University of Sunderland
Centre for Children, Young People and Families

City of Sunderland Digital Inclusion Evaluation
Final Report
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1. Introduction

1.1 Sunderland Digital Challenge

In March 2006 Sunderland was announced as the winner of the Government's Digital Challenge competition which called for bids from across the UK to outline innovative visions which would utilise digital technology as a tool to combat social exclusion and demonstrate the benefits to local industry and citizens (Prime Ministers' Strategy Unit/DTI, 2005). As a result the Sunderland Local Strategic Partnership (Sunderland Partnership) became the recipient of £3.5million from the Department of Communities and Local Government (plus additional investment from the private sector and other national government programmes such as Computers for Schools). This was provided to implement Sunderland's proposal of delivering technological solutions to socially excluded individuals and communities within the city (Sunderland City Council, 2007).

While Digital Challenge is a major landmark in the history of digital inclusion activity in Sunderland and the impetus for this evaluation, it is not seen in isolation from previous and concurrent work in this area. This achievement represents the latest major milestone along a path which has seen the city take a number of significant steps to improve access to and use of technology for socially excluded groups. In part, Sunderland was awarded Digital Challenge status on the basis of past developments including Beacon Council status for digital inclusion and the establishment of various e-inclusion programmes. Digital Challenge is therefore seen as a further investment towards achieving the goals of becoming a sustainable digitally enabled and socially inclusive city.

1.2 Purpose of evaluation

Commissioned by the Department of Communities and Local Government (CLG) and the Sunderland Digital Challenge programme, the University of Sunderland were asked to conduct an evaluation examining the extent to which Sunderland has achieved the goals of becoming a *digitally enabled* and

digitally inclusive city and the impact of these activities upon social exclusion and the delivery of public services. This is a city-wide longitudinal study focussing upon the combined work of Digital Challenge as well as co-existing and preceding local digital inclusion initiatives.

More specifically this evaluation has the following objectives:

- To assess the extent to which Sunderland has transformed itself into a digitally enabled and digitally inclusive city
- To measure the impact of digital inclusion initiatives in Sunderland
- To understand what actions were most and least effective in addressing digital inclusion, and why; and
- To identify specific good practice examples which can be used to assist other authorities in addressing digital inclusion

While the last few years have seen a significant bolstering of the national digital inclusion agenda (see section 2.7) and a growing evidence base (see section 2), there is also recognition amongst academics and policy makers, of a lack of empirical research that sufficiently evaluates the outcomes of digital inclusion initiatives in the UK context (for example see Phipps, 2000; Gaved & Anderson, 2006). There is also a dearth of research which has examined the experience of specific localities within the UK, as opposed to the national picture. As the government's Digital Inclusion Team (2007: 59) note:

> *"Despite the many research projects there are clear gaps in knowledge that deserve further work. For example, the national level surveys are a blunt tool for assessing the use of technology by small groups"*

Therefore, not only does this report look to address the objectives outlined above, but it also looks to contribute to a growing body of evidence based literature which examines the character of digital exclusion and the 'digital divide' (see section 2) and the ways in which it may be more effectively conceptualised and addressed.

1.3 Evaluation Outline

In order to address these objectives, the evaluation is broken down into five key parts. To some extent this draws upon a framework used by Phipps' (2000) to evaluate the success of ICT projects[1], but also builds upon the distinction made in the government's Delivering Digital Inclusion report (DCLG, 2008) between the direct and indirect benefits of digital inclusion. That is, those benefits which may be directly experienced by individuals and communities through their personal and collective use of technology and those which occur, sometimes unknowingly, through use of public services enabled by forms of technology. With this in mind, the research addresses both the extent to which the city has become digitally enabled in terms of strategic and operational prioritisation, but also how this may have translated into access, use of technology and positive social outcomes. These are the five sections, which are outlined in detail in section 3:

- **Digital Inclusion Context -** Literature review of key conceptual developments, definitions used and review of academic and non-published literature in relation to the digital divide and the emerging policy agenda.
- **Historic and Strategic Change -** Analyses the extent to which Sunderland has established itself as a digitally enabled city at the strategic level and the basis for these changes.
- **Longitudinal Measurement of Social Exclusion -** Examines how measurements of social exclusion on a city-wide level have changed alongside growing investment in and use of ICT initiatives with reference to a matched area.
- **Longitudinal questionnaire** - Examines the experiences of a sample of Sunderland residents in socially excluded neighbourhoods through two largely quantitative postal questionnaires gathering data on

[1] Phipps (2000) contends that the criteria for measuring success is based upon the strategic approach taken, use and popularity of the services amongst target groups, the development

demographic profiles, usage of technologies, involvement with digital inclusion activities and perceived quality of life benefits.

- **Qualitative Interviews with residents –** Further examines experiences of socially excluded individuals in terms of their engagement with technology through 11 case study interviews with participants from a variety of social groups identified in relation to the literature and the findings of the longitudinal questionnaire.

of community capacity and social participation, the impact on isolation and powerlessness as well as sustainability and replicability.

2. Digital Inclusion Context

In this section the growing body of academic and non-published literature which offers perspectives on digital and social inclusion is reviewed, along with an examination of key terms. The review also looks at the evidence base for current and recent digital inclusion initiatives within the UK and beyond and explores the emergence of government intervention as a means of addressing digital and social exclusion at the national level. This provides a useful context for examining how these interventions have developed at a local level in relation to the experience of Sunderland (see section 4).

2.1 Definition of Digital Exclusion/Inclusion

Digital exclusion is defined here in terms of a lack of access to and use of Information and Communications Technology (ICT) resources. By ICT we refer to a range of technologies, including, but not limited to:

- Desktop and laptop computers
- Dial up and broadband internet connections
- Landline and mobile telephones
- Digital and interactive Television
- Health monitoring equipment
- Assistive technology for those with long term health issues
- Video conferencing and networking technologies
- Interactive public information points
- Games and entertainment consoles/equipment

As with UK Online Centres (2007), we emphasise the importance of the *availability* of ICT resources, whilst also acknowledging the significance of the various *motivations* which drive use and the *skills* needed for initial and continuing engagement. This definition recognises that digital exclusion is characterised by diverse patterns, levels and types of non-engagement (see section 2.4). We are then not only concerned with the numbers of individuals using various forms of ICT, but also the type of use, intensity of engagement and the sustainability of such engagement over the longer term.

We also recognise that technology is increasingly used by individuals and agencies (particularly those delivering public services) on behalf of others, which may well have a discernable impact upon the quality of life of those in socially excluded groups (DCLG, 2008). Those who may benefit from this use of technology may in many cases be unaware of such efforts, but this is an important part of the work taking place in Sunderland and extends the list of the types of technology and systems which need to be taken into account.[2] These aspects are now part of the government's own definition of digital inclusion as:

> *"The best use of digital technology, either directly or indirectly, to improve the lives and life chances of all citizens and the places in which they live."* (Department for Communities and Local Government, 2008: 14).

The government's objective of greater digital inclusion is directly related to the goal of improved lives and life chances – what is seen as a more socially inclusive society. UK Online Centres (2007) have identified a correlation between those who are socially excluded and those who are digitally excluded. Those who remain disconnected from technology are more likely to also remain excluded from mainstream social, economic and political activities. Therefore greater access to and use of technology is posited as a key tool for addressing such social problems. What is at stake here is not then just the importance of use and access to technology per se, but the socio-economic benefits which this may bring.

2.2 Definition of Social Exclusion/Inclusion

The concept of social exclusion has gained increasing currency since New Labour established the Social Exclusion Unit in 1997 and has been one of the central planks of government policy ever since. However, as Lessof and Jowell (2000) point out, there has been disagreement over the basis and

[2] This then also includes technologies such as information sharing systems, back of office networks as well as technology used by front line staff in the delivery of public services.

meaning of this term and how it should therefore be appropriately assessed and measured.

The main defining feature of this concept is that it goes beyond conventional definitions of disadvantage in terms of inequality, poverty and material deprivation by focussing upon inter-related socio-economic and cultural processes that exclude individuals and communities from the social and economic mainstream (Giddens, 1998; Phipps 2000). While the focus of social exclusion is the economic realm and access to employment (Levitas, 1998), rather than considering structural inequalities alone, social exclusion is defined by a lack of access to a range of services and activities (Room, 1999). As Cameron (2006) points out, definitions of social exclusion are geographical in character in they locate a series of multi-dimensional social problems within specific 'excluded' neighbourhoods. The Government define this in the following manner:

> *"Social exclusion happens when people or places suffer from a series of problems such as unemployment, discrimination, poor skills, low incomes, poor housing, high crime, ill health or family breakdown"* (Social Exclusion Task Force)[3]

In their analysis of attempts to measure social exclusion, Lessof and Jowell (2000) found that social exclusion broadly covered the following areas: financial well being and stability, access to financial services, employment, health factors, education, family dynamics, local environment, social networks/social capital and attitudes towards exclusion. Whilst bearing in mind the critiques of this discourse, particularly in relation to the way in which it approaches the causes of poverty (see Byrne, 2005), this study recognises the conventional aspects of material deprivation as well as issues of community participation, empowerment and voice and the development of social capital. Therefore, in addition to the domains of deprivation identified through the Indices of Deprivation (Department for Communities and Local

[3] http://www.cabinetoffice.gov.uk/social_exclusion_task_force/

Government, 2007)[4], the last two domains listed below are also emphasised as key areas of social inclusion/exclusion to consider in this evaluation.

Domains of Social Exclusion

- *Income deprivation* – including no or low incomes and living in workless households
- *Employment deprivation* – including lack of employment, economic inactive or in part time
- *Health deprivation* – including not working because of poor health
- *Education deprivation* – including a lack of qualifications or poor educational experience
- *Barriers to services* – including living alone without access to car or a lone parent
- *Participation in mainstream social and political activities* – including participation in community groups and local politics an having an influence on decisions which effect the locality
- *Development of social capital and social networks* – including involvement and communication with neighbours and community organisations as well as development of contacts which enable social mobility

Bearing in mind the sometimes questionable links between digital and social inclusion (explored in section 2.5) and the lack of clarity within policy discussions of what social inclusion might look like (Cameron, 2006), we focus here on a definition of social inclusion which looks at changes which may be brought about, through digital inclusion, to the *quality of life* of individuals and communities (Bradbrook & Fisher, 2004). What is seen as important is that valued social benefits which meet everyday needs are gained from the use of technology. This is aligned with the definition of digital inclusion outlined above and also closely matches one of the main objectives of the Local Authority Agreement for Sunderland which states that: "A key

[4] As used by the Sunderland Digital Challenge programme to identify socially excluded target

element of the Sunderland Strategy's vision is a commitment to offer an enhanced quality of life for existing residents." (Sunderland Partnership, 2008:7).

2.3 The Digital Divide

In his 2009 budget speech the Chancellor of the Exchequer announced a Universal Connectivity Commitment which would see the UK achieve full broadband internet coverage by the year 2012.[5] While reactions to this and to the more recent clarifications in the Digital Britain Report (2009) have been mixed, particularly in relation to broadband quality and speed (see Said Business School, 2009), this comes just one decade after the first residential broadband connection was made in Britain. Such progress is one illustration of the advancement and proliferation of ICT which has become a defining feature of the modern era. Technology is increasingly shaping the economy and helping to define many social relationships. The consensus is that in the coming decades its adoption will continue apace alongside growing expertise and continuing processes of globalization (Harvey, 1990; Bauman, 1998), transforming the way individuals live, work, play and communicate (Bradley, 2000).

The use of technology is not without its drawbacks and disadvantages (see section 2.5), but for the majority who have access to ICT (in particular computers and the internet) there are a number of clear economic, educational, social and health related advantages including the following:

- Jobs are easier to search and find (McQuaid et al., 2004)
- Job market skills and confidence are better developed (UK Online Centres, 2009)
- Individuals and businesses can become more efficient and productive (Morris, 2009)

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groups for digital inclusion initiatives.

[5] This guaranteed that every home in Britain would have broadband internet connectivity of at least 2Mbps.

- Goods and services are cheaper online and savings can be made (PwC, 2009)
- Educational achievement is enhanced (BECTA, 2007)
- Social and language skills can be developed (Webb, 2006)
- Social networks can be deepened and/or widened (Hampton & Wellman, 2003)
- Opinions are heard more widely and greater political participation (Digital Inclusion Team, 2007)
- Individuals are able to live healthier lives due to the availability of health related information online (Levy and Strombeck, 2002)
- Those with long term health conditions are able to better cope through assistive technologies (Beech and Roberts, 2008)
- Services are more conveniently located and more accessible online, especially for those who have mobility issues and/or live in remote geographic areas

However, those who remain excluded from the opportunities such technologies provide in a 'network society' (Castells, 1996), are increasingly at risk of being left behind. As more everyday commercial and public services, which were once conducted through face-to-face interactions, become transferred on-line in a drive towards greater efficiency, there is a danger that those who are not accessing such channels will become further excluded[6]. This gap which exists between those who have access to and use of ICT and those who do not has become known as the *digital divide* (National Telecommunications and Information Administration, 1995).[7]

While the number of UK based non-users of ICT is declining (National Statistics, 2008), recent figures indicate that between 37-40 per cent of adults in the UK are still not accessing and using the internet (UK Online Centres, 2007), illustrating the extent and continuing significance of this divide. This

[6] This is one critique of the policy of transferring public services to electronic formats whilst a divide continues to exist between those who have easy and available access to such technology and those who do not.
[7] In this series of US government surveys the phrase 'the digital divide' was first coined.

same research points out that rather than increasing, the rate of take up of the internet is now slowing down, reaching a saturation plateau, while still not reaching all sections of society.

We also know that those on the wrong side of this divide are characterised by their already disadvantaged positions:

> *"Digital exclusion is highly correlated with social exclusion. Socially excluded people are three times more likely to be non-users of the internet than they are to be internet users"* (UK Online Centres, 2007:15).

In particular, the socio-economic profiles of non-users of ICT indicate that financial situations and social class positions heavily influence access to what Selwyn (2003) calls the 'opportunity structure' of ICT. Those who suffer deep social disadvantage are up to seven times more likely to be disengaged from the internet than those who are more socially advantaged (Helsper, 2008). Digitally excluded groups include the unemployed, those on lower incomes, those living in deprived neighbourhoods, those who live in social housing, those people with disabilities and long term health conditions and older people. There is then a fundamental inequality in the current levels of access to ICT (Graham, 2002), which favours more advantaged social groups and more affluent and connected localities (Russell and Stafford 2002). Poor levels of access to technology arguably both reflect and exacerbate these existing divisions.

2.4 The complexity of engagement with technology

Whilst it is clear there is a significant proportion of the population excluded from access to ICT, the digital divide is increasingly seen as a complex phenomenon (van Dijk and Hacker, 2003). This takes into account variables including the location of resources, differences in the type of resource accessed, and the level and type of usage over time (Daramin, 2000). It is therefore accepted that the quality of engagement varies considerably and that the digital divide today resembles more of a continuum of both skills and

connectivity than just a stark divide between the haves and the have nots (Warschauer, 2003; Reddick, 2000). What is increasingly recognised is a second digital divide, where differences exist not only between users and non-users but between users themselves, illustrating not only the width of the digital divide but also the considerable depth (UK Online Centres, 2007:8).

UK Online Centres (2006) recognise that there is no straightforward distinction between the digitally excluded and the digitally included through their typology which charts a linear journey from exclusion to inclusion as follows:

Digitally excluded Those who perceive themselves to have no access to the internet

Digitally dismissive Those who have access to the internet, but chose not to use it for a number of reasons, principally that they perceive they have no need to use it

Digitally determined Those who have access to the internet but not at readily accessible locations (such as home and work) and who have to travel to a public access location such as an internet café, public library or UK Online Centre

Digitally constrained Internet users (digitally included or determined) but report that they are constrained in what they can achieve by their level of skills and or confidence

Digital included Those who have the desire to use the new technologies and have the access to ICT and have the skills and confidence to use these new tools

While this typology does usefully highlight the various shades of digital inclusion, the experience of use of ICT is often not a one way linear process from exclusion to inclusion (see section 7). There is also the issue of the

types of technology individuals may engage with beyond the internet and how engagement with different forms of technology may vary considerably for different reasons. This typology may also not be adequate in order to understand the experience of digital inclusion for a variety of socially excluded groups in different locations using different forms of technology.

2.4.1 Social groups

As has been confirmed by a recent review of ICT user skills in the UK, the digital divide is a growing problem for certain 'at risk' groups which are identified as socially excluded in a number of ways (Morris, 2009). However, it is also recognised that these groups are intersectional in character (for example some individuals may be multiply disadvantaged in terms of ethnicity and disability), and that what characterises the majority of those who have poor access to and use of technology is their marginal social and economic positions.

Gender

In the UK a gender-based digital divide still exists, with more men than women using the internet more often and with greater levels of confidence (Liff & Shepard, 2004). There are still therefore prejudices and assumptions to be addressed around women's occupational and social roles more generally. However, as Faulkner and Kleif (2005) indicate there are other more subtle yet significant gender differences in the use of ICT and ICT facilities. They show how a relatively successful rural based ICT initiative in Scotland failed to attract middle-aged men in manual work due to marketing issues, the lack of middle aged male role models and use of the community centre as an established female space. In a post-industrial context the position of men in relation to a changing labour market, which increasingly requires the use of technology, is an important consideration. Male users may feel threatened in terms of their established masculine roles and the decline of traditional non-technological occupations within working class communities. On the other hand the women who used these facilities in a supportive environment experienced fewer obstacles to engagement and appeared to view the opportunities provided to them in a more positive

manner. What this research illustrates is the importance of the combined factors of gender, age and social class in the use of technology.

'Race' and Ethnicity

In the UK, recent research suggests that white families are more likely to own a computer and have access to the internet than black families and are more likely to use the internet than Asian families (Owen, 2003). It is recognised that black and minority ethnic (BME) communities face a number of additional barriers to access, particularly in terms of language difficulties and cultural relevance (CLES Consulting, MCCR & CEMVO, 2003; Webb, 2006). It is also contended that digital inclusion initiatives may often be too focussed on local issues, pressurised to achieve identifiable local outcomes to the neglect of the needs and practices of transnational communities whose lives and social relations reach beyond the local (Ferlander and Timms, 2009). There are also issues into perceptions of acceptance within localised community ICT facilities which may work to prevent access in those contexts which are seen as threatening environments.

Age

As major advances in technology have come relatively recently, one of the most significant digital divides is connected to the issue of age, with younger people using technology, particularly the internet, much more regularly and for greater periods of time than older age groups. In their work on internet use at the turn of the century Gardner and Oswald (2001) describe this difference between young people and pensioners as a 'gulf'. As Sourbati (2004) shows, older people are often very resistant to the imposition of new technologies as a replacement of previous forms of social interaction and everyday physical routines. However use of assistive technologies in relation to health issues may be one way in the elderly may begin to increasingly engage with technology (Bryant, 2005). As the Oxford Internet Survey (OXIS, 2007) illustrates, older people may not use the internet to gain training opportunities, but they will be much more likely to use it to access news and current affairs (Dutton & Helsper, 2007). Given these distinctions, and the fact that different age groups engage with technology in different ways and for

different purposes, Livingstone & Helsper (2007) suggest that a different explanation for the use of technology and the digital divide among children and young people is required in order to make sense of the different patterns of access and use.

Health and disabilities

Some of the clearest advantages of recent technological advances can be found in terms of improving the quality of life of those with long term health problems and disabilities; allowing individuals to carry out tasks and activities which they would have otherwise been unable to do on such an independent basis. However, whilst those with such conditions may rely upon forms of assistive technology, the internet in particular remains "…inaccessible or difficult to access by people across a spectrum of disabilities and this may have serious implications for the potential use of the Web for increasing social inclusion." (Adam and Kreps, 2006: 217). In her work on the situation in the US, Dobransky (2006) also found that people with disabilities are less likely to live in households with computers, are less likely to use computers and are less likely to be online. A picture emerges of a greater need for the benefits which such technology may provide, through for example improved contact with others for housebound individuals (Bradley and Poppen, 2003) alongside a continuing inequality of access and use. It has also been identified that those living with such conditions who are also in lower socio-economic groups are often unable to access the technology which is needed, while for others dependency and isolation is actually increased through their use of technology (Sheldon, 2004).

Unemployed/underemployed

Given the economic imperatives of social inclusion (Levitas, 1998), the unemployed are often recognised as the most socially excluded group and as such are amongst the highest priorities within the digital inclusion agenda. This has been heightened even more in recent years given the global and national economic recession. However, given that those most at risk of structural and long-term unemployment are those on lower wages with few qualifications, it is not surprisingly that this social group are also amongst the

most digitally excluded (Morris, 2009). As the process of job-seeking is increasingly transferred on–line, it proves much more difficult for those who do not possess either economic capital (finances) or cultural capital (knowledge and skills) to easily participate in this way (Lindsay, 2005). While technology has enabled the growth of whole new business sectors within the UK economy, they have not, in the main, attracted those who worked in the old industries. Due to levels of efficiency enabled through technological advancement, there is also now a lower requirement for labour, in particular more manual forms of labour. Technology focussed industries have not then worked as a direct replacement for manufacturing or primary industries in terms of the numbers employed – what is known as 'technological unemployment' (Postel-Vinay, 2002). This is particularly the case in areas of the country where such industries historically dominated, such as the North East of England. For those who remain excluded from those jobs which require a certain level of ICT skills, opportunities to develop such skills through the workplace are absent.

2.4.2 Location effects

The digital divide also needs to be understood in terms of the location of individuals, communities and ICT resources. Ferlander & Timms (2006) speak of a dual digital divide which takes into account the dynamics of both social class and location in their analysis of ICT provision in Sweden, highlighting how poorer neighbourhoods are at a disadvantage in accessing ICT, which is largely restricted to publically available facilities. Some locales, particularly poorer neighbourhoods, also suffer from both a lack of access and a lack of adequate support and training to go alongside such technology (Fong et al., 2001). Ferlander and Timms (2006) highlight the success of centralised and publically accessible ICT initiatives over schemes which concentrate on the use of ICT resources within residents homes. Of particular importance is the availability of informal support and training structures during use as will be further explored below. But there also needs to be consideration of the restrictions involved in accessing certain ICT facilities. While those who have availability at home face few restrictions, those reliant upon publically available facilities, for example through libraries,

are faced with a number of restrictions including distance from home, hours of availability, length of use and restrictions on viewing certain types of content over the internet (Liff & Shepard, 2004). These issues are only experienced by those for whom ownership of technology (or technology of sufficient quality) is not a option and is therefore directly related to social class inequalities and social exclusion.

There is also a rural/urban dimension. While it has been broadly accepted that rural areas are at a disadvantage in terms of accessing technology due to isolation from communication networks, recent research suggests that there are now a greater proportion of households with broadband in rural parts of the UK than in urban areas (Ofcom, 2008). A recent study for the BBC (2009a) has also found that those households with under 2Mbps internet connectivity are not just found in remote rural areas, but also in inner city and suburban locations. However, this is not to say that rural areas do not still have unique problems, particularly in relation to the speed of connectivity and the availability of public access to ICTs, in situations often characterised by an absence of bridging social capital (Putnam, 2000; Onyx and Bullen, 2000). This issue is explored by McQuaid et al. (2004) in their examination of the impact of ICT initiatives through Job Centres in urban and peri-urban areas in the UK. They discovered that use of digital services to secure employment was more popular in isolated rural areas where there remained a lack of conventional employment searching structures.

2.5 The limits of digital inclusion?

In an examination of the developing UK digital inclusion agenda, Mawson (2001) points out that a great deal, possibly too much, is expected of ICT as a catalyst for local economies and as a solution to entrenched social problems. While we can see that use and access to technology brings a variety of potential benefits in terms of empowerment, financial savings, access to information, education, convenience and access to legitimised social and cultural capital (Carter and Grieco, 2000), it is not as Warschauer (2003) argues, a ‘magic bullet’.

2.5.1 The importance of capitals

Crucially digital inclusion cannot be seen in isolation from wider socio-economic forces and exclusion from technology is recognised as only one barrier among many which needs to be overcome. The various forms of economic, social and cultural capital (Bourdieu, 1997) individuals bring to technology in terms of their own socio-economic positions and experiences of inclusion or marginalisation is recognised as key in determining the way in which technology might (or might not) act as an enabler for social change.

As Grant (2007:2) points out, "Possession of **economic capital** is the most immediate factor mediating access to technology, however, this is not a sufficient explanation for why people may or may not meaningfully engage with technology." Access the legitimised forms of **cultural capital** - forms of knowledge, skills and customs - is a crucial factor in determining both the ability to access and use technology, but also its appropriation for socially acceptable and widely valued purposes. For example, a young person may be very adept in using their mobile phone to text friends and play music, but this does not mean that they will be suitably equipped to do well educationally or to secure employment. **Social capital** (Bourdieu, 1997) is also extremely significant because it refers to the ability to draw upon social networks as sources of support and reliance in the use of forms of technology. Without legitimised knowledge or connections individuals will struggle to make *appropriate* use of technology within a society in which they do not dictate what is useful. In this way Sterne (2003) argues that while technology is often treated as something special, we need to remember that it is always social and cannot be examined in isolation from a range of other social practices and from the structures of society more generally.

2.5.2 Off-line/on-line inequalities

An application of Bourdieu's ideas of 'capital' illustrates the privileged and more disadvantaged positions individuals occupy and how, given the strength of these boundaries, this has a discernable impact upon their ability to use technology as an empowering tool or as a means of social mobility. Klecun (2008:272) argues that solutions to social problems which focus solely on the

technological might also "…further alienate and disadvantage vulnerable groups". By classifying non-users as those who need to 'catch up' in order to survive and prosper in a new information age, the discourse of the digital divide works to objectify and 'other' disengaged populations as insufficient and inadequate, thus reinforcing social hierarchies.

Whilst the importance of addressing digital inequalities is clear, it is also the case that the inequalities of the online world often reflect those of the off line world (Zhao and Elesh, 2006). As Lee (2008: 151) shows, looking at the impact of an ICT initiative on the class boundaries of young people from disadvantaged neighbourhoods in Glasgow, there are other more persistent processes which continue to marginalise communities despite their largely positive engagement with technology. Rather than allowing these young people to 'catch up' with the more digitally and socially included, the image here is that these young people are at best treading water.

> *"The impact of the internet is indeed much more temporary and limited and is unable to deal with the wider range of disadvantages suffered by young people from poorer backgrounds which need to be addressed alongside digital in/exclusion."*

While a lack of access to and appropriate use of ICT certainly has the potential to further exclude individuals and communities from mainstream social and economic activities, it is not the cause of social exclusion (Foley, 2004). Indeed, Graham (2002) and Selwyn (2003) both argue that technologies should not be viewed as intrinsically liberating or good. In contrast to the idea that social capital and social networks are enhanced through ICT (Hampton & Wellman, 2003), Graham (2002) contends that social interaction, may on some occasions be restricted.[8] This is seen through the work of Sourbati (2004) who illustrates the relativity of the perceived benefits of on-line services to some social groups, such as the elderly who favour physical interaction. It is also demonstrated through

Bure's (2005) study of the use of mobile phones and the internet amongst a group of homeless people. Rather than breaking out of their situation, ICT enabled these individuals to maintain associations and acquaintances within their sub-culture which provided them with a sense of security but also reinforced their position as homeless. As Di Maggio et al., (2004:7) puts it, it is often the case that "Rather than exploit all the possibilities inherent in new technologies, people use them to do what they are already doing more effectively."

2.6 Supporting 'meaningful use' of technology

If the purpose of digital inclusion remains the improvement in the quality of life of individuals and communities, then access to and use of ICT alone may not be enough. As Webb (2006) illustrates in her consideration of the experience of adults from minority ethnic communities, technology alone may not overcome existing inequalities, but it may have positive and beneficial outcomes for users, such as an opportunity for language learning and practice. Selwyn (2004) therefore suggests that what needs to be considered is the 'meaningful use' of technology, use which has a positive social impact. As DiMaggio et al. (2001) contend, the equipment used, the autonomy of use, the development of skills, levels of social support, and the purposes for which technology is employed are all important when assessing the extent to which technology will impact upon the lives of users. Added to this may also be the importance of the duration of use, frequency of use and whether the technology is assisting users to engage in activities which they themselves consider to have a positive effect upon the quality of their lives. Aside from some of the more structural considerations offered above, two key factors stand out from the literature; supporting resources and community involvement.

2.6.1 Supporting resources

As has already been mentioned, what Bradbrook and Fisher (2004) identify as 'supporting resources' is seen as critical in addressing the digital divide.

[8] Also see Gibbs (2001) and Strover (2003) for discussion of the often contradictory implications of ICT use.

For them this includes social, cultural and practical support structures such as childcare, language services and transport which allow use of ICT to take place. It is also recognised that it is often the non-technological and off-line aspects such as the social networks which sustain the transmission of cultures of learning which are just as important to the success of ICT initiatives as the technology itself (Liff and Steward, 2001; McQuaid et al., 2004). The importance of these cultures is picked up by Stewart (2007) as a key component in the success of ICT initiatives, not so much in terms of formal provision, but in terms of those within the community with little or no training who act as trusted mentors and relative experts amongst peers (apparent in Sunderland in the form of E-Mentoring and E-Champions as explored in section 4.5.8). Faulkner and Kleif (2005) also identify a package of measures which include the development of self confidence, technical support and dedicated support workers who build up trust with users.

2.6.2 Community involvement and empowerment

Another theme is the involvement of the local community in the development of ICT projects in order to ensure a sense of ownership and empowerment, but also to enable sustainability and capacity building amongst that community (Shearman, 1999; Gaved & Anderson, 2006). This also relates to the importance of the use of existing community resources in both physical and social forms (Devins' et al., 2002; O'Neil and Baker, 2003) and the importance of non-threatening and informal environments which are able to attract and encourage those individuals who feel least at ease with technology but more at ease with the environment (Cook & Smith, 2004; Ferlander & Timms, 2006). It is also vital that the use of technology meets the specific needs of users in order to maintain some level of interest, motivation for and stake in developing ICT skills and enabling them to achieve specific goals that they consider to be useful and life enhancing. That is, digital inclusion cannot be done just for the sake of it and cannot be done to people, but with people and with the needs of those people in mind (Blamires, 1999).

2.7 Government agenda and policy initiatives

Given the recognition of a digital divide, a pressing need has been identified to provide meaningful access to these valuable resources for excluded social groups and geographic communities. Although technology manufacturers, suppliers and infrastructure developers will have to be involved in any solution, it is widely recognised that market forces alone cannot adequately address this situation due to the inequitable basis in which they operate (UK Online Centres, 2007). Indeed, it is argued that market forces actually perpetuate the division between the digital 'haves' and 'have nots' by focussing their efforts upon more lucrative markets rather than fulfilling any public or moral obligation (Graham, 2002; Prime Ministers' Strategy Unit/DTI, 2005). While public intervention is not without its critics, who argue that differences in ownership will erode over time (Thierer 2000; Compaine 2001; Fink and Kenny 2003), it is unlikely that those who are currently unable to adequately access ICT (or the skills necessary to use it to its potential) will become engaged without some form of state led intervention.

2.7.1 Basis for government intervention

Within the last decade, digital inclusion has been increasingly identified by the UK government as a priority area to assist those outside of the digital mainstream in accessing opportunities previously denied to them (UK Digital Strategy, 2005). Although a number of key issues remain problematic at the national scale (especially connectivity (BBC, 2009b) and take up of e-Government services by business (see Ottens, 2005)), the UK is recognised as one of the leading nations in digital inclusion when compared with the rest of Europe and beyond (Lupescu, 2009; Carter, 2009).

This commitment combines three main policy strands:

- A growing acceptance of the importance of the 'information age' and 'knowledge economy' to the future success of the UK economy and job creation and the need to drive up skills compatible with such an economic structure (Leitch, 2006).

- An economic rationale related to the cost savings which could be made by government if the UK population were all digitally connected and accessed public services in this way, an argument becoming increasingly relevant (PwC, 2009).
- A politically constructed obligation to include disadvantaged communities within mainstream society and economy as a remedy to disadvantage, based upon a discourse of social inclusion (Selwyn, 2002).

2.7.2 National policy initiatives

One of the key starting points for government intervention in this area, came in 1998 when the Policy Action Team 15 (PAT 15) was commissioned to address the access and use of ICT by people living in the poorest neighbourhoods. The overall goal for PAT 15 was to develop a strategy to increase the availability and take-up of ICTs.

As a result of this work, for the first time, a commitment of universal access to the internet was outlined (PAT 15, 2000), one which the government has continued to aspire to.[9] In the same year the Learning Age Green Paper established the lifelong learning agenda, including a commitment to the use of technology at work, in learning centres, in the community and at home to drive up skills required in modern business. This was followed by the Knowledge Economy White Paper in 2000 which marked the beginning of a national IT strategy in relation to schools, teaching training and ICT enabled infrastructure such as libraries, as well as the establishment of the Office of e-Envoy whose task it was to deliver internet access for all by 2005 (Morris, 2009).

Alongside this, the UK government also looked to develop forms of e-Government. Whilst definition of e-Government varies (Weerakkody et al., 2007) it can be distinguished from other forms of digital inclusion activities in

[9] For example see Digital Britain (2009). Such an emphasis has not been without its critics, for example the prioritisation of simplistic measurements of success while ignoring the complexities around use and access.

that it involves the use of ICT by government to interact with citizens, businesses and other governments (Margetts, 2006:250). From the publication of the Modernising Government white paper (1999) onwards, the prioritisation was on improved access to public services as well as improving choice for citizens increasingly characterised as customers. It was argued that these objectives were best met through the use of forms of technology. These priorities were carried forward in 2000 with the publication of the 'E-government strategy: a strategic framework for public services in the Information Age' (UK Government, 2000), following which all departments and local authorities were required to respond with their own action plan, setting out how they would transfer all citizen centric services to become electronically enabled by 2008[10] (UK Government, 1999). The extent to which this agenda is compatible with an emerging digital inclusion strand has been questioned as those who remain excluded from technology lack the capacity to access public services which are increasingly moving from conventional to digital channels (Whyte, 2003).

From this period onwards the government endorsed a number of other national initiatives which sought to address access to ICT. These included the pre-cursor to the E-Champions work seen in Sunderland (see section 4.5.4) in the form of the £1.5M Community Champions Fund, the Community Access to Lifelong Learning programme which looked to provide ICT access through City Learning Centres in some of the poorest wards in the country and the Wired Up Communities programme.

Wired Up Communities, established by the DfES in 2000 was the first programme to run a series of pilot projects in an attempt to connect and network specific localities for the purpose of social inclusion, establishing 7 of these schemes in rural and urban areas locations across the country. The programme was seen as successful in terms of the positive impact on local communities, the creation of online networks, the use of on line community forums and the development of community champions. However time taken

[10] This date was later changed to 2005.

to deliver the projects, high expectations, the slow achievement of milestones, suspicion of government interference and demand led sustainability were all identified as weaker points (Devins et al., 2003).

The most comprehensive and geographically widespread ICT community initiative began in 2000, when the DfES provided funding for the development of a sustainable and embedded network of UK Online Centres which would replace ICT learning centres. The mission of UK Online Centres is to 'empower people to become skilled and confident citizens at ease with ICT' and these centres provide access points to computers and the internet, free at the point of access with help, advice and support. Initially the target was to reach 6000 centres across the UK, but this has now been far exceeded.

In Sunderland itself (further explored in section 4), there are currently 20 such centres based out of various premises including community centres, libraries and Age Concern centres in rural and urban locations. Whilst these provide an important resource for those without alternative access to the internet, the network has received some criticism for focussing upon 'learning for earning' rather than delivering on the wider social exclusion agenda and for not reaching socially excluded groups without any alternative access to ICT facilities (Bradbrook and Fisher, 2004).

In 2004 a Digital Inclusion Panel was formed and the Enabling a Digitally UK framework published. This reflected on the discussions of this cross-sector panel and set out an action plan for digital engagement. Recommendations included that government should support commercial and social enterprise, delivery of e-government services, and lifelong learning opportunities by providing market intelligence, that online services should be designed around the needs of citizens, and that trusted community based intermediaries such as UK online centres should be more widely used. What we see then is an emerging combination of concerns around E-government and digital inclusion.

From 2005 onwards with the publication of *Transformational Government* (UK Government, 2005), *Connecting the UK: Digital Strategy* (UK Government, 2005) and *Inclusion through Innovation* (UK Government, 2006) the government began to set out in more detail the ambition of achieving digital inclusion by closing the digital divide, in terms of providing access to ICT for all. These national plans supported a vast range of activities taking place at the local level. According to the Digital Inclusion Team (2005) the most common digital inclusion activities at this point included broadening access to technology for those without access and improving the accessibility and usability of services for those with access. Personal and community capacity building and strategic information sharing were identified as much less common. From this analysis it is also clear that digital inclusion activities at the local level were most often focussed on the disabled and older people and therefore health inequality was seen as the priority area of concern[11].

2.7.3 Recent policy developments

This developing agenda was further reinforced in 2008 with the establishment of a Minster for Digital Inclusion, the setting up of the Digital Inclusion Cabinet Committee, a cross-government digital equality team and proposals for a Digital Equality Champion, National Charter for Digital Equality and the announcement of the £300 million Home Access Programme; aiming to provide broadband connection for all 5-18 year olds in disadvantaged households.

As a result of these concerns and an evolving agenda, the UK has more recently witnessed a number of large-scale programmes directly addressing these issues. Unsurprisingly education and health are key areas where the government has looked to invest and achieve measurable social benefits. These have included:

- Directgov Digital Switchover

[11] See The Digital Inclusion Team (2007) for range of locally based ICT initiatives currently operating in the UK.

- Preventative Technology Grants
- White Paper Long Term Conditions Whole System Demonstrator
- Computers for Schools
- Building Schools for the Future
- Home Access Programme
- NHS Choices
- Telecare

2008 also saw the publication of *Delivering Digital Inclusion* – the government's digital inclusion strategy and action plan for future developments and consultation. This is outlined as 'a framework for achieving greater digital inclusion and for championing the best use of technology to tackle ongoing social inequalities'. The report develops the idea that ICT can have both direct impacts upon the quality of life of individuals and communities, but also indirect benefits through the use of technology to deliver effective and efficient public services.

Increasingly government policy has concentrated not just on the importance of initiatives which seek to provide access to the internet, but also to encourage service providers to improve their service delivery to meet social ends, thus providing greater value for money and reducing costs. This relates to the use of technology for data storage, data sharing and the efficient and effective delivery of services within the home or for example through newly created one-stop local services customer service centres. This has once again raised the profile of e-Government as an important and related strand of the digital equality agenda and has most recently been extended in plans to establish Mygov – a personalised and co-ordinated platform for interaction with all public services (Brown, 2010). Indeed, given the economic recession and the desire to make financial savings this has meant that much of the policy rhetoric is increasingly focussing on delivering 'more for less' and the business case for delivering more services through digital means (PWC, 2009; Francis, 2009).

In 2009 these developments have been followed by the publication of the Learning Revolution which includes the role of technology in the future of adult informal education, the announcement of the national E-Champion (Martha Lane Fox) who will now lead the Race Online 2012 campaign[12], and the publication of the government's wide–ranging Digital Britain Report (Carter, 2009). While the report is primarily concerned with the growing importance of the digital economy and issues of infrastructure, content and service provision, digital inclusion is considered as one aspect of this, outlining further commitment to 'universal access' to high quality, public service content and stressing the importance of those obstacles facing those who remain 'off-line' including: availability, affordability, capability and relevance.

While CLG continue to champion this agenda thus supporting the work of the independent E-Champion, and continue to focus on their engagement with local authorities and social housing agencies, the department of Business, Innovation and Skills (BIS) has taken on many of the responsibilities outlined in the Carter report (Carter, 2009). As such the digital inclusion agenda has seen a shift towards the use of technology to meet the needs of the wider economy and of enterprise as opposed to the needs of the more socially excluded communities. This also coincides with the removal of the Minister for Digital Inclusion from the government cabinet. The extent to which these changes represent a shifting prioritisation for social and digital inclusion is unclear, but it represents a changing emphasis given the looming general election, a financial crisis and calls for a tightening of the budget deficit.

2.7.4 Local initiatives

Alongside large-scale national schemes, there has been a considerable growth in the number of smaller scale projects operating across the country, often with support from local authorities and local strategic partnerships. In response to many of the lessons learnt over time through direct experience with socially excluded communities these are often operated through the

[12] A campaign to aim to get the approximately million socially excluded people in the UK who are not current accessing the internet, to get online by 2012.

community and voluntary sector (CSV), providing access to technology and the relevant support systems. However as a recent review of such initiatives indicates (Loader & Keeble, 2004), many difficulties remain in terms of the effectiveness of these schemes. These include: low levels of use by those seen as digitally excluded, the use of venues which are viewed as barriers to participation, approaches to training which put off those historically categorised as 'underachievers', and the long term financial sustainability of such initiatives.

2.8 Summary

The literature which addresses digital inclusion is extensive and growing rapidly, and while numerous studies have examined the impact of national digital inclusion initiatives (for example UK Online Centres and the Wired Up Programme), national statistical trends of take up and use (Ofcom, National Statistics and the Oxford Internet Survey) and the impact of minor interventions at the local level (for example see Hampton & Wellman, 2003), what appears to be largely absent is an examination of the patterns of provision, use and access and its social impact within a specific geographic area. As outlined in section 1, this evaluation addresses these aspects whilst bearing in mind the conceptual developments outlined here concerning the character of the digital divide.

This section has clarified the definitions of digital and social exclusion/inclusion used in this evaluation, it has examined the significance of a growing divide between those who do and do not have access to and use of ICTs as well as pointing out the complexities of the divide and the experiences of specific social groups. The section also briefly explored some of the limitations of achieving social inclusion through digital inclusion by drawing upon relevant research and conceptual models of economic, social and cultural capitals. This will be revisited in sections 6 and 7.

Taking this literature into account, what is of concern is the meaningful use of technology by socially excluded groups to achieve those goals which are

deemed as valuable in their everyday lives. According to the literature, this is assisted by the use of key supporting resources and community involvement. This led onto an examination of the evolution of government intervention in this area, particularly in relation to learning, skills, employment and the use of technologically enabled public services. While the need to address social inequalities exacerbated by digital inequalities are still considered worthy policy goals, this focus now sits alongside a strong renewal of an e-government agenda and economically motivated interventions. This is a trend which has also been witnessed at the local scale, and is evident in Sunderland as section 4 goes onto addresses.

3. Evaluation methodology

As mentioned in section 1.3 this evaluation is made up of 5 key sections, the first of which has been covered above in section 2. The second of these sections comprises a historic and strategic analysis of the development of and embeddedness of the digital inclusion agenda within the city, the third looks at changes in measurement of socio-economic data taken from national indicators in relation to these strategic changes, the fourth is a longitudinal analysis of experiences and behaviour of a sample of Sunderland residents in areas defined as 'socially excluded' in relation to use of digital technology and the last is a qualitative consideration of these some of these experiences through case study interviews. A mixed method approach has been adopted which allows for data to be triangulated (Bryman, 2008). For each section appropriate methodologies have been employed including the use of documentary analysis, secondary statistical analysis, single, bi and multi variable analysis of primary data, as well as an interpretative approach towards the qualitative data. These are outlined below in more detail.

3.1 Historic and Strategic Change

Following a brief contextual introduction to the city of Sunderland, this section examines the extent to which Sunderland has established itself as a digitally enabled city at the strategic level and the basis and impetus for these changes. In so doing it provides an explanation for the development of digital inclusion strategies in this city and an assessment of the sustainability of this strategic approach. It also allows for a break down of best practice and transferability at the strategic level.

Initially those programmes, initiatives and projects which have formed the basis of digital inclusion activities in Sunderland from 1996 to the present day will be set out. This will take an overview of those ICT enabled services provided by the Sunderland Partnership and other related agencies in the locality. Their details will be documented including the agencies involved, their location within the city, the specific objectives and economic/political/social concerns, the communities targeted and the technologies used. Those initiatives which existed prior to Digital Challenge

will be traced back to identify how they emerged as strategic priorities, understanding how specific projects became recognised as important and how Sunderland emerged as a Beacon city in contrast to other parts of the UK. This will illustrate how the city developed an initial business led approach which focussed upon inward investment and has more recently moved towards a more co-coordinated attempt by the strategic partnership, the local authority, the Community and Voluntary Sector (CVS), the University and local communities to engage with digital inclusion as a mechanism to achieve not only economic development but also social inclusion and improved service delivery. As a consequence of these efforts the recognition the city has received in the way of awards and achievements is then outlined.

With reference to locally sourced policy and strategy documents, board minutes and programme updates, non-published and academic literature as well as primary research conducted with key figures in the local strategic partnership, the embeddedness of the digital inclusion agenda within local strategic considerations will be assessed. This will examine the extent to which ICT has become incorporated into city-wide strategic considerations and public service delivery as a consequence of a shifting agenda. An analysis is conducted of current policy and strategic approaches taken with reference to the Sunderland Strategy, the Corporate Improvement Plan and other locally sourced documents, observing the extent to which digital inclusion has been embedded within the priorities and organisational structure at the corporate level. This contemporary analysis will examine the areas in which ICT solutions are now used or considered and the sustainability of this beyond the Digital Challenge funding period. At the end of this chapter key areas of strategic commitment are drawn out alongside areas which may be in need of further development.

3.2 Longitudinal Measurement of City-wide Changes in Social Exclusion

In the light of the development of various digital inclusion initiatives in Sunderland, this section examines how levels and measurements of social exclusion on a city-wide and more localised level have changed alongside the growing investment in and use of ICT. This allows for a demonstration of

possible relationships between digital inclusion activities and changing patterns of social exclusion. The baseline year for this analysis (where possible) is 2000 in order to coincide the publication of Sunderland's 2nd Telematics Strategy in Sunderland, which marks the beginning of a formal focus upon achieving social inclusion through digital solutions.

In order to attribute changes in levels of social exclusion to digital inclusion initiatives, a matched area has been selected which as closely as possible matches a set of criteria including; socio-economic profile, demographic profile, geography and local history, but also a borough which has not been historically engaged with ICT initiatives to the same extent as Sunderland. In order to calculate these similarities the indices of deprivation from the year 2000 was taken as the baseline data and a K means cluster analysis was employed to provide a list of 'similar' geographic areas (Devins, et al., 2003). This list was then refined by taking an average of rankings from the indices and then on the basis of the criteria set out above. As a result the Metropolitan Borough of Doncaster was selected (See Appendix 1 for further details of this process). This provides the 'counterfactual' - an indication of what may have happened to levels of social exclusion in Sunderland if the digital inclusion agenda had not been adopted in the way it has.

For both areas secondary, longitudinal administrative data from 2000-2009 is used. This has been made available through the Department of Communities and Local Government (CLG) and the local authority in the form of a set of national indicators. The measurements are based upon the definition of social exclusion as outlined in section 2.2, which includes the domains of deprivation used in the Indices of Multiple Deprivation (employment & income, health, education, housing and crime) as well as those which within the literature distinguish social exclusion from conventional definitions of poverty (including civic participation and independent living).

The thematic areas covered under this definition relate to the national indicators used. Only those indicators which are considered to have some discernable relationship with digital inclusion activities and use of technology

have been included here (for example the domain of Housing has been omitted as associated indicators only refer to housing supply). Use of national indicators also allows the analysis to relate to the strategic priorities of the Sunderland Partnership, by paying close attention to the priority areas identified in the recent LAA agreement. Those indicators used under each theme are outlined in section 5.

There are several issues related to the use of the national indicator data set. Firstly, that the data series for some of the indicators does not go back very far historically and therefore the time series offers a very limited indication of trends over time. Secondly, for some of the selected indicators which have been more recently established within the newly established 198 set, data is yet to be collected or adequately collated by either central and/or local government. Where these issues are relevant the associated indicators have not been used to draw out any indicative trend.

3.3 Longitudinal quantitative questionnaire

City-wide statistical analysis helps indicate the parallels between changing patterns of digital inclusion activity and social inclusion, but despite the use of a matched area it is not possible to entirely attribute changes to these activities. As is pointed out in an the DCLG's analysis of experiences from the New Deal for Communities Programme 'The direction and intensity of outcome change may be due to a wide range of factors' which fall beyond the boundaries of the sets of initiatives and strategic priorities examined in this study (DCLG, 2008). In order to enhance confidence in the validity of the impact of digital inclusion initiatives in Sunderland, it is therefore necessary that we triangulate the data through a consideration of the experiences and changing circumstances of those directly involved with digital inclusion initiatives. This also allows for an assessment of best practice in terms of which projects have been most successful in reaching out to socially excluded residents in the city and achieving the goals of social inclusion, thus leading to further discussion of transferability.

3.3.1 Questionnaire design

This key aspect of the evaluation takes the form of two sets of structured, largely quantitative questionnaires (but also includes some open questions) completed by local residents in areas of the city defined as 'socially excluded' over approximately a 11 month period. As with the analysis of secondary data above this is part of a longitudinal study which looks at changes over time in use and benefits of digital inclusion. The questionnaires gathered basic demographic data, information concerning usage of various technologies, involvement with digital inclusion activities and the discernable impact and benefits upon living circumstances, quality of life and life chances (A copy of both questionnaires are found in Appendix 2). In this way it will be possible to assess the benefits for those who have accessed forms of technology in relation to some of those benefits outlined in the literature and discussed above in section 2.3.

The initial questionnaire was designed and then piloted with a class of foundation degree students at a partner college in the city involved in digital inclusion activity. 13 questionnaires were completed by the students in this widening participation class. Direct feedback was then sought from the students on ease of completion, length, clarity, wording of questions and relevance and in light of comments and suggestions the questionnaire was revised (van Teijlingen & Hundey, 2001). This revised version was then circulated to the evaluation steering group and further comments were made which were taken on board by the research team before the final version of this initial questionnaire was completed and distributed.

The questionnaire was designed to be completed by both those in Sunderland who had already engaged with technology or any of the activities surrounding Digital Challenge and those who remained 'digitally excluded'. The purpose of the questionnaire was to access the opinions, experiences and behavioural patterns of a range of residents from a range of social groups at different stages of the 'digital spectrum'. This allowed us to assess both the reach of digital activities and initiatives, and also the effectiveness of engagement with technology and any discernible benefits. What we were

most concerned about was that the questionnaire reached those who were 'socially excluded' in the sense outlined in the previous chapter.

After discussion within the research team and the steering group, it was decided that a postal questionnaire was the best mechanism for reaching hard to reach groups in the city on a geographical basis. Our definition of socially excluded geographical areas in based upon the Indices of Deprivation (DCLG, 2007) and those LSOAs in Sunderland which fall within the '10 per cent most deprived nationally' category in this index.

3.3.2 Questionnaire sample

Given that 61, 171 (21.8 per cent) of the city's 280,600 population in 2007 lived in those Lower Super Output Areas (LSOAs) classified as amongst the 10 per cent most deprived LSOAs nationally, the initial postal questionnaire aimed to reach at least 6,117 residents (10 per cent of the socially excluded population). In order to access the sample frame of addresses we matched the LSOAs with corresponding post codes using the National Post Code Directory and then used the Electoral Roll (2009) to locate the most current registered addresses in these areas. According to this register, the number of residential addresses currently found in these areas totals 26,443. We took a 25% sample of this population providing a total of 6,610 addresses (a total in excess of the 6,117 figure mentioned above and therefore a representative sample). This sample was then systematically and randomly selected by beginning with a random number and then selecting every third address within the frame (Dane, 1990).

There are always difficulties with response rates when attempting to access hard to reach groups and when using a postal questionnaire (Cloke, 2004: 132). We were very aware of these issues and in order to improve the response rate for both sets of questionnaires we sent out a primer letter one week in advance of both sets of questionnaires to make the residents aware that they would be invited to participate in the research. We also sent out two questionnaires to each of the 6610 addresses selected. This not only meant that we could potentially double our response rate, but also allowed us to

access to different age groups by asking those above and below the age of 25 to complete a copy of the questionnaire where this was applicable. The age of 25 was selected in line with the Oxford Internet Survey (Dutton & Helsper, 2007) which suggests that internet use drops off considerably beyond this age. A further strategy employed was to enter all residents who responded to both rounds of the questionnaire into a prize draw to win a lap top computer.

We were also aware of issues of non-response bias and understood that those who did not respond to the questionnaire were more likely to be those who were more disengaged from technology and more likely to be socially excluded on a number of levels. In terms of responses from specific age this is addressed above and in terms ethnic groups, given that the non-'white British' population in Sunderland is relatively small (less than 3 per cent), issues of non response amongst this group may not be as significant as they may be elsewhere in the UK. After the completion of the first round of questionnaires we also tested the sample for non response bias based upon the demographic information we have for the selected sample areas and found that the sample was an accurate reflection of the overall population.

In total 811 residents responded to the first round of the questionnaire, with 393 of these respondents indicating that they would be willing to participate in the next round. The total from the first questionnaire represents a response rate of 12.7 per cent and a sampling error of below 4 per cent at 95 per cent confidence level (de Vaus, 1993). The second questionnaire was subsequently designed on the basis of the first in order to assess any changes in use of technology or quality of life as a result of such engagement over time. In total 203 residents responded to the second round of the questionnaire. Taking the first round respondents who indicated a willingness to continue with the research as our sample population (393), this represents a response rate of 51.7 per cent. Copies of both questionnaires are found in Appendix 2 and further details of the demographics of the sample for both questionnaires can be found in Figure 6.1.

3.3.3 Questionnaire analysis

The data from both sets of questionnaires was subsequently analysed using SPSS in the form of single variable analysis, and where data was calculated to be of significance ($P<.05$), cross-tabulation and multiple variable analysis was also applied. Each of the questionnaire surveys were analysed individually as well as on a longitudinal basis in order to monitor any significant changes in data or relationships over time. The key areas of concern in this analysis were ownership and use, engagement with digital inclusion initiatives and online public services, skills and learning as well as benefits and drawbacks to the use of technology. This analysis was particularly interested in examining the use of technology in relation to the key social groups identified in section 2.4.1.

3.4 Qualitative Case Study Interviews with participants

The questionnaires were followed up by a small number of case study interviews with participants who have engaged with technology to different levels and different ways, and who speak from different perspectives based on their social characteristics. This aspect facilitated a more in depth and nuanced analysis of the way in which socially excluded individuals approach and engage with technology. In particular it enhanced an understanding of the complexities of the digital divide and the ways in which such divisions may be addressed. The interviews were semi-structured and conducted using a topic guide which allowed for more open questions that revealed quality of life benefits not covered through the more standardised questionnaires. In the line with argument put forward by Williams (2000), these interviews with a limited selection of individuals, were employed in order to generate some form of *moderatum generalisations*, “where aspects of x can be seen to be instances of a broader recognisable set of features” as opposed to a total generalisation of these broader features. That is, these interviews provide a detailed insight into the concrete experiences which make up the patterns indentified through the survey.

Selection of the sample for these interviews was based upon locating individuals from the questionnaire survey willing to participate and who were engaged in some way with technology. Specific social groups for further investigation were drawn from the questionnaire data. This included one participant identified as middle class in order to contrast experiences with the other participants all identifying as working class.[13] 11 participants were selected, using the personal information section of the first questionnaire to identify individuals from the following social groups:

- 2 participants with **long term health condition/impairment** (1 male, 1 female)
- 1**unemployed** (male)
- 1 **full time employed** (male) and 1 **part time employed** (female)
- 3 **elderly/retired** (2 female, 1 male)
- 2 **engaged with initiatives** (1 male, 1 female)
- 1 **young person** (female)
- 1 **middle class** (female)

These various groups were selected as there were identified as key social axes which had an impact on the way in which technology was being used on the basis of responses to the first questionnaire. These participants were interviewed once. Each interview lasted approximately one hour, was recorded, transcribed and analysed using qualitative analysis software (Nvivo) and an approach influenced by grounded theory (Corbin and Strauss, 1998).

The questions used in these interviews explored the experience of individuals in terms of their relationship with digital technology but also in terms of their backgrounds, social positions and living circumstances. The interviews explored how levels of social inclusion may have been influenced through engagement with digital technology as well as covering any difficulties

[13] Social class and definition of working class is identified here using NS-SEC L7-L14 occupations, educational history and self definition (see Crozier et al, 2010 for more detail on this methodology).

encountered when attempting to make use of digital opportunities. The interviews also included questions around service delivery and interactions with technology in everyday life both within and beyond specific and identifiable digital inclusion projects. For details of the topic guide for these interviews see Appendix 5.

4. Historic and Strategic Analysis

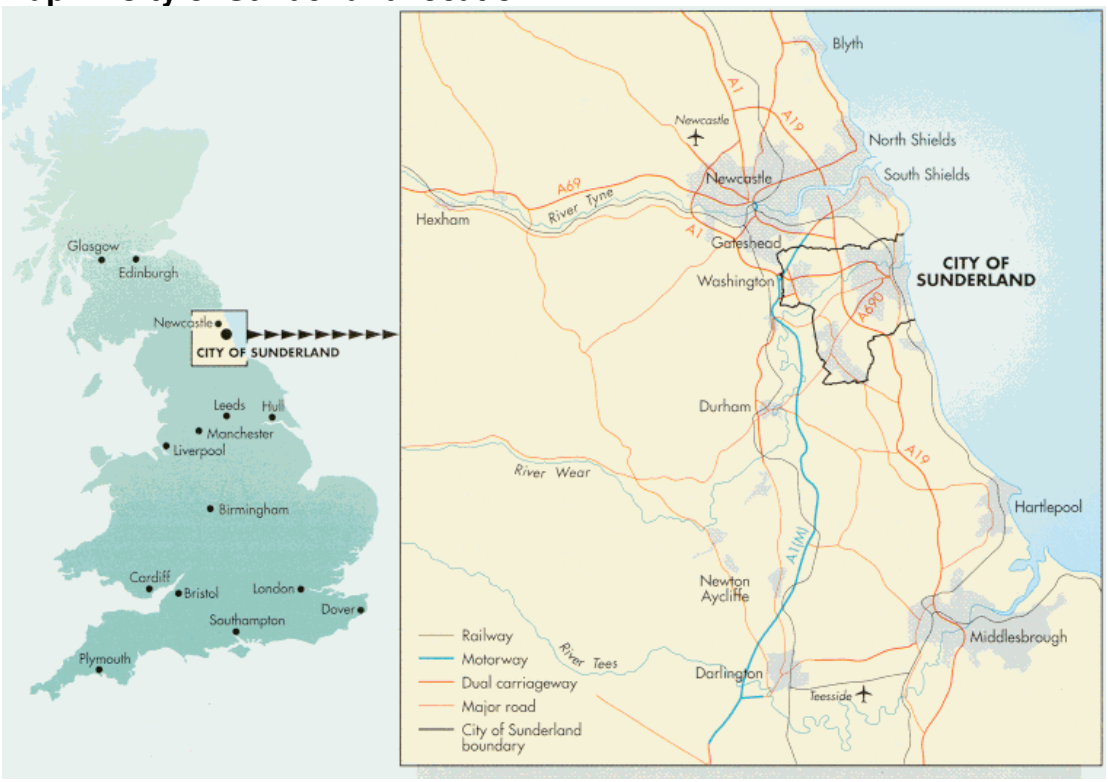
4.1 Introduction

Section 2 painted a picture of the digital inclusion landscape at the national level and illustrated an emerging policy agenda. It also highlighted how take up and access to digital technology is not uniform but varies across social groups and across the country. This section builds on this by shifting attention towards the historic development of digital inclusion strategies within the city of Sunderland itself. In so doing the importance of local socio-economic context, growing levels of interest and investment in digital solutions to economic and social issues and the actions and commitment of local authorities, agencies, partnerships and community groups is demonstrated. The section examines the extent to which Sunderland has established itself as a digitally enabled city at the strategic level, both through devoted digital inclusion programmes and the incorporation of the digital inclusion agenda into other aspects of corporate activity.

4.2 The City of Sunderland

The city of Sunderland is located at the mouth River Wear in the north east of England, with the River Tyne to its north and the Tees further to its south (See Map A). The city is estimated to be home to a population of approximately 280,600 (ONS, 2006) which makes it the largest city in the region. Sunderland gained its city status in 1992 and the modern day boundaries now include the settlement of Shiney Row and the new town of Washington in the west, and Houghton-le-Spring and Hetton-le-Hole in the south, covering 137 square kilometres (Sunderland City Council, 2007). As such the city is composed of both more densely populated urban areas, particularly along the mouth of the Wear and sea front, and more rural areas to the west of the A19 which runs through the centre of Sunderland from north to south.

Map A: City of Sunderland location



Source: Sunderland City Council

As with many post-industrial urban areas in the UK, the late 20th century has been a period of significant change and socio-economic adjustment for Sunderland. This was a city which once boasted the biggest ship building yards in the world[14] and extensive coal mining, glass and rope making industries, however, virtually all traces of these have now disappeared. These industries supported significant levels of employment in the city and region throughout the previous century, but by 1986 coal was no longer exported through Sunderland from the Durham coalfields, by 1993 the last local mine had closed (Wearmouth Colliery) and by 1988 shipbuilding had finally come to an end on the River Wear.

At about the same time (1986) the Nissan car manufacturing plant was opened, and today has become the largest of its kind in the UK and one of the most productive in Europe. While this was a welcome development and

[14] At the height of this industry in 1840, Sunderland had a total of 65 yards in operation (Ville, 1990).

economic boost for the city, it failed to address the fall-out of de-industrialisation and did not prevent widespread unemployment which had already taken hold. Throughout the 1980s Sunderland witnessed higher than national average figures of unemployment and experienced a period of significant economic decline. By 1991 the number of unemployed in Sunderland had reached 24,342 (ONS, 1991), with the male unemployment rate over 20 per cent (Vision of Britain Through Time, 2009).

Regeneration activities from the early 1990s onwards have sought to address the legacy of the loss of traditional heavy industry on the economic, social and cultural fabric of the city. While the city has engaged in a range of regeneration activities attempting to attract jobs, business, investment and tourism to the city and to improve the social and cultural opportunities available to residents, it is possible to identify from about 1996 the increasing role which Information and Communication Technology (ICT) has played as a major strategic strand of these efforts. Increasingly the ICT sector has become recognised in Sunderland as a key strength and this section traces the development of this. Not only has ICT increasingly been identified as an enabler of economic regeneration, but also as a way of addressing many of the social problems associated with industrial decline such as unemployment, low income as well as poor standards in education and health (as discussed in section 5).

4.3 Adoption of technology in Sunderland

Over the last few years access to technology in the city has increased throughout the period as can be seen from data presented in Table 1. Of particular significance is the growth in the proportion of residents with access to PCs, the Internet and e-mail. While these increases have taken place at a faster rate than in other parts of the country, this pattern is not unique to Sunderland and does reflect a national trend towards greater ICT access (see section 2.3 above). As will be further explored in section 5, it is also clear that these trends cannot be directly or solely attributed to the strategies and programmes outlined below. However despite these health warnings and that fact that a significant proportion of the population still appear to be digitally

excluded in some way, it appears as though attempts to improve levels of access to and use of technology have to some extent at least succeeded.

