sector and business, and the provision of discounted hardware and software as well as Internet connection and training do distinguish it in comprehensiveness.

Although the testing of Visa Cash was criticised as an expensive failure, it is entirely reasonable that private companies would exploit the initiative for product testing. Overall, focus was on existing technologies rather than emerging innovations, which was probably most beneficial to residents; although the application of new applications for ICTs, such as community asset mapping in Camfield Estates, was absent in Ennis. This indicates a possible lack of innovation in EIAT's deployment of ICTs. The use of the Ennis website also appeared to be unadventurous in that there lacked the kind of discussion spaces found in the Digital City of Amsterdam. EIAT members have defended this absence pointing to the Amsterdam example, in which such spaces mostly attracted a small number of keen users – mainly young, male, early adopters. Finally, while most ICT projects provided some form of free public Internet access, usually in libraries, EIAT's provision of household access (free for the first year at least) as well as free community group access was of particular value.

It is intended that these early responses to and observations of the project provide a foundation for more detailed views from a sample of Ennis residents, for whom the potentially life-enhancing role of ICTs may be more difficult to access.

Chapter 3
Case Study

In outlining the relevant aspects of history and outcomes from the Ennis Information Age Town project, the previous chapter provided the backdrop for the study. The beginning of this chapter focuses on the particular section of the Ennis community that will provide the case study: adult learners. As already mentioned, EIAT's provisions for schools have been referred to as their flagship project, but concern with marginalisation encourages exploration into those who have not extracted maximum benefit from traditional schooling. Adult education has its philosophical and practical debates which can only be referred to in passing; the issue taken up here is determining the possible role of ICTs in addressing disadvantage experienced by adult learners, and the barriers to their effective use of ICTs. The chapter proceeds to outline the methodological approach taken in the study, informed by existing 'social implications of ICTs' research. Following this, the respondents are introduced by way of individual profiles to allow for a deeper and more contextualised reading of the findings that are discussed in Chapter Four.

Adult Education and VTOS

Adult Education has a long tradition of active debate among theorists and practitioners, often concerning crucial differences in attitude and 'needs' between the adult and child learner (see, for example, Knowles' theory of andragogy (1970)). These debates have been galvanised by the dramatic changes in the nature and performance of Ireland's economy over the last twenty years. There has been growing recognition that reduced demand for traditional skills and increasing demand for more 'knowledge-based' capacities required a renewed approach, one now commonly referred to as life-long learning. The European Memorandum on Lifelong Learning acknowledged four themes: personal fulfillment, active citizenship, social inclusion and employability/adaptability within the following definition: lifelong learning refers to

> ...all learning activity undertaken throughout life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective. [71]

The Irish government, whose conception of Adult Education for many years remained the same as that contained in the 1984 *Kenny Commission on Adult Education*, recently acknowledged this debate, and in 1997 within the Department of Education a minister with responsibility for adult education was appointed: Mr Willie O'Dea, T.D. The white paper, *Learning for Life* (2000), set out some core elements of adult education which would take into account a 'life cycle' approach to education, different sites of formal and informal learning, and the need for support services such as counselling and child care. It also highlighted the importance of equality of access and participation in adult education, and the need for consideration of 'personal, cultural and social goals as well as economic ones' (White Paper quoted in Moore, 2002, p.8).

One element of the provision of adult education in Ireland is VTOS, the Vocational Training and Opportunities Scheme. Set up in 1989 with support from the European Social Fund, it was formed as a response to the low level of qualifications, both educational and vocational, within the long-term unemployed population in Ireland.[72] There are now 94 centres, usually provided through Vocational Education Committees, offering 5000 places per year. The courses last two to three years, require attendance of thirty hours per week, and include the Junior Certificate, Leaving certificate, National Council for Vocational Awards (NCVA), and the newer awards from FETAC, one of the bodies under the National Qualifications' Authority of Ireland. Entrants must be over 21 years old, and in receipt of either unemployment, disability, or lone-parent benefits. The official aims of the scheme are as follows:

> ...to promote social inclusion for unemployed people and families by providing national qualifications to re-enter the labour market...and to encourage the self confidence to be included in every day social activities (VTOS, http://www.iol.ie/~hkvtos/).

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[71] European Commission (2001) *Making a European Area of Lifelong Learning a Reality*, http://europa.eu.int/eur-lex/en/com/cnc/2001/com2001_0678en01.pdf.
[72] At this time it was found that the unemployment rate among people with limited or no second level education was over three times that of those who completed second level (Keogh, 1993).

Here the concept of inclusion can be seen in the scheme's manifesto, talked about in terms of (re)entry into the labour market and into the social fabric of communities. This aim is in accordance with the general aspiration of adult learning and life-long learning policy in Ireland, and also in Europe: Moore (2002) has located the Irish approach within the 'twin pillars' of European Union education policy: education for economic growth and as a means of bringing about social cohesion.[73]

The merits, or otherwise, of Adult Education Centres as a location for adult education provision have been debated. On one hand, it is argued that users do not like to be associated with a location which clearly identifies them as disadvantaged; the use of existing schools is recommended to bypass this. On the other hand, for those who may have had a damaging school experience a separate, non-threatening location is preferable; moreover, as Keogh points out, learner-centred, non-didactic teaching that is central to adult learning theory is more likely to be realised in a building devoted to adult education (Keogh, 1993). The effectiveness of these locations for the integration of ICTs into the lives of disadvantaged residents is of key concern to this investigation; patchy ownership of home PCs and Internet access, especially among those with tight financial resources, can be combated partially by public provision in these centres, as was the objective of the community provisions from EIAT. It should be noted that staff of public and community groups have been found to have their own problems integrating and finding relevance of ICTs for their working environment. Low economic resources, with their potentially negative consequences for management and for availability of facilities and space, have been identified as a serious barrier to effective ICT uptake (see O'Donnell and Trench, 1999). It may be the case that staff's barriers to ICT use impinge on students' use of them – a matter to which discussion of the case study findings will attempt to bring further understanding.

The Ennis Adult Education Centre provides the site for the local VTOS scheme which is run by the VEC. There are around 160 learners enrolled. The site has a tradition in ICT use: it has been providing computer training since 1990, it housed EIAT in the early years of the project, and its ICT rooms were used by residents for EIAT-facilitated training. The centre is the site of numerous

[73] Under the Portuguese presidency of the EU 'more jobs and greater social cohesion' was one of the key strategic goals agreed by European leaders at the Special Summit of the European Union in

educational and supportive services for adults and families, including night classes for 150 people annually (Eircom, 2000), a YouthReach school leavers programme, also the Clare Reading and Writing Scheme, which attempts to address literacy and numeracy issues as a family issue, and English language tutoring for asylum seekers. The newest initiative located in the building is the recently set up Open e-Learning Centre. Their working definition of e-learning is:

> ...learning from resources provided by multimedia technologies and structured in such a way as to cater for varying learning styles (http://adultelearn.ennis.ie e-learning section).

This initiative is intended to provide highly flexible access to use of ICTs in the presence of e-learning facilitators. Their role, as the name reflects, is not to teach but to support and encourage learning online or from CD Roms. Popular courses included advanced ECDL, and Learn Direct computer skill courses. Though in its infancy (it began in September 2002), the project appears to have tapped into an under-served market. It has become apparent that adult learning centres as well as libraries have limited effectiveness in drawing target users in (see O'Donnell, 2000). The criteria for entry into the VTOS scheme, for example, serve to exclude those residents in poorly paid employment; indeed, restraints relating to work commitments, child care, and finances mean that the social and cultural advantages of attending any education classes are closed to many citizens, which threatens to exacerbate their experience of marginalisation. In recognition of such realities, the e-learning centre allots no times or dates for use; instead users make commitments on a 'just-in-time' basis. Moreover, the individualised help provided by facilitators as opposed to a one-to-many class scenario means that embarrassment felt by having very low ICT awareness is minimised. The centre also houses the important Clare Adult Learners' Guidance Service, which, according to its website, has a solid understanding of the issues facing adult learners. For example, the service intends to provide 'individually negotiated learning support programmes' in which personal goals are identified and potential barriers to learning, such as family or financial concerns, are confronted.

The criteria for entry into VTOS means that these students are by no means a homogenous group; variation according to level of education and experience in employment, let alone gender, age, and income level, may vary substantially. However, it is reasonable to consider these participants to be linked by

disadvantage in terms of education, employment, and personal income. By inference, it can also be suggested that they may be disadvantaged in terms of social 'capital' or 'cultural capacities' (Putnam, 1995; ESRC, 2000). So engagement with this group provides a promising means of considering attitudes to ICTs by under-privileged individuals and the role of ICTs in processes involved in social inclusion. The 'double-edged promise' of ICTs is evident in the context of VTOS: lacking the benefits of the supporting structures that the work place provides, unemployed adults are more likely to lag behind in awareness of the potential provided by ICTs as well as attainment of the relevant skills, and financial disadvantage is likely to constrain these adults in their ICT use.[74] Yet they may have the most to gain, since ICTs may enrich the opportunities for informing and communicating required for societal participation.

From an educational perspective, VTOS students have often had a negative experience of mainstream education, leading to disruption in learning. It has been asserted that such experiences can 'define' individuals as educational failures (Kelly, 1998 cited in Brennan, 2000), thereby cutting off chances of educational attainment later in life. One ethos behind adult education is to offer a 'second chance' to provide more or less what was not completed earlier. There have been criticisms to this approach,[75] but it is exactly this second chance at recognised courses that is often demanded by students of VTOS (Keogh, 2000), as these qualifications still hold great currency in job markets. The role of ICTs in this context of traditional qualifications may not be significant because the curriculum and the tutors are likely to enforce established avenues of learning. Nevertheless the presence of the computers in households and in the learning institution, coupled with the offer of computer classes, potentially allows learners to use ICTs as an educational tool and to gain skills that are critical to widening employment prospects. From the perspective of social participation, VTOS members may have spent long periods isolated at home, often in rural under-served communities, and it is reasonable to assume that in some cases, social networks would be impoverished as a result. The Internet offers possible heightened access to

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[74] The ISC Report *IT: Access for All* cites those with no employment and low income as the most likely groups to be excluded from ICTs (ISC, 2000(a)).

[75] Those concerned with adult education theory are often encouraged to question ideologies regarding mainstream education and its relationship with employment. To merely offer second chances at traditional qualifications reinforces the idea that it was somehow they, the pupils, who were to blame for non-completion rather than considering possible flaws in educational practices and structures.

existing friends and relatives (via email) and community events on ennis.ie and other websites. It may also afford access to information and supports otherwise unknown. Furthermore, information on social supports, child care, and health issues may be improved by ICT developments, and there is continuing hope that links can be created between supporting agencies in these different but related areas through good use of the web (Eircom, 2000).

By focusing on Ennis VTOS students in particular, who have been under the influence of a comprehensive ICT community trial for the preceding five years, the study will benefit from the fact that ICTs are more likely to be further established in Ennis household, educational and community activities than elsewhere, so that inquiries into perceived barriers or benefits will be more meaningful to a greater number.[76] With these possibilities in mind, attention now turns to the case study, beginning with methods.

The flawed nature of social impact, or effects, studies was referred to in Chapter One. The approach taken here considers implications of ICTs rather than effects,[77] and to do this requires a method that allows individuals to give personalised accounts of what new technologies mean to them. Although speech, partially directed, presents one of the most straightforward and effective ways of allowing such accounts to emerge, it is necessary to consider first other means by which qualitative research into ICTs has been conducted.

Review of Methods in Social Studies of Technology

In the wake of new technological developments, social studies of technology have thrown up for debate the possibilities of new methodologies. With the evolution of new communication spaces, it has been argued that existing research methods are inadequate for exploring these new domains. The Internet, as a much-hyped 'virtual space,' has prompted the pursuit of a 'virtual methodology' referring to participant observation carried out in Internet chat rooms or the content of those

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[76] It could be argued that many areas of Ireland, the greater Dublin area, for example, have in many respects 'caught up' with Ennis's technological advantage, providing alternative sites for study, but this study is also concerned with documenting the EIAT trial..
[77] See Gauntlett, 1995 in which a move towards considering media influences rather than effects is proposed.

virtual rooms being subject to conversation analysis. This has also referred to the employment of new technologies in recording information. One example of this is Sancho's 'virtual ethnography', in which a video camera was used to capture the daily social interactions surrounding technologies in households (2000). It was claimed that the video camera was less intrusive, and less likely to influence behaviour than traditional participant observation.

A number of commentators have questioned the need for new methodological tools. The *Virtual Society?* Research programme was one such contributor: social studies of science and technology consistently critique technologically determinist approaches and characterise technological innovation as a social matter, contingent on social processes; it would be contradictory to assume that methodologies are determined by technological forces – that the old must be replaced with the new.[78] Nevertheless recent years have witnessed concerted attempts to find 'the' new methodology. Arguably, this is symptomatic of social researchers' insecurities regarding fieldwork. As Steve Woolgar, Director of the Virtual Society programme put it,

> Methodological tools, in particular our claims about which one is better than another, involve bids for security of membership to a community of research practice (Woolgar quoted in ESRC, 2000, p.42).

The sensible conclusion would be that exploration of new techniques is important as a means of supplementing traditional means of enquiry.

Virtual methodologies aside, Denzin's concept of triangulation of research methods, whereby different methods are employed to validate research findings, has become common practice in social studies of technology (Denzin, 1970). Early and leading exponents of a multi-faceted approach to studies of ICT consumption are Silverstone, Hirsch, and Morley, (1991). Their 'domestication of ICTs' perspective[79] is salient for concerns with inclusivity, since they ask how the material position of families determines opportunities for consumption, also how

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[78] CRICT workshop, February 2000, http://www.brunel.ac.uk/depts/crict/vm_intro.htm
[79] The 'domestication' school of thought has proved attractive to ICT researchers, perhaps because of the conceptual and practical parameters that the home setting provides, although proponents would argue that the theory is concerned with ways in which private and public are interwoven by ICT consumption. Their approach to technologies and media holds that 'their passage and their incorporation into the household marks the site of crucial work of social reproduction which takes

consumption activities express and create personal styles as well as class, gender, and age differences. With few forerunners to the study of communication technologies in a domestic setting, they have drawn from psychoanalytic studies (e.g. Henry, 1972) and television studies, such as those of Morley,[80] and advocated ethnography as the most appropriate approach. The latter may be conducted using a 'raft' of methods (1991, p.223) including participant observation, time diaries, in-depth interviews and mapping, over an extended period to reveal the changing role of technologies as life events occur.

Naturally, the methodological tools have mixed efficacy in this context as in any other: although participant observation overcomes the unreliability of self reporting and gives a 'real time' involvement with the research subjects, it provides only a superficial picture of family or other interaction; the presence and characteristics of the researcher may contort the dynamics of the group; it does not allow for point-to-point comparisons with other cases, and does not give a useful account of families or other groups within 'space and time' relations (Silverstone et al., 1991). Time use diaries can partially address these short comings and are a common tool for providing both insights into actual ICT use, and characteristics of subjects' everyday lives (see, for example, Haddon, 2000). Referring to diary creation, Silverstone et al state:

> Differential styles and intensity of their completion speaks of the gendering of their domestic culture [...] They reveal for example [....] the consistently longer and more complex days that wives have at home compared to their husbands (1991, p.214).

Their value lies in their engagement of subjects and in encouraging self-reflexivity, through which the researcher may discern the means by which technologies play a part in the 'project to create and maintain a sense of family and individual security in time and space.' Household maps provide 'mental maps' of the home, and again, may be insightful in their tendency to be highly gendered and 'aged.'

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place within the household's moral economy' (p.223, 1991). For more information see Silverstone and Hirsch, 1992.

[80] For an account of the shifting emphasis in Morley's studies, from *Everyday Television* to *Family Television*, see Jancovich (1992), who states:

> ...focus of interest (had) shifted from the analysis of the pattern of differential audience 'readings' of particular programme materials to the analysis of the domestic viewing context itself – as the framework within which "readings" of programmes are (ordinarily) made (Jancovich, 1992, p.136).

For example, women's maps have been found to contain more detail, suggesting more familiarity with the home; also omissions of technologies such as the phone suggest a taken-for-granted status. Network diagrams are another possibility, attempting to illustrate 'affective distance' between household members, to determine the effects of ICT-mediated communication on social ties. A final method is the creation of technology lists, including type of technology, age, who uses them etc., conveying the gendering of technologies and the technological endowment of households, and to provide 'an objectification of the technological culture of the household, of its density and its values' (1991, p.218). Also stories behind their purchase of use are encouraged in order to provide biographies of ICT objects (see Kopytoff, 1986).

Having considered some methodological issues within social studies of technology, this study's approach, based on in-depth interviews, can be explained. So-called 'virtual methodologies' such as online observation would be unsuitable in this context as focus lies on residents' own accounts of their relationship with new technologies, and these are best explored by face-to-face interaction. A more rounded picture can be gleaned from interpreting all available cues that constitute every 'real life' conversation. It is recognised that interviews rely on self-reporting and that they may have benefited from being accompanied by footage from cameras placed in the home, providing more accurate information on actual technology use. However, the logistics of setting up a number of cameras in appropriate sites, and studying hundreds of hours of video footage were beyond the scope of this study. In any case, actual use is of secondary importance to perceived benefits from use that may be conveyed in structured conversation.

Although the peripheral tools employed by Silverstone et al and others are attractive in their creative involvement of subjects, they require considerable time, effort, and one can argue, functional literacy in cases such as diagram creation, so that results are likely to vary heavily according to individuals' abilities and willingness to exert such efforts. Moreover, focus by Silverstone et al on the domestic setting is not shared in this study, in which individual experiences of possible disadvantage and ICTs' role in those experiences will steer discussion outside of family networks. Therefore it can be maintained that the semi-structured interview was the most appropriate research method at my disposal. The benefits of multiple, or triangulation of methods were recognised: while

questionnaires provided important quantitative information about usage and ownership, interviews allowed those self-reported facts to be explored, and sometimes for contradiction to be exposed. Participant observation at AEC and other community access centres allowed insights into the environments in which subjects engaged with ICTs.

In the context of domestication of technologies, Silverstone et al have approached the use of interviews using personal construct theory, which may prove helpful. Personal construct theory

> ... draws on the human capacity, through experience, to organise a world view and seeks to understand the basic discriminations and classifications which order and distinguish one world view from another (1991, p.218).

With this backdrop, researchers attempt to look at personal constructs of technologies according to individual identities, formed through gender, age and socio-economic circumstances. These constructs will be considered as shapers of attitudes to ICTs. It will be necessary for our analysis of attitudes to ICTs to incorporate the varying symbolic meanings that individuals attach to technologies.

Fieldwork

Fieldwork was conducted over a number of visits to Ennis between early 2001 and the end of 2002. EIAT offered open days on a monthly basis throughout their years of operation at which a presentation of the project's history and achievements was delivered. Through attendance at the open day in February 2001, access was gained to a particular community group involved with EIAT: the St Joseph's Traveller's centre, and by spending time observing activities in the centre and interviewing staff, the realities of EIAT's influence became more apparent. Within the centre there was a large kitchen, a woodwork room containing a number of men at work, and a craft room in which women sat around a table, working creatively with textiles. In contrast to these well-used and socially valuable rooms the PCs were located at the end of a corridor in a small, usually locked room. At that time the PCs clearly played an insignificant role, mainly because the travellers perceived little relevance; also, I was told, low

literacy levels made computer use extremely problematic. This visit highlighted literacy as a crucial variable in determining ICT benefits. It also drew attention to the potential importance for ICT use of a social and accessible environment, as fostered in the rooms for more traditional activities.

Further participant observation was carried out during a pilot parents' training scheme conducted by EIAT staff. Parents of Ennis school children were invited to attend introductory computer classes at the Clare Community Centre. At this first session, sixteen women between the ages of thirty and seventy turned up, many of whom were absolute beginners. The class was very basic, with most of it devoted to familiarisation with the mouse using games such as solitaire and minesweeper for practice. The atmosphere was casual and supportive, which was evidently needed as some women voiced embarrassment at their lack of ICT knowledge.

In May 2001, a pilot survey comprising a 'vox pop' style questionnaire was carried out on twenty Ennis residents in a main shopping centre in order to test the general workability of survey questions in terms of clarity, ethical boundaries (regarding inquiries into personal information), time taken and relevance. It also provided pointers for fruitful lines of inquiry. A notable outcome from the sample was that many more women than men attended computer training classes (as also witnessed at the pilot parents' scheme). Indeed, more men than women did not own or use a PC at all. The most commonly cited reason amongst the group for not using PCs or not using them more was 'lack of time'. Another significant finding was that most informants felt they knew little about the activities of the EIAT project (see Appendix (ii) for more information). These points were taken into account in the main analysis.

The timing of the main case study, June 2002, was beneficial because it was towards the end of EIAT's period of operation and it allowed respondents to reflect on EIAT's impact over a five-year period. Any novelty factor arising from the earlier 'honeymoon period' during which residents and community centres were endowed with PCs was now absent. Use of VTOS students as subjects for the case study group was arrived at through a series of visits to community organisations such as Clare Youth Service, Ennis West Partners, the Congress and Opportunities Centre and St Joseph's Travellers' Centre. Through observation at these centres and interviews with community group leaders it became evident that VTOS at the

Adult Education Centre presented the greatest potential for study of inclusivity with ICTs: there were substantial numbers of Ennis residents registered with the scheme, they could be approached as a self-contained socio-economic group, and their regular attendance at the Ennis Adult Education Centre (hereafter referred to as AEC) signalled relatively easy access.[81] Despite its understated appearance, the AEC is thriving, and is an invaluable meeting place for the unemployed, asylum seekers and families, encouraging exchange of ideas for coursework and the making and maintaining of social ties. The centre provided opportunity for observational work and a site for conducting interviews.[82] In June 2002, access was granted to a room suitable for interviewing for one week. During the week considerable time was spent as an observer and informal interviewer. The computer room was a particular focus for observational work. It was located one door away from the common room, and was usually unlocked, allowing casual, individual use of the computers as well as computer classes. The room was windowless but large, containing PCs along three walls and a printer at the other wall. It was often quiet but could equally be the site of informal conversation, which was seen as a short-fall for a number of users. The break room contained two trestle tables around which students and tutors could talk and relax. Here a strong sense of enthusiasm among the students and openness to social interaction was conveyed; this space allowed me to make initial contacts and to address any initial apprehension about becoming a case study subject. Sixteen volunteers, ten women and six men, all currently undertaking courses under VTOS,[83] were gathered throughout the week after being approached in person in the centre.

As with any research that uses volunteers, there is uncertainty as to the implications of self-selection for the results of the study. For example, it could be

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[81] The centre is located in Clonroad Business Park, a site that is only a few years old. It is accessible by a main road and only five minutes walk from O' Connell Street – the main shopping street in Ennis. Other buildings in the Business Park include: the Disabled People of Clare centre, a garden centre and a DIY store.

[82] Although the original plan was to conduct interviews in individuals' homes, the general impression was that outside the education centre, personal space and time were limited because of family obligations, making interviewing a difficult prospect. In addition, the centre appeared to provide a space for personal expression, and it was thought that this atmosphere would facilitate the free flow of discussion during interviews.

