The Digital Inclusion Landscape in England

Delivering Social Impact through Information and Communications Technology

Digital Inclusion Team

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About This Document

The aim of this document is to describe the landscape of digital inclusion activities in England. The broad definition of digital inclusion used as a foundation for this study is *the use of technology, either directly or indirectly, to improve the lives and life chances of people and the places in which they live.*

This document is the product of a three-month period of meeting and interviewing more than ninety people in over sixty-five organisations across government, local authorities, industry, academia and the third sector. Information on more than 260 live projects and cases has been collected and analysed to help to describe the landscape of digital inclusion activity. Digital inclusion is clearly a fast moving area and the findings in this report represent a snapshot of the situation at the end of 2006.

A comprehensive picture of activities and policies has emerged. The results of this study are targeted at those who are working to tackle the issues that disadvantaged people and places face and who could benefit from an awareness of how technology could help them achieve their objectives, and how their peers are successfully exploiting it. Digital inclusion cuts across many policy areas such as social exclusion, community development, transformational government, product and service accessibility, data sharing and skills. This study is intended to support the communities in these and other policy areas that could impact, or be impacted by digital inclusion.

This study has been conducted by the *Digital Inclusion Team*. This team was set up in May 2006 as a result of a recommendation in the Social Exclusion Unit's 2005 study *Inclusion Through Innovation*.

To submit comments or to submit details of digital inclusion projects not covered in this report please contact the team at enquiries@digiteam.org.uk

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EXECUTIVE SUMMARY

Information and Communications Technologies (ICT) have transformed the way we live, learn, work and play. For many of us, jobs are easier to find, services are more convenient, goods are cheaper, social networks are deeper and opinions can be heard more widely. We have been called the 'Google Generation'. However, many are excluded; around 40% of adults are missing out on the benefits of the information society, many of whom also suffer multiple social disadvantages. There has been little change in this situation since 2004.

Digital inclusion is defined in this study as *the use of technology, either directly or indirectly, to improve the lives and life chances of disadvantaged people and the places in which they live*. It is broader than just simple access to the internet and covers many different forms of technology and activity. But the common focus is on delivering positive social outcomes. Innovative use of ICT can lead to better access to education, to employment, to health and to a socially fulfilling life. It can be an additional support tool for people to lift themselves out of their disadvantaged social situations, and also to improve the communities in which they live. Technology can be an enabler for social inclusion and neighbourhood renewal.

Digital inclusion, defined in this way, is a crosscutting opportunity to tackle the problems that disadvantaged people face and to reduce the high costs to society of the consequences of social exclusion. It is estimated that 15% of the adult population, over 6m people, suffer both social exclusion and lack of engagement with ICT. Effective and co-ordinated action to increase digital inclusion will result in benefits that will be felt across many different areas of government and industry. 'Doing nothing' will not only miss these opportunities, but could make matters worse. Inaction or superficial action will re-enforce the social disadvantages of the few as they are increasingly excluded from innovative, value added public, private and third sector services. There is also a moral and ethical case for tackling the injustice of vulnerable citizens, and deprived communities, suffering the double disadvantage of social exclusion and lacking the benefits of engagement with the information society enjoyed by those better off.

There are many excellent examples of technology delivering social outcomes for people and communities presented within this report. However, when viewed in aggregate a number of key issues emerge:

- Policies and strategies for citizen and community uses of ICT are fragmented across government, industry and the third sector.
- There is also fragmentation of resources and effort. Programmes and policies that could be joined up are not being linked. There is duplication and there are also gaps.
- There are programmes and projects that have delivered social impact and form an excellent foundation to build on, but these tend to have low visibility.
- There is a wide knowledge gap between social policy teams and technology experts that isn't being bridged, leading to low awareness of the opportunities. 'Digital' is all too often seen as an end in itself.
- There are barriers to scaling-up pilots. These barriers hinder the scaling and repeating of successful initiatives:
    - Sustainability is a key issue and many projects using technology to deliver social outcomes have difficulty in achieving a sustainable business model or don't even try to. Projects often remain dependent on grant funding.
    - Funding is often locked in silos at a local level and difficult to use to tackle crosscutting issues like social exclusion.
    - Funding mechanisms get pilot projects off the ground but seldom provide second wave resources to enable scale-up and knowledge transfer. Many projects end at the pilot stage.
    - With no single point of focus for funding, successful project teams typically waste existing resources chasing around government and industry looking for new resources.

Addressing these issues will require reviewing whether more can be done in the following areas:

- Strategy, governance and leadership of activities to increase the social impact of technology.
- Capacity and capability building in local government and the third sector around the use of technology to support disadvantaged people.
- Joining-up and leveraging major programmes that could either benefit from or broaden digital inclusion, and make better use of existing resources.
- Investing in national infrastructure critical to increasing the social impact of technology.
- Tackling the barriers to scaling pilot projects that have clearly demonstrated social impact, especially finding sustainable funding models.
- Bringing together the social policy, practitioner and ICT communities, to bridge the knowledge gap and stimulate innovation.
- Supporting effective partnerships between government, industry and the third sector.
- Reviewing how existing legislation, codes of practice and procurement frameworks can support social and digital inclusion.

If we are to make real progress in broadening the social impact of technology to the most disadvantaged in society it is clear we need to build on the expertise that already exists across local government, the third sector and industry. This expertise is highlighted by the many innovations and activities presented within this report.

1.0 BACKGROUND AND CONTEXT

1.1 INTRODUCTION

Information and Communication Technologies (ICT) have the potential to make a real difference to the lives and life chances of those suffering socially exclusion. The Government's report *Inclusion through Innovation*[1], published in 2005, assessed this potential and found that:

- There are many examples of effective innovation in the front line of service delivery, but they are local, dispersed, and not able to be shared or scaled-up on their own.
- There are real and perceived constraints on sharing data that are a major barrier to innovation.
- There is a 'knowledge gap' between those who understand the real social policy issues but have limited knowledge of technical possibilities, and the imaginative 'techies' who rarely get close to the front line to put their knowledge to creative use.

The Government set up the Digital Inclusion Team, in the City of London, to establish a programme of work to take forward the findings of *Inclusion through Innovation*. This document is one of the team's deliverables to describe the landscape of digital inclusion activities in 2006.

The primary aim of this study is to raise awareness among those who are tackling the issues that disadvantaged people and places face, of how technology could help them to achieve their objectives, and how their peers are successfully exploiting it. Digital inclusion cuts across many policy areas such as social exclusion, community development, transformational government, product and service accessibility, data sharing and skills. This study is intended to support the communities in these and other policy areas that could impact, or be impacted by digital inclusion.

[1] Social Exclusion Unit (2003), Inclusion Through Innovation, http://archive.cabinetoffice.gov.uk/seu/page9948.html?id=713&pId=27&url=page.asp?id=583

1.2 DOCUMENT STRUCTURE

This document commences by setting the scene and presenting a definition of digital inclusion. Social exclusion is then introduced and priority disadvantaged groups identified. The next section presents the statistics of digital inclusion and the relationship with the digital divide. The final 'scene-setting' section focuses on the benefits of digital inclusion and presents the high-level business case for action.

The remainder of the document focuses on the landscaping research. It starts off by presenting the study methodology and in particular a digital inclusion framework that underpins the research. The next section presents the overarching findings and then subsequent sections cover four key digital inclusion activity areas in more detail.

1.3 DIGITAL INCLUSION SCOPE

1.3.1 Digital Inclusion Definition

There is a lot of terminology in this policy area, such as: digital inclusion, eInclusion, inclusive eGovernment and the digital divide. These terms are often used synonymously. Digital inclusion means different things to different organisations:

- Giving people the basic ICT skills to participate in the knowledge economy leading to improved macro-economic performance.
- Closing the Digital Divide — the gap between those enabled and empowered to participate in information and knowledge based society and those who are not.
- Making technology and electronic services accessible and usable by people with disabilities or the elderly.
- Giving people broadband internet access.
- Preventing economic exclusion from electronic commercial and public services that save time and money.
- Preventing social exclusion from digitally connected communities.
- Using any digital technology to tackle social exclusion.
- Using any digital technology in communities to tackle area-based deprivation.

An encapsulation of all these interpretations is: *The use of technology, either directly or indirectly, to improve the lives and life chances of people and the places in which they live*.

The focus of this study is, however, more narrowly on disadvantaged people and places. In other words this study defines digital inclusion as - *the use of technology, either directly or indirectly, to improve the lives and life chances of disadvantaged people and the places in which they live*. Figure 1 highlights this definition and the potential commonality and differences with other terminologies used in this policy area.

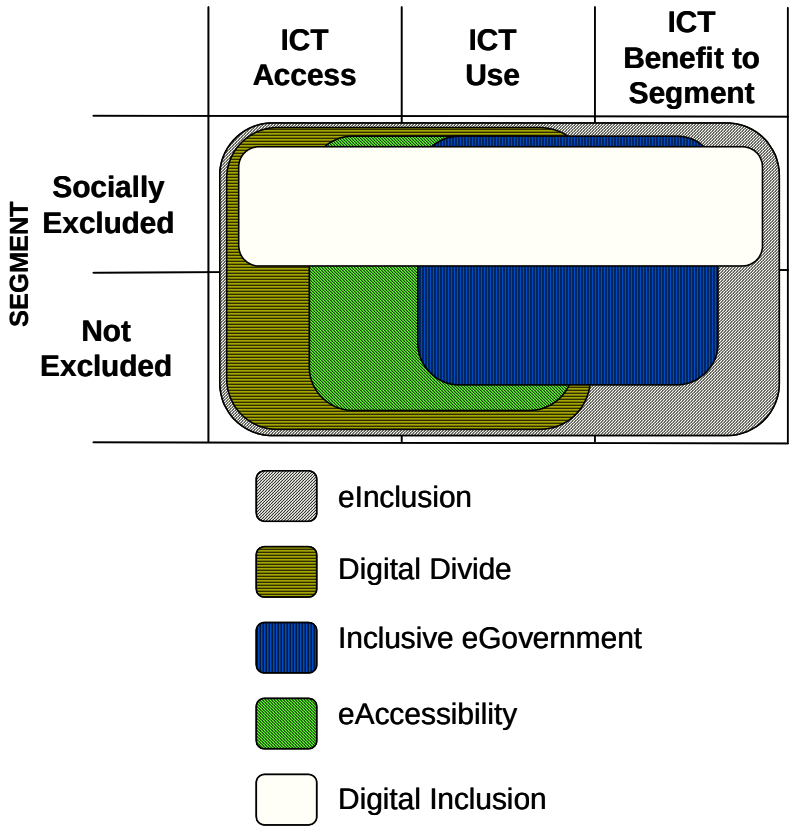


Figure 1 Common Terminology

1.3.2 Defining Disadvantaged Groups and Places

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. When such problems combine they can create a vicious cycle.