Table 1: Use of technology Sunderland 2004-2007

Use of interactive services	2004	2005	2006	2007
Mobile phone	81%	79%	81%	84%
SMS text messaging	44%	45%	47%	59%
PC desktop/laptop etc at home	39%	40%	52%	54%
Internet at home	36%	36%	43%	52%
E-mail	35%	33%	39%	49%
PC desktop/laptop etc/computer at work, place study or elsewhere	27%	23%	25%	32%
Interactive services through your digital TV	23%	19%	20%	31%
Internet at work, place of study or elsewhere	20%	21%	20%	29%

Source: IPSOS-MORI Sunderland Annual Residents' Survey (2007)

Other recent research produced by OFCOM (2008) paints an even more positive picture, particularly in terms of access and use of broadband internet connections. OFCOM's research shows that out of the UK cities surveyed, Sunderland has the highest proportion of residents connected to broadband (66%), the highest proportion using Digital TV (96%) and the highest proportion of fixed lined telephone lines (96%).[15] However, given the methodology used to generate these figures, there needs to be a level of caution in accepting this as an accurate reflection of the current situation. Also as has been discussed in section 2, consideration must be given to more issues than access alone in terms of the social outcomes which are generated. This will be addressed in further detail in section 5.

As with the rest of the country there are also still serious issues in terms of broadband availability, connectivity and the speed of connectivity within Sunderland (Carter, 2009). While broadband coverage is fairly comprehensive in Sunderland it is not complete (Sam Knows, 2009). There is also the issue of speed of connection. As a recent survey commissioned by the BBC (Sam Knows, 2009) indicates, Sunderland has several areas across the city with ADSL broadband speeds of less than 2Mbps and some areas with speeds of less than 512Kbps, particularly in an area to the south of

Washington. In terms of the capabilities of the nine telephone exchanges which serve the city, none are wireless enabled, two of these exchanges are not cable enabled, three are not SDSL enabled and one is not LLU services enabled. The availability of alternative LLU operators in the city also varies considerably between areas. For example Hylton has no LLU operator presence in the area apart from the service provided by BT (Sam Knows, 2009). However, it must be borne in mind that Sunderland will be included in the exchanges being upgraded to faster broadband connection by the summer of 2010.

4.4 Digital inclusion achievements

Sunderland has been recognised on many occasions since the mid-1990s as a model in terms of how technology and community engagement may be harnessed to meet social and economic ends. This has had discernible effects upon the way the city and its institutions operate and has inspired those responsible for digital inclusion activities to push for continuing development – to some extent, success has bred success. The results of, for example, securing Beacon status on several occasions and the Digital Challenge funding, has provided Sunderland with the opportunity to disseminate best practice, whilst also constantly learning from other parts of the country through networks such as D10 as well as through more informal relationships – allowing the city to continue at the forefront of new ways of working with technology for social and ends.

The following achievements illustrate this recognition:

Intelligent Community Visionary of the Year Winner (2001)
Awarded by the International Intelligent Communities Forum (ICF) in recognition of the city's leadership role in promoting broadband technology and applications as an essential utility in the digital age.

[15] Office for National Statistics also produces data relating to internet use, however the lowest spatial analysis for this is at regional rather than local authority level.

E-Government Pathfinder Status for Information and Communication Technology (2001)

Awarded by the UK government as one of the recognised pathfinder areas to have developed solutions for a variety of technical, policy and management issues surrounding the implementation of e-government.

Intelligent Community of the Year Finalist (2002)

Awarded by the International Intelligent Communities Forum (ICF) for the second consecutive year again for the city's leadership role in promoting broadband technology and applications as an essential utility in the digital age.

IT Professional Awards Finalist Social Contribution – Social inclusion through ICT (2003)

Awarded by the British Computer Society to showcase and celebrate best practice, innovation and excellence across the IT profession.

Beacon Council – Libraries as a Community Resource (2002/2003)

Awarded by the UK government for the promotion of social inclusion through access to information technology in local libraries.

Beacon Council – Social inclusion through ICT (2003/2004)

Awarded by the UK government for tackling exclusion and promoting life chances through the use of ICTs.

Beacon Council – Digital Inclusion (2008/09)

Awarded by the UK government again for Tackling exclusion and promoting life chances through the use of ICTs.

It is clear from these achievements and from securing Digital Challenge funding that Sunderland has performed well in a strategic sense. And in achieving Beacon status for digital inclusion in 2008, it is proof that Sunderland is adequately meeting the standards set out by government, standards which are now set out in the self –assessment Beacon Check list. The checklist assesses performance against leadership vision and strategy,

enabling actions, community engagement and empowerment, partnership working and evidenced outcomes. In the eyes of the panel assessing Beacon applications, Sunderland has performed well in all of these areas.

The development of a local agenda, which have led to these achievements and perhaps has contributed to a growing take up of technology, is now discussed. The clearest illustration of this strategic direction is evident in a number of key city-wide programmes which have been devoted to achieving socio-economic goals through the use of technology in a number of forms. These are explored here.

4.5. Key digital technology strategies and programmes in Sunderland 1996-2009

Key strategies and programmes are distinguished here from specific digital inclusion projects in that these represent significant, long term programmes which incorporate smaller scale and more targeted projects. The key programmes outlined here are seen as those which demonstrate a continued and growing commitment to the use of ICT as a socio-economic driver in Sunderland beyond the statutory requirements set out by national government (see section 2.7). These developments also illustrate the way in which the emphasis of programmes has shifted over time from initial economic regeneration and business infrastructure development through to an emphasis on addressing social exclusion and the social imperatives of initiatives. This is not to say that each of these programmes should be seen as entirely distinct and that the movement from an economic to a social focus has been consistent over time. The objectives within each are subject to a certain degree of cross-over and more recently in the light of a sustained economic downturn, economic growth has once again come to the fore in the guise of programmes such as Sunderland Software City and the emergence of a regional economically focussed digital strategy led by ONE North East.[16]

[16] ONE North East is the regional development agency for the North East of England.

The year 1996 is seen as an appropriate starting point for this analysis as it marks the publication of the first dedicated ICT strategy in the city, following the establishment of the city's local strategic partnership (LSP). Unlike many LSPs across England, the Sunderland LSP has a history which can be traced back before New Labour's modernisation agenda incorporated this model as a means of collaboratively tackling local issues (Sullivan, 2003). Originally named the Sunderland Partnership in 1994, the grouping brought together the public, private, business, community and voluntary sectors (CVS) to deal with some of the issues facing the city, in particular those relating to regeneration and the need to stimulate a flagging local economy. In the formation of this partnership there was a recognition that these concerns cut across the education sector, health, personal social services, the business community and the CVS, and therefore an integrated approach was required.

4.5.1 1st Telematics Strategy 1996-1999

One of the earliest developments which emerged from this grouping was the formation of the partnership's Telematics Group, which brought together the Council's ICT Unit E-Government team, the City of Sunderland College, the University of Sunderland, local NHS health services, locally based technology businesses such as the Leighton Group[17] and the Sunderland Voluntary Sector Partnership. The publication of a dedicated telematics strategy[18] then followed, which aimed to deliver greater economic prosperity through the use of ICT and in particular the development of business related ICT infrastructure which the group hoped would attract industries that relied upon advanced telecommunications facilities. This recognised the presence of a small but growing ICT and software industry and the role which could be played by key partners such as the University in helping to develop a local economy based around telecommunications, media and the digital sector. It also

[17] The Leighton Group focuses upon technology, software, new media and interactive communication industries. It is currently made up of five independent companies: Leighton Ltd, The Communicator Corporation Ltd, Leisure Travel and Tourism Ltd, Business Education Publishers Ltd and Workcast Corporation.

[18] In this strategy 'telematics' is defined as: "a new name used to cover the coming together of computers and electronic communications. But telematics is often used as a name to cover anything at all about computers and telecommunications" (City of Sunderland Partnership, 1996).

demonstrated a commitment to the further development of this work as a key future prospect for the future of the city's economy and an employment generator:

> *"The City of Sunderland Partnership is fully committed to Sunderland becoming a national and international centre for Telematics"*
> (Sunderland Partnership, 1996).

The business orientated goals related to developing capacity, particularly in those business parks which had already begun to see the growth of ICT related industries such as Doxford International, originally built in 1991. More specifically this involved establishing information processing capacity – the Sunderland Teleport - at Doxford International Business Park, which succeeded in attracting a number of international companies to the area and to some extent established the city as an 'information hub' (Southern, 2001).

Alongside this focus on the business sector the strategy also looked at building on a number of learning initiatives and community projects, by relating telematics to education and training providers and by focussing on the enhancement of educational facilities. For example, as a result of such commitments, in 1997 the Libraries Access Sunderland ScHeme (LASH) was launched as part of a shared commitment to lifelong learning objectives, allowing anyone with a valid membership card to use any of the city's 29 libraries including those at the University of Sunderland, the City of Sunderland College and the Library Service of the City of Sunderland's Education and Community Services. Alongside conventional library services, the public use of computers, the internet and e-mail facilities within libraries were also promoted (CHEMS, 2002). The strategy can therefore be seen as consistent with the desire to simultaneously explore the potential of technology to achieve both economic and social outcomes.

The strategy outlined achievements to date in terms of the development of ICT capabilities and infrastructure, but also set out a number of proposals which would guide the future direction of ICT and digital inclusion in

Sunderland. These proposals concentrate on the technology business sector itself, as well as the use of ICT by other companies in the city whilst also pointing towards to importance of provision for learning as mentioned above.

The proposals come under three headings. The first *'The Intelligent City'* includes proposals to install terminals and computer access in public buildings, homes, establish computer recycling, improve communication between city agencies, run telematics workshops for residents and establish Electronic Village Halls (EVHs) in community centres.

The second is *'Education and Training'* which includes telematics awareness for students, a mobile Telebus, call centre training, language learning and the establishment of a cross city working group dealing with skills development in the area of telematics. As a result of these first two aspects of the strategy it is estimated that 15,000 residents were given access to ICT and 33,000 were trained in the use of ICT at a basic level (Whyte, 2003).

The third heading is *'Business'* which covers an expansion of the Sunderland Teleport facility, an ideas forum involving public and private sectors, linking local supplier chains electronically, business start up facilities, an IT and network support centre, home-shoring, a programme to ensure the productive use of IT in small and medium enterprises (SMEs), the development of a marketing strategy and the use of a mobile ICT unit.

Although not all of these initiatives have been equally successful, there are a number of schemes that can be traced from these early beginnings through to the present day – illustrating the manner in which initiatives have been followed through. This can particularly be seen in terms of the EVHs which have now expanded in numbers across the city (see section 4.5.4), while others have changed slightly but are still identifiable, for example the Telebus which has now become the Libraries and Information Access Zone (LIAZe) Project – a mobile unit ran by the Sunderland City Libraries which provides access the computing facilities. It is also possible to trace the development of a number of community based initiatives as a consequence of the roll out of

this strategy. For example, initial impetus was provided as part of the Telematics Strategy to the SRB funded Hendon 2000 project in the east of the city, establishing PC connections for 5 community projects in the area. Since then by securing further sources of funding this work in Hendon has grown considerably, developing into a local ICT hub with improved broadband connectivity, its own EVH suite, EVH manager (E-lumination Issue 2) and a UK Online Centre (Social Impact Demonstrator project report).

With regard to the business sector, a number of successes emerged out of this early development. For example 1998 saw Sunderland receive World Teleport Property Certification from World Teleport Association for its Teleport House at Doxford, which through a partnership between the local authority, Sunderland College, the University of Sunderland, The Leighton Group and Northern Informatics became operational the following year. By 2002 the city had also attracted a number of other multinational companies to the business park including Nike, Barclays, One 2 One, London Electric, Verisign Europe and EDS (Intelligent Community Forum, 2003) and in 2004 the Rainton 'high tech' Business Park began its development including the E-volve business centre with a projected job creation for 5,000 employees. The centre has high levels of broadband connectivity and is equipped with the latest WiFi and smart-card technology.

What this early strategic development also illustrates is a demonstrable and concerted commitment by the major agencies and interest groups within the city to come together through partnership working to deliver on this agenda for both economic and social outcomes. This historical viewpoint also provides an indication of the level of expertise there now exists in the city both in terms of an understanding of the potential of technology as a socio-economic tool, in terms of engaging the wider community with these issues and of working together.

4.5.2 2nd Telematics Strategy 1999-2003

The main focus of this second telematics strategy was upon improving access to lifelong learning opportunities which involved the use of technology (Yamit, 1998). However, this strategy did not represent a clear change of direction, many of the ideas and initiatives put forward in the original strategy were further developed and in many ways this second strategy can be viewed as a renewal of continued commitment on behalf of the partnership to the areas originally outlined. The strategy continued to focus on the needs of residents, the needs of learners and those of businesses. The stated aim of this second strategy was:

> *"To move the City forward in the Information Society so that our people, business and learners can benefit fully from the advances in the new information and communication technologies, thereby promoting their social and economic well being."* (Sunderland Local Strategic Partnership, 1999)

This included the following key elements:

- Development of a publicly-owned ISP and e-government hub called the Sunderland Host,
- Expansion of the high-speed network to businesses and community centres
- Creation of a one-stop Sunderland Portal internet site for citizens, business and government users
- Extension of the Electronic Village Halls programme
- Extension of 'University for Industry' - which acts as an independent broker between learners and education providers
- Development of electronic database of IT training within the city
- Integration of city libraries and on-line access to library catalogues
- Extension of Learning Resources Centres with access to PCs across the city
- Smartcard trials and development
- Development of Sunderland Minster cyber –café

- Provision of school internet access as part of National Grid for Learning

4.5.3 E-Government Strategy and Action Plan 2000-2005

As mentioned in section 2, aside from a determination to use technology as a means of tackling economic development and social exclusion directly, the UK government has also increasingly promoted its use to deliver more efficient and effective public services. Sunderland's response to the initial E-Government Strategy (UK Government, 2000) came in the form of a local strategy and action plan which would attempt to meet obligations to make all public services available on-line by 2005. The aims set out in this strategy were:

- to transform service delivery and working practices to better meet people's needs and aspirations
- to encourage active citizenship
- to support lifelong learning both for employees and citizens
- to develop joined-up solutions with partners and;
- to secure 'Information Society' benefits for Sunderland in terms of efficiency, effectiveness and improved quality of life.

As can be seen, some of these aims do not only respond to the governments modernisation agenda, but also fit in with many of the concerns of the digital inclusion agenda at the local level, particularly in terms commitment to active citizenship, lifelong learning and quality of life benefits. It is therefore not possible, to entirely separate out e-government responsibilities from the digital inclusion and community empowerment agenda. Indeed if individuals and communities are increasing expected and perhaps required to access public services through the internet, then sufficient and suitable access to ICT facilities is vital. The cross-over between these commitments is recognised as a significant element of the emerging strategic direction in the city, but also an area which needs to be addressed in the future – for example engagement

with online public services will remain beyond the reach of those residents still unable to gain adequate access to ICT resources.

As with the early telematics strategies, central to the delivery of this strategy is the further integration of public, private and CVS through partnership working. This has been made possible through the 'e-City Partnership Working Group' which has continued to bring these sectors together on a local basis.[19] Again it is possible to observe how these early forms of partnership working have provided the city with vital experience of working together to achieve shared goals. The achievement of priorities in this area have also been followed up and closely monitored through the annual publication of Implementing E-Government Statements from 2001-2006. The key operational areas identified for development within these statements include:

- development and enhancement of the Council's website
- single telephone number Contact Centre and national pilot for Single Non Emergency Number
- roll out of Customer Service Centres across the City
- linked development of Electronic Village Halls and;
- capacity building through a network of 'Community E-Champions'

Again the cross over with the wider digital inclusion agenda is apparent in these priorities, it is clear that partners within the city, and in the case of e-government, particularly the local authority, have attempted to achieve socially inclusive outcomes. This is seen particularly in terms of the availability of public access to technology through Customer Service Centres, EVHs and the beginnings of the E-Champion scheme which has been more comprehensively followed up through the E-Neighbourhoods Programme (see section 4.3.4) and beyond.

[19] Formerly known as the City of Sunderland Telematics Partnership

In terms of the achievement of e-Government targets, by 2004/05 Sunderland was judged to have achieved 93.725% compliance which Best Value Performance Indicator 157 and by 2005/06 Sunderland had reached the government expectation for this indicator. This indicator measures 'the number of types of interactions that are enabled for electronic delivery as a percentage of the types of interactions that are legally permissible for electronic delivery'. These are positive results for Sunderland and indicate that the transference of public services on-line has been something of a success story for the city in terms of delivery. Although how use by residents of these services matches up is a different question (see sections 6 and 7).

This strategy also enabled the city council to begin to think through how the use of technology may be able to assist key public workers both on the front line of delivering public services and well as those involved in back office operations. As part of this drive, the city council along with its partners have developed a People First programme which looks to develop four levels of integration: Co-location, back office integration, front line integration and new services. The use of technology plays an important part in these goals, particularly in terms of single ICT systems in shared locations and the use of SMS text and video linking technology for front line staff (IDeA, 2005). Examples in Sunderland include: co-location of pubic services at the Customer Service Centre in Grangetown, the development of extended schools such as the Sandhill Centre, back office integration at the Bunny Hill Centre and an integrated reception services at the Hetton Centre. While the introduction of a new LAA national indicator which measures progress in terms of unavoidable contact with customers (NI 14) will be a useful measure of the success of these activities, it is too early to tell whether such developments have had a discernable impact on performance.

In terms of the Customer Service Centres, there are now 10 of these centres (2009) across the city operating on a basis of being accessible, relevant to the needs of residents and an efficient service in terms of effort, time and cost. For example, the Bunny Hill Customer Service Centre which opened in June 2006 in the north of the city brings together a range of partners including

community and cultural services, education, children's services, Sunderland Teaching and Primary Care Trust, Gentoo, GPs, Pharmacists and the Sunderland North Community Business Centre. Together they provide an integrated service dealing with advice and enquiries on a range of social issues, through channels including face-to-face, telephone and the internet. The centre also provides an opportunity for users to develop basic ICT skills and take part in non-vocational courses, incorporates an EVH, has a video link to other parts of the Sunderland Service Network and has a 'Techno-gym' facility which links to diagnostic services provided by the NHS (IDeA, 2007). These centres can be seen as a clear example of the ways in which the city has developed service delivery through the use of technology whilst attempting to ensure that these services help to impact of the quality of life of residents.

While public services are clearly being delivered through technological means, some issues around usability and the quality of these services do remain. These include issues around the Sunderland portal (www.sunderland.gov.uk), the main electronic destination for local public services which should be at the heart of efforts around e-government and e-inclusion. For example, the council's website does not feature in the recently published list of the UK's top 20 local council websites for usability (SOCTIM, 2007) and from discussions with key personnel within the council this is something that the local authority is looking to improve upon and prioritise in the future. There are also some issues around who has the right to access some of this technology. For example at Bunny Hill there is an entire computer suite which is only open to use by those enrolled on specific educational and training centres rather than for use by the general public. This issue around the visibility of usability of public services placed online is also further explored in sections 6 and 7.

4.5.4 E-Neighbourhoods Programme 2001-ongoing

While the various strands of the initial Telematics strategies continued to play a crucial role, from 2001 onwards there has been a need for the city to also

respond to growing demands from Europe (EU, 1999) and the UK government to address the 'digital divide' (see section 2.3). As set out in the PAT 15 report (2000), technological facilities, particularly computers and the internet, had to be made more accessible, especially in the more deprived neighbourhoods. While many of the initiatives already established in the city, particularly the EVHs and learning centres, were already addressing these concerns well before 2000, it was recognised that additional resources were required to meet the needs of community groups whose technological and social needs were not adequately met outside of public intervention. It was out of this recognition and Neighbourhood Renewal Funding (NRF) that the E-Neighbourhoods Programme emerged, administered by the city council ICT Unit on behalf of the LSP and working in partnership with the well established CVS in the city.

As opposed to a wide-ranging strategy which focussed on a number of target areas, this programme enabled a suite of initiatives which shifted the emphasis towards improving the quality of life of those identified as 'socially excluded'.[20] It aimed to do so by providing access to technologies, skills and training, promoting participation in the democratic process, encouraging cross-community dialogue and improving channels of consultation. This programme and its dedicated team within the city council's ICT Unit established the building blocks for much of what has followed in terms of community engagement, technical support and partnership working with the CVS. The ethos of this programme is that of meeting the needs of residents and supporting them in achieving these needs through the use of technology. This has proven to be successful and has subsequently been adopted in programmes such as Sunderland Digital Challenge as well as in other parts of the country as a model of best practice. The stated aim of the programme is to:

[20] See section 2.2 for a discussion of this term.

"…promote social inclusion by facilitating the participation of local people in a pro-active role, and to assist the development of Community based ICT provision."

The central aspects of this programme include:

- community consultation and community ICT audits
- the continuation, extension and strengthening of EVHs in community settings
- the establishment of the e-Champions initiative – the provision of technology, technical support, bespoke training and website development to community representatives to encourage others to engage with technology
- community of interest website development - on-line communities working with those linked by similar circumstances, locations and interest. Supported by community based technicians.
- strategic advice and support from the programme manager with the CVS
- technical support from a team of dedicated staff within the community

As a direct result of this work to date over 40 EVHs have been established across the city, over 70 Community e-Champions have been equipped and trained, over 60 voluntary organisations in the city have been supported, 10 COI websites have been created and 20 COI authors have been trained and supported (solutions4inclusion, 2009). The EVHs have been established, mostly in those areas of the city which are deemed to be the some of the most deprived – thus addressing the issue of public ICT access for some of the most disadvantages communities in the area.

The EVHs, which began in 1997 with the establishment of Pennywell EVH, but which were extended under this programme, fall under the sub-categories of Council EVHs and Community EVHs. The former are found at numerous city council owned sites – mostly libraries and Customer Service Centres and

the latter were initiated in 2003 through CVS organisation at a variety of different venues including: Washington Church of Christ, North East Refugee Service Sunderland Branch and Sunderland Sikh Community Hall. Some of the most recent EVHs which have been rolled out are also a result of the partnership formed with Gentoo which are located within Gentoo property and are exclusively accessible to their residents.

It is important to emphasise that this programme is still ongoing and has established strong links with other programmes, particularly Digital Challenge, in the delivery of a number of digital inclusion initiatives such as the continued extension of EVHs, the Community E-Champions initiative and Community of Interest websites. Community engagement remains at the core of these activities as well as the focus on the needs of the communities rather than use of the technology itself. In this way, facilities such as the EVHs have become more than just places to access computers and the internet but also community hubs and social opportunities for those in the city who are reliant upon such public provision – particularly seen through the development of EVHs in CVS facilities.

It is also clear that the initiatives established through the programme are cross-cutting and have managed to feed off one another in a sustainable fashion. For example, by building up a number of community based local experts in the form of E-Champions, reliance upon technical staff from the local authority in community settings such as the EVHs has not become so critical as representatives from local communities have been equipped with the skills and knowledge to help fellow residents and encourage their use of these facilities.

4.5.5 Connecting the Coalfields 2000-2008

This programme came out of a round of ERDF funding in the form of Urban II. Urban II looks to 'promotes the design and implementation of innovative models of development for the economic and social regeneration of troubled urban areas' (Urban II, 2007). Although digital inclusion is not at the heart of

all of the work within the programme (as given the levels of funding the aims of the programme are very wide ranging), the following key objectives illustrate that has played an important role, particularly in relation to employment, education and access to ICT.

- to improve the urban environment
- to create employment
- **to enable disadvantaged people take up opportunities for education and training**
- to develop environmentally friendly public transport systems
- to create effective energy management systems and make greater use of renewable energy
- **to increase access to information technologies**

The funding which is supported by the Connecting the Coalfields Partnership (over 200 organisations from the private, public and CVS based in the coalfields area of Sunderland and County Durham) has focussed upon the specific needs of the more rural areas of Sunderland, which suffered most from the closure of the coal mines during the 1980s. Associated problems of deprivation, a lack of training and employment opportunities, as well as geographic isolation in the communities around Murton and Hetton-le-Hole, means that they are at risk of becoming even more left behind in digital as well as socio-economic terms than the rest of the city. The programme established two Community Access Points in Easington Lane and Houghton Racecourse with transport facilities available to and from the centres as well as employing a mobile ICT unit to enable greater access to ICT facilities for those whose restricted mobility and isolation prevented them from directly accessing the centres.

The principal aim of the project at Easington Lane is to:

> *"…provide a Community Access Point that will create much needed facilities in a run-down former mining community. In*

particular we will focus on introducing local people to opportunities in education, training, primary health and social facilities".

Not only have these access points provided open access to ICT facilities, in particular computers and the internet, but have also heavily focussed on the provision of training facilities and educational courses led by professionals in these areas, as well as providing youth orientated activities and community meeting facilities. To enable those with families to partake of these opportunities, the centres have also provided a number of what Bradbrook and Fisher (2004) call supporting resources, including extensive crèche and child care facilities as well as community transportation. These have been developed at existing community centres in these areas, which as has been noted from the literature (see section 2.4) makes a vital use of already existing infrastructure, facilities and networks of trust and social capital. For example, the community access point as Easington Lane in its former life was the mining welfare hall for the village.

4.5.6 Sunderland Telecare Service 2007-ongoing

The use of telecare services, which look to support elderly and vulnerable groups within their homes through more preventative forms of social care, have a long history in Sunderland. However, in the light of considerable grant provision to local councils from central government in 2006, the service was re-launched in 2007 as 'Sunderland Telecare' with the following vision:

"To support people to maximise individual choice and independence at home; enabling vulnerable people to stay safe at home; promoting well being and preventing admission to hospital or long term institutional care" (Tunstall, 2008)

Aside from more recent developments under the banner of the Digital Challenge programme, there are currently two options available to Sunderland residents, the first of which is provided free of charge as part of a

mainstream service and the second which involves a small weekly charge (£3.20). The first of these is an emergency pendent with a panic button and a telephone lifeline for those with assessed needs, both of which are connected to a 24/7 monitoring centre in the city. A team of telecare technical assistants and the social and healthcare teams are available 24 hours a day to respond to any call outs. The second option is a more advanced proactive multisensor system including occupancy sensors and fall detectors. Staff who deal with the elderly have also received training in terms of the benefits of telecare, particularly for the elderly while the city council has also been engaged in a marketing campaign across the city to encourage those who may benefit from these system to take up the opportunity. The telecare system supports the work already being done by community dementia teams, overnight services and health and social care professionals.

This service is now estimated to support around 23,000 residents to live independently in Sunderland on a free of charge basis for those already receiving some form of social care (Revley, 2009). It is also calculated that between 2005/2006 and 2006/2007 a saving of £1.9 million was made by the adult services directorate at Sunderland City Council on the basis of a greater focus on prevention – including the use of telecare (Sunderland City Council, 2008). The roll out of this system of social care is seen also to reduce hospital admissions and the costs associated with residential care as has meant that Sunderland has been seen as one of the few success stories in the UK in terms of the adoption and widespread use of telecare services (Brindle, 2009). This can be seen as one of the key areas in which partnership working and the delivery of effective services within the health and social care sector in Sunderland has been developed through the use of technology, whereby essential services have arguably been enhanced rather than replaced. As will be seen in section 7, the importance of this kind of support should not be underplayed. The benefits of greater and more effective use of technology as part of the independent living agenda are more obvious than in other areas.

4.5.7 Software City 2007-ongoing

Sunderland Software City is an 'Innovation Connector' and part of the North East England ERDF Regional Competiveness Programme 2007-2013. It is an initiative which looks to build on much of the earlier work done in the city around telematics - encouraging the growth of the software industry and looking to make the area an attractive location for software businesses and digital media industries. In this way the programme is seen as a response to the economic needs of Sunderland and of the North East region, tying in with current work around an emerging North East Digital Strategy (led by the regional regeneration agency ONE North East). Software City focuses both on the needs of business, but also the needs of learners already within the industry and those considering it as a career option. This dual focus necessitates a partnership approach between co-dependent sectors and builds on much of the work which has been established by the educational institutions in the city including the ICT Networking Academy based at the City of Sunderland College and the Department of Computing, Engineering and Technology at the University of Sunderland. Other partners include Sunderland City Council, Codeworks Connect (the trade association for digital businesses working in the North East), the North East Business and Innovation Centre and Business Link.

A range of programmes and services have been put in place to support software related ventures from pre-start up through to large companies wishing to expand. For learners the focus is around providing career development advice, linking up with local education providers to deliver suitable courses and skills development, linking up with local business in the way of placements as well as the provision of facilities and sector knowledge. This initiative has a regional focus, supported by ONE North East and the regional e-Leadership Council made up of representatives from local authorities in the region and compliments other digital economy related initiatives in the region such as Newcastle Science City and Middlesbrough Digital City. Whilst this initiative is still in an early stage of development achievements to date include:

- An agreement between Software City and the City of Sunderland College to ensure the required infrastructure and supported technologies are embedded into the footprint of Sunderland Software City
- Establishment of Software Ventures programme – a series of workshops to develop prospective business plans in the software industry.
- Launch of Intelligent Service to provide a research facility which will help software businesses understand their sector, customers and competitors
- Establishment of the Software City hatchery at the University of Sunderland which looks to lead the way in software development and creating a world-leading science and computing industry in the region
- Increasing interest in international business opportunities in software and new media industries generated through the programme
- A number of workshops and seminar series provide tools and information for those looking to establish or consolidate software related businesses in the region e.g. 'Stimulating Software Innovation'

This programme represents a different focus some of the earlier programmes in that it looks to develop a sector of the local economy seen as a possible economic driver of the future. But it should be recognised that while this may contribute to the social inclusion agenda in terms of employment and business growth, it is not a programme which will necessarily improve the lives of the most socially excluded in Sunderland. Rather this is more concerned with attracting and retaining graduates and technology professionals in the city.

4.5.8 Sunderland Digital Challenge 2007-ongoing

The concept of Digital Challenge emerged out of the government publication *Connecting the UK: Digital Strategy* (Prime Ministers' Strategy Unit/DTI, 2005) which extended the government's commitment to expanding access

and use of ICTs as a mechanism for improving social cohesion, quality of life and the wealth of the economy. As part of a drive to close the digital divide and to establish the UK as a world leader in digital excellence, a commitment to the establishment of a Digital Challenge competition and award was one of the main outcomes of this report. As set out in that document, the original vision of Digital Challenge included:

- Establishment of universal access
- Advancement of public service delivery through digital technology
- Provision of a test bed for best practice in e-government and e-nabled public services as a model
- Extension of e-services to socially excluded groups
- Piloting high quality, high speed public services

Taking this original vision, but placing a greater emphasis on achieving social inclusion outcomes as well as delivering improved public services, the LSP set out their end goal in their Digital Challenge Vision Statement (Sunderland City Council, 2007) as follows;

> *To deliver new or extended capability through transformed organisations, enabling greater social inclusion through the delivery of digital solutions and services to citizens currently classed as disadvantaged or disengaged.*

Sunderland Digital Challenge is then an authority wide programme which looks to give impetus and support to a whole range of digital inclusion activities within and beyond the boundaries of the programme itself, building on the recognised progress and investment already made in digital infrastructure. The goal of this programme is to create a digitally enabled city, one where access to technology is available to all, where local services are delivered more efficiently and effectively through digital technology, and where digital solutions are considered in dealing with all economic and social challenges.

The selection of Sunderland as the winner of the national Digital Challenge competition was largely due to the community-led and needs driven nature of the bid over purely technological concerns. As Angela Smith MP remarked when announcing Sunderland as the winner of the award: "…right from the start, [Sunderland] has focused on action in developing communities. It listened to people's needs, wants and aspirations. And then looked at how technology could meet them". Building on previous experience of binding together community engagement and the provision of access to technology, the key priorities which formed the basis of the programme were based upon a round of community consultation exercises. These consultations took place formally with established community groups, area forums and delivery partners and also drew upon networks already established through the E-Neighbourhoods programme in order to generate priorities and themes to be addressed. The themes generated from these consultations were:

- Access and accessibility
- Community Empowerment and Networking
- Connectivity
- E-Champions
- Education and Capacity Building
- Independent Living
- Patient Empowerment
- Innovative Telephonies
- Virtual Sunderland
- Digital Communities

Consultation did not end at this initial design stage either, for example the CVS and Sunderland residents are represented on the Digital Challenge Programme Board and the design of each project has been influenced heavily as an ongoing and evolving process by those using the technology on the ground. The Digital Challenge team and in particular the engagement officers and the Community Change Manager continue to engage with the community, through for example the various Area Forums in the city.

However, it should also be recognised that the direction of Digital Challenge was also driven by the demands of central government and a shifting national agenda (as outlined in section 2.6), as well as the local priorities established in the most recent versions of the Sunderland Strategy and the Local Area Agreement. The direction of this programme may then be viewed as a negotiation between the national, local strategic and community led objectives.

Digital Challenge includes a suite of individual yet inter-related projects which look to address the key domains of social exclusion: health, education, independent living, and developing community capacity in particular. The rationale behind a range of projects was that 'one size does not fit all' and that the diverse needs of community groups could not be adequately addressed through large scale all encompassing initiatives (Coalfields Consultation Report, 2006). An important dimension of this programme was a recognition that there may be different ways in which technology could be used to match the needs of specific groups, for example, the elderly, young people in full time education and those with certain health conditions. Although a greater emphasis on vulnerable social groups could have made these interventions even more effective.

The personnel structure for this programme within the local authority's ICT department included project managers responsible for establishing each project on the ground in collaboration with partners and residents; a community engagement team who continue to work and alongside community groups once projects became operational; and a community tech team who, as with the E-Neighbourhoods Programme, continue to provide technical support to individuals and communities involved. Again as with the E-Neighbourhoods programme these activities are owned by the local strategic partnership yet operationalised by the local authorities' ICT department.

There have been a number of difficulties experienced by the Digital Challenge team which has meant that some of the original ideas will not become operational. For example the projects 'Transport Alert', 'Health at Home' and 'SUNTV' are no longer to be implemented. There have also been significant delays in implementation of some projects such as Health Information Points and Smart Sunderland and delays in implementing some of key themes in the original proposal, for example the Virtual Sunderland theme, which included the SUNTV, Portal and Citizen's Account has been one of the least successful areas. Some of the suggested reasons for this are:

- practical and technical difficulties in achieving original aims for some projects (for example achieving connectivity in the local areas of digital communities has proved difficult)
- changes to costs around certain project due to disputes with commercial suppliers
- lack of clarity of a shared vision amongst all partners about what the programme intended to achieve and what would then fall under its remit
- difficulties and delays around recruitment of key staff to the programme which led to further delays in implementation
- the drawn out procurement process for resources and services, leading to lag times in the delivery of projects
- complications over some partnership arrangements, communication with partners and representation of these partners on respective boards

However strong leadership, the use of existing knowledge and human resources, team work, valuable community engagement experience and the ability for the ICT department to work on a cross directorate basis within the local authority, as well as with external partners through previously established relationships, has meant that they have been able to put in place a number of important digital inclusion projects in a relatively short period of time.

As of 2009 the projects which come under the umbrella of Digital Challenge included:

E-Champions: A new direction (E-Champions theme) – Building on the existing e-Champions network through the E-Neighbourhoods programme, the provision of Internet-ready computers for community based practitioners/volunteers supported by appropriate training and guidance. This focus is upon engagement with the most underrepresented and hardest to reach vulnerable groups. This stage of the E-Champions work focuses on looked after adults, carers and cared for youth and older people who have all been identified by working alongside the partners in the CVS and social services. To date 66 e-champions represent this initiative: (34 from LAA, 10 from Carers profession, 10 from Gentoo – housing association, 10 young people and 2 from Education).[21]

Telesafe (Innovative Telephonies theme) - Use of tracking device on mobile networks to enable carers, parents and guardians to track the location of vulnerable and at risk individuals in case of an emergency. The technology also has a panic button facility which alerts those in contact to the individuals' location at a given time. The idea behind the technology is that it gives vulnerable individuals a level of independent living whilst also reassuring carers. This technology is now also to be applied for lone worker protection and detached youth workers within the city. Currently these technologies are being tested before 15 are deployed for trials.

Smart Sunderland (Innovative Telephonies theme) - A 'sign up' text alert system. The project provides a platform for organisations to deliver and receive SMS text messages from end-users. The aim is to keep beneficiaries up to date with vital information, building loyalty with them or encouraging a response from them quickly and easily. It could be used to distribute news, event details or to keep up to date with your project users and receive feedback. 8 groups in the city are currently taking part in the development of this project and is particularly being used to keep in contact with young

[21] Figures provided here on levels of usage are as of September 2009 and have been provided by the Digital Challenge Programme.

people with no fixed abode who need to contacted to ensure they attend meetings/hearings.

Flash/Hexagon (Community Empowerment and Networking theme) – Flash is a form of virtual meeting technology held between two or more people over the internet. Hexagon enables an informal, on-line social network environment and facilitates individuals, communities and the voluntary and community sector to communicate with each other. It is also targeted at hard to reach groups to begin the process of participation where location and mobility is a barrier. Hexagon consists of a number of rooms for various community groups' use. Each room is administered by a host organisation from that relevant community. Each community provides an administrator, able to manage the room on a day-to-day basis. There are 3 rooms currently established in Sunderland; the Community room, the Over 50s room and the Learning Room.

Health Information Points (Patient Empowerment) - Kiosks which allow users to check their health status including weight, BMI, blood pressure, body fat content and take them through an optional health questionnaire that will produce personalised advice with regards a healthier lifestyle. It also provides the opportunity to advise a person to seek medical advice if the readings justify it. The kiosks can be used to provide health related information and also site specific content. These are located within hospitals and community locations across the city. This initiative has only been rolled out relatively recently, but to date these can be found in 9 community locations across the city and 1 is located in Sunderland Civic Centre.

Health-E (Patient Empowerment theme) - Aimed at addressing childhood health by engaging young people with health related issues on the internet and through the use of healthy games/consoles in community based settings such as youth and community centres across the city through the loan and use of equipment such as Nintendo Wii Fit.

ICT@home (Education and Capacity Building theme) – Through the digital communities project established under this programme, this initiative provides

PCs, connectivity and technical support to families without access to technology within their own home. To date 18 families have benefitted from this provision – 6 accessing Swan Street Digital Community, 6 accessing Easington Lane Community Access Point and 6 accessing Washington Church of Christ EVH/Digital Community.

E-Mentoring (Education and Capacity Building theme) - The aim of this project is to provide disadvantaged and disengaged young people with the continuity and engagement to raise aspirations and awareness of future opportunities. This is done by matching up young people with appropriate and relevant education and business sector mentors and by enabling contact via e-mail with these young people providing information, encouragement and advice about future employment options. This project is ran by the third sector organisation, Enterprise Business Connections in Sunderland. There is potential for an extension of this project through Sunderland City Council Family, Adult and Community Learning to assist out of work adults to refresh and learn IT skills for the workplace. To date 61 pupils have registered on this initiative along with 36 mentors and 14 awaiting CRB clearance.

Community Tech (Education and Capacity Building theme) - Technical support provided to support a number of digital inclusion initiatives for individuals and the CVS by the dedicated technical team base out of the ICT department at Sunderland City Council.

Equipment Loan (Access & Accessibility theme) - Short term loan of digital technology equipment to community and voluntary organisations, as well as the provision of technical support in the use of this technology. Available resources include: Laptop Computers, projectors and screens, scanners, E-voting kits, digital cameras & camcorders, adaptive technology, Nintendo Wiis, interactive whiteboards, mobile internet connectivity. The loan period has a 3 month maximum duration. To date there have been approximately 170 individual requests since the established of the initiative in October 2008 at an average of 15 requests per month.

Telehealth (Independent Living theme) – A system of monitoring long term health conditions remotely thus avoiding unwanted trips to hospitals and potentially keeping down the number of re-admissions to hospital. In particular this relates to the use of COPD monitoring equipment, allowing health professionals to monitor the condition of vulnerable out-patients.

Digital Communities (Digital Communities theme) - A range of digital inclusion projects providing access to the internet and other digital technology through community based facilities, based in the Southwick, Easington Lane and Washington areas of the city. There has also more recently been the development of a digital community in the primary school within the Southwick area of the city. One of the key aspects of these communities is that they utilise existing community facilities (such as ELCAP in Easington Lane) and networks to deliver a range of bespoke technology based projects. As part of these projects there was also the intention to create wireless zones which would provided access to internet for residents in those areas. However, due to a number of practical and technical problems this has not been possible. Instead local residents have had the opportunity to use internet 'dongles' loaned out through the digital communities in order to obtain internet connection. There was also originally the intension to focus one project on the needs of the ethnic minority community in the city – the absence of these is seen as a key area which needs to be explored in the future.

Conferences and dissemination events

As a result of Beacon awards and the Digital Challenge programme Sunderland has been host to and a major partner in a series of conferences and dissemination events. These events have been based around the sharing best practice, dissemination of research, work which addresses digital inclusion and responses to policy developments. These have recently included events such as IT Works in 2007, IT in the Community digital inclusion conferences in 2008 and 2009 and the first North East Community Bar Camp, DC10 related activities and presentations by Telesafe and Safer

Walking project managers to the national Intelligent Transport conference. There have also been a number of Beacon status related events including Beacon Learning Exchange and the Brussels Digital Inclusion Showcase. In these cases Sunderland has played host to national audiences or taken their experiences to others across the UK. The SOCITM annual conferences have also been occasions through which Sunderland and Digital Challenge have been able to highlight their work, experience and best practice.

Bids for funding and partnership work

- A joint bid has been put forward by Sunderland City Council and the TPCT to become a demonstrator site for the Common Assessment Framework for Children and Young People. These demonstrator sites will look to test and develop information sharing across health, social care and wider community support services.
- Digital Challenge and Children's Services have put forward a bid for funds from the Home Access for Targeted Groups (BECTA) funding which provides home access to technology for learning to specific groups of learners identified by local authorities.
- Work with BECTA on a range of initiatives which relate to children of school age including: Home Access, Computers for Pupils and Building Schools for the Future
- Digital Challenge have agreed to support along with Newcastle University Information Systems Department a bid for ESRC funding to develop an inclusive digital economy in the North East.
- Learning Transformation Fund. A partnership bid involving the education sector, city libraries, adult and community learning and Digital Challenge, has secured funding to roll out a project which will meet learning needs and address community cohesion issues through the use of multimedia technology.

4.5.9 Other significant local initiatives

One of the main objectives of Digital Challenge was that it would operate as a catalyst to the digital inclusion agenda in Sunderland and would therefore support already existing initiatives and schemes in the city, whilst also

encouraging new and innovative ideas by a range of agencies. It therefore needs to be recognised that there a number of co-existing initiatives which although not directly designed through Digital Challenge and not part of the original or revised vision, form part of the digital inclusion landscape in Sunderland. With this in mind the following initiatives are also key in demonstrating the extent of the activity in Sunderland around digital inclusion but also the range of activities particularly in relation to the work of the city council and the CVS. In this sense these initiatives are a further illustration of the strategic success of Digital Challenge of working with and alongside partners in developing a more sustainable digital inclusion agenda within the city with real and observable social inclusion outcomes. All of these activities are focussed upon the enhancing the use of and access to ICT for social, cultural, educational and employment opportunities.

Lets Go card – A City Council scheme which allows young people in school years 9-12 and receiving free school meals to access activities across the city up to a value of £33 a month. Activities can be booked through the Lets Go card portal and therefore encourages young people to make use of the internet and manage their activities on-line. As a result 2533 young people registered and 2001 accessed spending. Although this was initially a short term initiative (between 1st April 2008 – 31st May 2009) this has been extended and there have been discussions with BECTA around further funding. On the back of this scheme and building on the infrastructure developed, the possibility of creating a Citizen's Account for personalised Adult Care is being considered.

Computers for pupils - Provides PCs and technical infrastructure to the homes of students and citizens at risk of underachieving at key stage 3, working in partnership with educational establishments and complementing the national computers for pupils and home access national programmes. Engagement Officers liaise with students and their families, providing training and support where required. As a result of the LetsGo card scheme and working with Sunderland City Council Children's Services the Digital

Challenge team have deployed PCs and connectivity to 143 families across the city.

Smartcards – In partnership with the University of Sunderland, Sage and technology firm ActivIdentity, Sunderland City Council developed a federated identity scheme using 8,500 NUS members based at the University and Sage employees in Newcastle. Participants using the cards could receive discount privileges (for the students) and authenticate themselves on the university/company computer system. This early stage of the scheme which finished in 2006 can be seen as the forerunner to other payment and e-ticketing services in the city such as the Lets Go Card.

Bridging the gap through Tech – A project ran by third sector organisation Education Business Connections alongside the E-mentoring initiative which looks to up skill parents and carers of young people, the unemployed and the over 50s in their ICT skills. This is part of the Make IT Work programme managed by the City Council which was created to help people develop new skills and be better prepared to get back into work. Much of the work focuses upon producing CVs, creating DVDs, completing on line job applications and meeting local employers.

Re-engaging NEET through E-learning – In partnership with BECTA, Changing Media and Connexions, Sunderland has been selected as a pilot location to run this project alongside existing projects to encourage and enable young people into education and employment. Proposals include networked and mobile youth workers, the creation of multimedia portfolios by the young people themselves and opportunities to meet employers, trainers and educators.

UK Online Social demonstrator project – In 2007, Sunderland became one of 20 successful projects to be selected as social demonstrator projects by UK Online Centres, which looked to make innovative use of ICT to bring

together community and voluntary groups to target hard to reach groups. In Sunderland this brought together a vast array of partners to deliver ICT provision and access to on-line public services – particularly focussing on older people, families in poverty, teenage parents and adults with mental illness.

ICT Infrastructure for voluntary sector – Managed by the University of Sunderland as part of the LSPs' Learning Partnership, this project builds on a previous NRF project, which worked with the voluntary sector to identify ICT provision for learning and produced a strategy for sustainability for the sector. The project looks to implement the recommendation of this strategy, provide targeted revenue funding for tutor support, provide funding for technical support and provide some additional hardware support to supplement the loan scheme currently run by the University. This also looks to contribute to the aims of Digital Challenge.

Diploma in IT – Digital Challenge and Software City joined up with other city partners to put forward a bid to DCSF for funding to support the new 14-19 IT Diploma. Sunderland is one of only six Local Authorities chosen to deliver all 14 Diploma subjects for young people between 14 -19 from September 2010 including the Diploma in IT.

Job Linkage – A nationally accredited Information, Advice and Guidance service, delivering a community based employment services. Co-ordinated by Sunderland City Council it aims to 'Link Local People to Local Jobs'. Job Linkage provides free services and support for local residents aged over 16 years from within the City of Sunderland, who are not working and want help to get a job as well as helping Sunderland businesses with recruitment needs. Provision includes ICT courses for those who want to improve their employability.

Sunderland Family, Adult and Community Learning **-** Working in partnership with the CVS, the city council provide a wide range of non-

accredited and accredited learning opportunities for adults across the city in a variety of community based settings, which includes ICT introduction courses, word processing, internet and e-mail courses and silver surfer sessions.

Social Care Services – For example, purpose built facilities such as Grindon Mews, which enables adults with profound and multiple learning disabilities and adults with high dependency physical needs to use music and light technology as a form of therapy.

Alongside the programmes and initiatives mentioned there are also a plethora of smaller scale projects which have been running in the city throughout this period, using digital technologies to meet socially beneficial goals. These are often those led by small community and voluntary sector organisations such as community associations and registered charities who are often operating on very limited resources. However, it is clear that in Sunderland a great deal of work has been done to link into such activities which are already working with the community in this way. Many of the larger programmes such as E-Neighbourhoods and Digital Challenge have utilised the capacity and expertise already developed and have brought these projects under the banner of more formal digital inclusion activity. The serious and sustained community engagement and ongoing community consultation originally developed through the early stages of the e-Neighbourhoods programme, remains a vital and sometimes unique aspect of the approach towards digital inclusion which harnesses the good work already done by the CVS.

4.6 Strategic embeddedness

Sunderland has been successful in pushing the digital inclusion agenda in terms of access to and use of technology for socially excluded groups, demonstrated by the number of initiatives designed and implemented to deal with this issue since 1996. However, how far has this commitment been adopted elsewhere in the activities of the council and the LSP and how has the city has not only addressed both the direct and indirect benefits of greater digital inclusion? This section looks at the manner in which digital inclusion

activities have been adopted across the partnership at the strategic level in order to asses the embeddedness of the digital agenda. This involves an examination of key strategic documents across the partnership and the incorporation (or not) of the digital inclusion agenda, as well an assessment of the incorporation of this agenda across the thematic partnerships which constitute the local strategic partnership.

4.6.1 Incorporation of the digital inclusion agenda

The extent to which the digital inclusion agenda has been adopted across the city's institutions is crucial to an understanding of the progress Sunderland has made in becoming a digitally enabled city. This section analyses the extent to which the key strategies and services in Sunderland have integrated digital solutions to the local issues which face them. Many of the documents explored here discuss not only what has been achieved – but what the future will hold and as such this section does not look to evaluate achievement as much as a corporate recognition of the importance of digital inclusion for the future of the city.

Sunderland Strategy – Sunderland Partnership 2008-2025

The five strategic priorities of the Sunderland Partnership outlined in this document are represented in a vision of Sunderland as;

- **a prosperous city** – to create an enterprising and productive global city with a strong and diverse economy providing jobs and careers for generations to come, where everyone has the opportunity to contribute to and benefit from the regional economy, to fulfil their potential to be skilled, motivated and wealth creating without losing the special characteristic of Sunderland's balanced way of life.
- **a healthy city** – to create a city where everyone can be supported to make healthy life and lifestyle choices – a city that provides excellent health and social care services for al who need them. Everyone in Sunderland will have the opportunity to live long, healthy, happy and independent lives.

- **a safe city** – to make Sunderland the place where everyone feels welcome and can be part of a safe, inclusive community, where people will feel secure and can enjoy life without worrying about being a victim of crime.
- **a learning city** – to create a city with a thriving learning culture where everyone can be involved in learning in a cohesive inclusive city that is committed to social justice, equality and prosperity where creativity flourishes and where individuals can have all they need to thrive in the global economy.
- **an attractive and inclusive city** – to ensure that Sunderland becomes a clean, green city with a strong culture of sustainability, protecting and nurturing both its built heritage and future development and ensuring that both the built and natural environments will be welcoming, accessible, attractive and of high quality.

In terms of a commitment to digital inclusion, the learning city aspect of the strategy appears most relevant to these goals. The strategy uses historic examples of best practice to illustrate such a commitment and outlines the importance of embedding ICT within "…a wide range of family centred programmes including literacy, language and numeracy courses." (Sunderland Partnership, 2008: 32). The strategy also outlines a commitment to achieving improved functional literacy and numeracy, so that by 2020 95 per cent of adults will have these basic skills. Of particular concern is the development of a skills base able to provide a workforce with appropriate ICT knowledge. The importance of the Building Schools of the Future (BSF) programme which looks to rebuild and/or refurbish all Sunderland schools by 2015 and the extended services to be offered by all primary and secondary schools by 2010, are both identified as one of the major ways in which ICT can be further embedded into teaching and education of children and young people.

This is closely related to the prosperous economy priority. One of the key objectives outlined for this priority indicates the commitment to building on past recognition and success in the knowledge economy sector:

> *"By 2025 Sunderland will have maintained its international recognition as an intelligent community where digital and software enterprise spearhead the economic growth of the city."*

The importance of the ongoing development of digital infrastructure is highlighted, particularly in relation to the growth of a knowledge economy and a focus upon the software industry as a key priority business sector in the city. For example the beginning of the construction of the Turbine Business Park in 2008 and the completion of the Rainton Bridge Business Park by 2015 is identified as a strategic milestone in achieving employment and business development opportunities. The strategy looks to maintain the international reputation for this sector by the year 2025.

Within the healthy city strategic priority another of the key objectives outlined is that:

> *"By 2025, 100 per cent of people with long term conditions in Sunderland will be supported to live at home for as long as they wish and feel able."*

This can be seen to relate to the use of technology to achieve independent living objectives, through schemes such as the Telecare service outlined in section 4.5.6. Indeed the use of Telecare to achieve these outcomes is highlighted in the document. This is recognised as an important measurement in assessing the success of the city in uses technology for socially beneficial ends.

Aside from the aspects of digital inclusion which fall under the overarching priorities, the strategy also highlights the 'digital divide' as a cross cutting theme and a key national agenda which is shaping the future of the city and

the actions of the Partnership, highlighting both the importance of reducing this divide as well highlighting the importance of integrated service delivery by technological means. In this sense digital inclusion is seen as a priority which bridges across all of the themes and needs to be addressed in all of the LSP's work.

Local Area Agreement – Sunderland City Council 2008-2011

As this is the delivery plan for the Sunderland Strategy much of the direction of the strategy is mirrored here and it is therefore unsurprising to find a similar emphasis upon the role of technology in achieving the priority of Sunderland as a 'learning city'. Again, the track record of using technology to engage and assist learners is outlined, particularly in relation to the work of Digital Challenge, once again outlining a commitment to further embedding the use of ICT within the local education system. Digital Challenge is also identified here as one of the key drivers of change and improvement for the city and the action plan for the delivery incorporates a 'digital opportunities' element, illustrating a commitment to the provision of services, where possible by digital means.

One of the major developments as an off-shoot from Digital Challenge, has been the design of an additional locally specific national indicator which will be a single measurement of digital inclusion and in itself a reliable indication of the extent to which this agenda is being prioritised in the city. Although the final design of the measurement is presently unclear, discussions around this have led to the recognition of the need for greater embeddedness of the digital inclusion agenda in all activities. These discussions have included some of the following suggestions:

- The presence of an agreed authority wide ICT strategy that underpins the Sunderland Strategy
- The creation of a Community ICT cross cutting Thematic Group for the Partnership

- Representation from the Community ICT Thematic Group on (a) Area Forums and (b) Thematic Groups

Corporate Improvement Plan – Sunderland City Council 2008/2009

Several of the corporate improvement objectives identified in this document relate to the issue of use of ICT, particularly in terms of how council directorates might be able to make better use of technologies in order to provide more efficient and effective public service delivery. In partial fulfilment of the Corporate Improvement Objective 1 (Delivering customer focussed services), the use of ICTs to enhance service delivery and access to such services is outlined. Making reference to the governments Transformational Government Strategy (2005) this document also states that "…services enabled by ICT must be designed around the citizen or business, not the provider, and provided through modern, co-ordinated delivery channels". Under this over-arching objective the plan also makes reference to other important programmes such as the Business Improvement Programme and the Building Schools for the Future Programme both of which will influence how technologies are used in Sunderland in the future in terms of service delivery but also in the education sector.

With regard to corporate improvement objective 2 (Being one council) the plan makes reference to the importance of ICT in workforce development, that is, ensuring that council employees are fully and adequately trained to deliver services through technological means and also in terms of ensuring that the council develops integrated IT systems.

Through objective 3 (Efficient and Effective Council) the plan outlines a commitment to improved and more cost effective services ensured through investment in ICT infrastructure. For example, investment in Voice over IP telephony and digital technologies, which is resulting in supplier line cost savings, and improving the quality of communications. Through international exchanges and agreements best practice in this regard has been shared and developed. The work achieved through E-Neighbourhoods and the Digital

Challenge Programme is also highlighted as a vital aspect of social inclusion work across Sunderland.

Objective 4 of the plan addresses those areas which will improve partnership working across Sunderland in order to achieve the 'one city' strategic objective. Under this objective there is a clear drive to develop the knowledge economy sector in the city, particular through the Software City initiative and to build on the reputation the city has attained as a place for inward investment for those working in the digital industries.

Other key areas of relevance include: Development of ICT capabilities to improve service delivery and to comply with the Information Security Management System standard, implementation of Information Technology Infrastructure Library (ITIL) standard across the council, implementation of Digital Challenge and the development of sustainable services out of this programme, enhancement of the e-Democracy Project to significantly improve councillor/officer/customer engagement and the promotion of the use of ICT through the community leadership project to improve public engagement in council services.

In terms of improvements identified within specific council directorates there are also a number of relevant references made.

Financial Services are actively seeking to improve access to services through the use of ICT and the implementation of an integrated council tax and benefits ICT system.

The development of a complaints/Freedom of Information (FOI) computer system to track customers' requirements and facilitate prompt attention for the **City Solicitor** is being developed by corporate ICT.

Children's services are looking to develop an integrated Information Technology/Information Sharing Strategy, implement e-admissions, develop a

Children's Service specific ICT Strategy and review the terms of reference and membership of the ICT Steering Group.

Adult Services is continuing to modernise its ICT systems (SWIFT, Electronic Social Care Record, etc.) with Welfare Rights creating a single point of contact for all customer enquiries, and an electronic case management system to consolidate information about customers. They are also looking to build upon the progress made by the Digital Challenge Programme and take this forward.

Implementation of Registration Online (RON) computer system for the **Housing and Public Health service** has also recently taken place.

A system is being developed by ICT for **Neighbourhood Services** which will assist with invoicing and inform debt collection, meals at home are to be transferred to an ICT system, the development of a programme to monitor carbon monoxide particulates and the possible introduction of PDAs for those working with the Neighbourhood Service is also being considered.

In terms of **Regeneration** a Multi-agency Information Sharing System is now in place which securely hosts core data sets needed for the LSP to make evidence-led decisions.

And in terms of **Culture and Leisure** a recent survey was conducted to assess the current state of ICT facilities in the city with the establishment of 7 service improvement groups covering Access and Inclusion, Books and Reading, Digital Citizenship, Services to Young People, Health and Well Being, Learning Development and Communication and Staff Development. Sunderland Museums are involved in the national Public Catalogue Foundation project, which aims, to give digital access to all oil paintings held in public collections. The service will also continue to update and develop the TWM website and will support Sunderland City Council web-based initiatives.

The delivery of 21st century compliant cabling and capital investment in the voice and data network infrastructure also underpin all these developments. There is also there is a commitment which applies across all of the corporate improvement objectives to 'provide information and communications technology services across the organisation, which supports the achievement of service objectives for all of our customers'.

Sunderland City Council Annual Report 2007/2008

Making reference to the Audit Commission annual audit this document notes that Sunderland is recognised as providing very good community leadership and working well with partners to achieve its goals in addition to engaging well with local communities through such programmes as Digital Challenge. It also mentions that a range of ICT based projects and programmes are underway to improve performance management and ensure that the council becomes more customer focused. The importance of improved ICT infrastructure within Sunderland schools is also noted, with particular reference to the refurbishments taking place across the city under the national Building Schools for the Future (BSF) programme. And finally the importance of improved and improving connectivity is flagged up both in terms of historic investment with mention of the recent Ofcom research indicating that Sunderland has a high proportion of residents connected to broadband and digital TV (Ofcom, 2008).

International Strategy 2008-2025

This strategy looks to compliment the Sunderland Strategy which tackles strategic objectives over the same period. It highlights the importance of ongoing international partnerships with the city's two twin towns; Essen in Germany and Saint-Nazaire in France, its Friendship Agreement with Washington DC and other emerging partners such as Harbin in China, particularly in terms of improving economic competitiveness and best practice sharing in relation to business, tourism, educational and cultural development. Included within this strategy is the importance of building on the inward investment already attracted to the city from the USA, Australia, Canada and Japan which has helped to establish the city as a leader in the knowledge

economy sector and a leading provider of ICT enabled business facilities as well as the maintenance and extension of these connections to support the work of 'Software City'. The emphasis here is upon economic development as opposed to highlighting the significance of digital and social inclusion.

Partnership Community Development Plan 2008

This plan expands on the community development and engagement methodology which has been successfully adopted by the ICT community engagement team within the city council, by focussing upon the principles of working and learning together and reflexive practice. The examples given here including E-Neighbourhoods, E-Champions and Digital Challenge illustrate that digital inclusion initiatives in Sunderland are at the cutting edge of community development techniques and processes. As with many of the other documents considered here, the importance of the knowledge economy sector to the health of the local economy is once again highlighted.

Community Consultation Strategy 2007-2012

As has been mentioned with regard to the processes involved in E-Neighbourhoods and Digital Challenge, community consultation has been a key element of programme design. The primary focus here though is e-consultation, ensuring that residents are able to provide their views and impact of local changes through electronic means (the intranet and internet). However there are clearly difficulties in marrying this with the continued problems of digital exclusion and these barriers to progress in this area are encouragingly recognised and set out.

Gaps and absences

There are a number of absences and gaps identified elsewhere in the key local strategic documentation. For example there is no mention of the role digital technology and digital inclusion could play in several documents including the Children's and Young People's Plan (2006-2009), the 50+ Strategy (2007-2010) and the Housing Strategy for Sunderland (2006-2011). These are clearly areas where the use of technology to achieve social outcomes could be relevant and significant. There is also a key absence in

terms of the lack of any dedicated city-wide digital strategy. While there is a plethora of information around the key digital inclusion programmes this does not relate to an overarching approach. Though it should be pointed out that the development of such a strategy is an issue that has been discussed as part of the Digital Challenge Programme Board and a way forward on this is currently progressing.

It should also be re-iterated that the documents considered here reflect on past achievements and set out plans for the future, as such they do not inform in terms of the extent to which the many plans and ambitions will be achieved. Strategic direction and corporate commitment is important, but the extent to which such plans are put into place is even more significant. This issue of 'impact' is considered in detail in sections 6 and 7.

4.6.2 Local Strategic Partnership and the digital inclusion agenda

All digital inclusion initiatives over the last decade in Sunderland have involved a partnership approach, and required different agencies within the public sector to work alongside the private and CVS (see Appendix 4 for a list of the members of the LSP). An obvious example of this is the development of the Telecare system, where partners include; the community sector, particularly Age Concern, the TPCT (Teaching and Primary Care Trust) and representatives from the major Registered Social Landlord (RSL). Much of the partnership working has been enabled through a strong, active and widely represented local strategic partnership. The physical, social and economic development of the City continues to be taken forward by the Council and its partners through the Sunderland Partnership. Increasing included within these responsibilities is the digital inclusion agenda. This section briefly examines the extent to which this agenda has been incorporated by the partnerships and more especially through the activities of the delivery partnerships.