[83] The multiple identities of these subjects should be noted when considering findings: I.C.T.s', specifically TV and the Internet's, dual role as media and artefacts makes the users of these technologies difficult to define: on the one hand they are undoubtedly media audiences, readers of texts, who produce and consume meanings from these texts; on the other hand, they are consumers of artefacts, of objects with their own biographies. Further, the subjects of study were selected on the basis of their being residents influenced by the EIAT project as well as adult learners.

the case that those who are willing to take part feel strongly that new technologies have impacted positively on their lives, or feel that somehow technologies should have had such an effect and are eager to convey this to a researcher, leading to a misleading picture that belies the nuances of opinion and attitude within the socio-economic group. Counterbalancing this is the belief that these students were enthusiastic about the act of helping with research regardless of the specifics of the information they had to give; also, my data shows great variations in attitude to technologies; further, it was made clear to all prospective respondents that no answers were better than others, that all attitudes were of interest.

Questionnaires were usually filled out in my presence, and followed immediately by interviews lasting between half an hour and an hour (see Appendix (iii) for the list of interview questions). Questions referred primarily to uses of the computer and Internet, but also the phone and television. The term 'triangulation of technologies' may be appropriate here in that use of each ICT impinges on and shapes uses of the others, so that a broader understanding is gained by considering them together – as indicated by the term 'family' of technologies (see Caron and Caronia, 2001, English-Lueck, 1998). The questionnaire consisted of thirty-five questions covering demographic data, details about ownership of technologies, including their location in the home, volume and nature of use, self-assessment of abilities, and common problems encountered. In line with Silverstone et al's approach (1991), subjects were asked to list the technologies they owned, together with details such as when and how many purchased, in order to convey patterns in ICT purchases and the significance attached to them. The interviews were loosely structured around twenty questions regarding their history of ICT use, the significance of ICTs for their everyday lives and for their attendance at VTOS, concerns and barriers to ICT use, and personal experience of the EIAT project. A sample interview is provided in Appendix (iv). Informal interviews were also held with a number of staff members, including two tutors from the computer classes, providing useful alternative perspectives on both the VTOS participants' relationship with ICTs and outcomes of the EIAT project. Supplementary questionnaires were also conducted with those out with VTOS: for example, attendants of the Clare Reading and Writing Scheme. This scheme was attended predominantly by immigrants to County Clare who required English language and literacy tuition.

A follow-up visit to AEC was made in October 2002, the main purpose of which was to interview Ann Knox about her early experiences as Head of the Open e-Learning Centre, initiated in September 2002 (see Appendix vi for a transcript of the interview, which provides valuable insights into the needs of disadvantaged learners that are not met by VTOS or other educational provisions). I was allowed to participate as an observer in one of the e-learning sessions: ten women, four of them VTOS students, were engaged in self-paced learning – varying from learning to type a letter to the bank to advanced ECDL – and were facilitated by one-on-one guidance from Ann Knox and an associate.

The information gathered by the series of visits to Ennis community organizations served to enrich the information gathered from the main body of interviews with VTOS students. My method of analysis involved transcription of the recorded interviews and, through careful interpretation and comparison of information, some common themes regarding attitudes to and implications of ICTs were formulated. These are set out in Chapter Four. In order to humanise and contextualise the information discussed in the next chapter, there follows a series of brief profiles of the participants.

The profiles provide some demographic and historical details of informants, showing the extent of variation in personal circumstances within the group, also some key points regarding attitudes and main uses of ICTs. In line with the discussion that follows they are organized loosely along a continuum of increasing engagement and familiarity with computers and the Internet. Four headings are given only to signpost increasing levels of engagement: they are not intended to be read as distinct categories. In brackets are typical types of ICT applications for these levels of engagement.

- *Low use: uninterested.* Unconvinced of ICTs' value, retain traditional methods for social practices.
- *Low-medium use: cautious appropriators.* Interested to 'keep up' with developments, though sense of familiarity important; appropriation of parts of technologies.
- *Medium-high use: instrumental users.* Educational goals drive use of word-processing and Internet as tools.

- *High use: tech-enthusiasts.* Long-term interest in technology; exploratory approach.

Profiles of informants

Low use: uninterested (children's homework)

Jimmy, 39, is married with two children.[84] His wife is employed as a swimming teacher. He attained lower secondary education. He appeared slightly ill-at-ease with the subject matter, as he engaged very little with new ICTs. Without any guidance, he completed the technology list in the questionnaire by entering just two technologies: TV and computer, leaving out phone of any kind, CD player etc. This may be taken to illustrate that the term 'technology' is not always identified with the many goods that feature in every day life. His PC was not bought under the EIAT scheme. As with a number of other interviewees, Jimmy cited his children's education as the main reason for its purchase, but presently the children are too young to make much use of it. Internet access is through a normal phone line and he reports frequently feeling frustrated with the slowness of the connection. He has an email address but considers himself to be a beginner at emailing and, indeed, at most common activities related to PCs. His wife was cited as the main user of the PC for information on goods and services and sometimes online purchases. The mobile phone was bought for emergencies and appears to have retained that function: it is used less than once a week. He has access to satellite television and watches substantial amounts of TV (11-20 hours).

Annie is 53 and has a daughter and a son. She achieved lower secondary level education and is interested in art and craftwork. Unlike many of the VTOS students, she could not identify her ambitions for future employment. Engagement with technologies appeared to be slight. If she didn't know how to do something it was simply because she hadn't taken the time to learn, as it wasn't

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[84] Jimmy was given a weekend to fill out the questionnaire, and was interviewed on Monday. From his questionnaire it became apparent that he found certain questions ambiguous and time-consuming. It also became clear that without prior knowledge of his answers, I was unable to tailor interview questions to him. From this point on, it was decided that respondents should be assisted with the questionnaires.

of much interest to her. It was striking during this interview that technologies were not a source of satisfaction or enrichment. She felt pressure to 'join the band wagon' and she believes that the dominance of technologies in everyday life is an inexorable development – which she had wanted to put off for as long as possible. She completed her ECDL at the centre and was surprised to find that she did enjoy it, although this interest was clearly limited. Her son is much more adept with the home computer, she said; indeed the computer's main purpose was for her son's school projects. The house has TV, video, computer, printer, and landline phone. The TV she watches regularly. She has no desire for a mobile phone. PC use amounts to about one hour per week. When asked about shopping online, she replied that it was impossible, as she had no credit card. There are significant numbers of residents in and around Ennis without credit cards, in contrast with urban Ireland, ruling out online shopping in the near future.

Colm, 39, a friend of Jimmy's, volunteered after seeing his friend's involvement. He has two sons and is currently single. In spite of similarly low levels of technology use to Jimmy, he seemed more up beat and confident about his responses. He also reached lower secondary level schooling. He owns a computer and two TVs but is without Internet connection or an email address. PC use amounts to 2-5 hours per week. He, like Jimmy, has no landline phone, so his purchase of a mobile phone was an important one. The mobile was appreciated primarily for its potential usefulness in emergency situations, in line with most respondents – not for conversation. As he put it: 'If I could walk there and speak to the person, I would.' Although, reasons for the PC purchase were access to the Internet and coursework, he, like many others interviewed, talked about computers in terms of their significance for his children's generation, rather than his own. When asked specifically about his own preferences regarding future technologies, he couched his answer in the context of his children: computers were 'taking away from the every day activities that kids could be doing.' Clearly there is contradiction here in the stance he takes on his children and computers. On the one hand, he feels a need or feels compelled to provide a computer for them, but on the other, he appears to see its implications largely in a negative light.

Low-medium use: cautious appropriators (up-skilling/emailing family)

Noreen, 58, was in her second year at VTOS. She lives alone but has two sisters. She has qualifications in aromatherapy and reflexology. She moved to Ennis in 1999 and claimed that when she went to EIAT to inquire about the subsidised PC the offer had expired, so she bought her computer independently in 2000. The PC was said to be bought for college work (that is, VTOS-related assignments), for emailing her sisters, and because she believed it would be generally 'beneficial.' Discussing the benefits of home Internet access, she pointed out that use of her home PC meant that a computer in the centre was freed up for those students who didn't have their own – computers in the centre were always under heavy demand. She has home Internet access through a normal phone line. A mobile phone was purchased in 1999, which she replaced in 2002, and is kept for emergencies. She has owned a TV since the mid sixties, though has access to RTE 1 and Network Two only. Both TV and PC use were estimated at between six and ten hours a week. She spoke of difficulties with creating Word documents through 'pressing the wrong buttons' and found the landline phone a source of frustration in that she felt she was often made to wait too long on the phone by companies and services, indicating an on-going concern about financial costs.

Breda is 35 and lives with her husband, who is in paid employment. She appeared to be lacking in confidence, but her initial responses gave the impression that her home computer had proved to be a highly positive influence in her everyday life. It was bought 'to improve my communication' and to use the Internet. On being asked how it has worked out having a home PC, she replied 'Oh, it's absolutely brilliant, brilliant.' Nevertheless, her volume of use is low – about an hour a week; indeed, she reported that weeks could go by when the computer wouldn't be turned on at all. Breda's case shows that the idea of 'success' of a technology cannot be agreed upon easily: from an Internet Service Provider's perspective her low usage is unprofitable, but she is using it at a level that she is happy with, and its allowance of occasional contact with her relatives in America is viewed as hugely beneficial. She and her husband also bank online regularly. She owns cable and satellite TV, though she watches only two hours per week, landline phone, and a mobile, bought for emergencies, but which is used a few times a week for texting her children to make arrangements

Fionnuala, 53, has five sons and a daughter. Her husband, daughter and one son are in employment. Fionnuala had attained a library diploma. Purchase of the home computer was a family decision: most of the family was still in education and it was felt necessary to buy one, to 'be up to date.' It is used mostly for writing school and college assignments, for practicing computing skills and for listening to DVDs. She didn't have an email address, and they did not have the Internet yet, as they 'hadn't got around to it,' and she rates her Internet and email skills as only moderate. The main impetus for getting connected soon is her youngest child going into secondary school next year. It is significant that Fionnuala didn't have the Internet considering the fairly heavy demand for the computer at home. She did in fact make an attempt to get connected after EIAT sent out a package allowing residents to set it up themselves. It turned out that she couldn't complete it – 'we were short some piece or some connection', so it was left. They were told by staff in the AEC that it may be better to go the normal route and go to a service provider, '...because if you get breakdowns...' There was, then, some uncertainty surrounding EIAT products and follow-up services. The household also contains a landline phone, satellite TV, a printer and a scanner. All family members have mobiles, and Fionnuala uses hers around once a day for making arrangements with friends and family.

Noelle, 37, has three daughters and two sons. Her husband is self-employed. She attained upper secondary schooling. She is a friend of Fionnuala's, and they were usually found together in the centre. It became apparent throughout the interview that their shared interests and attitudes extended to work ambitions and uptake of technologies. They had both applied to go on an accounting technician course; they both had a home computer, printer and scanner, but neither had Internet connection or an email address. Their reasoning was not the same, however. Noelle is a keen user of the Internet at the AEC and experiences few problems with information searches, but she was very apprehensive about having home Internet access because of the possibilities of her children coming into contact with inappropriate material. She was unsure how to deal with this potential problem and was not going to get online until she was more knowledgeable about possible solutions. Generally, she was very conscious of her limited knowledge surrounding computer applications such as chat rooms, emailing, booking flights online, and this 'not knowing how' appeared to act as a barrier to learning. The PC was bought because of EIAT's cheap offer and for helping kids with school work

but is now used mainly for her husband's accounting. The house has two TVs with digital channels, of which she watches between 11 and 20 hours per week. The landline was originally with EIAT, but was changed to Chorus because a better deal was offered. Her mobile is used for texting and talking once a day.

Marie, 42, has a daughter and a son. She achieved lower secondary education. Her house is endowed with TV (Irish channels only), video, computer, landline and mobile phones. Marie had sought to extract as much benefit from the Information Age Project as was possible, with motivation clearly sourced in her own and her children's futures. The EIAT PC offer she recognised as a good deal, and said she could not have afforded one otherwise. She also took advantage of the EIAT-run computer courses. She made use of the computer for her VTOS work, and knows she will continue to do so when she goes to Limerick Senior College. She also does bookkeeping on it for her brother. The Internet had been used for emailing friends in the States, and for finding help with her hobby: quilt-making. She would go onto relevant web sites, and people would exchange advice on the hobby in a very basic form of chat room. However, the cost of going online in the evenings became too much and she said she had to forego the Internet altogether at home. She has also stopped using her email account for financial reasons. PC use amounts to two hours a week. She watches little TV. Her mobile is used primarily for emergency situations, also making arrangements a few times a week. So use was low or non-existent because cost burdens overshadowed her initial pro-active approach to ICT adoption.

Medium-high use: instrumental users (word-processing)

Tina, 40, is originally from England but moved to a cottage in Ireland in the eighties with her husband. The latter is currently receiving benefits from his employer. She had formerly completed vocational programmes. TV is used primarily as an educational tool, as is the Internet. Through her husband's first purchase of a computer in 1986, and use of it in employment, she feels very familiar with computers; theirs had been upgraded recently. They also have a scanner, digital camera, digital and satellite TV, landline phone and mobile, the latter being used less than once a week. She has an email address and subscribes to the Mini (car) club mailing list. However, Internet use is quite low: she is very

conscious of her financial position, and this acts as a deterrent for use of the Internet and the phone. She talked of frustration with the slowness of her connection. On the other hand, shortage of money does encourage use of email as a substitute for phone calls, although this is problematic in that her relatives prefer the phone to email.

Winnie, 44, is married, and mother of three sons and a daughter. Her mainstream education stopped after primary level. Her husband receives a pension. The household is technologically rich, with 3 TVs with satellite channels, video, games, PC, printer, scanner, landline phone and she and her children all own a mobile. The computer was provided by EIAT, and they paid nothing for it because her husband worked for Telecom Eireann at the time. It was intended for the children's college work, for Internet and for emailing her sister in New Zealand. She is a very keen user of the computer, primarily for the help it has given her with her VTOS course work. Although she did not envisage the computer being central to her future employment – she wants to work with people with special needs – she recognised that it would remain invaluable as a tool for organising her work. The computer is heavily used at home – her use amounts to 20 hours per week – and she was thinking about getting a second one. It was well integrated into the family setting, situated in a room adjoining the living room – separated by French doors, which were 'more often open than closed.' There is also a second television in this computer room, and Winnie would typically work on the computer with 'one eye on the television', as she feared missing something of interest. They do not have Internet connection at present but they intend to and have a second phone line for the purpose. Voicemail on the phone, installed by EIAT, is another provision that was discontinued, as it got 'too clogged up with messages.' She believed that the execution of the Information Age Project was 'perfect' regarding residents at least, as residents were left to come around to computers on their own terms and in their own time. In response to the suggestion that many computers from the EIAT project might be left gathering dust, she believed that to be true two years ago. But recently, she believes, as needs have been identified they have been brought out of that condition into use.

Mary is 45 and was highly enthusiastic during interview (her computer teacher later described her as being 'enthusiastic about everything'). She is married and has three daughters. No one in the household is currently in employment. She

had attained two FETAC qualifications in tourism and secretarial and business studies. She described a rift between herself and her family, her understanding of which she could now frame in a 'class' context through attendance at the VTOS politics classes, she said. She described her background as middle class, but she had never been encouraged to get her own education; she was expected to marry someone who was financially secure. When she married a working class man, her family ostracised her. Having reared her children, she found herself in middle age in a rural part of County Clare with little prospect of fulfilling employment. Her return to education was evidently very important, and she felt that she had always had the potential to do well academically. She intended to go to university in the autumn, and appeared to be confident about her future.

The household had two TVs with digital channels, video, and a computer and printer, bought as an ESB package. She watches large amounts of television, but was quick to point out that she disliked 'rubbish' and watched almost exclusively educational programmes, saying she was 'too clever' for many popular TV programmes. She has a landline phone but no mobile. Her reasons for no mobile were fear of possible links with incidence of cancer, fear of unknown technologies, and lack of motivation. She talked of feeling intimidated by the mobile phone shops in the town, and acknowledged that this was partly because she disliked others to tell her what she did not know. The home PC has no Internet connection because of financial restrictions, so it is used for creating and storing documents. Mary is unusual in that she is a former owner of an email address, and claims that she is presently too busy for emailing. She does use the AEC computers for Internet access, and her total PC use she estimates at over 20 hours per week. She finds Internet searches frustrating and doubts her abilities to phrase the questions correctly. She also had severe reservations about her landline phone service ever since her daughters accumulated an excessive bill by phoning mobiles, and she wished that the service could be tailored to suit the needs of the user with, for example, restrictions on phoning mobiles.

Anthony, 48, was summoned by the computer tutor to be interviewed as he was, as one student put it, the star of the class. Anthony's accent indicated northern England upbringing. Before coming to VTOS he had almost no academic experience (no school qualifications were attained), but since his attendance at the centre he has excelled in political and social studies. He has developed his

writing skills to the extent that he now makes regular contributions to the local newspaper – letters and articles on political topics of local and national concern. He is one of five from the Politics class to go to university in the coming Autumn. His account of his academic successes was interesting as he attributed much of it to his use of the computer and the Internet. He composed a short article for the interview entitled '*How computers have changed my life*' (see Appendix (v)). He lives with his father. They purchased a PC, printer, scanner, and CD re-writer as a package from ESB. Originally it was bought for training for ECDL, but is now used more for writing assignments related to political and current affairs, and for email. He is subscribed to media-related email lists. They also have landline, on which the voicemail was installed by EIAT; they have satellite TV and video of which he watches up to 20 hours per week. His mobile is used very frequently for chatting to friends and family. He is a heavy PC user, estimating use to amount to 8 hours per day.

High Use: tech-enthusiasts (web design)

Miranda was the youngest respondent at the age of 29.[85] She was from England; she had a shy manner, but appeared to be independent and individual in her lifestyle. Her parents, sister and brother live elsewhere, and she lives alone in a caravan without electricity or a phone line, away from any roads, twelve miles from Ennis in rural County Clare. She had plans to move into an apartment soon. Miranda attained lower level secondary qualifications. She has developed interest in Graphic Design as a VTOS student, and intends to take a related course elsewhere after this one with long-term aim of becoming self-employed as a graphic artist. She has been interested in computers ever since her childhood: her father owned an early model in the mid eighties. Her web design is thought of as a hobby, not just a course; she described feeling torn between art and computers. Much of the space in her caravan is taken up with pieces of technology: she owns two TVs (Irish channels only), a computer, scanner and printer, bought as a package in 2001, digital camera, CD re-writer, PDA (personal data assistant), and a mobile phone. Her phone is in heavy use for chatting and making arrangements

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[85] Miranda was the only informant not to agree to a recorded interview; instead I took notes. Naturally this provides a less faithful representation of the dialogue, but since it was written very shortly after the interview took place it is still deemed valuable material.

with friends and family. She emails fairly regularly, and subscribes to the Clare Greens (Green Party) email list. Most PC use is at the AEC and is estimated at between 10 and 20 hours per week. She is fairly confident about her technological capabilities but finds information searches on the net and unwanted emails to be troublesome. She was also frustrated by the exclusion of rural areas from phone and Internet access and electricity. Through communication with Eircom she was informed that there were developments towards provision of radio-phones for rural residents.

Cronan was the only interviewee to volunteer before he had been approached. He presented himself as an interesting case: as he put it, he had gone from technophobe to 'techie' in a short space of time. At the age of 35, Cronan is one of the youngest students at VTOS. He lives with his father, who is employed in public relations for the Vocational Education Committee; he attained upper secondary level schooling. The house has cable TV, landline phone, video, hi-fi, and PC and the Internet. The PC and the voicemail facility on the phone were installed via EIAT. The reasoning was cited as his father's work (his father is main user) and 'training.' He has plans for upgrading, including Windows '98, more Ram, and software for use of a digital camera He also owns a mobile. He was talkative and at ease with the subject matter, and he appeared to enjoy showing the extent of his knowledge about various computer programs and applications. His enthusiasm for email was apparent by his owning two email addresses and subscription to three mailing lists. He had formerly begun attendance at a 3rd level institution but had found the environment was not conducive to learning, whereas he found his progress very satisfactory in the Adult Education Centre (AEC) and praised the staff. The Internet seemed to be a significant part of his everyday life, and he spoke animatedly about the potential of digital cameras to enrich his social contact via the Internet.

Sean lives with his parents and sister in a small town outside of Ennis, although he gave the impression that his life is independent of his family's. He reached lower secondary level education. His parents manage a general store. The household is technologically rich: they have two TVs with digital channels, video, a computer which Sean says he built himself, and Internet connection, landline phone, mobile phone, DVD player and CD re-writer, and a card reader for digital cameras. He has been interested in computers since the earliest models emerged

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in the eighties, and quickly became engaged in building them himself. He is interested in working in graphic design. The computer is located in his bedroom and is used for finding information for his course, emailing and downloading images. He spends extremely long periods on the PC: up to nine hours per day, he states. TV use is heavy too: over 20 hours per week. His mobile is used frequently for texting friends. He is wholly confident in his computer-related skills, and the only frustration he expresses regarding PC use is in the shortcomings of search engines and the excessive amounts of advertising online. He was disappointed with the activities of EIAT, in part since there was almost no physical evidence of it in the town.

I was encouraged to speak with **Ray**, 47, by other students and staff. He was referred to as a 'whiz' with computers, whose talents were being wasted. He eventually offered to participate. Like Anthony and Tina, Ray is from northern England. He is currently running two web sites, and has carried out some work for local companies in designing their web sites. He was outspoken, and, like Tina, Anthony, and Mary, he appears to have engaged strongly with Mike Hook's Politics and sociology class. He said he had always known he had talent, but he had never had the chance to channel it. His skills with computers came through experimenting on his home computer. He learnt HTML code, and taught himself a huge number of computer programs – which he listed off. He will go to University in September, but, contrary to others' expectations, he wants to pursue politics rather than computers, believing he would come up against ageism in the computer sector. His attitude to EIAT is that it was directed almost solely for the benefit of big businesses. On further probing, however, he conceded that he had benefited substantially from the EIAT team when setting up his own web design business. Ray lives with his wife, two sons and a daughter, and has another son who lives in the UK. His wife works part time. The house has a TV, video, PC, laptop PC, scanner and printer, and a Playstation 3. The TV has Irish channels only and he watches very little: less than two hours per week. His mobile phone is heavily used and appreciated for social and work purposes. His frustrations with technology concern poor network coverage on mobiles, and computer-generated commands on landline phone services.

The preceding profiles highlight the difficulties in asserting that any group is characterised by common experiences of social exclusion. While many of these

individuals do have low educational qualifications, lack of employment and constrictive economic circumstances in common, it is also clear that great variation exists in circumstances with regard to cohabitation with family members, educational and employment history and proximity to neighbours and amenities; socio-economic disadvantage is clearly experienced at differing levels and to varying degrees. The ages of informants are also significant as considerable life experience and non-formal education may signal a greater range of skills and level of confidence than the term 'socially excluded' suggests. Variation regarding ICT ownership and use, is of course evident, though, generally, these less advantaged households are technologically rich, which suggests that ICT purchase is prioritised to some extent. In the attempt to categorise profiles according to levels of ICT engagement, the complexities of respondents' relationships with technology come to light. The next chapter draws out some patterns from the myriad influences and motivations that shape their experiences. First, the information in these profiles is set out overleaf in table form for more accessible reading.