There is no definitive segmentation around social exclusion, although there are clearly some groups in society such as those who are *homeless* or *offenders* who are more likely by definition to suffer multiple disadvantages than others. For the purposes of this report the landscaping study has focused on the target groups presented in Table 1 which roughly divide into two sets: those that are most likely to be disadvantaged by definition (e.g. the homeless), and those groups in which only a fraction are likely to be significantly deprived e.g. older people (60+). This list has been compiled through

trawling reports on social exclusion and has been refined when reviewing digital inclusion case studies.

Disadvantaged people among:	**Most people among:**
Young Children (0-5)	Asylum Seekers/ Refugees
Youth (5-12)	Gypsies and Travellers
Teenagers (13-19)	Chaotic Families
Young Adults (20-25)	Domestic Violence Suffers
Disabled	Children In Care
Older People (60+)	Those with Severe Mental health Problems
Lone Parents	Substance Abusers
	Offenders
Ethnic Minorities	Homeless
	Unemployed/ Workless

Table 1 Target Groups

Social exclusion is formally measured on a geographical basis through the Indices of Multiple Deprivation (IMD)[2]. These indices are computed by combining area based data within seven discreet factors: income deprivation; employment deprivation; health deprivation and disability; education, skills and training deprivation; barriers to housing and services; living environment deprivation and crime. The index indicates that:

- There are approximately 4.9m people living in the 10% most deprived places in England.
- 21.5% of Black and Minority Ethnic (BME) people live in these areas compared to 8.8% of the white population.
- On average 39% of the people in these areas experience income deprivation compared to a national average of 14 per cent.
- 29% of households within these areas are surviving on incomes below £10,000.

[2] http://www.communities.gov.uk/index.asp?id=1128440

- 12% of all children live in these areas and just over half of these live in households that are income deprived.
- People are generally less likely to report high rates of participation in formal volunteering than those living in the least deprived areas.

1.4 DIGITAL INCLUSION AND THE DIGITAL DIVIDE

1.4.1 The 'Google Generation'

Information and Communications Technologies (ICT) have transformed the way we live, learn, work and play. For many of us, jobs are easier to find, services are more convenient, goods are cheaper, social networks are deeper and opinions can be heard more widely. We have seen rapid progress across different forms of technology[3]:

- By the end of March 2006, there were 11.1 million broadband connections to homes and smaller businesses in the UK, nearly twice as many as narrowband connections.
- Nearly all major urban areas in the UK are now covered by wifi hotspots. According to Jiwire.com, the UK is second only to the US in the league table of public hotspot numbers, with over 14,000. Those who have the technology can now connect 'on the move' in cafes, bars, stations, shops and public spaces.
- By the end of March 2006, the total number of mobile subscriptions stood at 66.2 million, greater than the population of the country. Around 30% of consumers now report use mobile phones as their main method of making phone calls. And 2005 was a record year for texting with approximately 35 billion text messages sent in the UK during the year.
- Supported by rising broadband take-up those who are connected are using the Internet more often. Over half of all Internet users now report using the Internet at least once per day.
- There has been high growth in the popularity of social networking websites: portals such as MySpace and Bebo are among the UK's most popular sites - in May 2006, they attracted 5.1m and 3.9m unique users respectively. Over half of 16-24 year olds that are online regularly use social networking websites.
- The majority of users value the Internet for its practical purposes. Over half of all Internet users consider online banking sites to be the most valued type of web page, followed by shopping (50%) and holidays (47%).
- Music downloads are increasing – in the first quarter of 2006 an estimated 11.5m tracks were downloaded legally.

[3] Ofcom, The Communications Market 2006, http://www.ofcom.org.uk/research/cm/cm06/main.pdf

- In June 2006 around 14% of internet users aged 16+ claimed to have contributed to a website or blog by writing a comment, posting a photo or posting a video. This activity is highest among the 18-24s with 37% of those who are online reporting that they have at some time contributed to a website or blog. Information and Communications Technologies can clearly help to provide a voice for those currently unheard or excluded, and improve citizen engagement.

For those who are connected we are seeing increasingly more sophisticated uses of technology. We have been called the 'Google Generation' - the google.co.uk site is among the most popular websites in the UK with over 19 million unique visitors measured in April 2006. Many in the country are clearly at ease with technology and reaping the benefits in their personal and professional lives.

1.4.2 The Digital Divide

In contrast, many are not part of the 'Google Generation' and are excluded from the benefits of the information society:

- 11% don't have a mobile phone.
- 27% don't yet have a digital TV, and 26% of those who do, have non-interactive forms of Digital Terrestrial TV.
- 33% of UK Households don't have a home computer
- 39% of adults in the UK don't use the internet .
- 23% of children have never accessed the internet from home and 29% lack such access.

The direction of travel is positive but recent progress has been particularly slow. PC ownership has remained relatively stable since 2004, at between 65% and 67%. Similarly mobile phone penetration has remained stable over the same period at around 89%. Growth in use of the Internet was particularly rapid up to 2004, but since then has been flat. Figure 2 illustrates this. On recent evidence it is clear that the digital divide is persistent and that the market is failing to close it. Digital TV stands out in Figure 2 as the technology that is still experiencing strong growth; it has rapidly overtaken internet and PC penetration. The government will intervene to ensure

universal use by 2012 and to release spectrum used by analogue TV broadcasting for sale.

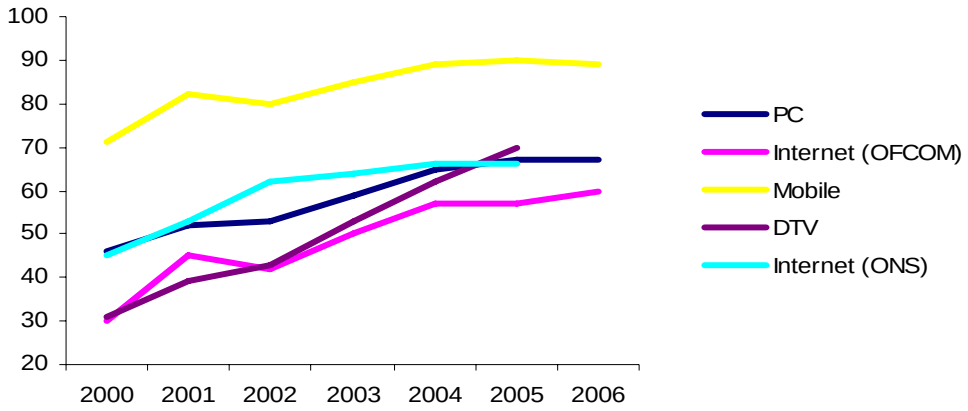


Figure 2 Technology Use in the UK[4]

1.4.3 The Link Between Social and Digital Exclusion

There is strong evidence that many of those who are on the wrong side of the digital divide are also socially excluded. Figure 3, Figure 4 and Figure 5 are derived from OFCOM's tracking survey in 2006 and illustrate the demographics of ICT use. The key points are:

- Technology use broadly falls with age; younger people (16-24) are more than twice as likely to use the internet, use a PC or a mobile phone as older people (65+).
- Technology use increases with wealth; people on the highest incomes (greater than £30k) are more than three times as likely to use the Internet as those on the lowest incomes (less than £11.5k). They are over twice as likely to use a PC and also much more likely to have a mobile phone.
- Technology use broadly increases with socio-economic status; ABs are more than twice as likely to use the Internet than DEs. Usage of mobile phones is below average for DEs.

[4] **OFCOM and ONS Internet measures differ as ONS includes community use and OFCOM's is based on home use only. The ONS data has been flat for six successive quarters between Oct 04 and the last data point in Feb 06.**

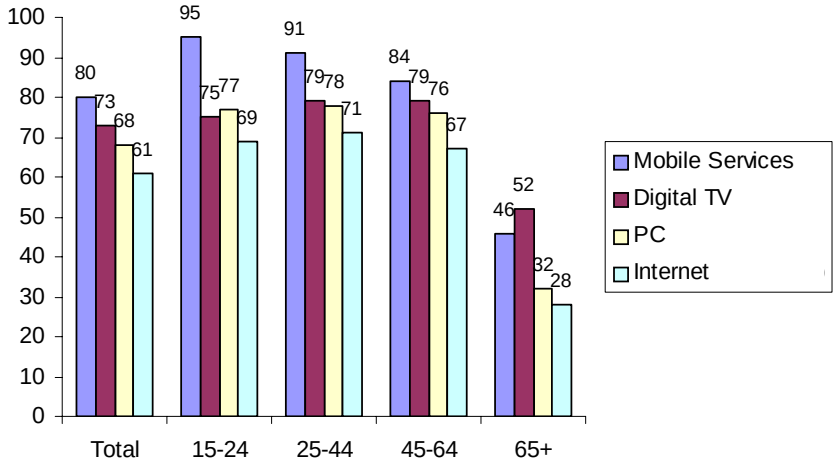


Figure 3 Technology Use by Age (Ofcom 2006)

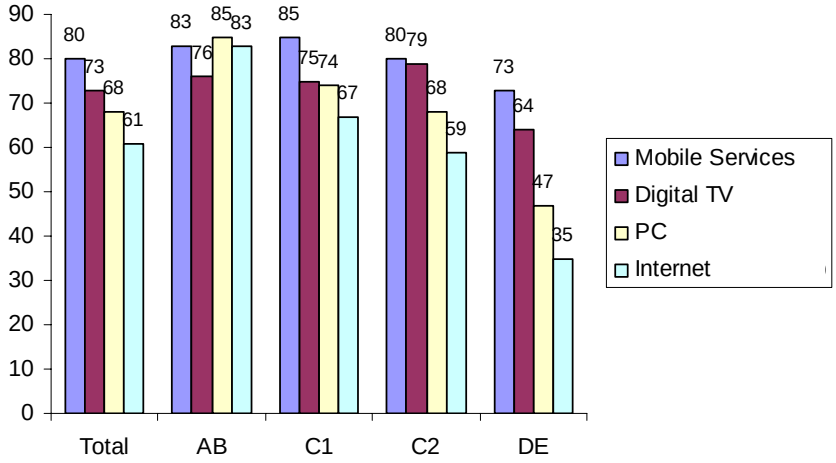


Figure 4 Technology Use by Socio-Economic Background (Ofcom 2006)