The LSP and Delivery Partnerships

Following a restructuring of the organisation of the Sunderland Partnership in 2008/2009, it is now constituted by five delivery partnerships, each of which

concentrates on a particularly area of concern in relation to the priorities set out in the Sunderland Strategy and the LAA. These are the:

- Learning Partnership
- Safer Sunderland Partnership
- Attractive and Inclusive City Partnership
- Economic Prosperity Partnership and
- Healthy Living Partnership
- Inclusive Communities Cross-cutting partnership

Research into the activities of these partnerships revealed some areas of concern, particularly in terms of a demonstrable strategic commitment to the digital inclusion agenda and a clear knowledge of where these partnerships fitted in with sustainable digital inclusion work beyond Digital Challenge. What was evident was a lack of understanding about what the partnerships were being asked to achieve as a result of the Digital Challenge investment, and as a result, relatively few new avenues of digital inclusion work were being explored by these partnerships. However, this was not across the board, with some of the partnerships, particularly the Learning Partnership very active in this area. This may point towards the issue of how relevant ICT and the use of digital technologies is seen to be those working in these very different sectors.

It is also clear that due to the efforts of the Digital Challenge team and an increasing awareness of the need to develop this agenda through the thematic areas of the partnership, that the delivery partnership are beginning to make more positive steps in incorporating Digital Challenge projects into their own delivery plans.

The **Learning Partnership** has been involved in developing many of the Digital Challenge projects, but has also been involved with a range of other city based partners such as the University, city colleges, the CVS, city libraries and Family Adult and Community Learning (FACL) to establish a number of ICT based learning opportunities in Sunderland. This includes

being one of only six Local Authorities chosen to deliver all 14 Diploma subjects for young people between 14 -19 from September 2010 including the Diploma in IT. Within the delivery plan for this partnership (2008-2011) ICT as a tool for learning and the use of learning as a means to social inclusion are both clearly identified as key themes. One of the key objectives of this partnership is that ICT is embedded in educational courses language and numeracy courses and to ensure this is given top priority the partnership has established an ICT sub group whose responsibility it is to attend to these issues. This sub group, with the help of NRF funding have also put together a strategy concerning the use of ICT within the voluntary sector as a tool for learning. As with the analysis of the Sunderland Strategy in section 4.6.1 it is clear that those in the education sector have taken the opportunities made possible through ICT very seriously.

For some of the other delivery partnerships there is clearly a willingness to develop the work they are doing in line with the digital inclusion agenda. For example, through research conducted with the **Safer Sunderland Partnership** they expressed a number of ideas about how technology could be used to deliver on their priorities, particularly in terms of using technology to deliver key messages to vulnerable groups and the use of recording and geocoding equipment to record environmental crime. Some of this is already established such as the use of a partnership TV network used in community locations to present key safety messages. But many of these were suggestions for future use as opposed to current and established techniques. What was evident was that there a lack of open dialogue between the Digital Challenge team and this partnership in terms of how they could help each other in achieving goals of digital and social inclusion. In terms of the Safer Sunderland delivery plan (2009-2010), it is also clear the use of ICT and the digital inclusion agenda does not feature and there are no formal future plans in place to build on digital inclusion in this area.

In terms of the **Attractive and Inclusive City** partnership, discussions with the Digital Challenge team have been improved and developed and as a result of the identification of cross cutting priorities, a number of Digital

Challenge projects have been included within the most recent delivery plan for the group. This partnership recognise the importance of the agenda in making the city as accessible and inclusive as possible from interactive mapping technologies, real time transport information through to more systematic processes such as information sharing. This is important work as far as the sustainability and mainstreaming of Digital Challenge initiatives are concerned. These projects include Legible City**,** the use of technologies for transport networks, and the improvement of access to green spaces. The partnership has worked with a range of agencies to develop this work including: the University, FE Colleges, regeneration partnerships, the Strategic Transport Authority, social landlords, the 3rd sector and the city council and relates to a number of city wide strategies including: Legible City (in development), Green Infrastructure (in development), Community Development, Community Cohesion, Community Engagement and Equalities.

In terms of the **Inclusive Communities** cross cutting partnership it is recognised that there is potential for technology to meet the needs of residents in terms of supporting access to information, enabling information sharing, promoting activities and engaging residents more fully in discussions and public consultations. Specific areas of activity developed in this area include: Working with Independent Advisory Groups to maintain and design accessible websites, use of technology for consultation exercises, networking for the 3rd sector and managing the ARCH racist incident reporting system. While this work relates to a number of city wide strategies including the community cohesion strategy, the community development plan, the consultation strategy and the equalities strategy, the ARCH development plan and the Prevent action plan, it does not form a discrete sphere of activity in any one of them. Again there is no formal system of measurement of progress in this area, although the option of including a question in the residents survey is being currently considered. For this partnership there are issues such as resourcing, assessing need and differential support for individuals and groups which needs to be given more thorough thought in relation to the use of technology.

However, it is also recognised by this partnership that further discussions are needed across the city to highlight and share key information and the key issues facing this work if further progress is to be made. There is also an issue around measurement of progress which isn't formally documented at present – although work is being done to possibly incorporate this into the annual residents survey.

In terms of the **Healthy City** delivery partnerships, discussions have not been so well developed. This partnership did not respond to our request for information around their use of technology in meeting social ends. This is surprising given the emphasis placed upon health related activities as part of Digital Challenge for example through Health information points and Telecare. In terms of the **Economic Prosperity** Partnership, again no response was forthcoming, although it is important to acknowledge that these delivery partnerships are at an early stage of development and therefore it is unsurprising that some elements of partnership working around these issues are not yet fully matured.

Digital Challenge as cross cutting priority/partnership

Following the recent re-organisation of the LSP Digital Challenge/Digital Inclusion has also been established as a cross cutting partnership across the LSP along with inclusive communities, housing culture, marketing and international and has been established a key priority area. This is a very significant development in terms of the sustainability of this agenda at the local level and will provide a mechanism for continuing the discussions and activities which are currently being led by Digital Challenge. It will also provide leadership and guidance for the community engagement team which is continuing beyond the life of the Digital Challenge Programme.

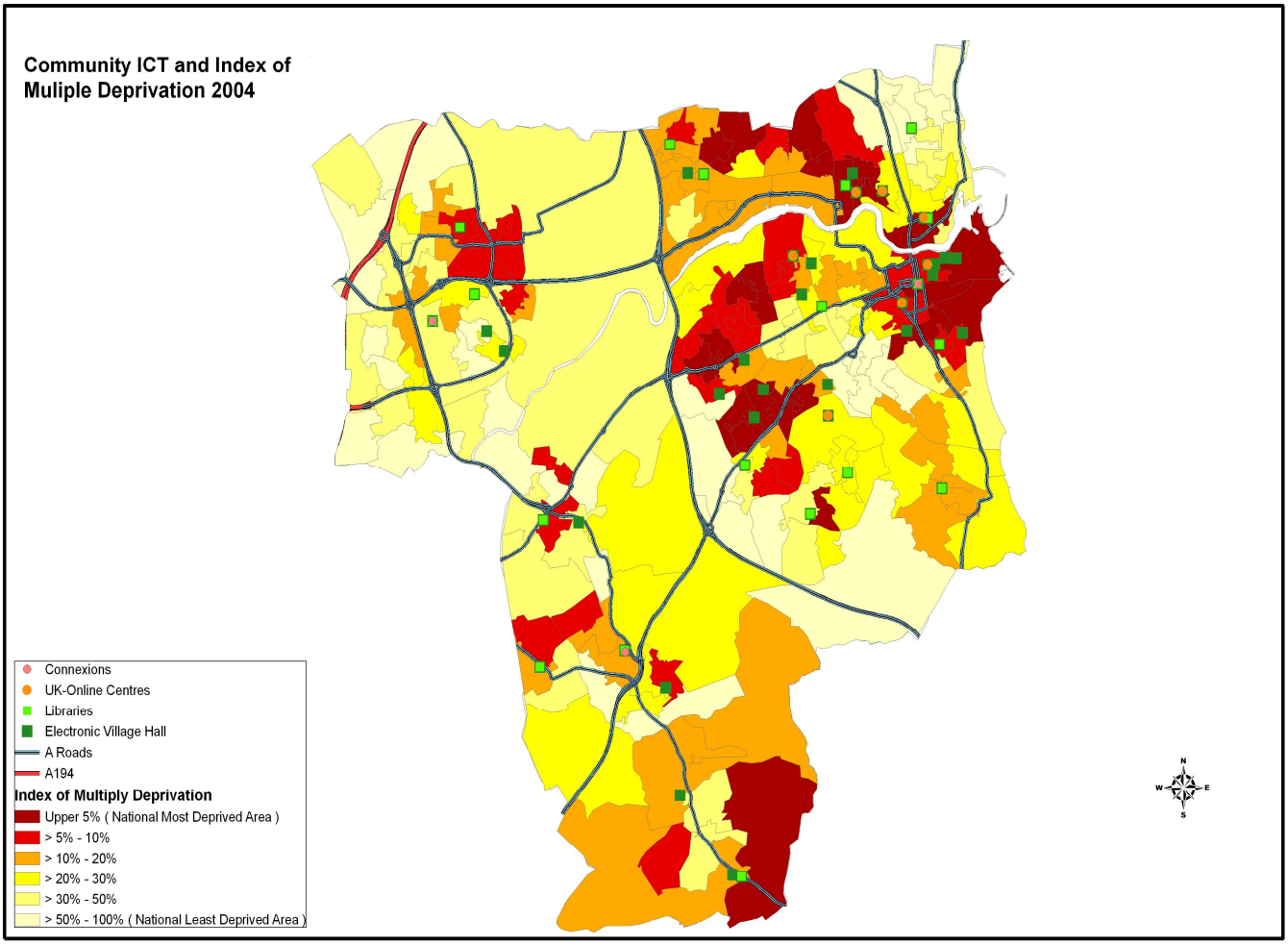
4.7 Section Summary

- Digital inclusion activity in Sunderland has historically been focussed around several key areas and is a reflection of national policy and local priorities:

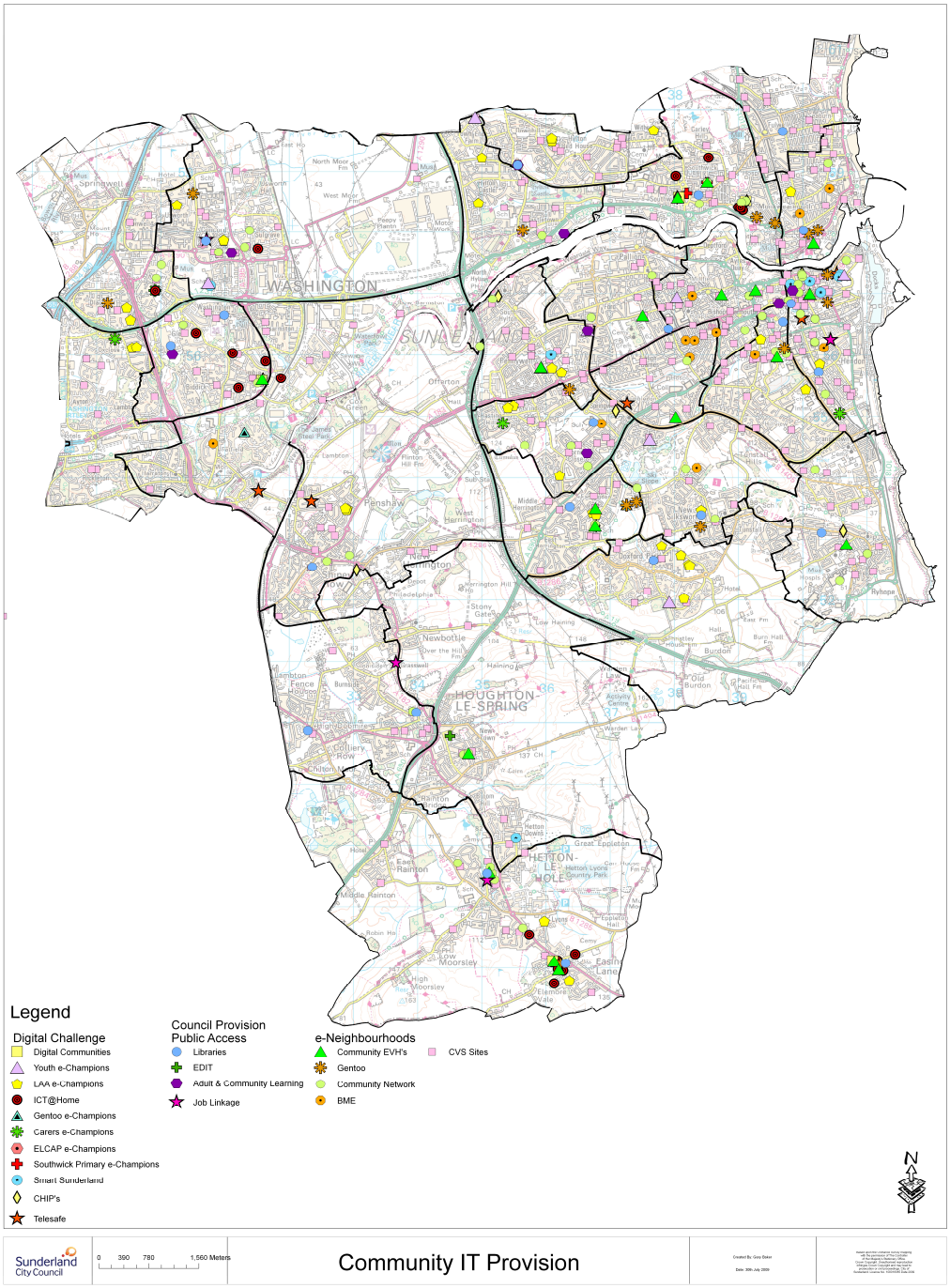
- economic regeneration which has targeted inward investment, the establishment of digital infrastructure and business support
- a focus on public access to technology in community facilities for those who do not own such resources for social, educational and employment related ends
- provision of technology through the loan of resources or financial aid whereby use is within the users home
- the building of community capacity and networks to provide technical and social support to those who are digitally excluded
- the use of technology to meet health needs of the most vulnerable groups in the city
- the transfer of a number of public services on-line

- The history and sheer number of digital inclusion initiatives which have been rolled out is in itself testament to the efforts and commitment of the local authority, the CVS and LSP to the importance of the local digital agenda.
- Many initiatives have been targeted at those communities who mostly live in some of more deprived neighbourhoods within the city. This practice began in the early stages of digital inclusion with the E-Neighbourhoods programme and UK Online centres as can be seen from the Map B below, and has continued under the more recent Digital Challenge programme. Map C indicates the location and the number of community based ICT initiatives in place across the city as of July 2009 including the more recent Digital Challenge work, but also E-Neighbourhood projects and other council provision.

Map B: Community ICT and Index of Multiple Deprivation 2004



Map C: Community ICT Provision July 2009



- Early organisation of activities around digital inclusion, and other aspects of the digital agenda such as the knowledge economy and e-government, means that important experience was gained at an early stage. In relation to digital inclusion, experience of community engagement is seen as especially important.
- Sunderland has a long and successful history of partnership working at a numbers of levels including the LSP, public-private, community based, regional, national, European and international.
- In terms of basic top level numbers the initiatives put into place have had observable positive outcomes in terms of engaging the public and improving levels of use – this can be seen both on an economic and social basis.
- On a social level, one of the big successes in Sunderland has been the establishment and continued importance placed on public access to technology through EVHs which continue to grow in number in community based settings across the city.
- The fact that digital inclusion initiatives have not been entirely discrete is crucial to the promotion and success of the digital inclusion agenda. This can be seen both over time where initiatives have been successfully sustained and extended as well as through cross-over and sharing between concurrent projects.
- There has been recognition that some digital inclusion initiatives can meet diverse strategic goals, for example exploiting the links between ICT up skilling and educational objectives while bolstering the digital sector in the city.
- There has been a demonstrable corporate commitment led by the local authority where the ICT department has a cross cutting portfolio and has been at the forefront of digital and social inclusion developments supported by the leader and chief executive.
- A strong and forward thinking original ICT Unit-E-government team and a similarly effective ICT department in the last few years continuing much of the good work established in the early days if digital inclusion and e-government.

- The use of already existing community based activities, facilities and networks to deliver new digital inclusion initiatives, has made the most of a strong CVS.
- Aneeds based approach which also engages communities with technology in a language which is easily understood and for purposes which are relevant to everyday lives is identified as a form of best practice.
- Ongoing community consultation driving developments forward – although there is a negotiation here between such consultation and the partnership agenda and central government/statutory requirements.
- The availability of sustained technical support which has established a close and trusting relationship with the community and voluntary sector in the city is identified as significant.
- Long term partnership wide strategies incorporate significant consideration of the role of technology and the importance of digital inclusion means high expectations of a level of sustainability beyond Digital Challenge. The digital inclusion agenda is recognised an important strand in some of the major strategies in the city, particularly in terms of the Sunderland Strategy and LAA. Although gaps and absences have been identified.
- Digital Challenge has allowed for a number of parallel initiatives to emerge by bringing digital inclusion to the top of the agenda, which may not have developed without such a strategic commitment and operational experience in place.
- For some of the delivery partnerships within the LSP there have been important steps taken to ensure digital inclusion forms part of the future plans of LSP activity.

4.7.1 Areas for further consideration

- Further partnership working is required This is advanced but does need continued efforts to bring all sectors on board as some are more involved than others. While the local authority and LSP have accepted digital

inclusion and a vital aspect of their work - not all sectors seem to have taken this fully on board their responsibilities.

- Need for effective transfer of responsibilities following Digital Challenge. This is relevant from the Head of ICT through to project and engagement officers.
- Sustainability of funding is clearly an issue for the many of the facilities which run on the limited funds and short term grants. This has recently been witnessed in the Hendon area of the city where the EVH has been disconnected following the end of Hendon 2000 due to financial difficulties. This relates to the need for mainstreaming of projects, better prioritisation of funding and the creation of more sustainable business models for such organisations.
- There is also a fine balance to be struck between continuing community engagement and technical support alongside the need to keep ownership and future direction in the hands of local communities. It is recognised that a Sustainability Plan is currently in development by the Digital Challenge team.
- Need for greater awareness and information sharing of the work which is taking place around digital inclusion – this is often not brought together in any cohesive manner.
- Some projects such as Lets Go and E-Mentoring have received further funding which have enabled them to continue beyond their anticipated life span. Further consideration needs to be given to funding those initiatives which are deemed to be successful.
- Terms such as ICT and Digital Inclusion are sometimes employed in a catch all way to include a range of economic, political and social agendas. While there is some sense of cross over between these in some of the initiatives discussed – the purpose of initiatives needs to be clearer and these separate discourses need to be untangled. For example, a political drive to increase efficiency for example does not necessarily entail quality of life improvements for individuals.
- There is also a need to look at the contradictions inherent within a drive to push all public services on-line while a proportion of the local population

remain either without any access to technology or with limited or poor resources.

- Beneficiaries of this agenda are extremely diverse. With this in mind there is a need not to lose sight of the social agenda and the needs of excluded communities in the light of growing interest in the digital sector (eg Software City and the Digital North East regional strategy).
- There is a need to develop some form of city wide ICT strategy for the city in order to mainstream digital inclusion, to provide some sense of clarity for partners and for city residents about what is involved in digital inclusion and provide a clearer picture of what is happening in the city. This may clear up some of the confusions around the differences and cross over between digital inclusion, e-government, and the digital sector. It may also help to clear up responsibilities and roles. The production of a Sunderland City Digital Equality Plan is something which is being proposed as an outcome of the Digital Challenge Programme.
- This strategy could also help those working with communities by providing a plan for training and building capacity amongst the most marginalised groups in the city
- There is a need for mainstreaming of digital inclusion agenda within in the Corporate Improvement Plan and the delivery plans for the LSP delivery partnerships
- There is also a need to improve the targeting of schemes at groups indentified as in most need or most vulnerable. This has been developed, but needs to be enhanced – especially in terms of achieving Sunderland Strategy goals in relation to Telecare for example.

Strategic commitment and success is important and is clearly something which Sunderland has take seriously, but does it necessarily equate to a marked improvement in digital equality and the quality of life of socially excluded groups? The next section of this report begins to consider this in more detail.

5. Analysis of socio-economic trends in Sunderland

5.1 Introduction

Despite efforts of regeneration in Sunderland, deprivation and poverty remained entrenched and problematic issues. 82 of the city's 188 Lower Super Output Areas are ranked among the 20% most deprived LSOAs in England and 41 of those are ranked within the 10% most deprived nationally (Indices of Multiple Deprivation, 2007). Child poverty, a reliable indicator of family poverty, also remains a real problem. Measurements of child poverty used vary, but on all scales the situation is not positive when compared to the national average. Using measurements based on those families who earn less than 60 per cent of the average income (approximately £13,000 per annum) Sunderland has 51 per cent of its children and young people within this classification (year) compared to a national average of 30 per cent. This proportion is similar to Doncaster where 50 per cent are within this classification (endchildpoverty.org.uk). In the following wards this level is over 70 per cent of children and young people: Central, South Hylton, Southwick, Thorney Close and Town End Farm (see Appendix 3). As with the nation as a whole, the prospects of this trend shifting direction do not look promising, particularly as the inequality between the worst and best paid employees continues to grow (DWP, 2009). The continuing issue of poverty and deprivation is also taking place in a context of one of the worst economic recessions of the twentieth century, which will play a huge role in influencing a range of socio-economic indicators at the national and local level.

Given these socio-economic realities, as well as the influence of a range of other past and present social policies in Sunderland, it would be misleading to state that an analysis of socio-economic indicators could provide an accurate and detailed reflection of the impact of digital inclusion activities in this city. However, what such data does illustrate is both the socio-economic context in which these activities are taking place and responding to, as well as trends in specific social exclusion domains – highlighting where combined efforts to combat social exclusion (including digital inclusion activities) have been successful and where there are still areas to be tackled. For example, we

know from the above analysis that the approach taken in the education sector in Sunderland has been amongst the most pro-active and may be seen as one of the more 'relevant' areas for digital inclusion activity. This section will then indicate how this may have played some part in improving educational performance in the city in recent years.

5.2 Social In/Exclusion: Employment & Income

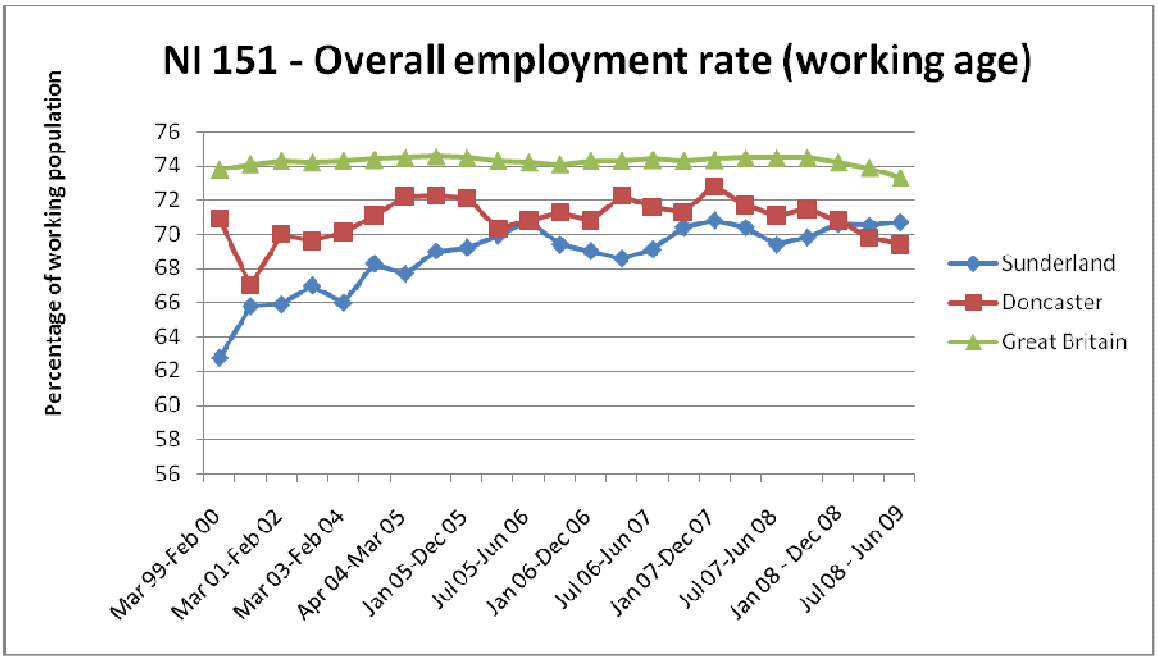
Programmes/initiatives which have looked to address this area:

- Telematics strategies
- Associated regeneration programmes such as the work carried out under 'Connecting the Coalfields'
- Inward investment/place marketing strategies around the digital/technology sector
- E-Champions
- E-mentoring
- Electronic Village Halls
- Digital Communities
- Equipment Loan
- ICT@home
- Software City

As the Chart 1 (NI 151) below indicates, up until 2007, employment rates in the city had generally been improving since 2000 and catching up with the national average which remained relatively constant throughout this period. While the employment rates for Doncaster have always been slightly higher than those of Sunderland, it too followed a similar pattern of slight overall improvement – signs of positive outcomes from investment in education, training, regeneration and job creation. The signs of the current national recession in terms of declining levels of employment in Great Britain, have not (initially) been matched by a decline in Sunderland. Recent trends in the city indicate that Sunderland's employment rate has not been effected to the extent of either Great Britain or Doncaster which have both witnessed a sharp

decline. The rate in Sunderland has actually risen to match its highest point for a decade. This can be seen as evidence of success in terms of the ability of new employment sectors (including those supported by new technologies) to withstand, in the short term, the shocks of the current recession and may also be contrasted with the experience and approaches adopted within Doncaster. However as with Doncaster, by July 2009 the fact remains that the city still lagged behind the national employment rate average.

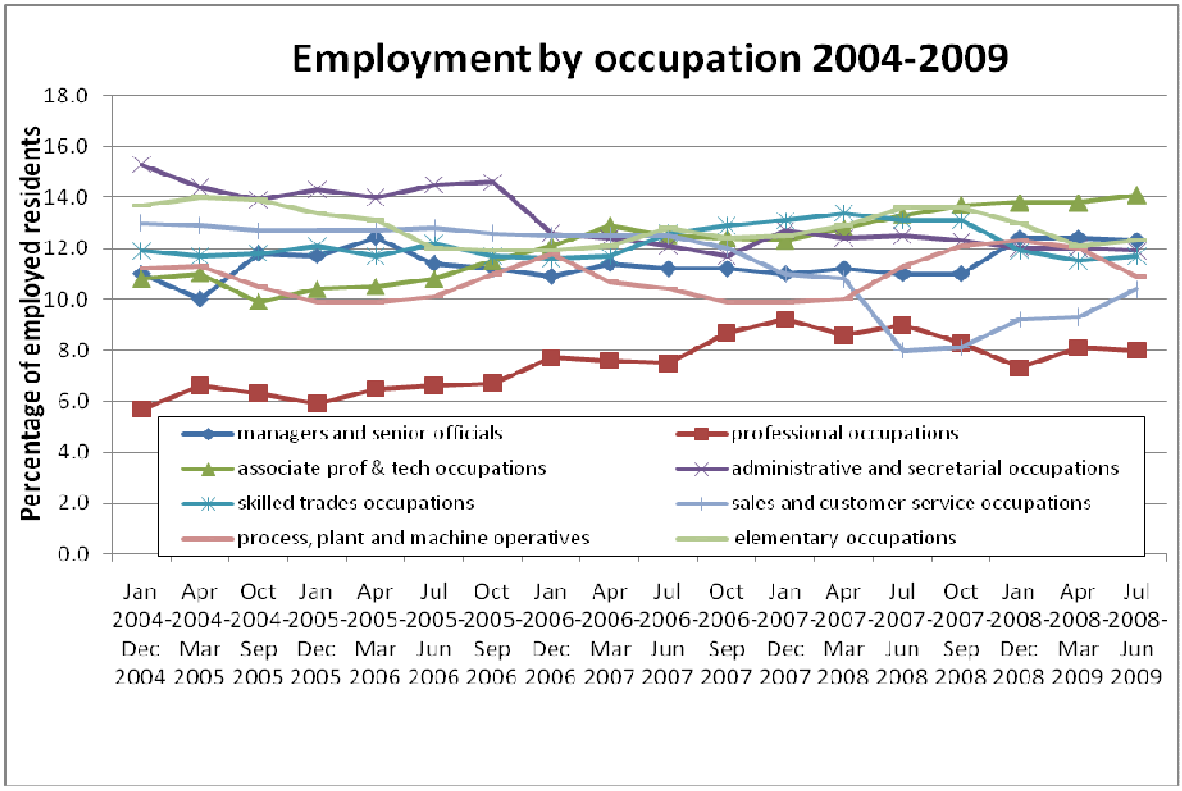
Chart 1: Overall employment rate



A number of initiatives have been implemented in the city in recent years which may account for part of this rise including the Small Business Grant Scheme enabling new business start ups (although as is pointed out below this start up rate remains lower than the national average). Part of this growth in the employment rate may also be attributed to the growth in certain sectors including those related to digital industries in Sunderland, both by building on the expertise already existing in the city and by attract prestigious inward investment. According to the Sunderland Strategy (2008) since 2005 inward investment attracted to the city has brought 3,100 jobs. As Chart 2 (based upon SOC 2000 occupational categories) below illustrates, the largest occupational sector of employment in Sunderland in 2009 was 'associate professional and technical occupations' which includes Science and

Technology Associate professionals as one of the main sub categories. This may indicate some growth in the digital sector/knowledge economy and a shift away from a greater reliance upon lower skilled administrative and secretarial occupations and sales and customer service occupations. However, it needs to also be recognised that a large proportion of jobs created around the digital sector in Sunderland are not necessarily at this higher skill level – but are more often recognised as sales and customer service occupations in such areas as call centres and technical support centres. Over the last year this occupational sector has seen significant growth after experience a decline in the period from mid 2007 to mid 2008.

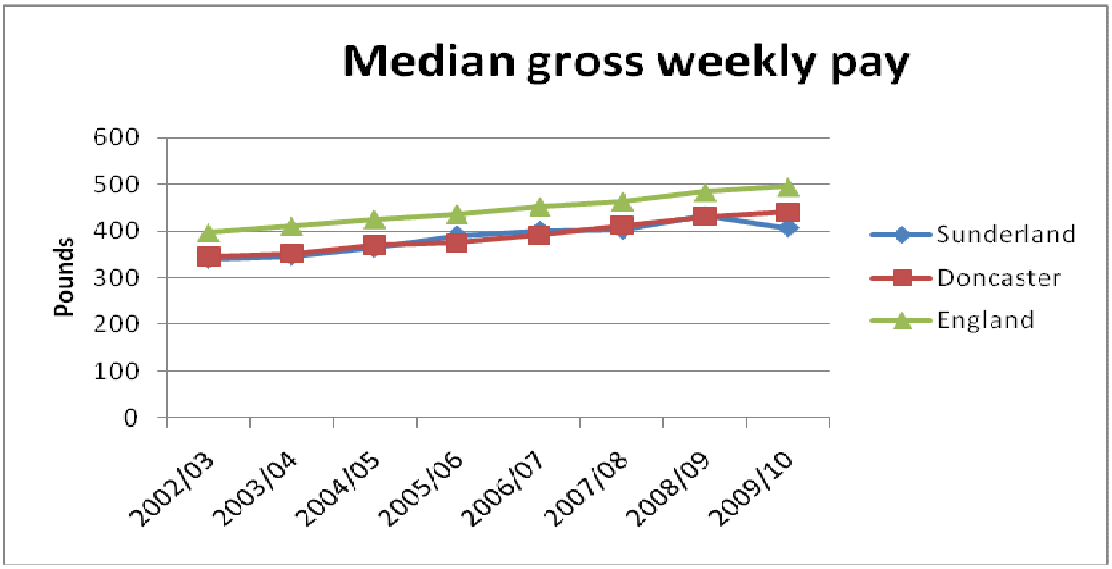
Chart 2: Employment by occupation



Despite an improving employment rate and evidence of growth sectors, the issue of low pay and the continued prevalence of low skilled jobs in the city still remains an issue. The overall employment figures presented above do not take into account levels of 'in work poverty' through low pay and underemployment. As the data on average earnings in Chart 3 below (NI 166) illustrates, employees in Sunderland (as with Doncaster) are still paid approximately £50 a week less than the national average and this has shown

little sign of improvement since 2002. In fact while employment levels appear to be fairly resilient in Sunderland during the recent recession, this data indicates that median earnings are beginning to actually decline – raising questions about the types and conditions of employment which a service and knowledge orientated economy may be providing.

Chart 3: Median gross weekly pay

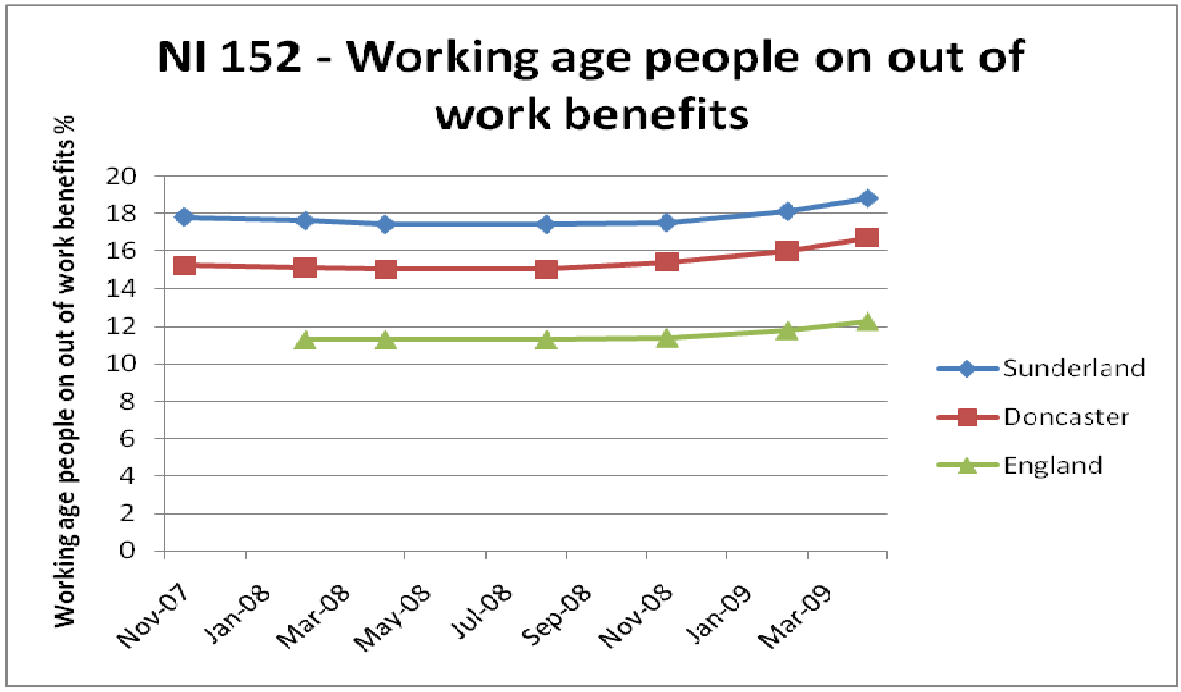


According to the Index of Multiple Deprivation (2007) 70 of the city's 188 LSOAs had in excess of one-third of their older residents suffering income deprivation[22], while 63 SOAs had one-third or more of their child residents living in income deprived households. These trends are likely to become exacerbated as the knock on effects of the current recession takes hold. For example, it is clear that there is a growing problem with youth unemployment in Sunderland which has grown sharply due to the current economic recession. It was recently identified as having one of the highest proportions of young people between the ages of 18-25 as out of work in the UK. Second only to Hull, the youth unemployment rate in Sunderland is presently at 9.45 per cent (Shaheen, 2009). The overall employment statistics presented in Chart 1 (NI 151) appear to mask this critical phenomenon.

While the overall employment rate for Sunderland does appear to be positive news, it is also clear that the downturn has effected the number of those

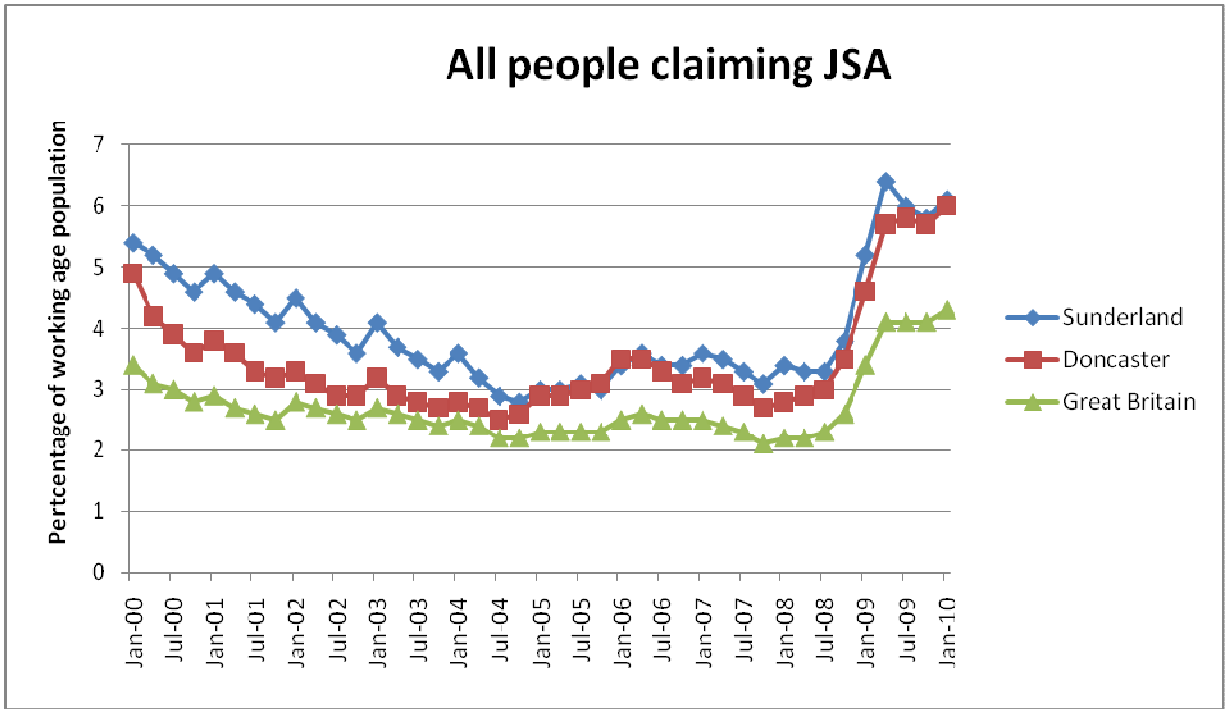
receiving out of work benefit. As is shown in Chart 4 below Sunderland continues to have a higher proportion of those on out of work benefits in comparison to both the national average and figures for Doncaster, with a rate that exceeds the national average, but has not been as marked as in Doncaster. In terms of Job Seekers Allowance claims, in Sunderland these have exceeded the levels experienced in 2000 having dropped in 2004 and coming close to the national average (see Chart 5). Although the data indicates that the extent of these claims is beginning to level out, the figures for Sunderland are now higher than both those in Doncaster and the national average climbing steeply from mid 2008 onwards.

Chart 4: Working age people on out of work benefits



[22] Income deprivation is defined as

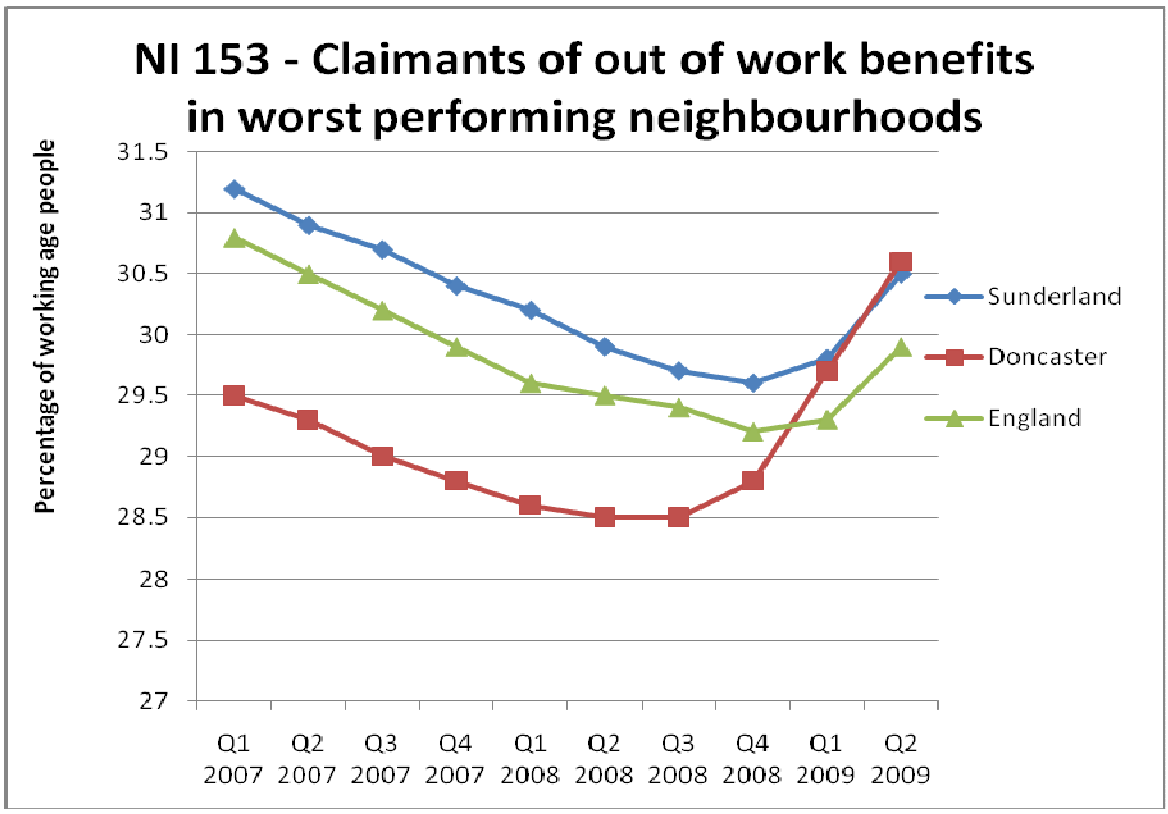
Chart 5: All people claiming Job Seekers Allowance



It is also the case that issues relating to unemployment and income deprivation are more concentrated in certain neighbourhoods of the city. Where any significant improvements have been made in terms of the employment rate, these do not seem to have had a positive consequence in those areas of the city already classified as more deprived. While the JSA claimant count has gone up in all city wards in recent months, those wards who recorded the lowest JSA claimant count in 1999, remain those with the lowest count and those with the highest in 1999 still are those wards amongst the highest in 2009. These include the wards of Thorneholme, Washington North, Thorney Close, Hendon and Central. Although much of the work around social inclusion (for example through New Deal for Communities) digital inclusion has been focussed upon improving employment opportunities in the poorest neighbourhoods such as these, it is clear that making a discernable impact on what is deep rooted issue of disadvantage is extremely challenging. While the number of those claiming benefits in the worst performing neighbourhoods (NI 153) had decreased in Sunderland up until the fourth quarter of 2008, more recent figures show the initial effects of the current recession (see Chart 6). Doncaster too, witnessed as sharp rise in these figures as did the nation as a whole. Throughout the last two years, the

gap between benefit claimants in the worst performing neighbourhoods in Sunderland and nationally has been maintained.

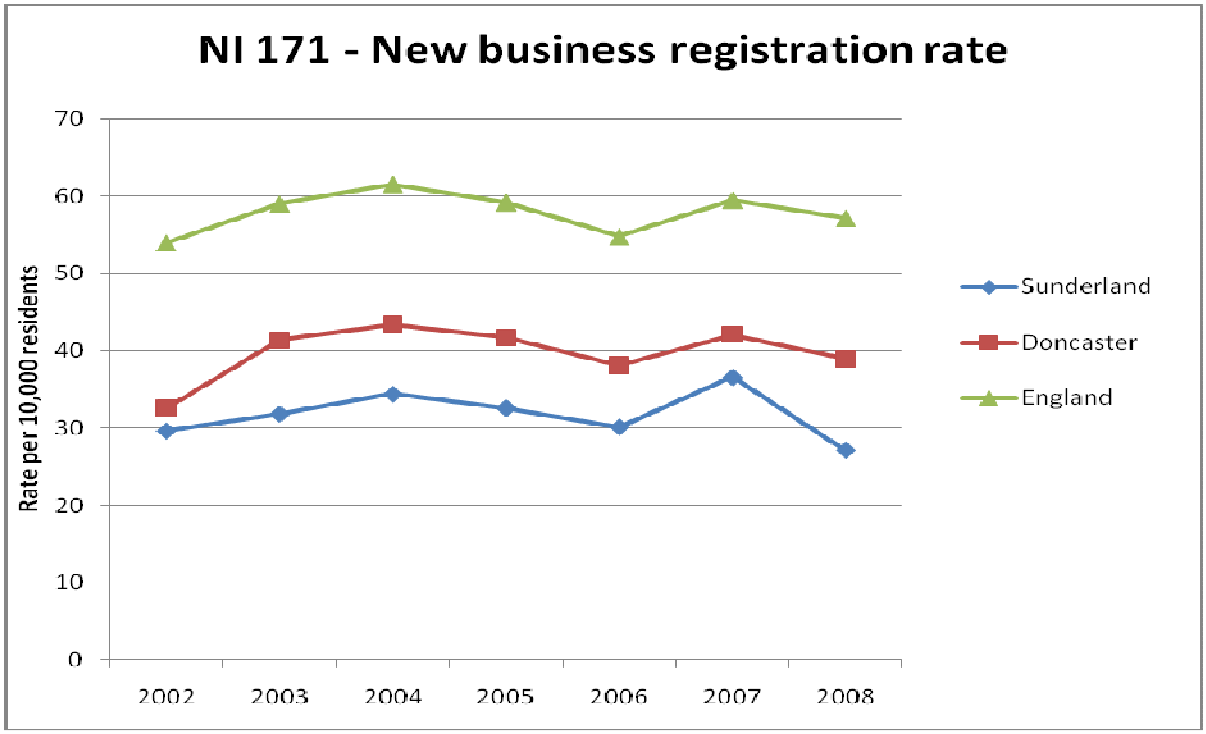
Chart 6: Claimants of out of work benefits in worst performing neighbourhoods



Finally in terms of measurements of employment and income, new business registration (NI 171) is much lower in Sunderland than the national average and the rate of start-ups experienced in Doncaster (see Chart 7). Although low already, this has seen a sharp decline between 2007-2008 and more recent data may indicate a further reduction as a result of the recession and availability of credit. One of the major approaches for programmes such as Software City and the recent North east regional Digital Economy strategy has been to attempt to attract both inward investment and to foster the growth SMEs around the knowledge economy and digital media sectors – in terms of new business start-ups this does not appear to be particularly successful. However, it will clearly take some time to be able to adequately assess the impact of such strategies and programmes which will not see immediate results in such data as these. Self employment through new starts is not

especially significant element of new employment in Sunderland, where employees tend to work for larger employers.

Chart 7: New business registration rates



5.3 Social In/Exclusion: Education

Programmes/initiatives which have looked to address this area:

- Libraries
- Learning Centres
- UK Online Centres
- Electronic Village Halls
- Community of Interest websites
- Home Access Programme
- LIAZe Bus
- Computers for Pupils
- Digital Communities
- ICT@home
- E-Mentoring

- Equipment Loan
- E-Champions
- Community centres and Youth Clubs

While educational achievement in Sunderland, as with employment and income, is behind the national average, this is a domain of social inclusion which has seen some improvement in recent years and can be viewed as one of the local success stories. In particular it is the younger age groups (KS1-KS2) and those children and young people who are either looked after or in care, where better and sustained levels of performance and attainment have been achieved. The extent to which this can be attributed to the digital inclusion agenda is questionable, however many of the efforts within the agenda have focussed their attention on this area as can be seen from the list of relevant projects above. Investment in new schools such as the BSF programme, which is expected to have led to the rebuilding or refurbishment of all Sunderland schools by 2015 (Sunderland Strategy, 2008), the Every Child Matters agenda and improved strategies for dealing with vulnerable children and young people have to also be seen as crucial strategic commitments which have contributed to this local picture in Sunderland.

There are some issues in relying too heavily on national indicator data for education in terms of the short length of time over which much of the data has been collected, but for the selected NIs in Sunderland those which are now (2009) above the national average (England) include:

- Narrowing Gap in Early Years (NI 92)
- Progression in English from KS1 to KS2 (NI 93)
- Progression in Maths from KS1 to KS2 (NI 94) (see Chart 8 below)
- Looked after Children achieving Level 4 in Maths KS2 (NI 100) (see chart x below)
- Care leavers in education, employment or training (NI 148)

Chart 8: Progression by 2 levels in Maths between KS1 and KS2

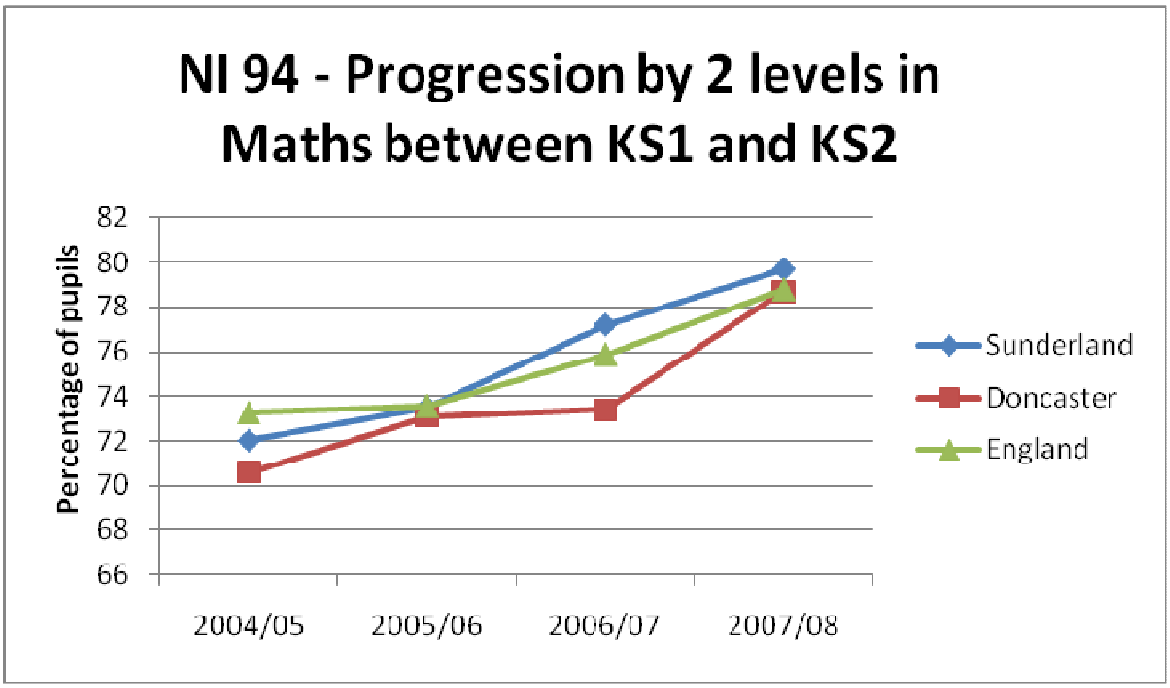
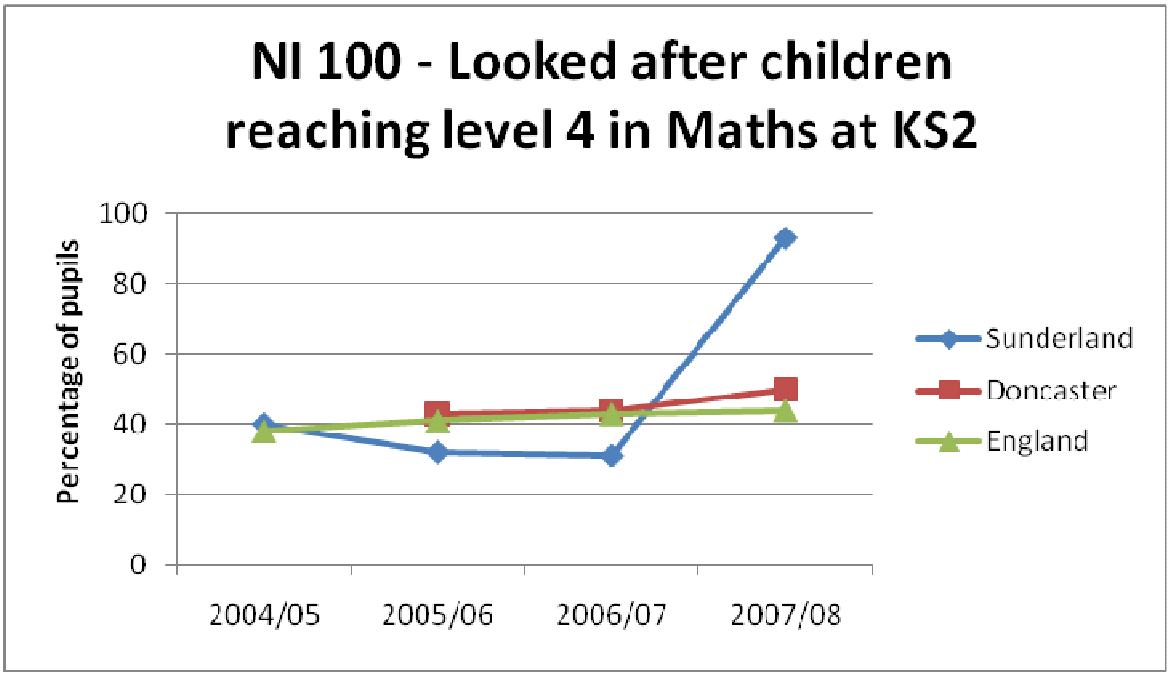


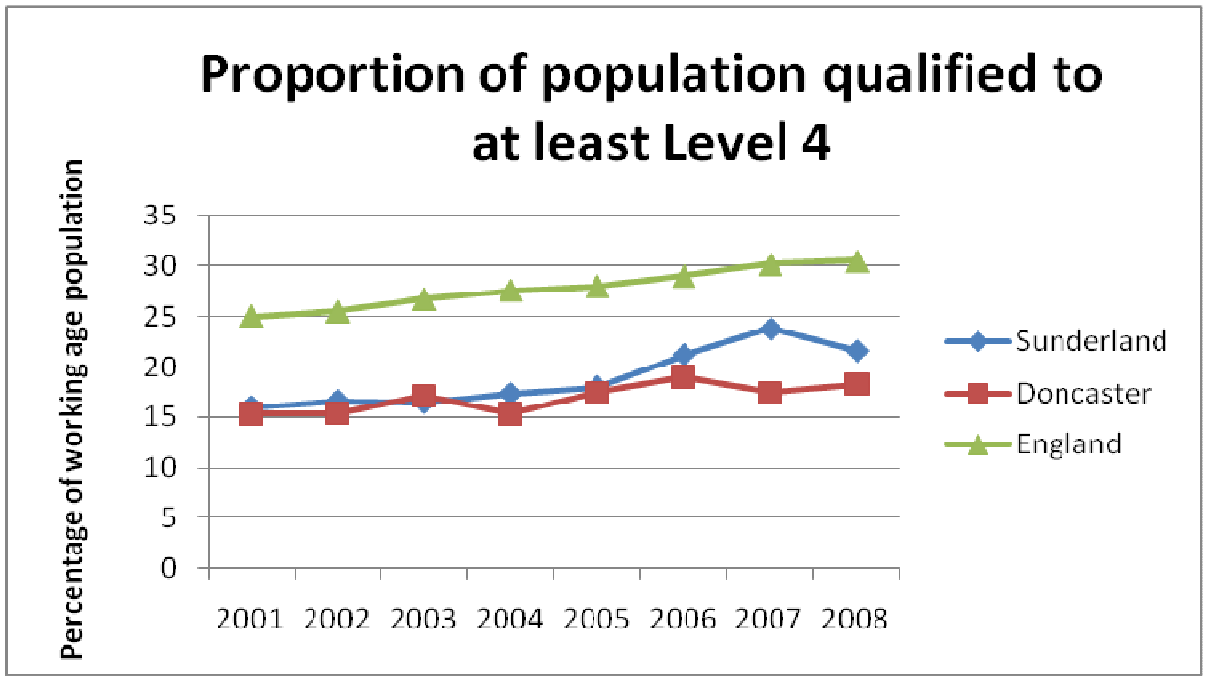
Chart 9: Looked after children reaching level 4 in Maths at KS2



Whilst Sunderland has started from a much lower baseline position than elsewhere in the country (even in comparison with Doncaster for some of the key indicators), it is also the case that nearly all of the selected national indicators relating to education have been improving in recent years. This seems to apply to a range of indicators across the age groups in the city including those at KS2, GCSE, at age 19 but also significant improvements of achievement of qualifications for the population as a whole.

This does not necessarily mean that the gap in performance between Sunderland and the national average has been decreasing (apart from those indicators mentioned above), and therefore this may represent an overall national trend as opposed to a localised one which is specific to this city, but it does illustrate that progress has been made over the last three or four years. Those indicators which make reference to the whole population as opposed to just children and young people are considered as significant in terms of the impact which technology may have played in improving educational performance across the city, illustrating that the adult population are accessing educational opportunities in the city as thus developing their capacity to engage with ICT as a tool for learning (see Chart 10 below). While this data indicates an increasingly highly qualified local population the figure has begun to drop between 2007-2008.

Chart 10: Proportion of population qualified to at least level 4



The following educational indicators have also all witnessed a rise in performance in recent years:

- English and Maths at KS2 (NI 73)
- Achievement gap between free school meal students and peers at KS2 and 4 (NI 102)
- 2+ A*-C in GCSE Science (NI 184)
- Achievement of Level 2 at age 19 (NI 179)
- Achievement of Level 3 at age 19 (NI 180)
- Inequality gap in achievement at level 3 by age 19 (NI 181)
- Participation of 17 year olds in education or training (NI 191)
- Proportion of population qualified to at least Level 2 (NI 163)
- Proportion of population qualified to at least Level 3 (NI 164)
- Proportion of population qualified to at least Level 4 (NI 165)

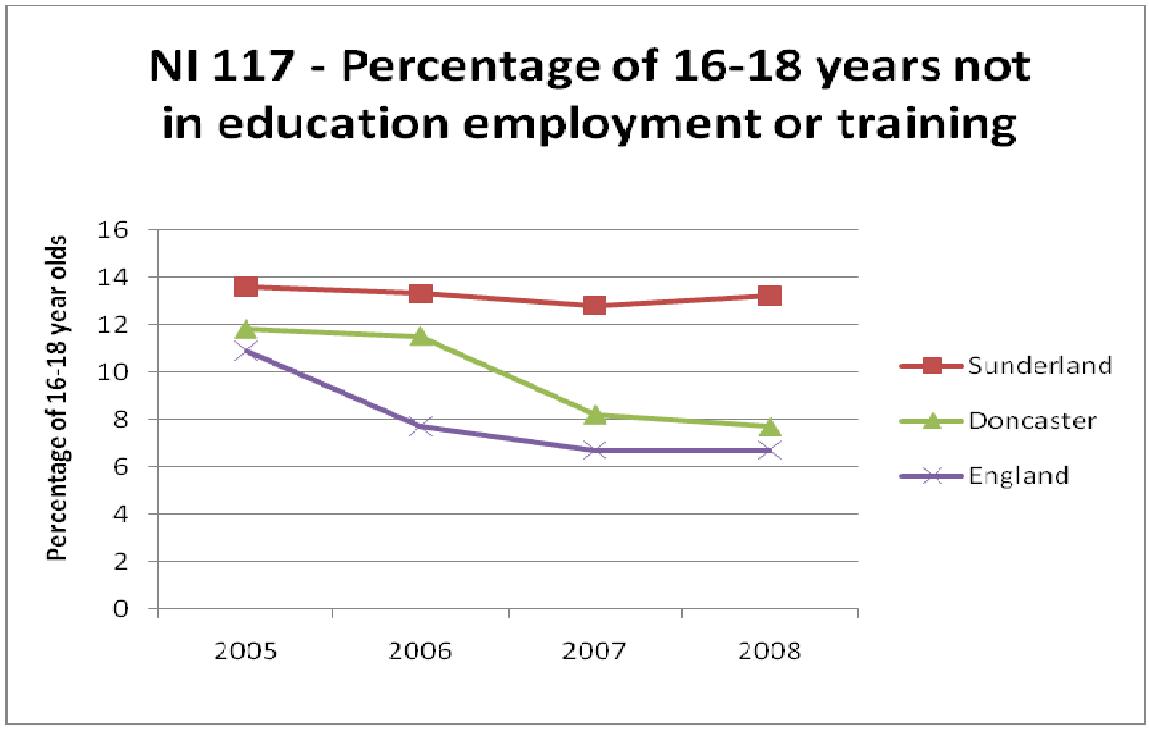
Despite these improvements there are still areas where performance is poor and/or getting worse over time in Sunderland and these have appropriately been identified as strategic challenges by the LSP (Sunderland Strategy, 2008). These particularly relate to issues of attainment and improving the

proportion and number of young people engaged in education, training or employment. The role which technology could play in improving training and employment opportunities for this group of young people is clear as is rightly a local priority. The indicators which illustrate these challenges include:

- Inequality in achievement of Level 2 by 19 year olds (NI182)
- Progression in English between KS2 and KS3 (NI 195)
- Young people between 16-18 identified as NEET (NI 117)

While the current recession means that the increasing number of NEETs has now been identified as a national problem (Pemberton, 2008) the data presented in Chart 11 below illustrates how this is an issue which has been relevant to Sunderland for several years. The data illustrates how the proportion of NEETS has historically been much higher than both Doncaster and the national average whose figures (without the recent recession taken into account) have both improved in recent years, while the proportion of NEETS in Sunderland continues to remain fairly static.

Chart 11: Percentage of 16-18 years not in education, employment or training



It also needs to be pointed out that indicators of educational achievement vary markedly across the city particularly in terms of the performance of specific schools. As is identified in the Sunderland Strategy (2008), there exists a significant achievement gap between children, young people and adults from disadvantaged communities and those from more affluent areas. In terms of data gathered from recent OFSTED reports the gap between the better and poorer secondary schools is clear.