Chapter 4
Findings and Discussion

This chapter draws together for discussion data from the questionnaires, interviews and observational work. It begins with brief consideration of use of TV, an established ICT, as a possible benchmark against which PC integration can be considered. It then moves to the potentially inclusive role of ICTs in the context of EIAT; the issues are organised into four sections. The first attends to the problem of access to ICTs in the most physical sense. The second addresses the core concerns of the study: any means by which ICT use among the sample group produced benefits that could help address exclusion. The third sets out a number of factors that moderate access to such benefits: purchase of ICTs often precedes need and motivating factors may be difficult to identify; comfort levels with ICT uptake vary according to gender, age and social circumstances; and technical constraints may disrupt the quality of experience of ICT use. The fourth section considers responses to EIAT's activities.

A striking aspect of the findings was the technological richness characterising many respondents' households. At the same time there was high variation within the group regarding ICT ownership and significance attached to them. In these respects, results from this group echoed those for broader populations, indicating that low income and education do not necessarily produce homogenised patterns of low ICT ownership and use.

Preliminary focus on patterns of use of television will provide a background for discussion of new ICT uptake. The television's taken for granted status meant that attitudes and behaviours were readily played out through consumption of it. This could also be discerned in computer use to some extent, as will be seen shortly. The variation in types of TV service reflected family circumstances – particularly presence or absence of children – and TV's importance in daily life. Although every respondent owned a television, a significant number still availed of just Irish channels, with two having access to RTE only, and television had minimal

importance in these cases. Most respondents had cable service, reflecting TV's significant role, but only one had digital services.[1]

Long-held attitudes to education were evident in television use. Arguably, some of the group's viewing behaviours were shaped by their recently acquired identities as adult learners, but the fact that TV was frequently used for educational purposes usually reflected a life-long attitude rather than recent changes resulting from attendance at the AEC. For example, Mary had always viewed television as an educational tool; she enjoyed National Geographic and history programmes – in contrast with her husband, whom she described as a 'couch potato.' However, respondents often emphasised the limits to television's edifying potential and its dispensability:

> NN: ...if there was something more important to be done, or somebody needed my time, I would be willing to give up the television for a person or something else more beneficial.

TV was rarely spoken of as a valuable past time.[2] The educational potential in PC and Internet use meant that there was some replacement of TV viewing with PC use in some cases. Sometimes the PC was turned to instead of the TV as a means of winding down, using simple games such as Solitaire, echoing findings from English-Lueck (1998) and Sancho (2000). The more technologically advanced respondents would sometimes work on graphic design as an alternative to TV. Overall, though, the assertions that new technologies supplement rather than replace existing practices is generally upheld by my findings (Wyatt, 2000b; Woolgar, 2001); the presence of the PC and Internet had negligible impacts on television habits. Although TV watching was not presented as a valuable activity it was clearly relied upon for its ability to inform through news and documentaries, and for allowing a means to wind down and escape through, for example, soap operas and films. Supplementation rather than replacement also applied to mobile

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[1] There have been concerns that the growing popularity of subscription to digital television will serve to increase the gap between those who can afford the service and those who cannot. The advent of digital terrestrial television based on the 'free to view' model used in the UK is viewed as the most 'inclusive' potential way forward (e-City Working Group, 2003).
[2] The impression was sometimes given that the TV was symbolic of a previous era of isolation and boredom during which it was heavily relied upon. Now respondents had embarked upon adult education TV was sometimes gladly given up in favour of more goal-oriented activities, such as work on VTOS assignments.

The notion that modern ICT consumption is characterised by simultaneous use[4] was not borne out strongly by these interviews, although one respondent, Winnie, did describe using the PC with 'one eye on the TV' that was located in the same room for fear of missing any programmes. In Winnie's household the PC was integrated into the leisure environment that TV created. She cited her children watching World Cup football on TV, and simultaneously accessing the relevant websites to check on scores and league tables.

Physical access to ICTs: costs and location

Access to ICTs, that is, the (physical) ability to procure use of them, has been acknowledged as necessary but not sufficient for finding benefits to use, but the issue still merits discussion as disadvantaged residents are more likely to continue to encounter costs and location as immediate barriers to use. It has emerged in my case study that costs, both the experience and the fear of them, factor strongly as a deterrent. It also appears that Internet applications are rarely deemed essential to everyday life, and all the time this remains the case, costs will act as barrier.

In spite of the fact that every respondent owned a home PC, many did not have Internet access or were severely restricted by home connection costs, which limited the PC to word processing – letter and assignment writing – and sometimes playing games and music. Those respondents who did have home access were highly sensitised to the amount of time spent online. One respondent found that she was getting carried away with online browsing related to her hobby, quilting, and had to take the disciplinary measure of stopping the connection altogether as a means of reducing her phone bills, showing the attitude that her online pursuits were dispensable.[5] This example appears to exemplify the Internet 'drop-out' phenomenon (Katz and Aspden, 2000), except Internet use was continued at the Adult Education Centre.

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[4] See discussion of UCLA Internet report, 2001 by Steve Jones, Professor of Communication at University of Chicago, Illinois in Read, 2001.

[5] In contrast to this, US studies have found that household subscriptions to ICT services such as broadband are becoming regarded as increasingly essential; indeed, Katz's recent research suggests that, in spite of cost concerns, many families would be willing to spend far more than at present to receive the right services – up to $500 per month (Katz cited in Fixmer, 2003). Households with lower spending power will undoubtedly struggle with increasing numbers of subscription fees.

Although the concern about home Internet costs stemmed from lived experience in most cases, sometimes the anticipated expense acted as deterrent. Mary's story below indicates that social networks can serve to deter ICT use as effectively as they can encourage it:

> M: ...we live in a friendly environment here, and we all network with each other. Everybody keeps telling me, 'oh, it's going to cost you a fortune if you get the Internet in. So I was getting it in, I was half way in, I had a lad come in and everything and he had it all set up. And when I heard how expensive it was going to be, and the expense of the landline phone bills I was having, I said, 'Oh my God, I can't afford that'. So genuinely, I would have it in tomorrow if I could afford it.

Mary did not qualify for the cheap PC offer from EIAT, as is the case for nine of the respondents. It could be argued that, had she been able to avail of the offer from 1997, and the cheap Internet access for a year, this fear of cost may have been outweighed by the Internet's more positive influences.

Use of both landline and mobile phones was similarly hindered by cost and there was a shared opinion that costs of all home ICTs were exploitative.[6] While some believed that greater market competition would help, more commonly, respondents took a critical stance on 'big business' in general and looked to the government for a more interventionist approach regarding costs of ICTs for residents in their economic circumstances.

Because of the expense of home connection, free public Internet access at the AEC was highly valued.[7] But this location was of mixed benefit; on one hand, it provided an accepting atmosphere for ICT use in which other family members' demands did not encroach on respondents' time at the PC. On the other hand, the room was crowded, sometimes noisy and the computers troublesome, and many preferred home use for these reasons. The centre was an interesting location for PC access from a gendered perspective; the norm of 'maleness' of computers, exemplified by men's dominant presence in web cafes, was disrupted since women outnumbered men overwhelmingly in attendance at AEC. This gave the

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[6] Use of text-messaging was infrequent in this group, and was mostly regarded as the reserve of younger generations. Some reported that they hadn't worked out how to use text yet years after purchase of the phone, which illustrates that users are only willing to expand their ICT 'repertoire' on their own terms – a point returned to later.
[7] Of course the PCs at the centre also allowed for provision of computer courses which acted as a major stimulus for use at home.

impression that women were keener users of computers than men. Anthony, himself a heavy and enthusiastic ICT user, drew this conclusion, estimating that for every one man in the AEC computer room there were usually about five women. Concern was expressed that women's outnumbering of men had led to some women becoming 'too confident' through their strong presence and their new-found skills, leaving certain men in the centre feeling somewhat overwhelmed.[8] From a feminist perspective, locations for ICT access that foster women's confidence in this way would obviously be welcomed.[9]

Although home use was preferred for privacy, it too had its problems. There were potential clashes between TV use and PC use in households. Because of very limited space in many respondents' homes the PC was often not afforded a room of its own. It's placement in the same room as the TV was naturally problematic in terms of noise, whereas placement in children's bedrooms was difficult as respondents no longer had easy PC access for their studies, and the PC would sometimes become symbolically attached to the children's ICT activities. So the PC was often placed in the living room and time allotted for use, such as late at night when children were in bed.

In general, costs and location did not act as totalising barriers because access to AEC computers was always an option, but because of mitigating factors discussed later in the chapter, costs and location were frequently presented as reasons for low or non-use; the ratio of 'perceived value to cost' was low – which is a common finding among late adopters of ICTs (Alakeson, 2003).[10]

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[8] Interview with Samantha Considine, tutor in computing skills, Adult Education Centre, 20th June 2002.

[9] One interpretation of women's confident presence in the centre comes from considering Brennan's work on the over fifty-fives' experience of ICTs. She asserts that women of this age place emphasis on social relations, which gives them 'resources independent of paid employment' (Brennan, 2000, p.71), making the transition to retired life easier for women than for men. She found that women were open to ICT uptake for social purposes whereas men's attitude to ICT was more strongly aligned with work. Similarly, the women at AEC appeared to draw on the centre as a place for building social capital and for learning to use ICTs for social purposes.

[10] Flat rate Internet access has been presented as a realistic answer to the cost barrier. A UK survey has found that the primary reason for users preferring broadband was not the fast access to audio or video material but because there were no concerns about mounting connection costs (The Work Foundation, 2002 cited in Alakeson, 2003). But while flat rate narrow band may present a useful temporary goal, investment in broadband remains imperative for exploiting more fully the Internet's potential.

Benefits: ICTs as tools for inclusivity

Taking the strands of employment, education and social participation from Chapter One's discussion, the case study findings suggest that ICT use succeeds in enhancing individual efforts in these areas. The linking of digital literacy with traditional literacy emerges as an opportunity. The need to feel included in technological developments also becomes apparent. Finally, although social networks may be maintained through ICT use, the possibility of expansion of networks is not borne out by the findings, emphasising the need for face-to-face encounters for encouragement in taking steps towards 'inclusive' activities and practices.

There were few cases of employment opportunities arising directly from new ICT skills.[11] Although it has been suggested that women may often approach ICTs with greater confidence because they may possess good typing skills due to secretarial courses and jobs,[12] ICT use rarely figured as a central component in women's hopes for future employment. Miranda's desire to become a graphic artist provides an exception, but her relatively young age, 29, is believed to be significant; for older VTOS students, technologies were being introduced after a lifetime of absence of technology, and interest in them was limited. Instead, many respondents focused hopes on provision of 'people-oriented' services such as social work. But nearly all recognised that ICT skills were virtually mandatory in modern job markets, and most of the sample group were confident that they had achieved or would achieve the necessary level of ICT literacy, usually ECDL standard, through attendance at AEC. Of course the actual benefits derived from ICT use in prospective work roles would vary enormously,[13] but respondents' concern at this stage was in widening opportunities.

These skills also meant that entry to third level education was less daunting. Acquisition of ICT skills acted as a leveller, not only practically but psychologically, which may be crucial as feelings of inadequacy may pose the

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[11] Ray's work in web design provide a distinct exception, but, significantly, he intended to pursue politics rather than computer skills at university; in part because he believed that he would encounter ageism in the ICT job market.

[12] Interview with Mimi Conroy, manager, The Computer Store, Ennis, 22nd April 2002.

[13] The authors of the Servemploi report suggested a gendered difference in connectivity through ICT use at work in which the Internet may be used by managers to increase connectivity with the world,

largest threat to inclusivity for those without a mainstream education.[14] Mary, for example, had grown increasingly interested in sociology and politics through her VTOS course and intended to study them at university the next academic year. She viewed computer ownership and skills to be absolute necessary for her confidence levels as well as for practical matters:

> M: Without the computer, I don't think I'd be able to go to college, I really don't. I don't think I'd have been able to cope. My self-belief, you see, as a woman, fifteen years at home, not being asked to do anything – only write out a cheque now and again, or maybe – if we had a chequebook to write – I think we had a chequebook to write at some stage. But I was never asked to write anything down or have it corrected by anybody. But it's lovely to be able to hand up a good piece of work, all presented nicely.

Mary regarded the PC as indispensable for presentation and creation of academic work. She cited friends with comparable academic ability who had felt handicapped at university by their lack of ICT skills, while others had failed to submit VTOS work for the same reason. By contrast, Mary believed her entry into college would be eased by use of her 'secret weapon': her computer skills.

A further benefit of word processing is in rendering lower levels of literacy less problematic; poor spelling was cited by a number of respondents as a hindrance that was relieved by the spell check on Word. The thesaurus facility was also appreciated for expanding formerly limited vocabularies. Ray wanted others at AEC to discover the benefits for themselves:

> R: I love Microsoft Word and I love the Thesaurus. I mean, I tell these people in college, if you want to write academically, an academic dig at somebody, write your letter out and go through it, section by section, check each word out. If there's a word there that you know there's another meaning of it, change it in a thesaurus.

Ray and Anthony both asserted that as a direct result of word processing and its tools they have found a means of contributing to political and social discourses for the first time. They and others in the group were always aware of their academic potential, but as Ray put it, the talent was never nurtured. Clearly, tutors on VTOS played this crucial nurturing role, but word processing facilitated the process. In this way it can be asserted that digital literacy, in this context

whereas many women lower down in organisations primarily use the Intranet to 'organise the domestic world of work' (Wickham, 2002 cited in MacKeogh and Preston, 2002, p.11).
[14] See interview with Ann Knox, 17th October 2002.

referring to the abilities to exploit ICT applications, aided literacy levels for these respondents. It may be useful at this point to turn to some views on literacy expressed by Ann Knox, e-learning tutor at AEC (for a full transcript of the interview, see Appendix (vi)). In the following excerpt, she refers to attendants at the new e-learning centre and discerns amongst them a more covert form of social exclusion in which those with good social status may be suffering from low literacy levels:

> AK: ...there's a good lot of women out there, say forty five to sixty five, who did a junior cert, who maybe did a leaving cert, who were once well educated, but they haven't used those skills; they've worked in the home; they've fallen back relative to others in society, and they're terribly hesitant about saying that they have, because they don't want to lose what is considered their status. They would be looked at from the outside as having very good status...

These residents to whom she refers would not have assigned themselves to a VTOS course, probably because they were not receiving benefits but also because they would perceive it as undermining their status. Yet the lack of nurturing of literacy and academic skills is equally apparent amongst them as in the VTOS sample group. Knox makes the point that their choice to learn digital literacy may facilitate increased literacy.

> AK: ... I feel there's a whole body that would do with improved literacy, and if that built in with digital literacy, that it could be upped.
>
> AG: Do you mean they could complement each other?
>
> AK: I do. I mean that as they acquire their computer skills they might improve their literacy skills as well – that both might go hand in hand, if the way the computer skills are presented to them was, you know – if there was a bit of thought gone into that.

Indeed, digital literacy not only aids traditional literacy, but it moves the goal posts regarding what level is adequate. As asserted below, drawing benefits from ICTs requires a higher level or form of literacy that is commonly absent:

> AK: in actual fact I would see the whole business of computers is requiring a higher level of literacy. Because what good is the Internet to you if you cannot search and source the information you need? If you can't read a book it's no good to you; if you can't read a screen it's no good to you. You've to be able to identify what is useful to you, and jiggle it back into a

format that is useful to you, which you could escape if you hadn't that skill; that's a higher level skill than reading and comprehending: that's another step up the ladder.

The interdependency between traditional literacy and digital literacy is surely equally relevant for our sample group, and indeed for every ICT user, as for the e-learning students.

Notably, negative consequences of the merging of digital and traditional literacy were also recognised by respondents, including laziness regarding spelling and handwriting. Tutors were also concerned that students would substitute time-consuming Internet searches for critical engagement with relevant literature:

> MH: Students will print out Internet material and present it to me as if that counts as their own work, but of course this says nothing of their abilities to critically analyse the material.[15]

As well as practical benefits from engagement with ICTs, the purchase of equipment and the use of various applications addressed the sense that respondents and their families would be left behind if they did not act. Efforts at self-inclusion in ICT use, sometimes in the absence of defined goals, and sometimes in spite of significant reservations as to relevance and benefits (see Jimmy and Colm's details in Chapter Three for examples), may be attributed in part to ICT sector marketing as well as media treatment and construction of the 'Information Society' concept.[16] But concern to learn ICT skills was also a response to the evident computerisation of everyday services and activities. Annie spoke of her resistance to computers, and of being 'forced down a road' – of having to get 'on the treadmill,' and the following quote reveals her feelings that continued full inclusion in society required computer knowledge. She was asked where she felt such pressure was coming from:

> AB: ...Umm, I suppose, everywhere you look really. I mean everything was being computerised at that stage, and uhh, I suppose I did feel that I would have to learn the computer in order to know what was going on, in order to be able to be part of the communications system.

[15] Interview with Mike Hook, Politics tutor, Ennis Adult Education Centre, 21st June 2002.
[16] One aspect of such marketing by EIAT was the presence of five photographs on the walls of Ennis's library, framed in Eircom's motifs, portraying images of ICTs in the context of the five sectors in Ennis: residents, business, education etc. The residents sector was represented by two children and their parents gathered around the PC in a kitchen, apparently enjoying learning new skills and drawing on ICT resources as a family activity.

Awareness of possible self-exclusion through lack of ICT skills is evident in Annie's comments.

ICTs' role as enhancer of social participation was confirmed by my study; in line with findings from Haddon's research among others, the landline retained its function as a highly important mediator of social networks for many members of this sample group (Haddon, 2000). The explosion in mobile phone ownership in Ireland was reflected in the group and in two cases, the mobile was substituted for landline connection. These cases were both males whose use of all ICTs was negligible, making the pre-paid mobile option most cost effective. The majority of respondents regarded mobile costs as excessive, and retained their landline phones, so concerns that socio-technological developments might undermine traditional communicative practices, especially amongst women (see Lohan, 1990), were not supported strongly. However, one woman did express regret that many of her friends communicated by mobile phone now which made phone chats almost impossible financially.

Landline phone bills were also a burden in the maintenance of long-distance relationships and consequently email had become a useful tool. It should be noted that the reproduction of social ties through email did not occur simply because this alternative means of communication was made available, rather email was turned to when life events prompted a desire for contact. In the following example births in the extended family provided motive:

> M: My sister was having her first baby this year, and she's married so many years, and they were trying so many years, and then they had the baby. So, it's a big, big thing. My younger baby brother was also having babies – all in New York and Boston. That's what motivated me to put myself on the Internet to email them. And that was my first, personal contact, and it was lovely, because I could feel them coming back.

So email facilitated this return to contact but did not cause it. Using language from Bourdieu's school of thought, the perceived 'return on investment' in emailing was enhanced by this turn of life events (Brennan, 2000): that is, for the first time the benefits from regaining closeness to her siblings outweighed the costs (in terms of time, effort and money) of learning and using email.

Mary mentioned another benefit of email aside from cheapness: that is, the ability to create a physical record of the conversation, constituting a partial return to the traditional letter as a favoured form of social contact.

> The writing was better than the talking, because I could take a printout, and I could take it home, and I could read it again. I have a big collection of the emails I got from them.

Another respondent expressed preference for emails over phone calls because it gave him the opportunity to say exactly what he wanted whereas the pressure of real-time phone conversations did not. However, most preferred phone calls and used email out of financial necessity. Mary continues:

> M... but I have never phoned them. They're out there three years, and I have never – I couldn't afford to phone abroad, because I keep on a tight budget on my landline phone because of what my ladies did.[17] But you know, basically, I'm scared of the phone; I'm scared of the cost of phoning.

It can be argued, then, that email carries certain benefits mentioned above, but it has diminished value because of the lack of those sensory cues that constitute closeness[18] and is used in the main because of time and cost restrictions.

Lack of cues was also behind the resounding negative response to the prospect of forming social ties through chat room use, together with a sense that such activities signified failed 'real life' social skills, not an extension of them. Asked if she would consider chat rooms as a way of making friends, Tina replied, 'no, that's sad!' – a sentiment that represented most respondents' attitudes. Forming meaningful friendships was believed to be only possible through face-to-face interaction via such activities as going to the pub or even walking the dog in the park. The prospect of virtual interaction was associated with danger also, since with limited information, respondents would be disadvantaged in attempting to identify dubious characters.[19] Virtual chat appeared to have seedy connotations

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[17] This refers to a time when her daughters ran up a huge bill by phoning their friends' mobile phones.

[18] By sensory cues, I refer to the personal qualities provided by handwriting and voice in letters and phone calls, respectively, although the printouts from emails referred to by Mary at least approximate the value of a letter.

[19] The lack of cues does not mean that online communications can override social codes and norms, nor that gender cannot be identified (women are evidently more skilled at identifying textual gender than men (Connolly, 1997 cited in Mackeogh and Preston, 2002)), but it does mean, in line with Turkle (1996), that quality of communication may be diminished.

for many of the group and was linked conceptually with sexual material and activity on the web, especially paedophilia.

Online chat services could also be problematic for communication with existing friends and family. Ray, the only respondent to claim actual use of them, revealed that the feeling of freedom and privacy which Internet browsing allows is obstructed by demands for communication as soon as the Internet is accessed.

> R: ...[I] subscribed to – what was it called, you know like MSN? Microsoft have their own chat thing don't they as well – as soon as you come. But it's annoying because I had a friend in England and every time I logged onto the Internet, you'd have to, he'd want to chat with you and, 'oh God, I don't want to do this, I want to do some work, I want to surf.'

He also expressed the common conviction that such communication is inferior:

> R: ... my sister wanted me to subscribe to one, so that we could chat over the Internet. But again, it takes over, it can, and you end up – instead of communicating like you should be communicating, you end up communicating like this – [*mock types on the table with head down*].

To summarise, the contention that email and Internet use may address forms of social exclusion associated with long-term unemployment, such as low self-esteem, low skills and feelings of isolation, appears to be borne out by the findings in the sense that it can help to maintain and enhance existing social ties, it can level out perceived and real shortcomings regarding return to education and the job market, and it can produce feelings of achievement and inclusion in modern, 'Information Age' activities. On the other hand, networks were not expanded by these new means of communication and there were no examples of online relationships characterised by mutual trust and co-operation on any meaningful level.[20] What was striking was the extent to which attendance at the AEC, the institution enabling technology use, rather than use of technology itself, was linked with significant expansion of networks and with overcoming psychological barriers associated with exclusion.

Factors moderating ICT uptake and benefits

It is clear that access is not sufficient to gain immediate benefits from ICTs. Benefits are moderated not only by physical issues of access, but also by psychological, symbolic and social factors – these are explored below. Time is required for ICT integration into everyday practices, but use may continue to be limited and infrequent, especially among later adopters. Children's use of ICTs in the home and educational requirements provide strong motivations for uptake, and arguably without the presence of such motivators, users are disadvantaged, especially among women, who tend to show minimal interest in ICT use for its own sake. Users appear to be constrained by technologies' make-up and by limited knowledge. In spite, and because of, these technical constraints, users shape meanings of ICTs by favouring certain applications. Gender and age feature as factors in this shaping process.