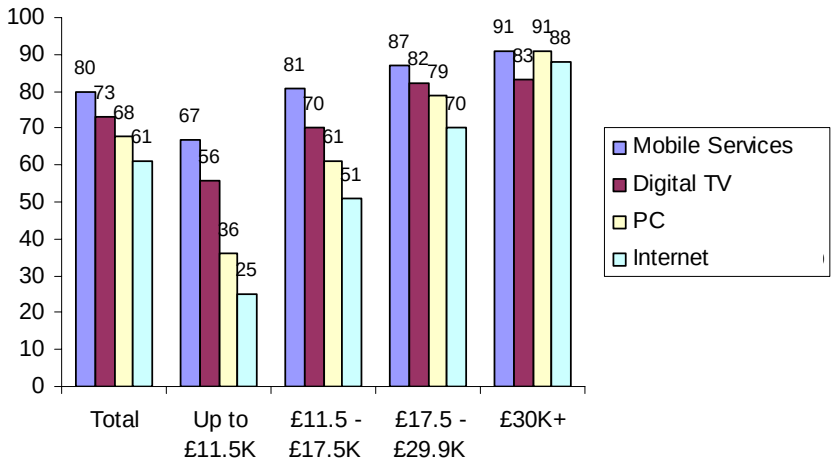


Figure 5 Technology Use by Income (Ofcom 2006)

In addition to the OFCOM data, the 2005 ONS Omnibus Internet survey has been used to explore the links between social and digital exclusion further. A broad definition of social inclusion was developed based loosely on the domains of the Index of Multiple Deprivation (IMD). For the purposes of this analysis people were defined as being socially excluded if they suffered three or more of the following six indicators of deprivation:

- Income Deprivation
    - Live in social housing or
    - Living in a workless household (but not retired)
- Employment Deprivation
    - Working in low skilled employment - routine/ semi-routine work or
    - Never worked or
    - Unemployed or
    - Working part time <10hrs per wk or
    - Living in a workless household (but not retired) or
    - Economically inactive (but not retired)
- Health Deprivation
    - Not working because of poor health

- Education Deprivation
    - No qualifications
- Suffering Barriers to Services
    - Living Alone and without access to a car or
    - Lone Parent
- Living Deprivation
    - Living in crowded accommodation or
    - Living Alone

Using as 'not having used the internet in the last 3 months' indicator of exclusion from the information society, the grid in Figure 6 was produced. The analysis indicates that around 20% of the population meets the broad definition of social exclusion. Of these, it was found that 15% of the adult population, over 6m people, suffer the double disadvantage of social deprivation and lack of engagement with the information society. The socially excluded are three times as likely to be excluded from the information society as they are to be included.

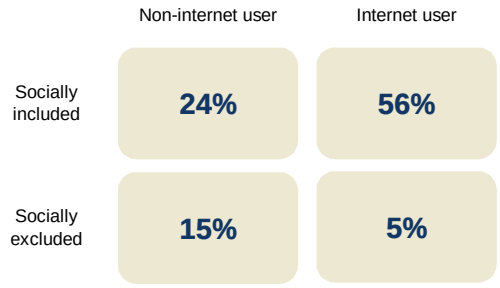


Figure 6 Link between Social Exclusion and Internet Use

In addition to overlap there is some evidence of causality, for example:

- OFCOM has found that 15% of people are 'involuntarily excluded' from communications services due predominantly to cost.[5]
- It is estimated that 79% of those on means tested benefit lack practical ICT skills. This indicates that many of those who suffer specific social disadvantages also lack the capability to engage with technology.

[5] http://www.ofcom.org.uk/research/tce/report/research.pdf

1.5 BROAD BUSINESS CASE FOR DIGITAL INCLUSION

Digital inclusion is a crosscutting opportunity to tackle the problems that disadvantaged people face and to reduce the high costs to society of social exclusion. Effective co-ordinated action will result in benefits that will be felt across many different government departments and industry sectors. However, crosscutting business cases, where the benefits are distributed across different organisations, are typically very difficult to develop and drive forward to realisation. They require the co-ordinated commitment of different organisations to conduct a transparent analysis of the potential impact of more people being digitally included within their respective sectors. There are many barriers to achieving this and more work needs to be done in this area to quantify the aggregate benefits. This section therefore only sketches out a high-level case for action, covering:

- The strategic case.
- The specific case around tackling disadvantage.
- The macro-economic case of more pervasive use of technologies among disadvantaged groups.
- Examples of the benefits of digital inclusion for specific groups.

1.5.1 The Strategic and Political Case

Table 2 presents a list of high-level mapping of government policies, strategies and action plans that are relevant to digital inclusion.

Potential to Impact Digital Inclusion	Potentially Impacted by Digital Inclusion: No	Potentially Impacted by Digital Inclusion: Yes
Yes	**Digital Strategy (DTI)** **i2010 – European Information Society (DTI)** **Inclusion Through Innovation (former ODPM)** **Home Access Taskforce (DfES)** **Third Sector Strategy (Cabinet Office)** **Future Builders/ Capacity Builders (Cabinet Office)** **Invest to Save (HMT)** **Government Data Sharing Strategy (DCA/ Cabinet Office)**	**Digital Switchover (DCMS)** **Transformational Government/ Varney Review (Cabinet Office/HMT)** **Social Exclusion Action Plan (SEAP)** **Skills for Life/ Leitch Review (HMT/LSCs)** **Health Whitepaper covering Telehealth and Telecare (DoH)** **Local Government Whitepaper (CLG)** **Link Age (DWP)** **National Action Plan on Social Inclusion (DWP)**
No		**Together We Can (DCLG)** **Every Child Matters/ Green Paper on Children in Care (DfES)**

Table 2 Digital Inclusion and Related Government Policies

It is clear from Table 2 that digital inclusion cuts across many areas of government policy. Some policies, such as the *Home Access Taskforce*, directly promote digital inclusion. Others, such as digital switchover, provide potential opportunities to improve policy outcomes and concurrently increase digital inclusion. Part of the strategic case for digital inclusion is to unlock the synergies between these policies and related programmes, so that we realise a greater socio-economic impact on existing investment across all these areas. The challenge is to realise the opportunities by joining-up and ensuring:

- 'Digital policies' support other policies and deliver social outcomes.
- Other polices support digital inclusion policies: for example digital inclusion as an additional intended consequence of digital switchover.

The 'do nothing' option will not only miss these opportunities, but could make matters worse and **compound social exclusion**. Inaction or superficial action will re-enforce the social disadvantages of the few as they are increasingly excluded from innovative, value-added public, private and 3rd sector services.

1.5.2 The Contribution of Digital Inclusion to tackling Social Exclusion

The digital divide, social exclusion and place-based deprivation are linked, they are issues that impact the same people, and policies to tackle these issues can be mutually beneficial. Digital inclusion is an additional enabler for social inclusion and therefore shares, in part, the same business case for action.

An estimated 22% of the population (11.3m people) are socially excluded. They suffer three or more disadvantages such as: unemployment; living in workless households; social housing; overcrowding; no qualifications; poor mental health; poor health; living alone; lacking consumer durables; or enduring financial stress. A fraction of these, amounting to 2.5% of the population (1.3m people) are particularly high harm to society or high cost to the state. Innovative use of technology can help to tackle the problems that disadvantaged people face and help to reduce the high costs to society of social exclusion. Specific benefits include:

1.5.2.1 Benefits of Digital Inclusion to Government

- Digital inclusion can increase self-sufficiency and reduce state dependence. Government avoids costs in benefits and social care when people are better able to help themselves using technology.
- By putting technology in the hands of front line workers, who are serving disadvantaged people, productivity can be improved, benefiting both client and service provider.
- Government can benefit from efficiency savings by dealing with more people using technology either directly or indirectly.

1.5.2.2 Benefits of Digital Inclusion to Disadvantaged People

- People have increased choice in the services they use and the way they access them.
- People can obtain goods and services at better prices such as shopping, holidays, insurance, and banking.
- People can enjoy greater democratic and societal engagement, and an enhanced quality of life.
- People are equipped with the essential skills needed to work in a modern economy.
- People are more self-sufficient and independent.
- People can maintain a better work-life balance.
- People gain social capital as they extend their support networks beyond geographical boundaries.

1.5.2.3 Benefits of Digital Inclusion to Deprived Communities

- ICT can support more cohesive communities.
- ICT can support crime reduction by improving the speed and quality of crime reporting, and by helping to gather local intelligence more effectively.
- ICT can support improved educational outcomes and engagement of the young.
- Digital inclusion can promote equality of opportunity for all sectors of the community.
- Electronic communication is environmentally more sustainable than traditional communications channels.

Cases are presented throughout this document, which provide evidence to support the preceding benefits that have been identified.

1.5.3 Examples of the Benefits of Digital Inclusion to Specific Groups

Table 3 presents the types of benefit that innovative use of ICT can offer specific target groups.

GROUP/ POLICY ISSUE	DIGITAL INCLUSION BENEFITS	ACTUAL EXAMPLES/ CASES
Mental Health; 180,000 people have serious mental health problems and are on benefits. - Depression and anxiety have become the main basis of incapacity benefit claims. - Mental health problems are estimated to cost the country over £77 billion a year through the costs of care, economic losses and premature death. - 80% of people with serious mental health problems are without a job. - Employment rates have fallen among those with moderate to severe mental illness from 14% in 2000 to 10 per cent in 2005.	- Telecare technology can help people with less severe problems to live more safely in the community. - ICT can increase access to peer support and professional support. - ICT can support specialist labour markets that bring together employers specifically recruiting people with mental health problems. - ICT can help people to communicate in different ways.	- Remote e-clinics. - Online, email and SMS based cognitive behaviour therapy. - Assistive technology to support communication. - Online communities such as DepressionNet. - Multi-agency assessments/ data sharing e.g. FAME. - Telecare technology to support dementia sufferers. - MegNexus online employment support.
Children in Care; there are approximately 60,000 children in care at any given time. - 25% of the prison population spent a childhood in care. - only 11% get 5 good GCSEs. - it costs about £100,000 a year to keep a child in residential care. - it is estimated that a total of £1.9bn is spent on children in care every year.	- ICT can provide confidential and secure access to services such as online counselling and virtual schools. - ICT can help to re-engage those excluded from education. - ICT can support activities to boost self-esteem.	- Secure ICT enabled services. - Cashless school meal cards. - SMS based bullying service. - Virtual Mentoring. - Virtual vaults for storing childhood information. - ICT equipment and training for foster carers. - Video recording and editing of drama activities. - Interactive games to increase numeracy, literacy and teamwork.
Chaotic Families; there are an estimated 50,000 'chaotic' families in the UK who are particularly high cost to the state; - those with the most complex needs can cost the state an estimated £250,000 a year.	- ICT can provide increased access to support from professionals, mentors and peers. - ICT can help neighbours to deal with the harm that some families cause the community. - ICT can support purposeful activities for teens from chaotic families at risk of offending. - ICT can be a 'carrot' to re-engage youth who are excluded from education.	Positive parenting network. Remote parenting courses/ e-learning. Truancy alert systems. Reward cards for school attendance and behaviour. Anti-social behaviour reporting via Digital TV. Peer testimony - early intervention. Purposeful activities involving ICT: digital music, digital art, and video recording of 'street-sport'.