5.4 Social In/Exclusion: Health

Programmes/initiatives which have looked to address this area:

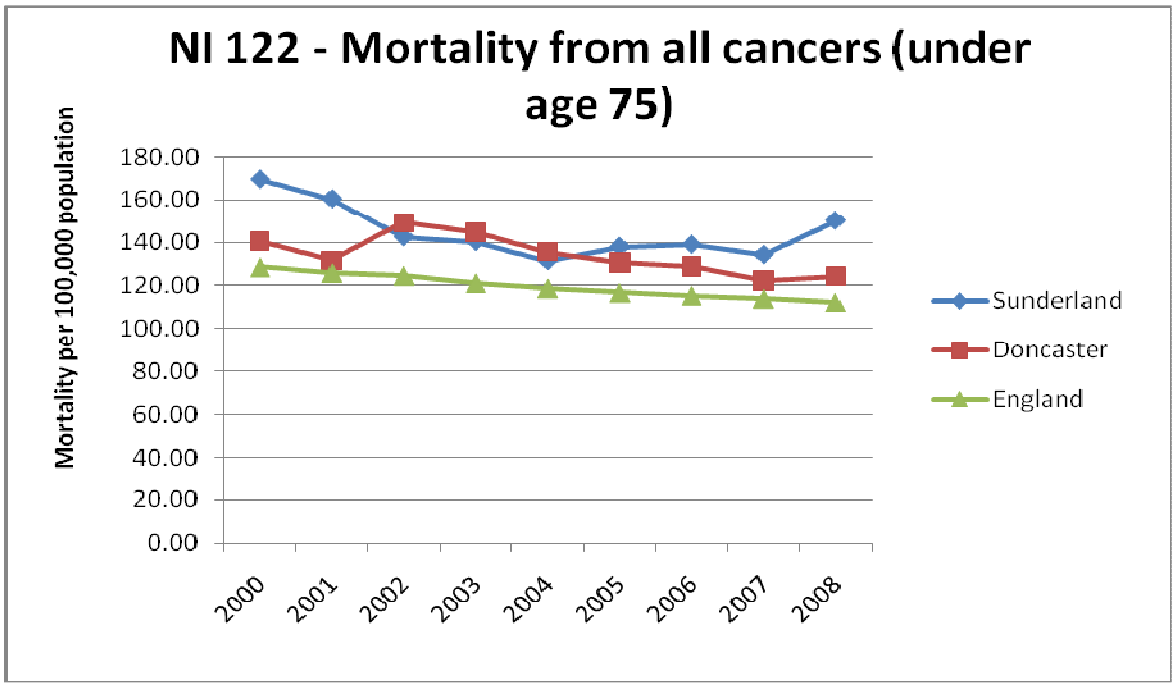
- Community access points
- Hospital Information Points
- Community Health Information Points
- Telehealth
- Telecare
- Telesafe
- Health-E

Many of the health related problems associated with post-industrial cities in the north of England combined with an aging population can be identified in Sunderland and these can be closely related to problems of deprivation already outlined. 80 of the city's 188 Super Output Areas – containing 42.5% of its population – were ranked among the 10% most health deprived nationally in the Indices of Multiple Deprivation 2007. Part of this picture is the fact that Sunderland has higher rates of mortality from cancer (NI 122) and coronary related diseases (NI 121) than the national average (see chart 12 and 13 below).

While Sunderland has done well to reduce mortality from all cancers from a rate in 2000 which was well above the national average and above that of Doncaster, between 2007 and 2008, this gap once again opened up. The health issue of cancer is one of particular concern in this part of the UK due to

the legacy of industrial working conditions, particularly in terms of mining and shipbuilding. For example, one increasingly common cancer found in the North East, is that of Mesothelioma – lung cancer caused through exposure to asbestos.

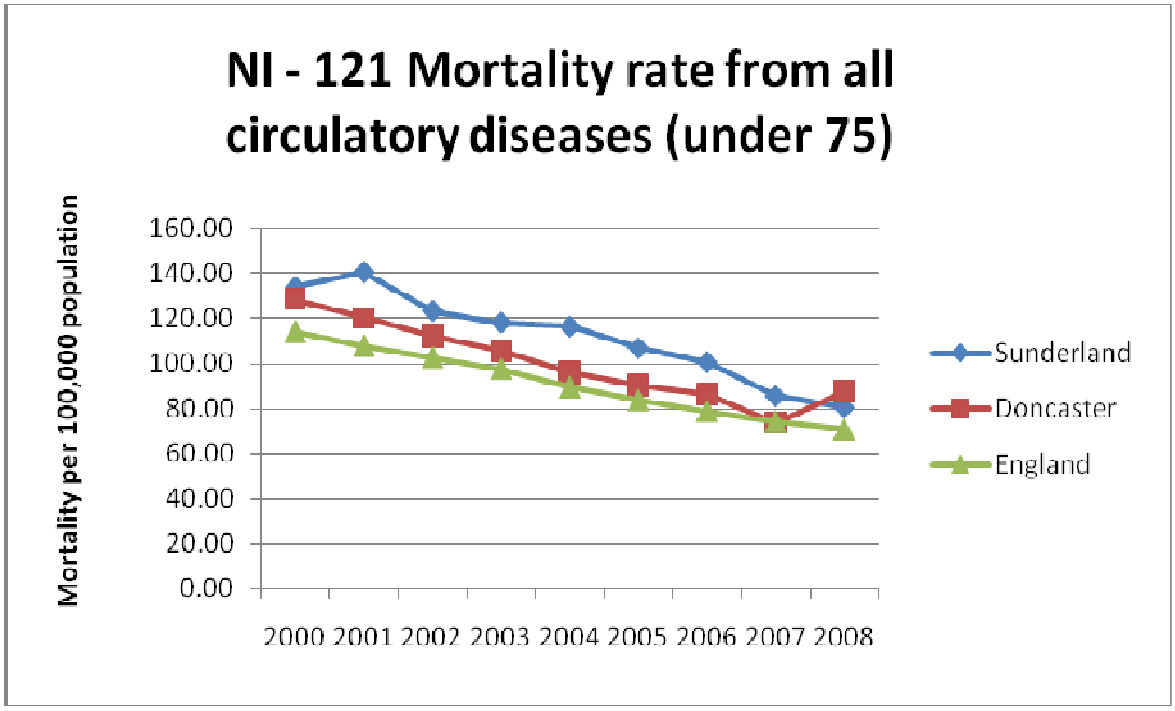
Chart 12: Mortality from all cancers (under age 75)



The mortality rate from circulatory diseases in Sunderland has fallen year on year since 2000, and in recent years this rate has come close to the national average, while at the same time the rate has been seen to increase in Doncaster. Improvements which have been made seem to represent broad national trends at improving levels of overall mortality related to care techniques, medication and better treatments available over time. Clearly there is an element of these broader developments which is related to the impact of technology within the scientific research community, but also the approaches adopted by local PCT and Hospitals in the management as well as treatment of patients.[23]

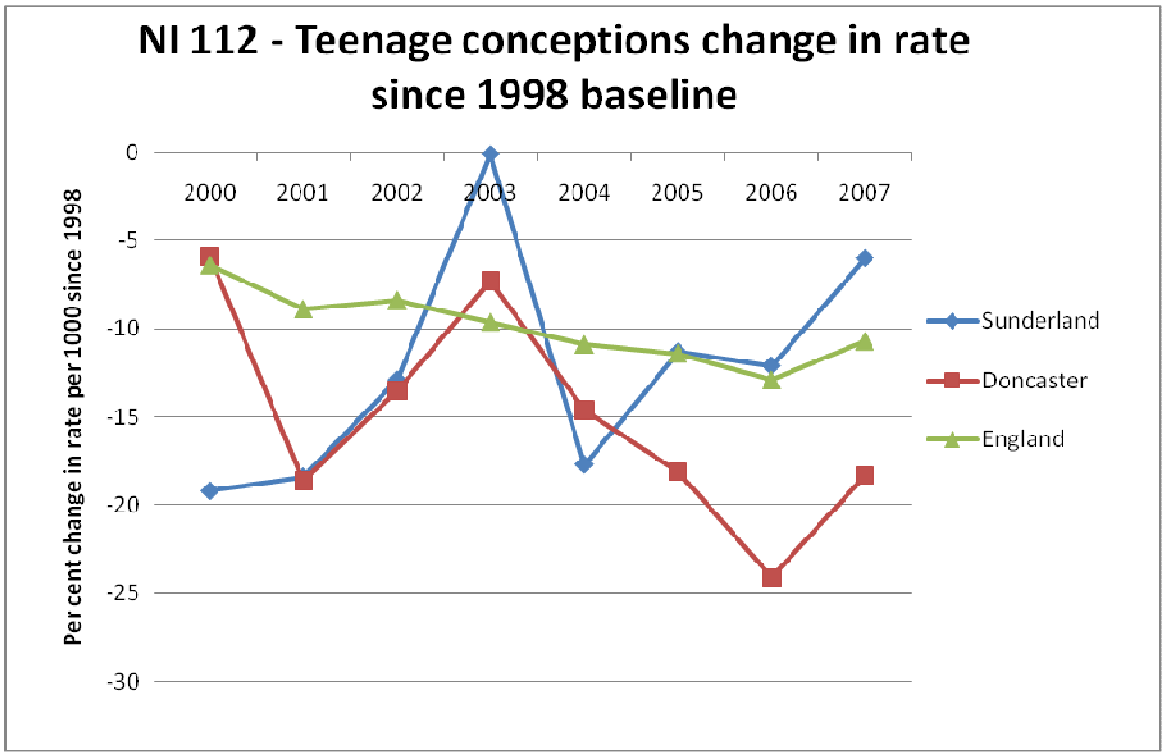
[23] For example, SOCITM have identified Sunderland's Teaching Primary Care Trust as innovative trust which has invested in the provision of ICT within the health community. Examples include the delivery of full IT infrastructure for NHS dental practice in the city on an in-house basis (SOCITM, 2007).

Chart 13: Mortality rate from all circulatory diseases (under 75)



While the city has witnessed improvements in terms of rates of mortality from circulatory diseases, Sunderland lags behind the national average (and figures for Doncaster) in terms of child obesity levels (NI 55/56) and teenage pregnancy (NI 112), both of which are areas highlighted as key concerns at the LSP level (Sunderland Strategy, 2008). The collection of data for these indicators is relatively new and therefore any long term trend is difficult to discern at this present time.

Chart 14: Teenage conceptions in rate since 1998 baseline



Life expectancy for women and men (NI 137) is also one of the areas identified as lagging behind national average. However, the fact that these figures are on the way up and catching up with the figures for Doncaster (see Charts 15 and 16 below), does show that positive steps have been taken on a national basis, but also in the city over the last decade.

Chart 15: Life expectancy at birth: females

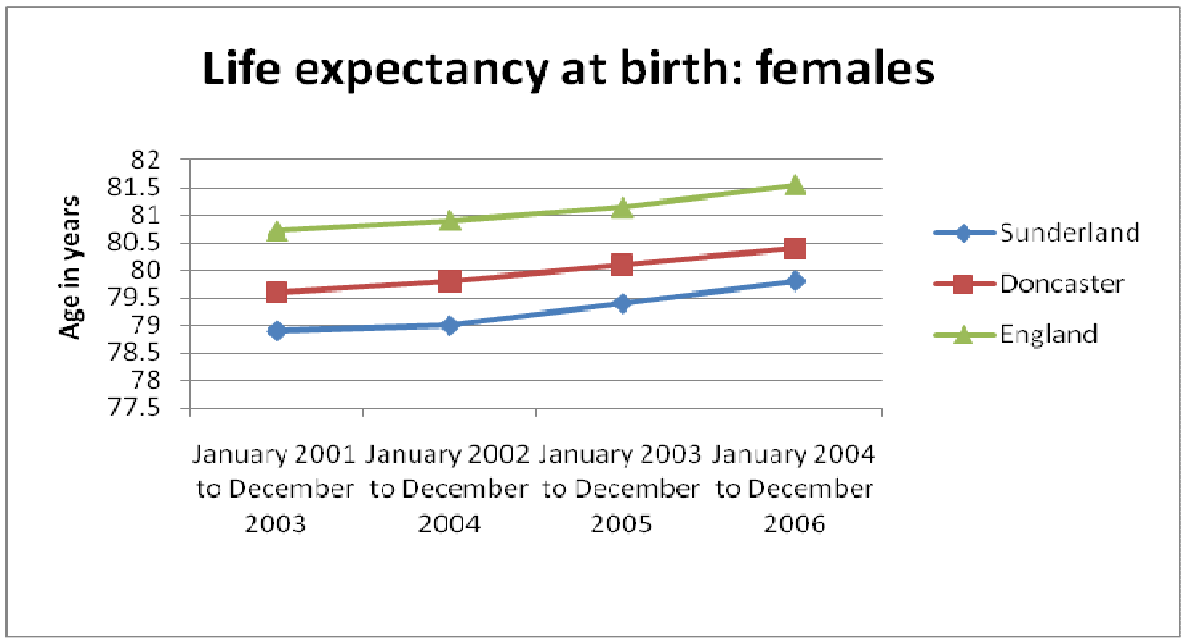
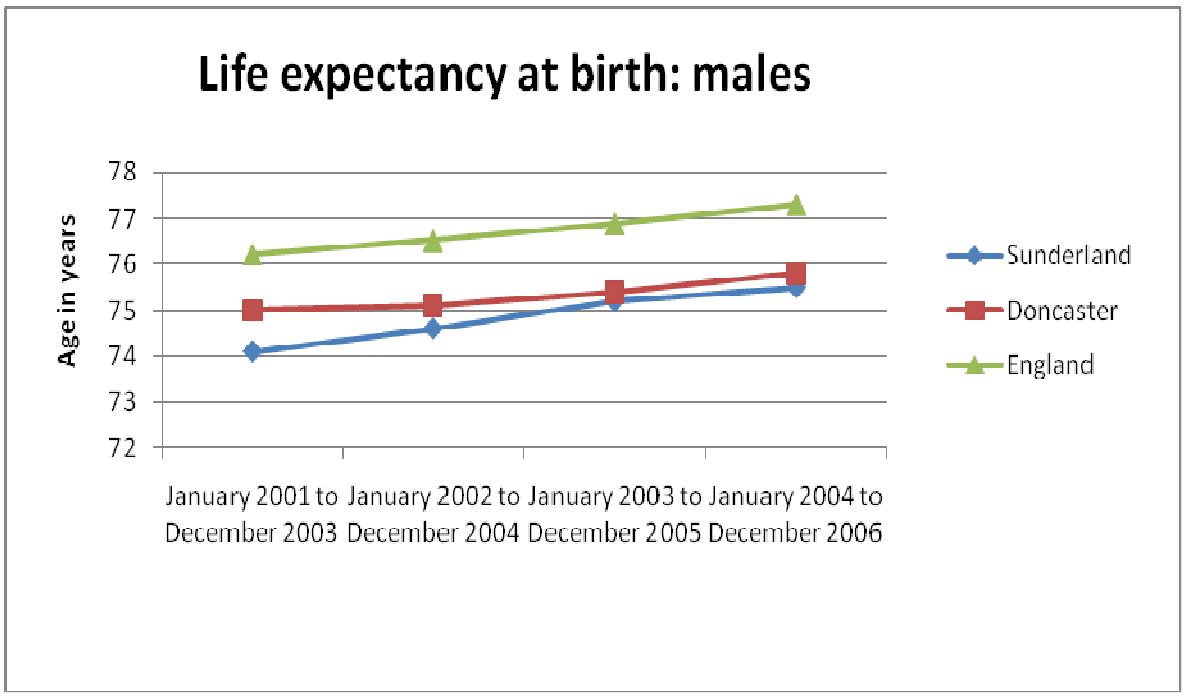


Chart 16: Life expectancy at birth: males



Such steps include the construction of Wellness Centres, and programmes such as Exercise on Referral Service, the enhancement of the Community Child and Adolescent Mental Health Service (CAMHS), Healthy Exercise Lifestyle Programme and the establishment on new and enhanced primary care centres at Bunny Hill and Grindon Lane which have helped people in the city to live more healthy lifestyles and access more convenient health care services. Sunderland is an active member of the World Health Organisation European Healthy Cities Phase IV programme. Working on the core objectives of Healthy Ageing, Healthy Urban Planning, Healthy Schools Programme, Health Impact Assessment and Physical Activity and Active Lifestyles, the city has developed and integrated examples of best practice. Access to quality leisure facilities has also been developed as a strategic priority, for example the new Aquatic Centre. The role of access to ICT may be seen to play some part in this, although given the fact that use of technology may both help but also hinder healthy lifestyles, its impact is likely to be less than in other social exclusion domains.

Some further progress has also been made in the following areas: Fewer women are smoking during pregnancy (down from over 37% in 2004/05 to just over 23% in 2006/07 – a reduction of 40%). More mothers are trying to breastfeed their children (initiation rates have increased from 37% in 2004/05 to 40% in 2005/06), and fewer children are dying in their first year of life, (5.2 deaths under 1 year per 1000 births in 2007 compared to 6.5 in 2006). Other key health related areas in the city include:

- Smoking; the number giving up is higher than both Doncaster and the national average, however the number still smoking remains higher than both of these figures
- Emergency bed days in hospital and starting to fall in Sunderland, but again the figures are higher than in both Doncaster and the national average

The relationship between ICT use and health outcomes is not straightforward. On the one hand more widespread use of technology has meant that many now live less active and healthy lifestyles, with children in particular spending more time sat in front of a TV or computer screen (seen as the impetus for recent government programmes such as 'Change4life'). On the other hand access to the internet can be a valuable tool in accessing information regarding healthy lifestyles as well as offering opportunities for education and self diagnosis.

5.5 Social In/Exclusion: Independent Living

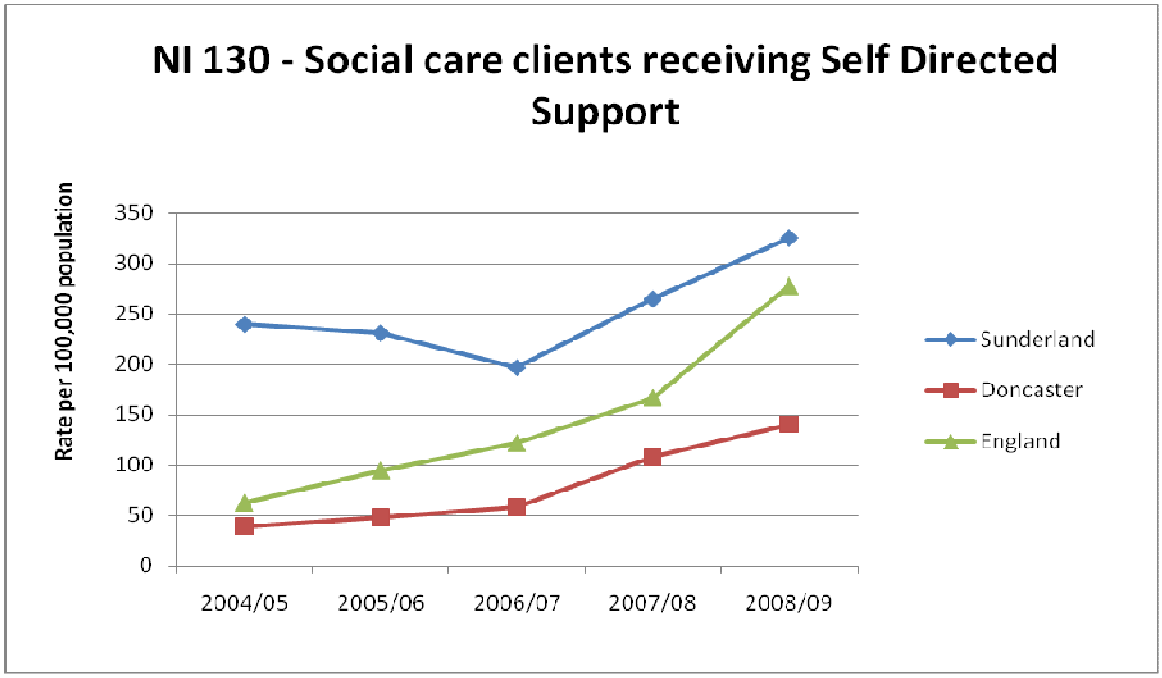
Programmes/initiatives which have looked to address this area:

- Letsgo Smart card
- Digital Communities
- Telesafe
- Flash meeting/Hexagon
- Equipment loan
- Telehealth

Good progress has been made in Sunderland in supporting people to live at home as long as possible. Sunderland continues to be in the top 10% of all authorities for the number of older people supported at home, whilst the number of adults aged under 65 supported at home, increased by 61% between 2004 – 2007. Since 2004 partners have been working together to provide a number of innovative schemes to support individuals, including the Joint Intermediate Care Scheme and the hospital resettlement programmes for people with severe learning disabilities. The role of ICT particularly that of Telecare services, is also significant in this story as been explored above in section 4.3.6. The use of this technology has been an important aspects of allowing people to continue to live in their own home safe in the knowledge that assistance should they need it is readily available.

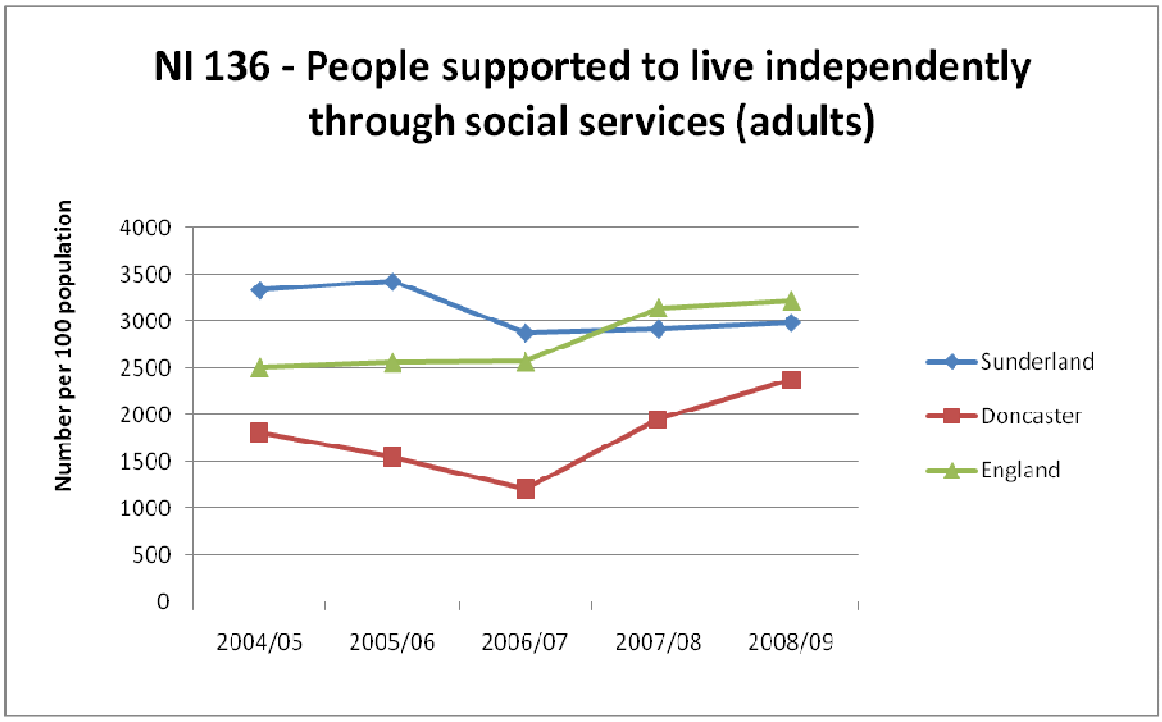
In terms of the national indicators, for the rate of social clients receiving self directed support (NI 130) the figures are relatively high for Sunderland and have been increasing in recent years – particularly from 2006/07 onwards (see Chart 17 below). This is difficult to interpret because it could indicate the fact that there is a greater need in Sunderland for social care and support which is related to issues of poverty and the age profile of the local population, and/or it could indicate a positive and pro-active approach to offering this support. In reality, the figures are likely to reflect both of these aspects in some way.

Chart 17: Social care clients receiving Self Directed Support



In relation to the number of people supported to live independently (NI 136), the figure for Sunderland is again higher than that of Doncaster and the national average, but appears to be trailing off slightly since 2006/07. Again this is difficult to interpret, but it could relate to the lack of need to support further forms independent living because a certain saturation point has been reached, or it could indicate that more needs to be done to continue to support the large numbers already supported in the city in this way.

Chart 18: People supported to live independently through social services (adults)



These indicators do not tell us anything however about other 'versions' of independent living, particularly in relation to the independence of younger people. This is not only in terms of independence achieved through social care arrangement, but also in relation to schemes such as the recent Lets Go Card scheme for young people. This aimed at assisting in the independence of young people, helping them to increase their mobility around Sunderland and make the most of leisure opportunities available to them. However there is no official measure to assess the extent to which such forms of independence are being achieved or not. It is worth remembering how independence is defined in these official statistics.

5.6 Summary

The socio-economic trends presented here in the form of national indicators illustrate some the successes and challenges faced by the city of Sunderland in terms of social exclusion/inclusion. The extent to which these trends illustrate the influence of a growing investment in ICT and digital inclusion initiatives is recognised as limited, although the data does provide an indication of the extent to which combined regeneration and social inclusion

efforts may have impacted on such measurements. While it is not disputed that for certain individuals within the city digital inclusion activity has had a positive impact in terms of quality of life (see section 6), this is not observable in the overall socio-economic statistics for the city. Given the multiple influences at work and the limited reach of recent initiatives in terms of raw usage figures, there has been little major city-wide impact. However, it is clear that in those areas where improvements have been made in recent years that such activity has played an increasingly important role.

In each of the social exclusion domains there are some signs of success. These include steadily increasing employment figures (especially in technical roles), educational progression between KS1 and KS2 as well as improving attainment for the overall population, improving mortality rates and the success of independent living initiatives in the city. In terms of those areas were Sunderland has been performing better than the matched area these include key measurements of education achievement as well as measurements of independent living. In all of these trends access to and use of ICT has played its part, particularly in can be argued in relation to employment, education and independent living. Many of the social inclusion indicators used here illustrate the fact that despite such efforts, Sunderland remains behind similar areas of the country (such as Doncaster) but also often below the national average.

There is also a need to bear in mind that these trends are played out very differently across the city. In the more deprived areas of the city as is referred to in section 5.2, these improvements have not necessarily been so marked. This is considered in more detail in the following section. There is also a need to consider the huge impact that the current recession will have on these local social exclusion trends – something which is beginning to become clearer in the JSA claimant count in chart 5.

6 Quantitative Questionnaire Analysis

6.1 Introduction

The aim of this section is to present quantitative data findings on issues concerning the digital divide within socially excluded areas of Sunderland, drawing upon two questionnaire surveys over an 11 month period (see section 3 for details of methodology). This study focuses on how technology impacts on the quality of life and life chances of individuals in deprived communities in the context of improved access to, and investment in, technology (see section 4). This research explores how successful local initiatives have been in facilitating engagement with technologies and evaluates which public spaces have been most successful in encouraging local residents to use technology for socially inclusive benefits.

As it was computer/internet access that was central to participants' definition of technologies, the section examines how the computer was used by different social groups (gender, age, disability and socio-economic status). Furthermore, there is an in depth analysis of internet use and how useful it was in accessing on-line public services. Yet, in order to understand engagement, respondents reported that ownership was central to their use of technology. This research particularly contemplates how participants develop skills and knowledge of new forms of technologies which was somewhat intertwined with ownership.

Key areas of social inclusion were analysed identifying employability, educational achievement, independent living, health inequalities, and improvement in individual, community and social networking. This section concludes that the relationship between technology and social inclusion is a complex one and is affected by a number of key social variables. Hence, in order to overcome the digital divide although access to equipment is vital, cultural aspects also need to be confronted in order to encourage successful and beneficial engagement.

6.2 General population

The general population was derived from geographical locations which fell into the bottom 10 per cent of the indices of deprivation. Within these areas a 25 per cent sample was selected randomly in order to represent this initial population from which the sample for the second questionnaire was then subsequently drawn (see section 3 for further details). Although the majority of data comes from survey one, a second longitudinal level of analysis has been developed. Figure 6.1 represents the general population analysis in survey one and survey two to illustrate the different ratios between social groups within this study.

Figure 6.1 Questionnaire 1 & 2 populations

		Survey 1		Survey 2	
General population	**Variable category**	**n**	**%**	**n**	**%**
Gender	Female	451	56.3	106	52.5
	Male	350	43.7	96	47.5
Age	5-17	35	4.3	6	3
	18-24	47	5.8	5	2.5
	25-34	80	9.9	15	7.6
	35-49	187	23.1	49	24.7
	50-64	233	28.8	69	34.8
	65-79	163	20.1	43	21.7
	80+	64	7.9	11	5.6
Ethnicity	White	768	97.8	200	98.5
	Non-white	17	2.2	3	1.5
Disability	Disabled/long term health issue	300	37.6	71	35
	No long term health issue	498	62.4	126	62.1
Employment	Employed	315	39.7	75	37.2
	Full time education	74	9.3	13	6.4
	Not working due to illness	71	8.9	23	11.4
	Looking after home/family	40	5	12	5.9
	Retired	254	32	69	34.2
	Unemployed	40	5	6	3
Occupation	Working	149	49	44	50
	Intermediate	91	29.9	24	27.3
	Managerial/Professional	64	21.1	19	21.6
Residence	Home owner	304	41.5	80	43.2
	Rent from private landlord	53	7.2	11	5.9
	Rent from housing assoc./council	307	41.9	85	45.9
	Live with parents/relatives	64	8.7	7	3.8
	Live in residential care	4	0.5	1	0.5
Location	DH4	45	6.5	14	6.9
	DH5	48	6.9	12	5.9
	SR1	55	7.9	11	5.4
	SR2	96	13.9	30	14.8
	SR3	97	14.0	41	20.2
	SR4	160	23.1	46	22.7
	SR5	163	23.6	42	20.7
	SR6	28	4.0	11	5.4
Total	Population	811[24]	100	203	100

Respondents were fairly evenly split between sexes in survey one (females = 56 per cent; males = 44 per cent). There is an equivalent ratio in survey two, where females are at 53 per cent compared with males which are at 48 per cent. Within both surveys (survey one = 52 per cent; survey two = 60 per

cent) the majority of respondents were situated in the mid-to retirement age groups (35-49; 50-64). However, this can be explained as children were not directly targeted in this survey. Unsurprisingly, nearly all respondents identified as 'white' (survey one = 98 per cent; survey two = 99 per cent) which can be explained by Sunderland's relatively low ethnic minority population (1.9 per cent in 2001). A significant proportion of respondents reported that they had some form of disability or long term health condition (survey one = 38 per cent; survey two = 35 per cent). These results are significantly higher than the UK's national average of disabled people (at 18 per cent), and implies that disability is over-represented within areas of poverty in this city.

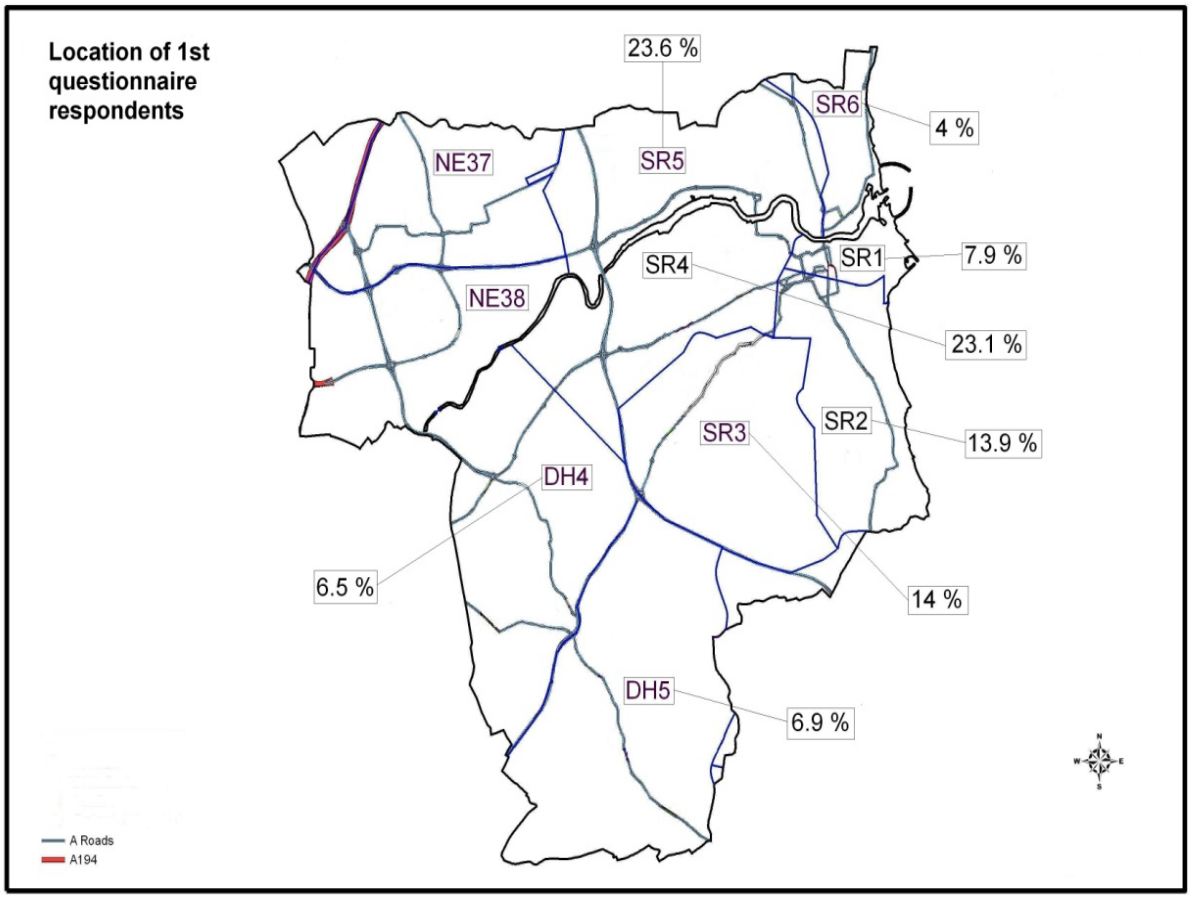
Less than half of respondents were employed (survey one = 40 per cent; survey two = 37 per cent) with 32 and 34 per cent of respondents in retirement. Encouragingly, unemployment rates were below the national average (8 per cent: ONS 2010) at 5 per cent (survey one) and 3 per cent (survey two) and employment circumstances do not appear to have been affected by the recent recession. In spite of this, due to the high number of participants with a disability, 9 per cent (survey one) and 11 per cent (survey two) could not work due to long-term health or disability issues. There was also a relatively low student population at 9 per cent (survey one) and 6 per cent (survey two). Additionally, only 5 per cent of participants reported that they were not in employment due to issues of family care.

Although this survey targeted particular areas of social deprivation, participants could be grouped into socio-economic categories. This occupational categorisation was identified using the three tier distinction of working, intermediate and managerial/professional occupations using the NS-SEC definitions (Rose and O'Reilly, 1998). Hence, 49 (survey one) and 50 per cent (survey two) of the respondents who are in employment were categorised in a 'working' occupational category. 30 per cent (survey one) and 27 per cent (survey two) could be classified in the intermediate group and 21 per cent (survey one and two) were defined within managerial/professional

[24] There were more questionnaires received but due to the need for a cut off date these could

occupational roles. A significant proportion of participants in the study reported owning their property (survey one = 42 per cent; survey two = 43 per cent), however the majority of respondents report that they rented accommodation (survey one = 49 per cent; survey two = 52 per cent). In general, the population were spread across the city, but a significant proportion (survey one = 47 per cent; survey two = 43 per cent) lived in either SR4 or SR5 postcodes (see figure 6.2).

Figure 6.2 Location of 1st Survey respondents



6.3 Use and ownership of technology

6.3.1 General Use and Ownership

When comparing the data from both surveys they revealed a number of interesting patterns in relation to engagement with and ownership of technology. In this study a relatively high proportion of the population had

not be included in the initial analysis.

access to a personal computer, a statistic which mirrors growing levels of ownership in the city, as outlined in section 4.3. 70 per cent reported they either owned a desktop or laptop, a figure much higher than the figure of 54 per cent outlined by IPSOS-MORI (2007) for the whole city. This might also explain the low levels of engagement in formal digital inclusion initiatives identified in Figure 6.4. In survey two, ownership of either a laptop or desktop computer was at 76 per cent. Although we can see a rise in ownership in survey two, no statistical relationship can be drawn from this as the data was not significant. Although there was no relationship between survey one and two, this data still indicates that approximately three quarters of the population within this study owned some form of computer technology (see Figure 6.3). However, this also means that there remains a significant proportion of this population without access to computers at all. Surprisingly, usage of technology was slightly lower than ownership in both surveys. In survey one only 58 per cent reported actually using their computer compared with survey two where it increased slightly to 64 per cent.

Figure 6.3 Use and ownership of technology

Technology	Survey1 Use		Survey1 Own		Survey2 Use		Survey2 Own	
	n	%	n	%	n	%	n	%
Telephone – landline	487	60	428	52.7	137	67.5	138	**68.0**
Mobile telephone	458	56.4	570	70.2	112	55.2	166	**81.8**
Digital TV	409	50.4	488	60.1	110	54.2	148	**72.9**
Desktop computer	251	30.9	295	36.3	70	34.5	83	**40.9**
Laptop computer	220	27.1	271	33.4	59	29.1	71	**35.0**
Dial up	63	7.8	43	5.3	13	6.4	14	**6.9**
Broadband	313	38.5	301	37.1	88	43.3	94	**46.3**
Dig Camera	307	37.8	392	48.3	75	36.9	108	**53.2**
Games Console	**200**	**24.6**	**273**	**33.6**	**58**	**28.6**	**69**	**34.0**

6.3.2 Internet connections

Although a fairly high percentage of participants have access to a computer, only 37 per cent had broadband internet connection and 5 per cent had dial up access. Surprisingly, although 70 per cent reported owning a computer in survey one, only 42 per cent can access the internet from their homes. In

survey two a similar relationship appears as 76 per cent owned some form of personal computer, where only 53 per cent had any type of internet connection. Similar to personal computer ownership, although a rise in connectivity can be seen in Figure 6.3, a statistical longitudinal comparison cannot be made between survey one and survey two as the data comparison was not significant. Interestingly, this data illustrates that the level of broadband ownership is very different to the picture portrayed in Ofcom's recent research. Ofcom indicated that 66 per cent of households in the city had broadband internet connections which is 24 per cent higher when compared with connectivity in this survey (Ofcom 2008).

6.3.3 Mobile phones

Mobile phone technology was the most commonly owned form of equipment in this study at 70 per cent in survey one (see Figure 6.3), even amongst the unemployed group ownership and use was high (80 per cent; P<.01). Furthermore, by applying a longitudinal analysis this increased by 12 per cent in survey two where ownership was reported at 82 per cent (P<.00). Similar to data on internet use, although participants owned a mobile phone only 56 per cent of participants in survey one actually use this technology. A comparable relationship can be seen in survey two, although 82 per cent owned a mobile phone only 55 per cent actually used it. In survey one more people reported owning a mobile phone (70 per cent) than owned a landline telephone (53 per cent). A similar relationship can be seen in survey two as 82 per cent owned a mobile phone where only 68 per cent reported owning a landline (see Figure 6.3). Although mobile phones were not strongly associated with social networking in this quantitative analysis, within the qualitative analysis this is identified as a key theme (see section 7.7.1).

6.3.4 Assistive technologies

Although the majority of respondents when discussing technology referred to computer/internet and mobile phones, it should be noted that alternative assistive technologies also play a key role. Within this study a significantly high population of respondents, at 38 per cent (N =300), had a disability or a long-term illness. However, very few reported using technology to assist

them in independent living (3 per cent of total population N = 23). Within this analysis it was the Telecare service (at 17 per cent), and the use of chair and bath lifts (at 17 per cent) which were most commonly used. Due to the small population, no conclusion can be drawn from this data, however some level of engagement can be seen. 11 per cent of the total population (N=84) engaged in Telecare services. This data suggests that this group of people are the least likely to engage in the use of technology, although it would be expected that their level of engagement would be higher than the general population due to issues of impairment.

6.3.5 Other technologies

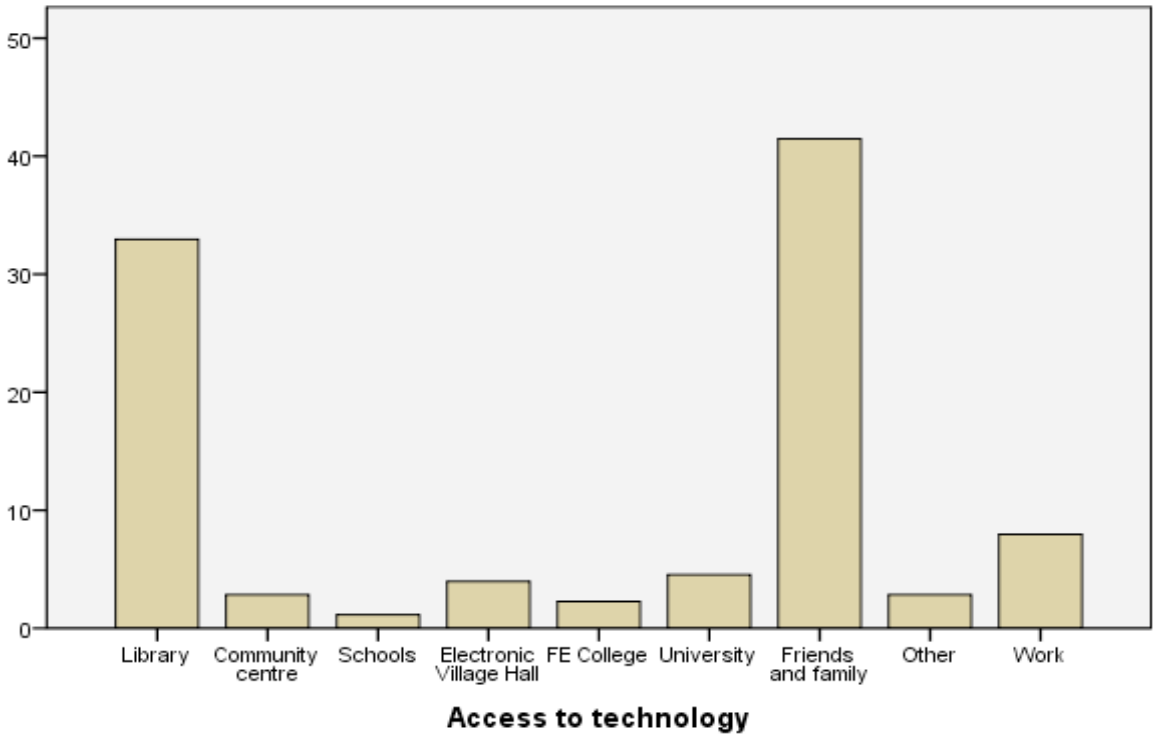
Although less people owned a landline than a mobile phone, these people were more likely to use this technology than people who owned a mobile phone. Interestingly, mobile phone ownership was also higher than digital TV ownership. Despite the national Digital switchover drive, mobile phone ownership is still far higher than digital TV ownership. Whilst ownership of digital TV is high at 60 per cent in survey one this is still considerably lower than phone technology. However, the government drive seems to have had some impact as there was a significant rise ($P<.00$) in digital TV ownership in survey two. This can be seen as 73 per cent (in survey two) reported owning digital TV which is a 13 per cent increase from survey one. In this study the only other significant piece of technology used by participants was game consoles. In both surveys, 34 per cent of participants reported owning a games console. Similar to other forms of technology, ownership was higher than usage. This can be seen in both surveys as usage was at 25 per cent and 29 per cent compared with ownership at 34 percent (see Figure 6.3).

6.3.6 Location of technology

To expand on levels of ownership it was also important to discover where people used technology. The majority of respondents (78 per cent) engaged in technology within their own home, however, 22 per cent describe accessing technology outside the home. Figure 6.4 shows that the majority of this group of participants had gained access to technology through family and

friends (42 per cent). This raises the issue of informal learning networks. This is followed by Libraries which were the second most popular destination at 33 per cent – linking to our findings on the use of initiatives in section 6.5. Again this may indicate that, in relation to future initiative developments, it is established spaces like community libraries that seem to be the most accessible places for people to engage with, and gain access to, new forms of technology (see Figure 6.4). Finally, for participants in employment 8 per cent reported accessing technology at their workplace.

Figure 6.4 Where respondents accessed technology outside the home (1st survey)



6.3.7 Computer and Internet use

In order to investigate the impact that increased access to internet services might have in improving the quality of life and life chances of participants, it was important to establish how individuals used the internet. As Figure 6.5 illustrates, the most popular uses of the internet was for general browsing (survey one = 50 per cent; survey two = 53 per cent). This was followed by e-mailing which in survey one was reported at 46 per cent and increased by 7

per cent to 53 per cent in survey two (P<.02). As we can see in survey two, e-mailing is the most common internet based activity. Hence, one of the key aims of digital inclusion; to encourage greater social networking appears to have been achieved, although engagement with social networking sites was not as popular, as only 29 per cent reported using them. The details of how participants use the internet for social networking is followed up in section 7.

Figure 6.5 Use of computers and the internet

Computer use	Survey1 N	%	Survey2 N	%
General internet browsing	401	49.5	107	**52.7**
E-Mailing	369	45.6	110	**54.2**
Shopping online	319	39.4	92	**45.3**
Word Processing	284	35.1	74	**36.5**
Travel	251	31	63	**31.0**
News and current affairs	243	30	83	**40.9**
Social networking	235	29	65	**32.0**
Playing games	207	25.6	42	**20.7**
Jobs	198	24.4	47	**23.2**
Downloading music	184	22.7	49	**24.1**
Training & educational	176	21.7	54	**26.6**
Finance	174	21.5	49	**24.1**
Health	144	17.8	49	**24.1**
TV/Radio	142	17.5	49	**24.1**
Council information	**82**	**10.1**	**35**	**17.2**

Encouragingly, respondents also described using the internet to increase access to knowledge. 30 per cent of participants in survey one reported using the internet to keep updated on current affairs and news. This increased significantly by 11 per cent in survey two, as we can see 41 per cent indicate the importance of accessing current affair knowledge (P<.00). Surprisingly, only 24 per cent of respondents reported using the internet to improve employability. Furthermore, only 22 per cent describe the importance of using the internet for training or education. The data also indicated that there was no significant rise between survey one in survey two in relation to education and job searching. Finally some less significant uses of the internet

were reported, such as financial issues at 22 per cent, health issues at 18 per cent, TV/radio at 18 per cent and council information at 10 per cent (in survey one). However, although these were the least popular use of the internet in this study, all four of these variables increased significantly within survey two (see Figure 6.5). Financial support, health and TV/radio use all increased to 24 per cent (P<.03) and council information increased from only 10 per cent to 17 per cent (P<.00). Although these findings are fairly low in comparison to e-mailing and shopping online, they still show a significant increase over a one-year period (refer to Figure 6.5).

6.3.8 Internet use and age

To expand on this analysis, this study investigated if general internet use was influenced by external social factors. A comparison was made between social variables such as age, gender, socio-economic status and disability and its impact on general broadband internet browsing. The data revealed that gender, socio-economic status and disability had no significant impact on participants' general internet use. However, a significant correlation did appear between age and internet engagement. Furthermore, there was also a longitudinal relationship which appeared between survey one and survey two when comparing age with engagement in broadband internet services. As indicated in both Figure 6.6 and 6.7, the younger participants were more inclined to access broadband internet services.

Figure 6.6 Age and broadband Internet connection – use (Survey one)

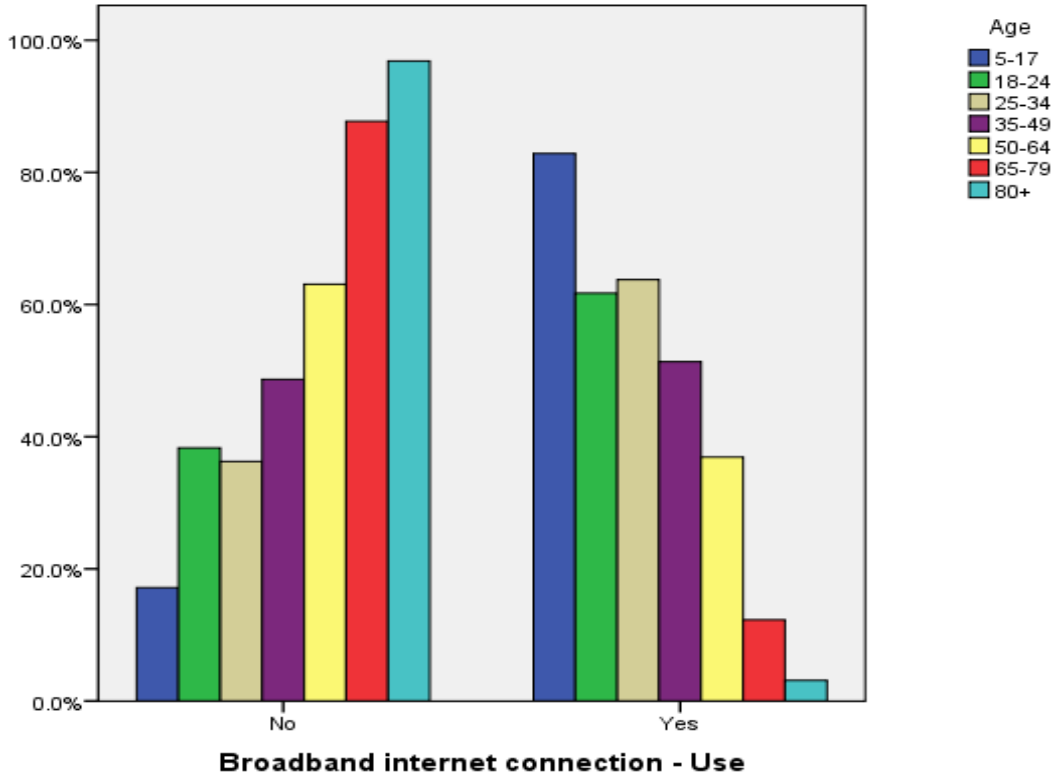
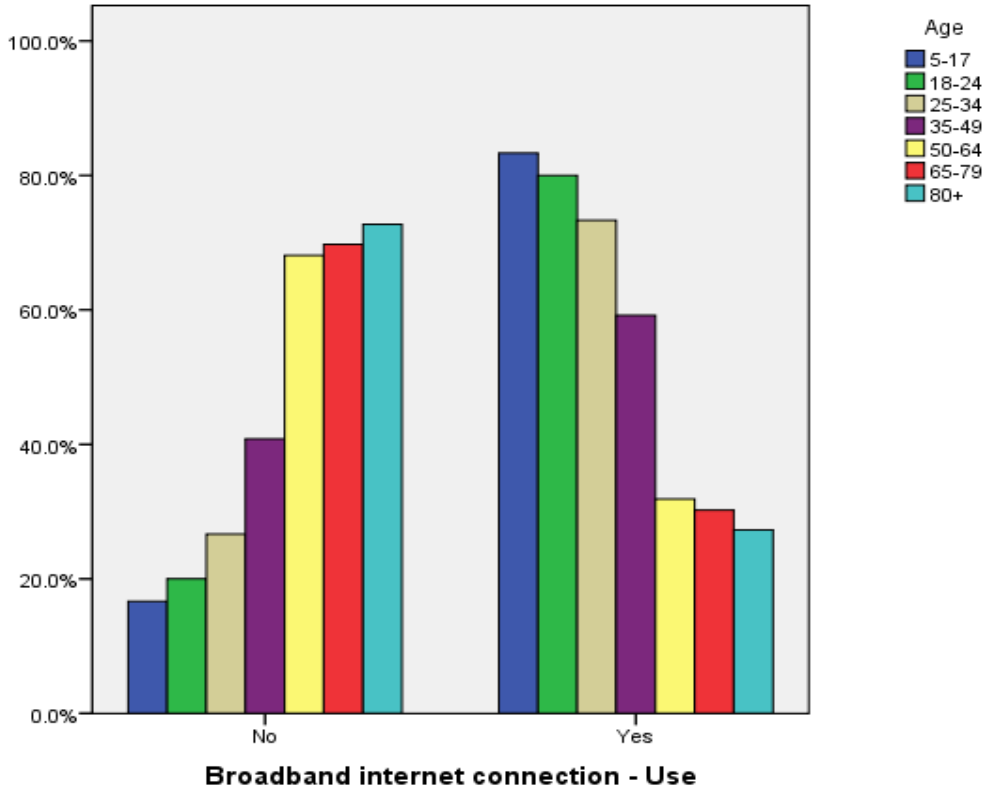


Figure 6.7 Age and broadband Internet connection – use (Survey two)



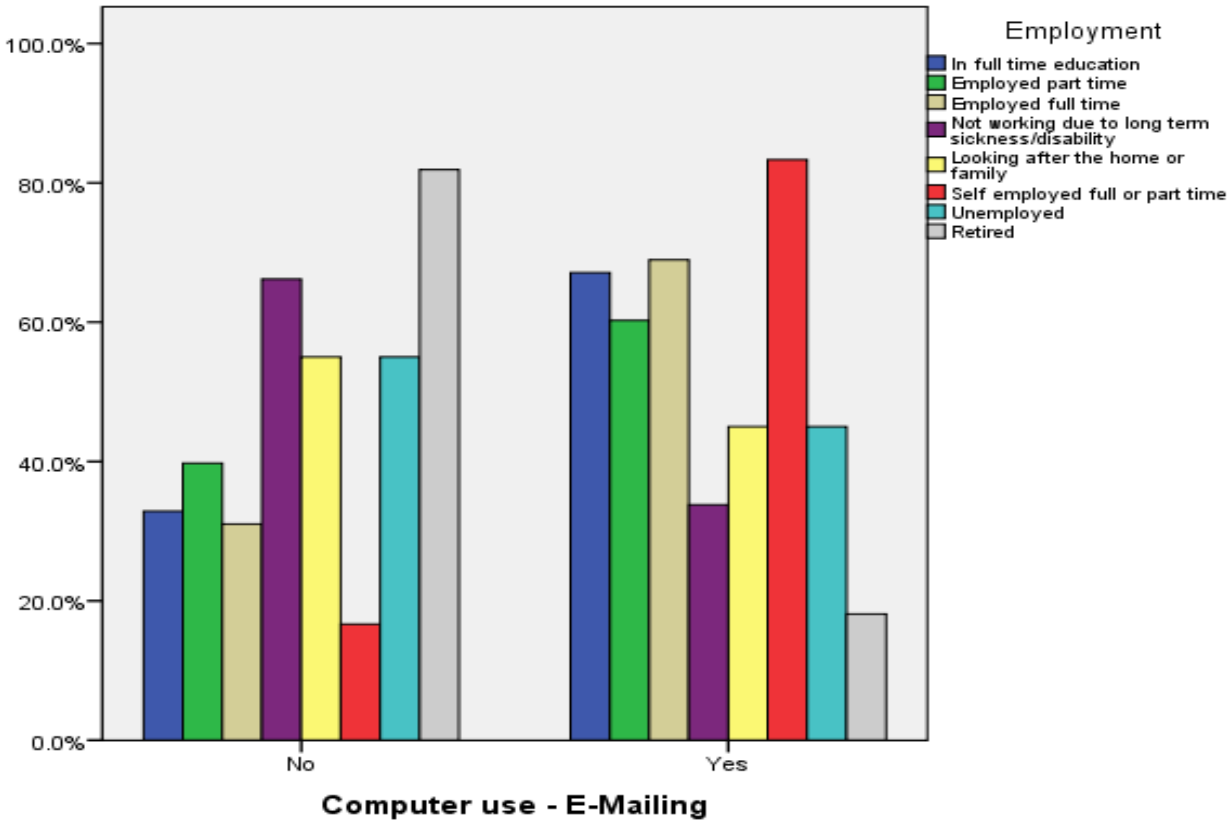
As we can see in Figure 6.6, the majority of respondents (83 per cent) aged between 5 -17 regularly engaged in broadband internet use in survey one. Usage of broadband steadily declines as respondents get older and by the ages of 35-49 only 51 per cent regularly use the internet. For participants in the 80 plus category, only 4 per cent reported using broadband internet services in survey one (P<.00). A similar decline can be seen in survey two, where 83 per cent of the youngest group (5-17 years) regularly use the internet. This was compared with 59 per cent of the 35-49 age group, which steadily declined to only 27 per cent of the 80 plus group engaging in internet browsing (P<.00; see figure 6.7). However in survey two, there is a noticeable increase in internet usage in the 80 plus age category. This rose from 4 per cent (in survey one) to a staggering 27 per cent within the year (in survey two). This demonstrates a 23 per cent rise in broadband internet browsing within the 80 plus age group. There was also a noticeable increase within the 65 to 79 age group as internet use increased by 18 per cent (from 12 per cent in survey one to 30 per cent in survey two). These increases might indicate some success of the digital inclusion initiatives within Sunderland, particularly those aimed at older members of local communities.

6.3.9 E-mail use and social variables

Although internet browsing was the most commonly reported pursuit (refer to Figure 6.5), social networking through email use was also a significant activity. Similar to internet browsing, e-mailing was affected by social groupings, however; it was employment levels and age groups that influenced e-mailing use rather than just age groupings. Nevertheless, there were no significant longitudinal changes between employment, age and e-mail use, however different groups did engage with e-mailing in different ways. As shown in Figure 6.8 it was individuals in employment that were more inclined to use e-mails (self-employed 83 per cent, full-time employment 69 per cent and part time employment 60 per cent) compared with other groups. This was followed by people in full-time education at 67 per cent. There is a noticeable drop of engagement (reported at 45 per cent) between people who are

unemployed or were family carers. The least likely to use e-mails within this study were people with disabilities (34 per cent) and those who were retired (at 18 per cent; P<.00).

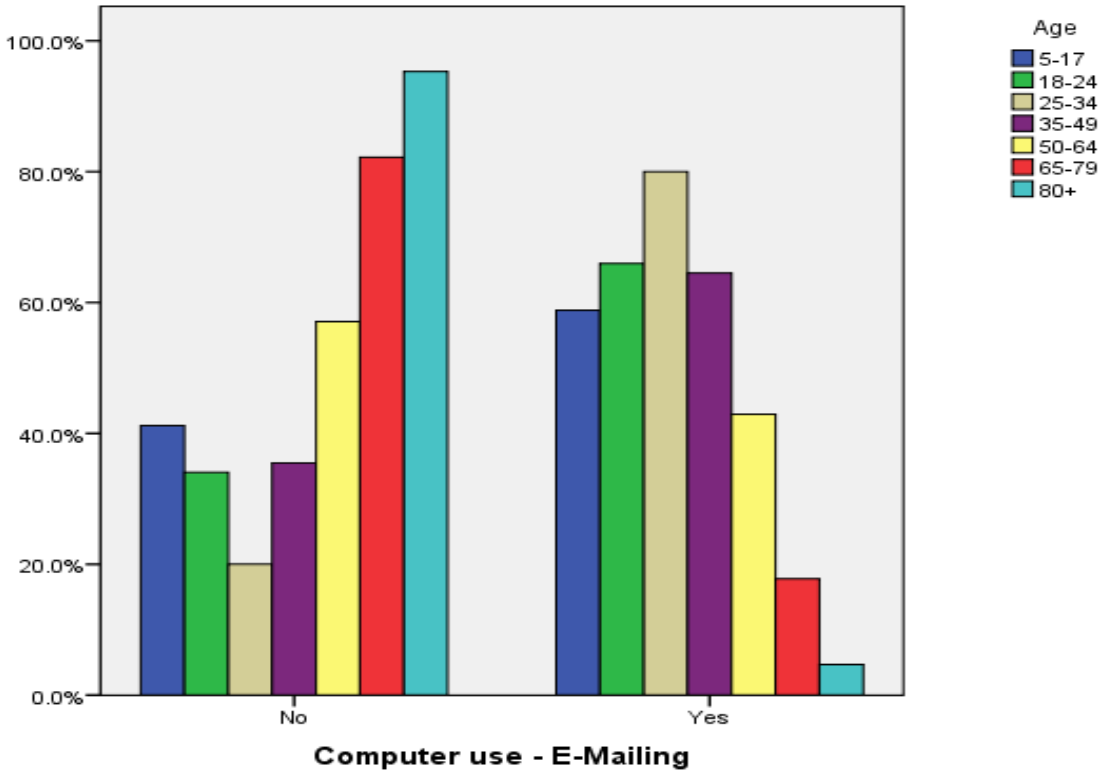
Figure 6.8 Employment and computer use: e-mailing



These findings were mirrored by e-mail use and the age of participants which can be seen in Figure 6.9. This data indicates that it was younger participants that were more inclined to use this form of communication rather than older respondents. However interestingly, rather than the youngest age category reporting the highest engagement it was the 25 to 34 age group who were more likely to use their computers for emailing purposes. Within the data we can see a rise of engagement starting in the age groups of five to 17 years (at 59 per cent) which increased to 66 per cent in the 18 to 24 category, and finally peaked at 80 per cent in the 25 to 34 age group. This begins to decrease within the 35-49 age category (at 65 per cent) and falls to 43 per cent in the 50 to 64 age group. It was after retirement that this began to drop drastically as can be seen within the 65 to 79 category where only 18 per cent

reported using their computers for emailing. This finally rests at just 4 per cent in the 80 plus age group (P<.00). These findings might indicate that by comparing age and employment results together, it is those within the primary employment age range that are most inclined to use their computers for emailing purposes. This might suggest that rather than use emails for informal and recreational social networking, this form of communication is predominately used as a tool within the workforce. These uses are further explored in section 7.