Purchase preceded need

It was mentioned in Chapter Two that frequency of Internet use in Ennis has been considerably higher than national averages, suggesting that attendance to access issues, via the PC offer, was sufficient to induce use in some households. However it would be misleading to assert that the offer had a blanketing effect; the well-publicised figure of 83 percent Internet penetration in the town was qualified by the statistic stating that only 45 percent of households have at least one active user (Eircom, 2000). With respect to a large portion of the population, the figures may be viewed as testament that the right socio-economic conditions must be in place for technology to be used as a life-enhancing tool. Hynes says of the EIAT PC offer:

> in order for a technology to become successful in a contrived and fabricated situation, users have to find a need and a place in their lives for such a technology, and they have to shape it according to their social circumstances (Hynes, 2001, p.4)

It appears that this is what happened in Ennis; the higher than normal PC ownership and Internet access resulting from the 'contrived and fabricated

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[20] Marie's online exchanges regarding quilting are reminder of Frissen and Bockxmeer's paradox

situation' in Ennis did not produce overwhelming results regarding usage in a short period; rather, residents, communities and businesses approached or returned to ICTs as needs were constructed through every day life events. In accordance with earlier research, such as that of Presvelou (1988), purchase commonly preceded need, as the quote from Jimmy illustrates:

> J: ...it [the PC] is still kind of there and not being used at all. Maybe when she [his daughter] gets to know a bit more or wants to know a bit more...

Jimmy has had almost no engagement so far with the computer, but he suggested that its incorporation will come via his daughter – that she will be the dominant shaper of the technology, to borrow from social shaping of technology discourse (MacKenzie and Wajcman, 1985; Williams and Edge, 1996). Once identified, these ICT needs may be such that frequency of use remains very low. Consider Breda, who described her experience of having a PC in the home as 'brilliant,' yet weeks could go by when the computer was not turned on. Many saw use for it only as a tool for their VTOS course, and in the summer months the PC would lie dormant.

The same pattern, of purchase preceding need, is clear in the case of mobile phone purchase. Nearly every respondent owned a mobile, but its function was underdetermined. Again, Jimmy was a case in point: he said of his mobile,

> J: I think I'm one of those people who just keep it at home and – I bought thinking that I'd use it a lot and I don't use it at all.

A cheap deal in the shops would often act as the main incentive for purchase of a phone, the assumption being that its utility would emerge when the circumstances arose. For a sizeable section of the sample, mobile purchases were explained in terms of their potential usefulness in emergencies. Tina, for example, stated that she bought a mobile 'only because I had a Mini that used to keep breaking down.' However, with time parents became glad of the security it afforded regarding their children: they could contact them at any time if they got into difficulties, and childcare and study commitments could be negotiated.

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that online communication is often an individual-oriented activity (2001).

Motivating influences

A striking pattern in respondents' accounts was the extent to which the children in the household were the impetus and the continuing reason for engagement with ICTs such as mobiles and especially PCs. Children were also the focus of concerns over inappropriate use and content of computers. Consider Colm, father of two children, who frames his reason for taking a computer course in the context of parenting:

> C: ...I suppose a lot of it, well most of it, was for myself. I just wanted to kind of, be able to do it, you know? I didn't want to be in a position where I was giving out about something that I knew nothing about.

Here, even though his rationale for learning begins with reference to himself, clearly the underlying impetus comes from the children in that he wants to maintain some authority with them regarding computer use.

The return to education provided another motivation; one respondent recalled that her computer was covered over with a dustsheet until her VTOS computer classes prompted a desire to practice. It is clear to see how these motivational forces are an advantage: educational or parenting agendas provide incentive to learn; parents particularly can benefit from their children's digital literacy and more exploratory approach to ICT use and consumption – referred to as a 'retrospectively enhancing effect' (Brennan, 2000).

Schools and community groups appear to have followed similar patterns of dormancy and 'activation' of ICTs. One respondent describes below a school's eventual deployment of computers for children with special needs. She was asked initially whether she thought the EIAT project had resulted in ownership of unused PCs. She responded:

> W: ... I did think that last year when I was down in one of these schools; I did think that. But saying that, on different occasions, they got maybe other schools in, or maybe special needs schools in, or they used it for slow learners in the school itself. They started using them – they were in the room alright, two or three of them, but they took them out and used them in those situations. They must have been thinking along those lines themselves: that they're there, we could be using them for – even if I said I'm qualified now with special needs, and we could do some games or some form of education on it for the special needs. Because you don't have to be

talking or anything; you could have the game set up and they could type in what they have to ask you. So my view on that has changed; they're not gathering dust like they were. If anything they're shining them up now.

In this example, initial concerns about unused PCs in schools were eased as uses for PCs were found with time. ICT use was not always contingent on goal-oriented need; some men in particular engaged with ICTs also as a hobby. This brings us to a what may tentatively be described as a gendered difference:[21] men's interest in computers appeared to be more polarised, with Jimmy at one end, seeing little benefit to home PC ownership and use, and at the other end Sean, who had had a keen interest in computers since childhood when the very first computer games emerged, had since 'built' his own PC and, without formal qualifications, secured some employment in graphic design for commercial companies.[22] Although there was of course variation in women's use, generally the PC appeared to be viewed by women as an educational tool, especially for getting course work done; technology was not interesting in and of itself. Tina talked about gender differences in the following way:

> T: ...men are more toy orientated – 'if it's a new toy, I've got to have that' kind of thing...we [women] would settle for a computer system that worked, that was practical, that did the job. I don't think we'd be too interested in going shopping for new toys for it.

Tina's belief, that men view computers as hobbies or toys whereas women view them more instrumentally has been coined the 'toys for boys' attitude and is well documented,[23] frequently in the context of arguing that female participation is hindered by 'maleness' in PC design and representation. But, as mentioned in the context of physical access to ICTs earlier, the AEC had a predominantly 'female' population, which resulted in a different image of gendering of ICT use. Anthony comments below on women's higher volume of use and on their more goal-oriented use of computers:

> AW: I think, actually, because men are more into soccer and whatever else, they just see computers as: it's there – if I want it, I'll use it. Whereas

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[21] Behaviours and attitudes varied substantially, as expected; furthermore, there were very few men on the VTOS scheme, making gender comparisons difficult. But attempts can be made at identifying patterns, and in any case respondents' own perceptions of gendered differences are also useful for indicating the gendered symbolic significance of computers.

[22] Also at this end of the spectrum is Ray, who taught himself an array of computer programmes, has set up two web sites, and is making money as a web designer. His story is returned to later.

[23] See, for example, Cockburn and Ormrod, 1993; Grint and Gill (eds.), 1995; Wajcman, 1991; Hynes, 2001.

> women, I think, are more intellectual anyway, so they will go online and do their stuff and... yeah, definitely women are – would use computers a lot more than men, I would say – unless you're a fanatic like me, but they're not all crazy like me.

Although the female-dominated environment may have coloured his views on gendered use of computers, his comments echo existing observations that men tend towards extremes of PC use and women tend to make more instrumental use of them.

For the more technologically enthusiastic men in the sample, interest led to an exploratory approach to computers. But fear of the unknown was a recurrent barrier for female respondents, and fear of learning by trial and error was also evident, the situation of 'not knowing how' acting as a barrier to further use. This is concurrent with the assertion by Rommes, van Oost and Oudshoorn (1999) that an exploratory approach was characteristic of men's PC use. It can be argued, though, that this reluctance does not preclude women from utilising more fully the Internet's potential; if a need is identified, this will motivate users into learning the necessary steps to exploiting ICT applications. Again, Mary provides a useful example: her interest in web production stemmed from concerns for her own rural community:

> M: It's North Clare. I know it's very wealthy and there's a lot of people moved in, built their big houses and their golf-courses [...] There's an awful need for community spirit. People are dying up there for community spirit. The old things have moved out; the new things are moving in. I definitely think there's a greater need. I mean web paging would be very important. If you have your own web page, and got people involved, and even get women together and teach them more about their value to the community [...] You see, there's a lot of poverty up there...

Mary has identified a need for ICT applications and is considering the potential of a website to help address the pockets of poverty and lack of community activity in her area.

Shaping of ICTs according to personal and social circumstances

The success or otherwise in finding motivation for ICT use is one moderating factor in gaining benefits from ICTs, and design constraints constitute another.

Social studies of technologies are premised on the idea that technologies are shaped by their social contexts (MacKenzie and Wajcman, 1985; Williams and Edge, 1996). But in Chapter One it was argued that the power of the end user to shape home technologies is exaggerated, and most research leaves wholly unspecified the nature of the process by which this may occur.[24] Relating my findings to the theme of shaping, it may be suggested that technologies can remain almost 'unshaped' in a home; un-integrated into daily life until the circumstances arise for it to be put to use; there may follow periods of dormancy until new needs are identified at which point the ICTs may be 'reshaped' according to these new needs. 'Shaping' is used only in the sense that particular uses confer symbolic meanings on the technologies; the findings do not support assertions that end-users configure technologies' make-up – more likely, the respondents have felt constrained by technological limitations, as well as limited knowledge. The limitations in usability of the Internet, a prototype after all, are generally recognised and can be understood partially as a consequence of the original circumstances in which the technology was conceived. Kaplan's essay is useful here; in discussion about designs of the earliest computing centres, she writes:

> Those design decisions, lodged deeply within the workings of the tools and enunciating an ontological claim, remain evident in subsequent designs...
> (Kaplan, 1995)

In other words, the Internet was not designed for the purposes that it is now used and the design affects usability. Furthermore, it was in defining the problems to which the technologies would find solutions that the computing devices were shaped:

> The higher degree of success they attained – the closer the match between problem and solution – the less room remained for accidental, incidental, revolutionary, unforeseen purposes and uses (Kaplan, 1995).

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[24] I would retain the importance of the idea that influence can flow 'upstream' from end-user to designer (see for example, Preston, unpub.), and it is understood that with certain technologies heavy use of certain applications and virtual non-use of others leads eventually to changes in design to reflect these preferences. But this process can be extremely slow: the conventions of word processing and Internet use have remained strikingly static.

So, new technology, designed to address particular problems, prohibited new and creative uses, but in spite of this SST writers continue to celebrate the idea.[25] In this study, low-level shaping was evident in the sense that people preferred certain applications over others:

> C: ...the Internet for me would be, umm, digital photos, online albums, sharing them between various relations – that's what the Internet is going to become; and sending them to my friends...

Cronan's language, above, is reminiscent of Ward's discussion of the concept of many, personalised Internets – of 'my Internet,' rather than a global, impersonal technology imposed on the consumer (Ward, 2001).[26]

Users appear to incorporate into their daily lives as many applications of new technologies as they are comfortable with, and for some, this can be very limited relative to the technologies' capabilities – as described by the term 'cautious appropriators,' in last chapter's profiles (page 88). Many online applications appeared to be outside the sphere of experience of most users not because of lack of awareness but because of social circumstances. In Brennan's study of ICT use among the over fifty-fives, economic circumstances were found to shape lifestyle choices, which in turn determined ICTs' relevance (Brennan, 2000). Similar findings emerged in this context: on being asked about possible use of online banking, Tina referred to her tight budget:

> T: Umm, yeah, I don't have much banking at the moment, but I don't think – even if I – I like to see the cash [*laughs*].

This suggests that her limited finances incur a desire for a more 'physical' awareness of money than Internet banking would allow. Tina also offered that her age as a reason for her reluctance:

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[25] ICTs as 'closed' artefacts, that confront the user as 'pre-packaged entities,' disallowing end-user input, have been referred to also by Wickham in the context of women's disempowerment regarding ICTs in the workplace (2002 cited in MacKeogh and Preston, 2002). This idea is also contained in the concept of technology 'scripts,' mentioned in Chapter Two, page 45, and in Woolgar's discussion of 'configuration of the user' (see Lieshout, 1999). These discussions help to temper overly optimistic claims regarding the freedom of the end user.

[26] The undirected use of the Internet as a means of filling time was also apparent; for example allowing one respondent to look at Ennis house prices 'for the fun of it.' Sean would plan his evening around the TV schedule, and when no programmes of interest were on the time would be filled using the PC. But in general these students associated the PC with course work, which hampered somewhat its attractiveness as a time-filling, entertaining tool.

T: It's maybe I'm just that little bit too old for the banking side of it, you know?

This suggests that she finds it difficult to change long-standing practices. Consider that Tina had described herself as very comfortable with computers, having worked with them in every job; nevertheless she was as yet uncomfortable with integrating them into another area of her every day life. Age was identified by other women as a barrier to making further ICT purchases. Mary reasoned her reluctance to update her computer and to own a mobile thus:

> M: I think it's my age group; I'm at the end of my forties [...] You see this has only come in for us in the last five or six years. We've been used to – I remember a teacher slapping me across the hands at school for using a calculator. Oh no, you'd be suspended from class if you were caught with a calculator [...] And we had this fear of using these tools. And the same with the mobile: the mobile is a handy thing to have, and I can't understand it why. But I have questioned it; and that is the fear of the unknown...

So the relative newness of these ICT tools in everyday life made for a more cautious approach.[27] Every individual set personal limits regarding which areas of everyday life ICTs would enter, and respondents were reluctant to update or replace their computers because this would disrupt their feelings of familiarity with the technology, which was vital to their continued use of it.[28]

As with online banking, Internet shopping was unattractive because of social circumstances rather than lack of awareness. Often the possibility was ruled out because of either absence of a credit card or self-imposed restrictions on use of the card.[29] Tesco's online shopping service was cited frequently as an option in adverse circumstances, but no one had used it, not only because of absence of credit card, but because the sensual cues associated with 'real life' shopping were

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[27] a number of women rejected mobile use through fear of cancer and were willing to go without while the technology was in its infancy and the implications for health remained unknown.
[28] One respondent spoke of this familiarity in terms of a mutual understanding between user and computer: 'I think my computer is like myself: it's kind of got into my language, and I've got into its.'
[29] This can be viewed as one means by which the technology configures, or filters out, users, since payment methods exclude less well off users.

too important,[30] as was its value as a purposeful activity. One respondent reasoned her lack of interest in online shopping in the following way:

> N: I've been so long stuck at home, I think I just like to get out there instead of waiting for anything to come to me.

So isolation is combated partly by physical engagement with the town. This statement illustrates that prioritisation of needs varies with different forms of social exclusion; for lone parents such as those studied by Haddon (2000), freedom to leave the house was curbed by obligation to care for children; Tesco's online service may be potentially useful to such groups.[31] But the subjects of this study – long-term unemployed and many parents of older children – place greater value on activities that increase face-to-face interaction and meaningful activities out-with the home setting, and shopping meets these criteria to a limited extent.

Public and civic services such as interaction with social services or payment of bills were absent from respondents' ICT repertoires, which is unsurprising since the development of EOLAS[32] was delayed and national government services online are very recent developments that have been subject to virtually no promotion.[33]

Quality of Experience of ICTs

Technical limitations due to ICT design have been mentioned as a constraining influence for users, limiting their abilities to 'shape' ICTs. Expanding on this point, four limiting factors stand out: slowness in Internet connection; problems in finding relevant information; the need for better communication between PC

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[30] The problem of lack of sensual cues has been referred to by American analysts as the 'Squeeze the Bread' factor (see Danton in 'Opinion' section of the Fast Track to Information Technology website, http://www.fit.ie

[31] In spite of the potential for socially excluded sectors such as lone parents to benefit from online shopping, it is believed that *Tesco* online is generally a middle class phenomenon, since there is a charge for the service, and in any case, poorer households would tend to shop at lower-priced supermarkets than *Tescos*. Perhaps, for example, *Iceland* online, with no service charge, would better meet the needs of disadvantaged groups.

[32] Ennis Online Local Authority Services. Ennis local authorities have made significant progress with their web presence for internal affairs: the intranet for Clare local authorities allows for online booking forms, room booking, leave applications and other online forms. It receives 8, 500 hits per month ('Did you know?' *Digital Ireland*, 2003). As yet, though, there appears to be negligible online communication with the public.

[33] After four years of the EIAT initiative, Ennis Urban District Councils website was not yet in use and Clare County Council 's site was just initiated (Deegan 2001). For the Irish government's e-Government agenda see Department of Taoiseach, 2002.

and user, and unwanted information hindering use and damaging perceptions of the Internet.

Slowness of Internet connections was the most common cause of frustration among respondents. Although home PCs were often updated, for example to Windows '98 or with more RAM, the speed of Internet connection was not satisfactory.[34] There was consensus that computers at AEC, which were the same PCs initially donated to the centre by EIAT, were 'worn out' with too many applications on the hard drive, and the printer was also troublesome. Furthermore, as mentioned earlier, the heavy use of the computer room resulted in a crowded rather noisy environment, and, although the room was highly valued, nearly all respondents preferred the home setting for self-paced, quieter and less problematic PC use.

The length of time spent on the Internet due to slow connections was often compounded by problems in sourcing relevant information. Most respondents cited difficulties in formulating search questions, and all were familiar with sifting through swathes of unwanted information in researching topics for their courses. The concern with over-informatisation expressed by Seely-Brown and Duguid (2000) among others was borne out here. Perceptions of the Internet were, then, highly conflicting: it was viewed as potentially effective and efficient as a tool for information yet slow and time-consuming in practice. Typing skills were another perceived barrier to efficient use of time online. In Noreen's case, computer use was purely a tool for aiding course work, and no pleasure was drawn from Internet browsing for its own sake. She was asked whether she felt pressured for time online because of the costs involved:

> N: Oh no, no, no it's just that when I do go online, or on the computer as a whole, I feel that an awful lot of time has gone by since I started – from the time I started to the time I finish. But maybe that's a lot of my own fault too, you know?
>
> AG: In what way?
>
> N: Well with typing and that, I'm pretty good at typing but if I were faster it would take me less time to type something.

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[34] The highest speed of connection for the respondents was provided through ISDN; none of the sample was part of EIAT's broadband trial, initially for 100 homes.

Noreen, like a number of other respondents, was quick to blame her own lack of skills for negative experiences. Some were interested in software that would translate speech to text as a solution. The inability to trouble-shoot ICT problems was also a source of frustration, as Colm describes below:

> CM: I just think sometimes you think you know it, and then something just goes wrong and you're back to being totally illiterate again – you can't figure out what you've done wrong. Maybe, just kind of, you know it gives you hints and all this stuff, and tells you what you might have done wrong. Maybe it should tell you what you *have* done wrong – and tell you how to change it. Like, you pressed the wrong button or you didn't do this, so you need to go back and this – maybe that would be easier.
>
> AG: So, a more intelligent computer is what we –
>
> CM: Yeah, yeah – for less intelligent people [*laughs*] or whatever, you know. But you know, I find when I do something wrong with the computer and I have no idea what I've done wrong and I don't know how to correct it, I find I can get frustrated with it that way, and I just walk away from it, because I don't want to frustrate myself more, 'cause I already know I don't know how to fix it. So it's easier just to walk away. Whereas I think if somebody came up and said, look this is what you've done wrong, you need to do such and such a thing. And then you can follow the steps, and at least that way it's teaching you as well.

Colm's suggestion for increasing ICTs' effectiveness demonstrates a relatively reflexive relationship with technologies: his experiences shape future requirements from ICTs – and presumably will influence future consumption. The suggestion is two-fold: he points to the need for communication between the computer and the user to be developed and the need for individualised supervision when using computers. The first aspect relates to the human-computer interface – a vast research domain that extends beyond the confines of this study. But its importance in this context is clear: the so-called 'enabling content' of ICTs – the means by which basic content is communicated to the user – can, conversely, serve to obscure meaning (Zadek and Raynard, 2001). At this juncture it may suffice to consider Lawler's contention that computer use is plagued by its reliance on the written word as communication medium. He argues that understanding is 'not a literal matter,' in line with Seely-Brown and Duguid's concern with absence of visual and other cues from human-computer interaction, and he places hopes in future technological breaks from dependence on the typed word (1999).

The second aspect of Colm's suggestion, the need to be able to draw from other people's know-how, is of key importance, because disadvantaged users usually have fewer resources at their disposal. Dutch research into social inequalities found that

> a social network that can help with ICT problems is mostly found with people with a higher income, a higher educational background and among younger people (SCP, 2000 cited in Rommes, 2002, p.415).

The network provided by the workplace is perhaps most significant, and it has been shown in the EIAT Residents Survey and elsewhere that higher socio-economic groups have greater access to computers in the work place (see Figure 3, page 57). By inference, they also have access to a reservoir of ICT skills that is denied to less advantaged groups.

Significantly, the computer room at AEC provided a place for ICT know-how to be shared between users. Marie explained that she tried to share with others in the computer room helpful tips that she had picked up in an e-learning trial session:

> M: ... I'd be sitting there and I'd hear someone saying, 'gosh, I can't find something' and I'd turn and say, 'well, why don't you look under this, you might get quicker.' Or I use Dogpile [search engine] a lot, I find that very good, or Goggle, or Google, however you want to say it – different ones because it's quicker. So, I have helped a few people, saying why don't you try this and that, and since then they've said 'yes, I use that all the time now – '

This informal type of knowledge dissemination appears to be extremely effective.

Unwanted 'information' served to undermine further the quality of time on the Internet. Anthony mentioned the problems in getting rid of 'pop ups', stating that sometimes the only effective action was to re-boot the computer. Pornography was mentioned by nearly all sample group members as an aspect that tainted their overall experience of Internet use, both in information searches and email inboxes, and the prospect of such material accessed by respondents' children was particularly worrying, in line with findings from the Internet Advisory Board, among others (2001).[35] Advertising was also viewed as an intrusion.[36] Negative

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[35] In their study, carried out by Amarach consulting, accessing pornography was cited as the main negative impact of Internet use for children (44 percent of adults surveyed). Exposure to unsuitable people such as paedophiles was the main negative impact for 12 percent of respondents. (Internet Advisory Board, 2001)

attitudes to online advertising and complaints that time allocated for education and information retrieval were being invaded were levelled at Internet use far more than they would be at TV use. This may be understood as a consequence of the Internet's multiple and conflicting role as entertainer and as tool for personal, goal-oriented activity.

Perceptions of EIAT

This final section draws out some perceptions of EIAT among the respondents to explore possible lessons regarding disadvantaged users in such ICT initiatives. It notes that a generally positive attitude to EIAT's provisions prevailed, but limited knowledge of the projects' activities may have led to exclusion from the PC offer and other services such as computer tuition. EIAT's approach to the residents' sector, which could be described as 'hands off' regarding encouragement of use, provoked mixed reactions. The provision of technical and financial support to residents could have been exploited further with more communication with the public. Innovative uses and promotion of cutting edge technologies were perceived to be underdeveloped, and in the absence of understanding regarding EIAT's goals, the lack of pioneering technologies was regarded by some as a sign of failure. The site of EIAT's headquarters was also criticised for its remoteness.

There was low qualification for the PC offer – seven out of sixteen respondents – because of geography or personal circumstances. Many did not qualify because they lived outside the Urban District Area (UDA) or arrived after the offer had finished, and some who would have qualified had insufficient interest to exploit the offer at the time. There was frustration among those just outside of the boundary, especially on learning that in houses a short distance away within the UDA, there were computers sitting idle 'with pretty lace cloth and a bunch of flowers' as one respondent put it. There were suggestions that EIAT should have sought more reassurances that the computers were really needed before they were sold to households. However, the sample group findings suggest that households could justify the initial purchase with ease, often referring to children's school

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[36] One respondent suggested that exposure to advertising should be a matter of choice: there should be an optional link to an 'advertising website,' containing numerous other links to advertisements.

work, but lack of motivation to commit to learning would delay significantly ICT uptake.