Table 3 Specific Examples of Digital Inclusion Supporting Social Policy

2.0 METHODOLOGY

2.1 RESEARCH FRAMEWORK

There are a few relevant frameworks that are often used to help to focus policies, activities and research around the digital inclusion. These include:

- "***Three Cs" of the digital divide*** – Connectivity, Capability and Content[6]; this framework highlights the importance to bridging the digital divide of tackling lack of access, lack of ICT skills and the need for service developers to provide compelling content through electronic channels.
- ***Publish, Interact, Transact Model***; this is a supply side framework focusing on content. There are a number of variants and it is often used to measure the increasing sophistication of online services.[7]
- ***Access, Use and Impact Framework***; this has been used by a number of studies for benchmarking and policy comparisons. This framework introduces the importance of impact alongside access and use, an advantage when measuring policy outcomes.[8]
- ***Awareness, Access, Skills, Information Sharing and Services***; a framework which usefully combines service sophistication with digital divide activities and policies[9].

These frameworks have their disadvantages. Whilst they are useful for framing policies for the general population they tend to be less applicable to disadvantaged people with more complex social needs. Furthermore, they focus predominantly on the internet, and on direct use of ICT. ICT offers many more opportunities to improving the lives of disadvantaged people that are not captured by these frameworks. These include exploiting non-internet based technologies such as games

[6] The 3Cs model is highlighted in: BT (2003) BT and the Digital Divide An Independent Commentary. Also attributed to Pacific Bell (2002) Pacific Bell / UCLA Initiative for 21st Century Literacies at the UCLA Graduate School of Education and Information Studies Re-evaluating the Bridge! An expanded Framework for Crossing the Digital Divide through Connectivity, Capability and Content, a Public Policy Roundtable Los Angeles

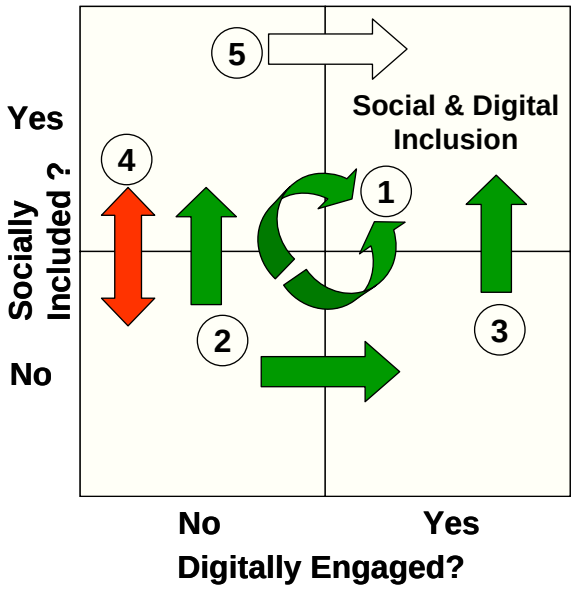
[7] For example the typology (publish, interact, transact) is used by Center for Democracy and Technology. 2002. The e-Government Handbook. Online. http://www.infodev.org

[8] For example of Access, Use and Impact: ONS (2002) Towards a Measurement Framework for International e-Commerce Benchmarking http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=9565&Pos=&ColRank=1&Rank=256

[9] IECRC (2005), An International Study of technology initiatives to enhance social inclusion: Extending the Reach of what works.

or smart cards, back-office innovations and technology in the hands of front-line workers.

Using insights provided by the preceding frameworks an alternative framework has been developed for the purposes of this study. This framework is presented in Figure 7. This framework emphasises the importance of both the social and digital dimensions of policy, and therefore acknowledges that a different approach for digital engagement may be necessary for those with the most complex social needs. The arrows on the framework indicate activities and policies that aim to move disadvantaged segments towards both social inclusion and digital engagement. Importantly, *Arrow 4* acknowledges that activities are also needed to prevent people falling into social exclusion by missing out on the benefits of ICT enabled services.



1 – Policy: ICT supporting policy delivery. Integrated policies that improve both social inclusion and digital engagement
2 – Needs: personal and community capacity building supported by ICT.
3 – Services: ICT-enabled service transformation.
4 – Prevention: technology supporting intervention and social exclusion prevention. 'Design for all', access and accessibility.
5 – Addressing the digital divide for the non-socially excluded

Figure 7 The Dynamics of Social Inclusion and Digital Engagement

Addressing each of the arrows in Figure 7 in turn:

- ***Arrow 1*** - represents integrated policies and activities to tackle social exclusion and lack of digital engagement concurrently. Success is, in part, dependent on bringing together those who understand social exclusion issues, but have limited knowledge of technical possibilities, with the ICT research

and development community who rarely get close to the front line to put their technical knowledge to creative use.

- ***Arrows 2*** - represent activities that use ICT to tackle the complex needs of disadvantaged people and communities. Those who have the most complex needs in society may be least likely to be motivated to engage with information technology. This is likely to be a lower priority than poor housing, low income, crime, safety, ill health, poor skills and worklessness – some key drivers of deprivation. However, ICT can help either directly or indirectly, to tackle these issues. Some activities focus on engaging people with ICT first, and provide a foundation for tackling social exclusion next. Other activities focus on using technology to tackle social exclusion barriers first and foremost.
- ***Arrow 3*** – represents the transformation of public services through ICT to help vulnerable people become more self-sufficient in their dealings with government and to achieve more effective outcomes. The focus is on activities to transform existing government services for the vulnerable. This is particularly distinguishable from *Arrow 2*, which tends to focus on addressing social needs that are not met by existing services, typically where government's role ends and the third sector's role starts.
- ***Arrow 4*** – represents activities that tackle the risk of widespread adoption of ICT by the many, compounding the social exclusion of those left behind Activities tend to focus on increasing access, e-accessibility, and promoting assistive technologies for those with disabilities. Activities also include the positive contribution that ICT can make towards enabling early intervention in situations where a decline into social exclusion looks likely. For example ICT can facilitate a combined risk assessment across different social care agencies, which could then be used to determine if and when direct intervention is necessary. The focus of all these activities is social exclusion prevention - preventing people becoming more disadvantaged as ICT becomes pervasive, and using ICT to enable early intervention.
- ***Arrow 5***; represents activities for the people who are socially included, and for example, have made a voluntary decision not to engage with technology. This group is not the main focus of this study. However, there is already a wealth of

knowledge around successfully engaging this segment. Furthermore, the activities to engage the social excluded highlighted in this report, are likely also to have some relevance to the socially included as well.

In summary, ICT can contribute in four key areas as illustrated in Figure 8:

- Supporting social exclusion and community deprivation policy.
- Helping disadvantaged groups and communities address their priority issues.
- Transforming government services for the disadvantaged.
- Preventing people becoming more disadvantaged, especially as ICT becomes more pervasive.

These four key areas are useful for categorising digital inclusion activities and they are the foundation for the activity framework presented in Figure 9. The reality is that there is some overlap and in some cases activities could be classified into multiple categories, as illustrated in Figure 8. However, activities tend to fall more under one area than another. The categories have been expanded into sub-categories, which are presented in Table 4 along with example activities. For the purposes of this study the digital inclusion landscape has been presented against the framework in Table 4 to provide structure to the analysis.

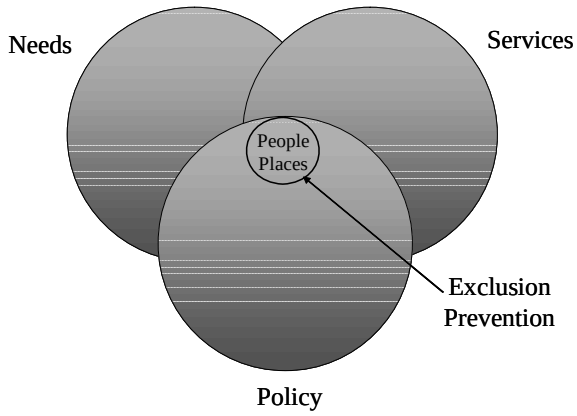


Figure 8 Four Focal Points of Digital Inclusion

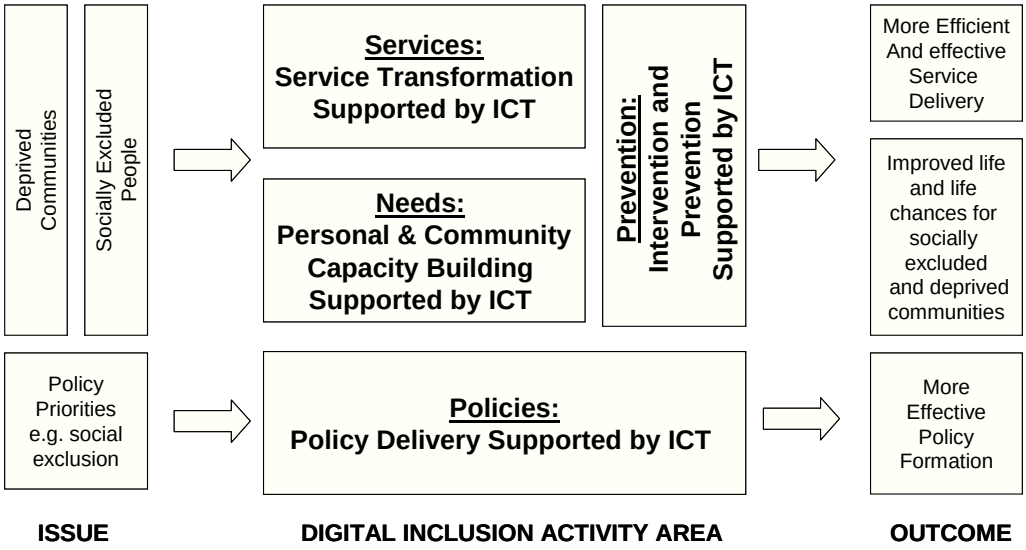


Figure 9 Digital Inclusion Framework

	SUB-CATEGORY	DESCRIPTION	ACTIVITY EXAMPLES
ICT SUPPORTED POLICY DELIVERY	ICT Enabled Policy Delivery	Integrated social and digital inclusion policies resulting from early consideration of ICT in the policy development process to open up intervention options e.g. through innovation activities to bridge the gap between the policy specialists who know little about ICT, and the technology specialists who know little about social policy.	Where ICT is applied directly to a policy goal. Social exclusion drivers and digital disengagement are addressed concurrently: • DVD game to reduce re-offending • Healthy eating reward card to tackle childhood obesity with online management of reward points.
	Strategic Information Sharing	The ICT-enabled sharing of aggregate and anonymised data between agencies to support better planning and targeting of social services/ policies.	• GIS mapping of take-up of benefits from one agency to target local policies and actions by another
	Building the Evidence Base	Research projects on social exclusion and digital inclusion to support evidence based policy-making.	• Market research on the attitudes towards ICT by target groups.
	Supporting Policy Makers	Building the capacity and capability of policy makers to understand and appreciate digital inclusion and the opportunities of ICT to help deliver social policy goals.	• Digital inclusion module in policy development courses • Digital inclusion tool kit for policy makers
PERSONAL AND COMMUNITY CAPACITY BUILDING	Building Personal Capacity	Activities that improve the individuals' attitudes, skills, knowledge, experience and interpersonal skills so that they become more self-sufficient.	Typical examples use ICT to meet 'Maslow' needs e.g. • 'Physiological': Telecare and Telehealth • 'Security': Bogus caller schemes • 'Belonging': Communities of interest networks