Figure 6.9 Age and computer use: e-mailing



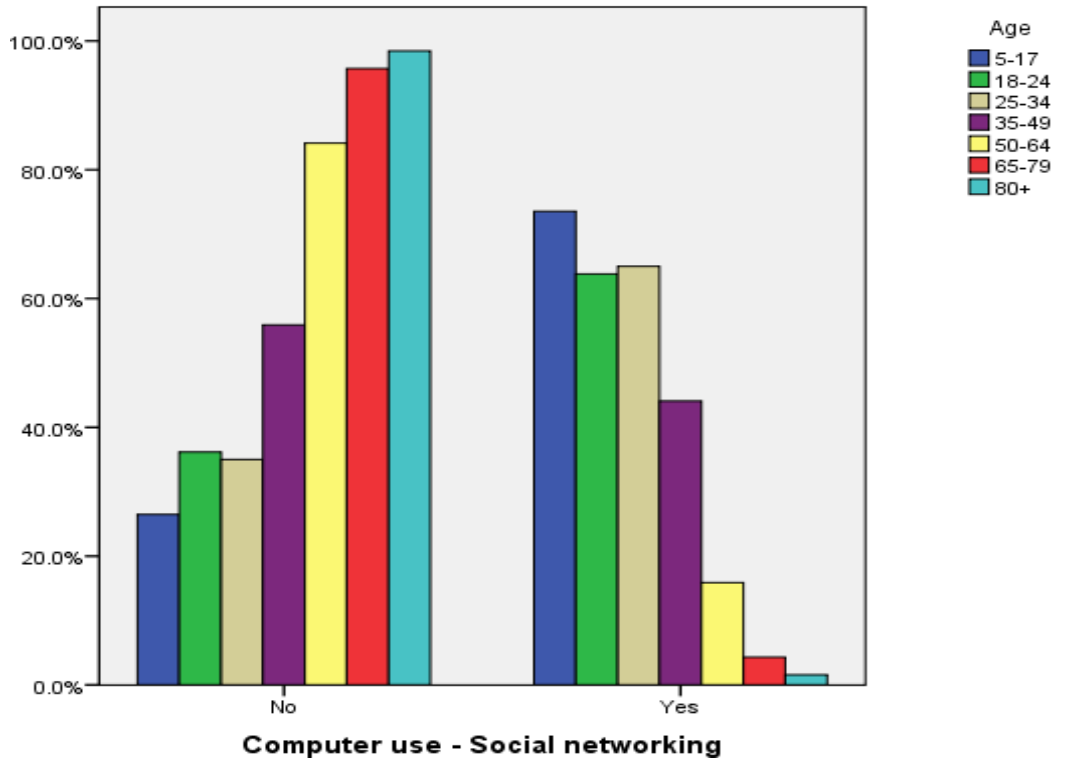
6.3.10 Social networking and age

Significant data also appeared in relation to a broader definition of social networking through websites like 'Facebook' (see Figure 6.10). Although only 29 per cent of the general population engaged in this form of social networking, the qualitative data in section 7 suggests that such websites were central in reducing social isolation for some participants. From this perspective it was important to investigate which social groups engaged with this form of technology. Similar to engagement with other types of technology

the study found that age was a significant factor in the use of social network websites (but only in survey one). Yet, the data revealed a slightly different trend within the engagement of social networking websites to that of emailing. This can be seen as it was the youngest age group (5-17 years) which was most connected with this form of networking (74 per cent).

This trend gradually decreases through the age groups until it is only 2 per cent for the 80 years plus category (P<.00) (see Figure 6.10). Although it was the 5 to 17 group that most commonly engaged in social networking websites, participants that were between 18 and 34 years old also effectively engaged in this form of technology (18-25 = 64 per cent and 25-34 = 65 per cent). Just under half of the 35 to 49 group also reported engaging in this form of technology (44 per cent). It was not until respondents reach the age of 50 plus where there was a dramatic decrease in engagement in social networking websites (50 to 64 = 16 per cent; 65 to 79 = 4 per cent and 80 plus = 2 per cent).

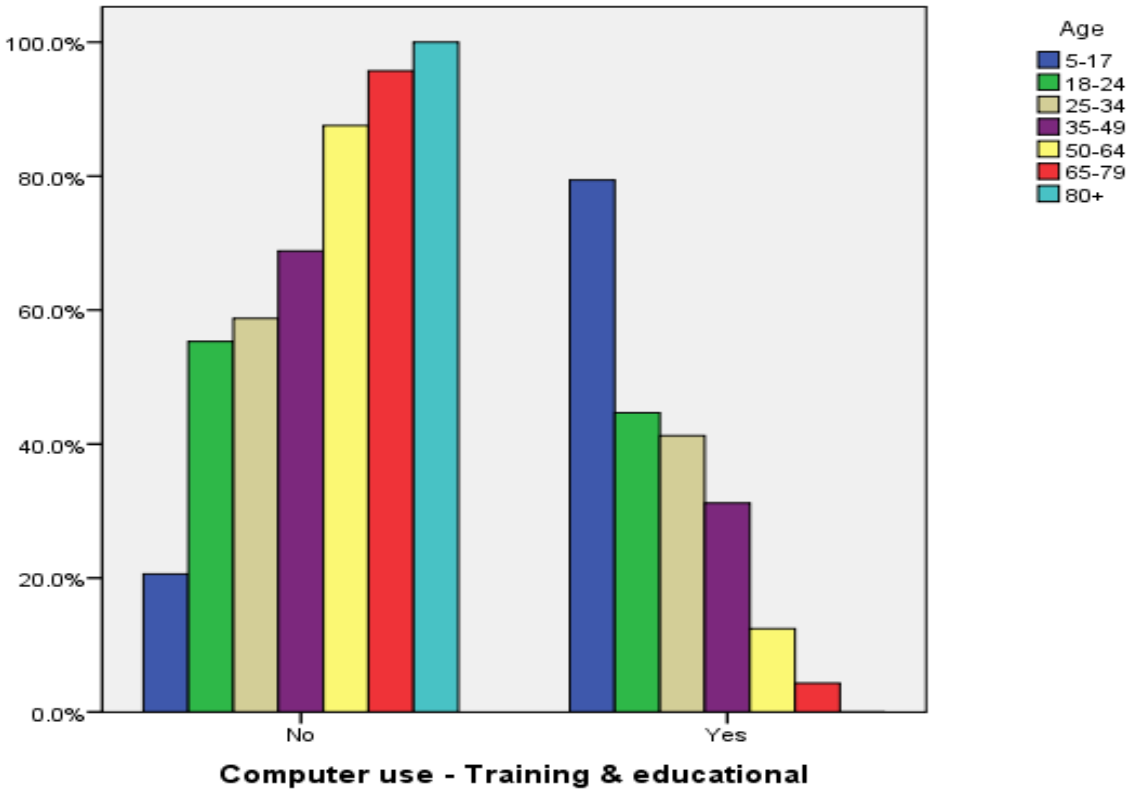
Figure 6.10 Age and computer use – social networking



6.3.11 Educational use and age

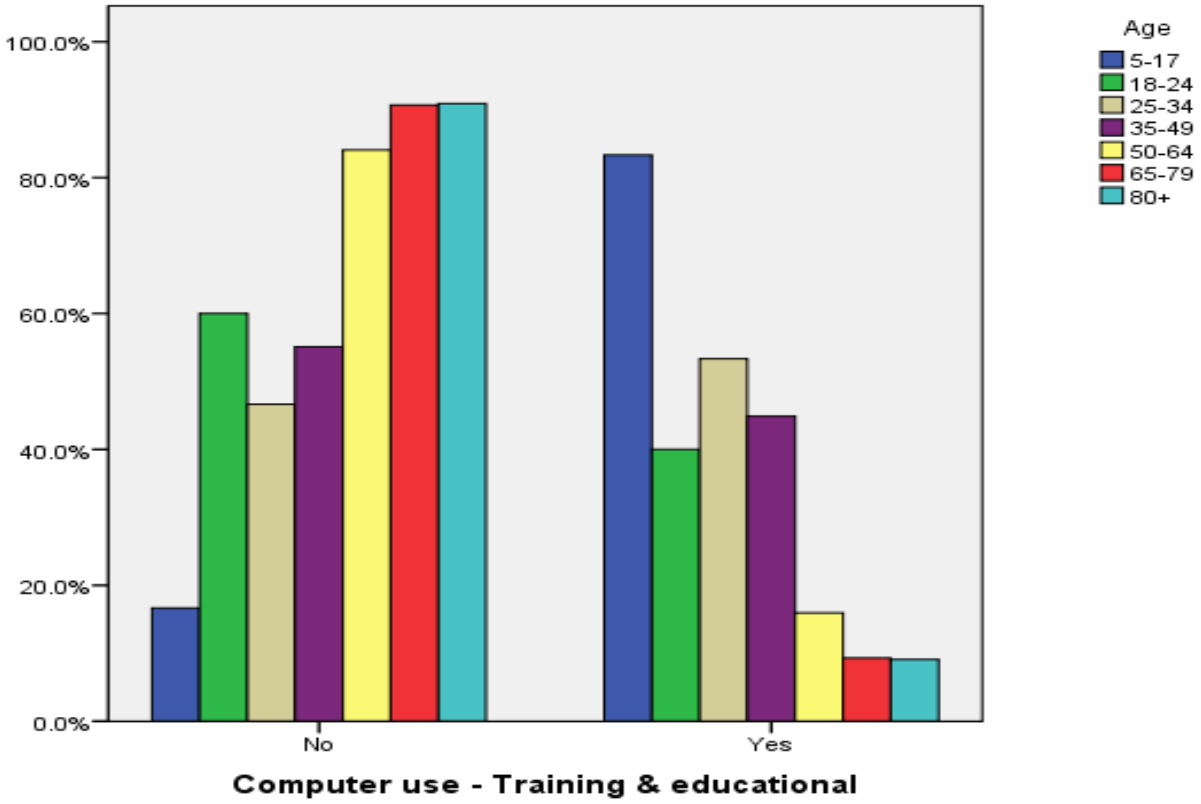
Even though use of technology for educational purposes was reported at only 22% (similar to that of engagement with social networking websites) age also had an effect on the general data findings. As expected, in terms of training and education, a greater proportion of the younger group (5-17 years in survey one) used a computer for educational training, at 79 per cent, compared to other age groups (refer to Figure 6.11). There was also a longitudinal relationship which appeared between survey one and survey two when comparing age and educational training. In survey two there was a slight increase in the 5-17 years age group from 79 per cent to 83 per cent (an increase of 4%; p<.00). Again in both sets of data a gradual decrease is revealed for the older participants. This falls from 83 per cent in age group 5-17, to 0 per cent for the age category of 80 plus (in survey one). Obviously, this can be explained as older participants are less likely to engage in formal education than their younger counterparts.

Figure 6.11 Age and computer use – training and educational



However, interestingly there is a noticeable difference between survey one and survey two in relation to the 25 to 34 and 35 to 49 age categories which can be seen in figure 6.12. Within the age groups of 25 to 34, there is an increase of 12 per cent of participants using technology in education, from 41 per cent (in survey one) to 53 per cent in survey two (P<.00). This increase is similar within the 35 to 49 age group, as in survey one only 31 per cent used technology in education which increased to 45 per cent in survey two (P<.00). These findings seem to reveal two aspects of engagement trends; firstly technology is central to gaining qualifications in contemporary education and secondly, engagement in education seems to have increased over a one-year period. This rise in educational engagement might have been significantly influenced by the recent economic recession as people that have be made redundant might be seeking to retrain by engaging in education. If this is the case, these findings might suggest that for individuals who have been affected by the recession in Sunderland, digital initiatives seem to have been successful in supporting individuals into educational training with the help of improved access to technology.

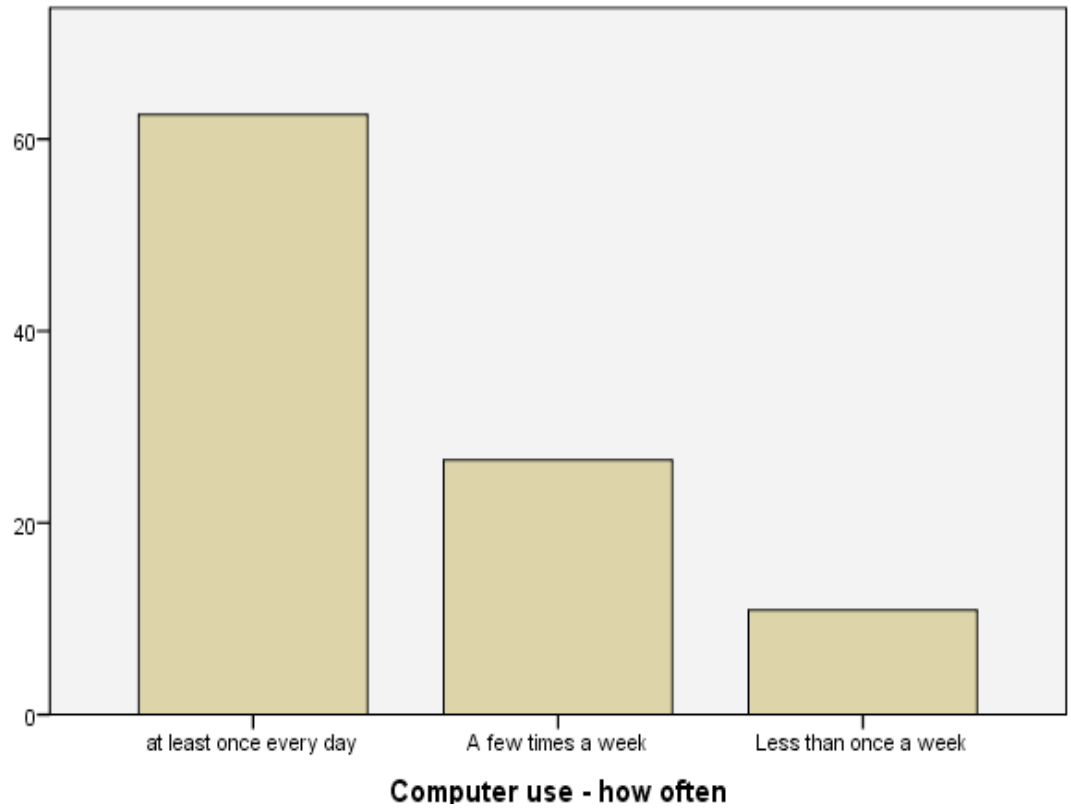
Figure 6.12 Age and computer use – training and educational



6.3.12 Frequency of computer use

Respondents predominantly use their personal computers more than once per day. As we can see from figure 6.13, 63 per cent of respondents reported using the internet daily. This was followed by 27 per cent that suggested that they use their computers approximately three times per week. Finally, only 7 per cent reported that they made use of their computers less than once a week. These findings show just over half of participants use their computers each day (at 63 per cent), indicating how important this form of technology has become in participants lives.

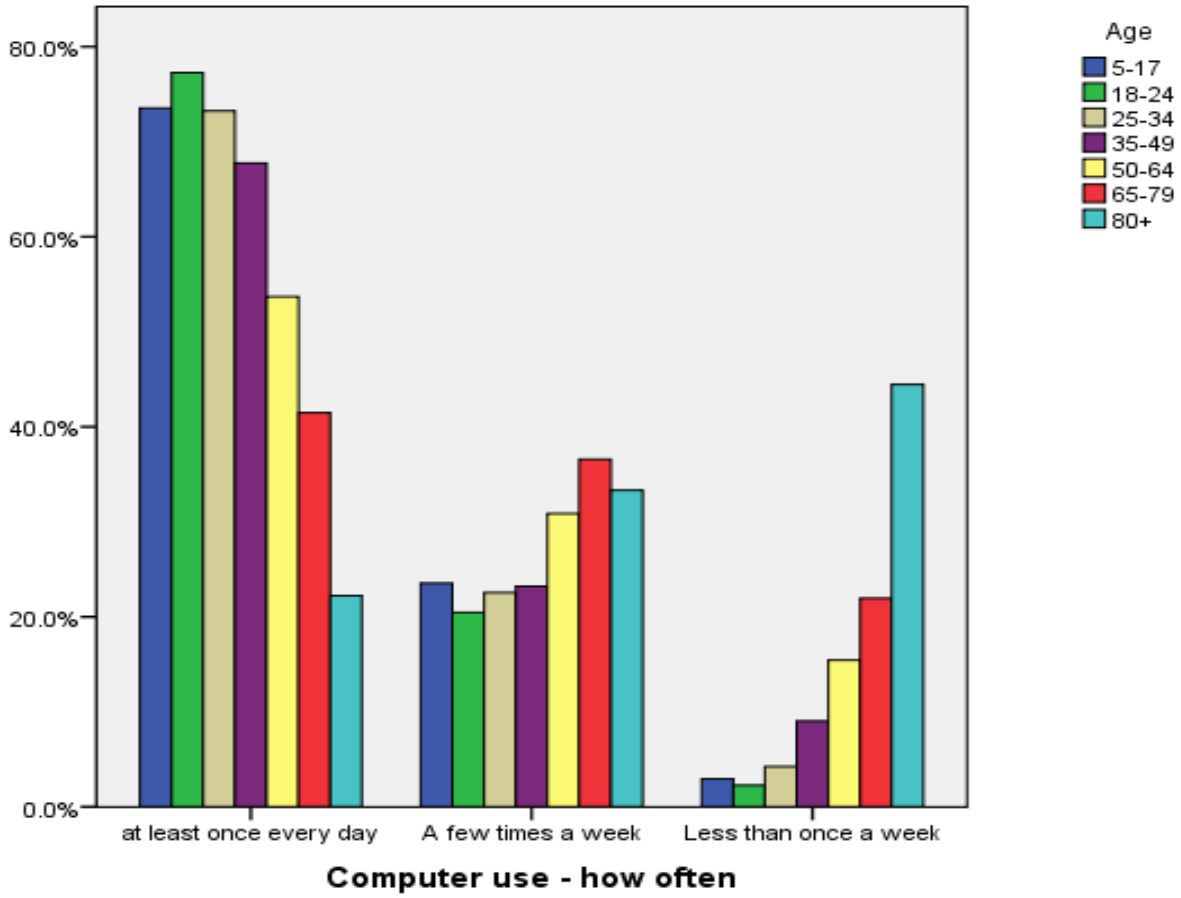
Figure 6.13 Frequency of computer use



6.3.13 Frequency of use and age

However, these findings are transformed by the age of participants in this study (see Figure 6.14). Within this analysis we can see that in general, people aged between 5 through to 49, use a computer on average at least once per day (5 to 17 = 74 per cent; 18 to 24, =77 per cent; 25 to 34 = 73 per cent; 35 to 49 = 68 per cent). Again it is in the older age groups, starting at 50 to 64, where a significant decrease starts to appear, as only half of participants use their computers daily (50 to 64 = 54 per cent). Again it is after retirement where computer use falls dramatically, as 42 per cent of participants in the 65-79 category use their computers daily. This falls to just 22 per cent of the 80 plus category with 44 per cent of this group reporting using it less than once a week (P<.00). This data reinforces previous results which shows that older participants are the less likely will engage in new forms of technology than their younger counterparts (see Figure 6.14).

Figure 6.14 Age and frequency of computer use

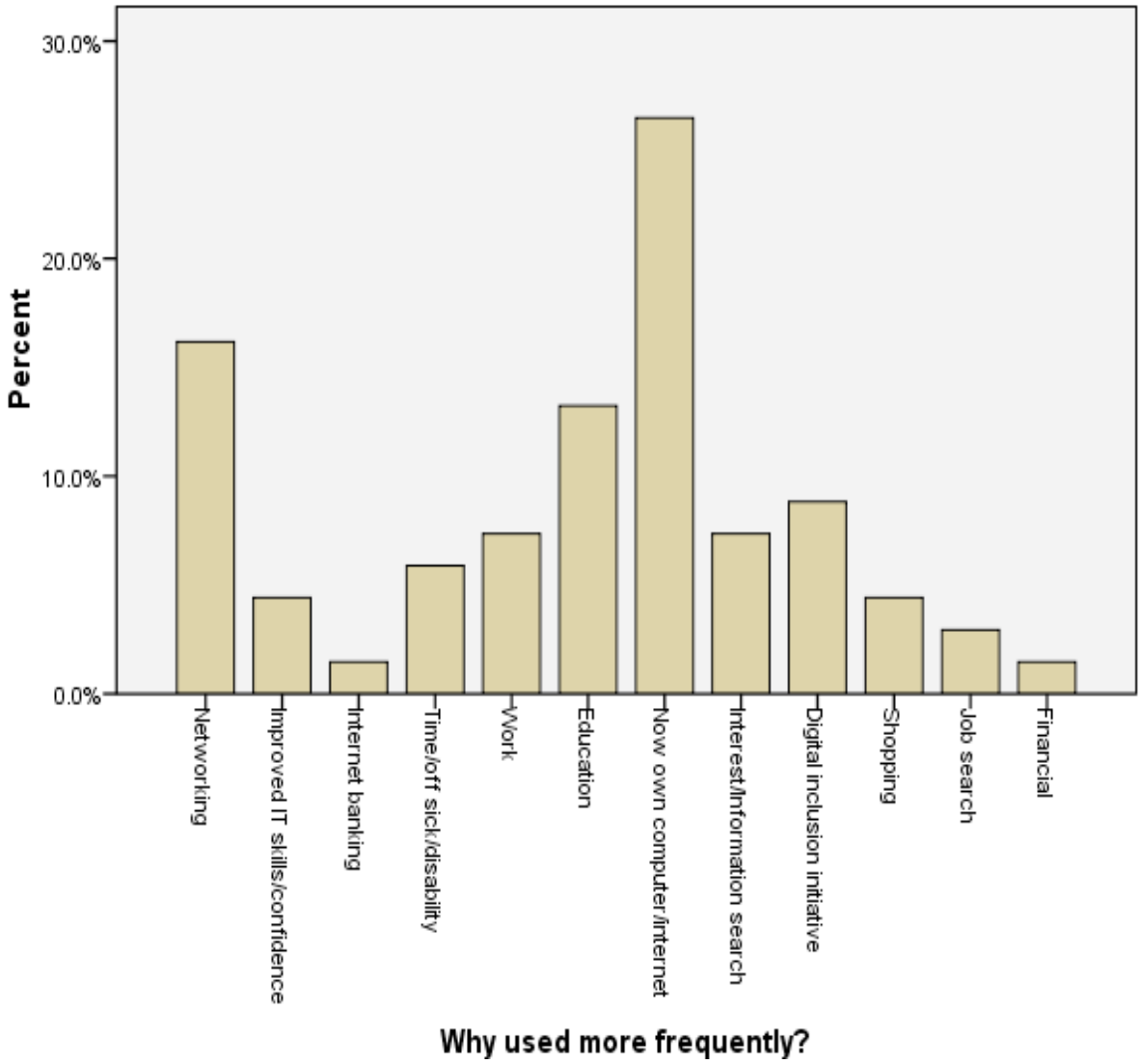


6.3.14 Reasons for engaging with technology

Nevertheless, it has been noted that general engagement with technology has increased throughout 2009. In order to investigate this increase the study attempted to understand why respondents had decided to engage with new forms of technology during this period. There were three distinct categories which appeared within the data findings in Figure 6.15. The most common response suggested that respondents had embarked on the use of new forms of technologies because they had recently purchased a computer and gained internet access (27 per cent). This might show that once people start using a computer this has an effect upon participant's engagement with other forms of technologies. This also highlights the importance of ownership in relation to new forms of technologies. However, an additional 16 per cent reported that they had started using new forms of technologies in order to establish social networks. And therefore make use of popular sites such as Facebook.

Finally, 13 per cent reported that their usage increased due to them taking part in formal education. As discussed earlier, technology is central to both contemporary education and employment.

Figure 6.15 Reasons for increasing engagement with technology between surveys

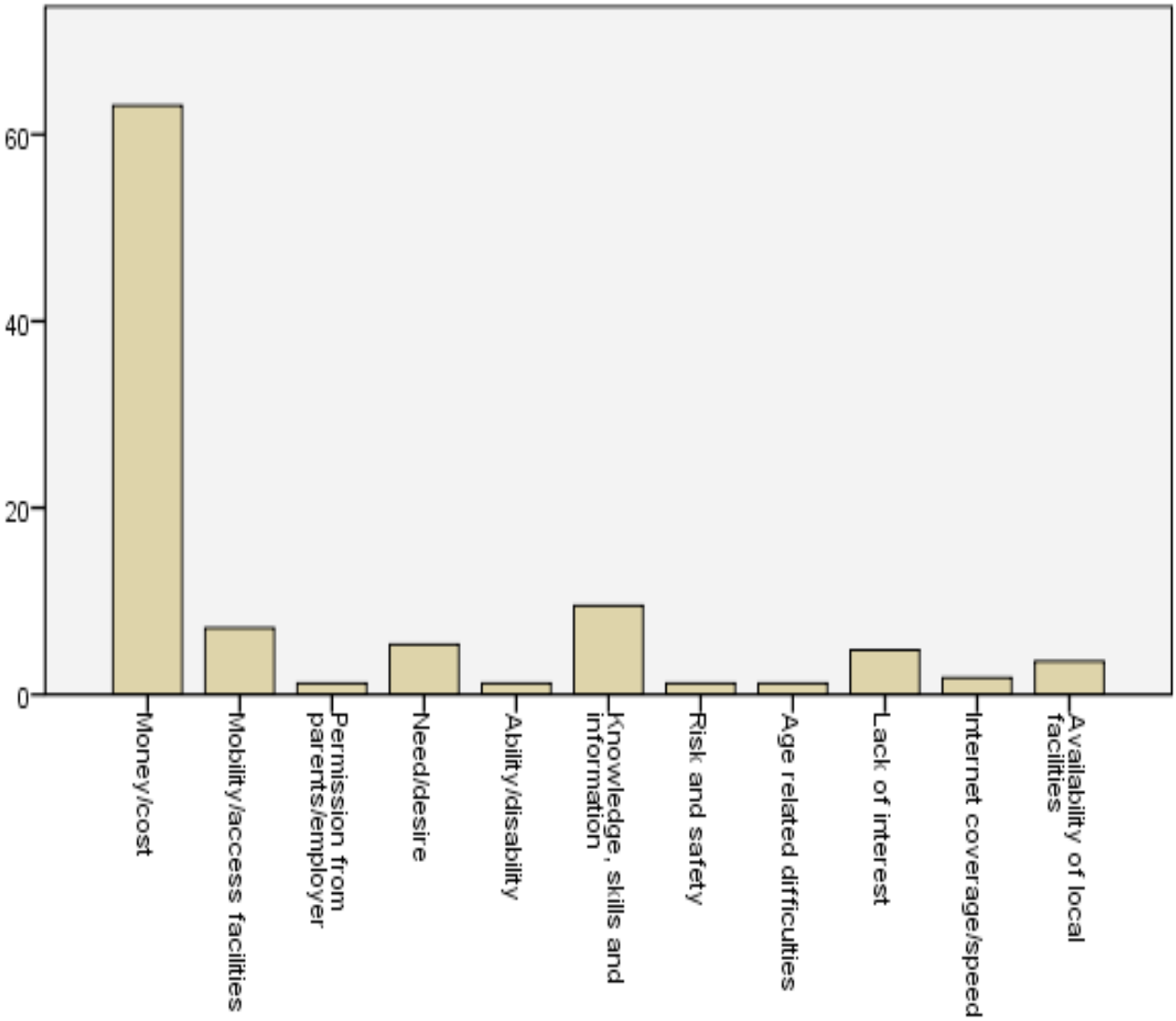


6.3.15 Barriers to engagement

It was also important to discover the key barriers preventing participants from further engaging with technology. Relatively few respondents see any barriers stopping them from accessing technology. However, of the 19 per cent who did, 63 per cent suggested the key issue was affordability. This was followed by a lack of knowledge, skills and information at 10 per cent (these

barriers are further discussed in section 7.8). Hence, this data indicates that, barriers preventing people from accessing technology are generally suggested to be financial limitations. Again this seems to illustrate the importance participants place on ownership of technology. Although general initiatives have had some success in connecting participants to new forms of technologies, people in this survey feel that ownership is central to engagement.

Figure 6.16 Barriers preventing further engagement with technology



6.4 Levels of experience

The findings (see Figure 6.17) revealed a comparatively even split between people who felt they were confident and those who were not. In general,

people reported being more confident in using digital TV (55 per cent) and mobile phones (51 per cent) than what they were in using computer technology. This can be seen as only 45 per cent felt they had adequate experience in using the personal computer and only 48 per cent reported they felt confident using the internet. A further 46 per cent reported that they were confident in using e-mails. When comparing these findings longitudinally, no significant statistical changes were revealed in the data.

Figure 6.17 Levels of experience

	Survey 1				Survey 2			
	No experience		experienced		No experience		experienced	
Technology	n	%	n	%	n	%	n	%
Mobile & texting	378	49.3	388	50.7	--	--	--	--
Digital TV	323	44.9	396	55.1	--	--	--	--
Computer	392	55.4	315	44.6	87	52.7	78	47.3
Internet	371	52.3	338	47.7	83	50.6	81	49.4
E-mail	381	54.3	321	45.7	95	59.4	65	40.6
Digital camera	427	59.1	296	40.9	--	--	--	--

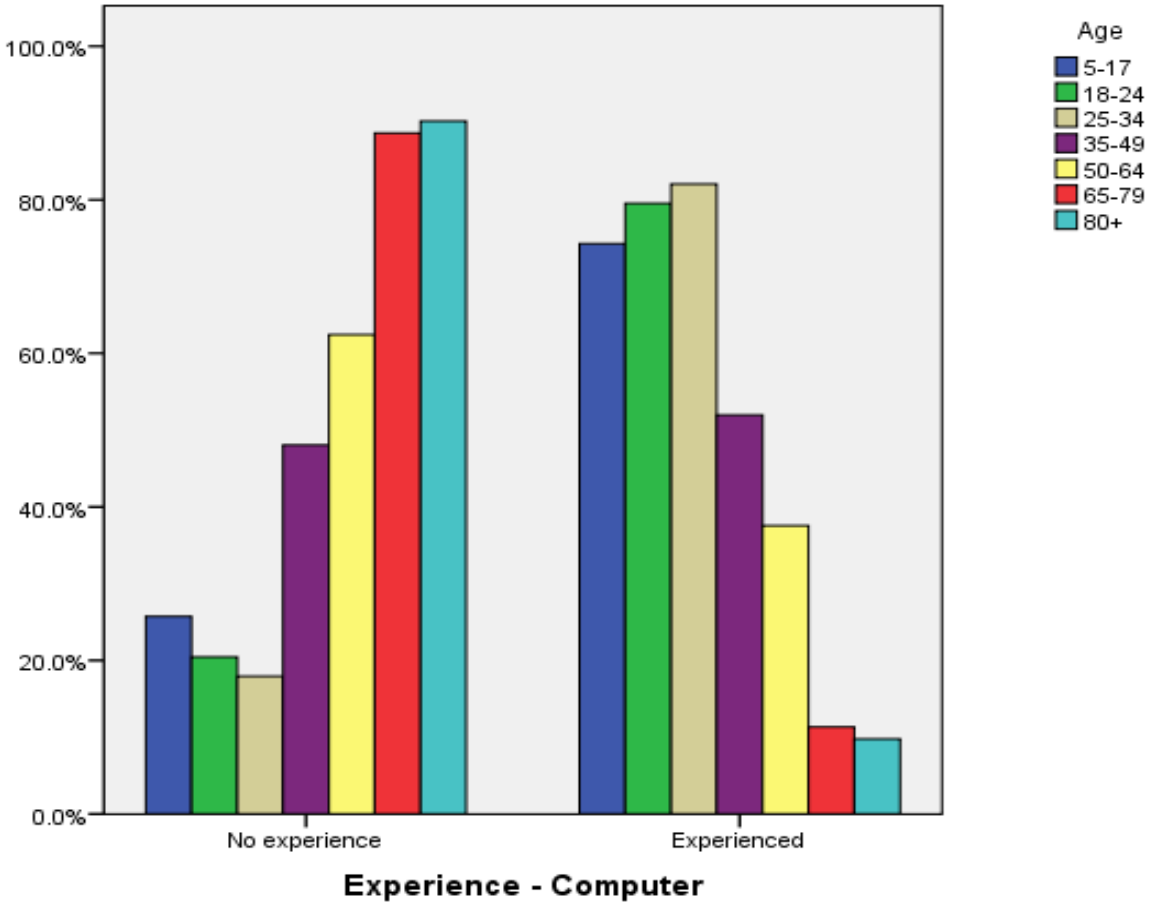
These results link back to previous findings in Figure 6.3, which reveal that although participants own technologies like the personal computer and mobile phones, not everyone uses them. Findings in Figure 6.3 might reveal that a dominant feature of the digital divide is not necessarily access to technology but the ability to use it adequately (as discussed in section 2.5). Hence, confidence seems to be essential in overcoming barriers faced by participants when using new forms of technology.

6.4.1 Experience and age

In order to expand on this interpretation, it was important to discover if certain social groups were more experienced in using technologies than others within this study (see figures 6.18; 6.19). Interestingly, the findings revealed that a number of social issues transformed how people viewed their own ability when using new forms of technology. In relation to participants computer skills, not surprisingly age had an impact on reported confidence (see Figure

6.18). The age groups who were most confident in using computers were younger participants. Confidence grew from the age of 5 to 17 (74 per cent) and peaked between the ages of 24-34 years (at 82 per cent). Within the 35 to 49 age group confidence began to fall (at 52 per cent) and gradually decreased to 10 per cent within the 80 plus age group (P<.00).

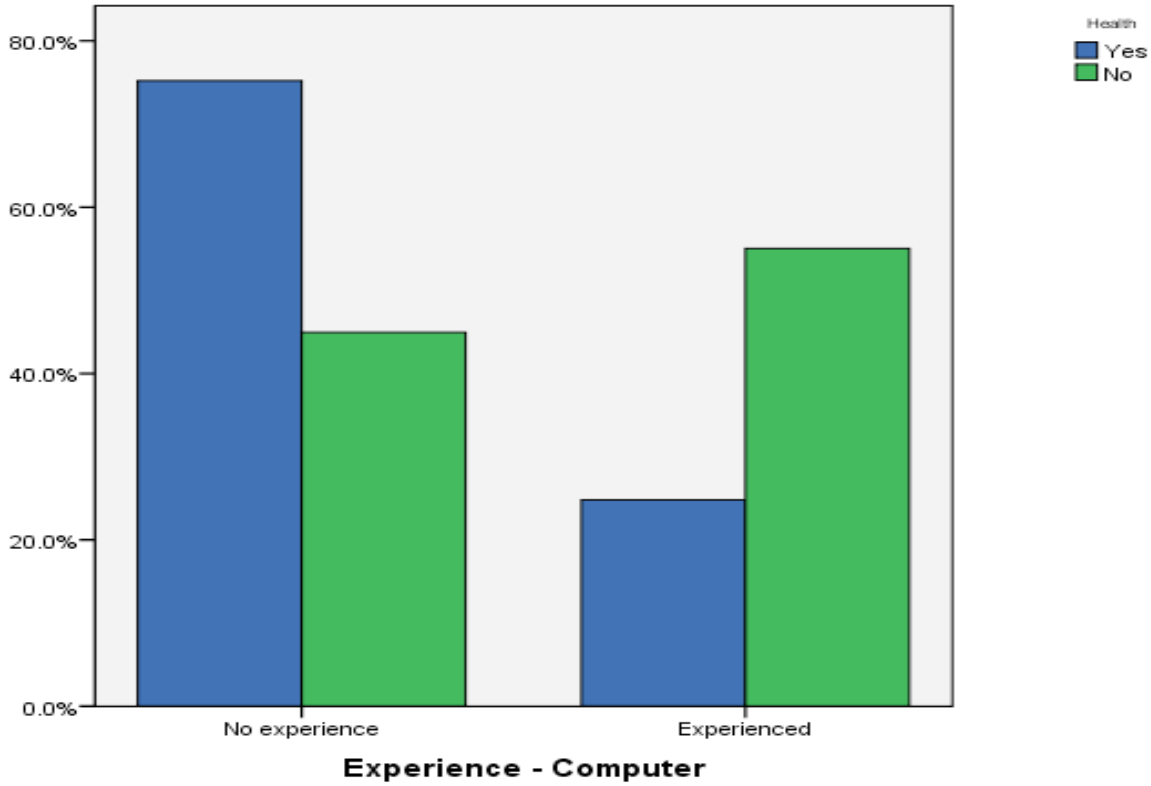
Figure 6.18 Age and level of experience in using computers



6.4.2 Experience and health

As we can see in Figure 6.19, people with long term health conditions/disabilities also reported a lack of confidence in some types of technologies. 75 per cent reported that they were not confident in their skills when using a computer (P<.00).

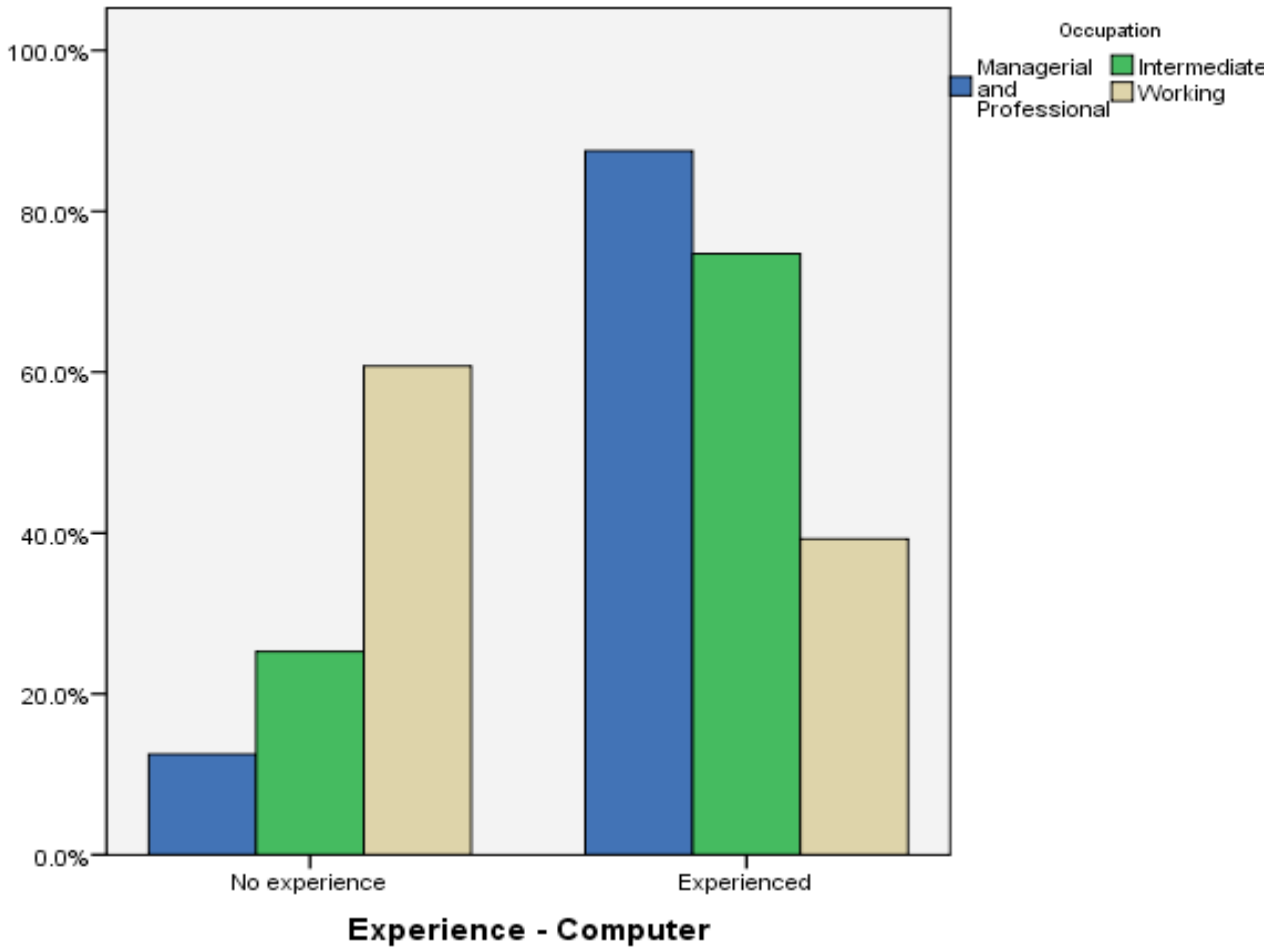
Figure 6.19 Long term health problem and level of experience in using computers



6.4.3 Experience and socio-economic status

In relation to computer use this was also affected by socio-economic status. Respondents who were in the managerial and professional group predominantly reported having more confidence when using a computer (at 88 per cent), whereas the intermediate group was also predominantly confident at 75 per cent (referred to figure 6.20). Again it was the working-class group at only 39 per cent who were the least confident in using a computer (P<.00).

Figure 6.20 Occupational role and level of confidence in using computers



6.4.4 Location of knowledge and skills acquisition

As confidence played a significant role in how people interacted with new forms of technology, it was important to discover where technological skills/knowledge was acquired (specifically with reference to computer use). The development of skills overwhelmingly took place in the home which is demonstrated by 66 per cent of participants accumulating their skills in this way (Figure 6.21). This was followed by 28 per cent of participants who described their skills being learnt within the workplace. Again, this highlights

the important role that new technologies now play in the contemporary workforce. Friends and family also played a significant role as 20 per cent suggested that they had learnt new technological skills due to informal networks. Again this seems to demonstrate that access to new forms of technology is influenced by participants peer groups. Hence, for some participants engagement in new forms of technology was due to their family and friends engaging with them first. Again these findings illustrate the importance of social capital and informal learning/knowledge on the development of technological skills in this research. Unfortunately within these data findings Community Centres, EVHs and UK Online Centres did not seem to play a significant role in helping individuals develop their skills (refer to Figure 6.21).

Figure 6.21 Location of knowledge and skills acquisition

Where were skills learnt?	N	%
Home	532	65.5
School	129	15.9
FE College	91	11.2
Library	45	5.5
Community Centre	18	2.2
University	69	8.5
Work	226	27.8
Friends and family	158	19.5
EVH	6	0.7
UK Online Centre	6	0.7

6.5 Engagement with digital inclusion initiatives

6.5.1 Digital inclusion programmes

One of the primary aims of this research was to establish the impact that formal digital inclusion programmes have had in areas of deprivation within Sunderland. This study set out to discover if respondents were aware of these programmes and initiatives, and if so did they encourage participants to access new forms of technologies. As we can see from Figure 6.22, very few respondents reported having any knowledge of either E-Neighbourhoods or

Digital Challenge (survey one = 91 per cent; survey two = 72 per cent). This is compared to only a small number of participants who were aware of both of these programmes (E-Neighbourhoods, = 6 per cent; Digital Challenge = 5 per cent). These findings indicate that knowledge of programmes were comparatively low, which might indicate problems with communication, marketing and issues of accessibility within targeted communities. Yet, there was a significant increase of 8 per cent (to 13 per cent) in respondents awareness of these programmes by the end of this study (P<.00). As Digital Challenge developed throughout 2009, awareness did increase for some participants, although awareness in general stayed relatively low at 28 per cent.

Figure 6.22 Awareness of digital inclusion programmes

Question	Response	Survey1 Frequency	Survey1 Percent	Survey2 Frequency	Survey2 Percent
Heard of E-neighbourhoods	No	767	94.5	175	86.2
	Yes	45	5.5	28	13.8
Heard of Digital Challenge	No	769	94.7	176	86.7
	Yes	43	5.3	27	13.3
Heard of both	Heard of neither	738	90.9	56	72.4
	Heard of one	60	7.4	147	27.6
	Heard of both	14	1.7	0	0

Although these findings seem on the surface negative, it should be noted that within the qualitative data (in section 7), people who had been involved in initiatives were not always aware of the formal programme or project names. It may also be the case that individuals have engaged with technology which has been indirectly influenced by the digital inclusion programmes, but participants have not been made aware of this. In order to generate an in-depth analysis of these programmes, the study investigated if respondents engaged with specific initiatives within these programmes. This can be seen in figure 6.23.

Figure 6.23 Awareness and engagement with digital inclusion initiatives

Surveys	Initiative	Heard of		Used/been involved		Not heard of	
		n	%	n	%	n	%
1	Community Access Points	246	33.2	31	4.2	461	62.5
2	Community Access Points	96	50	10	5.2	86	44.8
1	Libraries/Learning Centres/UK Online Centres	407	54.1	164	21.8	181	24.1
2	Libraries/Learning Centres/UK Online Centres	166	92.2	--	--	14	7.8
1	EVHs	134	18.5	27	3.3	564	77.8
2	EVHs	--	--	--	--	--	--
1	COI websites	91	12.6	13	1.8	621	85.7
2	COI websites	35	18.7	6	3.2	146	78.1
1	LIAZe Bus	84	11.3	12	1.6	648	87.1
2	LIAZe Bus	39	20.4	4	2.1	148	77.5
1	Computers for Pupils	228	30.6	30	4	488	65.4
2	Computers for Pupils	62	32.8	7	3.7	120	63.5
1	Letsgo Smart Card	114	15.6	29	4	589	80.5
2	Letsgo Smart Card	40	21.2	5	2.6	144	76.2
1	Swan Street Dig. Community	77	10.5	6	0.8	651	88.7
2	Swan Street Dig. Community	37	19.6	2	1.1	150	79.4
1	Easington Lane Dig. Community	36	4.9	1	0.1	701	95
2	Easington Lane Dig. Community	14	7.5	2	1.1	171	91.4
1	Southwick Dig. Community	59	8	3	0.4	675	91.5
2	Southwick Dig. Community	23	12.3	1	.5	163	87
1	Telesafe	76	10.4	15	2	641	87.6
2	Telesafe	24	12.8	2	1.1	161	86.1
1	Flash Meeting	36	4.9	3	0.4	696	94.7
2	Flash Meeting	12	6.4	2	1.1	173	92.5
1	Hexagon	25	3.4	5	0.7	698	95.9
2	Hexagon	7	3.8	1	.5	177	95.7
1	Tele4care	196	26.4	84	11.3	462	62.3
2	Tele4care	60	31.7	36	19.0	93	49.2
1	Health-e	62	8.6	5	0.7	657	90.6
2	Health-e	16	8.6	--	--	171	91.4
1	Digi TV	133	17.9	24	3.2	587	78.9
2	Digi TV	35	18.6	7	3.7	146	77.7
1	ICT @ Home	51	7	6	0.8	668	92.1
2	ICT @ Home	18	9.6	--	--	170	90.4
1	E-Mentoring	62	8.5	4	0	664	90.8
2	E-Mentoring	24	12.8	--	--	163	87.2
1	Equipment Loan	66	8.9	7	0.9	666	90.1
2	Equipment Loan	31	16.4	2	1.1	156	82.5
1	E-Champions	34	4.2	7	1	695	94.4
2	E-Champions	18	9.6	4	2.1	165	88.2
1	Community Centres/Youth Clubs	328	44.2	23	3.1	391	52.7
2	Community Centres/Youth Clubs	97	51.3	14	7.4	78	41.3
1	Other - Libraries	--	--	24	32	--	--
2	Other - Libraries	--	--	--	--	--	--

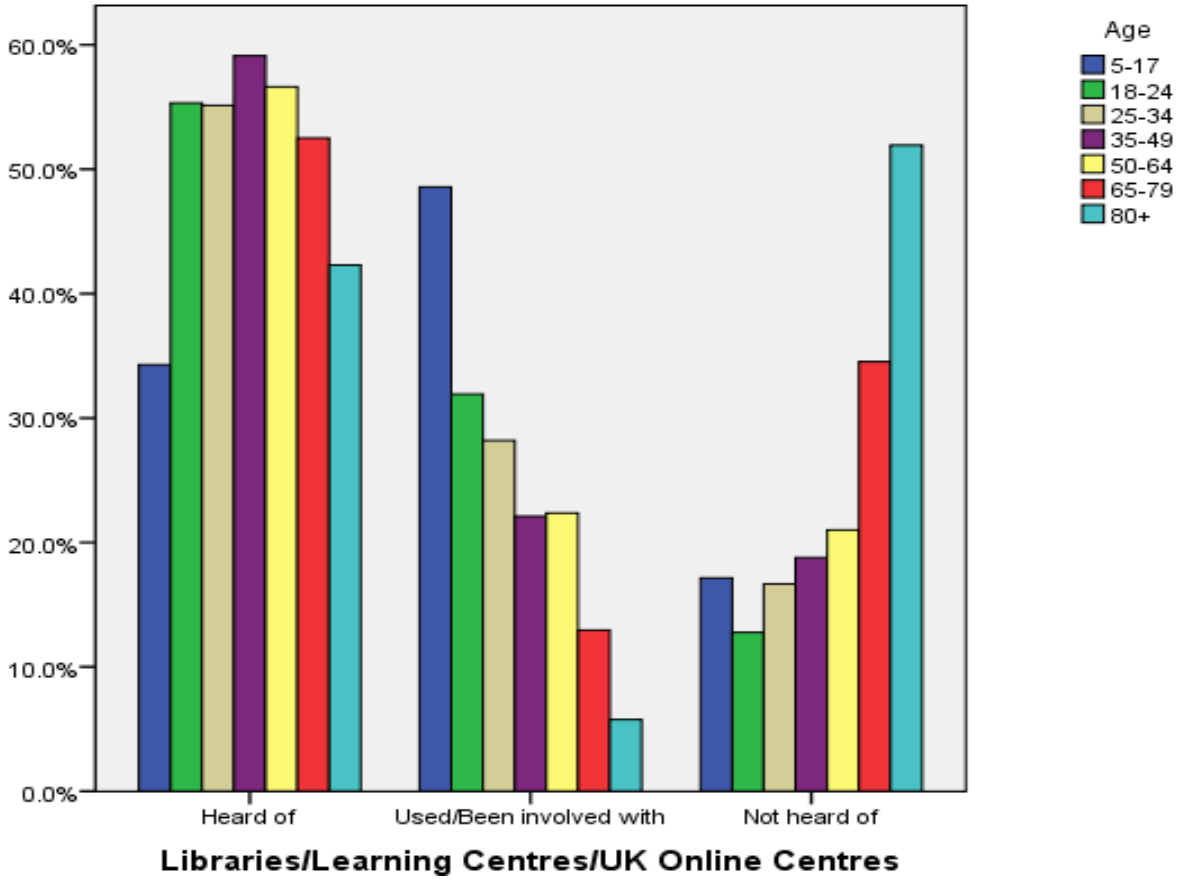
6.5.2 Digital inclusion initiatives

When focusing on individual initiatives, respondents demonstrated far greater knowledge and it can be argued that such awareness is far more important and relevant than knowledge of over-arching programmes. Unsurprisingly, the most commonly known initiatives were UK Online Centres/Learning Centres/Libraries (survey one = 76 per cent). While these initiatives largely existed outside local formal digital inclusion programmes, it should be recognised that the impetus from local digital inclusion activities has given support to these initiatives and in the form of EVHs has clearly contributed to the development of facilities in such locations. Furthermore, it was these venues which had far greater participant involvement, as 22 per cent of respondents reported using these initiatives. Interestingly, when comparing the longitudinal data in survey two, awareness of these initiatives increased dramatically (survey two= 92 per cent); hence when comparing data from January to December 2009, there was an increase in awareness of 16 per cent relating to these initiatives ($p<.00$).

6.5.3 Libraries/Learning Centres/UK Online Centres and age

Although the population was relatively low, a significant relationship was discovered when comparing age with awareness and use of UK Online Centre/Learning centres/Libraries ($P<05$). In Figure 6.24 a noticeable difference appears between age groups and general awareness. In relation to younger participants (5 to 17 years), 83 per cent of this group reported having knowledge of these centres and only 17 per cent were not aware of these initiatives. Furthermore, this group reported a high level of engagement, as 49 per cent had use the centres at some point. In relation to awareness, most age groups (18 through to 79 years) reported having some knowledge of these initiatives (from 53 per cent to 57 per cent). Yet, only 42 per cent of the 80 plus group were not aware of these centres. Interestingly, engagement generally declined with age, ranging from 32 per cent (18-24 years) through to 6 per cent for the 80 plus group.

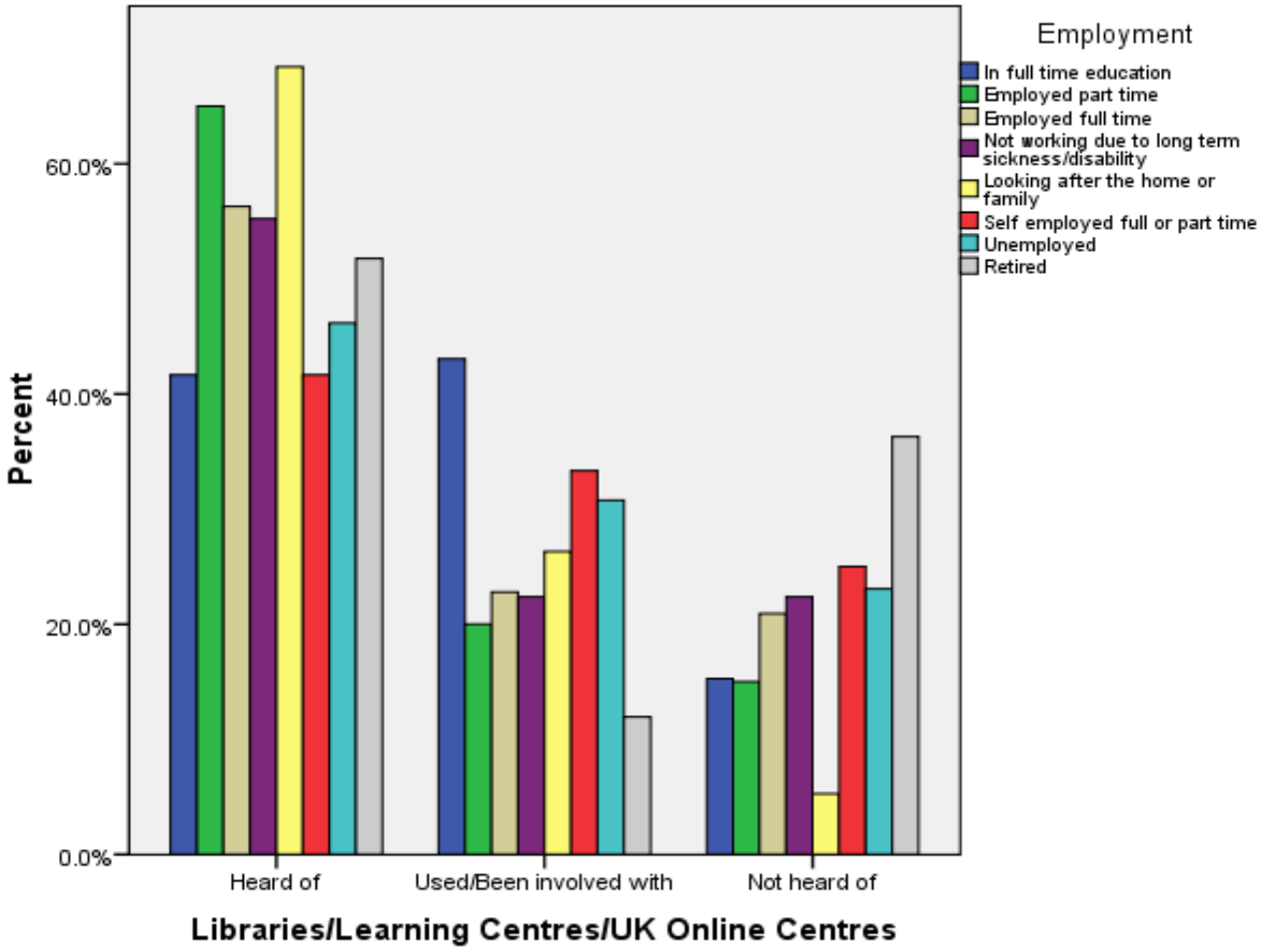
Figure 6.24 Age and awareness and use of Libraries/Learning Centres/UK Online centres



6.5.4 Libraries/Learning Centres/UK Online Centres and employment

In addition to the impact of age, unemployment was also significant in relation to engagement with these initiatives. With reference to Figure 6.25, 30.8 per cent of unemployed participants engaged with Libraries/Learning Centres/UK Online Centres. Only those in full time education (43.1 per cent) and those who are self-employed (33.3 per cent) engaged more. This indicates that this group are some of the most reliant upon this form of public access to technology and opportunities in terms of education and employment and points to the success of such initiatives in the city (P<.00).

Figure 6.25 Employment status and use of Libraries/Learning Centres/UK Online Centres



6.5.5 Community Centres and Youth Clubs

A similar relationship can be seen in relation to Community Centres and Youth Clubs. In survey one, 47 per cent of participants were aware of initiatives within Community Centres and Youth Clubs. Again a significant relationship appeared (P<.00) relating to a 12 per cent increase in awareness from 47 to 59 per cent by the end of 2009. Unfortunately, actual participation within these initiatives was relatively low compared to the Libraries/Learning Centres/UK Online Centres (survey one = 3 per cent; survey two = 7 per cent).

6.5.6 Telecare

Similar awareness can be seen in the data in Figure 6.23 relating to Telecare services. With reference to Telecare services, 38 per cent of participants were aware of this initiative with 11 per cent reporting using it regularly. Furthermore, when comparing this data longitudinally there was a 13 per cent increase (to 51 per cent) in awareness of this initiative by the end of this study (P<.00). This data analysis highlights some level of success in relation to Telecare services.

6.5.7 Community Access Points

There was also some success in relation to awareness of Community Access Points. In survey one, 38 per cent of participants had heard of Community Access Points. When comparing this data with survey two, there was an increase of 17 per cent in awareness to 55 per cent (P<.00). Unfortunately as with other initiatives, although a large number of respondents were aware of Community Access Points very few reported actually using them (survey one = 4 per cent; survey two = 5 per cent).

6.5.8 Computers for Pupils

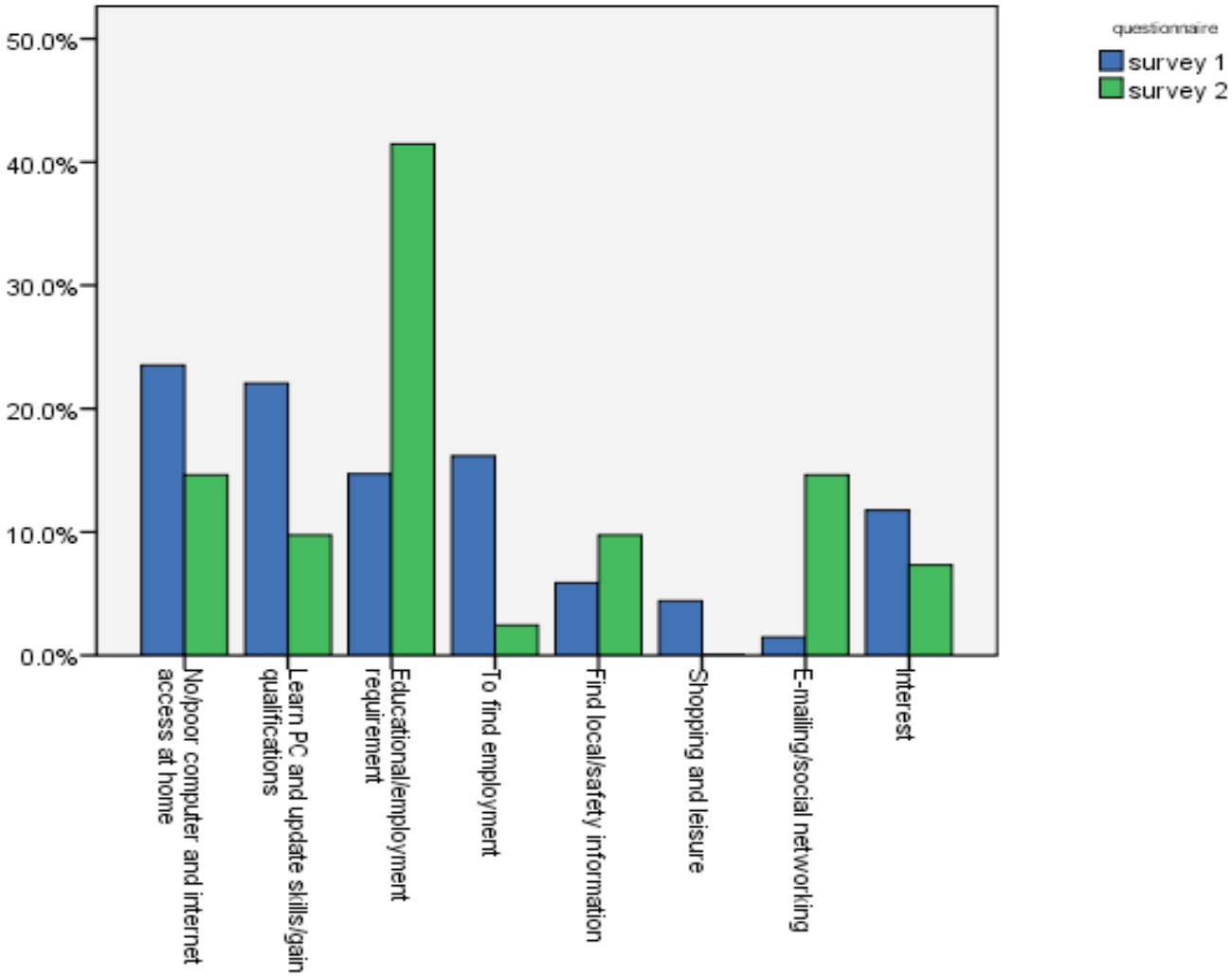
Finally, the Computers for Pupils initiative was also widely referred to in this study. In total 35 per cent of respondents reported having knowledge of this initiative. Unfortunately, similar to Community Access Points very few participants reported actually engaging in this initiative (4 per cent). Unlike the other initiatives, knowledge of this scheme did not seem to change longitudinally between the two surveys as data stayed relatively the same within the period.

6.5.9 Changes between surveys

This was not the case for initiatives such as LIAZe Bus and Community of Interest websites. When analysing the longitudinal data, a number of slight increases appeared for these initiatives. In relation to the LIAZe Bus, only 13

per cent had heard of this initiative in survey one. In the second survey there was an increase of 10 per cent, where 23 per cent reported having knowledge of this initiative (p<.00). Unfortunately, although there was increased knowledge, again very few participants reported actually engaging with this initiative (survey one and two= 2 per cent). A similar relationship can be found within the Community of Interest websites. In survey one only 14 per cent of participants had heard of Community Interest websites. When comparing this data with survey two, there is an 8 per cent increase to 22 per cent. On the whole this data shows an increase in awareness, unfortunately only 1 per cent of participants reported using them in survey one which increased to only 3 per cent in survey two (p<.01). Within this study engagement was generally low, however these findings demonstrate a number of improvements in awareness throughout 2009 relating to some initiatives.

Figure 6.26 Reasons for engaging with digital inclusion initiatives



6.5.10 Reasons for engaging with initiatives

In order to expand on the analysis in Figure 6.23, it is important to acknowledge the motives behind why people engage in local initiatives. Figure 6.26 reveals that most initiatives are used by people in this study because of a lack of access to adequate computers/internet equipment. This is illustrated by figures of 24 per cent (survey one) and 15 per cent (survey two) suggesting that initiatives are used because of no, or very poor, computer/internet access at home ($p<.00$). A further 22 per cent (survey one) and 10 per cent (survey two) reported that they engaged in local initiatives in order to improve their computer skills in general. Interestingly, in survey two there was a dramatic increase of 27 per cent of people that used initiatives due to either education or employment requirements (survey one = 15 per cent; survey two = 42 per cent). This seems to indicate the growing reliance of technology in the contemporary workforce. Unfortunately, there was a dramatic decrease in survey two concerning participants using initiatives to find employment. This can be seen in survey one where 16 per cent engaged in initiatives to increase employment opportunities compared with only 2 per cent in survey two. In general, there were a relatively low amount of respondents using initiatives to access local information/services (6 per cent in survey one; 10 per cent in survey two). There was also an increase in participants using initiatives for recreational purposes such as shopping, social networking and hobbies however these rises were relatively insignificant (see figure 6.26).