Lack of clarity on the criteria regarding family circumstances sometimes led to feelings of exclusion. Colm, for example, had separated from his partner, and his children only visited him periodically. He was asked initially about his knowledge of EIAT's tutoring provisions for the public and reveals limited knowledge on this too:

> CM: Well, actually I didn't hear anything about it [*EIAT-run computer courses*] until here. I didn't know there was anywhere you could go to learn how to use a computer until I saw the courses here. And, plus the fact that it didn't qualify everybody to have a computer. Even though I had kids, but as I said they're not with me all the time. So I wouldn't have qualified to have a computer under the Information Age technology. I got mine off my sister.
>
> AG: Why is that?
>
> CM: 'Cause I think it was you had to be in a household, whereas I'm in a flat or an apartment – whatever you want to call it.
>
> AG: And is that because it's a rented place and it has to be owned?
>
> CM: Yeah, something like that. And there was other stuff [*voices from outside the room become loud*] that you had to have, like I think there had to be somebody under sixteen living in the house or stuff like that, which I technically had, but not all the time. So I couldn't use what was there for me, so I didn't really qualify for one.

The position of EIAT on circumstances such as these is not clear from public documents, but the point to be noted is that Colm's inquiry, albeit limited, led him to believe that he was excluded. From the sample group it was apparent that public knowledge of the project was limited, especially if the computer offer was not availed of. From those who did have knowledge came mainly positive responses to EIAT's activities, although the latter's 'laissez faire' style approach to the residents' sector, whereby computers were provided and training offered without any proactive follow up activities such as home visits to encourage the use of certain PC applications, was met with ambivalence. Most voiced no opinion on the subject, suggesting little engagement with their activities. Some respondents wished for greater encouragement of ICT uses, whereas one respondent was unequivocal in her praise of the approach, believing it was necessary to allow people to find a use for them independently, in their own time.

> W: ...I think what they were doing was perfect, because you weren't forced into doing anything. And it was there, and because you see your children using it – because the schools got them as well you see. Then because they were using them at school, and when they came home, they needed help and you found that you wanted to help them. You said: 'instead of sitting down in the corner, I could be helping them' – rather than having them wait till they go to school in the morning and do it. Or they might have to wait for their friends to help them.

Winnie's view, in which residents could find meaning on their own terms, echoes that of the EIAT team.[37]

Technical support is an area that appeared to need stronger involvement: Fionnuala's example, whereby her moves to secure Internet access for her home were halted because they 'were some piece missing,' suggests that residents need to be led firmly through technical matters and be reassured that technical support is at hand.

Trials into innovative uses of existing technologies were perceived by some as underdeveloped; notably one respondent mentioned teleworking as a missed opportunity, which had initially been one of three main strands of focus in the Ennis submission:

> CC: I wish the technology was used better, especially for distance learning... I'd like to see people working from home and video-conferencing. I'd just like, umm, it might sound like an advertisement, but the Information Age Town is here now; we are it, Ennis is it, and I wish the local paper or a newsletter from Eircom Information Age to push the technologies available...

Cronan was concerned that the project did not exploit the possibilities of ICTs as fully as it might have. But uncertainty over EIAT's goals made evaluation difficult. Cronan continued:

> CC... I don't think the full use has been made of – I don't what Eircom set out to achieve. I don't know if they've achieved what they set out to do. I don't know what the consensus of opinion is. I got a bit of a shock when I heard the project was winding down. They still have a few million to spend and I hope they spend it wisely. I mean there's huge potential in that project, so my biggest hope is the park – that the technology park goes ahead.

Lack of communication means EIAT's successes are not known. The technology park to which he refers has since got permission to go ahead,[38] and it is

significant that Cronan is looking towards the next 'big thing' for delivering tangible benefits; even five years on EIAT is still sometimes referred to in terms of its potential rather than its achievements. This may be viewed in part as the legacy of the publicity shrouding the project's inception.

Another criticism concerned EIAT's minimal testing or promotion of new products, aside from Visa Cash, which was regarded as a new product that was tried, tested and found not to work. Sean suggested that the large poster on the side of a building in O'Connell Square in the centre of Ennis should have been replaced with a large screen – 'like New York, Times Square' – to be used for promotion:

> SB: All you see is computers. What's computers? I mean we're all playing with these cards.[*referring to the Visa Cash trial*] That's what Mastercard and all these super companies were designed for. I mean Information Age Town wasn't just about computers, it was about technology which was to do with washing machines, fridges, the computer, the TV, the Hi Fi – everything. They should have been promoting business in the sense of new businesses to do with computers. If it was a new business opening up over in Gort Road to do with manufacturing and computer chips, or to do with faster processes for washing machines or micro waves, it should be posted up on this huge screen, and a big showing of it so that every body could see and say 'oh cool' And if there was a band playing in Dublin, say in the Point, get to see it live, blaring on through the whole screen.

So the lack of physical evidence of the initiative was a source of frustration, as was the seeming absence of promotion of new innovations in 'smart homes' technology. It should be noted that such criticisms came from the more technologically enthusiastic males in the group; the majority of respondents had few expectations or desires for the project, and consequently no point of comparison on which to judge its achievements. The uncertainty surrounding EIAT's objectives encouraged the belief that the project was primarily a bid for publicity in anticipation of competitors' entrance to the market, in order to pre-establish Eircom as a household name.

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[37] Her comments also confirm the value of children's influence in the household as motivators for ICT use.

[38] Shannon Development, as part of their drive to create 'technology nodes' throughout the region, bought the site of Our Lady's Hospital, Gort Road from the Mid Western Health Board. Plans for the €150 million project include the development of a technology park (providing 750,000 square feet) and the relocation of Clare County Council in a County Hall. Their implementation was delayed until 2003 as Ennis Town Council initially imposed conditions on planning permissions through concern that the park would draw small business away from the town centre. Shannon Development has estimated that 5000 new jobs could be created (Deegan, 2002).

Conflicting criticisms over EIAT 's approach regarding involvement of the public arose from academic perspectives. According to researchers in the University of Limerick and Dublin City University, the EIAT approach was 'top down,' and was thereby criticised for imposing wishes onto the Ennis public without allowing grass roots exploration of ICT requirements.[39] EIAT appeared to be criticised both for being too forceful and for not being proactive enough.[40] It can be argued that EIAT was not estranged from localised, 'bottom-up' initiatives as certain commentary has implied; instead it tended to provide back-up for such activities rather than initiation or significant involvement in them. Consider Ray's example; he was initially dismissive of EIAT, stating that the funds went to the 'top business men' in the town because they knew whom to ask. However, he did manage to benefit from them for his own ambitions in web design:

> AG: Have you had any contact, personal contact, with that project [EIAT] yourself? I mean, have you had any leaflets through the door or, have you heard about classes –?
>
> R: [...] In fairness, when I had this idea of Colorweb, the web design, it was, like, very vague, it were very, very vague – I went to the Enterprise board, for e- Pages, to raise some money. And this guy said 'where have you come from, like?' So he picked the phone up, and rang Rita McInerney at Eircom [business officer for EIAT] and said, 'do you know Ray Doherty?' She said 'no;' he said 'e-Pages, Colorweb, no? I think you'd better see him.'
>
> AG: Right.
>
> R: This guy was mega-impressed with what I could do. I thought Jesus, this is it, people are going to recognise me for my talent, like. She rang me about fifteen minutes later, and I went up to see her, and she pulled all these leaflets out. She said, 'You can register that business on the Information Age directory, as a business, and we'll give you a grant.' [...] I said, 'well I want a laptop.' 'Well, we'll give you half of the money.' 'Brilliant,' I said. I've only got the other half to find, now. So I went somewhere else and got the other half [...] So fair play to Ennis Information Age Town. I was just lucky, because the grants were just finishing. And I did get seven hundred quid towards my laptop. And, fair play to them again: I said, 'what about the registration fee for Colorweb?' She said, 'Well, we'll give you that as well.' So they sent me a cheque for a hundred and something for the business name, Colorweb. So I got that off them as well. And I registered on the Information Age Town web site to pursue whatever. I did get it off them, but it was late, it was late, when I found out.

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[39] Hynes, 2001; Interview with McQuillan, 26th January 2001.
[40] It would be tempting for EIAT actors to read these apparently conflicting criticisms as sign that the approach taken was pitched appropriately along a middle road.

This illustrates that individual ICT ventures were supported but that there was poor communication between EIAT and the public about such help; significantly, Ray did not consider applying directly to EIAT for support, suggesting inadequate promotion of EIAT's value to small-scale ventures. His assertion that already successful businesses would have the experience to exploit EIAT funds effectively would seem credible.

Other support has included help in forming proposals for government funding, one example being the Community Network Centre at Ennis West Partners.[41] Aside from the initial provision of computers to the centre, EIAT's support consisted mainly in helping the ICT tutor, Mary Downey, to form funding applications to CAIT. More funding is needed for the continuation of the service, in particular to allow for reliable wages for staff, although concern has been expressed that CAIT's funding remains too limited, endangering the long-term future of such community services.[42]

Returning to the issue of paucity of communication between EIAT and the public, one final point may be made: the sense that EIAT was not investing in 'Joe public,' so to speak, can be understood partly as a consequence of the location of their headquarters. Anthony, for example, wished the offices had been more central:

> AG: What kind of role would that [EIAT headquarters] play in the centre of the town?
>
> AW: Oh, it could be big; it could be a starting point for people to even know what computers are, what they do. Have a place in the middle of town where people could walk in; have somebody there to show them around – 'here this is what this can do, that's what that can do; are you interested? Would you like to learn more?' Have leaflets, folders, booklets, instead of having it out of the town, there, where people don't know what it is, and to them, Information Age Town is just a name. Being out of the town there, towards Doolick, it's out of the town, and then people come up with the concept, oh it's not for me, it's high tech, and it's multi-national, you see? Whereas, if you had it in the middle of the town, it'd be more visual.

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[41] The Disabled People of Clare's proposal to CAIT is another example. See Disabled People of Clare Ltd, 2001.
[42] See Interview with Helen McQuillan, 20th April 2002.

He reasoned that a central location would have meant that EIAT was more visible and accessible – and therefore more relevant to residents.[43] Furthermore, the fact that the business park in which EIAT resides is shared with a number of specialised high-tech companies exacerbates EIAT's 'techie' and remote image for many residents.

Towards conclusions

The preceding discussions have presented a nuanced interpretation of ICTs' role in efforts towards inclusivity. It is noted that the sample group is self-selected as one which tends towards inclusivity; their adult learner identities distinguish them as proactive, and their ICT use probably reflects this existing trait; without the motive that VTOS provides, use would probably be negligible for many of them. But it could be argued that this group's testimony of ICTs' utility is all the more valuable because steps have already been made towards changes in 'life-scripts;' any problems experienced with ICTs cannot be dismissed as a result of general lack of aspiration.

Findings suggest little encroachment of technologies upon one another: that is, supplementation rather than replacement was usually observed. New ICTs' supplementary roles meant that they were not yet viewed as indispensable expenses but as an extra that could be foregone. As more practices are developed online, the Internet is more likely to be experienced as an essential expense. In the mean time, free access at the centre was of great benefit and this environment fostered interest in furthering ICT skills.

Benefits from use were experienced in the areas of academic inquiry, upskilling in readiness for the job market and maintaining social ties. There were also some instances in which the PC has been a tool for far-reaching changes in ambition, allowing existing analytical skills to blossom, and technological skills to develop. But ICTs failed in some respects to emerge as an inclusive tool: they are not viewed as an aid to everyday running of activities, or as a means of widening social networks. Crucially, it was the enabling institution – AEC – which nurtured social contact, suggesting that appropriate social institutions are a higher priority

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[43] The decision to move EIAT to Ballymaley Business Park was based on the need for greater space and facilities (*Industry Ennis* Newsletter, Vol.2).

than ICT use in facilitating inclusivity. The possibility, even, that the Internet facilitated the widening of social networks by providing initial access to information about VTOS cannot be supported by my findings. Although the AEC has a comprehensive website hosted on ennis.ie. containing information about VTOS and other courses, the mere online presence of such information is not enough to reach those who may most need it. One respondent referred to the fact that women in similar social and geographical circumstances to her did not know about such services as the VTOS scheme until she relayed her own experiences. It would be useful here to focus on rural poverty, already raised by a respondent in an earlier section, since the combined issues of geographical, economic and social isolation expose some of the shortcomings of the Internet as it is currently experienced. It can be argued that lack of Internet access for rural citizens around Ennis is not a main problem since Internet connection in such areas is fairly common. Instead, lack of confidence, a sense of isolation, and an attendant lack of pro-activity may prevent individuals from accessing potentially helpful services. As stated above, only as a consequence of a peer recounting her own example did three more rural women embark on adult education. Arguably, it is necessary to bring services to the attention of disadvantaged residents rather than wait to be reached by them. Although it contains useful information, the ennis.ie site is not heavily advertised in popular physical locations and is relatively invisible as a result, and its concern with the town of Ennis may deter rural Internet users as it does not focus on their particular needs.[44] Mary points out below that services closest and most relevant to rural communities are absent from the web:

> M: I think what's happened is people are very insulated inside their homes, and there is a great need to develop – because they are watching the Internet, but they're not seeing anything like this on it: Lisdoon-varna services for the North Clare Area, you know.

A local website for rural citizens, created by peers and advertised in 'real life' locations such as shops and pubs may begin to approach the effectiveness of word of mouth in creating social networks and social capital. Additionally, space on the site for displaying personal narratives such as Mary's to encourage pro-activity might be useful. It may be suggested that people like Mary are best positioned to help their own communities; of specific importance is that her desire

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[44] Mary revealed that there were adult education courses in the local school in her area, but residents were also unaware of this. A localised website may be effective in advertising such provision, but I would maintain that no website will have influence without the fostering of self-belief and pro-activity that face-to-face networking can achieve.

to create a website for women in her rural community is nurtured and the necessary ICT skills are made accessible in order to realise these ambitions.

The endurance of traditional, face-to-face communication in Ennis was starkly evident, and though subjects were disadvantaged by lack of employment-related networks and sometimes rural isolation, relationships among nearby family and friends continued to provide social capital, unchanged by ICT developments. It is significant that no Ennis-based community discussion forums have emerged during EIAT's period of influence. As mentioned in Chapter Two, EIAT did not pursue this possibility for their website, and the gratifications derived from face-to-face communication are easily and readily achieved in the town. Its moderate size, together with its identity rooted in activities such as traditional music and hurling encourage traditional styles of interaction.[45] Arguably, such cultural characteristics highlight the urgency for Ireland to develop its capacities for imminent technologies such as real-time video communication.

Among factors moderating experience of ICTs, the introduction of ICT tools relatively late in life was significant: age appeared to factor in the negligible use by respondents of text-messaging on mobile phones and in the aversion to chat rooms. Most respondents, especially women, appeared to value the computer solely in light of the assistance it gave with course work and with maintaining family contact. Thus, technologies were made their own by piecemeal appropriation of favoured applications. The need to achieve and maintain a sense of familiarity precluded many from taking an exploratory approach. Assistance with ICTs, either at home or at AEC, was highly valued among men and women in the group, and an exploratory approach was often absent. one characteristic of this age group (mostly between thirty and fifty) was that help and motivation was found through the children of the household. But, generally, assistance appeared to be not accessible enough, pointing to a need for greater contact, with ICT tutors and with peers, in the process of acquiring skills.

Lack of financial freedom, exemplified by low ownership of credit cards and tight constraints on landline phone bills, also factored in patchy ICT use; furthermore, space constrictions in household settings disrupted easy access. Technical

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[45] The websites associated with these traditional activities, such as Clare Hurlers, are successful but do not facilitate online discussions.

shortcomings such as slow connections and difficulties in sourcing relevant information were limiting factors. Unwanted material, especially advertising and pornography was also problematic. These considerations around age, gender and socio-economic circumstances, together with more technical problems, manifested in a *lack* of shaping of ICTs. PCs would lie dormant, confirming Rogers' assertion that diffusion and appropriation of technologies requires considerable time (1995). Finally, regarding experiences of the EIAT project, evaluation by respondents was made difficult because of absence of preconceived ideas for the project's outcomes. But the case study also highlighted the limits to communication between EIAT and Ennis residents: awareness of EIAT's intentions and achievements was minimal, resulting in the initiative being perceived by some as remote from everyday contexts. It was thereby regarded as exclusionary of disadvantaged residents like them – the beneficiaries were often seen to be the town's larger businesses. A sense that EIAT was a missed opportunity for pushing innovations and new applications was evident among the more technologically enthusiastic in the group.

These reservations aside, having lived under EIAT's influence, all of these unemployed residents owned home PCs; many had Internet access and all were acquainted with, at the very least, basic ICT skills. It is impossible to determine how technologically endowed or proficient these people would be had EIAT not been implemented, but it is likely that their exposure to a sense of imperative regarding ICT uptake would have been considerably less. Also, the cost of PCs may have remained too great for longer so that benefits from use would have emerged later.

The moderating factors in procuring benefits, discussed above, are present under the EIAT initiative but independent of it. The concluding chapter will set out the study's contribution to the field in terms of these moderating factors, or barriers to benefits from ICTs.

Chapter 5
Conclusions and Recommendations

This final chapter will provide some conclusions that look towards future developments in ICT design and policy. First it is necessary to revisit the usefulness of the concept of inclusion in the light of case study findings. Then, to move towards evaluation of EIAT's outcomes regarding disadvantaged groups, concluding comments are organised as a series of barriers to effective ICT use, identified from last chapter's discussions. The barriers graduate from essentially technical aspects of ICT use to issues more contingent on social relations and processes. It is these 'people-oriented' barriers that I would like to emphasise as holding the greatest challenge for addressing exclusion effectively. Recommendations are offered for ways in which they can be addressed by future ICT developments – in policy, in future social experiments like EIAT, and in more organic community initiatives.

To return to the usefulness of inclusion as an analytical tool, this thesis has been premised on the idea that inclusion is an under-explored but critical issue for ICT community initiatives, both in terms of inclusion in ICT provision and use, and in terms of ICT's ability to facilitate greater inclusion in society. One important conclusion to be drawn is that interpretations of inclusivity can vary according to different standpoints. In Chapter One, the point was raised that digital divide discussions were unhelpful in portraying disadvantaged households as victims of exclusion from ICTs (McPherson, 2001). My findings support this to some extent: many respondents made infrequent use of ICTs, sometimes with long periods of no use at all, and the number and type of applications varied according to personal comfort levels and circumstances. However, most were content with this albeit patchy uptake and felt themselves to be adequately included in 'Information Society' activities.

A second, related conclusion is that projects aiming for total inclusivity in ICTs, incorporating purchase of ICT 'packages,' are mostly born of commercial ambitions. Within this study's agenda of *social* inclusivity, by contrast, findings have confirmed that slow technology uptake may be an indicator of social disadvantages but is not a cause of them (see Chapter One, page 15). So the positive association between ICT use and social participation presented by large-

scale surveys such as from Katz et al (2001) and Kraut et al. (1998; 2001) should be read strictly as a correlation pertaining to high levels of social and cultural capital. My study showed that trust and cooperation, central to Putnam's 'social capital,' were gained more effectively through active engagement with the institution of adult education than through ICT use per se. This is not to disregard the potential for ICTs to play a greater role – with future infrastructural and content developments, e-inclusion will become less distinguishable from social inclusion – but as it is currently experienced, ICTs' role remains under-whelming.

It is maintained that, as a concept, 'inclusivity' is useful for approaching socio-economic disadvantage because it captures the multi-faceted nature of disadvantage and its powerful consequences. However, inclusion suffers from the same affliction as the digital divide: both entail a bi-polarisation, which inevitably is accompanied by simplistic application of notions of good and bad (Sligo and Williams, 2002), disguising complexities in patterns of ICT uptake that involve exclusionary processes in other domains of everyday life. For this reason the 'digital ladder' has been offered as an alternative (Alakeson, 2003). It would appear that metaphors remain too attractive to avoid in public discourses.

The 'divide' now makes a consistent appearance in government ICT policies, and the case for businesses addressing uneven use grows increasingly compelling: as ICTs move towards the status of an everyday domestic technology, the mainstream market approaches saturation point; late adopters such as those with low education attainment and income constitute a large, underserved market. Community ICT initiatives continue to provide a useful means for governments and businesses to reach out to late adopters, and my final comments point to some lessons from the Ennis project. Below are mapped out some factors potentially hindering effective ICT use that have emerged in EIAT's sphere of influence. They provide further evidence for many of the barriers identified in previous research (See Chapter One, page 22).[1]

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[1] It should be noted that the five barriers are without exception applicable to any user of ICTs, but they have more significant impacts on disadvantaged users, as those with greater economic, social and cultural resources may be better positioned to address them.

1. Low bandwidth

This study confirmed it as imperative that the long-standing agenda to increase bandwidth for communities in Ireland should be progressed. Not only did slow connections seriously hinder quality of experience of ICTs, but also a high level of interest was expressed in the potential of developments such as video conferencing for maintaining social networks;[2] email and chat room contact was often perceived to be unsatisfactory in its lack of sensual cues. Further applications of video technologies have been presented by the e-City Working Group report (2003) from the Dublin Chamber of Commerce, such as video connection between shop assistants and online shoppers and between call centre operators and customers. Although such technologies are still in development stages, at base, the principal requirement for such uses is development of Ireland's technological infrastructure.[3]

The Irish government has set out objectives for endowing homes with broadband speeds of at least five megabits per second, and more for businesses, within the next ten to fifteen years. It hopes to be the first in Europe to achieve this. In the shorter term, it intends to facilitate the availability of 'open access, affordable, "always on" broadband infrastructure and services' within the next three years (Department of Taoiseach, 2002, Appendix 1, p. 43). The Metropolitan Area Networks initiative has already identified nineteen towns for the first phase of this development. Certain obstacles have been widely acknowledged: for example, the Telecommunications Working Group reports:

> ...the primary problem is not at the national or regional level. The key deficit is in local access broadband networks. This results in a lack of availability of affordable 'always-on' local level access to high-speed data transmission services (Appendix 1, Department of Taoiseach, 2002).

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[2] For example, one female respondent delighted in the prospect of being able to send digital footage of Ennis town to her sister, who had moved away many years ago. It can easily be inferred that this use of the Internet would serve to strengthen a geographically distant family relationship, and for her sister, it would reacquaint her with her home town.

[3] The number of bits per second that can be transmitted along a medium would have to be increased. The current bandwidth for residents in Ireland, allowing ten thousand bits, could not handle video and audio information.

Lack of competition within Irish telecommunications is commonly cited as the most critical impediment.[4] Particularly, the minimisation of cost for the consumer is crucial for reaching socio-economic groups such as the subjects in this case study.[5] Although the study found that poor economic circumstances do not often deter ICT purchases, they do mitigate use: the perceived benefits currently do not outweigh the costs.