	SUB-CATEGORY	DESCRIPTION	ACTIVITY EXAMPLES
	Building Community Capacity	Development of area based initiatives, which provide disadvantaged communities with the tools they need to address their priority issues.	Typical examples provide community access to digital services e.g. broadband, Wifi, iDTV, and overlay some community tools that help to tackle key local issues.
	Building ICT Skills and Trust	Activities providing basic ICT courses/ support and also initiatives to build trust in ICT.	• Internet taster sessions • Intergenerational training • Purposeful ICT training • Safe surfing advice
ICT ENABLED SERVICE TRANSFORMATION	Service Transformation	Transforming government services and improving their efficiency and effectiveness for the most disadvantaged.	• Service automation/ self-service • Customer relationship management (CRM) • Intermediation
	Operational Data Sharing	The sharing of personal information between agencies to support integrated delivery to target groups.	• Receive information once, but use many times model to reduce duplication for clients of multiple agencies • Sharing of databases between charities working in the same sector • Intermediary self-service of information from government back-office systems.
	Supporting Frontline Staff	Activities to support frontline staff in delivering a more effective service. Also activities to support service designers/ practitioners around good practice service delivery for the 'hardest to reach'.	• Use of mobile technologies to take services into the homes of the vulnerable • Practitioner capacity building • Communities of practice
SOCIAL EXCLUSION PREVENTION	Access and Accessibility	Activities to tackle two key risks: a) exclusion from public services and information as public services become increasingly electronic b) exclusion from an increasingly electronic social and commercial world	• Supported/ subsidised technology access schemes • General ICT benefit awareness campaigns • Design for All – inclusive channel strategies, assistive technologies, eAccessibility
	Supporting Early Intervention:	ICT can help to monitor those at risk of falling into social exclusion and support early and timely intervention	• Early warning indices based in cross-agency assessments to support early intervention e.g. for children at risk.

Table 4 Digital Inclusion Framework: Activity Categories and Sub-Categories

2.2 STUDY PROCESS

Information on digital inclusion projects was gathered through interviews and desk research. This information was captured in a database, and included:

- Project Title
- Delivery Organisation
- Project Description
- Start/End Dates
- Funding & Funding Organisations
- Risk Assessment
- Project Dependencies
- Project Benefits
- Project Status (vision -> operational)
- Activity Category (per Table 4)
- Target Segments Addressed (per Table 1)
- Geographical focus
- Sustainability
- Transferability/ Scalability

The information within the database was then analysed to describe the digital inclusion landscape against the research framework in Table 4.

3.0 OVERARCHING RESULTS

3.1 HIGH-LEVEL FINDINGS

The most common focus of digital inclusion activities is on broadening access to technology for those without access, and on improving the accessibility and usability of services for those with access. *Personal and community capacity building* activities and *strategic information sharing* are much less common.

Many projects to date have focused on the largest groups lacking internet access, such as the elderly and the disabled. Smaller, disadvantaged groups are currently less well served. Although these groups are smaller the people within them could disproportionably benefit more from initiatives to improve their situations than many in the larger groups. Government, in turn, could benefit from increased self-sufficiency within these groups leading to a reduction in state-dependency.

There is at least £424m of mainly government money currently being invested in projects that promote digital inclusion or that could be leveraged to do so. This is certainly an underestimate given that funding information for only 20% of projects has been obtained during this study, with few financial details on industry projects. However, this figure does include a number of major central government initiatives that dominate aggregate funding calculations. When these few major projects are excluded, a fragmented landscape of many projects receiving small amounts of funding is revealed. Around 25% of projects have funding issues that threaten their future and the lack of sustainability of initiatives is an important problem that must be addressed.

There is a need for joined-up working across sectors and organisations engaged in activities that promote digital inclusion, in order to foster efficiency and effectiveness. There are clear instances of overlap, e.g. eleven different schemes to make PCs more widely available were identified during this study. And there are synergies to be exploited: five projects were identified that could potentially be enhanced by an online reading companion for those with literacy problems. Overall it is estimated that only 25% of the linkages between projects that could have been made, have been made.

A few major projects have the potential to add some cohesion to the rest of the landscape and 'anchor' the smaller less sustainable initiatives. One specific opportunity, for example, would be to gain leverage from the *Digital Switchover Help Scheme*, which offers an opportunity to provide interactive electronic services to people who would otherwise almost certainly remain on the wrong side of the digital divide.

At first analysis the ownership and governance of the digital inclusion agenda appears to be fragmented across government, industry and the third sector. More co-operation and joining-up could help to achieve greater impact with the existing resources that are being committed across the sectors.

3.2 SCALE AND TIMING OF STUDY

Information was collected during 65 days of meeting with and interviewing more than ninety people across 65 organisations between 9th June 2006 and 8th September 2006. These interviews built on *Inclusion through Innovation*[10], with low but complementary overlap; only 11% of people interviewed for this study were also interviewed during *Inclusion through Innovation*.

3.3 ORGANISATIONAL SCOPE

Figure 10 presents organisations and/ or programmes that have been seen during the course of this study.

Ability Net	DSG International	National Council for Voluntary Organisations
Active Communities Unit	Dept for Trade and Industry	NOMAD, National Programme
Addaction	Digital UK	Northern Ireland Office
Alliance for Digital Inclusion	Dept Work and Pensions	Office of the Third Sector
Barnardos	Educe	Office of Communications (OFCOM)
British Broadcasting Corporation	eGovernment Unit	OFCOM Cmte on Older and Disabled People
Brunel University	FilmIT	OFCOM Consumer Panel
British Telecommunications	GLE oneLondon	Office for National Statistics
Brook	Government Connect	Oxford Internet Institute
Change-Up Programme	Groupe Intellex	Scope
Charity Technology Trust	Hackney Acting Up	Scottish Executive
Childrens Society	Help the Aged	SIAC
CISCO	Home Office	Single Non-Emergancy Number Team
Citizens Advice Bureau	Home Office NOMS	Social Exclusion Taskforce
Citizens Online	Hewlett Packard	Society of Information Technology Management
City of London	IBM	South East Connects
Clicks and Links	Improvement and Development Agency	Tavistock Institute
Coram Family	Intel	The Smart Company
Crisis	Intellect	TimeBank
Dept Communities and Local Government	Institute for Public Policy Research	Turning Point
Dept for Culture, Media and Sport	Kable	University for Industry
De Montfort University	Leeds City Council	UK CEED
Dept Environment, Food and Rural Affairs	Liverpool University (AIMES)	Varney Review
Dept for Education and Skills	London School of Economics	Welsh Assembly
Digital Challenge Team	Microsoft	Worshipful Company of Information Technologists
DigiTV National Programme	Mind	Who Cares? Trust
Directgov	NACRO, the crime reduction charity	Youthnet
Dept of Health	NCH, the children's charity	

Figure 10 Organisations Seen During Landscaping Study

Figure 11 presents a breakdown of the interviews conducted by organisation sector. There was a slightly greater focus on central government to cover the major national initiatives. There was a similar distribution of interviews across all other organisational sectors except 'international', a lower priority at this stage.

[10] Social Exclusion Unit (2005), Inclusion through Innovation

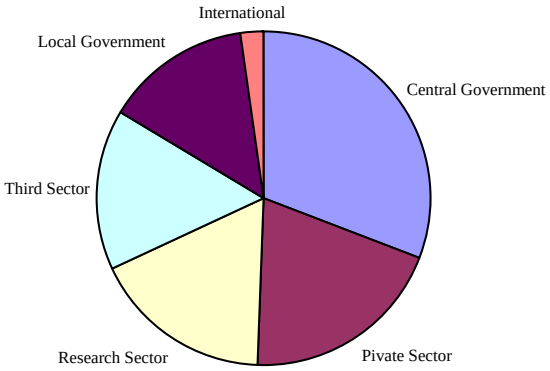


Figure 11 Landscaping Interview Focus by Organisation Category

3.4 INFORMATIONAL SCOPE

The information collected during this study has been divided into:

- Approx 120 live programmes or projects that are at various stages of the life cycle between vision and operational.
- Approx 140 case studies, projects that have been completed and in some instances are still live and operational.

The prime distinction between the two is that there are opportunities to join-up and build on the live projects whereas the case studies are generally completed and in many cases there are only opportunities to learn lessons. Much of the analysis in the sections that follow has been conducted on the live projects rather than looking backwards at historical case studies.

It should also be noted that there is a huge difference in the scale between some of the projects collated, but they have all been given equal weighting when assessing the landscape because, with the exception of a few large-scale projects, there is a ‘long tail’ of similar sized projects.

3.5 LIVE PROJECTS BY DIGITAL INCLUSION CATEGORY

Figure 12 illustrates the focus of live projects against the research framework. Some key points to note:

- *Building the evidence base* is the most popular project category; many organisations are currently conducting digital inclusion related research.
- Research aside, *Access and Accessibility* is a major focus; it is the single most popular non-research category across the database of live projects compiled. It was also the prime focus of local authority partnership bids in response to the Digital Challenge competition at the first submission stage[11].
- The use of ICT to build the personal capacity of disadvantaged people is the third most popular category of activity, although still only half as popular as *Access and Accessibility*.
- The project categories where there is least activity are *Strategic Information Sharing*, *Supporting Early Intervention*, and *ICT Enabled Policy Delivery*.

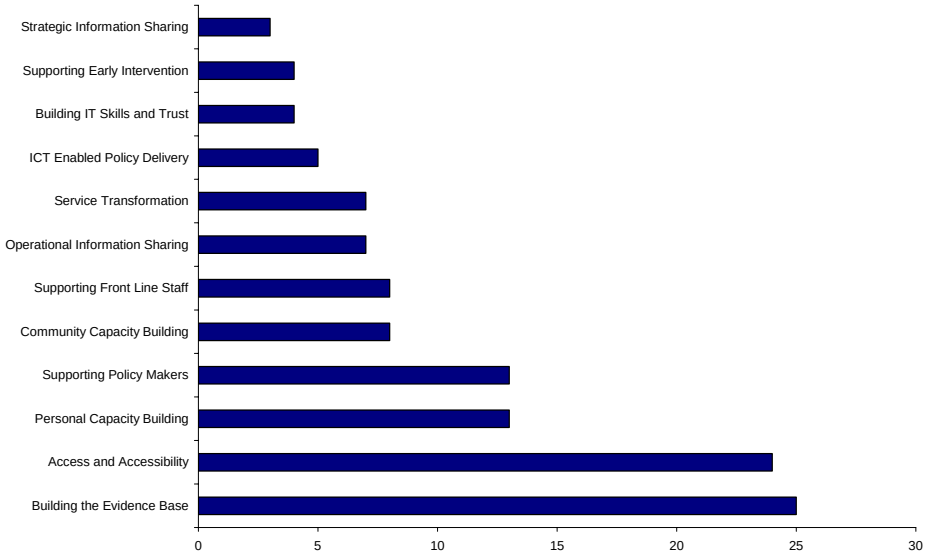


Figure 12 The Prime Focus of Live Digital Inclusion Projects

[11] Digital Challenge and Inclusion Network (2006), Sustaining the Momentum, Moving Forward to achieve Digital Inclusion

3.6 PROJECTS AND CASE STUDIES BY TARGET SEGMENT

Digital inclusion activities are most often focused on either the elderly or the disabled, as illustrated in Figure 13. These findings are similar to those of a separate analysis of Digital Challenge bids[11].