6.5.11 Positive aspects of engagement with initiatives

Although general engagement was relatively low, many participants suggested that their first use of technology was made possible through these initiatives (see Figure 6.27). As we can see from Figure 6.27, for those who have been involved with initiatives, 54 per cent reported that these were successful in introducing them to new forms of technologies. This might imply that for these participants, programme involvement resulted in some level of 'digital inclusion'. Furthermore, in Figure 6.8, the vast majority of respondents suggest that their experiences of initiatives had been generally positive (58

per cent; an additional 28 per cent reported having no negative or positive feelings). This is compared to only 14 per cent that described having negative experiences when attempting to engage in initiatives.

Figure 6.27 First use of technology through initiatives (1st survey)

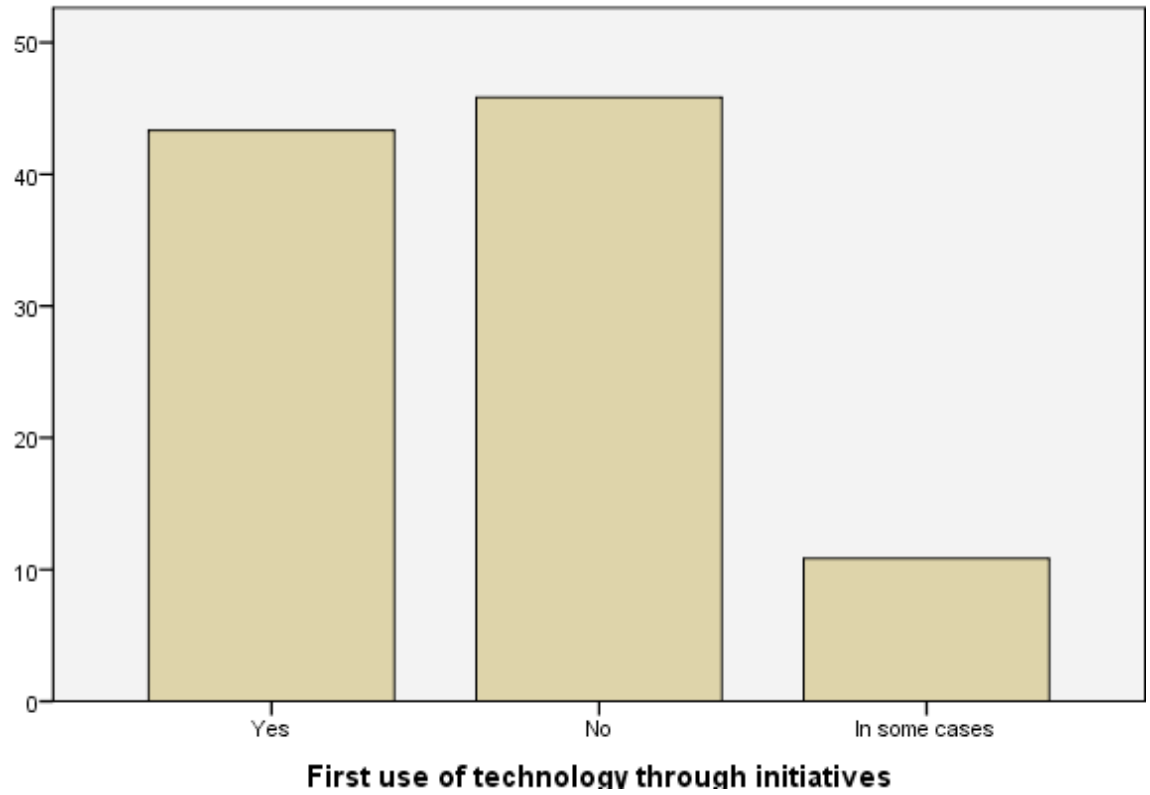
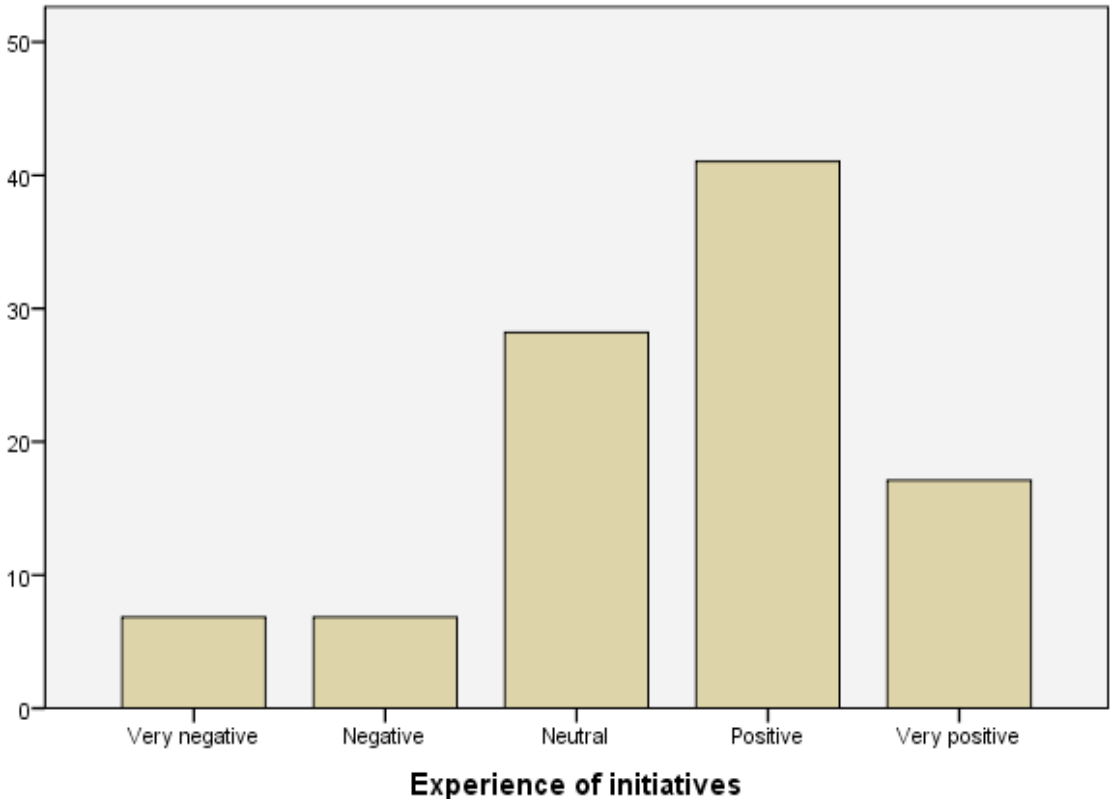


Figure 6.28 Experience of initiatives (1st survey)



6.5.12 Summary of engagement with initiatives

Although this analysis is generally positive, Figure 6.23 reveals that more work needs to be done in order to access a wider audience and develop greater awareness within communities. As we can see from the above analysis, general engagement of initiatives was low. Despite this lack of engagement, these findings seem to indicate a level of success of digital inclusion initiatives due to general public opinion of their usefulness, hence supporting continued development of public access in Sunderland.

6.6 Accessing local on-line public services

As set out in both section 2.7 (on a national scale) and 4.5 (on a local scale), there has been a recent move make public services accessible online to patients and service users. This includes general council information, health services, social services and employment agencies. The move to online services has been generally successful in increasing access and availability

for people that are using new forms of technology. However, for those who do not have access, this might mean that some front-line services will become inaccessible. To investigate this, the study attempted to establish the level of engagement participants have had with these services in Sunderland.

There was a moderately low engagement rate with these services in this research. As we can see in Figure 6.29, only 33 per cent of respondents (in survey one) have used the internet to access local public services. Furthermore, the longitudinal data showed most changes between survey one and survey two were not statistically significant. The only two significant increases were in relation to Sunderland City Council's website and Sunderland Social Services. Sunderland City Council website was the most frequently used online service access by participants in this study. This is encouraging, as the website has been identified as a key area which needed to be improved within the city's E-government Strategy and Action Plan 2000-2005 (see section 4.5.3). There was a significant increase ($P<.04$) from 28 per cent (in survey one) to 31 per cent in survey two. Social services also showed a significant increase ($P<01$) from 3 per cent (in survey one) to 5 per cent in survey two. However, although the data indicated an increase that was statistically significant it should be noted that very few participants actually used this service. Services that did not increase significantly were health services, education services, youth services and job centre services. However, although these services did not significantly increase, services such as Job Centre services (at 22 per cent), health services (at 13 per cent) and educational services (at 12 per cent) demonstrated that individuals did, to a certain extent, engage with a range of online public services.

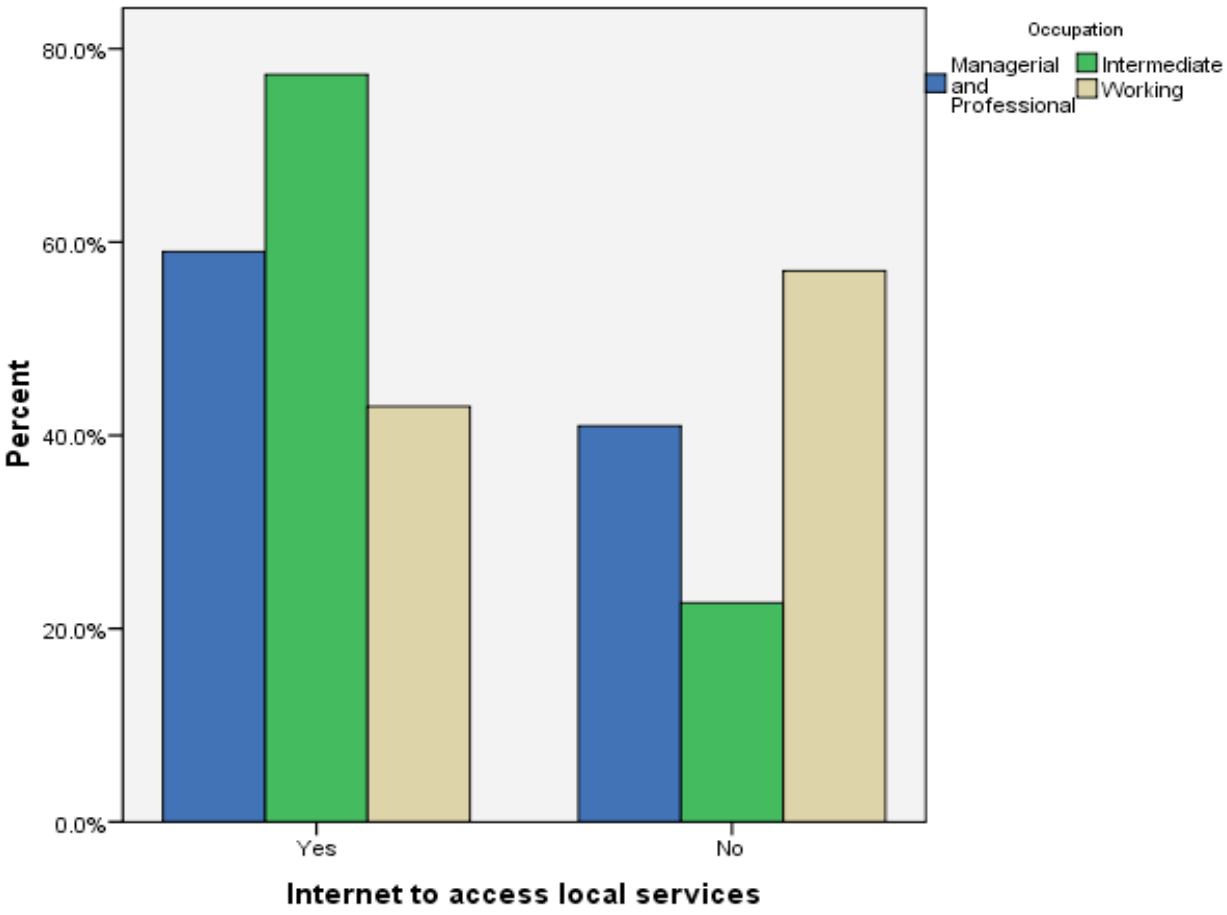
Figure 6.29 Use of local on-line public services

Internet local services	Survey 1		Survey 2	
	n	%	n	%
Access to Local Service	263	32.5%	74	36.5%
Sunderland City Council	223	27.5%	61	30.5%
Health services	107	13.2%	29	14.3%
Social Services	23	2.8%	10	4.9%
Education Services	98	12.1%	23	11.3%
Young Services	22	2.7%	1	.5%
Job Centre Service	182	22.4%	34	16.7%

6.6.1 Online public services and socio-economic status

Although only a third of the population reported using these services, the study endeavoured to discover if any statistical trends appeared between social groups. The only significant findings ($p<.00$) relate to respondents socio-economic status. In Figure 6.30 shows that participants from an intermediate (middle-class) occupational group were far more likely to use online local services than participants from other socio-economic positions (at 77 per cent). The intermediate group was closely followed by the managerial and professional group at 59 per cent. The least likely group to access local services were participants from the working (manual) group, as only 43 per cent reported using local services online. It appears that those most in need of such services may actually be the least likely to use them, with awareness and access higher amongst the middle ranking socio-economic group.

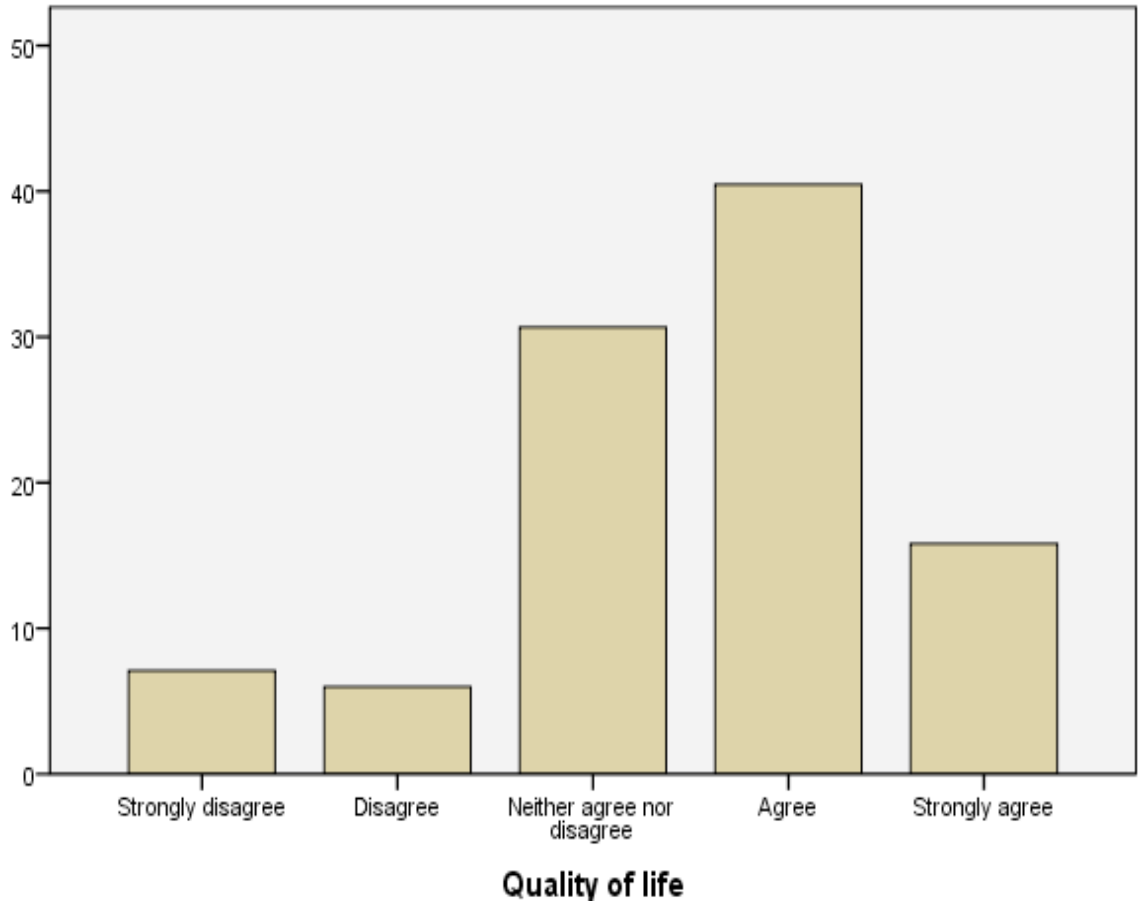
Figure 6.30 Occupational groups and use of internet to access local public services



6.7 Benefits of technology, social outcomes and quality of life

More than half of respondents (56 per cent) see the benefits of technology in terms of improving their quality of life (41 per cent agree and 16 per cent strongly agree with this statement). Only 21 per cent of respondents view technology as having a negative impact on the quality of their lives (refer to Figure 6.31). The fact that people are always easily contactable through e-mail and mobile phone (18 per cent in survey one), that health is adversely affected (13 per cent), that it results in a lack of physical interaction (12 per cent) and that surveillance is a concern, were all highlighted. This is followed up and expanded through the qualitative analysis in section 7.8.

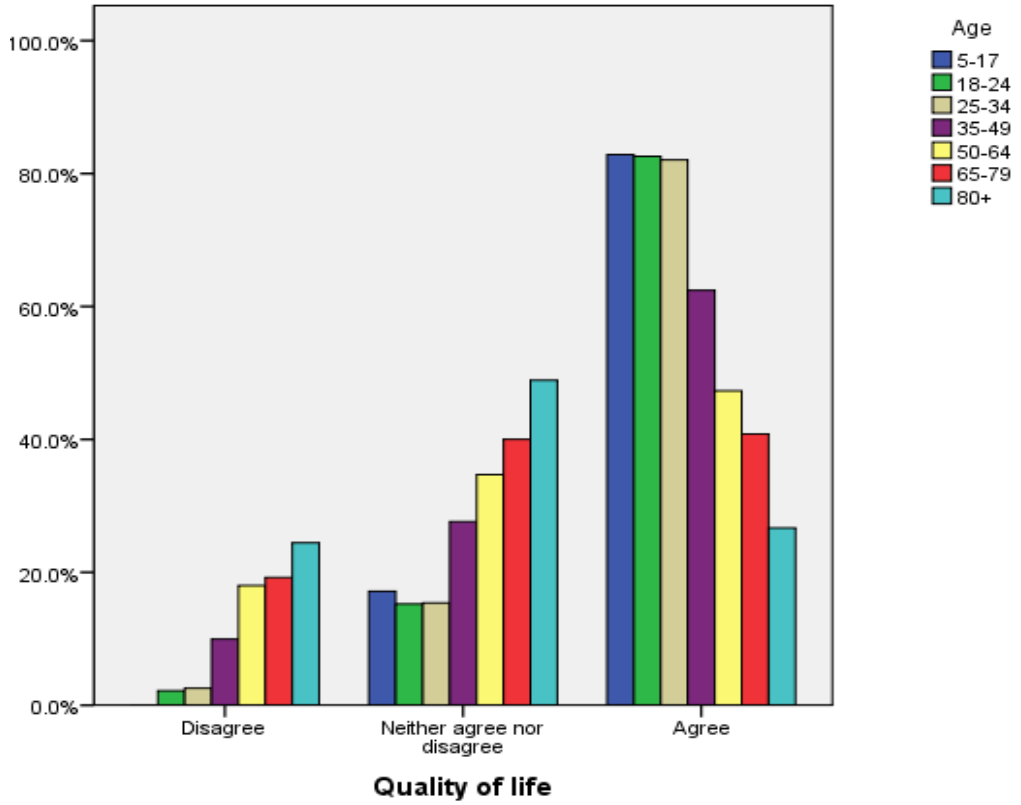
Figure 6.31 Extent to which technology improves quality of life



6.7.1 Quality of life and age

When comparing this benefit measurement with age, disability and socio-economic status, a number of significant differences appeared. In Figure 6.32 the findings reveal that between the ages of 5 to 17 through to 25 to 34 age groups, participants agreed that technology improved their general quality of life (at 82 per cent; P<.00). Similar to other findings, a noticeable decrease started to occur between the ages of 35 and 49. In this age group only 62 per cent considered that technology had improved the quality of their lives. Again this generally decreased to only 27 per cent of the 80 plus category as the majority disagreed with the idea that technology contributed to any real benefits. These findings reinforce existing results that showed older participants are less prone to see the benefits of technology compared with their younger counterparts.

Figure 6.32 Age and quality of life benefits from use of technology

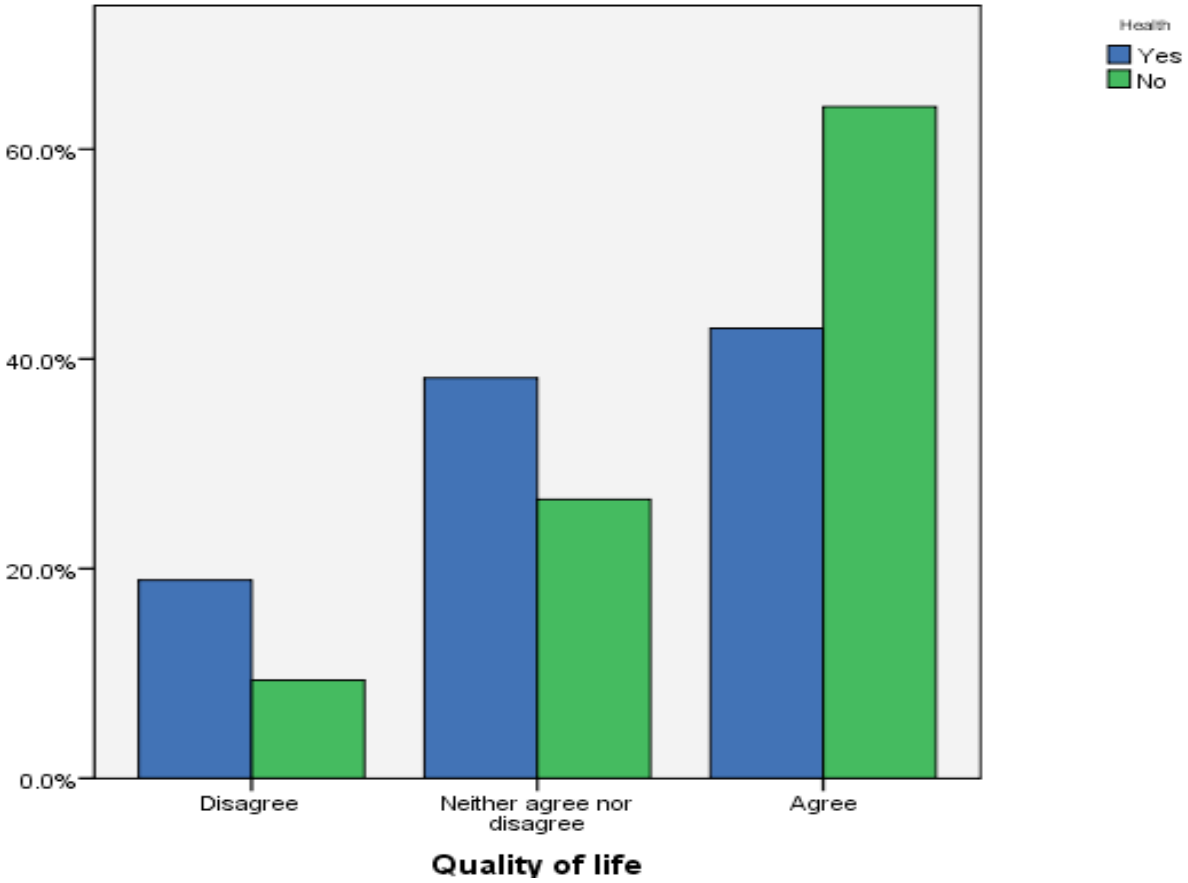


6.7.2 Quality of life and health

A similar relationship appears with disability and long-term health issues (see Figure 6.33). Technology is a crucial part of both a national and local commitment to independent living. It would be expected that technology plays a vital role within the lives of people with disabilities in the context of a growing market. However, there was no evidence of increased use of technology within this group. In fact, the reverse seems apparent, as people without any form of disability or health issue were more likely to engage in new forms of technology compared with the disabled group. This could relate to a number of factors such as; those with a disability or long term illness are not aware of technology that can assist in improving their general situations, or that they have tried to use new forms of assistive technologies and found them unhelpful. It could also be the case that certain assistive technologies are not viewed as technologies as such, or that people with disabilities face other barriers when accessing these forms of technologies as identified by

Adam and Kreps (2006). Surprisingly, 64 per cent of disabled participants did not consider that technology has improved the quality of their lives. This was compared with only 42 per cent which agreed that some improvement had taken place (P<.00).

Figure 6.33 Long term health condition and quality of life benefits from use of technology

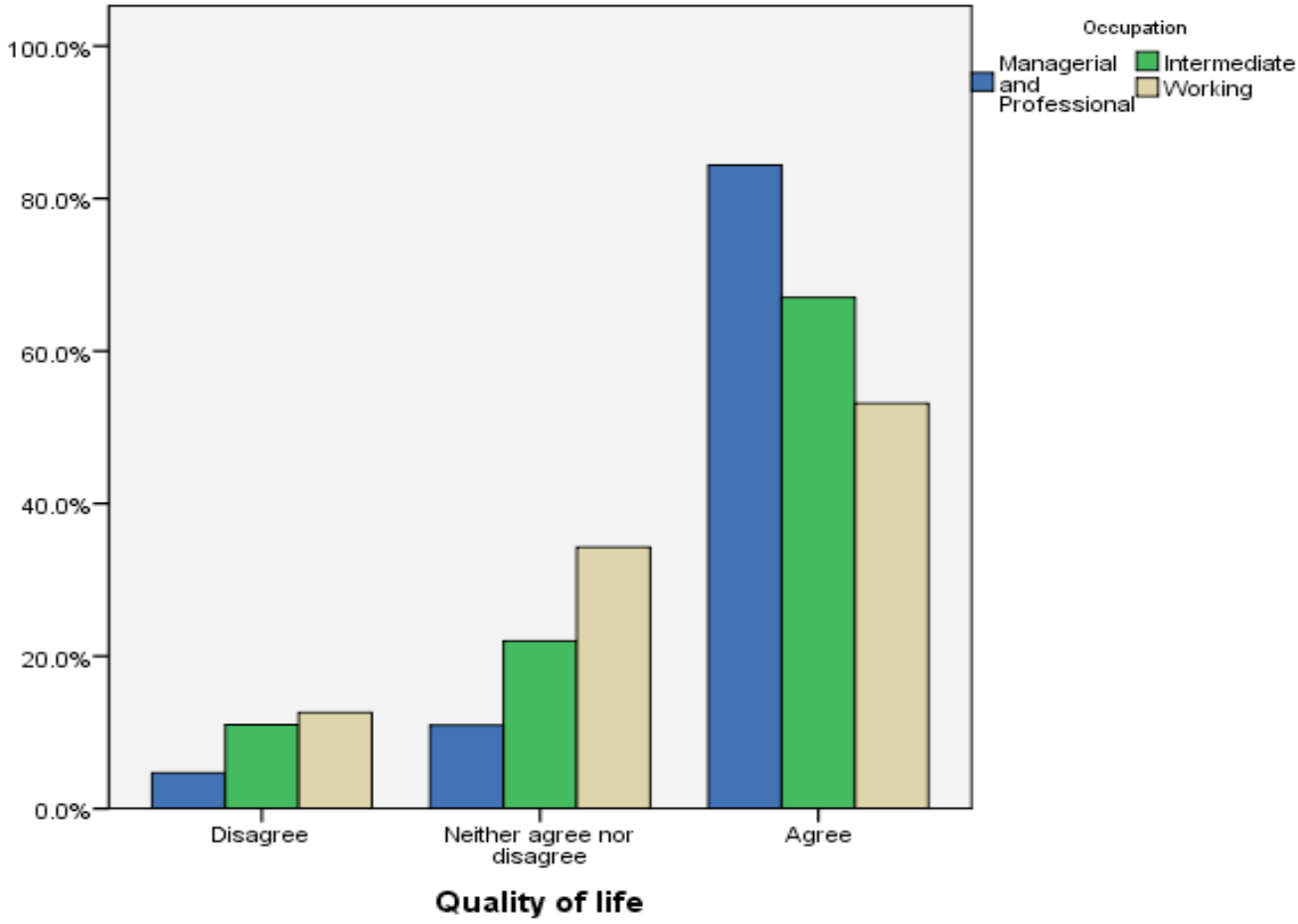


6.7.3 Quality of life and socio-economic status

Socio-economic status also had an impact on perceptions of quality of life improvements (see Figure 6.34). A noticeable difference appeared between social classes, as 84 per cent of the managerial and professional group agreed that technology has benefited their lives in general. This was compared with the intermediate group at 67 per cent who also agreed that technology had made some improvement to their life chances. Only 53 per cent of the working class group suggested that technology played a significant role in improving the quality of their lives (P<.00). Hence, this

analysis highlights that it is the middle-class group who can see direct benefits of technology. This is compared with the working-class group, which engages in fewer forms of technologies and seem to perceive less benefits within their overall life histories (see figure 6.33). Surprisingly this is not reflected in the experience of the unemployed group, of whom 61 per cent in the first survey agreed that technology had improved the quality of their lives (P<.00).

Figure 6.34 Occupational roles and quality of life benefits from use of technology



6.7.4 Benefits perceived for social inclusion domains

While many respondents agreed that technology had improved the quality of their lives generally, this does not seem to equate to improvements in the domains of social inclusion such as education, employment, health, independent living and participation and networks (see Figure 6.35). In all

areas of social inclusion, they suggested that technology had not 'positively influenced' their life chances in these areas (ranging from participation and networks = 60 per cent through to educational achievement = 45 per cent). The data also indicates that only 34 per cent of participants thought access to technology had a positive impact on social inclusion relating to educational achievement (survey one). This was followed by a further 20 per cent that felt technology had a positive impact on their health and only 21 per cent reported that technology had positively improved their social networks. Furthermore, when comparing survey one and survey two, all changes in the data concerning education, health and participation and networks were revealed as not significant within the analysis.

Yet, in relation to employment, income and independent living, the findings illustrated a significant change between survey one and survey two. In survey one, 28 per cent reported that technology had improved their employment and income, however this decreased by 13 per cent to only 16 per cent in survey two (P<00). A similar relationship can be seen in relation to independent living, as in survey one 27 per cent of respondents reported that technology improved their independence. In survey two this decreased by 9 per cent, to only 18 per cent. In conclusion, participants generally reported that technology had a general positive impact on their lives, however they did not feel that technology has improved specific realms of social inclusion as officially defined (see figure 6.35). In fact when referring to the longitudinal changes participants felt less likely to agree that technology improves social inclusion compared with data in survey one. This leaves room to discuss in more detail what such benefits may therefore be defined as. This is discussed with reference to the qualitative data in section 7.7.

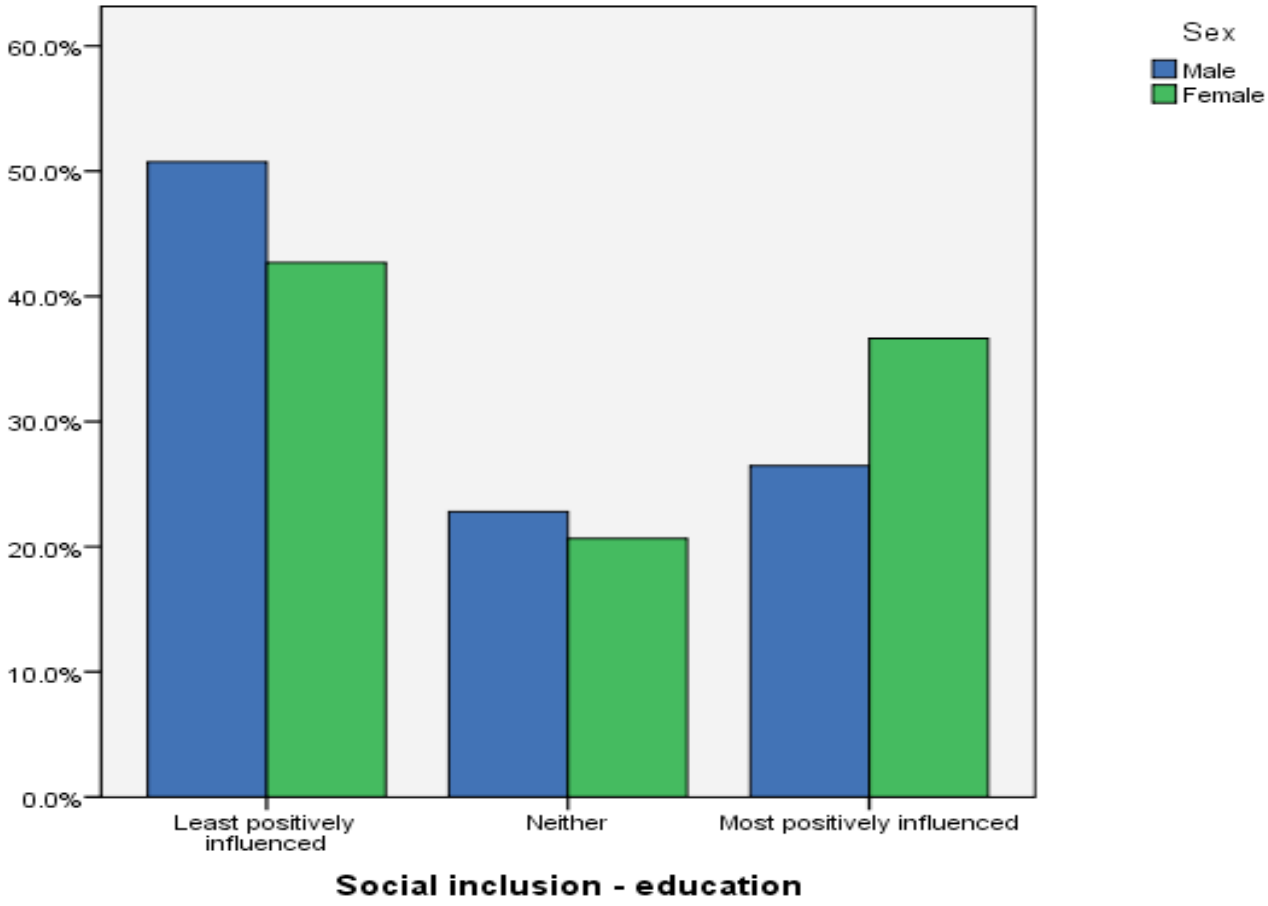
Figure 6.35 Social inclusion benefits from use of technology

	Survey one						Survey two					
	Weak influence		2		Strong influence		Weak influence		2		Strong influence	
Social inclusion	n	%	n	%	n	%	n	%	n	%	n	%
Educational achievement	223	44.6	109	21.8	168	33.6	74	52.1	29	20.4	39	27.5
Employment and Income	240	47.6	122	24.2	142	28.2	90	64.3	28	20.0	22	15.7
Health	253	50	151	29.8	102	20.2	73	51.8	45	31.9	23	16.3
Independent Living	263	50.5	115	22.1	143	27.4	88	61.5	29	14.3	26	18.2
Participation and networks	297	59.6	96	19.3	105	21.1	85	58.6	33	22.8	27	18.6

6.7.5 Social inclusion: education

In relation to the perceived positive impacts that technologies have in relation to educational achievement, gender appeared to have some impact. Referring to figure 6.36, 37 per cent of females indicated that technology had improved their educational life chances compared with only 27 per cent of males (P<.02).

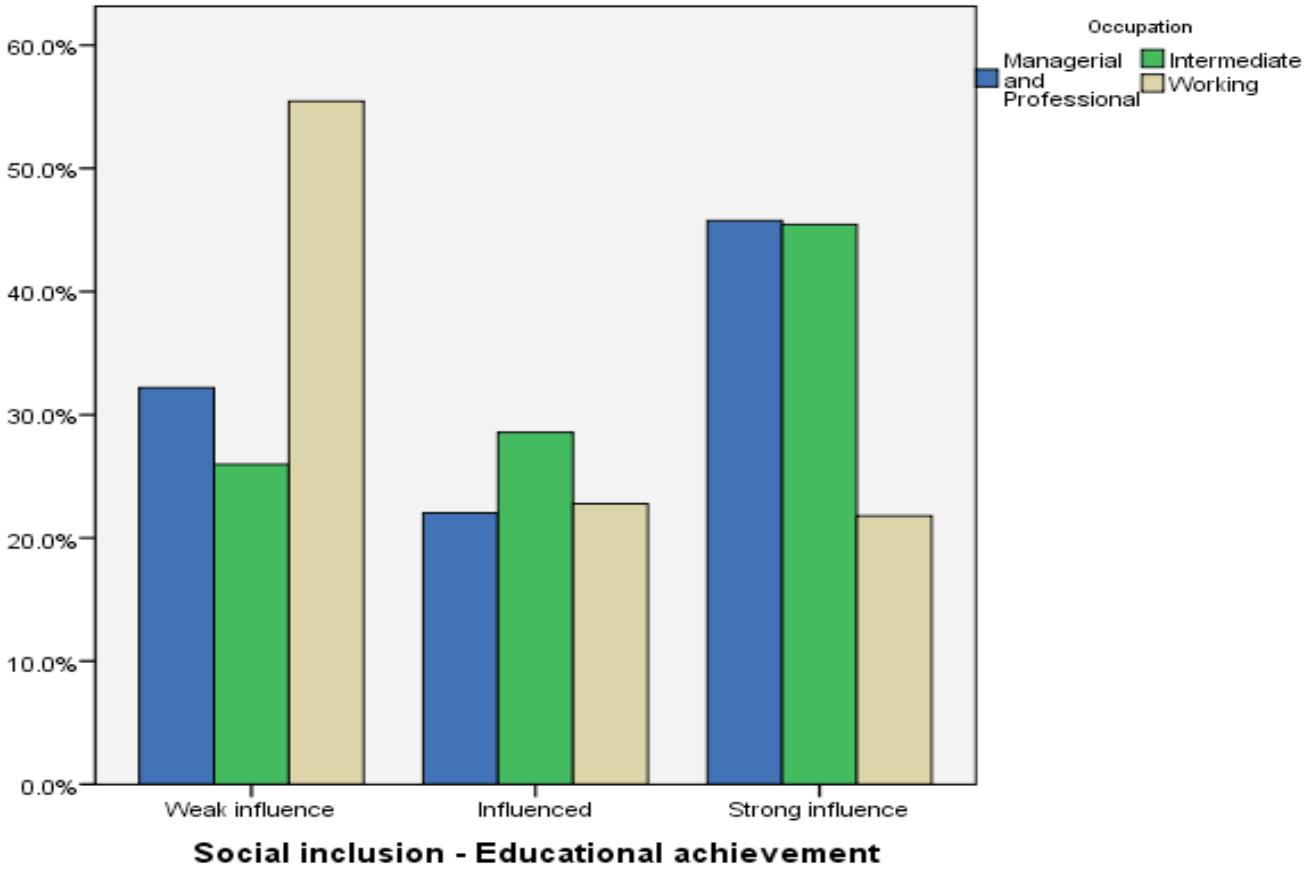
Figure 6.36 Gender and social inclusion: education



Socio-economic status is also identified as significant (Figure 6.37). 46 per cent of the managerial group and the intermediate group agreed that technology played a positive role within their own educational achievements (P<.00). For participants within the working class group only 22 per cent felt that technology has had a positive impact on their educational achievements. For the working class group, technology does not seem to have had the same impact on individuals educational achievements compared to their middle-class counterparts. What is surprising, is that quality of life benefits in this domain of social inclusion are viewed positively by the unemployed group. 45 per cent of this group stated that technology had strongly influenced their

quality of life in terms of education (P<00). This points to the importance of technology in re-training for future employment.

Figure 6.37 Occupational roles and social inclusion: educational achievement

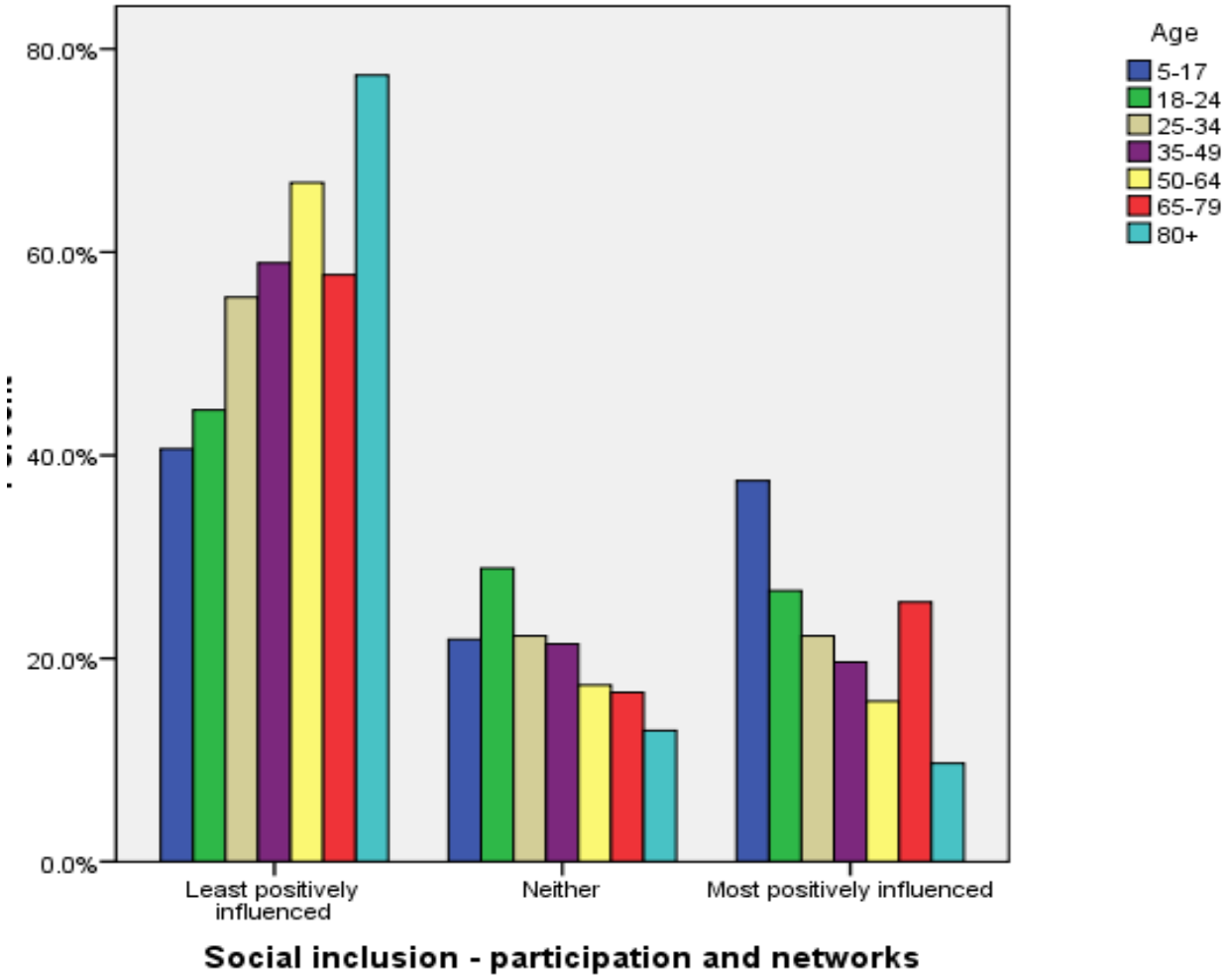


6.7.6 Social inclusion: participation and networks

When investigating the key differences between social inclusion and age groups the key differences appeared in relation to participation and networks (see figure 6.38). It might be expected that for older people the internet would play a crucial role in facilitating social networking in order to reduce issues of isolation. This study discovered that it was the younger groups that engaged in networking far more than older participants. This can be seen as 38 per cent of the five to 17 age group reported that participation and networking can be an important outcome in the use of technology (P<.03). However, these

attitudes gradually decrease throughout the age categories concluding at only 10 per cent of the 80 plus group.

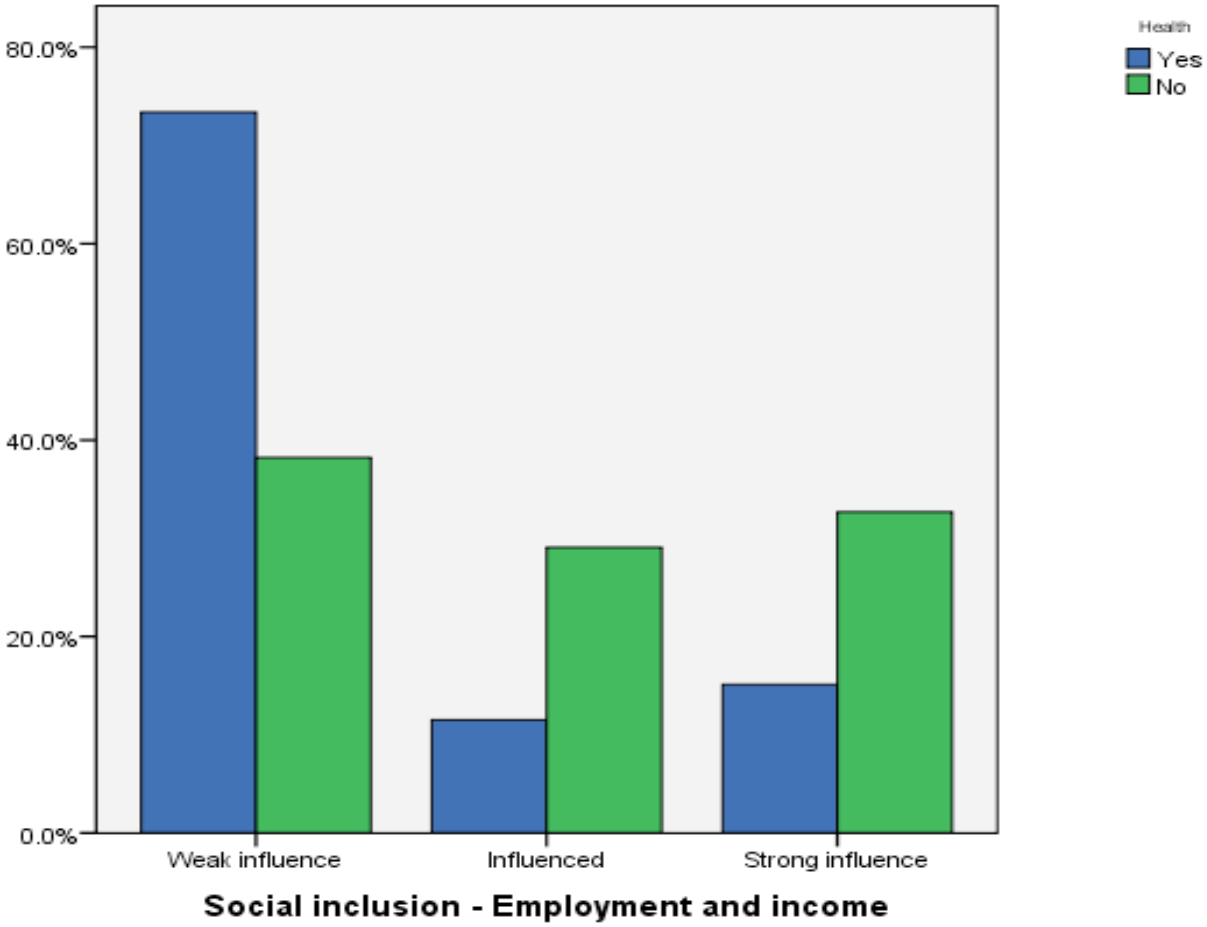
Figure 6.38 Age and social inclusion: participation and networks



6.7.7 Social inclusion: employment and income

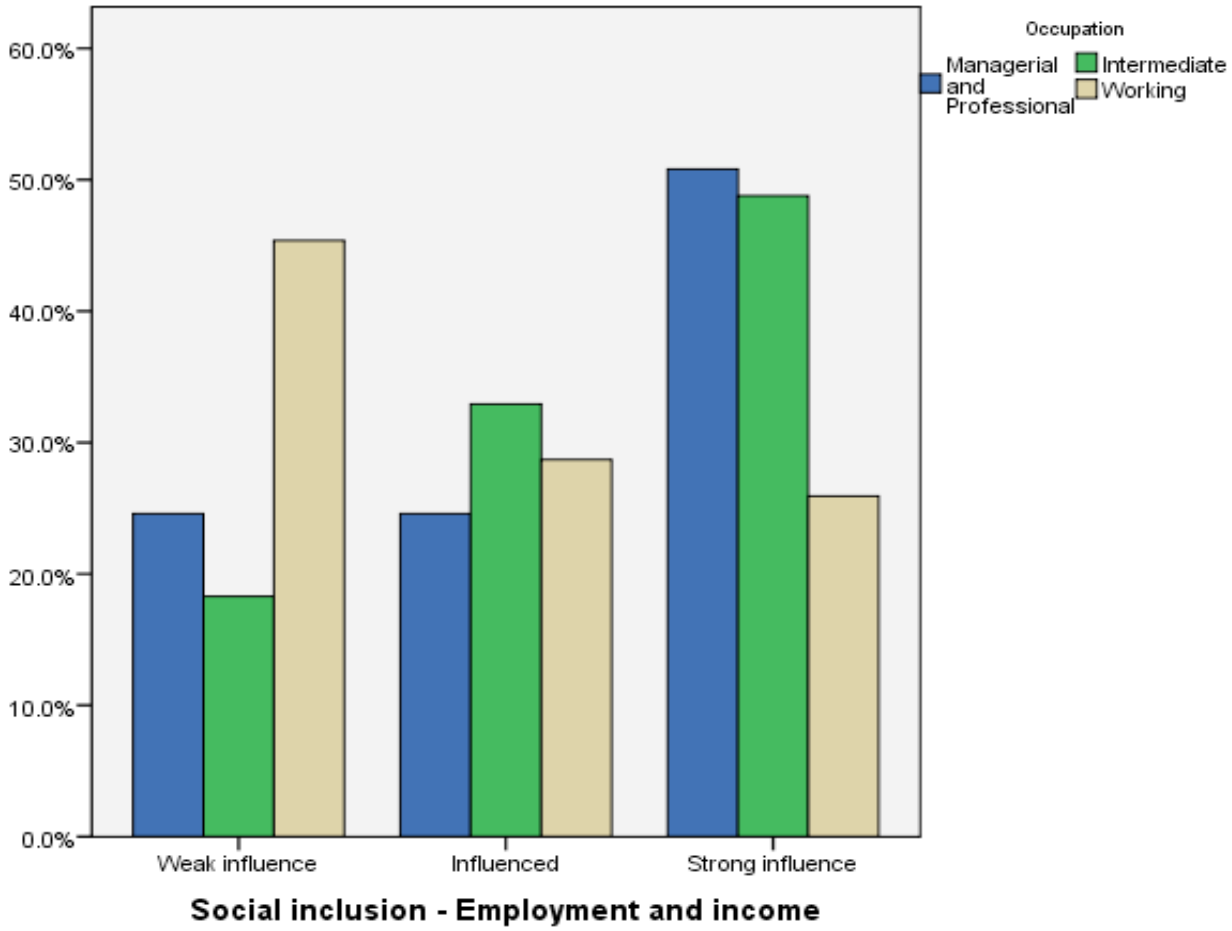
There were also some significant differences in relation to employment and disability. As we can see in figure 6.39, only 15 per cent of this group reported that they felt technology had improved their life chances in relation to employment and income (P<.00). This data illustrates that although the government and local agencies has developed a number of initiatives in supporting disabled people back into work, technology seems not to have played a significant role in improving the employability of this group.

Figure 6.39 Disability and social inclusion: employment and income



The data also indicated that socio-economic status has had a significant impact on the relationship between use of technology and employability. As we can see in figure 6.40, individuals from the managerial group felt that technology had strongly influenced their employment opportunities and improved their income (at 51 per cent). These findings were comparable with the intermediate group as 49 per cent also reported that technology has had a dramatic impact within their working lives (P<.00). This is not the case for the working class group has only 26 per cent indicated that technology had any impact on their employability or general income. This highlights two key points, firstly the important role that technology has in the middle-class employment sector and secondly how the digital divide is evident in this study for participants from a lower socio-economic position. Hence participants from a working class group seem to use less technology within the workplace and subsequently see fewer benefits within their working lives.

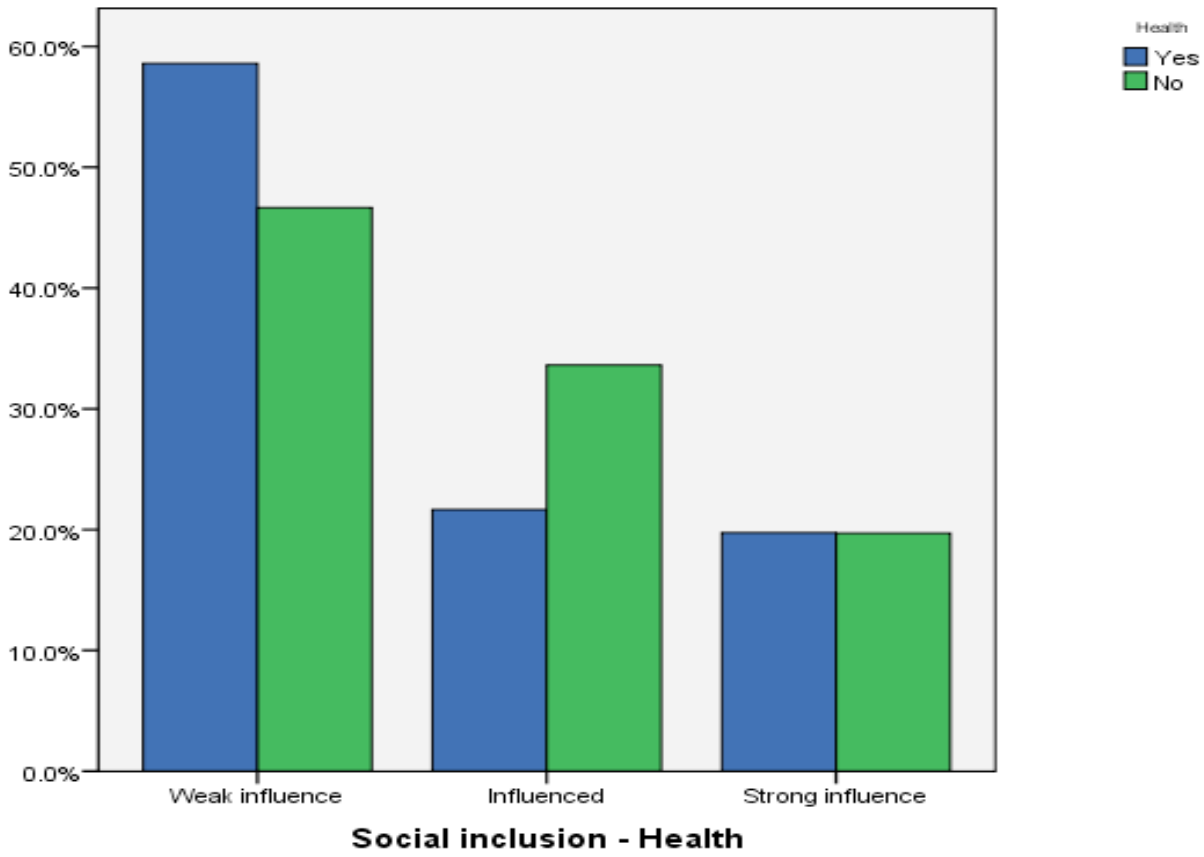
Figure 6.40 Occupational roles and social inclusion: employment and income



6.7.8 Social inclusion: health

Only 20 per cent of participants with a disability or long-term health issue reported that technology had any impact on their general health or improved their general health services (See Figure 6.41; P<01). This is surprising given the potential benefits that this group could gain from greater and more effective use of assistive technologies and confirms the findings discussed in section 6.7.2.

Figure 6.41 Disability and social inclusion: health



6.7.9 Summary of benefits

As we have seen, gender, age, disability, and socio-economic status all influence peoples experience of technology in different areas of social inclusion. In relation to gender and socio-economic status, both of these social variables have an impact on educational achievement. Furthermore, both disability and socio-economic status also had an impact on employability and inclusion. Although earlier findings indicate that technology has improved the overall quality of life for the majority of participants, this was not the consensus in relation to perceptions of specific forms of social inclusion. These findings verify the idea that digital inclusion and engagement with technology does not simplistically equate to improvements in social inclusion and as one person noted 'it's not better, it's just different'. This data also might illustrate a distinction between improvements in quality of life as defined by participants and improvements in social inclusion as officially or formally

defined. This is explored in further detail in section 7 through the qualitative research.

6.8 Summary

6.8.1 Use and ownership

- Ownership of forms of technology including computers and especially mobile phones is higher than expected.
- Many participants own forms of technology, but do not use them. This points towards the importance of the barriers preventing non-use.
- Few barriers and restrictions were identified by respondents, but these were mostly based upon financial considerations.
- Age is a significant factor affecting use of technology. For example younger people are more likely to use the internet. However usage by older groups of the internet is increasing over time.
- E-mail use is mostly engaged in by those in employment and education as well as those in their 20s, 30s and 40s – the most employable age groups.
- Use of computers for educational purposes and social networking, is mostly carried out by younger age groups.
- There is a lack of engagement with assistive technology, even by those with disabilities or health conditions despite the apparent success of Telecare roll out within Sunderland.
- Use of the internet is mostly focussed on general browsing, e-mailing and shopping with job hunting, educational uses and especially council services much lower. Internet use seems more focussed on leisure.
- Those who use the internet do so regularly, although younger people use it more often and older people less often.
- Use of computers and the internet outside the home takes place mostly in the homes of families and friends and in libraries.

- Reasons for increasing use of technology over time included increased ownership and the importance of becoming part of an informal social networking culture.

6.8.2 Levels of experience

- Digital TV was the technology most participants were confident in using. This was followed by mobile phones. Internet, e-mailing and then computer use.
- There continues to be a significant proportion of this population with no experience of certain technologies. For example over half of the participants had no experience of computers, internet and e-mailing.
- Age again is significant, with younger people more experienced than older groups. Experience peaks at the 25-34 age group and declines rapidly for the older groups.
- Health is also significant, with three quarters of those with disabilities and long term conditions expressing that they have no experience in using computers.
- Socio-economic status also effects experience. 61 per cent of the working class group express no experience in the use of computers.
- Informal learning networks are seen as key in to the acquisition of knowledge and skills in the use of technology. These include those acquired in the home, in places of employment and through friends and family in that order.

6.8.3 Engagement with initiatives

- The survey has highlighted the limited reach of some of the formal digital inclusion programmes and initiatives in the city both in term of awareness and take up.
- There is an issue of the language used to identify projects and the possibilities of a lack of knowledge as to the labels used to identify initiatives. However, this is of a lesser concern that actual levels of engagement with technology.

- However, Libraries/Learning Centres/UK Online Centres are identified as important venues for access to technology and the role of local digital inclusion efforts in building on these valuable resources is recognised.
- Those engaging with Libraries/Learning Centres/UK Online Centres were predominantly young people, those in full time education, self employed and also importantly the unemployed.
- There was an improvement in awareness of initiatives over the course of the two surveys.
- There were positive outcomes for those who engaged with formal digital inclusion initiatives. Overall feedback from initiatives was strong and favourable.
- For many of those engaging in formal digital inclusion initiatives this was the first use of technology and can be seen as an important stage in the learning journey for some participants.
- Reasons for engagement with initiatives were largely around lack of computer access/ownership within homes and for employment related or educational purposes.

6.8.4 Accessing local on-line public services

- Use of local services on the internet is fairly low at about a third of respondents.
- The highest use is for the City Council website, followed by Job centres, health and education.
- Social services and the main Sunderland City Council website has seen increasing use over time.
- The use of technology to access public services and information is more often taken up by the intermediate social class group, with the working class group less likely to engage in these services.

6.8.5 Benefits of technology

- More than half of respondents agreed that technology had beneficial social outcomes in their experience.
- Of the 21 per cent who saw negatives impacts the key issues identified were little escape from work contacts, adversely affected health and lack of physical interaction.
- The older age groups do not see the benefits of technology as strongly as younger participants.
- Less than half of those with disabilities or long term conditions agree that technology has had a beneficial impact on their quality of life.
- Those in higher occupational roles identify technology as having a greater benefit on their quality of life.
- In terms of perceived benefits in relation to specific domains of social inclusion, most people identify technology as having a weak influence.
- Educational benefits are mostly clearly identified followed by the importance of employment and income, then independence, then participation and networks and lastly health.
- In relation to educational benefits, this is more strongly felt by female rather than male participants as well as by higher status occupational roles. More than half of working class participants do not see technology impacting their education at all.
- In relation to employment higher occupational classes see more benefits. This falls dramatically with the working class. Those with disabilities and long term conditions did not see benefits in this area.
- Those who are disabled or long-term ill are not using technology to improve their quality of life in relation to the social inclusion domain of health. Only 20 per cent of this group report benefits in using technology in this way.
- In relation to participation and networks, generally the benefits of this domain are not recognised overall, but this decreases further the older people get.

7. Qualitative Interviews: Key themes

The data gathered from the qualitative interviews conducted with participants within socially excluded neighbourhoods in Sunderland[25], has been analysed as outlined in section 3 and presented here through a series of themes. These themes focus on general usage of technologies, usage by different social groups, ownership, patterns of learning, engagement with local initiatives, use of on-line public services, benefits of technologies and lastly negative and constraining factors linked to the use of technology. These look to build upon the themes which have emerged from our quantitative analysis in section 6 and provide further detail around engagement with technology by socially excluded groups within the city.

7.1 Use of technologies

7.1.1 Definitions of technology

Technology was broadly conceptualised in terms of electrical appliances. Participants described a range of applications including personal computer/laptop, mobile phone, IPod/Mp3 players, digital TV, digital cameras, washing machines, fridge freezers, kettles and vacuum cleaners as being at the forefront of their understanding of technology.

> *John: Anything that is difficult to work... [laugh]... TV, Video, Sky Satellite, Computers even down to fridge freezers and washing machines*

Definitions were dependent on age, for example, washing machines, kettles and vacuum cleaners were more often referred to by older participants. This was in contrast with younger participants whom were more prone to refer to MP3 players and game consoles (although this was not clear-cut, as a small number of older participants referred to game consoles and Mp3 players). Although participants' used multiple definitions of what they thought constituted technology, all referred to the personal computer and mobile

[25] For personal information details on qualitative interview participants see Appendix x. All names used here are pseudonyms.

phone in their descriptions and as central to their everyday activities. What this suggests is that all participants had *some form* of access to computers.