2. Computer-user interface

In the previous chapter's discussion the human-computer interface (HCI) was identified as problematic for many respondents as it continues to be experienced as exchanges of information with the computer via the written, or typed, word. Poor typing skills were a hindrance to fast and effective use of computers, and subjects took interest in possible voice-recognition facilities as a way of bypassing this. Adult learners appear to find it more difficult to substantially increase typing speeds than younger learners, and this may deter adults from entering certain employment and third-level education.[6] Many respondents were generally self-conscious, attributing difficulties to their own shortcomings, but equally there was an awareness of what technological changes would alleviate such problems. Their experiences confirm in part Lawler's contention that the literal word is an unsatisfactory communicator of meaning (1999).[7] Trends within HCI research show a concerted effort to improve the 'user interface:' progression to a more 'embodied' type of computing, in which the sensorimotor system plays a bigger role in transferring information; more intelligent sensors that will better understand human intention; and the evolution of so called 'anthropomorphic agent techniques' in which computers are developed to mimic humans in their interactions (Biocca, 2000). One manifestation of this is a talking face on screen,

[4] Chris Horn of *Iona* technologies has described Eircom's position by way of analogy, asking us to imagine Aer Lingus having sole ownership of all the airports it used (Proceedings of *Digital Ireland and EIAS e-Forum* Guinness Storehouse, Dublin, 5th November 2002). See also e-Cities Working Group, 2003.
[5] In terms of digital television, the UK's developments of 'free to view' digital television is believed to be an appropriate model for Ireland.
[6] This highlights once again the continued digital divide between early and late adopters, whereby late adopters maintain a competitive edge through more advanced ICT skills ('Getting online: a guide to the Internet for small town leaders').
[7] The PC's lack of appeal for accessing applications because of its cumbersome size and weight has been acknowledged (see, for example, Ward, 2001), but the prevalence of typing to communicate is a greater hindrance.

and studies have suggested that this type of interface is more stimulating to users (Sproull et al. 1996).[8]

Another area for improvement is the 'design interface,' referring to the means by which users, constrained by design decisions, navigate and search basic content. My findings are concurrent with the idea that marginalized groups would benefit from simpler websites, designed specifically to meet their needs for clarity and accessibility. It is therefore necessary for accessibility to become a primary goal of content developers. Emerging developments such as websites that offer varying levels of complexity (Alakeson, 2003) and national competitions to find the most accessible websites are to be encouraged.

Although smart technologies have been the concern of the EIAT throughout, with membership in the EU IST project, ODIN, for example, the reality of Ennis's five-year project was that the monitor and keyboard were never in danger of becoming supplanted by a more efficient interface. Some respondents viewed the lack of cutting edge technology in Ennis as a sign of failure, but it is believed that, in line with the discussion of dimensions of ICT initiatives in Chapter Two, EIAT provided more benefit to the public by prioritising uptake of existing technologies. Subsequent ICT projects in Ireland should optimise opportunities to test out impending developments in HCI research.

3. Lack of visibility of supports and services

There appeared to be inadequate communication between EIAT and the public regarding ways in which EIAT could benefit individuals; for example, the extension of the PC offer to especially disadvantaged households was not well known, neither was the provision of financial and website support for small businesses. Residents may have benefited further if EIAT's distribution of ICTs to the public and to community groups was followed up with more vigorously promoted support services. For many, there was sufficient awareness, and problems were resolved efficiently (they were at least aware that there was a

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[8] For the H-C interface to mimic interaction between persons, the computer would have to 'contextualise' the interaction; as Lieshout puts it: 'as long as human-machine interfaces only take the specifics of the 'real time' situation into account and neglect the result of earlier exchanges and other situational characteristics, they are at most quasi-interactive.' (Lieshout, 1999, p.105).

technical support phone number fro EIAT). Equally, there were cases of lack of awareness and consequent hesitancy in seeking technical help such as setting up an Internet connection, thus delaying effective use. ICT initiatives should acknowledge that unlike TV, the Internet requires 'active, informed, literate participation' (Tapscott in Caraveth and Kretchmer, 2002) and among disadvantaged adopters of ICTs, extra efforts are needed to ensure they are aware of any financial supports and have confidence in the technical back-up provided. Sending software by post, for example, is not enough; door-to-door visits and demonstrations at local schools and education centres, though time and labour intensive, may be required to facilitate use of that software. Another possible avenue is the development of ICTs specifically for less advantaged groups. AOL Avant in Spain, for example, distribute a cheaper, simplified computer – Intel DotStation – including pre-loaded software (Alakeson, 2003), providing a lower cost alternative to the PC that allows for home Internet access.

At root, one of the pivotal elements of ICT initiatives is whether the project players foster a sense of trust amongst the various actors involved, not least end-users. Alakeson argues

> ...corporate reputation increasingly depends on a company's social, environmental and ethical performance. Failure to look beyond the bottom line and address wider impacts can lead to loss of reputation and trust among key stakeholders – investors, employees, suppliers, consumers and government. And loss of trust is a strategic issue (Alakeson, 2003, p.28).

A number of respondents in the preceding study conveyed mistrust of the motives and actions of EIAT, suggesting that greater communication and engagement with vulnerable groups was needed. Recalling Chapter Two's dimensions of ICT projects, it is apparent that the digital divide is another dimension along which future ICT projects will be judged.

4. Information Overload

> The world produces between 1 and 2 exabytes of unique information per year, which is roughly 250 megabytes for every man, woman, and child on Earth. An exabyte is a billion gygabytes. Printed documents of all kinds comprise only .003 percent of the total (Lyman and Varian, 2000).

The statement above raises two issues: firstly, it is troubling in terms of the dangers of over-informatisation that were discussed in Chapter One (Postman, 1990); secondly, it is suggestive of the kind of decontextualisation of information that Seely-Brown and Duguid warned against. As they put it, obsessing about the Information Age in terms of numbers of bytes can be compared to discussing the Industrial Revolution in terms of changes in amounts and movement of atoms (2000). Both these readings should be taken into account: while sheer volume of information is a serious impediment to benefits gained from the Internet, a more 'humane' approach to information than is encouraged by 'Information Society' discourses would be helpful. By neglecting to contextualise ICTs in human experience of them, the agendas for broadband and wireless technologies could indeed be regarded as embracing dumb power as Kelly suggested (1997 cited in Seely Brown and Duguid, 2000).

Internet searching was a source of time-wasting and frustration for the respondents.[9] The volume of information available online can obstruct learning and make it difficult to distinguish between valuable and non-valuable information; also, the current methods for information searches hinder the formulation of coherent research questions. Some respondents couched these problems in terms of their own poor searching skills, but mostly, their encounters with ICTs were reflexive; they were able to talk about future requirements from ICTs based on their current experiences of them.

The growing number of indexing and searching systems, while offering potential alleviation, often adds another layer of information to contend with. Some researchers have proposed architectures for systems to subdue the overload of

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[9] This is in spite of surprise expressed by McQuillan, research co-ordinator of EIAT, at the generally high levels of proficiency in Internet use among Ennis residents (Interview on 20th April 2002).

Internet information retrieval (Montebello, 1998),[10] but a more immediate means of addressing the issue is optimising relevant skills. The dominance of the literal word in ICT use is exclusionary to users with low educational attainment, so literacy must remain a priority in adult education policies. In agreement with Ann Knox's comments, traditional literacy may benefit from being approached in conjunction with digital literacy. General reading, writing and researching skills can be advanced through learning to use the computer, and the computer may even be a preferred method for learning and teaching if students have a negative attitude to traditional methods.

The skills required for sourcing valuable information through ICTs and integrating it into other work constitute a form of literacy that is understandably lacking in older learners whose educations were devoid of ICT tools. Many tutors need to be more skilled at Internet use in order to provide signposts for their students. It remains commonplace for tutors to be repelled by the Internet as a resource,[11] leaving adult learners undirected and demoralised in their search attempts. Face-to-face, individualised support in ICT use was cited by a number of respondents as vital.[12] The e-learning centre (described in Chapter Three and in Appendix vi) addresses this need and provides a potential model for future ICT learning institutions.

5. Unfavourable learning environments

The case study supports Byrne (2002) and Rogers (1995) in their recognition of time as a requisite for widespread ICT adoption. But the environments in which users engage with ICTs are strong determinants in uptake, and 'social' surroundings are to be encouraged.

Public access locations may be daunting to those with little confidence, their fear of being 'found out' about their lack of skills acting as a psychological barrier.

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[10] A highly promising development in the UK intends to provide a more user-friendly search engine that aids refinement of searches. See the *Cybrarian* Project, http://www.dfes.gov.uk/cybrarianproject
[11] In her attempts to recruit e-learners for a pilot scheme, Ann Knox, Head of the e-Learning Centre, found interest to be far lower among tutors than among students (Interview on 17th October 2002).
[12] While group classes can provide peer support and a friendly environment, there is the danger that those with severely low self-esteem may be deterred.

Computers must be easily accessible, symbolically and financially, in places where marginalised groups already feel familiar. EIAT adopted this approach in creating its Community Network Centres: established community institutions (such as the Adult Education Centre) were endowed with ICT hardware and financial support. Alternative ICT access sites should also be in established places for interaction such as village halls, and possibly pubs and shops.[13]

In the home setting, it was found that even with the help of family members and even with e-learning aids, lack of support can deter use altogether, especially in households with little interest or competence in ICTs. This was a concern in Chapter One regarding public sector donations of ICTs to disadvantaged households without follow-up support. The feeling of 'not knowing how' can be debilitating, especially to those with little confidence in their learning abilities. The integration of ICTs into community centres allows experiences to be shared as part of a social process. This appears to be crucial for allowing technological know-how to spread. Mentoring programmes, whereby those with more technological proficiency are teamed up with beginners, is one potential option.[14] With interest from peers and support from mentors, computer use can become more relevant to everyday life. Many of the communicative opportunities afforded by the Internet have minimal utility: as Morrison and Svennevig have put it:

> The ability to talk to some unknown other across time and space does not mean much other than one can talk to some unknown other across time and space. It certainly does not mean that one has magically become a world citizen. It is the local that is pre-eminent in forming who we are (2000, p.74).

While individualised Internet use has value, a local, shared approach holds potential for more participative use: local news can be both generated and retrieved on the Internet; support networks may be enhanced by an online presence, facilitating services such as baby sitting, neighbourhood watch schemes and care for the sick and elderly (the Camfield Estates-MIT project provides a potential model). In short, production of highly localised and relevant content,

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[13] See 3rd Report of Information Society Commission, 2000b, p.69 for mention of the need for alternative ICT access points to create a wider user base.
[14] One model for mentoring came from Iowa in the US, whereby schools students were paired with senior citizens and sometimes with businesses to share ideas in ICT practices. The project was funded by the MIRA scheme (Managing Information with Rural America) from the W.K.Kellogg Foundation, which began in 1997 and has since closed. See Stark, 1999.

which was conspicuous by its absence according to some respondents, needs to be prioritised.[15]

It is acknowledged that even local community centres targeting severely marginalized people remain outside of the sphere of experience of many households. For this reason, community centres need to be supported financially to allow for greater promotion by door-to-door recruitment and awareness-raising to work towards reaching residents who are unable to take steps to self-inclusion. The value of institutions that enable technology use far outweighs the importance of technologies themselves in addressing issues of isolation and lack of 'life skills.'[16] And it is necessary to foster these life skills for interest in other skills such as digital literacy to emerge. Technologies may play a part in developing basics such as literacy, typing letters and accessing information, but the more fundamental layers – such as aspiration, self-reliance, and a sense of participation – can only be addressed through opportunities for social interaction.

Final Comments

The preceding study has highlighted that, to date, ICT practices are not pivotal to fostering social inclusivity. However, it is recognised that the role of ICT use in retaining and benefiting from 'membership' of society will increase and that widespread inclusion in uptake of these technologies is critical. In light of the Information Society Commission's recommendations that more qualitative research be undertaken in order to inform Government's ICT inclusion policies (ISC, 2000b), this study has substantial value; although its scope has been modest, it forms the only qualitative research currently available on residents' experiences of the EIAT project. Its findings suggest that many factors moderating ICT experiences need to be addressed.

Current ICT use is often experienced as isolating and frustrating, three key aspects raised by the respondents being bandwidth, the human-user interface and problematic information retrieval. The enduring convention of keyboard and

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[15] Ennis.ie has proved valuable as provider of information on local commercial and community-orientated services in education, health and employment. However, arguably, information provision is less helpful than development of web-enhanced services incorporating end-user input.

monitor use and its demands for literacy in users is exclusionary, but while it prevails, efforts need to be concentrated on humanising experiences of ICTs. Ultimately, this means placing them in social settings, in recognition of the enabling power of interaction. With regard to future ICT initiatives, then, a fundamental lesson from EIAT has been that widespread, meaningful uptake of technologies takes considerable time, but funds marked for provision of access to ICTs can be optimised by paying equal attention to human engagement with users.

These conclusions already form part of ICT-inclusion discourses, but this study provides further valid evidence for them. They are based on a concerted attempt to move beyond quantification of ICT consumption towards insight into lived experiences of those technologies. The subjects of the study represent vast sections of society who are at risk of being socially marginalised and who find these technologies to be at the margins of their comprehension. The challenge is set to find means of shaping experiences of ICTs in order to bring greater benefits to their lives.

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[16] Mary Downey, one of the key actors at Ennis West Partners (an EIAT-designated Community Network Centre), which targets long-term unemployed and similarly disadvantaged residents, believes the biggest barrier facing people from that deprived area is 'lack of life skills'.

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Appendices

Appendix i.

Timeline of EIAT history

1996

Oct   Telecom Eireann announce details of competition – a 'flagship project to accelerate Ireland towards the Information Age.'

Speech by Alfie Kane, chief executive of *Eircom*, at an IMI (Irish Management Institute) conference on the concept of an Information Age Town project, which was attended by representatives from Ennis Chamber of Commerce.

Editorials in the *Clare Champion* newspaper and an article written by Anna Nolan, technology journalist, on the benefits to Ennis in getting involved with the project

Ennis Urban District grants £15,000 (€19,000) to the project. Support and commitment from Clare County Council and Shannon Development. Consultants Farrell, Grant, Sparks were appointed to help prepare the submission.

1997

Mar   Launch of *Information Society Ireland: Strategy for Action* – a report from Information Society Steering Committee.

April   Information Age Town project formally launched by former Minister for Transport, Energy and Communications, Alan Dukes.

Taskforce formed of 11 men, 4 women, headed by T.J. Waters of Ennis District Council.

May   Information Society Commission established: six advisory groups including the Government Services and Social Inclusion Advisory Group.

Sept   Ennis presents submission to judging panel (broadcast on Clare FM and on Internet).

Ennis announced as winner with Kilkenny, Killarney and Castlebar as runners up.

Ennis infrastructure improves: digital broad band ring installed around town, carrying 24 fibre optic cables.

Nov   600 new telephone users created.

Dec   All home phones given voicemail facilities.

1998

Mar   Taoiseach Bertie Ahern launched Eircom's Information Age Schools national initiative in Holy Family School.

April Ten Community Training Centres given ICT infrastructure.

May   Michael Byrne appointed Chief Executive of EIAT Ltd; Chairman is Des McLoughlin.

Summer

Up to fifty Dell PCs installed daily in Ennis; all twelve schools equipped with PCs.

2200 residents take usage test; 2400 take familiarisation programme.

Sept   Advisory committees set up in health and social care; sports and social; commercial activity; public sector; education; new industry; information technology.

Two companies set up: Ennis Task force and Ennis Information Age Town. Nominating bodies were: Ennis UDC; Clare County Council; Shannon Development; Chamber of Commerce; Ennis Task Force.

Oct   Eight training agencies providing support for marginalised groups put forward proposal for IT integration in their centres.

Nov   Visa Cash trial commences

Dec   18,000 residents have access to 5000 PCs in schools and homes.

1999

Jan   Personal ATM units rolled out to 500 users in Ennis for topping up Visa Cash card.

May   Pupils from all four second-level schools produce their own electronic newspaper.

Installation of ADSL modems for 48 participants.

June   78 percent telephone users in Ennis use voicemail.

300 take self-paced training CDrom and European Computer Driving Licence exam.

Sports and social groups and health and social care programmes launched.

2000

April WAP technology trialled by 100 Bank of Ireland Visa Cash card holders.

2001

Sept Residents' Survey results published: Ennis Internet take up higher than average in US and Ireland.

Nov Michael Byrne, Chief Executive of EIAT project is appointed to the new Information Society Commission

2002

Feb EIAT press release: 100 homes on the Limerick road and Tulla road are to receive VDSL technology for 'always-on' Internet and faster transmissions.

Mar *New Connections: a strategy to realise the potential of the Information Society* Government Action Plan published.

Minister Mary O'Rourke announces phase 2 of CAIT (Community Applications of Technology). The funding totals €3 million – with a maximum of €127,000 per community project.

April Announcement on Ennis website that EIAT is forming new company, *Ennis Information Age Services*, to promote Ennis for 'the usability testing of websites and the test marketing of new technologies.'

The formation of *Ennis Information Age Services* ultimately marked the end of the EIAT project; the activities of this commercial organisation after April 2002 are beyond the concerns of this study. Of course many of the activities initiated by the project continue, such as the Ennis.ie website and the Community Network and Training centres.

Appendix ii.

Pilot questionnaire for Ennis residents

The questionnaires comprised five sections: personal details; PC ownership and access; PC use; perceptions; and the EIAT project. They were carried out as a vox-pop survey in the main shopping centre on O'Connell Street, Ennis at around 5pm. There was a large supermarket at the end of the shopping centre, and most informants were on their way to or returning from grocery shopping. There were more women than men in the centre and hardly any boys. A number of possible informants were non-Ennis residents so were not questioned.

The data is unsuitable for drawing general insights about the Ennis population: the sample was very small and, although at that time most people would be finished work or school, those who work long hours were absent (in general, this vox-pop style of questionnaire necessarily under-represents those who have busy working days). Nevertheless it gives an impression of some attitudes held by Ennis residents towards computers and EIAT, and it guided construction of the main questionnaire. At the time of conducting the pilot, the research was moving in a 'gendered' direction; hence, the findings were segregated into categories 'male' and 'female.' Although emphasis shifted later to socio-economic concerns the information remains useful; the gendered difference regarding attitudes to ICTs was evident. Considerably more women had access to computers, used them and took computer courses. It could be argued from this that a greater number of women hold an open attitude to learning new skills (particularly from their children) and are less fearful about adopting the status of 'beginner.'

Of course the nature of the sample should be borne in mind: arguably women of all socio-economic circumstances continue to hold most of the responsibility for family shopping, so females from all socio-economic groups would be represented outside a shopping centre. Males of more privileged status, who may make considerable use of ICTs, were less likely to be present; indeed, more men were entered in the low income category. Moreover, young women between 15 and 24 years old, many of whom were still in education, were highly represented in the sample.

Attitudes towards New Technologies

Conducted in Ennis, Thursday, 17th May 2001

Section 1: Personal Details

Q1.

Male	8
Female	12

Q2. What age category do you belong to?

	5-14	15-24	25-34	35-44	45-54	55-64	65+
Male		1	4		1	2	
Female	1	5	2		3	1	

Q3 What ethnic category do you belong to?

White Irish	White other	Black African	Black other	Asian	Chinese	Other
20						

Q4. Which job category do you fit into?

Accounting/ Banking 1	Admin/ Support services	Advertising/ Marketing/PR	Banking/ Financial service 1	Pharma- ceuticals/ Biotechnology	Computer hardware
Computer software	Consultancy	Education/ Training	Recruitment/ H. R.	Engineering	Healthcare/ Childcare
Tourism/ Hospitality	Internet/ E-commerce	Installation/ Repair 1	Insurance/leg al services	Law enforcement	Student 4
Manufactur- ing/ Production 2	Other: Gardening Musician Homemaker (2) Postwoman Unemployed	Retail/ Wholesale 1	Telecoms. 1	Trades/ Construction 3	Ware- housing/ Distribution

Adapted from NACE economic sectors, National Quarterly
Household Surveys, Central Statistics Office (Ireland).

Q5. What income category do you belong to?

	<£10,000	£10 – £20,000	£20 – £30,000	£30 – £50,000	> £50,000
Male	4	2	2		
Female	3	4	1		

The others were school age and had no income.

Section 2: PC Ownership /Access

Q5. Do you have a PC at home?

	Yes	No
Male	2	6
Female	9	3

Q6. Who does it belong to?

	Own	Mother	Father	Family owned	Brother	Sister	N.a.*
Male	1			1			6
Female	3			6			3

* These respondents did not have PCs at home.

Q7. How many people share it (including yourself)?

	2	3	4	5	5+	N.a.
Male	1		1			6
Female	2	1	2	2	2	3

Q8. Do you use a PC at work/school?

	Yes	No
Male	1	7
Female	6	6

Q9. Which of the following public areas in Ennis have you used PC facilities?

	Library	Community network centres	Youth club	Training centre	Other*	None
Male	3			2	2 (Web Café)	1
Female	2				2 (Web Café)	10

*Some respondents had accessed PCs in more than one public location: for example in both the library and web cafés.

Section 3: PC use/non-use

Q10. Do you use the home PC?

	Yes	No	N.a.*
Male	1	1	6
Female	9		3

* These respondents did not have a PC at home.

Q11. Who uses the home PC most?

	Self	Mother	Father	Equal	Brother	Sister	Other
Male					1		Son
Female	3		1	1	2		Children (1) Husband (1)

Q12. For which of the following activities do you use your PC?*

	Male	Female
Household accounts	2	1
Report writing for college/school	1	5
Admin. Work for community groups	1	0
Games	2	3
Emailing friends/relatives	3	7
Shopping: books	2	2
Shopping: travel	2	1
Shopping: food		
Shopping: other		CDs
Banking		1
Chatrooms	1	2
Downloading music	1	3
Recording life events		
Reading the news	1	
Other	1	Stock-market

*Respondents identified up to three of their most common activities on the PC.

Q13. Which of the following is the most likely reason for not using the PC/ not using it more?

	Male	Female
No computer		
Lack of interest	*1*	
Don't know how to use / do more	*3*	*1*
Too expensive	*1*	*2*
Fear of technology		
No modem		
Privacy concerns		
Concerns of appropriateness for children		
Computer not good enough		
Internet connection not fast enough	*1*	*1*
Enjoy getting things done in more traditional ways		*2*
Other	*No time (1)* *Age (1)*	*No time (5)* *Opposition from family(1)*

Section 4: Perceptions

Q14. On a scale of 1-6 how helpful have PCs been in your day-to-day activities?

1= a hindrance   6= revolutionary

	1	2	3	4	5	6	Don't Use
Male		*1*	*1*		*2*		*4*
Female		*2*		*4*	*3*	*1*	*2*

For questions 15 and 16, below, asking for issues to be rated 1 to 5, averages were calculated in order to aggregate the answers, although it is recognised that this is not ideal as the variation in responses is obscured.

Q15. How would you rate your proficiency on the PC in the following areas?

1= very poor 6= highly proficient

	Word process- ing	Internet	Emailing	CD roms	Spread- sheets	Games
Male (n=4)*	3.3	2.3	3.8	3.3	3	3.8
Female (n=10)*	3.8	3.1	3.6	2.4	2.6	2.6

* The other respondents did not use PCs.

Q16. How would you order (1-5) the following technologies in terms of importance to your social life?

1= least importance to social life 5 = most importance to social life

	Male (n=4)	Female (n=10)
TV	3.3	2.1
Land-line	2.3	4.1
Mobile Phone	4.3	4.8
PC	3.7	3
Internet only	2	1.9

In Q16 mobile and land line phones are rated very highly in terms of importance to social life, especially amongst women, whereas the Internet ranks very low, with many giving '1' as their rating, suggesting that Internet communication does not impact significantly on social networks.

Section 5: The EIAT project

Q17. How familiar are you with the activities of the Ennis Information Age Town Project?

1= not familiar at all   6= very familiar

	1	2	3	4	5	6
Male	6	1	1			
Female	4	2	3	2		1*

*School projects on EIAT carried out at Holy Family School and Rice College

Q18. Did you buy your PC in conjunction with the Eircom Information Age Town deal?

	Yes	No	N.a.*
Male	1	1	6
Female	7	2	3

* No PC at home in these cases.

Q19. Have you taken any training for IT/ Internet skills?