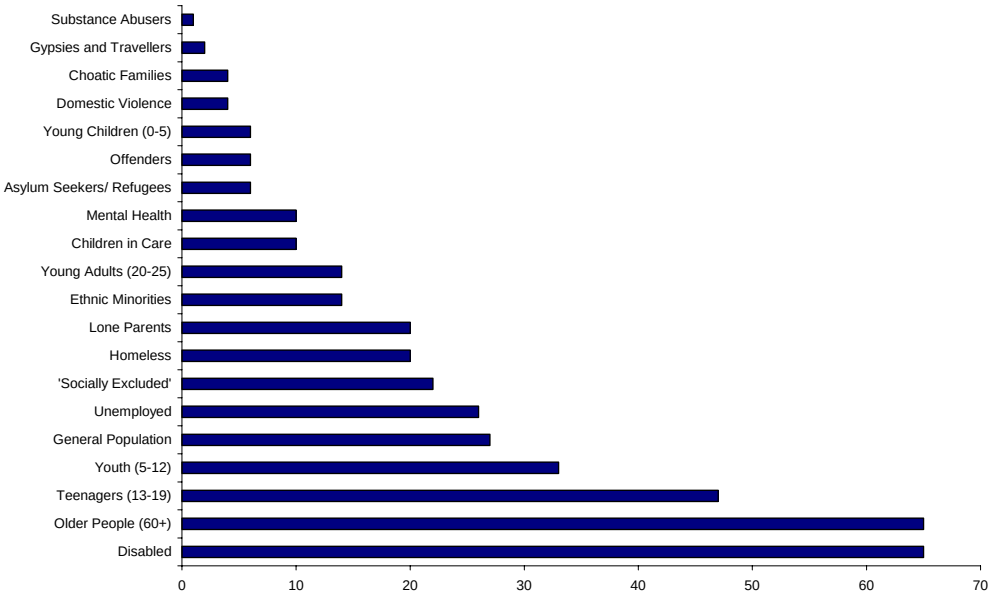


Figure 13 The Target Segment focus of Cases and Projects

There are fewer examples of innovative use of ICT for smaller groups such as substance abusers, travellers, domestic violence sufferers and the youngest children. Similarly, groups such as those with mental health problems and children in care, which are government priorities, are less well covered. These results are not necessarily a surprise as they indicate a greater focus on larger target segments where activities could impact greater numbers of people. However, although activities for niche segments potentially impact fewer people, the scale of the impact could be greater. This is because they are focused on those in greatest need and those who could benefit the most. Government, in turn, benefits from increased self-sufficiency within these groups leading to a reduction in state-dependency.

Table 5 presents a combined picture of projects and cases by digital inclusion category and target segment. It highlights high and low levels of activity. This can help to steer future landscaping work and focus the search for new innovative examples of ICT serving niche groups.

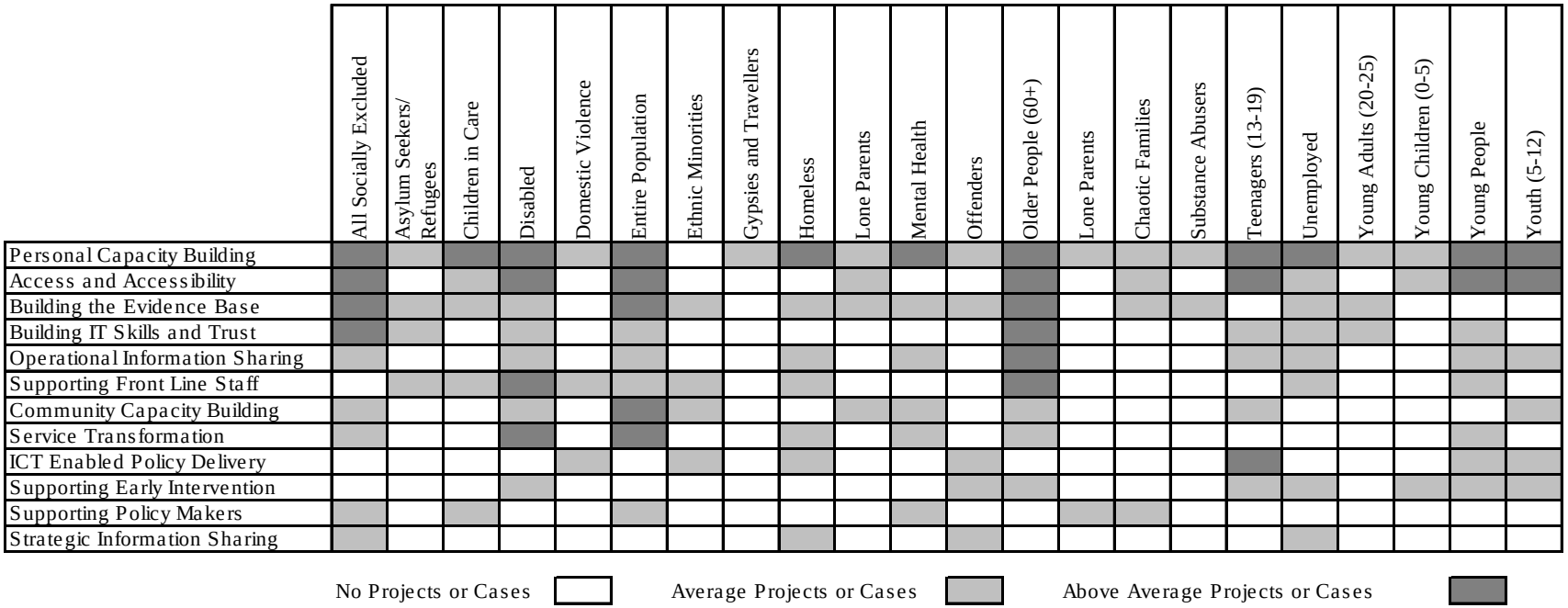


Table 5 Digital Inclusion Landscape: Activity Types Compared to Target Groups

3.7 PROJECTS AND CASE STUDIES BY SOCIAL EXCLUSION DRIVER

Figure 14 illustrates the policy focus of digital inclusion projects. The results are closely related to the target segment focus presented in the previous section. Health and health inequality is one of the most frequent issues to be tackled, linked to the high frequency of digital inclusion projects for people with disabilities. Educational underachievement is the second most frequent focus of activities. The potential for ICT to build community capacity and to tackle rural and urban deprivation is less well explored. The Digital Challenge has helped to address this.

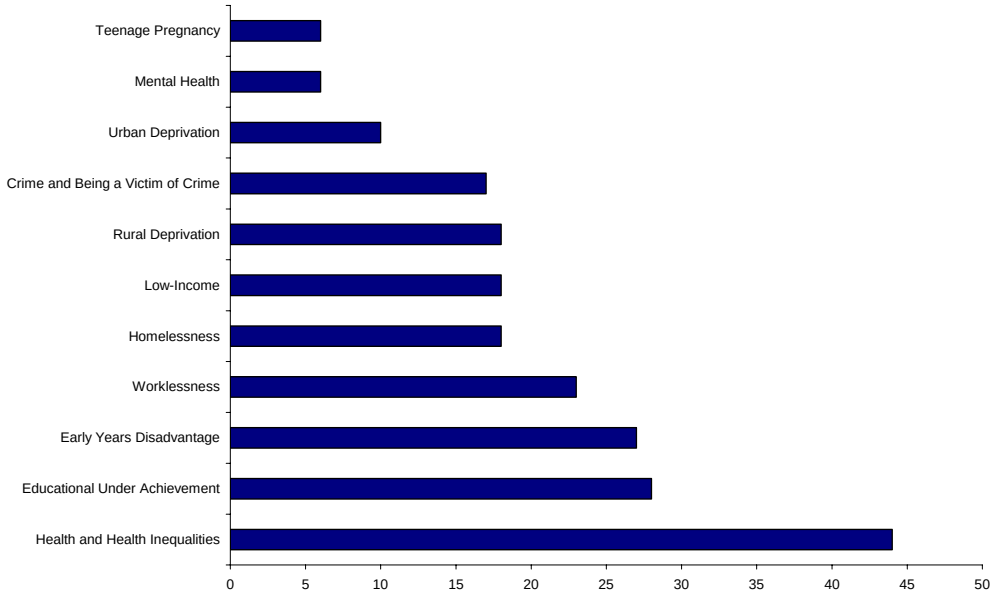


Figure 14 The Social Exclusion Policy Focus of Projects and UK Cases

3.8 THE LIFE CYCLE STAGE OF DIGITAL INCLUSION PROJECTS

Approximately a third of digital inclusion projects catalogued are in a pre-approval stage i.e. vision, strategy or bid for funding. One fifth of projects are close to completion or in-service. The remainder, amounting to nearly half of the projects, are in implementation and development phases.

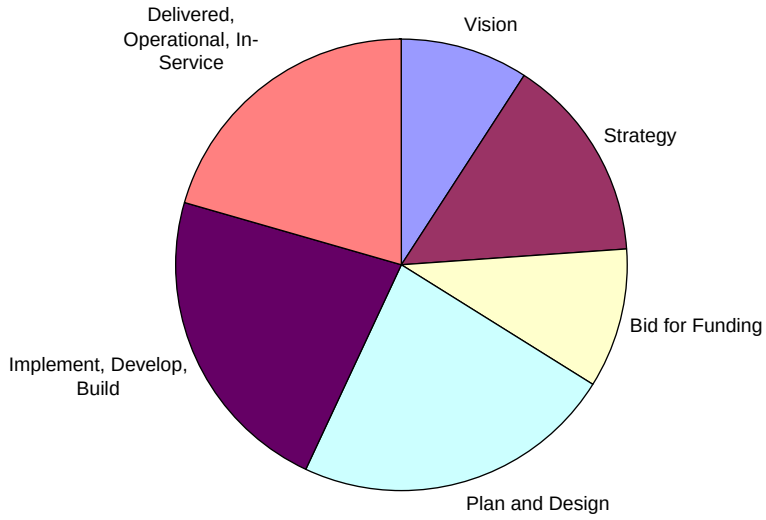


Figure 15 Life-Cycle Stage of Live Digital Inclusion Projects

3.9 FUNDING AND SUSTAINABILITY

High level funding information was available for approximately 20% of the projects particularly the major central government initiatives. These numbers indicate that at least £424m is currently being put into activities relevant to digital inclusion by the different sectors. This expenditure covers a broad time window with some projects completing in 2012. This figure is clearly an underestimate given the fact that it represents only 20% of projects, however, it includes some major initiatives which could account for the majority of expenditure including £200+m on assistance for some vulnerable groups around digital switchover, £80m in national telecare grants and £60m on the DfES PC initiative for pupils in low income households. The large-scale telehealth pilots[12] is another major project which could promote digital inclusion

[12] Known as the White Paper Long Term Conditions Whole System Demonstrator

and that will reach a population of 1 million people backed by an investment of around £50m.