7.1.2 Use of the internet

Although some participants referred to assistive tools on their personal computers, such as spell checks and read/write technologies, it was internet access that was essential to how they engaged with computers. In fact, the internet was often referred to without mention of computers – reflecting this as the primary way in which computers are used and also the fact that computers are not even required to access the internet. For many participants, a computer without internet and e-mail access actually seems to become of little discernable use.

> *Andrew: Because the good thing about it is for email, we've got the dongle; the mobile phone dongle goes in the side. If I can find a hole, an open point, and I don't have the dongle with us, and the laptop registers that there's wireless location somewhere nearby, then I'll hook it in through that*

The entire group referred to the benefits of internet use, as is explored in section 7.7 below.

7.1.3 Use of games consoles

Participants also used their PC/laptops specifically for leisure, especially to play games. Although some used their PC/laptops to play online games, the majority invested in buying a separate game console and a small number reported playing games online through their game console. Unfortunately, participants did not go into detail about this usage, but all reported regularly interacting with this form of technology. This use of technology raises questions around formal definitions of digital inclusion, which might ignore the importance this leisure related aspect and its impact on quality of life.

> *Andrew: Believe it or not, there's a PS1 under there somewhere, but there's nothing new. Um in the girlfriends we have um, should say partners, we have a PS2 that gets used, but on a 50" screen, it's a bit… you've got to sit at the far end of the room to watch or*

you get exceptionally… I get a feeling of nausea creeps in cos I can't drive round this, oh no! [Laughs]

7.1.4 Use of mobile phones

Although use of personal computers was discussed by all participants, mobile phones were also considered as significant (only two participants referred to their land-line phone connection as a form of technology). For participants who had access, they reported that they used this technology more than any other form. Phones were generally used for keeping in regular contact with family and friends. Some participants also reported that their phone had radio access or camera technology. Although phones incorporated these other forms of technologies, these additional features were rarely used. The most common feature used and valued was either text messages or voice conversations.

Andrew: One's just a standard basic phone. It's just a phone that's got a radio on. The radio's never been used. The unfortunate problem is my main phone, which is an ancient dinosaur comes with a camera, there she is, and a video camera, and it's an old phone. Um it gets used mainly as a phone. Rarely it gets used for taking photographs unless I'm out and I need something and I haven't got a camera with me

For both participants with impairments, mobile phone use was highlighted as a key technology - assisting them in their everyday life. For William, who is blind, his mobile phone has given him a new level of confidence and security facilitating improved independent living. For Dorothy, who has severe mobility problems, financial issues meant that she struggled to keep her phone in credit. Yet, interestingly she started using the internet due to her mobile phone. Her phone had internet access and led to her buying a laptop. She discovered the internet was more useful and replaced her phone with a laptop which was cheaper to run and easier to use. The issue of cost is revisited in section 7.8.

Dorothy: My mobile, although at the minute I have no money on it but at least people can contact me... it has no money on at the minute I used to use that for the internet until I got my laptop I have a house phone but try not to use it much as you never know what

the bill will be.

7.2 Differences in use of technologies

7.2.1 Gender

Surprisingly gender differences did not seem to play a prominent role in the use of technologies. Only two participants referred to gender differences within their narratives. John reported that although he himself engaged in the use of a number of different types of technologies (i.e. personal computer, games console, mobile phone) his wife did not share his enthusiasm. He states that:

> *John: I mean my wife, she's got a mobile phone and that's about it like. And she watches Sky telly and click about. As for the internet and that, she's not bothered.*

However, this is not the case for the middle-class retired female participant, Eleanor, who reported that she and her husband regularly used a number of different forms of technologies. Although from her perspective, she is more likely to use her personal computer for internet access to knowledge and information. She reported that while her husband had bought her forms of technology for recreational use (i.e. an Ipod, and a robotic dog), it is he who is usually ends up using them. Eleanor implies that her usage of technology is underpinned by what she defines as practical use ('I am more the IT person') where as her husband's use can be defined as recreational ('he likes his toys').

> *Eleanor: My husband has just bought an IPod erm, and again there is also games on there so that is good as well for use with the internet and he downloads applications as they are only a couple of pounds if that and he plays around more, Laughing,,,, I am more the IT person but he is actually more active on that sort of front he likes his toys basically*

This is in line with Liff's (2004) analysis of the gender digital divide, whereby men engage more confidently and more fully with technology than women – the exception here is Eleanor whose middle class background and

employment history have enabled her to become more fully involved.

7.2.2 Age

A number of participants reflected on how age had an impact on the use of technology and our sample provided an interesting range of experiences. All of these participants made reference to how it was more difficult for older people to engage with new technologies, thus reinforcing Livingstone & Helsper's (2007) point that use of technology by different age groups requires a different form of explanation. An example of this can be seen by one older female participant, Margaret, who suggests that people of her generation found it extremely difficult to engage and use new forms of technology by virtue of the fact that they are playing catch up with the younger generations:

> *Margaret: Technology, it's for the youngsters. I think it's for the younger generation. My generation, you'd have to be very intelligent and have a lot of patience. I don't have that. Well I do, but not with things like that.*

When older participants have attempted to engage in using new technologies they have turned to their younger relatives for assistance. This inter-generational approach to learning has been fairly successful for participants in this study and a more common way of learning than through formal initiatives. Yet some participants also highlight the subjective nature of age. For example, Eleanor refers to herself, who is retired, in comparison with her older sister who is 10 years her senior. From her perspective, when referring to older people this exceeds retirement age. This may also be related to her established middle class position which means that she has experienced much greater exposure to technology over a longer time frame than some of the other older participants in our study.

> *Eleanor: you know and people who do not use it take my sister she is ten years older than me and she doesn't .....use it I don't know why but she won't even use email I say to her that the difference it would make to her she likes going to talks and historical sites the difference it would make but it is a blockage*

In relation to positive viewpoints, younger people were seen as broadening their horizons in relation to employability and providing the basis for the future of the national economy.

> *Andrew: The children of today are the computer engineers of tomorrow, ha ha there is a lot of kids can run circles round me. ... Now they are writing websites and they are writing websites at 10, 11, 12 and they are learning html and all the computer languages and that's good. So you have a new web engineer.*

However negatives were also highlighted, as a number of participants referred to how they felt the internet has created new dangers for children and young people discussed in sections 7.7 and 7.8.

7.2.3 Disability

The experiences of those participants with disabilities (William and Dorothy) illustrated some of the key differences in the use of technologies. For these participants their use differed from the rest of the group. For the majority of participants in this study, engagement in technology was optional. This was not the case for these participants, as technology played a far greater role in supporting their lives in order to maintain some form of independence. Yet, there was also a difference between participants. William, the male with a visual impairment was far more enthusiastic about technology and engaged in far more different types of technologies compared to his female counterpart, Dorothy. Furthermore, the interpretation and definition of technology was far wider by William. The basis of these differences in terms of benefits and constraints is further examined in sections 7.7 and 7.8. As is asserted in the literature there is also evidence in the experience of William, evidence of the use of technologies provided by Telecare alongside continuing difficulties in accessing computers and the internet, which requires specialised support (Adam and Kreps, 2006).

7.3 Ownership of technology

Participants predominately discussed technologies in terms of what they personally owned, rather than what was available to them through local

initiatives and the personal computer was the most widely discussed form of technology in this way. However, not everyone in this study owned a computer. The most commonly owned form of technology was the mobile phone. Hence, through mobile technology all participants had some level of access to internet browsing. (Although participants had access to the internet through their mobile phones not many people could afford this). For the majority of participants, they owned a mobile phone before obtaining a computer due to affordability. Mobile phone technology fell in price considerably sooner than PC technology, making it more accessible. The entire group felt it very important to own their own mobile phone, although not all participants could afford to keep their phone in credit. However, this meant, even if they had no credit that they could be accessed in an emergency. Most participants reported that they had obtained a mobile phone roughly around about 6 to7 years previously.

> *John: When the mobile phones got a lot cheaper and that, we decided to get one, cos I mean you can keep in touch, you know. You can keep in touch when people are not in the house and that*
>
> *Dorothy: I own my mobile but it has no money on at the minute*

Participants thought it also important to own their own computers, although all were aware of public access available through such local venues as libraries. Three participants reported that they did not own a computer in this study. Two of these participants did have some form of access through local initiatives, however they were both very interested in owning their own resources. These participants, Margaret and Joanne, were both unemployed and both female; however they differed considerably in terms of age. Both reported that the reason they did not own a computer was due to financial restrictions.

> *Margaret: I'd like a computer. Yes I would love a computer of my own,.. I'm dying to get a computer or a big laptop*
>
> *Interviewer: Is there any technology you would like to own but don't currently have?*
> *Joanne: Laptop*
> *Interviewer: and that's the cost stopping you getting one*
> *Joanne: Yeah*

Most of the group referred to buying a computer and gaining access to the internet, relatively recently, in the last couple of years. However, ownership of this type of technology was not necessarily new for all participants. Two participants reported that they obtained their first computer over 25 years ago.

> *Andrew: Yeah. Way back. Were you like me, when it was the old Amstrad and Spectrum type things*
>
> *Mark: Well the first time I used a computer I actually bought one when I was in my 20's roughly about 25 yrs ago me very first computer was a Commodore 64*

However, these computers were predominantly designed for games and came before the arrival of e-mail or the internet. These participants had updated their computers to newer game consoles, but they did not necessarily engage in buying a personal computer before other participants in this study. Despite the fact that most participants owned a computer, the majority reported that, if they could afford it, they would upgrade their computer systems, indicating the poor quality of some of this equipment. Unemployed male, Mark, stated that although he had access to the internet through a dongle, if he could afford it he would buy broadband to improve his connectivity. Almost half of this group report that they would like to improve their connectivity if they could afford it. Both the issue of poor connectivity and dated hardware/software impinged upon the ability of participants to use this technology to its full potential.

7.4 Learning to use technology

7.4.1 Education

Although ownership was reported to be essential to participants when using computers, it was important within this study to find out how participants gained knowledge and subsequently skills in order to use these technologies. Whilst formal education was not reported to play a significant role in developing new technological skills (possibly because for nearly all of our participants this kind of training would not have been part of their compulsory education), knowledge of technology was related to other post-compulsory

educational institutions in the city. For six participants their initial experiences with a PC and the Internet were through a local college and for one participant from the University of Sunderland, illustrating the importance of initiatives located in these venues for inexperienced users.

> *Andrew: I did it through education. It was initially through college. It was um… Or did I? Well the first P… We had a PC here for years, but it used five and a quarter floppy disks, which were the large square ones.*

7.4.2 Family and friends

For the two disabled respondents and one of the retired participants, initial engagement came through encouragement and help from family and friends. This finding is illuminating as the role of local community services aims to provide a barrier free environment in order to support independent living. However, in the case of William and Dorothy, this does not seem to be the case, as access to knowledge of certain types of assistive technologies has been discovered informally (although this was not the case in relation to Telecare access). Dorothy indicates here a lack of knowledge about any alternatives to learning either by herself or through those close her. This is a concern as local initiatives could have usefully assisted her, particularly in relation to technical advice. This is also illustrated by John who states that all his knowledge of newly released technologies, are due to word-of-mouth.

> *Dorothy: Friends helped me with the laptop and the rest you just try and learn yourself…erm....don't really know of anywhere or anyone that could help me other than the friends*

> *John: It's usually when you say use the internet and somebody has accessed something it is done by word of mouth that way, if I need to find something out someone would say try this or you can get that off the internet or whatever*

This form of learning is also clearly present for the older participants in the form of inter-generational learning as mentioned previously in section 7.2.2.

7.4.3 Employment and Unemployment

The focus of digital inclusion is often around employability and for three of the participants it was the fact that they had become unemployed, which resulted in them gaining new technological skills. For John, his employer making him redundant gave him access to computer training to help with a future career and address the issue of what Postel-Vinay (2002) calls technological unemployment. This was subsequently reinforced by his local employment agency that sent him on courses to improve his technological skills in order to increase his chances of finding new employment. He reports that each short course was extremely useful which led him into a career in social care. This experience is somewhat mirrored by Mark. He is also in the process of retraining and gaining new personal computer skills at his local college. Although both of these individuals traditionally worked in heavy manual roles, they both decided to change their career and work within the social care industry. Although Mark has not been successful in gaining employment to date, accessing these courses will hopefully result in future career developments.

> *John: It might have been like the Job Centre and that as well, you know, what they do now when there's a big redundancy somewhere. They send people in and have job clubs and that*

In total five participants reported that they had gained their knowledge and skills of technology (specifically relating to the personal computer and the internet) from their employment related activities. Participants that were in professional roles from an upper working-class background had more access to technologies and in turn increased skills and abilities relating to new technologies.

> *John: I use the computer a lot more at work than I used to. I use it at home as well, you know, like you can buy things off it, you can set your insurance and all that, which I do... I mean now I've got to write like, you know, I've got to write support plans and that for service users. Whereas when I was at M, all I was doing was printing off tickets for jobs, you know. I'd print the ticket off, put it in where the jobs are and send it away, but now like I say, I've got my spellings a lot better than it used to be. I mean like you've got spell*

check and all that, but I can spell a lot more words cos I'm getting used to them.

As can be seen from the above quote, for participants that were in employment, technologies were suggested to play a prominent role within the workplace, and in developing their own skills. This can be identified as relatively recent phenomena, where technology is now used on a daily basis as part of working-class employment roles in such locations as the office, the call centre, but also the factory/warehouse. As this quote shows, these changes have effected how work is conducted for some of our participants in employment:

Andrew: In the job that I do at present, if I'm out on site and I need to take a photograph of something that is important, I can download it straightaway to the laptop. As soon as it's on the laptop, it can be sent to the relevant body...The laptop, I wouldn't be without. Before I didn't have it, it was a case of taking the photograph, bringing it home, and then send it, but by then I've driven 60 miles and the problem is still there.

Andrew highlighted the importance of developing new skills in his employment biography. This participant who had been involved in local initiatives reported that developing a career in IT transformed his socio-economic position. For Andrew the importance of experience gained through his various jobs and roles has bolstered his position as someone who might be categorised as 'digitally included', as well as providing him with a good career. However, this is not the case for the group in general.

Andrew: It was a case of people I come into contact with every day. I started life working as a lowly hall porter in a hotel [laughs] and worked my way right through the catering side so I couldn't go any further. Came out of that. Went into computers and been stuck there ever since. And then became a fund-raiser, welfare officer, health and safety officer and disaster management officer. Um and a radio communication specialist for the Home Office. Consultant for the in London. So yeah I've got a lot of these things that have fallen beneath because I come into contact with so many people down the line every day of the week.

7.5 Digital Inclusion Initiatives

7.5.1 Awareness and use of initiatives

While the majority of respondents failed to identify specific digital inclusion initiatives around the city or seemed to have made much use of them, upon prompting, it became apparent that some had utilised initiatives and services almost unknowingly. This raises the issue of how such initiatives are labelled and how they are marketed to residents – although it should be stressed that what is more important is the use of initiatives and benefits gained, rather than focussing on the fact that participants may not identify the 'correct' name for a particular initiative.

> *Interviewer: Have you been involved with any initiatives in the City?*
> *Joanne: [Pause]...Dunno....not really*

Awareness of initiatives was often limited to the more visible schemes, such as those which appeared (and disappeared) on the streets of their locality in the form of street kiosks.

> *Andrew: Well I've used them strange info points that keep appearing every year. This funny thing that's… Um I think there's one in the town and there used to be one down the sea front, but I can't remember where. And I think it's vanished cos there's a concrete mark where it used to be.*

> *Jenny: Seen them around [street kiosks] but don't really know what they are for, but I think they will probably tell you about the services available around Sunderland.*
> *Linda: I have also used the street ones where you can email it's like a street kiosk thing I have used them as well but I wouldn't say very frequently but when I have been at a push yes I have used them.*

Of all the participants, Andrew was more aware of available initiatives. This may be accounted for due to his social care work experience within the region and the social and cultural capital he has accrued through close involvement with a number of local council related bodies. This points to the importance of such capitals in any engagement with technology or attempts to engender such engagement as was stressed in section 2.5.1. Although, from the sample of participants, he may be in the least need of assistance to access such initiatives, he seems to be the most aware.

Interviewer: How long have you been involved in these initiatives?
Andrew: I am still involved and they are ongoing all the time, there is always someone will ring me up and say can you do this, mm especially the home access ones.

Apart from Margaret who has applied for a grant under the Home Access programme and had been made aware of this opportunity through her grandchildren's school (identified below as Computers for Schools), Andrew was the only person to know of this particular scheme. This was because he was directly involved with administering the same scheme elsewhere in the region. It is positive to see that Margaret's family are engaging with this opportunity and have clearly been made aware of this initiative through their school. However, as Margaret indicates here, there is still some confusion over what exactly they have applied for.

Interviewer: Computers for Schools you mentioned earlier, is that what you've applied for?
Margaret: I don't know what it is.
Margaret's granddaughter: It's a Government run thing isn't it?
Margaret: That's right. That's it. I've applied for it. I've sent everything off they've asked for, cos they needed my uh family allowance number and I'm just waiting to hear from them.

7.5.2 Importance of libraries

As with our quantitative data, the most utilised and recognised initiative were those provided by library facilities – which does reinforce the importance of locating initiatives such as Electronic Village Halls in such venues. EVHs were mentioned by some respondents, but none had actually visited or used the services offered. However, in their use of libraries it is clear that some participants may well have used EVHs but were not aware of it. This would also apply to those participants who have made use of the facilities at Swan Street such as Margaret's grandchildren. All participants had heard of the computer suites in the city libraries and some had used the facilities, especially those who had no computer or internet access of their own. This does say something important about the value of these resources, which are easily recognisable and long established within communities. They are not resources which have such a limited life span compared with some of the

other initiatives. As well as those participants mentioned below, use of the mobile library was also brought up by Jenny who used that resource frequently for books. However she did not access any forms of technology through that facility.

> *Linda: I was using the library a lot because I didn't have the internet at home so I was using the library for the internet their err...have been using that for about 6 or so years now so I am kind of use to using it.*
>
> *Andrew: I mean the only centre I've attended, but that was a while ago, was the centre that's attached to the side of Doxford Park Library, but it never seems to be open…I use to go every Wednesday without fail, Wednesday afternoon, to Fullwell Library, and they had four PCs in the library.*
>
> *Margaret: She's gone up the libraries if she's needed something off the computer haven't you when we've needed maps and things like that. C did, wasn't it?*

7.5.3 Telecare and health related initiatives

Telecare was acknowledged as a significant initiative by older and disabled participants and by those with family members who had used the service. However, it was not until prompted that it was acknowledged as a form of technology at all. The value of such initiatives is clearly very high for those involved. Andrew in particular described how his mother's house was fitted with a range of Telecare based technologies to help her with her condition.

> *Andrew: Well...that helped me mam for so long, mum had dementia and we lived in a prefab and because I was out at work all day we fitted some seriously strange technology in the house. Test bed, the house was used as a test bed.*

Such alert and alarm systems have also been seen as important and useful to William and potentially to Dorothy. William also indicated how he was able to develop his use of computer technology through a course made available through a local college within the city, using assistive technologies in terms of word processing and other basic skills. His enjoyment and appreciation of this opportunity is clear in the following quotation. William was also able to access technology through facilities made available at his local Age Concern centre.

William: Word processing and that yeah. But I thought, I loved it. And there was one time, I think it was round about 2002 or 2003, um instead the college closing down, the put the Summer Experience on, and when the college closed down, that kept open for six weeks until September till the colleges start again. And I used to go over there and they put taxies on and everything. And I used to go up there 10 o'clock in the morning and come back 5 o'clock at night. And I went there for six weeks and I absolutely loved it.

7.5.4 Customer Service Centres

Customer Service Centres failed to be acknowledged until prompted however, very few respondents had utilised the forms of technology offered by the centres. The most identified were Bunny Hill and Sandhill View, although this could be as both have medical centres attached with respondents having utilised the medical services there. It also needs to be recognised that they have libraries attached with computer facilities and these may have been identified as separate from the Centres. Linda shows here she has used these facilities, but not in order to access technology but as part of her job for the council.

*Interviewer**:** I don't know if you're aware of the new customer service centres, have you ever used any of those for anything?*
*Linda**:** [Pause]...I know there is something up at Bunny Hill I have with us working for the Council on the crossing patrols and part of that we done an NVQ and we had to do equality and diversity with that and we were up there but that was the first I knew about it really*

7.5.5 Digital Communities

The Digital Community established under Digital Challenge at Swan Street in Southwick was also recognised by some participants. Those with children (Margaret) in the family and living on the North side of the City, close to this centre, had heard of and used initiatives based here. However, this was related more to the fact that the children in this family attended youth clubs ran at the centre and through this attendance raised awareness of other opportunities at the centre including the ability to make use of the computer suite.

Interviewer: The initiatives that we've mentioned, I think you mentioned Swan Street and stuff, have you had any involvement in any of them initiatives?
Margaret: They have yes, because they go there and they go on their trips. What do you call it?
Interviewer: And can you access the computers when you're there?
Margaret: Aye. I've had to fill forms in for them, for them to be able to use the computers.

7.5.6 Barriers/Disadvantages to use of initiatives

A key issue which prevented participants from accessing available digital inclusion initiatives was a lack of knowledge about what they were, where they were located and what purpose they served i.e. how they could enhance their current level of engagement with technology and provide benefits. The importance of ownership of technology and having the freedom associated with such ownership is clearly significant in terms of the value attached to accessing publically available initiatives, even if the quality of publically accessible resources is better. The value of ownership is an area which is difficult to address – but indicates why some initiatives may not be successful.

Some of the initiatives that had been implemented and used had also finished or run out of funding and respondents were not aware of similar schemes commencing in the near future. In these cases skills, confidence and benefits gained can be seen to be at risk. William for example, noted that courses he had attended at the City of Sunderland College, which had enabled him to build up his computer skills had been stopped due to a lack of funding. This is particularly important in his case as he requires specialist assistive computer equipment to make use of the technology in any meaningful way.

Jenny also explained that she had accessed a scheme ran by the local housing association; Gentoo, specifically focussed on the needs of the elderly in their use of computers and the internet, but the issue of sustainability is again identified as a barrier to continuing engagement. The short-term character of such schemes is identified as a major drawback of any attempts to engage digitally and socially excluded groups.

Jenny: I say I started a ten week course just before Christmas but they have not continued them
Interviewer: Is that the course in the flats?
Jenny: Yes they were all pensioners you know
Interviewer: So who ran that?
Jenny: Ah it was someone from Gentoo, they ran it but we are not sure if they are going to finance it again we would have heard if they were

A key barrier highlighted by older participants in relation to the use of initiatives in any way, was a feeling of low self-confidence, intimidation or feeling as though they were being left behind. As noted in section 7.2.2 the idea that technology is for the young is pervasive.

Jenny: I am always afraid in case it is younger people

Andrew identified two other barriers and drawbacks to using public facilities including the limited time available when slots were booked at computer suites and limitations related to the type of internet connection available – for example the Digital Community initiative through Swan Street supplies dongles as its form of internet connection – which is not as advantageous as a more permanent and high spec connection.

Andrew: There is not enough access time if you are using somewhere like an EVH you only have an hour or so if that as the computer is booked if you are using a library you might only have an half hour or an hour tops. So you only have that facility for that time. If you are using a laptop that has wifi or you are having to use a laptop that has a dongle then you are limited to where you can use it because the band does not cover all the UK.

7.6 Public Services

7.6.1 Use of public services online

Respondents were aware that some public services could be accessed via the Internet. However, only a few had accessed the services and identification of specific local services was limited. Most were aware of the online services offered by Gentoo Sunderland although few had accessed them online with

the preference of contact made via the telephone or in person, particularly for the older participants. The majority of participants noted they might use the services if they had direct access to the Internet and if they knew how to do it. However, there were more positive stories. One respondent had utilised the Council services online to access employment opportunities and it was through this, in combination with telephone contact that led to her part-time job with the City of Sunderland council.

> *Linda: Yes, Yeah, I have actually been err when I applied for the job of crossing patrol I had me stuff emailed and I was able to access it that way, I know you can access the job vacancies and get the err applications forms off there*

Some of the respondents were also aware of the HMRC website, one of which noted she was sign posted from the City of Sunderland website and this enabled her to check out her income tax details. The Directgov website was another key service identified by some respondents, but only a couple had utilised the service for information. Again, because of his interests, his employment status and roles within the community, it is Andrew who seems to be more comfortable and more familiar in accessing these kinds of services online.

> *Andrew: Yes, cos I do all the time, I am always on the Gentoo website as I am a panel member for some of the Gentoo groups and I use the council websites. In fact I used the council website to set up my direct debit for rent and my home insurance, I don't bother with council tax. I set up council tax through digital banking so it would have been done online…Yes, Directgov, HMRC, whatever yeah, motor-bility as I have a motor-bility car. The directgov site I use a lot as being an RAF welfare officer I need up to date information all the time*

Older participants were aware of some of the available health services online but had not used or accessed the sites.

7.6.2 Barriers to using public services online

The main barrier highlighted by respondents was not having immediate or any access to a computer through which to access online services. On the other hand some participants did have such access, but were not aware of the

public services that were available. What we see is a combination of lack of resources, knowledge, information and necessity combining to exclude some residents from this process.

> *Joanne: You mean like go on the sites and stuff*
> *Interviewer: Yes*
> *Joanne: Ah aye but I have never been on them*
> *Interviewer: Why?*
> *Joanne: Dunno just never had to pause…*

> *Jenny: No no I can't I haven't got a computer …Oh I think you should have the option because I mean not everybody can you know I mean I would love to be able to learn*

> *Interviewer: You don't access any services online, is there a reason why you don't do that?*
> *Jim: Well I'm rather old fashioned, that I do not believe in uh…*

The potential for on-line contact with residents seems particularly relevant for participants with disabilities. For William, the issue of receiving information from the local council in written format remains a problem. If he received this information in another more suitable format, either in Braille or in the form of electronic mail, his interactions with the local authority would be more straightforward and his privacy would also be maintained. Despite contacting the council on numerous occasions, letters are still sent to him in print. It was clear this was distressing. This is an area which needs to be enhanced if the council are going to maintain adequate contact with some of the more marginalised members of the community and develop the use of technology in explicitly beneficial ways.

> *William: I've been complaining about getting print. I said look, it doesn't matter if it's 6 inches big the writing, I still can't see it, and you send me letters. And I said I've got no privacy. I've got to either take it to my sister or show it to the neighbours.*

7.7 Benefits of technology

Drawing on the literature in section 2.3, we set out the key social inclusion benefits from having access to technology and the need to make these benefits a universal reality. As with our quantitative data we found that some of these themes, particularly in relation to employment and education but also

independent living came through, although some areas were absent, particularly in terms of political participation, the development of language and social skills, and the use of health information online. Other key themes were also indentified from our sample including: the enhancement of hobbies and interests, the value of community venues and the future, if not current, possibilities of technology to the improvement of quality of life. What these emerging themes suggest is a way of thinking about quality of life which isn't necessarily related to formal definitions of social inclusion and which is sensitive to the socio-economic positions of our interview participants.

7.7.1 Social networking

As ownership of mobile phones is widespread among our sample, this appears to be the main way in which participants communicate with others. However, even though mobile technology is now cheaper, for some participants it was a struggle to keep their phones topped up with credit, which clearly constrained their ability to communicate in this way:

> *Interviewer: Which is the most important form of technology you use?*
> *Dorothy: My mobile although at the minute I have no money on it but at least people can contact me*

One of the most important roles of mobile phone and personal computer access was to facilitate contacts with family and friends either through emails or social network sites. These technologies increased social networking allowing families/friends to keep in contact especially for people that have moved to a new geographical area. Social networking sites were also important for those who were unemployed or retired and had reduced resources. This meant they could keep in contact with relatives which otherwise would have been restricted due to financial implications.

> *Mark: Well I am using the laptop more with Facebook, and more with job searches but that's with me circumstances and being out of work you know If I was at work I wouldn't be using Facebook as much, for obvious reasons and I wouldn't be doing job searches you know*

Sheldon (2004) suggests that for some people living with long term health conditions the use of technology adds to a sense of social isolation. However, for Dorothy access to social networking sites and emails were a vital part of life in order to reduce her social isolation. Due to the nature of her illness she suggested that if it were not for social networking sites she would have very little contact with the outside world. Although this does illustrate positive outcomes, this narrative also draws attention to certain failures in community services which have allowed individuals to experience these levels of isolation in the first place. Although technology can be an important tool to assist individuals it should not be used to replace human interactions which are more beneficial long term.

> *Dorothy: Oh yes I can now contact family in London where before I had no contact, I also can talk to them on Facebook and see pictures stuff going on it's great and my emails you know with friends and family*

There is also a recognition by Jenny that the benefits of, technology in this regard are felt more by others than themselves. This issue is particularly seen in terms of age – with younger age groups seen to be making greater use of such opportunities to communicate through the internet. It appears as a generational issue related to experiences of not growing up with computers and a subsequent lack of familiarity and confidence in the use of such technologies.

> *Interviewer: Do you think the use of technology could improve your life?*
> *Jenny: Yeah I think it would, yeah, yeah*
> *Interviewer: What benefits have you got from using different forms of technology?*
> *Jenny: Well I don't think I have used them long enough really, no, no, well when I go to my daughters you know she keeps in touch with her cousins in Greece and they are always on Facebook telling you all the latest you know she rang me up saying A has had the baby it's on Facebook*

Even for those older participants who do use Facebook, there is a hint of embarrassment or shame at engaging in a form of technology which is seen to be for younger age groups. We might think about the use of Facebook as taking place along parallel lines for the different age groups – with slightly

different purposes and usage patterns. Again, we see that the ability to catch up with old friends and colleagues is viewed as a key benefit in engaging with this technology for those in older age groups. This may explain the low engagement rates for older people for social networking revealed in the quantitative data.

> *Interviewer: Have you ever used Facebook or any of the social networking sites or anything like that?*
> *John: Aye. [Laughs] I've got, well I've been on Facebook like. Bairns are all on it. Both of them are on. And I've actually met people from school who I haven't talked to for years. People who I used to work and everything at [former place of work] you know.*

As Andrew illustrates here, the older age groups appear to make use of this medium as a form of reunion and reminiscence, as opposed to an everyday form of communication with friends and family in the geographical vicinity or as a blog of daily activities. This is along similar lines to the purpose sites such as Friends Reunited and Andrew mentions here that this website still plays an important role in his social networking activities.

> *Interviewer: What benefits have you got from using your technology?*
> *Andrew: Mmm, erm. I am on Facebook so I have contact with well through using online erm Friends Reunited or msn groups as it used to be we now have a page for our old school which we created and it lets people know when the reunions are and where they are. So people keep in touch that way yeah social networking great. Erm I use Facebook erm more than the others.*

Others forms of technology are also used to keep in physical rather than virtual touch with family and friends. For Mark more mundane and everyday forms of technology such as his car enable him to keep in contact with family which is spread over the North East. The car, not an obvious form of technology in definitions of digital inclusion, is seen to be an important tool which is used, as much if not more than items such as the computer and the mobile phone, to improve the quality of life of Mark on a both a social and emotional level.

> *Interviewer: What would you say is the most important form of technology own/ or use?*

Mark: Me vehicle
Interviewer: Why?
Mark: Why? Well transport for seeing me family…just general transport because me family does not live that close really…I keep going on about the car but minus the car err, yes it has improved, well err access ability I mean for instance me daughter is in Middlesbrough so I can contact through her mam by the internet well she is only two you know things like that err mobile obviously to keep in contact if I am out me phone is on 24/7 so if me daughter is ill I know I can get a call you know.

Margaret also points to the fact that computers can also be used to continue with more traditional forms of communication, such as using word processing software to write letters. However, at the time of the interview she did not have access to a computer which would allow her to do this. Although historically she was able to access a computer through her workplace, this is no longer the case and access for Margaret remains a key problem in realising such benefits, for her, these are only potential and possible benefits at this moment.

Margaret: but if I had a big one, like when I had the computer, and I did have a computer, I could work it then. I could write letters on it, but I would like one so that I can talk to my friends in Wales and, you know, and it's good for these kids.

Social networking is often posited within the policy rhetoric as a way of bolstering community cohesion and of establishing new forms of local democracy and political participation within socially excluded communities. However, the character of the use of social networking in our sample indicates a very different pattern of outcomes. Participants do not necessarily use technology to contact new people or those they have never previously engaged with before. Rather, its use in this way enables the maintenance of those social relationships which are already established such as those with friends or family. Even if these technologies involve contacting those in distant places, many of these relationships have some historic and personal basis – such as college or work reunions mentioned above. Dorothy here talks about the important of using technology to stay in touch with friends and family through a number of different forms of technology. *Staying* in touch, rather than *getting* in touch seems to be a significant distinction.

Dorothy: Oh yes I can now contact family in London where before I had no contact, I also can talk to them on Facebook and see pictures stuff going on it's great and my emails you know with friends and family

Where new social networks are established, these may not be local in character and may not necessarily help to build forms of localised social capital. For example, as John points out here, the internet has enabled him to play around, attempting to find those with his own sir name in distant countries out of a form of curiosity rather than out of any form of political activity or social concern. Such benefits though should not be underplayed. The ability to broaden horizons in this manner is an exciting development for many of have not previously had the opportunity to explore.

Interviewer: Do you think that's affected your life? Do you think it's changed you, like using the social network, do you think they're a good thing or a bad thing?
John: No. I think they're a good thing like. It's uh… I mean like I say the first thing I did I went in and put my name in to see if I can find somebody with the same name like. And someone in Australia. I mean he's not on now, but I put him down as a friend. He must have thought weird this like. Somebody with the same name the other side of the world. You know what I mean? Just something like that. It's strange.

7.7.2 Learning skills and confidence

Learning skills and gaining confidence is one of the key benefits attained through the use of technology for our participants. In an economic context where the importance of having basic ICT skills to enter the labour market at any level is becoming more important, this is a social outcome which is clearly valued. This is particularly the case for those who have engaged with some form of formal technology initiative, in terms of developing employability (which is a contradiction with the quantitative analysis which emphasised the importance of informal learning networks outside of formal activities). As John and Jenny demonstrate here, not only were there tangible skills developed such as the knowledge of computer hardware and software and qualifications, but also more intangible capitals such as belief in themselves that they were capable of using such technology to their own advantage. For

John this was developed through a course put on by his employers and for Jenny this was through the use of a local library based computer ran by Gentoo. While John needed new experience and qualifications for future employment, Jenny's concerns and needs were more personalised given her retired status.

> *John: Like I say, I was probably more confident when I was doing it and that. I was learning something, plus I was getting something at the end. I always think if you go somewhere and you get a piece of paper to say oh you've done it, I think that's better than just saying to people oh I've done this like. Well have you got any proof like? So I always like to get something at the end of it.*
>
> *Interviewer: What advantages did it have for you?*
> *Jenny: Ah it was building up the confidence to try different things you know you are always frightened in case you cancel everything but they you know I would have definitely erm…Oh I think it gives you a bit of confidence you know that you are learning the computer you know*

As with social networking, some participants such as Joanne indicated that the educational and employability benefits of technology were not something which was seen as relevant. While lifelong learning has become an important part of the educational agenda, it is clear that the development of skills through the use of computers is more often related to the educational needs of the younger generation and the demands placed on them to succeed in this area.

> *Interviewer: "What benefits have you got from using different forms of technology?"*
> *Joanne: "mmm [pause], for bairns aye there is a lot of sites on I mean me son uses this maths site and it's good he sits ages on there you can work up different levels and stuff it's good*"

7.7.3 Employment

Not only does technology provide some of the necessary skills needed to participate in the current UK economy, but it also benefits users in terms of locating opportunities to work. Some participants, for example, saw the benefits of using the internet in order to search for and find available jobs in

the local area. In the case of John who works in the social care sector, he used the internet to search for his job and has gone on to be successful in securing that position.

> *John: But I went into it like and I got a lot of information. It did help us. I know I got the job, but I got a lot of information off the actual council website for that job. Plus like I say, I've got…You can get like the jobs what we get in the office that come on the computer, you can get them jobs off the council website and that.*

John also points out that without other forms of technology such as his mobile phone he may not have secured his current position. The ability to be contacted wherever you are has, from his own perspective, benefitted him. While ease of contact does have its drawbacks, and it is unlikely that the job would have been immediately passed onto another candidate, John was able to make the most of the employment opportunity presented to him.

> *John: I mean I was in the middle of ASDA once when somebody rang up, oh you've got the job and things. Whereas if I uh… if I hadn't been in the house and they'd tried to ring us, they might have given it to somebody else.*

As discussed above in section 7.6, Linda was also able to use the internet to search for employment and through the job information on the local council site, was able to secure a part-time position.

One participant who had been unemployed for six months prior to being interviewed was also using the internet to search for jobs as well as to access educational qualifications to increase his employability. Due to shifting employment demographics, Mark felt that in order to acquire a job he would have to retrain as his factory skills had now become redundant in a region increasingly dominated by the service industries.

> *Mark: Every day I use errrrr the laptop for job searches...With us being out of work and doing courses I do a lot more job searches and like a course in childcare and all that so I am trying to research the qualifications you need you know*

However, as Mark points out, although job opportunities may be available on-line and he has been able to attend a series of courses through the local Job

Centre, this does not necessarily mean that individuals will be successful in securing those positions. The fact that a new source of information exists in this way does not alter issues in relation to qualifications, to ability to meet criteria and a range of other factors which would influence whether someone was successful or not in securing a job. While technology opens up new avenues of information and opportunities to train, many of the barriers to employment are still in place.

> *Interviewer: What benefits have you got from using different forms of technology?*
> *Mark: Well not at the moment, I have applied for a few jobs over the internet but no response, that's the same with millions though you know*

For those who were in employment, some participants saw the benefit of technology in their current jobs. In this sense technology helped them to do their job more quickly and more conveniently and in the case of Andrew who works for Avon, the use of technology made his job more efficient and resulted in cost savings to himself personally:

> *Andrew: I sell my Avon to people all over the place so it's people you meet that becomes customers, you had to go to the place to put orders in now they text them in or phone and over the internet reduces the cost of petrol. I have a diary that is full so it makes life easier. Can hold meetings with conference facility it is much easier.*

While the benefits of technology were recognised by a number of participants within the work context, the fact that its use had become a *necessary* part of employment today was emphasised by some. Technology in this sense didn't have a value attached to it as such, but was something which needed to be accepted as part of an emerging culture of employment. For example, Margaret talks here from the perspective of young people today who require the knowledge to use technology if they are going to be able to compete for employment at any level. There is also an issue here in relation to the importance of the work place as an intensive site of learning about the technologies – where the necessity of technology in today's society is reproduced.

Margaret: Yeah. Well for one. They're not going to get jobs if they can't deal with day-to-day of things. Everything these days is computerised. Even if they go to work in a shop, a till is computerised. When they put the clothes out now, it's all computerised isn't it. If they do stock checks, like years ago when you worked in a shop, I worked in a shop, and you did a stock check, you had to count and put it in. Now you only have to go like this with a machine

7.7.4 Financial: buying and selling

One of the key benefits which (also identified within the quantitative data), specifically in terms of access to the internet, is the ability to buy goods at a cheaper price, therefore saving money. This is illustrated by the daughter of Margaret, and by Joanne who points towards the use of the internet in order to compare the best prices.

Margaret's daughter: Well she's getting her prom dress off there which is like um less than half the price of what she would pay in the shops, cos we're going to get it ordered. Cos like we've ordered hers. It was from China wasn't it? Hand-made and it was less than half the price. So we're doing it with her this week today…It's saved us a bit of money.

Joanne: Yeah, Facebook aye, I used to go on often but not now ... Ebay, just to browse really I love browsing, I use Argos at Christmas especially, aye, it's easier… shopping and that, finding the best deals

In a similar way, John has also used the internet to his advantage by firstly physically visiting to the high street stores to identify and inspect goods, and then by using the internet to purchase the goods, thus saving money.

John: I've bought my cooker and that off, you know, I've gone into a shop like that and I've wrote down the model, oh I'll be back later. And I've checked it would fit and then straight on the computer.
Interviewer: Cheaper?
John: Save myself hundred quid. Just sent away for it

Surprisingly, only one person had used the internet to buy their weekly food shopping and none of the older participants had begun to use their PC's for food shopping. These participants reported that they preferred going directly to the supermarket, but it may also be related to the need to hold a bank

account and debit card to shop in this way. In relation to the person that had ordered their food shopping online, he also stated that he preferred to go directly to the stores. That physical element to such interaction is still highly valued by our participants.

There is also the issue of value for money with regards to technology as an expensive resource and therefore as a form of investment. John expresses the opinion that the money spent on buying their computer has been of good value when he considers the amount of use he and his family get out of the equipment. The fact that multiple family members use the same laptop, indicates the extent to which these technologies are shared amongst some families and the constraints this might place on use and the quality of engagement with technology.

> *John: And it gets used a lot. I mean I know one of them's got their own laptop, but she's on like one of these uh ones where you can only go on for so long. So she still uses mine. She still fills mine up with stuff. But the other one goes on. So mine gets, you know, the money's well spent on ours. But like somebody probably on their own and never use it much, probably a waste of money like.*

Another key theme is that of using the internet to actually generate or make money. This is particularly seen in the case of Andrew, who is one of the more engaged and confident users of technology in the sample. He uses the website E-Bay specifically to buy and sell goods across the UK and beyond as a form of informal business. His level of engagement with technology though is worth re-iterating, as this form of engagement is not something which any of the other participants are involved with.

> *Andrew: The main thing for having an advantage with the internet I have found is that it has opened up a new world it not allows me to sell what I no longer want on E bay I no longer have to take it to a shop and get a silly price for it. Stuff goes all over the world I am sending something off to Romania, what is a waste of time to me other people want it, so it makes me money. PayPal is one of the better formats for payment now; I can leave money where it is now and use it as I want to buy stuff.*

7.7.5 Independent living

Surprisingly the quantitative analysis revealed that those with disabilities (over a third of our sample) did not engage with assistive technologies to any great extent in the city. Although the significance of technology was not identified by many of the interviewees in their original definitions of what technology might be, as some of the interviews progressed this issue was raised, particularly with reference to old age. For the older participants, the issue of using technology, particularly in relation to the use of computers on a regular basis, as a tool to ensure continued mental health was also mentioned as important, for example, by Jim:

> *Interviewer: I suppose it keeps you active doesn't it?*
> *Jim: Well that's it. Keeps your brain active. I'd say that's the main thing.*

Andrew indicated how his mother's house was used as a test bed for a variety of Telecare equipment which had some clear benefits in terms of the ability for her to live independently despite living with a form of dementia. There were limits to these technologies though in terms of the fact that her condition became much more advanced and the technologies did not become adequate to serve their required function. These kinds of benefits are perceived to be especially important in such circumstances – as can be seen in the expression 'Technology is great' in the excerpt below.

> *Andrew: Well...that helped me mam for so long, mum had dementia and we lived in a prefab and because I was out at work all day we fitted some seriously strange technology in the house. Test bed the house was used as a test bed. We fitted mats pressure sensitive mats underneath the carpet so if she went to the front door it prompted the phone to ring so when she answered the phone, a tape said mam, I am on my way home do not go out. That did it for so long then on the outer door in the porch there was another mat which said where are you going I have told you I am on my way home stay in so she would go back and sit down. Then she started using the back door. So we wired the same to there but that used a wireless link to make the phone ring. We used it through care in the community but it got to such a point where she was not taking any notice of the phone and different things had to be tried or she went walkabouts. In the end it did not work. But eventually she went into a home but all the*

technology we used we took out and gave it to the home and as far as I know they are still using it. Technology is great.

However, this example should be seen as an extreme example – not all of this equipment would be found in those households engaged in the Telecare programme in Sunderland. And once again the situation for Andrew – someone has developed both knowledge and social capital in relation to his working life is very different from some of the other participants in the sample. What this does illustrate though is the possible discernable and high impact benefits in this area of 'social inclusion' in terms of independent living.

In relation to the experiences of both William and Dorothy, the benefits of technology in relation to positive health outcomes are clearly at their most explicit due to their long term disabilities. Although he has a range of Telecare equipment, and equipment in relation to audio-visual requirements, for William his mobile phone is identified as the key technology which has improved the quality of his life. He views this as a 'lifesaver', particularly in situations where he finds himself isolated, disorientated or at risk.

William: I've got my mobiles aye. I think that's brilliant cos if I lost my bearings on a night or if I miss the last bus or whatever, I'm not out very often very late, but if I miss my bus, the last bus or something, I wouldn't know where to find a phone box, it's handy to carry around with you.

This differed for the female participant whose chief concern related to isolation. Like her laptop her mobile was another type of technology that allowed her to keep in touch with her peers and reduce isolation. William and Dorothy both identify the Telecare systems in their homes as important to their safety and their independence. While Dorothy is less familiar with what the Telecare is and what it could potential do to help her quality of life, William is very much used to have this support system in place. This idea of reassure and safety is related to his impairment but is not something which results in physical quality of life health benefits. This seems to be more about peace of mind.

Dorothy: Independence in being able to talk to family and friends and that but as for my health would rather see a doctor face to

face, but I might be getting them cords and that, well I hope, pause .... make me feel safer if I fall you know"
Interviewer: You mean Telecare?
Dorothy: Is that what it is, yeah but not quite bad enough at the minute, got my bungalow though so can't moan

William: The care alarm, and there's um… I've got a thing on my door, next to the door, it's like a door bell, it's for bogus callers. If somebody comes, bogus callers, I've got to press that and they don't hear us press it, but there's some… I've got… The set, it's behind that carbon monoxide meter in the corner there, behind there. If I have an accident I'm supposed to wear a pendant round my neck, but I haven't needed to at the moment. So if I was out in the garden and I had an accident, I could press that. Or say I broke my leg in the garden, I would press that and they… if they got no response when they call us, they would send a warden up. So that's a good thing, but…

For William, technology is used as a form of security and protection against possible intruders and given the vulnerability of this participant on the basis of his impairment it is understandable how this may be a method of reassurance and safety. The use of security lights is one way in which William uses technology to his own benefit – also aiding the anxieties of family members concerned for his safety.

William: I mean on a night time I've got a stereo upstairs as well. And I've got a plug in. Well there's one in there. It's a timer. I've got the light. That little lamp on the corner. I wouldn't have bothered at all, but my sister said look, if anybody comes they'll think you're not in, cos I can walk around the house without the lights. I never used to use them. So I just got that lamp and put it on a timer. So it comes on a certain time. And I think that's good. Well I've got one on the radio upstairs. So seven o'clock in the morning it comes on, just before seven, and it's on an hour or so. And on a night, eleven o'clock, just before eleven it comes on, and then it goes off just before twelve.

Overall the various technologies William has in his house seem to make his life and living with his impairment a lot easier, less stressful, less physically demanding and more convenient. As he reflects here, without the Telecare system, listening devices, alarms and automatic timings on equipment such as his radio he would not enjoy the quality of life to the same extent. The benefits for William of technology seem far more apparent than for some of the other participants. This is about the experience of living with an

impairment and in that sense is related to issues around health, but on reflection is more to do with improvements in quality of life and general well-being.

> *William: It's made things much easier. Um it's improved a lot cos I don't think now I could… I couldn't do without them. If I was to take everything out the room, I'd be lost. I couldn't do without them.*

Furthermore access to a personal computer had increased his ability to organise his life in general. However, access to his personal computer would not be possible if not for certain assistive software. For instance his computer was adapted in order to allow him to listen rather than read the text on his screen.

> *William: Just the computer. Then they've got Supernova, which I'm on Supernova in here, but there's some .... I'm just used to the Supernova... Well we've got… Like the blind, we need the voice. But sometimes there's one called JAS, that reads more out than Supernova. And sometimes Supernova reads more out than them. ...Anyway, I've just found out how to get lyrics on Supernova, so I don't know. It depends what you get used to I suppose.*

7.7.6 Convenience and time

The convenience of the internet is emphasised by some participants, especially in contrast to other sources of information and other forms of technology. Recorded messages and queues on phone systems as sources of information and interaction with public service representatives and/or companies are highlighted here as inconvenient, impersonal and time consuming. The internet for Linda and John is seen as a preferable alternative.

> *Linda: You can find out things a lot quicker and at least you are not being held in queue on a telephone or anything having to punch numbers in before you speak to someone really but you know...*
> *John: I've probably saved us a lot of time. A lot of time. Definitely a lot of time. Instead of running around looking for car insurance, being on the phone for about three days a year. You*

know, I mean you've just got to go on the websites and they do it for you. You know what I mean? Saves a lot of time…I suppose it has made it easier to access information and to find where things are really it has made it easier in that respect

More than anything, use of computers and the internet has enabled participants to remotely access services which they would have had to physically visit in the past. This is viewed as a saving in terms of time taken and the inconvenience of travelling from the home to access services and information. It is worth noting however, that this convenience of more often related to commercial rather than public services.

Interviewer: Would you say your use of technology has improved your life?
Andrew: No, I wouldn't well in retrospect I would have said yes because it's made well there is more services available to hand you can use your laptops, phones and get services available to hand.

John: I mean if my computer's ever off, I can go into Nationwide and I can log onto their computer, but they have a computer in there and you can log on and transfer money and that. I don't go into the bank now. I just use my computer.

7.7.7 Hobbies and interests

A further theme referred to how individuals used technologies in order to assist them in developing or supporting interests and hobbies ranging from astronomy to photography and music. Interestingly, the people that put most emphasis on the importance of technology for such interests were those with disabilities and retired or unemployed participants. Again this illustrates how people's engagement with technology often seems to reduce isolation and assist individuals in the development of social networks. This is highlighted by William not only providing internet access for searching (written) music to play on his guitar, but his PC also had a Braille printer. Hence, this allowed him to search, find and print music which he could read and then play. Furthermore, he reported that this did not only benefit himself but he also printed up music in Braille for his friend who did not have access to this technology:

William: The computer, I use it not every day, but I use it regular. Um looking… a dabble with a guitar. And I print songs out. I like to Braille them and I Braille one out for my friend

The benefits of technology are seen in terms of the fact that an interest or hobby is generated through the use of computers and the internet. This can particularly be seen in relation the experiences of the young people referred to in some of the interviews. More often though, for the participants interviewed who were older, what the use of technology enhances is those interests individuals have already established as is illustrated in the case of Jim.

Wife: Even gardening.
Jim: Oh aye. I mean I go on a lot for the gardening.
Wife: You used to have an allotment didn't you.
Interviewer: Oh did you? That's what I'd love to do [laughs].
Wife: Oh aye. An allotment down there.
Jim: Oh I have.
Interviewer: So do you use the internet for your gardening stuff as well?
Jim: Yes. Aye. Aye.

It is also interesting to see how Eleanor, the middle class participant, made much greater use of technology in this way - to enhance and develop her own interests and the interests of her husband. Technology is seen as an integral part of many of their hobbies and relates to the vast array of technologies they own, including the GPS and internet to plan and monitor their walking excursions as well as her husband's interests in shipping which is reproduced through use of the internet. With the exception of Jim above, the use of technology in this way is not so evident in the rest of the sample and again reflects a specific educational and employment history as well as greater disposable income.

Eleanor: …definitely if you take the walking the GPS if we hadn't got the GPS when walking in thick mist…take my husband his photography that is amazing…the only recent thing is the IPod that my husband is using more in relation to his interest in ships and he can look them up on that via the internet to see what it is where it is going etc ...the other thing is maybe you can get an application for the IPod where you can hold it up to the sky and it tells you all the constellations…and we want a telescope so we can see the other fells, yeah a big

telescope and we will get a clearer view of the sky there so...

7.7.8 Physical venues

It is not just technology itself which is seen to provide quality of life benefits, but also the community infrastructure which supports and provides the opportunities to access such technology. This is particularly evident for the experiences of young people in these most socially excluded areas of the city. The youth clubs and community centres for example where such facilities are based provide an important service of keeping young people occupied and engaged with other young people. In the case described below, Margaret explains that for her grandchildren the availability of such venues also provides a refuge from other more harmful activities and from harassment by the police. The availability of computers is seen as secondary bonus.

> *Margaret: It's give them all something to do, plus it's helping with computers and that's there if you want to access them. Cos if not, they find somewhere and they get a bottle and they sits and drink…If they didn't have places like that, I mean all the police are doing, all the police ever did, I moved from Southwick, and I've only been down here eight weeks, cos I was sick of being picked up and told to move on. And I've had to go out and say they're not moving anywhere, they live here. Go up to Thompson's Park. I said yeah that's right. She went up to Thompson's Park three years ago and a fella tried to get her.*

7.7.9 Excitement

We also need to be aware that not all benefits of technology are constructed through a conventional social exclusion framework. Technology is not only beneficial in areas such as employment and education, but it is also has an emotional element to it. Technology is something which can be seen as thrilling, interesting or exciting – something which is for some people, ultimately enjoyable and perhaps even a distraction or a relief from boredom. This is particularly the case for some of the young people referred to in the qualitative interviews in terms of their use of games consoles and social networking sites. Here Joanne and Margaret, makes a clear reference to such alternative interpretations of benefits to the quality of life:

Interviewer: Do You think technology has improved your quality of life?
Joanne: Mm, it will be all 3D coming soon... I dunno if it improves your life but I think it's more exciting!

Margaret: I'm dying to get a computer or a big laptop so I can…Cos it'll take hours for me. You know, it would be hours of less boredom

7.8 Negatives, constraints and drawbacks

Although not recognised as a strong feature of the quantitative analysis in section 6, there were a number of negative aspects in the use of technology as well as barriers to access identified within the qualitative research.

7.8.1 Confidence and skills

Although most participants engaged in new forms of technology, this did not seem to have an impact on some of their confidence and skills. With the exception of two participants who were from higher socio-economic positions, all reported that they only had limited ability in using these forms of technologies. In general these participants reported that they only had a very basic knowledge when operating technology at home and in the workplace. It was those from higher socio-economic employment roles, such as Eleanor who demonstrated more confidence and knowledge in the use of these technologies.

Linda: Sometimes I feel fine with it but then other times I feel like I am banging my head against a brick wall because I don't feel like I am getting anywhere with it you know

Eleanor: I went into IT and ended up being head of the IT unit in S County Council, it was actually the planning and highways department you know so myself and my staff looked after all the IT requirements from secretarial word processing up to engineering design and I looked after the budget for all that to purchase hardware, software, and training... I am fine if I have to learn something then I just go ahead and learn it you know I don't have the fear of anything

7.8.2 Surveillance

There was a fear expressed by Andrew, who from amongst the sample has some of the most advanced levels of knowledge and experience, that it was

hard to escape the reach of technology in terms of a surveillance society. Tracking systems which are becoming more common place in ordinary devices were specifically picked out as a concern. But this wasn't a concern expressed by any other of the participants.

> *Andrew: But the now problem is people know where you are and believe it or not there is a facility for keeping tabs on people. If it's a truck or bus driver it is a taco graph, car doesn't but a mobile does it has GPRS, somebody can find you if they want you erm.....and they can see where you are somebody can sit on a laptop with and aerial on the roof of their car and say oh there is Peter there Fred is over there. Yeah right, it has now made it so you cannot hide, you cannot just switch off you cannot escape big brother watching.*

7.8.3 Security

For John, there were anxieties around the security of using technology. This was expressed both in terms of online and offline security. Here we see that there is a worry, particularly when dealing with financial transactions online – this may also relate to issues around self-confidence of the user involved in making such non-physical transactions. John goes on to also suggest concerns around the possibility of the physical theft of technology, particularly costly technology – the idea that you may attract unwanted attention and crime through the use of your mobile phone for example.

> *John: It's like click of a button isn't it. I mean once you've sent something and that, you're not… if you've wrote the wrong thing on it, once you've sent it, that's it. There's no getting it back like. So I think that's a little bit of a disadvantage. That's why I always double check everything that I send me, especially if it's to do with money and that…I think technology, you've just got to watch where you use it and that. You know, if somebody's watching you and you've got a really expensive phone. You know what I mean? I think that's a disadvantage. Men and women now, cos you know, if somebody is after your phone like, they'll have it.*

7.8.4 Reliability and performance

Issues around the reliability of technology, particularly when those involved do not have the expertise to deal with such difficulties was an issue raised by Linda. This particularly relates to dealing with computers which crash or slow

down and is also related to the standard of the technology involved and the ability to update technology in order to avoid such problems.

> *Linda: You have to wait until there computer system kicks in and sometimes they crash and you have to wait that's a bit of a disadvantage really*

Other participants also brought up the issue more generally of poor quality and performance of hardware and software. In the case of Mark, his reliance of using a top-up dongle as his form of connection to the internet meant that he encountered problems around the strength of the signal and occasional disconnection from the internet. As he expresses here, this inferior form of connection meant that a sense of patience was required to deal with such frustrations.

> *Mark: The only negatives I can think of is off the top of me head is the errrr dongles errrr is the power the weakness of the signal the strength is poor and how easy it goes off, you have to have a lot of patience to have a dongle but if you have no patience I would say don't get one… if it's been snowing outside the connection is poor and it goes off and you have to keep reconnecting so you have to have a lot of patience, so that could be a negative, it's through Vodafone you know*

Margaret's family do have a computer in the home, but it is not of a size and standard which allows her to do the things she would like to do. Owning technology which does not allow the user to achieve their required tasks seems of little discernable benefit. In this case the ability to stay in contact with friends and to source information for Margaret's children and grandchildren is severely restricted.

> *Margaret: I mean K's got a little one right, but I can't work that cos it's too small and I can't see it…but if I had a big one, like when I had the computer, and I did have a computer, I could work it then. I could write letters on it, but I would like one so that I can talk to my friends in Wales and, you know, and it's good for these kids. They can find out whatever they need to find out.*

There are also problems experienced in terms of the hardware and software used which doesn't work to the expected standard. In the case of William, the following software Supernova (a screen reader and magnifier with Braille

support) disappointed in terms of its performance and the facilities at the Age Concern centre where he was using this technology didn't appear to be able to deal with the software in the manner expected. These concerns also relate to the availability of suitable facilities for those with impairments such as William to use such software – which can potentially offer substantial quality of life benefits.

> *William: Just the computer. Then they've got Supernova, which I'm on Supernova in here, but there's some… There's jars out and there's other things, but I've never used them. I'm just used to the Supernova, but I've found out today now disappointing it is. Looking on the internet, he showed us… When the class first started he showed us this um getting song lyrics and things. And anyway, he asked us who my favourite was and I said this Ronny Millsap, and he got it on his computer straightaway. The sound and the record, the actual song, he put on, but when we try it on the Supernova, the Supernova doesn't seem to work as good as… without the… It was just ordinary computer, you know, and it didn't have Supernova or anything on.*

7.8.5 Cost

Although many participants reported 'how amazing' having internet access was which gave them new pathways to knowledge, friends/family and cheaper goods, their narratives were additionally littered with negative aspects specifically referring to the cost of technology. This reflects the findings in the quantitative analysis which identified cost a key barrier to accessing technology. For instance, participants such as Mark who used to dongle often referred to how this was expensive, '*it's very poor signal but it is all I can afford'.* Dorothy also reported using a games console regularly in the past, unfortunately this had recently broken. Due to financial restrictions she was prevented from getting a replacement or a repair. This illustrates a key theme which emerged throughout the research - not only is access to technology restricted due to financial reasons, but additionally certain participants found it difficult to maintain or replace the technologies they owned.

> *Dorothy: I used to have a games console but it broke and I cannot afford another one.*

Dorothy is restricted in her home and her main concern is the issue of social isolation. Unfortunately, due to the cost of assistive technologies she did not have the same level of access to technologies as William. She owns a mobile phone, however she cannot afford to keep it in credit. She also has access to Telecare which allows her some level of personal support from her local authorities. However, when asked if any of the technologies had been provided by the local council or local initiatives she stated that she has had to finance all forms of technology herself (with the exception of Telecare). She suggests that local government has offered her no assistance and she would be worried that they would reduce her benefits if she did receive funding.

> *Dorothy: You're joking, they give you nothing if you get money through benefits, it comes off your money and you have to struggle without the money until it is paid back*

Again, for other participants, the principal restriction to all of these forms of technologies was reported to be a lack of financial capital. Margaret is very aware of the needs of young people today in relation to a requirement to access to technology in order to achieve educationally and in the world of employment, particular with her children and grandchildren in mind. But as she explains here, there are financial restrictions on the extent to which she can help them with providing the tools needed in their education.

> *Margaret: The other boy's in college and I've got one in bed who's ill. He's in school. He's got his work experience next week. He'll be going to college cos he's 15 this year. She'll be 17 this year. The other one's 18 this year. Cos there's only eleven months between the two oldest. But they're all, you know, they're all…I give them what I can It's money. It's all down to money at the end.*

As a number of individuals had financial difficulties, in order to obtain new forms of technologies they had to wait until these technologies had become slightly outdated. Hence, although participants were referring to new technology such as PC/laptops, mobile phones and digital cameras, it was a more affordable older version:

> *William: Obviously as I was getting older and when I could afford it, you know, when I started work, when I could afford them. And uh at first everything's expensive, but as life goes on, as time goes on,*

they get down cheaper. As new things come out, the old ones get a bit cheaper, you know

The need for technological aids in the case of William is clearly of great significance to the improvement of his quality of life. However, this comes at a price. Out of all of the equipment he owns and uses on an everyday basis, the only piece of equipment he hasn't had to pay for himself is his Braille machine. Public provision of such vital equipment appears to be absent in this case, which is of a concern in the context of a city that has prided itself of making such issues a strategic priority and has developed one of the most comprehensive Telecare system in the UK.

William: The only thing I got free what you can see here is the Braille machine.

This is also taking place in a context where many of the programmes he has historically engaged with, enabling him to access useful technologies and social support, are no longer running due to a lack of sustainable sources of funding. This has had a clear impact on the everyday quality of life of William – the importance of these forms of offline support through voluntary and statutory organisations vulnerable to fluctuations in funding cannot be over-emphasised for those such as William who demand more intensive and specialised training in the use of technology.

William: Well I only wish I could have kept going, but uh with them saying they're cutting the funding down to do it. Everything's costing money and obviously you just can't afford to pay for it, otherwise it would be great if I could just to all the time for year after year, but apparently you can't. And I wouldn't mind going somewhere every day, but you might just get a couple of hours a week, which to me, it's not long enough.

7.8.6 Lack of interest and need

In light of the transfer of many public and private sector services online, and the pressure to use technology in these ways, the idea that some members of the public needed to be able to choose the extent to which they engaged with technology, was expressed by Andrew and Margaret. This reflects the fact

that in our quantitative analysis a majority of respondents did not access such services. Although this did not apply to his own experience, Andrew was aware of those, particularly older people, who did not wish to use computers or the internet and were content not to do so. He also raises the point that for many it may not be a straightforward 'choice' not to engage, but a matter of not having the adequate opportunities to do so. This addresses the points that there still needs to be some form of physical contact available for such social groups and if there is to be a greater emphasis on using technology as a form of engagement with public services there needs to be an availability of physical resources which match this commitment.