	Yes	No
Male	2	6
Female	10	2

Q20. If yes, where did you receive training?

	School/ College	Work place	EIAT	Clare County Council	Clare Education Centre	Other*
Male		2				1
Female	6	1				3

* Other locations included the Congress Information and Opportunities Centre and the FAS centre in Ennis.

Q21. To what extent do you agree or disagree with the following statement?

'The Information Age Town project has significantly changed the way the people of Ennis go about their lives.'

1 = Strongly disagree   6 = Strongly agree

	1	2	3	4	5	6	No opinion
Male			2	1		2	3
Female	1	1	1	5	1	1	2

Appendix iii.

Interview questions: acceptance, use and meanings of ICTs

Patterns of use

1. When does TV watching take place for you?

2. Has your level of TV watching changed since you got your PC/mobile?

3. Has use of the mobile phone affected level of contact with friends and family? How?

4. Has your level of use of the landline phone changed since you got your PC/mobile?

5. How long do you generally go online for at a time? Would you like to go on for longer? Why? What prevents you from going online for longer?

6. Do you ask other family members for help with the PC/Internet? Do you help them?

7. Do you think level of contact with friends/family has gone down or up since you started using the PC? Or is there no change?

Meanings (attitudes, values, etiquette)

8. Would you say TV watching is a social activity in your house?

9. Can you think of the last time that you felt glad you had a mobile phone? What were your circumstances?

10. Do mobile phones help your social life? Please can you explain?

11. Do you consider using the PC a hobby or as a way of getting something done? Is it a social activity?

12. Are you concerned that phones, TVs and computers/Internet are invading your privacy?

13. Are there any rules in your household about using the mobile or the landline phones?

14. Do you feel comfortable with using the PC? What frustrates you/frightens you about using it?

15. Are you interested to learn more about using computers? What for/Why not?

16. Does the PC belong to a particular person in the house? Does this mean there is conflict when others try to use it?

17. Are there any rules in your household for use of the PC?

18. Are you happy with your Internet set up? What happens when someone calls you when you're online?

19. Where do you prefer to use the PC: at home or at the education centre or somewhere else? Why is that?

20. Can you think of any ways in which using the PC has helped with the running of the household? e.g. shopping online? Or ways in which it has caused problems?

Changes in attitudes and meanings

21. Think of the last two technologies you bought. What are they? What made you want to buy them?

22. Think back to how you felt about the PC when you first bought it. How do you feel about it now? How has your attitude towards it changed?

23. Do you use the PC more or less than you used to? Why?

24. Can you think of a time in your life when you'll find the PC more useful? Or a time when you won't want to use it?

Physical place in the household

25. Can you describe where your technologies are in the house? Why are they located where they are? Are you happy with their location? Do you think, for example, you'd use the PC more or differently if it was put somewhere else in the house?

26. Do you prefer using the computer at home or the ones at the Education Centre, or somewhere else? Why is that?

Empowerment

27. What changes would you like to see in your every day living?

28. Do you see the VTOS course as a way of bringing about these changes?

29. Do you see new technologies as a way of bringing about these changes? Is technology a way of making life easier in you opinion? Or does it make things more complicated?

30. Which technological 'thing' or service would make the most positive difference to your life? (Give examples: Car/ dish-washer/ voice-activated computer/ communication device in clothing)

31. Do you intend to look for work when you finish your course?

32. Do you think that your knowledge of computers will help you in looking for and finding work? Please explain.

33. Is there anything that you'd like to do on the Internet that you don't do at the moment?

Reflections on the Information Age Project

34. Do you think Ennis being an 'Information Age Town' has affected your attitude towards computers and technologies in general?

35. The project was mostly about getting computers and the Internet into people's homes and to encourage use of them. Do you think they were successful in encouraging Ennis people to use computers and the Internet?

36. What is your experience of the EIAT team? Have you had any direct help from them?

37. Do you feel you had any input into the project? Have you ever been asked by the EIAT how you have got on with your computer?

Appendix iv.

Sample transcript of interview with VTOS student

Interview with Marie, Room 9, Ennis Adult Education Centre, Clonroad Business Park, Ennis, Thursday, 20th June 2002. Tape no.13

Marie had a soft American accent, and was generally mild-mannered. The interview room is adjoining other rooms that are in use. The sound of doors being closed is quite loud at times. Used a Sony Micro-cassette recorder M – 540V about 3 feet away.

Marie says 'you know' and 'so' a lot and many of these interjections have been eliminated.

This interview follows the joint completion of a questionnaire.

AG: It's Thursday 20th June and I'm talking to – Marie? Marie. Right, okay, if we just – look back – emm – when you first got your computer from the Information Age Town, can you think back to how you felt about it when it came into your house and how you feel now about it, and how things have changed –?

M: Yeah, well, when it first came in I was in awe of it because, you know, I didn't really have much computer experience; and the man, he came in and set it up and everything, but he was talking technical terms and I hadn't a clue what he was saying. In turn then he said Information Age Town was offering an introduction to computers so I followed up and I got in on one of their classes, yeah.

AG: And how do you feel about it now?

M: Well, I feel I've got a good comprehension of it and I'm able to get around the computer fairly good, having taking the classes here at the VTOS, so I feel very comfortable with the computer – I'm not afraid of it any more.

AG: When you bought it, you say you bought it mainly because of the cheapness of it, but did you have anything in mind for what you'd be using it for, or was it just a buy it and see what happens?

M: Kind of a bit of both. But I new I wanted to learn, say, the word-processing – and to be able to find out how I could actually use it in the house, let's say, typing up stuff and then putting it on a floppy and then bringing it to school to print. So, that was my main reason; and also to – my son and daughter, Emily and Connor, they're seven and nine now – I want them to be able to use the computer, because in their school, at the Gaelscoil, they have computers and they're getting used to it. So from time to time they'd say can I get on, and I'd let them either play games or – I got the typing tutor, so they're learning to use the typing tutor.

AG: Okay, and is this your feeling that computer skills will just be generally useful, or – ?

M: Oh, definitely, I feel that, like, everyone will be using computers from here on out; all the schools have them available to the children and that's just the way that technology is going; everyone is going to be computer literate, I feel.

AG: Yeah, okay. And for yourself, when you leave here, do you have plans? And do computers enter into your plans?

M: Well, when I leave here I hope to go on to Limerick Senior College and then the Limerick – LIT. So I know that I'll be using the computer at home for writing up reports and that kind of work. So it will be continually used, the computer; and then I have a brother-in-law who I do some book-keeping for him on the computer as well, so I use that for that purpose as well, yeah.

AG: Are you ever concerned – you did have the Internet – can you explain a bit about why you don't have it any more and –

M: Well, because, well I found the computer good because I have a few friends in America and I was emailing them and got great use of that. But then I would go on for the evening time only for the Internet, and I'd be sitting there – I'm into quilting and stuff – and I'd be reading and stuff, and you'd sit there for a few

hours and wouldn't realise it. And then when the phone bill came in it got quite high, so that's why I just cut it out. And also the fact too that I knew that I could come into school and use it free; so that was the other reason why I stopped it as well. So –

AG: You mentioned quilting, how does that relate – ?

M: Well, on the Internet you can find – there's all these quilting magazines, and all kinds of information about quilting and embroidery and stuff. And so that's why I'd spend hours looking at it and reading about it and finding – because in America they're very advanced and they have all kinds of ideas, and even in England – whereas you couldn't get that out of book and magazines here in Ireland, yeah.

AG: So it was working out quite well then?

M: Yeah, I was learning a lot but it was getting a bit costly, yeah.

AG: And how do you find the Internet for trying to navigate it and get to what you want?

M: Well, I find it good in the sense – in the beginning I wasn't quite sure about it, but I had actually taken – there's called e-learning – and it was kind of a pilot project here, so I did a bit of it. One of them was on the computer about how to navigate around the computer and about the different headings that you can use to find things quicker. So in doing that I had printed it out, so now if I'm looking for something in particular, I kind of look at that first and see which – what's it called? The, you know, like Alta Vista, and –

AG: Search engines?

M: Yeah, search engines – which ones to go to to get my information quickest, so I won't spend so long on the computer.

AG; And was that the Information Age Town that did this pilot project, or was it something else?

M: Well it was the lady who was sitting here at your desk [*laughs*].

AG: *Ann Knox, okay [laughs]*

M: She presented it to some people and said would you be interested. So I had done a few of them and one of them was about e-learning and the Internet. So that's how I learned my information, whereas I wouldn't have gotten that here in the school teaching because they just teach general email under the ECDL, and that is general whereas this was more detailed: about where to look quickest for certain information.

AG: *And do you get an impression that that's a problem for people around you, that they don't know how to –*

M: Exactly because I'd be sitting there and I'd hear someone saying, gosh I can't find something and I'd turn and say, well, why don't you look under this, you might get quicker. Or I use Dogpile [*search engine*] a lot, I find that very good, or Goggle, or Google – however you want to say it, different ones because it's quicker. So, I have helped a few people, saying why don't you try this and that, and since then they've said yes, I use that all the time now –

AG: *Right*

M: – you know, to find things quicker, rather than just putting in a word, having a billion things put up in front of you.

AG: *So would you say that it's important to have face-to-face contact [door opens and closes elsewhere in building] to learn about computers? Do you think you'd be able to sit at home and learn as much by yourself?*

M: Well, the two experiences I had with the Information Age Town, like I was saying, I was one of the first two hundred people to be the pilot project for the ECDL. And we had done it over at St Flannans' college, you know, just over. So that learning was with the CD Rom and a book, and what they did, they gave you an introduction and then they sent us a way and then at home you would work through it. So that was a new experience for me, working through that. What we

did, we would work through so many of them and we would go back again to the college there, and if we had any questions before we took the test about the certain –the several modules, they would clarify it for us. Versus coming in and I did desk-top publishing in class, and I learned so much more because it's one-on-one with the teacher and you'd work out your problems quicker. Then, in turn, the e-learning that she [Ann Knox] had done, it was similar to the CD Rom because you'd go through a question and pick an answer or whatever.

The person contact is always better, but I mean I felt – I passed my ECDL no problem, and I hadn't really done much before that, just really only typing, kind of. So I feel the ECDL was a great benefit, because it gave me the different several modules; then in turn I was able to come here and pick certain ones like the desktop publishing and go much further with it. So I did feel that it was a good start for anyone who gets a computer – do the ECDL, because it gives you a taste of everything, and you can go on further if you like – one thing or another.

AG: Okay. Was that a crash course in ECDL? Were there different paces at which you can take it or?

M: Well, the course was given over six months. And I felt actually it was quite long: I'd like to have gotten on quicker with it. But other people, it was good for them because they had only just learned to turn on the computer, whereas I had a little bit of experience with it. So in saying that, I'd like to have done it quicker, but I got through and I passed it all with a good grade. So I understand now that they have the ECDL Two – more advanced. So I haven't got the opportunity to get that but I'm hoping maybe when I go to Limerick I might get a chance to do that down there, then.

AG: So this is your final year.
M: This is my final year, yeah.

AG: So you've talked about the Internet being a good place to find information. What about communicating and broadening your social circle? Do you think it works that way?

M: Well, when I did have the Internet at home I did have the email and I kept in touch with my friends who lived in America, and I found that very good, because it was instant, you know. They replied to me the next day – kind of the time difference and stuff. But, I'd like to get back to that again.

AG: *Do you think there was more communication than there would have been?*

M: Yeah, because phone calls – like, I wouldn't phone America because it's expensive.

AG: *Yeah.*

M: – Whereas the email, I can type away and do whatever and it was cheaper. So for that I would get it back to use that again, because I do miss not being in touch with them; I write them and they're not great to write back. They all have computers in their homes and offices so it's more instant and accessible.

AG: *What about the idea of meeting people online?*
M: I've never tried chat rooms or anything like that. It just doesn't appeal to me. I have my friends here and, I dunno, I wouldn't do that. I just wouldn't feel comfortable with that.

AG: *You know, some people say it's great for – people can open up more online, they can be more open than in person, in face-to-face.*

M: Well, I just wouldn't use it; I wouldn't be interested in that. I mean with the exception that, say, like, in the quilting, when I would go into the different sites and things. And if there was a problem you have with quilting, like I wanted to know on my sewing machine what foot I might need, you can actually type in something and people will reply to it. But it's anonymous, in the sense that they would just reply and say, re: help on [...], then they'd give you a suggestion or an answer. But it's only – that way I would use it, if I was looking for help.

AG: *And can you think of a way that you'd like – or changes that you'd like to see in the Internet, to make it easier. Have you ever thought, hmm, if only it was like this way, it would be so much easier, or have you – ?*

M: Umm, yeah, well sometimes when you're looking on a site and it's information you're interested in, and then you go and move. Sometimes I find when I have to go back to something and I forgot what it is, I press the back button and it only goes back so many, and it may not be within that. Oh, I want to see that again or what did that say; if there was some way of getting back to that a bit quicker, rather than having to go back all the way through to the beginning, let's say, of the site – if you can't remember the site. It's just to get back to information: I find that trying at times – I just give up [*laughs*].

AG: Are you ever concerned about privacy being impinged, infringed or whatever?

M: Well I heard on the radio, on Pat Kenny talking – like, my daughter, she likes Britney Spears, and I have found out since that if you go onto a Britney Spears site, it could be pornography. So I would be a bit afraid of – my daughter being innocent, if she said to me, if we were sitting there and went onto the site, I would be shocked and – she'd be sitting there with me, kind of. She doesn't understand how to use the Internet that well but from time to time I'd do something with her. That is what frightens me, is that it's a common name – she's a singer and – that's the bad side of the Internet I feel: the people out there who would use that, with it being an honest site, but in reality, when you went into it, it wasn't.

AG: And have you had any experiences yourself of that?

M: Yes, one that in here in the computer room, somebody had – I don't know what they did – but we just went on and it was there in our face. We had to tell Eileen so she had to get us out, like. That's the only experience I had of it: we just went on and it was there.

AG: Relating to that, do you have any rules about using the Internet when it comes to your children?

M: Well they don't use it; if they want to look up something they'd come to me and say – you know, like the Crayola site, that's a good one they have lots of things, so – just little thing like that. Or my son was interested in Pokemon, like that, or else Lego – those sites. They'd say, 'mommy would you bring that up for me now?' And I would, so they could sit and look at one or two things. At school they don't really

use the Internet except for emailing. They're at a young age that I'm not concerned about it, but if they were teenagers or something, that would bother me. I understand that they have, kind of, those Net Nannies, things like that. I don't know that my children would be looking at pornographic sites – you never know – but maybe I'd be interested in something like that if I had the Internet and they were older. It's just that teenagers are so knacky with the computers and everything that they would be ahead of me, kind of. That would be my only worry.

AG: If we talk about television a bit; you don't watch a huge amount –

M: No.

AG: What kind of function does TV watching have for you?

M: Well, with the World Cup kind of matches – but we tend to watch – let's say, National Geographics or Irish-made productions: let's say we do watch Fair City and – [*Knock at the door, another student enters. Tape is switched off for a minute.*] So really it's just Irish home-grown shows and news shows, let's say. My children do watch a bit of – Sunday and Saturday mornings they watch television: the cartoons, but that's it. They don't really watch much TV.

AG: So, for pure relaxation you wouldn't turn to the TV, as such? It would be more education for you?

M: Yeah, I mean, the odd time when there's a good movie or something on I would watch that.

AG: Okay. You have your computer in the landing; and are you happy with where it is at the moment? Is that a good spot for you?

M: Yeah, it is because it's out of the way.

AG: It doesn't interfere with the living room

M: No, no

AG: You wouldn't want to bring it in to that living space?

M: No, no, I wouldn't, because I just feel that it's up there and it's quiet and I have a good light on it and it's out of every one's way.

AG: Okay so you were saying you were spending a lot of money on the Internet. Do you hope to go back; what kind of, emm, package are you hoping to get?

M: Well, no, I only just want to get hooked up to the Internet again really to only use it for email, because, like I said, I was using it here and when I go to school next year, please God, I'll use it there. So it's not costing me anything; and then, just the emailing is very cheap.

AG: Okay, if we talk about the Information Age Town: you say you've already had a fair bit of contact and they've bought the computer into your house, and you went on the ECDL pilot project.

M: That's right.

AG: So what are your own impressions of how the project's gone? How successful or unsuccessful has it been in your eyes?

M: Well, I mean in my own house I feel it was very successful, like, in the sense that I wouldn't be able to sit here and talk to you otherwise, plain and simple, and that –

AG: Do you think you came here because of the computer? Was it that was round? You know, it drove you on to coming to VTOS?

M: Well, no not really; I found out about the VTOS through – I went to a family – teaching how your children reading and writing and stuff when they were younger, and then I had found out that this VTOS was here, and I looked further into it. So I was able to come out and do the two year course and within that, the use of the computer and what I could learn more with the computer. Like, I did the book-keeping as well here, which I did on the computer and manually, and I wouldn't have done that before, so I have learned a lot with it. You know the fact

too, with the Information Age Town, my children, like I said, go to the Gaelscoil, and they have a computer room and, I don't know how many computers they have, but they have plenty. The children have access to it all the time, whereas before that they only had two computers in the school – before the Information Age Town came. So that has made a difference to my children's life in the school, versus before they wouldn't have gotten near the computer. I think it was only fifth and sixth class who got to use the computers – and that was only two. So for my children they're going to be computer literate as well, and it won't be because I'm going to be teaching them, it'll be through the school: they have the opportunity there.

AG: Without trying to lead you anywhere, do you think, umm, the project could have done more to level inequalities within Ennis? You know, do you think they could have perhaps focused more on people who were less well off instead of making it a blanket – ?

M: That would have been good, alright. I mean, I understand they couldn't give computers away free, that's obvious, but I know a few elderly people actually got them to be able to learn how to do email to their children around the world. Umm, they were running classes for elderly people to learn how to use the computer because they got it installed, excuse me. So that was good – I know a few people who are in touch with their sons and daughters all of the time – but that's all they know how to do. They don't know what the Internet is about or anything; they just know how to do the email strictly. Maybe for them if they know more that would be helpful, but they just gave them the basic training of email, maybe how to type up a letter or something like that, but – I think it was a great opportunity that we were lucky in Ennis and got it. So I feel I made use of it, definitely; I've definitely made use of it. I understand that it's winding down, but that they're still – if you want to upgrade your computer and stuff like that you can still do that, and a few bits and pieces. But it was a great opportunity. I feel very lucky to be able to make such good use of it – I feel I made good use of it.

AG: Okay, that's great. Thanks very much.

M: Alright.

Appendix v.

Benefits from ICTs: a respondent's account[18]

How computers have changed my life: By Anthony Woods

Just two years ago I was an technological illiterate I was wondering what al the fuss was about over e - mail and internet, so I wandered into the library and I observed the hive of activity that surrounded the computers as the public made appointments to operate them. At this stage I had no idea how to even turn the machine on, so I booked one to use and began to play with it, after the first hour I had mastered the art of turning the machine on and off and felt pleased with myself.

I then proceeded to take on loan a few books on basic computer learning and spent the next few weeks studying them and practicing on the library computers. I was starting to make some headway but realized I needed some formal training to really understand what this new technology was all about. So I enrolled in a basic computer class and completed a twelve-week course.

At this stage I was hooked and wanted to learn more so I went straight into an intermediary course and began another twelve-week course, which I successfully completed. At this stage I was flying it and went on to pass my E.C.D.L. I had really caught the education bug and decided I wanted to go even further to third level if possible, so I threw caution to the wind and gave up my secure job and applied to The Adult Education Center and was delighted to be accepted on a two year course in sociology, the journey had began.

So there I was a mature student, now I had to decide what direction my life was going to pursue, as I experimented more and more with the computer I discovered the wonderful world of e – mail and the potential power it had to propel me into the limelight. I began to write to the papers about social issues I felt were not getting their due attention, and by using this marvelous technology I was able to compose and formulate text to a standard that won me awards for my writing, all made possible by using the spell check in the tools menu from the computer.

In conclusion and my answer to (how computers have changed my life?) I would have to reply a whole new world has opened up before me. I look forward to the future confident in the knowledge that I now have the tools to ensure a bright future lies in front of me.

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[18] Received 19th June 2002.

Appendix vi.

Transcript of interview with Ann Knox

Head of Open e-Learning Centre, Ennis

Interview with Ann Knox, Room 9, Ennis Adult Education Centre, Clonroad Business Park, Ennis, Thursday, 17th October 2002. Tape no.17

The interview room is adjoining other rooms that are in use. The sound of doors being closed is quite loud at times. Used a Sony Micro-cassette recorder M – 540V about 3 feet away.

AG: Thursday, seventeenth of October, two thousand and two. You, kind of, told me a bit when I met you in the open-learning – I mean, the life-long learning exhibition; but if you could just briefly go over the reasoning behind setting up the centre and the purpose of it –

AK: This centre is set up with an aim to promote life-long learning, and the adult education centre caters especially for disadvantaged learners, so this comes within the EU's remit of having an inclusive Information Society. So my real brief is to target disadvantaged learners, and expose them to e-learning in a positive way, and hope that they might be able to use the e-learning as a way of promoting life-long learning.

AG: Okay; and are these all people that are doing courses in the centre anyway – like VTOS?

AK: No, today there were – was it eight?

AG: I think it was ten altogether.

AK: – Ten or something, yeah. I think about four of them were VTOS, and this is the biggest group that comes. Two of them belong to Clare Reading and Writing Scheme, and they attend literacy course; and the literacy tutor advised them to

try our centre; and the others are outsiders. At the moment I have – I advertised this in the middle of September; I just put one ad in the paper, and I have sixty learners registered.

AG: Wow. Is that more than you expected?

AK: Way more. I have quite a big marketing budget, and I'm going to not spend it [*laughs*] obviously, because I have no problem finding learners. The oldest learner is eighty-one, and the youngest is nineteen. This is confined to over-eighteens. A number of them have no qualification at all; they don't even have a primary cert. But they would be very capable and able people.

AG: Mmm, and so they're going – they're targeting computers rather than picking up a VTOS course?

AK: You see people are not entitled to avail of the services of VTOS unless they are unemployed. So some of these people would be part-time employed, or they would be housewives, or their husbands were employed, and they badly want to get back into the work force, and they badly need computer skills. The second thing is that they are absolutely delighted that they can work at their own level because an awful lot of them say to me: 'I'm right stupid; I'd hate anyone to know how stupid I was.' I would have known a number of them, because I taught in a school in a very disadvantaged area as a primary teacher. When they saw it was I who was doing it, because their kids had fared reasonably well with me, they felt: 'oh, maybe I could learn from her.'

AG: Right.

AK: And they are delighted on the basis that no one else is learning what they're learning.

AG: So what do you think makes them feel that they are stupid, or whatever? Did they have bad experiences when they were younger?

AK: Not necessarily, but they have no schooling and they have no qualifications; if they go for a job, they have no qualification, so they're stupid.

AG: Can you give me an example of how it's come about that they've come to that age and they haven't had formal education?

AK: Well, a number would be my own age: would be in their fifties; for instance one woman, whom I dealt with as a parent when I was in primary school, I was astounded when she told me: 'I've not even my primary cert.' She was the oldest of a large family and her mother was ill. She left school at first year. Now she's doing the books of her husband's business; his business is doing very well. She has pushed her children, so they are performing really well at school. And here she is, and outside of her husband's business, she's not employable. So when I wanted her to state her learning goals, she wanted to have a recognisable qualification, so someone other than her husband would employ here. But she's an awfully capable woman; I'd be delighted to employ her myself.