A quarter of digital inclusion projects catalogued have specific funding issues associated with them; at least 12% have sustainability issues around running costs and around 17% have development funding issues. Some important funding issues have emerged:

- Sustainability is a key issue and many digital inclusion projects have difficulty achieving a sustainable business model.
- Funding is often locked in silos at a local level and difficult to use for crosscutting activities like digital inclusion.
- Due to fragmentation there is a long tail of smaller projects, which suffer from the burden of costs for the same things e.g. people looking at the same problems, set up costs or administration overheads. So the funding that does get allocated can end up paying for headcounts rather than reaching the problems that matter.
- Funding mechanisms typically get projects off the ground but seldom provide second wave funding for scale-up development. Many projects end as pilots.
- With no single point of focus for funding, successful projects looking to scale-up typically chase around government and industry looking for new resources, which is a waste of existing resources.
- Programme and capital funding is often more widely available than revenue, which is a barrier to sustainability.

In many cases funding issues around digital inclusion are less about additional money, and more about making better use of existing resources and unlocking money from existing supply chains.

3.10 PROGRAMME LINKAGES AND OPPORTUNITIES TO JOIN-UP

Each live project in the database was assessed for actual and potential links with other projects. This enabled a review of the overlap of initiatives and the potential for joining up programmes.

There are clusters of projects that overlap in their objectives, delivery mechanisms or target audiences. One prime example is providing affordable home access to PCs. There are many schemes that are either operational or being planned:

- Industry-led successors to the *Home Computing Initiative*.
- PCs for disadvantaged pupils.
- PCs for all pupils (*eLearning Foundation*).
- Learning devices for all pupils over 11yrs old.
- A new high street retailer scheme for PC purchasing.
- PC purchase scheme for the elderly.
- A proposal for children in care to have universal access.
- Schemes at a local level, e.g. *Canon's Connect*, which provides laptops for children on free school meals.
- Recycling schemes such as *Burslem Ethical Recycling of Computers*.
- Interest from industry in new recycling schemes due to the Waste Electronic Electrical Equipment Directive.
- Home Access Taskforce

In this particular case there would be some benefit from joining-up some of these schemes to develop an holistic approach that ensures the most disadvantaged groups, that the market is most likely to fail, have the opportunity to get access to affordable computing. This is only one example and there are many other areas where there is overlap that could benefit from a co-operative and joined up approach: ICT surveys (four organisations conducting overlapping population level surveys), kiosks (two major initiatives that are looking to scale nationally) and the development of simple internet interfaces (three initiatives).

In addition there are projects that are clearly complementary and could support each other in achieving their individual objectives. For example, IBM has created a 'reading companion' that tackles illiteracy and poor reading skills. There are at least six other programmes that could benefit from this, for instance:

- The DfES *Computers for Pupils* initiative would be a good way to get it into the homes of low-income parents and disadvantaged children.
- The social impact demonstrator projects within UK Online Centres, could explore distributing this service to target groups in urban and rural areas.
- Liverpool's *community grid pilots*, which are installing thin client based services into the homes of pupils of a number of schools in the North West, could potentially distribute the service.
- The *Reading Companion* could enhance the secure email and internet services provided by Barnardos to all the young people under its care.
- E-LAMP (*elearning and mobility project*), which has been concerned with the use of ICT to enhance distance-learning provision for mobile Traveller children, could particularly benefit.

An analysis across the database indicates that only one quarter of project linkages have been made, that could be made. There are real opportunities to join-up more and increase the impact of existing resources.

Particular attention should be paid to 'joining-up-the-dots' with the large-scale projects, which could help to anchor and sustain smaller projects e.g. Digital Switchover, Preventative Technology Grants, White Paper Long Term Conditions Whole System Demonstrator, Computers for Pupils and the Digital Challenge.

3.11 GOVERNANCE AND OVERSIGHT

Table 6 presents some of the projects and programmes that central government and some local authority organisations are currently engaged in, that are relevant to digital inclusion. Table 7 presents a cross-section of activities across other sectors.

Potential to Impact Digital Inclusion	Potentially Impacted by Digital Inclusion: No	Potentially Impacted by Digital Inclusion: Yes
Yes	**Digital Challenge (DCLG)** **Digital Inclusion Team (DCLG)** **Data Sharing Guidelines (DCLG)** **Sport Via The Internet (DCMS)** **Computers for Pupils (DfES)** **StartHere (DEFRA)** **Rural Social and Community Programme (DEFRA)** **E-LAMP3 (DfES)** **Preventative Technologies Grants (DoH)** **Intermediary Datasharing (DWP)** **Benefits Automation (DWP)** **ICT Hub (Cabinet Office)** **Digital Challenge and Inclusion Network (DCLG)** **Renewal.net (DCLG)** **GovXchange (SOCITM)**	**Switchover Help Scheme (DCMS)** **Switchover Marketing (D UK)** **Government Connect (DCLG)** **e-PAL (DfES)** **myguide (DFES)** **Social Impact Demonstrators (DfES)** **NHS Direct/ Interactive (DoH)** **Connecting for Health (DoH)** **Long Term Conditions Whole System Demonstrator (DoH)** **Positive Futures Programme (HO)** **DigiTV National Programme** **NOMAD** **ITEX**
No	N/A	**Directgov (COI)** **Patient Opinion (DoH)** **Primary Intervention Project (Home Office)** **The Children's Network Online Service (HMT ISB)** **In Your Place (HMT ISB)** **Making a Difference in Stockport (HMT ISB)** **Equipment Direct (HMT ISB)** **IT Network drug misuse (HMT ISB)**

Table 6 Example Government Projects and Programmes Relevant to Digital Inclusion

Potential to Impact Digital Inclusion	Potentially Impacted by Digital Inclusion: No	Potentially Impacted by Digital Inclusion: Yes
Yes	**London Marketing Campaign for Non-Internet Users** ***Wireless Cities*** ***BT Community Connections*** **IT training in Sheltered Housing** ***Switched-on Communities*** **Research - ICT use by the over 50s** ***e-Well Being Awards*** ***Everybody Online***	***BBCi Player*** **Talking book library automation** **Easy Internet Access** ***Silver Surfer Clubs*** **Video Sign Language Content Development** ***Community Grid Pilots*** ***The Life Portfolio*** **eGovernment via UK Online**
No		**Free Community Web Site Hosting** ***Web Adaptation Technology (WAT)*** ***Reading Companion*** **Email Mentoring Programme**

Table 7 Example Projects and Programmes Relevant to Digital Inclusion across other Sectors

It is evident from the cross-section of activities presented in the preceding tables that digital inclusion is a broad area, which involves many organisations across different sectors. Oversight is relatively fragmented, as digital inclusion is relevant to many committees and bodies, including:

- Ministerial Committees:
    - Public Expenditure Committee (Electronic) (PSX(E)).
    - Ministerial Committee on Social Exclusion.
    - Ministerial Committee on Data Sharing (MISC 31).
- Official Boards:
    - CIO Council.
    - Digital Strategy Board.
    - Delivery Council.
    - DCA data sharing group.
- Partnership Bodies:
    - Alliance for Digital Inclusion.
    - Customer Insight Forum.
    - Information Age Partnership.

There are opportunities to join-up more, but it is not clear how far to go in improving governance and oversight. On the one hand it should be acknowledged that this is a broad agenda and there are advantages in it being mainstreamed in other policy areas. On the other hand it should also be recognised that many in the private and third sector are confused about who is responsible for what and there is frustration at having to deal with many different organisations. Government stakeholders are also concerned that there is fragmentation of scarce resources and duplication of effort across industry and the third sector as well. Fragmentation is leading to:

- Programmes and policies that could be joined-up, are not.
- There is duplication and reinvention of wheel as well as gaps.
- We are not learning from our successes.
- There is no government, industry or third sector focal point to submit proposals and ideas to. Projects waste scarce resources chasing around for funding.

The digital inclusion agenda would be better served by increased clarity in roles and responsibilities across the sectors. Going further than this, there is also a case, given machinery of governance changes in 2006 and the review of the Digital Strategy in 2007, for assessing whether current arrangements could to be improved, whether there are any gaps that need to be filled, and for example, whether a central champion for digital inclusion is now warranted.

4.0 LANDSCAPE ACTIVITY SUMMARY

The previous section presented a high level summary of the digital inclusion landscape, drawing on quantitative information from the database of projects that has been compiled. This section presents a summary of digital inclusion activities against the research framework presented in Table 4.

4.1 POLICY: ICT SUPPORTING POLICY DELIVERY

ICT can directly support the delivery of social exclusion and neighbourhood renewal policies. Innovative examples include: a healthy eating reward-points card to tackle childhood obesity, an interactive game that challenges offenders with future life-decisions to reduce re-offending, and community TV screens which provide public reassurance to reduce the perception of crime. There are few examples of ***ICT-enabled policy delivery*** because of the knowledge gap that exists between the social policy and ICT communities. Opportunities to bridge this gap and bring these communities together need to be explored. One possibility is the development of a generic innovations process to bring these disparate communities together and generate ideas to solve priority issues. The most robust ideas emerging from innovations processes can be taken through successive stages of review to test technical feasibility and economic viability prior to piloting.

Policy makers can better understand local patterns of social exclusion when organisations share high-level information. ***Strategic Information Sharing*** can support evidence-based policies and the more effective delivery of services. It is particularly important tool to support Local Strategic Partnerships (LSPs) delivering against Local Area Agreements (LAAs). ICT facilitates the sharing, presentation and analysis of information. A good example is the *Job Centre Plus GIS Tool*, which has helped Liverpool to map areas of high incapacity benefit take-up, and Kent to target lone parent hotspots. There are relatively few examples supporting social inclusion and more activity needs to be encouraged. Establishing cross-agency shared analytical services to support local strategic partnerships, as proposed in *Melton's Digital Challenge* bid, is one potential way of achieving this.