> *Andrew: For all this wonderful technology that they say they're coming in here, there's loads of old people out there that may not want the technology, but there's a lot for them that do, and if they haven't got access to it, well they can't use it.*
>
> *Margaret: Yes [on-line public services]. The older generation, it's too much for the older generation. They can't understand it, and therefore they lose out on a lot of things, because they don't understand*

For some participants some of the services made available by new technologies rather than improving the quality of their life, actually had an adverse effect. As William mentions here in relation to digital TV – with increased choice and options does not necessarily come increased quality.

> *William: To be honest there's more rubbish on than anything else. Everybody's complaining. J said, my sister, if it wasn't for the soaps there'd be nothing on. And not only that, even the films. There was three Catherine Cookson's. One on Sunday afternoon, one on Sunday night, 9 till 12 I think it was. Then there was another one on. There was three different [Catherine Cookson] films on. There was another one on 12 till 1 on the same night.*

7.8.7 Health and well-being

As noted above, some of the participants indicate that there are positive outcomes in relation to health and particularly independent living through the use of technology. However, there were also a number of drawbacks noted in this area. In particular, over-exposure to and over-use of devices was

recognised as potentially damaging and the basis of some health related problems. The issue of becoming addicted to the use of technology, in particular TV, games consoles and computers, was something specifically expressed by some of the parents in the sample, pointing towards some of the health implications of such over-use for young people.

> *Andrew: we have a PS2 that gets used, but on a 50" screen, it's a bit… you've got to sit at the far end of the room to watch or you get exceptionally… I get a feeling of nausea creeps in cos I can't drive round this, oh no! [Laughs] My head starts going put me in a darkened room quick.*
>
> *Joanne: oh kids aye they can sit for hours and they forget the time and they are just glued really when they start, you know*
> *Eleanor: some people get hooked on it and spend all their time sitting in front of it you know I think that's why kids have to be controlled my grandchildren sit on the DS and that is why my daughter won't let them have one if it's there in the house then it will be used.*

For William who relies upon a series of technologies to maintain his quality of life, he recognises a number of drawbacks to these technologies. For example the Supernova software that reads screen information does not access all websites, and alarms can run out of batteries without him realising. The cost of technologies has also had a significant impact on what form of technology he uses.

7.8.8 Child safety and unsuitable material

Not only are there concerns about health implications of technology, but there are also concerns expressed around child safety, particularly in relation to the damaging potential of social networking sites such as Facebook for younger children. Recent high profile stories in the media about the use of such sites to groom children and persuade them into harmful situations, have clearly influenced Margaret's opinion on this matter. Jenny also identifies the possible misuse of such sites as an anxiety requiring closer monitoring of the activities of children when on-line.

Interviewer: Yeah. It's like Facebook. That young girl who ended up murdered in Sedgefield cos she went off to meet somebody who she thought was younger.
Margaret: Well I just hope these lot wouldn't be so daft. Well she won't cos she's got them. I've got three girls. Well two girls that's here all the time every day. They keep her right.

Jenny: Oh I think these Facebooks and things like that really need monitoring you have to watch your children and things like that

The problem of access to disturbing or unsuitable material through the internet is also of concern to Margaret and her family, citing the example of one of her children who uses the internet to access pornographic sites as well as the easy availability of gruesome and disturbing real-life violence accessible through internet video sites such as You Tube. Although Margaret clearly objects to these possibilities of the internet, there seems little she can do to prevent her grandchildren from accessing such material.

Margaret: But they're not allowed on anything else, cos C will still go on the what do you call it? What he shouldn't go on.
Margaret's granddaughter: Porn
Margaret: Oh yes.
Interviewer: There are negative sides to it yeah. Are there any other negative sides do you think?
Margaret: Um I think there's a few, because they watch like somebody's killed… they watched somebody kill his… I think it's disgusting.
Margaret's granddaughter: Oh that was awful that.
Margaret: They can shoot him. I wouldn't watch it.

7.9 Summary

Our qualitative research confirms the findings of research conducted by Reddick (2000) and Warschauer (2003) and our own quantitative analysis, that there exists a digital divide in Sunderland, not only in terms of those who do and do not have access to technology, but also in terms of level of access, and a continuum of skills, confidence, ability and knowledge. The identities of our participants in relation to age and health as well as their socio-economic situations can be seen to have a significant bearing upon both access to ICT and their ability to make use of the technology to achieve what are recognised as beneficial outcomes.

There is a difference in terms of the development of knowledge, skills and therefore cultural capital as well as economic capital for those who have secured full time employment in which technology has become an integral aspect. Those excluded from these opportunities are clearly at more of a disadvantage in relation both to digital and social inclusion as formally defined. Certain kinds of employment provide skills necessary to enter the digital age – absence from this labour market helps to sustain a cycle of exclusion.

In relation to the experiences of publically available digital inclusion activities, it is clear that engagements in more recent and small scale schemes is low, however in terms of engagement with venues such as local libraries, educational institutions, and places of employment, engagement is seen to be much more successful. This reinforces much of the data from the quantitative analysis (section 6). A lack of knowledge of initiatives, confidence in their own ability, a lack of project sustainability and limited access provided by public facilities were all identified as barriers to accessing or better accessing such opportunities. Similar issues were raised in relation to the use of public services on-line in relation to knowledge and need.

One of the key themes which stands out from this analysis is the way in which those who are disabled or have a long term illness rely upon technology, but also the fact that access to suitable and reliable technologies is often absent. This confirms the trend identified in section 6 in relation to the fact that those with specific health requirements in Sunderland are not accessing those technologies which would help to support independent living and are not identifying the benefits of technology to the level expected.

For the majority of our participants, besides William and Dorothy, rather than being transformative, technology is seen to be useful and seen to be a key aspect of everyday life which they cannot often afford to be without in order to participate in a number of social, cultural and economic activities. This is particularly the case in terms of personal computers and the internet – which

a surprisingly large proportion of participants owned. However, for all participants apart from those in more senior professional positions, there is an absence of key forms of capital which prevent them from making better use of these opportunities; access to technology didn't give them any clear 'advantage'.

Key benefits were identified by participants. In relation to formal definitions of social inclusion, the learning of skills and confidence, employment and independent living benefits can be seen as valuable. However other significant benefits were also mentioned including: social networking, buying and selling of goods, savings in terms of time, bolstering hobbies and interests, the use of community venues and excitement. Our participants also identified a number of negative aspects to the use of technology. These included; a lack of confidence, issues over security and surveillance, reliability of often poor equipment, the cost of 'keeping up', a lack of need and adverse effects on health.

8. Summary and implications

8.1 Strategic analysis

- Sunderland has a long established history of digital inclusion activity focussing on economic regeneration, e-government and social inclusion activities.
- In relation to social inclusion this has mostly focussed on public access in community facilities, provision of technology for use in residents own homes, the building of community capacity and the use of technology to meet health needs.
- The digital inclusion agenda is becoming increasingly incorporated into city-wide strategies and the work of the LSP. This is particularly evident in the area of education.
- However there are further steps needed, including the creation of an overarching strategy, insurance of sustainability and improved communication between the local authority and LSP delivery partnerships.
- Despite major socio-economic problems, Sunderland has steadily increasing employment figures, improving educational progression between KS1 and KS2, improving educational attainment for the overall population and declining mortality rates.
- Some of these indicators are either improving or better than those of the matched area or the national average and may therefore, to a limited extent, be accounted for by greater investment in and commitment to the digital inclusion agenda.

8.2 Digital inclusion initiatives and public services

- Amongst our sample, knowledge of formal digital inclusion programmes is low. However, awareness of specific digital inclusion initiatives (a more significant measure), is greater and is growing.

- While improving, engagement with formal digital inclusion initiatives is low amongst our sample, with younger age groups engaging more than older age groups.
- For those who have engaged with formal digital inclusion initiatives, the experience is largely positive and for many this has been their first use of certain kinds of technology. For those in more professional employment positions such engagement appears as more beneficial, although section 7 did reveal exceptions to this.
- Engagement with formal initiatives especially in the case of Telecare has improved in the period between our two surveys.
- Public spaces, particularly Libraries and UK Online centres, are crucial venues for engagement with technology and learning in socially excluded areas of the city. These facilities also have a relatively high engagement by those identifying as unemployed.
- Those with disabilities and long term illnesses are not making full use of the benefits of technology, although take up of Telecare is high and increasing.
- Use of on-line public services was not high, although the city council website was most often referred to and did increase between surveys. Social class has an important bearing of who uses these facilities – they are especially significant for those in higher employment positions. Barriers to use of such services include resources, knowledge and necessity.

8.3 Skills and learning

- The importance of self-teaching, informal networks of learning (particularly identified in the quantitative analysis) as well as training in employment (particularly identified in the qualitative analysis) is clear. Such networks are identified as important sources of support and development.
- Learning most often takes place in the home, at work and through the homes of family and friends.

- Educational institutions and places of employment are key locations where skills and knowledge are developed and where individuals engage with initiatives. This relates to some of the more positive educational attainment trends seen in the city in recent years identified in section 5.3 and also relates to the experiences of such engagement outlined in section 7.
- Confidence and experience of technology is strongly affected by age, (dis)ability and social class. Those who are in high quality employment positions are most confident in their use of technology. The older, the poorer and the disabled in general have lower levels of confidence.

8.4 Ownership and use

- Ownership of computers is higher than expected, but within our sample this does not equate to high levels of usage of computers or the internet in particular. The same pattern is true of mobile phone ownership and use. Finance, skills and quality of resources are key factors in explaining this.
- The importance of a culture of ownership rather than use of public resources is clear. A rise in the use of computers between our surveys increased largely because of greater ownership as well as a desire to engage with social networking opportunities.
- Barriers to the use of technology, particularly computers and the internet, is mostly around affordability in socially excluded areas of the city. Therefore while ownership is important, it remains beyond the reach of some.
- The supports the idea adopted within initiatives such as Home Access where financial aid facilities such ownership, but should not mean that the quality of publically available facilities should be neglected and importantly skills and confidence needs to be developed for residents to make meaningful use of this technology.
- Age is a key determining factor in computer use, although the proportion of older people making use of such technology did increase between our surveys.

- Younger groups made greater use of computers for the purpose of social networking and for different reasons than the older groups.
- Use of computers for training and education also increased generally between the surveys.

8.5 Benefits of technology

- For just over half of participants, technology has improved their lives. But this is especially the case for younger age groups, those in higher social class/employment positions and for just under half of those with disabilities.
- Benefits related to specific social inclusion domains actually dropped between our surveys. This was particularly the case in terms of educational and independent living benefits – which may relate to the impact of the recent recession on employment levels in the city.
- Education is identified as the greatest area of benefit and links to some of the positive indicators in this area identified in section 5.3. However, only a third of participants strongly agreed with the fact that technology had provided them with such benefits.
- In terms of disability it does not appear that assistive technology has had the level of impact desired (in terms of health benefits) and has not helped people back into employment (in terms of employment benefits)
- For education and employment, the higher social classes have benefited more and in terms of participation and networks the younger and the retired have gained the most benefits.
- Important benefits identified by participants included social networking, development of skills, employment, financial savings, independent living, convenience, hobbies, use of community facilities and a level of enjoyment.
- Negative aspects of technology or constraints limiting engagement were identified as a lack of confidence and skills, fears over inappropriate use, surveillance and security, reliability and cost of equipment as well as negatives impacts on health.

8.6 Digitally enabled and digitally inclusive?

In many ways the recent history of Sunderland with regard to digital inclusion activity demonstrates that the city council and its partners have made great strides in establishing a strategic framework for addressing social issues through the use of digital technologies. The expertise gained (both in terms of technical know-how and community engagement), partnerships developed, mistakes made, and ability to act as a test bed for a range of digital inclusion activities, has meant that the city is in a much better position than it was in the early 1990s. This has been helped through a series of nation-wide programmes seen most recently in the form of the Home Access programme, but has been built upon a series of city level schemes which have focussed upon the key areas of health, employment, education and independent living. In particular the Digital Challenge programme has given such efforts a financial and strategic boost and has pushed the issue of addressing digital inequalities towards the top of the local strategic agenda. It is also clear through much of the Digital Challenge reach-out work over the last two years has succeeded in disseminating this fact. This also compares favourably to other similar placed urban areas in the UK, such as the matched area identified in section 3,2,

However, this 'transformation' will not be successful in the long term if these significant achievements and commitments are not reinforced and incorporated into a sustainable strategic approach to digital inclusion. There is a danger that the financial pressures of the current economic and political climate will mean that digital inclusion activity becomes solely a means of reducing costs and of shifting public services online. The social justice imperatives of facilitating access to digital technology as well as technical and educational support for those who currently cannot access such resources needs to maintained as central to any attempts at achieving digital inclusion.

It is contended therefore that Sunderland has made great efforts to become a digitally enabled city. However the extent to which the city might be seen as

digitally inclusive is more open to question. We have seen from our primary research that despite strategic efforts, improving levels of ownership and use of technology that digital exclusion is still a reality for many of the city's residents, particularly those living in the most socially excluded neighbourhoods. While the emphasis of this agenda is often focussed on the role that technology can play in bringing about social change, it also needs to be recognised that socio-economic circumstance needs to be addressed in order for technology to play such a role. For example, this research has highlighted how the use of technology becomes more significant when individuals are involved in high quality employment or post-compulsory educational programmes and it is these aspects which must be a pre-requisite for sustainable and meaningful digital inclusion.

On the other hand there is also a need to recognise those forms of capital within these communities which are not necessarily recognised as legitimate forms of capital. For example one of the key findings highlighted is the importance of informal networks of learning and support and these need to be better harnessed to make the most of this valuable resource. This has been adopted in such current schemes as E-Champions and we welcome this emphasised on using expertise within community to develop capacity and encourage socially excluded communities to make use of all the benefits which would be available to them.

8.7 Best practice and effective interventions

Much of the work on a strategic level within the city can be viewed as successful in terms of a demonstration of corporate commitment. The establishment of dedicated teams for community engagement, technical support and the establishment of a strategic strand within the partnership are all arrangements which can be identified as best practice. The level of community ownership is not perfect and will always be blighted by issues of financial sustainability; however the emphasis placed on this approach is also an area which needs to be recognised as effective. In terms of partnership working, although shortcomings have been identified, the city has come a long way. This can be seen in terms of the corporate direction adopted as

well as in the implementation of a number of long standing programmes, especially E-Neighbourhoods and the more recent Digital Challenge programme. Despite a series of obstacles Digital Challenge more recently has also been able to roll out a series of schemes in a relatively short period of time through effective leadership, organisation and dedicated teams within the local authority and wider community.

If we are to assess which efforts have been most effective in addressing digital exclusion in Sunderland, there is a distinction to make here between 'effective' on a city-wide scale and 'effective' in terms of the impact upon the quality of life of certain individuals. However, it is clear that schemes such as Telecare have been very successful in Sunderland both in terms of roll out and in terms of quality of life benefits. Other key initiatives have been the expansion of UK Online centres, Libraries and EVHs. These have been effective due to the fact that they are community base, easily accessible, and trusted sites of community engagement. The use of already existing resources is clearly significant as is the need to draw upon those social networks which exist within the community.

8.8 Barriers to digital and social inclusion

Those who use technology are more often than not those who access it regularly through formal institutions such as school, college, university and the workplace. Improving confidence and use of technology is related to the ability to secure high quality employment in particular. Age is definitely an important here as well as relevance and a perception that technology is necessary, sometimes enabling for those who require help to maintain their health and independence, but not necessarily transformative for those who are excluded in other ways. In terms of age, it is clear that younger people are more confident in their use then older generations, but it is also clear that informal networks allow for some form of inter-generational learning which needs to be better harnessed.

Barriers to digital inclusion also relate to the under use of already existing public facilities in the city, particularly by our sample which can be identified as living in socially excluded areas of the city. This tallies with the research conducted by Loader & Keeble (2004) who point out that such facilities are under used by those with little knowledge or training in the use of technology. The importance of libraries as successful venues for our sample indicates that some venues are considered as barriers to participation, as this same research also found.

We have identified that although some residents may have some form of public or private access to technology this does not always translate into forms of use which will enable social mobility. The forms of capital in the shape of finance or knowledge and skills are vital in order to help socially excluded groups gain access to appropriate forms of technology which can improve the quality of their life. In many ways the activities in Sunderland have recognised this by emphasising the need to provide physical non-technological support alongside access and this is encouraging. However, what is also required is support and investment in education, employment and health sectors, alongside the need for greater awareness raising about the opportunities that are available.

The responses to the first round of questionnaires from some older people in the city revealed some of the obstacles facing this cohort and the need to address the manner in which language around technology is used and the relevance of technology to some groups. Unlike many young people, everyday talk of and engagement with new forms of technology, is not a reality for many older people. Many were positive in their response expressing an interest to help with the research, but explained that because the survey was interested in use of technology that they were not appropriate participants. It was not for many of this group something which they saw as relevant to their everyday lives. This may be despite the fact that they did use technology in some of its forms, for example the telephone and the television, as some conversations revealed. This is clearly also problematic in terms of the initiatives which are available in Sunderland, whose names were not

familiar to the vast majority of participants in the questionnaires. This is either an issue of poor awareness raising amongst the surveyed population or it is an issue of language and the inability for people to relate to the activities through the language used to describe these activities.

8.9 Future activities in Sunderland

A history of innovation and commitment to digital inclusion should be recognised and used as a solid basis for future activity. The experience and expertise built up over the years should be employed to its full potential. This includes the human capital of experienced staff within the local authority and key support workers within the community. Sustainability is also crucial in terms of finance, organisation, corporate will, and support for the CVS in what will be challenging years ahead. This is especially important to highlight in a context of public service cuts – where it appears as though technology related funding is going to suffer.[26] There is a need to also recognise and value the work being done by and with the CVS and a necessity to support these activities. We have seen that family and friends and important networks through which technology is discovered and learnt about. This again needs to be the focus of future work, perhaps building upon already established ideas such as E-Champions. In terms of practical steps it is suggested that Focus for future activities around digital inclusion will have to be much tighter given financial constraints and lessons learned from Digital Challenge. It is suggested that the focus remain on those social groups in the city who remain most vulnerable and most in need of support including older people, those with long term health conditions, children living in deprived conditions and areas, the long term unemployed and those suffering from multiple disadvantages such as the ethnic minority community. Given the growing tendency to focus upon on-line public services and attracting a graduate workforce to the city, there is a need to retain a strong social inclusion strand to this agenda, and a recognition that social inclusion goals are not always achieved through greater economic competitiveness.

[26] For example the new coalition government has announced plans to scrap BECTA the governments' technology agency for schools.

8.10 Definitions of digital inclusion

The digital divide in Sunderland is not just a matter of the 'haves' and 'have nots'. There has been identified a continuum of use, ownership, access, skills, knowledge and benefits. Definitions need to focus more upon what Selwyn (2004) refers to as the meaningful use of technology as opposed to ownership or use of technology alone. For the respondents in this study it is clear that such use is where discernable benefits in relation to education, employment and health are identified through access to technology and the acquisition of a series of other skills and competencies allow individuals to make meaningful use. Such a definition would also recognise the limitations of technology as a transformative tool of social mobility. While for some participants they were able to make the most of technology as a means to improved education and employment, as Di Maggio (2004) notes, very often technology helps people to do what they are doing. This is borne out in this research, and the need to engage with technology in order to keep up, but not necessarily get ahead also came through in section 7. In relation to social class a divide was identified in our evidence in terms of the extent and manner to which those in more privileged positions used technology for their own advantage, while those in lower socio-economic positions did not. More than anything what influences digital inclusion is not access to initiatives but a positive educational experience and a history of decent employment. Digital inclusion is only successful when it is linked to these other aspects of social inclusion.

8.11 Implications and recommendations

- It is clear that many opportunities have been developed to address digital exclusion in Sunderland, although this has not always translated into engagement and perceived benefits by those within our survey sample. There is a need to continue and extend much of the good work achieved through E-Neighbourhoods and Digital Challenge, in

particular, positive initial experiences of technology, the development of informal networks of learning and the use of existing community facilities, particularly Libraries, to create public available access across the city.

- Continuation and extension of these activities will have to deal with the crucial issue of sustainability. This relates to both a strategic corporate commitment and a financial commitment, especially in support of vulnerable community facilities dependent upon regularly sourcing new funding streams.

- This also includes the need for strong leadership and a designated group to take on the work of Digital Challenge and the development of a clear digital strategy for the city involving ICT experts, council representatives, community representatives and those from health, social services and education within the city. This can be achieved through the new LSP cross cutting theme of Digital Inclusion recently developed.

- There is also need for better partnership and integrated working particularly between those involved in digital inclusion programmes and those responsible for leading the LSP delivery partnerships, particular in terms of awareness raising and clarity of roles and responsibilities.

- There is a need to focus on the social benefits which can be gained from digital inclusion activities in a context of shrinking budgets and concerns around efficiency and economic 'worth'. For example, the recent regional digital strategy ignored this social inclusion element as a priority and lessons should be learnt from this. Greater equality of

engagement with technology should be recognised as a positive driver of employment and local economic growth.

- Our data suggests that while initiatives such as Telecare have a wide roll out in Sunderland, they are not necessarily reaching some of the more socially excluded residents or having the desired impact on these communities. There is a need to target health related technology, particularly assistive technologies at those most in need and most isolated as well improve awareness of relevant initiatives.

- There needs to be a level of flexibility built into public provision of ICT, which meets the specific needs of individuals. However, there also needs to be a level of standard access for all, where all publically available computers have software which allows for a greater equality of access (e.g. up to date software for those with specific learning disabilities).

- There was also a lack of awareness of digital inclusion initiatives identified more generally which points to a need to address the promotion of opportunities. One way to address this is to think about the role of heath, social services, education and employment professionals in guiding individuals to those initiatives which may be of benefit to them. This highlights the importance of effective integrated services which have information available to them about such opportunities.

- There is also a need to target those other groups who may not be making use of technology for socially beneficial ends. From this research this particularly relates to older people, those in lower status occupations, the long term unemployed and those with disabilities/long

term health conditions. Future projects should be developed with these specific groups in mind, not only in terms of developing basic ICT skills, but also in terms of delivering a range qualifications and levels of training.

- Our data suggests that it is those in more privileged positions who are making the most of technology for social and economic benefit. More needs to be done ensure that benefits are more equitably shared. Therefore public access needs to be extended for those groups not in work or education, including young people identified as NEETS.

- The importance of ownership and the identification of affordability as a barrier supports initiatives such as Home Access where financial aid facilitates ownership or that of Equipment Loan where equipment is loaned out on a long term basis. However, this should not mean that the quality of publically available facilities should be neglected, as we have seen that established public spaces are key sites of engagement with ICT for socially excluded groups, especially in terms of training and support.

- There is a need to think more closely about the location of public facilities and services and the spaces used. Digital Communities have provided a useful model for the provision of a range of digitally enabled services which are not available elsewhere, on the other hand libraries (including EVHs within libraries) have been identified as a key accessible space. It is therefore recommended that public libraries be extended and used as a core hub for learning about the ways in which individuals can engage with technology by rolling out a range of services in line with the Digital Communities model.

- Providing comprehensive connection to both on-line public services and the internet more generally would be seen as an ambitious goal for the city, but one which would certainly address many of the issues in relation to adequate internet access discussed in this research. The development of this kind of infrastructure over the long term would be a huge and effective stride forward for digital inclusion in Sunderland.

- It is suggested that further longitudinal research should be conducted to measure engagement with and benefits from ICT over a longer period within Sunderland in order to monitor progress. This could be achieved by using those participants involved in this study and should focus on the specific needs and experiences of the key groups identified in terms of age, social class and health.

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Appendices

Appendix 1: Details of selection of matched area

In order to gather data on the counterfactual we employ what Davies (2004: 8) calls a 'matched comparison design', whereby 'an experimental group is exposed to a policy or programme initiative whilst a closely matched control group does not receive the programme or policy in question'. The effect of the policy or programme is then accounted for by the difference before and after the intervention.

Drawing upon the methodology used by Devins et al (2003), the selection of a matched area against which to compare the impact of digital inclusion initiatives in Sunderland is based primarily upon locating a borough which is similarly deprived, yet which has not engaged to the same extent with the digital inclusion agenda. This matching exercise relies upon data from 2000 as this approximately coincides with both the 2nd Telematics Strategy in Sunderland, which began to focus upon achieving social inclusion through digital solutions, and the production of the indices of multiple deprivation.

Indices of deprivation
The indices of multiple deprivation (2000) is used as the initial point of comparison. As Devins et al (2003: 135) note, this is arguably 'the most comprehensive index for comparing levels of deprivation across a range of aspects at the local level.' It was also the case that the geographical unit of analysis – the local authority of the city of Sunderland was coterminous with the geographical units used within the district level summary. Unlike the data provided for individual wards which lists information for all 7 domains of deprivation, the district level provides data for employment and income but then also a number of different ways of measuring deprivation including averages, extent and local concentration.

Cluster Analysis of deprivation
The first stage in locating comparable local authorities was to run a K-Means Cluster Analysis using SPSS on the basis of all 7 measurements used in the district level analysis. Rather than use individual scores which would not have been directly comparable, we used the ranking figures in this analysis. The analysis was re-iterated 6 times until cluster centres stabilised. This test was ran originally with 3 clusters identified and repeated with increasing cluster until an optimum minimum number of local authorities within the same cluster as Sunderland was reached. This number was 6, with all those 58 local authorities in the same cluster deemed to be similar to Sunderland in terms of deprivation.

Average rankings of deprivation
The next stage involved measuring the average of the rankings of the different forms of deprivation measurement for each of these districts and identifying those which were closest to the average ranking for Sunderland. Sunderland's average mean ranking was calculated as 17.8. This was taken

as the half way point with all those authorities with an average of between 0 – 35 taken onto the next stage; 25 authorities in total not including Sunderland.

Other criteria
As with Devins et al (2003) a number of other criteria were then employed to reduce this number further in relation to the purposes of the evaluation. First of all it was confirmed that all areas matched with Sunderland in terms of their urban and post-industrial character. Then those areas which were too proximate to Sunderland and were potentially within its geographical sphere of influence were dismissed. The remaining areas were as below. Population size was then also considered with those areas with a population of within 50,000 of Sunderland's 2001 census population considered as the matched area. Those areas whose population were considered too high or low are highlighted below in red:

Barnsley
Blackburn with Darwen
Bradford
Doncaster
Kingston upon Hull
Knowsley
Liverpool
Manchester
Middlesbrough
Nottingham
Rochdale
Salford
Wirral

Digital Inclusion Activity
Finally this provided a short list of four comparable areas which we could then be analysed in terms of the extent of digital inclusion activities in place. All of these places are involved in one way or another with digital inclusion initiatives, but this is not surprising given the priority placed on this in recent government policy. However, Nottingham and Kingston-upon-Hull are both in the DC10 and can therefore be discounted. In terms of digital inclusion activity The Wirral seems particularly engaged through the work of the Greater Merseyside Digital Development Agency (GMDDA), and is very close to Liverpool which is currently experiencing a wave of investment on the back of the successful City of Culture bid. On the other hand Doncaster appears to be less integrated into wider programmes of digital inclusion activity. While a recent Ofcom (2008) survey did not provide details on a city by city basis on the extent of digital connectivity and usage in the UK, it indicated that levels were far lower in Yorkshire and Humberside than in Sunderland.

	Fixed Line	Mobile Phone	Broadband	Digital TV
Sunderland	93%	83%	66%	96%
Yorkshire and Humberside urban	81%	87%	55%	75%

Source: Ofcom (2008), *The Communications Market 2008:Nations and Regions*

Doncaster also shares important historical similarities with Sunderland, particularly in terms of a past dependence upon heavy industries, especially coal mining. In terms of unemployment in Doncaster in 2000, the borough also shares similar figures with Sunderland. The matched area selected is therefore the **Metropolitan Borough of Doncaster**.

Appendix 2a: Questionnaire 1

Dear Resident,

This survey is part of an evaluation carried out by the University of Sunderland which looks to understand the impact of technology on your quality of life. By technology we refer here to your use of equipment including desktop and laptop computers, the internet, e-mail, mobile telephones, digital TV, virtual meeting technology, and other technological devices used to improve your life such as those associated with disability and health issues.

As a resident of Sunderland we value your experience and your input on these matters. The results from this survey will play an important part in improving the services you use in Sunderland, but will also have an impact on the delivery of services across the UK. This is the first in a series of 3 questionnaires which we will be sending to residents in the next year. Those who complete all 3 will be entered into a prize draw to win a lap top computer.

Thank you for taking time to complete this survey which is made up of 7 short sections. This should take approximately 15 minutes to complete. Please complete the following questions, either by placing a tick in the appropriate box or by writing an answer in the spaces provided.

A. Personal Information

1. Are you male or female?

☐ Male ☐ Female

2. To which of these groups do you consider yourself to belong?

White

☐ British

☐ Irish

Any other white background

Black or Black British

☐ Caribbean

☐ African

Asian or Asian British

☐ Pakistani

☐ Bangladeshi

☐ Indian

☐ Chinese

Any other Asian background

Mixed

☐ Black Caribbean/White

☐ Black African/White

☐ South Asian/White

☐ Chinese/White

Any other mixed background

3. What age are you?

☐☐ years

4a. Do you consider yourself to have a disability, health issues or a long term health problem?

☐ Yes ☐ No

4b. If 'Yes', please give details

5. Are you currently:

- ☐ In full time education
- ☐ Employed part time
- ☐ Employed full time
- ☐ Not working due to long term sickness/disability
- ☐ On government training scheme
- ☐ Looking after the home or family
- ☐ Self employed full or part time
- ☐ Unemployed
- ☐ Retired
- ☐ Doing something else

6a. If you are employed, what is your occupation?

6b. If you are unemployed, for how long has this been?

- ☐ A month or less
- ☐ 1-2 months
- ☐ 2-6 months
- ☐ 6 months - 1 year
- ☐ more than 1 year
- ☐ Not applicable

7. Do you:

- ☐ Own your own home
- ☐ Rent from private landlord
- ☐ Rent from housing association/council
- ☐ Live with parents/relatives
- ☐ Live in residential care
- ☐ Other -please give details below

B. Technology based Initiatives in Sunderland

8a. Have you heard of either of the following programmes, which have addressed access to technology in Sunderland ir recent years? (select all that apply)

- ☐ E-Neighbourhoods
- ☐ Digital Challenge
- ☐ Heard of Neither

8b. If so, where did you hear about these? (select all that apply)

- ☐ Friends/family
- ☐ Local community centre
- ☐ City council
- ☐ Libraries
- ☐ Internet
- ☐ Other - please explain

9. Below is a list of recent technology based initiatives in Sunderland. Please indicate if anyone in your household (including children) have heard of or been involved with any of these? (tick all boxes that apply)

	Heard of:	Used/Been involved with:	Not heard of:
Community Access Points - On-street internet access and information points/kiosks.	☐	☐	☐
Libraries/Learning Centres/UK Online Centres - To access the internet and other digital services.	☐	☐	☐
Electronic Village Halls - Neighbourhood based facilities offering access to technology either run by the city council or community organisations.	☐	☐	☐
Community of Interest Websites - The development of on-line communities working with those who are linked by similar circumstances, locations, themes or interests.	☐	☐	☐

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9. (cont.)	Heard of:	Used/Been involved with:	Not heard of:
LIAZe Bus - Internet access via the Libraries Learning Access Zone mobile internet bus.	☐	☐	☐
Computers for Pupils - Government scheme to provide computers and internet connection to pupils at KS3 and KS4 for free of charge.	☐	☐	☐
Letsgo Smart Card - Card eligible to 13-16 year olds in Sunderland to pay for a range of city based activities.	☐	☐	☐
Swan Street Digital Community - A range of digital inclusion projects providing access to the internet and other digital technology through the Swan Street Community Centre in Southwick.	☐	☐	☐
Easington Lane Digital Community - A range of digital inclusion projects providing access to the internet and other digital technology through the Easington Lane Community Access Point.	☐	☐	☐
Southwick Digital Community - A range of projects providing access to the internet and other technology through Southwick Primary School.	☐	☐	☐
Telesafe (Formally Worldmark) - Use of mobile phones as walkie-talkie, panic button and vibrating pager to help those living alone.	☐	☐	☐
Flash Meeting - Pre-booked virtual meeting technology held between two or more people from any location using the internet.	☐	☐	☐
Hexagon - Virtual meeting technology using the internet chat-room, more informal than Flash meeting.	☐	☐	☐
Sunderland City Council Telecare Services - Use of a range of equipment fitted in the home to keep you safe and secure, connected to a 24 hour monitoring centre.	☐	☐	☐
Health-E - A project aimed at addressing the issue of childhood health by engaging young people with health related issues on the internet and through the use of healthy games (such as Wii Fit within community centre setting)	☐	☐	☐
Digi TV (Looking Local) - Local digital television broadcasts and interactive internet content available through televisions in the home.	☐	☐	☐
ICT @ Home - Provides PCs and technical infrastructure to the homes of students & citizens at risk of underachieving at Key Stage 3.	☐	☐	☐
E-Mentoring - Mentoring provision via e-mail for young people, providing young people with the continuity and engagement to raise aspirations and awareness of opportunities.	☐	☐	☐
Equipment Loan - Short term loan of digital technology equipment to community and voluntary organisations.	☐	☐	☐
E-Champions - Representatives from the community and voluntary sector who encourage other members of their community to identify needs and requirements then use the ICT to meet these needs.	☐	☐	☐
Community Centres/Youth Clubs - Use of computers, the internet and other technology in community based settings.	☐	☐	☐

10. If you have accessed any of the initiatives previously listed **where** did you access them?

11a. Apart from those activities/facilities listed in question 9, have you accessed any form of technology elsewhere in Sunderland?

☐ Yes ☐ No

11b. If 'Yes', please explain **where you accessed this technology.**

12. If you have accessed any of the initiatives previously listed **why** did you access them?

13. If you are currently involved with any technology based initiatives, was this your first use of this type of technology?

☐ Yes ☐ No

14. If you are currently involved with any technology based initiatives, how would you describe your overall experience of these initiatives so far?

☐ Very positive ☐ Positive ☐ Neutral ☐ Negative ☐ Very negative

15a. Has involvement with any of these initiatives encouraged you or enabled you to access any other forms of technology?

☐ Yes ☐ No

15b. If so, which initiative and which technology?

16a. Has involvement with any technology based initiatives enabled you **to help others** to access technology?

☐ Yes ☐ No

16b. If so, who have you helped?

☐ Friends ☐ Fellow students

☐ Family ☐ Other - please explain

☐ Work colleagues

☐ Fellow residents

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C. **Other use of Technology**

17. Do you currently use and/or own any of the following forms of technology? (select all that apply)

	Use	Own		Use	Own
Telephone landline	☐	☐	Internet connection (dial up)	☐	☐
Mobile telephone	☐	☐	Internet connection (broadband)	☐	☐
Digital TV	☐	☐	Digital Camera	☐	☐
Home computer (desk top)	☐	☐	Games Consoles	☐	☐
Home computer (laptop)	☐	☐			

18a. What other forms of technology are used by yourself **(or others on your behalf)** to improve the quality of your life if not already mentioned?

18b. If any of these technologies are associated with a disability, health issue or long term health problem please provide details.

19. If you **do not own** some of the technology listed in question 17, **but do currently use it**, how do you access this?

☐ Library ☐ Electronic Village Hall ☐ University
☐ UK Online Centre ☐ School ☐ Friends and family
☐ Community centre ☐ FE College ☐ Other - please explain

20a. If you have access to a computer, what do you currently use it for? (select all that apply)

☐ Shopping online
☐ News & current affairs
☐ Travel
☐ Finance
☐ Downloading music
☐ Watch TV/listen to radio online
☐ General internet browsing
☐ Training & educational activities inc. school & college work
☐ Health services & information
☐ Information about jobs
☐ Local council information
☐ Playing games
☐ E-Mailing
☐ Word processing
☐ Social networking e.g. Facebook/instant messaging/dating sites
☐ Other - please explain

20b. If any, which of the above do you use computers for the most?

21. If you do use a computer, how often do you use it?

☐ More than once every day ☐ A few times a week ☐ Less than once a week

☐ About once everyday ☐ Once a week

22a. Is there anything stopping you from accessing forms of technology you don't currently use?

☐ Yes ☐ No

22b. If 'Yes', what is stopping you? (e.g. money, equipment, need, local resources)

23a. Do you face any restrictions in accessing the technology you already use?

☐ Yes ☐ No

23b. If 'Yes', please explain:

D. Local Services on the Internet

24a. Have you ever used the internet to access local services such as those listed below?

☐ Yes ☐ No

24b. If 'Yes', which of the following have you used and how effective were these services in meeting your needs on a scale of 1 - 5? (where 1 = Least effective and 5 = Most effective)

	Yes	No	1	2	3	4	5
Sunderland City Council	☐	☐	☐	☐	☐	☐	☐
Local health services	☐	☐	☐	☐	☐	☐	☐
Social Services	☐	☐	☐	☐	☐	☐	☐
Education services	☐	☐	☐	☐	☐	☐	☐
Youth services	☐	☐	☐	☐	☐	☐	☐
Job Centre Service	☐	☐	☐	☐	☐	☐	☐
Other - please explain	☐	☐	☐	☐	☐	☐	☐

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E. Knowledge and skills in use of technology

25. How experienced are you at using the following equipment? (tick one box for each form of technology)

	No experience	Very basic experience	Basic experience	Experienced	Very Experience
Mobile telephone & text messaging	☐	☐	☐	☐	☐
Digital TV	☐	☐	☐	☐	☐
Computer - word processing & other basic software packages	☐	☐	☐	☐	☐
Internet	☐	☐	☐	☐	☐
E-mail	☐	☐	☐	☐	☐
Digital camera	☐	☐	☐	☐	☐

26. Where did you learn to use this technology? (select all that apply)

☐ Home
☐ School
☐ FE college
☐ Library
☐ Community Centre
☐ University
☐ At work as part of your job
☐ At the homes of friends & family
☐ ElectronicVillage Hall
☐ UK Online Centre
☐ Other - please explain

27. To what extent do you agree with the following statement?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
I am confident in my use of technology	☐	☐	☐	☐	☐

28a. Have you recently received any help or support in your use of technology?

☐ Yes ☐ No

28b. If 'Yes', from whom did you receive this support?

☐ Friends
☐ Family
☐ Community workers
☐ Teachers/Tutors
☐ E-Neighbourhood/Digital Challenge support workers
☐ Other -please explain

F. Benefits of technology

29. To what extent do you agree with the following statement?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
The use of technology has improved the quality of my life	☐	☐	☐	☐	☐

30. Which **technologies** have been most important in the improvement of your quality of life?

31. If any, which **technology based initiatives** have been the most important in the improvement of your quality of life?

32. On a scale of 1-5 (where 1 = least positively influenced and 5 = most positively influenced), to what extent have the following been positively influenced by your recent use of technology?

	1	2	3	4	5
a. Educational achievement qualifications and learning progression	☐	☐	☐	☐	☐
b. Employment, employment prospects, level of income	☐	☐	☐	☐	☐
c. Improved health, healthy lifestyle, quality of life	☐	☐	☐	☐	☐
d. Ability to live independently within your own residence	☐	☐	☐	☐	☐
e. Ability to participate with others in your community, become involved in local matters and develop social relationships	☐	☐	☐	☐	☐

33. If anything, what has the use of technology in your everyday life enabled you to do which you have been previously unable to do?

34a. Has the use of technology had any negative impacts on your quality of life?

☐ Yes ☐ No

34b. If 'Yes', in what ways?

G. Location

35. If you are happy to do so, please provide your current post code. This will allow us to see how the use of technology varies across different parts of the City. We will not use this information to locate your exact address.

☐☐☐☐ / ☐☐☐

Further Assistance

As we are interested to see how technology impacts on your life and how it might change over time, we would like to know if you are willing to complete another questionnaire at a later date. If so, please provide the following details:

Name:

Address:

Telephone number:

E mail:

Any of the personal information provided above will be treated with absolute confidentiality and will not be shared with any third party or used in the analysis or presentation of results of the survey.

If you have any questions regarding this questionnaire or the research in general, please contact Dr John Clayton at the University of Sunderland either by telephone (0191 5152733) or by email (john.clayton@sunderland.ac.uk).

Appendix 2b: Questionnaire 2

Second Resident Survey
Using Technology in Sunderland

University of Sunderland

Approximately nine months ago you kindly completed a questionnaire for us, which looked to understand the impact of technology on your quality of life. In that questionnaire we explained that we wanted to see how the impact of technology might change over time and therefore asked if you would be willing to complete a second questionnaire at a later date. As you kindly agreed to help us we would be grateful if you could spend a few moments completing this follow up questionnaire, which asks questions about your use of technology in the last nine months.

Again completion of this questionnaire is entirely voluntary and the information you provide will be treated with absolute confidentiality and will not be shared or used for any other purposes. The results from this survey will play an important part in improving the services you use in Sunderland, but will also have an impact on the delivery of services across the UK. **Everyone who completes this questionnaire will be automatically entered into a prize draw to win a lap top computer** and we will contact the winner of this draw directly in approximately one months' time.

Thank you for taking time to complete this survey which is made up of 6 short sections. This should take approximately 10 minutes to complete. Please complete the questions, either by placing a tick in the appropriate box or by writing an answer in the spaces provided and return the questionnaire to us in the freepost envelope provided at your earliest convenience.

A. Personal Information

1. Are you male or female?

☐ Male ☐ Female

2. What age are you?

☐☐ years

3a. Have your personal circumstances (e.g. education, employment, unemployment) changed in the last nine months'

☐ Yes ☐ No

3b. If 'Yes', are you currently:

☐ In full time education
☐ Employed part time
☐ Employed full time
☐ Not working due to long term sickness/disability
☐ On government training scheme
☐ Looking after the home or family
☐ Self employed full or part time
☐ Unemployed
☐ Retired
☐ Doing something else

3c. If you have started work or changed your job in the last nine months what is your current occupation?

B. Technology Initiatives in Sunderland

4a. Have you heard of either of the following programmes, which have addressed access to technology in Sunderland i recent years? (select all that apply)

☐ E-Neighbourhoods ☐ Digital Challenge ☐ Heard of Neither

4b. If so, where did you hear about these? (select all that apply)

☐ Friends/family
☐ Local community centre
☐ City council
☐ Libraries
☐ Internet
☐ Previous questionnaire
☐ Other - please explain

5. Below is a list of recent technology based initiatives in Sunderland. Please indicate if anyone in your household (including children) have heard of or been involved with any of these in the last nine months?
(tick all boxes that apply)

	Heard of:	Used/Been involved with:	Not heard of:
Community Access Points - On-street internet access and information points/kiosks.	☐	☐	☐
Libraries - To access the internet and other digital services.	☐	☐	☐
Learning Centres - To access the internet and other digital services.	☐	☐	☐
UK Online Centres - To access the internet and other digital services.	☐	☐	☐
Electronic Village Halls - Neighbourhood based facilities offering access to technology either run by the city council or community organisations.	☐	☐	☐
Community of Interest Websites - The development of on-line communities working with those who are linked by similar circumstances, locations, themes or interests.	☐	☐	☐
Hospital Information Points - Measurement of a person's weight, body mass index and blood pressure etc and takes them through a health questionnaire as well as self check in facilities. Available in city hospitals.	☐	☐	☐
Community Health Information Points - Measurement of a person's weight, body mass index and blood pressure etc and takes them through a health questionnaire. Available in community based locations across the City.	☐	☐	☐
TeleHealth - A way of recording health readings in your own home using a small monitor. This gives your nurse regular information about your health condition so he or she can monitor any changes before they become serious.	☐	☐	☐
Home Access for Targeted Groups - Providing computers and connectivity to looked after children across the Primary schools of Sunderland.	☐	☐	☐

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IF YOU HAVE NOT ACCESSED ANY INITIATIVES IN THE LAST NINE MONTHS IN SUNDERLAND WHICH USE TECHNOLOGY, PLEASE GO TO SECTION C.

6. Please list **the key reason** for engaging with technology based intiatives in Sunderland in the last nine months?

7. Has involvement with any of these initiatives encouraged you or enabled you to access any other forms of technology?

☐ Yes ☐ No

8a. Has involvement with any technology based initiatives in the last nine months enabled you **to help others with technology?**

☐ Yes ☐ No

8b. If so, who have you helped?

☐ Friends/family ☐ Fellow students

☐ Work colleagues ☐ Fellow residents

☐ Other - please explain

C. Other use of Technology

9. In the last nine months have you used and/or owned any of the following forms of technology? (select all that apply

	Use	Own		Use	Own
Telephone landline	☐	☐	Internet connection (dial up)	☐	☐
Mobile telephone	☐	☐	Internet connection (broadband)	☐	☐
Digital TV	☐	☐	Digital Camera	☐	☐
Home computer (desk top)	☐	☐	Games Consoles	☐	☐
Home computer (laptop)	☐	☐			

10a. In the last nine months have any other forms of technology been used by yourself **(or others on your behalf)** to improve the quality of your life if not already mentioned?

10b. If any of these technologies are associated with a disability, health issue or long term health problem please provide details.

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11. If you **do not own** some of the technology listed in question 9, **but do currently use it**, how do you access this?

- ☐ Library
- ☐ UK Online Centre
- ☐ Community centre
- ☐ Electronic Village Hall
- ☐ School
- ☐ FE College
- ☐ University
- ☐ Friends and family
- ☐ Other - please explain

12. If you have been accessing a computer in the last nine months, what have you used it for? (select all that apply)

- ☐ Shopping online
- ☐ News & current affairs
- ☐ Travel
- ☐ Finance
- ☐ Downloading music
- ☐ Watch TV/listen to radio online
- ☐ General internet browsing
- ☐ Training & educational activities inc. school & college work
- ☐ Health services & information
- ☐ Information about jobs
- ☐ Local council information
- ☐ Playing games
- ☐ E-Mailing
- ☐ Word processing
- ☐ Social networking e.g. Facebook/instant messaging/dating sites
- ☐ Other - please explain

13a. If you do use a computer have you used it more frequently in the last nine months than before?

- ☐ Yes
- ☐ No

13b. If 'Yes', please state why?

14a. In the last nine months have you faced any restrictions in accessing the technology you already use?

- ☐ Yes
- ☐ No

14b. If 'Yes', please provide details:

D. Local Services on the Internet

15a. In the last nine months have you used the internet to access local services such as those listed below?

☐ Yes ☐ No

15b. If 'Yes', which of the following have you used?

	Yes	No		Yes	No
Sunderland City Council	☐	☐	Education services	☐	☐
Local health services	☐	☐	Youth services	☐	☐
Social Services	☐	☐	Job Centre Service	☐	☐
Other - please explain	☐	☐			

15c. If you have only started using these services in the last nine months, what was the **main reason** for doing so

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E. Knowledge and skills in use of technology

16. If you use any of the technology below, have you become more experienced in the last nine months?

	Yes	No
Computer - word processing & other basic software packages	☐	☐
Internet	☐	☐
E-mail	☐	☐

17. If 'Yes', where did you improve your skills in these technologies?

☐ Home
☐ School
☐ FE college
☐ Library
☐ Community Centre
☐ University
☐ At work as part of your job
☐ At the homes of friends & family
☐ ElectronicVillage Hall
☐ UK Online Centre
☐ Other - please explain

18. Has your confidence in the use of technology improved in the last nine months?

☐ Yes ☐ No

19a. Have you recently received any help or support in your use of technology?

☐ Yes ☐ No

19b. If 'Yes', from whom did you receive this support?

☐ Friends/Family
☐ Community workers
☐ Teachers/Tutors
☐ Work Colleague
☐ E-Neighbourhood/Digital Challenge support workers
☐ Other -please explain

F. Benefits of technology

20. Over the last nine months has your use of technology improved the quality of your life?

☐ Yes ☐ No

21. If 'Yes', which technologies have been the most important in the improvement of your quality of life?

22. On a scale of 1-3 (where 1 = least positively influenced and 3 = most positively influenced), to what extent have the following been positively influenced by your use of technology in the last nine months?

	1	2	3
a. Educational achievement qualifications and learning progression	☐	☐	☐
b. Employment, employment prospects, level of income	☐	☐	☐
c. Improved health, healthy lifestyle, quality of life	☐	☐	☐
d. Ability to live independently within your own residence	☐	☐	☐
e. Ability to participate with others in your community, become involved in local matters and develop social relationships	☐	☐	☐

23a. In the last nine months has the use of technology helped you do anything which you were previously unable to do?

☐ Yes ☐ No

23b. If 'Yes', please provide details:

Further Assistance

As we are interested to see how technology impacts on your life and how it might change over time, we would like to know if you would be willing to help us further by participating in an informal discussion about these issues and your own experience at a later date. If you are interested in helping in this way, we would be very grateful if you could provide the best contact method from the following:

Tel:
Mobile:
Email:
What is the best time to contact you?

Any of the personal information provided above will be treated with absolute confidentiality and will not be shared with any third party or used in the analysis or presentation of the survey.

If you have any questions regarding this questionnaire or the research in general, please contact Angie Wilcock at the University of Sunderland either by telephone (0191 515 2562) or by email (angela.wilcock@sunderland.ac.uk)

If you require this questionnaire in an alternative format please let us know.

Once again, many thanks for your time

Appendix 3: Sunderland Ward Map (2001)

Appendix 4: Members of the Sunderland LSP

- Sunderland City Council
- The University of Sunderland
- City of Sunderland College
- North east Chamber of Commerce
- Northumbria Police
- Tyne and Wear Fire and Rescue Authority
- Sunderland Teaching Primary Care Trust
- City Hospitals Sunderland NHS Trust
- Learning and Skills Council (Tyne and Wear)
- Job Centre Plus
- Sunderland Echo
- Sunderland Community Network
- Gentoo (formerly Sunderland Housing Group)
- Sunderland ARC
- Government Office North East

Appendix 5: Qualitative interview topic guide

Explain the purpose of the research in general and then the purpose, more specifically, of this interview. Reassure the participant in terms of the confidentiality of the information provided and anonymity of any excerpts taken from the interview. Ask permission from the participant to record the interview.

Personal Information

- Did you grow up in the Sunderland area?
- How long have you lived in this area?
- Tell us a little bit about yourself in terms of their family, job, education history?
- How do you identify in terms of social class?

Use and ownership of technology

- What would you define as technology?
- Which technologies do you use in an average week?
- How often would you use these technologies and for what use?
- What would you say is the most important form of technology you use and why?
- When did you start to use this technology and why?
- Did anyone assist you in your early use of this technology? If so, who?
- Where did you first access this technology?
- Has your use of technology changed much recently? (i.e. types of technology, extent of use, purpose of use) If so, why is this?
- Do you own the technologies you use? If not, why not?
- Do you feel it is important to own forms of technology or is there adequate access to technology by other means?
- If you do own some forms of technology have any initiatives, such as government initiatives helped you to own this?
- Are there any technologies you would like to use or own, but which you currently do not? If so, what is preventing you from accessing these technologies?

Technology initiatives

Explain what we mean by 'initiatives' here i.e. that the local council and other local organisations have in recent years been active in trying to get people to use technology in Sunderland in a variety of ways

- At any point in your life have you been involved with any initiatives in Sunderland which have helped you to access forms of technology?
- What were the initiatives (they may not know the exact name), where were they based and what kinds of technology did they help you to access? (may include a number of initiatives)

- Why did you become involved in each of these initiatives?
- For how long were you involved with each of these initiatives?
- If you are no longer involved with these initiatives, why did you stop?
- What were the advantages and disadvantages for you for each of these initiatives?
- In what ways did they help you in your everyday life?
- Has anyone else helped you in your use of technology? If so, who and in what ways have they assisted you?

Public services

- Are you aware that you can access public and council services through the internet?
- Do you access any of these services?
- If you don't access these services in this way, why?
- If you do access these services in this way which services you access the most? (May have to offer some examples here)
- Why do you access these services in this way?
- What are the advantages and disadvantages of accessing these services in this way?
- Are there any other ways in which you have recently used technology to access any public services apart from through the internet? (For example, street kiosks, customer service centres etc)

Benefits of technology

- Has the use of technology improved your life? If so, in what ways?
- What benefits have you got from using different forms of technology? (These may be different for different types of technology used)
- How experienced do you feel you are in your use of technology? Has this changed much in recent years? And if so what do you think the reasons for this are?
- If not already covered in answers to the above ask how technology have effected their lives in relation to: Education, Employment, Health, Independent Living and Social networks)
- Are there any negative sides to the use of technology in your experience? If so, please explain what these are?
- Do you see the use of technology as helping improve the quality of your life in the future? If so, in what ways?

Appendix 6: Qualitative interviewee profiles (all names used are pseudonyms)

Jenny: Retired female, aged 68, living in social housing within a tower block. The one bedroom flat is owned and managed by Gentoo Sunderland. The lady was born in Sunderland but moved to Greece when she married at the age of 30yrs. She returned to family in Sunderland around 25 years ago following the break-up of her marriage. Brought up in a working class family attending state comprehensive school. Following school she trained as a dispenser working in a chemist in the City centre. On her return to England she took up employment in social care and remained in that until her recent retirement. The lady owns a mobile phone as well as a landline telephone, also in the property was a television and DVD player the only other pieces of technology she identified was a Nintendo DS bought for her by her family which she does not use and a digital camera. The camera is not used to its full potential as she does not own a computer as she feels without the knowledge and skills on how to use it this would be a waste of time and money.

William: Elderly gentleman, aged 69, and registered as blind, living in the one of the former council estates of Sunderland all his life. He had lived in the family home until it was recently demolished and was decanted to his present home. He has support from his family who live close by. Started to lose his sight at the age of 7 and by the time he was of junior school age he was partially blind. He attended a state comprehensive until his sight worsened and he was then sent to another school in the city centre. Upon leaving school he found employment and was trained in light engineering duties. At the age of 34yrs he lost his sight totally but he remained in employment given alternate duties until he was made redundant after 22 yrs service. His was the end of his career path as he failed to find alternate employment due to his impairment. He lives independently due to the technology fitted to his home and he is reliant on the services provided by Telecare. His mobile he notes 'is his lifeline' especially when he is out of the home and on his own. The gentleman also owns a computer which is fitted with the relevant software enabling him to communicate with others both socially and to help with the day to day running of his life via the internet. It also provides entertainment as he has as interest in making and listening to music and the computer aids this.

John: Male, aged 47, grew up in the south of the city and remained there until he was 27 yrs old. He married and went to live in a neighbouring area of the city for 16 yrs and now lives in another neighbouring area of the city with his family. He attended a local state comprehensive and upon leaving school he went to work in the shipyards serving his time as a shipbuilder remaining there until they closed. He continued to seek full time employment in heavy industry until eventually he retrained in social care and now has a career in that sector. He stated all the family have mobile phones and they have a desk top computer as well as a laptop both having wireless internet connection. They also have a printer and scanner for the computer which is

used by all the family. The computer is used every day and helps them in their day to day living through shopping, entertainment and contact with family the children also use it for education purposes. His children have mobiles, game consoles and iPods and they use sky television daily. He recently purchased himself a digital camera and bought a memory card via the internet for the camera.

Mark: Male, aged 44, currently unemployed, brought up in the south of the city. He only recently moved to his current neighbourhood following a relationship breakdown. He is from a working class family and still positions himself as working class. He left school with no education but quickly found employment as a drayman in which he was employed for 26yrs until recently being made redundant. Following his redundancy he enrolled on many courses with the job centre which were based at the City of Sunderland College to enable him to gain new skills and improve his employability. Through this he has gained computer skills as well as training in social care. He uses technology daily mainly his laptop which enables him to search for jobs and keep in touch via Facebook. He has been using a computer since he was in his 20s. He owns a mobile but no landline so he accesses the internet through the use of a dongle. He uses his television daily and is a keen gamer since becoming unemployed his play station is used most evenings however, he does not go online with that as it would be too expensive topping up the dongle. He highlighted his car as the most important piece of technology he owns as it allows him to travel to see his daughter.

Linda: Single mother aged 37 who has lived in the City all her life being brought up in the north-east of the city and then moved to set up home in social housing in the north of the city 12yrs ago. She identified with a working class background. Upon leaving school she went into clerical work but this failed to work out so she embarked on her nurses training but whilst doing this she fell pregnant and had to leave. Following the birth of her daughter she returned to college then on to University where she completed a Health & Social Care Degree. With the focus on bringing up her daughter with very little support she is now working part time as a school crossing patrol. It is clearly a struggle for this young lady and she had little material possessions in her home. Initially she related technology to her television, washing machine, fridge and her mobile. There was an old computer in the property which until very recently was only used for writing letters and keeping on top of bills through a spreadsheet. A few weeks prior to her interview the lady had a landline telephone fitted to the property giving internet access. This now enabled her to access services and use email saving her time and making her life easier.

Jim: Retired male aged 78, brought up in the East End of the City and attended a Technical School. From school he went on to an apprenticeship as a Marine Engineer, he then went into the Royal Air Force then onto the Navy and just before he got married he left to enable him to be with his wife. His career continued in marine engineering and was employed until 1984 when he retired. When he married he set up home with his wife in the south-west of the City. This was originally social housing owned by the City of Sunderland,

he later purchased the property and he still resides in that home with his wife. He has travelled the world through his career and was the first man in England to commission a ship with bridge control. He has witnessed much change in technology throughout his career and his personal life. Although he agrees technologies do make life easier he strongly believes they should be treated solely as an aid. There is a computer in the property which he uses daily for internet use as he is a member of the Sunderland Maritime Museum. He also enjoys music with all the relevant equipment needed in his home. They have television with freeview, a DVD player and a digital camera including a camcorder which he uses a lot along with a music system that connects to the computer. He also has a mobile phone which is not used a lot as well as a landline. He admits he is self taught although a neighbour trained in computers does help him out if he becomes stuck with anything. He also noted that due to him being ill recently it has helped him remain independent and be able to access his work at the museum online at home.

Eleanor: Retired female, aged 63, was born in India as her father was working in the country. The family came back to England when she was 5 yrs old and she grew up in the Midlands. Following school she went to Newcastle University where she studied computer programming. It was at university that she met her husband who is a chemist and they moved to the Midlands where they brought up their family**.** She had a varied career in IT working for the local council. Upon their retirement and the relocation of their daughter they came to live in the newly redeveloped residential area on the River Wear in the city centre. However, they also have a home abroad and a property in the Lake District which they share their time over the year in each of the properties. It is apparent that the expertise and knowledge of technology as well as personal income allows their extensive use of technologies. There are two computers which are used daily in many ways, both have wireless internet connection. They own a robotic dog that responds to her voice, they have numerous cameras, GPS navigation systems for both walking and car use. The study has all the latest computing hard and software including a collection of musical instruments and related technology. They utilise sky television which allows them to record all the programmes they want to watch at a later date if they are away. A Nintendo DS is owned but it is there for the grandchildren when they visit. I pods are also used by them both and they are in the process of looking for an e book in which to use on holiday and a telescope for their home at the Lakes.

Margaret: Female, aged 60, came to Sunderland in 1989 from South Wales after experiencing domestic violence. She attended school in Wales and went on to obtain her nursing certificate. She had four children and managed three jobs to ensure there was enough money coming into the home. Upon coming to Sunderland she and her family lived in the northern part of the City, but recently moved to private rented accommodation in the north-east area of the city. She now fosters her grandchildren and there is very little money going into this household and she noted it is a constant struggle. She has a mobile phone which she has had for around six years and it is pay as you go and is only in use when she can afford to put money on it. The only other piece of technology she owns is a digital television of which she also gets internet

access however; they do not have a computer. The children have a game console but she does not use it. She and her daughter have attended a computer course provided by the city at the Bunnyhill Centre, Concorde and also at Swan Street. Her grandchildren also utilise the services at Swan Street. Community access points have also been utilised by her and her daughter. She has also recently applied for a home computer through a scheme identified through her granddaughter's school. It is not known if they have been successful in obtaining a computer. They have also utilised the services of the library to help with the children's homework.

Joanne: Young female, aged 26, who grew up in the south of the City and is now renting a Gentoo property in the same area near her family. She went to a local state comprehensive where she achieved seven GCSEs. Upon leaving school she attended college but on falling pregnant with her son she left the course. The young lady is surviving on benefits and admits she struggles financially. She owns a mobile phone which is important for her in remaining in contact with friends and family via text. A television and play station was on display in the sitting room and she advised me they are on all the time as a means of entertainment. There is no computer in the property as she cannot afford to buy one if she needs to access a computer she uses the one at her mother's home. Very recently she had a wireless connection fitted to the property this allows her and her son to use the game console online. It also enables them to access the internet for Facebook and browsing via the games console and through the remote from the television. There is no keyboard so they are limited to what they can do. The young lady advised me should love to have a laptop for her son so he could do the maths and English work that he does at school to enable him to progress. However, she has responded to an advert in her local paper offering the home access scheme and she was waiting for the relevant paper work to arrive.

Andrew: A working class single male aged 46, living in the south of the city who resides in a high rise flat owned and managed by Gentoo Sunderland. He was born and brought up in the north-east of the City and moved to his current neighbourhood with his mother a number of years ago and he remained in the flat after the death of his mother. He attended a hospital school in Northumberland and left with CSEs. He went on to complete 'O' levels then 'A' levels continuing with education He achieved a HNC in Software Engineering and a HND in Business Administration for Conservation and Recreation. He is a professional in computing and is fluent in its use he owns all the technology he uses. His property is full of modern technology that includes computers, printers, scanning equipment, laptops, and external hard drives amongst much other hard and soft ware. He also owns three mobile phones all with differing abilities he also has a landline with internet connection. He is also a keen amateur radio enthusiast and has an interest in astronomy owning an up to date telescope. He is also a keen photographer with different digital cameras with different functions as well as the old type camera that uses film. A Play Station was also in the property which he uses occasionally.

Dorothy: Single female aged 43. She was brought up in Surrey and moved to the North East in her 20s due to family connections. The majority of her time in the North East has been spent in Stockton (20yrs) and she came to Sunderland 3 years ago. She is clearly isolated having no family in the area and only a few friends who visit occasionally. She lives in the south of the city in social housing provided by Gentoo Sunderland and is struggling financially with very little material possessions. She suffers from Osteo Arthritis has limited movement and her home reflects this and she is in desperate need of external support. She left school without qualifications and admitted she had received very little education as she did not mix well. She did find employment in a factory until 1994 but due to her disability and the progression of the arthritis she had to give up work and now survives on benefits. However, she did identify with technology stating she owned a mobile phone which was her lifeline but more often than not she has no credit on it as she has no money. Her laptop which she has just recently purchased was key to her keeping in touch with family in London via Facebook. Only very recently she had cable fitted to the property through Virgin enabling internet connection and digital television. She saw her television as the most important as it is on all the time for entertainment and it 'keeps her company'. She highlighted she is self taught as she does not read very well and struggles. Her use of the computer is limited due to this and with training this would greatly improve her lifestyle.