AG: [Laughs] Your role is to facilitate what they're already doing themselves –

AK: Yes. Our role is – I explain to people when they come that we are not teachers – that if they don't want help, we are unemployed, so that our business is to give the help they need, and we don't know what help to give, so that they must decide what help they need. So in other words, I'm saying 'we're here as a resource to you, and whatever help you need, if we can't give it, we find somebody who can'.

AG: Right, okay. And you got the software from Learn Direct; is that right?

AK: I have software from ECDL as well, and then I have Equal skills, but the Learn Direct is based – it's somewhat like Equal skills, but the Learn Direct one would be more comprehensive as a beginners' introduction to computers. Now I also have literacy and numeracy software, which I got a fortnight ago, but I have access only to the room when I'm using it as an e-learning centre, because all other times, it is used, unless I'm talking about working at ten o clock at night. So I actually I used the literacy and numeracy software myself on my own laptop here. But for a bit of a break, I'm actually going to shut the centre, which I didn't intend to originally, although the other programmes have closed, until I and the other two facilitators sit down and get a handle on what this software actually does, and how we'd work it, and how we'd build it in.

AG: There's already numeracy and literacy classes going on in the centre –

AK: There are but this'll be supported, or this would, em – I mean, there's loads of computer classes in the centre, there's night classes and day classes in computers in the centre and yet all these people are choosing to learn this way. And one of the things are a lot of the people who are coming work part-time in unskilled jobs; they are attendants in hospital; they man the checkout in Dunnes; and they have to work shifts – they've no choice. Here they can come; or their children are off school at quarter to three, and they come one to two, and they can get out of here at their leisure and be at school to pick up their kids at quarter to three. Or I have about five women coming from [*inaudible*] which is twenty miles west of here, and one of them has a child who is playing very good music and she's in the music school here. So her mother now, two aunts, and a neighbour are coming while her music class is on, because they've got to go in twenty miles to Ennis anyway for that.

AG: Right, okay.

AK: So the real bonus of it is the flexibility: you can go as quickly or as slowly as you like. And, umm, the business of if you miss a week, if something happens at home, it doesn't matter.

AG: And people come in weekly – that's the general rule: they have a slot?

AK: No, they don't keep a slot. They do not keep a slot [*says with emphasis*].

AG: Ohh, okay.

AK: They book when they're here: when they're here they say when is the next suitable time to come, so it is not a weekly slot.

AG: I heard you say at the beginning that – you kind of assigned them seats –

AK: I have to assign a seat for someone who's following a particular programme, where a record of the programme is kept on that machine; it's not the programme. Some programmes keep records on the machine. Now I could choose to have them

keep a record on the floppy, but I'm afraid of people bringing in a floppy, and you've to scan them every time when they came –

AG: For viruses –

AK: – So it easier at the moment, but all this – I mean, I am up and running three weeks. We're going to have a staff meeting next week until we look at how we've got on for these four weeks, and maybe change our procedures. We've covered as many bases as we could, and left a lot uncovered, and we're a bit chaotic.

AG: Right, okay, and – so how do you feel about being based in the education centre? I mean, what are the benefits of being here do you think?

AK: Umm the benefits of being here are: there's a really good handle on adult learners and on disadvantaged adult learners. That has been a huge learning experience for myself. I would have told you I had a fair handle on disadvantage and education, but his has been an eye-opener to me to work here. So that has been a real bonus, and were I to move out of it now, I would have learned a lot of lessons. But I would feel if we are going to hope to attract disadvantaged learners into e-learning, I don't think a classy building in the middle of the town, where people who appear trendy are going isn't going to attract my main target –

AG: –clientele

AK: – Exactly. They're happy, they're comfortable here; they're in and out of here. And they know the system and they feel that this is a good place to be, and there's no pressure, so they're coming with a good attitude.
AG; Yeah, it's kind of an established place.

AK: It's an established place where it's safe to learn. So that – if I'm targeting disadvantaged people – is a real bonus.

AG: Can I ask what kind of thing were you referring to – you said it was a real eye opener coming here –?

AK: For example, a woman was in the kitchen one day whom I recognised; I had taught her four daughters. They would have had severe learning difficulties and severe social difficulties. And she had a letter that the youngest had brought home from school, which I immediately recognised. It was the standard letter about nits. Now, out of consideration for children's feelings in school, we would not talk to them about nits, except in a general way. But when a parent came up to us and said they had nits, we'd give out a health board letter, photo copied. The health board letter is typed in size ten print, single spacing, and that woman hadn't one hope of reading that. She would have been – when I had her child in my class, would have been the main ones I was targeting. I was aware that people had reading difficulties, but it never occurred to me that she actually couldn't read the letter that I was sending home – more to her, maybe, than to anybody else. So this sort of thing happens all the time. So maybe a note in the homework notebook when you were irate [*laughs*] isn't such a good idea, especially if the writing's a bit scribbled, as the parents are going to be able to read it. So what's the point in me going [...] say didn't take any action on it?

AG: You think you're reaching them and you're not.

AK: Yes, and we would have done this with the best intention in the world – that we didn't want to embarrass anybody or –

AG: Okay. You know, I'm trying to tie my thing into the Information Age project. Can you just recap on what your experience of that project is. Like, I know you did – you were involved with them at one stage –

AK: I was, but when the Information Age came to the town, I couldn't turn on a computer. My husband – there was a computer in our house for maybe ten years at that point – a big old awkward computer ten years previous to that – and my husband who once had been in education [*sound of door opening and closing elsewhere obscures sound*] was forever at me that it was a marvellous tool, and I ought to get the hang of it. And I made some efforts; and Information Age Town forced me to really look at it, because I was the Fall Guy in the school – to learn where there was nineteen staff in the school, and nobody could turn on the computer. I think the water shed for me was when I saw how kids could cope with the computer – how they could present their work. I was teaching thirteen year

olds at the time. And it made me think – there's nothing magical about it – but to me, there will be a stigma in not being able to read; well I think there is going to be as big a stigma in not being able to use computers, because you will be cutting off access to such a pool of information, such a tool of communication. So I do think our adult education programmes should absolutely be counting – when they say literacy, they should mean digital literacy as well. Now they're a little while off that yet. I don't mean County Clare, I mean country-wide.

AG: Okay. Do you think sometimes, though – there' s been some complaints that the digital age is sort of over clouding – over-crowding – the problem of literacy? You know, people are more concerned these days about computer literacy than plain old literacy; that's getting –

AK: But you need ordinary literacy to deal with the computer, really, don't you? When all is said and done, if you're not literate – And in actual fact I would see the whole business of computers is requiring a higher level of literacy. Because what good is the Internet to you if you cannot search and source the information you need? If you can't read a book it's no good to you; if you can't read a screen it's no good to you. You've to be able to identify what is useful to you, and jiggle it back into a format that is useful to you, which you could escape if you hadn't that skill; that's a higher level skill than reading and comprehending: that's another step up the ladder. So it's actually – there's going to be even greater emphasis on literacy; I mean even people who consider themselves literate now, even with computer skills, won't necessarily be literate, if you know what I'm saying; they won't be able to use –
AG: Right, so there's an extra level –

AK: So there's an extra level required, so people who might be employed and have a basic level literacy – is that actually enough? It isn't: they'd want to be topping up their literacy skills.

AG: Do you think that even people that are seen as successful and educated and wealthy – even those more advantaged people – do you think even they don't have that extra level that we're talking about?

AK: A lot of them don't. And I think at a level that the e-learning centre – umm [long pause] I may be wrong on this; I think that from what I've seen so far, there are a whole body, I suppose particularly women, – I'm a bit of a feminist [laughs] so perhaps it's men as well – but there's a good lot of women out there, say forty five to sixty five, who did a junior cert, who maybe did a leaving cert, who were once well educated, but they haven't used those skills; they've worked in the home; they've fallen back relative to others in society, and they're terribly hesitant about saying that they have, because they don't want to lose what is considered their status. They would be looked at from the outside as having very good status. And I feel there's a whole body that would do with improved literacy, and if that built in with digital literacy, that it could be upped.

AG: Do you mean they could complement each other?

AK: I do. I mean that as they acquire their computer skills they might improve their literacy skills as well – that both might go hand in hand, if the way the computer skills are presented to them was, you know, – if there was a bit of thought gone into that.

AG: Right. I see there's a real disparity between the number of men and the number of women in the centre; and some people have put that down to men are more embarrassed than women to come forward and say: 'look, I've got problems.'

AK: And also, perhaps, a lot of the women falling into that category would not actually have work, or they'd have part time low paid work, so they would be more willing to come forward. And if you had a man and a woman with equal poor level of skills the man was going to get a job, but the woman less likely, I would have thought. Now I could be wrong. I have a very small number of men signed up for this.

AG: So the Information Age Town – back to that: we diverted there – does that have any involvement with what you're doing?
AK: Not now. The Information Age Town now is a commercial enterprise; it's three year, four year period is finished; it's wound up. They have set up – a number of people who were employed have set up, and are now running, information services commercially. So the business of where they supported – I mean, some of

the services are supporting people, but you're paying for them. So, at a level, they've moved off from where they were a huge resource for the community. They are still a resource for the community, but you are going to have to pay to use that resource now.

AG: And are you in direct competition with them? Have they got a set up – ?

AK: No, they are selling e-learning as a totally commercial – but my constituents weren't going to buy e-learning from them anyway, really, when all is said and done.

AG: For financial reasons or –?

AK: For financial reasons, mainly; and it wouldn't even occur to them, I think. The key thing, I think, in this is the one to one support: that it is going to be made [*emphasis*] possible – that you're not just going to come to a hurdle and have to give up.

AG: So the Information Age Team aren't promising or thinking of doing something like your – ?

AK: Well unless they did it as a commercial – and targeted business end of the market or that sort of thing. But then, if you're targeting the business end of the market a company will have a training manager who will be putting this sort of support in place. So the Information Age Town will simply send e-learning objects to the company. But they're not providing personnel to support the learner – which is what my key thing is. I am in contact with them; I mean, unofficially, they are providing back-up. Helen McQuillan, who's their researcher – I am in contact with her, and she will make me aware of a programme that might provide funding down the road for me, or a project I might like to join, you know. But these are not formal links between adult education and the Information Age Town: these are personal links, you know.

AG: Is that regrettable in your eyes, that the Information Age Town have become what they are, or is that just to be expected?

AK: Well it's to be expected, and I think at a level, that there's enough skill in the community to pick up on and use – and there's been a level of awareness, which would have taken a very long time to come to, but for the project. So certain people would say there's not an awful lot of visible spin-off, but I would feel there's a huge awareness – that we're not even aware of how aware we are.

AG: *Yeah, yeah.*

AK: – relative to other groups around the country.

AG: *Okay. So going back to your own – you've only been at it four weeks –*

AK: I've been open four weeks – three I've been open to the public.

AG: *So what's your impression of how it's going now, compared to how you expected?*

AK: Well, I read that in business where you had people with third level qualifications taking e-learning, which is necessary for their jobs: for instance, Consultants in Andersons – IT consultancies; they're away from [...] they're training by e-learning. You know, it is people with at least second level education who are doing e-learning; the drop out rate is phenomenal: it is sixty three percent I think – worldwide dropout rate. So my target rate was, when I started I was setting my targets low: I said if I get ten people to follow a course to its conclusion in the year, I've done right well. So I was quite prepared for at least a sixty percent dropout. And sixty people have registered – I started registering in the middle of September – sixty people have registered; fifty have begun learning. You register, and you say you come back in and say I'm ready to start learning; you talk to me about what your learning goal is and you come back and say: 'I'm ready now to start', and tell me a time you'll come. Fifty have done that. Only one of those has not returned. So I am absolutely charmed and delighted.

AG: *That's great.*

AK: Now, we have a very high – I don't know if the department is going to continue funding. At night, say on Tuesday night, we have twelve people; there are three of us in the room. So we've a very high level of support. Now I agree, you'd have seen

today there was two or three working quite independently. They would have had computer skill coming in. And I reckon the support level ratio – you know, facilitator to learner – will lower as people get more confident in using it. But I still think you're talking double the normal class-tutor ratio.

AG: Right, just the nature of what you're trying to do –

AK: And the nature of all the different tasks. So I'm aware it is asking a lot; you know, you're talking serious funding.

AG: Can I ask how much – how far in the future are you funded to run this?

AK: I'm funded for one year, and I'm to report back. I'm doing September to September.

AG: Right, and that's the department of –

AK: – Education and Science, Adult Education section.

AG: Right, and – can you sort of talk about the main obstacles that you encountered in setting your self up and running this. Has there been any kind of thing that you feel has hindered what you're trying to do?

AK: Well, it was absolutely brilliant that I got a year to plan and research. I mean that was just worth anything. When I came in here first, the first month, every staff member said: 'what are you doing here?' And I said I'm doing e-learning. There was not one single staff member who said great; every one said: 'Oh, our learners will never manage that; you don't understand what our learners are like; they'll never manage that.' And absolutely every single one of the staff said that. My boss, who hadn't much of a handle on it, thought this might be possible. He had seen or read about it and he thought this would be possible. At the moment I have done a total change on that 'not possible.' And really it has come about because the learners can do it. So now I have staff members beginning to sign up to e-learn. Where last year I ran a pilot project, I looked for ten staff members out of eighty nine staff. And I got one staff member who would try it.

AG: Right.

AK: And I cajoled and bugged and nagged [*laughing*] and tried every option. But some students, when they heard – I stuck a notice up for staff, and some students approached me, and I got fifteen students involved with the trial.

AG: The eighty-nine staff you say, where were they –?

AK: Around County Clare –

AG: Schools and colleges?

AK: No, Adult Education staff.

AG: Okay.

AK: Adult Education staff; I [...] them all to try and have it come and set it up for them; I would help them with it –

AG: How do you read that then?

AK: I read that they didn't – well the one out of eighty nine had poor computer skills, but she had got a new job and she had not the skills that she needed. And it was October when she was starting her new job, and there was e-learning – it was a management job – there was e-learning that would have supported her and given her ideas and helped her set up systems. So she badly needed information that she could only access at that moment through e-learning. So she worked in my office where I helped her with the computer skills. So it was a case of having to in her case maybe.

AG: And the rest – no interest?

AK: Well, they didn't think it was possible really. I think about seven promised me they'd do it after a lot of cajoling, and none of them did it; didn't even start.

AG: Right. Interesting

AK: Isn't it interesting? So I was quite prepared that people wouldn't do it. So I'm delighted at the level at which people feel they can cope with it, and they're back learning, and –

AG: I see that – is it Hilda?

AK: Hilda, yes

AG: – the secretary – she's sort of coming in and out. Is she doing her job and then –?

AK: She has an hour for lunch, so she eats her lunch then she's in for half an hour. So isn't that the essence of how it ought to work?

AG: Mmm, absolutely. So this is the first time she's ever done anything?

AK: She was offered last year and she didn't think it was possible for her, but she regretted it greatly. Later on in the year, she heard how some of the students had got on with it.

AG: Coming back to what the students are doing; you said they're doing basic computing; and I saw some of the students writing letters to banks and whatever. Are there any people that are doing political studies – Mike Hook's class or something; are they coming in saying: 'look, I'm terrible stuck using the Internet as a resource?'

AK: Well, the ones down on the end wall that came late, and they were VTOS, some were in childcare and some were in social studies – VTOS. And they have a computer class, but it's a sort of crash course in Word – what they need for typing up documents and that. So they are topping up on that; they were using it as a practice initially, and now some of them they need the Internet for social studies.

AG: And it gets very sticky [laughs].

AK: Yeah, so one of them there, I said to her: ' What are you doing?' She said: 'I'm doing Internet and email'. So she's off a social studies course – FTAC in Social Studies.

AG: How do you find that yourself, trying to – Well we've discussed before that the Internet is quite hellish to negotiate, trying to find things. Do you find it quite hard to –?

AK: Well I've a good programme on the basic skills of the Internet. And what I'm doing is before everybody starts they sit down ad discuss their learning goal with me. So if that woman's learning goal was, 'I want to be able to use the Internet, and to research for my social studies programme' I say to her ' there's a number of steps; you've got to learn how to use the Internet first of all, then you've got to be able to do a search on the Internet; then you've got to learn how to – when you do a search – be able to discriminate about what you'll pick and what you won't pick; and maybe down to the end subjects. So when she gets to the end of it, I will sit down one-to-one with her and maybe do a search a number of times. And that's the beauty of this: she's working away on her own at the moment and getting basic Internet skills, but she knows when she gets to the point when she needs specific help she'll get the specific help.

AG: Are many of them able to go and practise on home computers? Do you get the impression that –?

AK: Emm, I'm asking that question generally and I'm giving them homework. They would have got – if you're beginning computers, I have a manual of exercises that match specific programmes; in other words, if you've done two modules on beginning computers, you want to try the skills on your home computer and see if you can manage it. If you can't manage it, you'd best go back or you better check with us why you couldn't do it. So I'm really emphasising the business of testing yourself. And how many times you've to go over something. So I've added work like that to it.

AG: I was finding doing my own interviews that coming here doing VTOS or whatever, was encouraging them to use their computers. There were literally cloths over them in the corner of a room, not being used until they came here. Are you finding that?

AK: Well, I suppose, by the time they're coming down to me they know they've got to get to grips. I have a woman from a farm about ten miles form here, and her

younger son is a doing a computing cert. She told me, her learning goal is: 'I want to be able to keep a record for the cows and that on the computer, because my son does that, but he's doing his leaving cert now, and he has no time. He's going to leave home next year, and someone has to do it.' Now she didn't know what the programme was or anything; she couldn't do anything. So her goal is get a small handle on it. I've told her: ask the son what the programmes he's using; I presume it's Word and tables, or Excel or something like that. So we'll actually pick off various learning objects – that she gets enough skill that she can keep this record; and if she wants to go further, fine. So it's often a specific problem that's forcing people to come and try it.

AG: Has your idea of e-learning – has your attitude towards it changed as you spent the year researching, and these past four weeks –

AK: I had no great handle on e-learning when I cam in here, but I had seen how one could integrate computers in a primary school curriculum; and I wasn't using the Internet a great deal; I was using multi-media authoring more and virtual learning environment. But I saw, because of the children's positive – there was nothing magical about it – but they felt so positive about it; and I felt there had to be something in e-learning. I really didn't know, but I felt I couldn't pass up when it was sitting on my door; I couldn't pass up having a look at it.

AG: If I can move to the idea of inclusion now. You mentioned it at the beginning, and I've been sort of struggling with it with my own project. I was just wondering what you thought of that idea – social exclusion and inclusion. Because it's quite a recent buzzword that's come in with the Third Way – you know, Bill Clinton and Tony Blair. I think it originated in that kind of thing. I was just wondering how useful you think it is as a way of understanding disadvantage.

AK: Well, I mean, isn't that what disadvantage is about: that you are excluded from making decisions; that you are excluded from accessing resources; and you are excluded from control of your own life. I mean, if you can't deal with online banking now, you can go up the town and you can stand for three quarters of an hour in a queue; the banks are shutting a number of their banks. Two offices in town they've shut it and they've only one now.

AG: Why is that?

AK: Because they don't want their customers inside, and they're making it uncomfortable for them to be, so there's a long queue. So it's easier to use their ATM and use online banking.

AG: They don't want customers in the – ?

AK: – The bank, no. I suggest you go up and look on the AIB on Bank place and there'll be a queue out the door all day – for as a long as it's open.

AG: So they're encouraging people to go online?

AK: They are. I mean, nobody will pay you in a cheque any more; there's a charge to cash a cheque – even if it's your own account, drawn on your own bank, now there's a charge. So everything is going to be – we can't escape computers. They're going to collect revenue online; you can deal with that rather than paperwork, and wait six months to get tax rebates. So at a level we absolutely have to make serious efforts to get people into using computers.

AG: There's one line of thought that says that's kind of a shame; you know, that town centres are closing up, you know – places that have been there for years, and are institutions, they're closing down because they're trying to encourage business over the Internet; it's taking away from the community – the physical community. What do you think of that?

AK: Well I think its reasonable, but I mean dropping off and going to Mass is also having the same problem. People don't congregate and meet each other, so it's a case of how things have changed and how we're working things. There certainly is a real need for establishing magnets for communities now. Mass was once a magnet for the community – maybe more important for that than for a religious point of view. Places like banks – I don't know if they were ever a magnet for the community

AG: [laughs]

AK: – but they were a possible place that you met. But the issue of community, I think, really, really needs to be addressed; and the issue of feeling that people belong to a community and contribute to a community. For instance, I don't know if you're rural, there's an organisation called the rural water schemes. If you live out in the country you're in a water scheme; it's run by volunteers. I live out the country and there's two hundred houses in our water scheme, and the secretary of it is sixty nine years. It's twenty years he set up the scheme; twenty years in the water scheme. He went to the national meeting in Monahan where you get advice in management systems, which now have to be put in place in water schemes. They got the advice as a CD Rom; it obviously came from Europe. It was printed off on a blue background on a white page. So if he was printing that off on a home computer, which of course he did not have, think of the amount of blue ink that came on it. So here is our local water scheme; legally by 2003 it has got to meet EU standards; the county council is not meeting EU standards, never mind the local water schemes. So where are you without computer skills?

There's all this sort of thing that you don't think about. I was so taken aback when he arrived home to my husband and said: 'I've got all the information – ' He went to the meeting in Monaghan and came home to my husband and said: ' I've got all the information here [...] will you get it out of it?

AG: [laughs]

AK: So he printed it out in work; all the backgrounds were in blue. This was work was subsidising him, but think about that on a home computer – nearly ninety pages.

AG: And just going back to this idea of exclusion, this is the perfect example of what you can do: it's an established place where included [means excluded] have been coming anyway, and you're adding an extra service to that. Can you think of other ways that you could address exclusion?

AK: I do. I live out in the country where there is a really active number of voluntary organisations: a really active youth club which people come from Ennis out to – about six mile out of town; a really – a water scheme that's working really well – they have expertise that can upgrade it; a parish council that have built a

state of the art hall by begging, borrowing, stealing money. So there's a really good community, but if you look at who's volunteering, there are about twenty people out of quite a big community – out of two hundred households, so [...] And they're running everything sort of; and they can't get young people to join it.

So I would feel, say communities like that, if this sort of a centre was in the local hall – you can get local support of the local hall; they think nothing about it. It would be a local person they know who would run this. I mean it doesn't take a great deal of skill to run an e-learning centre like this. If this were in the local hall two nights a week, it would be a social occasion; they would learn skills; they would learn off their own; say if they learned about the Internet, whoever was teaching them would know what was of interest in that community – what websites they would access. For instance, you'd know there was not much point in accessing the Irish Times website, because nobody would read it, but they read the Examiner and the Champion. So I feel you would get people in – not necessarily people who would be termed disadvantaged, but people who are excluded because of their age and background, but who wouldn't fit 'disadvantage' category, but from a computer end, are disadvantaged.

AG: I suppose being rural is a disadvantage in a lot of ways – the fact that the money came to Ennis town. I'm aware that a lot of the people couldn't avail of the cheap computers because they were outside the area.

AK: I would not say that being rural was a disadvantage; I would say that being rural you had a greater chance of being part of a community and all that sort of –

AG: Right

AK: But from the point of view of training and up-skilling and that sort of thing, you had to travel.

AG: Okay. I think that's it for now anyway. Thank you very much.

AK: Thank you.