Building the Evidence Base is one of the most popular types of project in the landscape. Common activities include digital divide surveys, attitudinal research and digital inclusion award schemes, which generate case studies. There are areas where more research could have an important impact. An assessment of how the digital inclusion agenda intersects current legislation could lead to a clearer understanding of the legal obligations of public and private sector service providers. 'Action research' can be particularly effective in helping disadvantaged people to communicate and to challenge policy makers and service providers to improve services. An example of action research is 'multimedia profiling'. Disadvantaged or excluded groups are assisted in using ICT to help to tell their stories and to highlight the every day problems they face especially when interacting with government, the third sector and private sector.

For ICT to help deliver social outcomes the relevant policy communities around social exclusion and neighbourhood renewal need to be fully aware of the opportunities. Increased awareness can open up intervention options that would not otherwise be considered. Cross-government strategies, like *Connecting the UK*, together with targets can provide a framework for cross-organisational collaboration and action. Establishing communities of interest and developing training can also **S*upport Policy Makers*** in taking advantage of the opportunities.

4.2 NEEDS: PERSONAL AND COMMUNITY CAPACITY BUILDING

ICT can help disadvantaged people address their most pressing needs. There are many examples, often requiring no IT skills by the beneficiary, such as telecare, domestic violence alert technology and hostel vacancy SMS alerts. These schemes increase self-sufficiency and ***build personal capacity***[13]. They are frequently developed by, or in partnership with the voluntary and community sector, which typically has established relationships with disadvantaged groups. Some innovative examples include: e-mentoring schemes, befriending schemes for the isolated elderly, specialist electronic labour markets for people suffering specific disadvantages and remote cognitive behaviour therapy for substance abusers.

[13] Personal capacity is the ability to use personal resources to achieve goals. It encompasses attitudes, skills, knowledge, experience and interpersonal skills.

In a similar way, ICT can be deployed to address the needs of deprived communities. Examples include *Eastserve*, a subsidised network in East Manchester focussed on tackling worklessness and *LSP TV*, a community TV system in Easington to increase community safety. These initiatives ***build community capacity***[14]. The *Digital Challenge* is the government's flagship initiative in this area and will create an exemplar community over the next three years. Innovative ideas emerging from the *Digital Challenge* include: digital twinning between communities, delivering sustainable community based services through grid computing, improving community cohesion with neighbourhood email directories and using ICT to generate and distribute community TV/radio content. Other community applications include: making use of the WiFi clouds that are emerging over city centres for social inclusion applications, supporting the creation of community heritage digital content and leveraging major community projects such as the large-scale telehealth pilots and digital switchover in Whitehaven.

Improving ***ICT skills and trust*** among disadvantaged groups is an important element of digital inclusion. The most effective programmes, such as those offered in *UK Online Centres*, are highly functional and build personal and digital capacity concurrently; for example, someone out of work could learn how to use the Internet at the same time as learning to search for employment online. Other initiatives, such as *Everybody Online*, are successful at creating local digital champions in community groups to achieve multiplier effects and virtuous circles where learners become trainers. Other innovative activities in this area include: digital mentoring schemes, wider deployment of '*Everybody Online*' style digital champions both geographically and across technologies such as DiTV, expansion of the BVSC style digital volunteering scheme where people give their time to teach basic ICT skills and the training of public sector key workers to support the basic ICT needs of their digitally excluded clients.

4.3 SERVICES: ICT ENABLED SERVICE TRANSFORMATION

Those suffering significant deprivation can present the greatest challenges to government service delivery processes. They stand to gain enormously from the better

[14] Community Capacity is a community's ability to define and solve their own problems.

service provision envisioned by *Transformational Government*. ICT can help to transform services at the customer interface and within the back-office. It can lead to better co-ordination of services between the many different agencies that those with complex needs typically have to deal with. There are good examples of ***Service Transformation*** where disadvantaged people have been the main beneficiaries, such as single electronic benefit assessments and *virtual viewings* of social housing by prospective tenants. There are risks that there will be a greater focus, at least initially, on easier-to-reach segments to deliver quick efficiency gains, and that the most disadvantaged will miss out in the near term. A number of initiatives that could help mitigate these risks include:

- An increased role for *UK Online Centres* around delivering 'facilitated electronic government' transactions to disadvantaged groups.
- Actions to lower the barriers to intermediation.
- Customer insight research around social exclusion to improve service design.
- The establishment of champions responsible for 'social exclusion proofing' transformational policies and services.

The sharing of personal information between agencies enables the coordination of efforts and better targeting of support to the most disadvantaged around their unique, individual needs. There are some good examples, such as NOTIFY — a system that enables London boroughs to share information on homeless families and individuals living in temporary accommodation in London, in order to improve service delivery. ***Operational Data Sharing*** can support 'passporting' where an application for one form of benefit results in an automatic entitlement to another. However, data sharing is a sensitive issue and it is often perceived to be difficult to achieve within the provisions in the Data Protection Act. Guidance and codes of practice are being developed to address this issue. Other initiatives that could help include the roll-out of *Government Connect* to 3rd sector partners to enable secure data-sharing with government, and information sharing audits to identify priority pieces of information that 3rd sector organisations could feasibly serve themselves with from government back-office systems.

Giving frontline staff and service designers the level of support and tools they need is an important enabler to transforming services for the disadvantaged. ICT can ***Support Frontline Staff*** in focussing less on administration and more on rewarding, value added work with clients. For example, mobile working technologies are particularly effective at cutting administration; they enable remote access to case management systems, mobile incident reporting and work scheduling on the move. Examples include the use of digital pen and paper in Leeds to provide benefit application services in people's homes and the *Responsive Repairs* project in Harlow for the mobile scheduling of maintenance work in social housing. It is also important to support service designers. There are many off-the-shelf toolkits for developing services, some of which are particularly relevant to reaching disadvantaged groups such as the *DigiTV* national programme, *NOMAD* for mobile working and *iTEX* for SMS services. Communities of practice, such as the government IT profession, SOCITM and the *ICT hub* can also support the design community by sharing good practice and raising competency levels.

4.4 PREVENTION: TECHNOLOGY SUPPORTING INTERVENTION

The modernisation of public and private sector services can have the unintended consequence of reinforcing disadvantage by excluding digitally disengaged people from value-added services delivered via information technology. ***Access and Accessibility*** initiatives tackle this issue. Activities include awareness campaigns around the benefits of ICT to promote take-up, and providing subsidised access to technology. Major projects in this area include *Computers for Pupils* and the *Help Scheme* to switch disadvantaged groups over to digital TV. There are also many initiatives to ensure that technology related products and services are accessible and usable by all, including people with special needs. Good examples include sign video call centres for the deaf to access public services, and assistive technologies such as screen readers for the visually impaired. An opportunity in this area is to raise awareness among employers and those involved in the decision process of granting incapacity benefit around the benefits of assistive technologies and the accessibility features of computers. This could not only improve workplace productivity but also help to keep people in the workplace at the onset of disability preventing a potential decline into disadvantage and benefits dependency.

ICT can also ***Support Early Intervention***. It can support multi-agency assessments to identify those most at risk and to prioritise interventions accordingly. One example of this is a possible new national information-sharing index for children in England that has the potential to support better communication among practitioners across education, health, social care and youth offending. ICT can also support intervention activities when at-risk individuals have been identified. A particularly innovative intervention activity is that of 'life-swapping', for example helping to communicate the testimony of people who have suffered the consequences of their actions to those at risk of similar consequences. Such testimony can be communicated interactively and remotely through email, DVD, video link or even through interactive *SimCity* or *Second Life* style games.

The sections that follow expand on the summary provided in this section and cover each area of the research framework presented in Table 4.

5.0 ICT SUPPORTING POLICY DELIVERY

This section deals with the role of Information and Communications Technologies in supporting the delivery of social exclusion and neighbourhood renewal policy. Key activities such as strategic data sharing, digital inclusion research and raising awareness of the potential opportunities among policy makers are covered in detail.

5.1 ICT ENABLED POLICY DELIVERY

Information technology has the potential to support effective social inclusion and neighbourhood renewal policies. Integrated social and digital inclusion policies can deliver social and digital outcomes concurrently. There are, however, only relatively few cases of this happening. A key reason for this is the knowledge gap that exists between the social policy and ICT communities. When these communities do come together it enables policy makers to consider new intervention options that may not otherwise have been considered. These interventions tend to be powerful because they align applications of ICT directly to specific policy objectives.

For example, the *Fuel Zone Points Reward Scheme*[15] has been introduced by Glasgow city council to offer incentives for healthy eating to around 30,000 children in 29 secondary schools. The pupils, who sign up to the scheme on a voluntary basis, are given smartcards with magnetic stripes that are used to record points gained for eating sensibly. As the points accumulate, they can be redeemed for various rewards including cinema tickets and computer game consoles. This scheme directly tackles the policy issue of childhood obesity using technology to incentivise healthy eating. It also helps to increase the take-up of free school meals by reducing the stigma, because everybody uses the smart cards.

There are similar applications of technology for educational improvement. For example, using smartcards to tackle poor attendance records; attendance at college is tracked by a smart card and rewarded. Truancy systems are also growing in deployment. These typically use smart cards or finger print scanners to complete electronic registers, backed by text messaging or email alerts to parents and authorities if children do not turn up to school. One innovative example in a Welsh

[15] http://www.fuelzone.co.uk/

school combines the healthy eating and truancy scheme using smart cards and a school WiFi network[16].

Another example is the *Lifting the weight CD ROM*[17], an interactive game targeted at young inmates aimed at breaking the cycle of re-offending. The game gives players the challenge of making difficult decisions at "choice points" within real-life scenarios. The players have the opportunity to re-play scenarios to look at the consequences of making a different choice.

There are also non-social exclusion examples of ICT supporting policy delivery particularly around the environment, applications such as:

- The London congestion charge where an application of technology to read licence plates has been applied to the policy issue of congestion.
- The personal carbon allowance card concept; each person receives a smart card containing their 'carbon credits'. The card is used on purchase of energy or travel services, and the correct amount of carbon credits deducted. Carbon credits can be gradually reduced each year to improve the environment.
- Radio Frequency Identification (RFID) tags on wheelie bins which help local authorities to record levels of waste attributable to specific households with the potential to introduce variable billing based on weight, and promote more recycling.

Many of these examples use the power of technology to promote behavioural change, which is a common objective of policy makers. Two other notable projects in this area are:

- Futurelab[18] has developed Fizzees (Physical Electronic Energisers) games that enable young people to care for a 'digital pet' through their own physical actions. In order to nurture their digital pet, keep it healthy and grow, young people must themselves act in physically healthy ways.

[16] http://www.pingwales.co.uk/2006/10/06/CNS-Bryn-Hafren.html
[17] http://www.geese.co.uk/HTML/resources.html
[18] http://www.futurelab.org.uk/showcase/fizzees/index.htm

- The Oxford Internet Institute is working on a 'Digital Partners' project which brings together an interdisciplinary team of researchers in social and computer sciences in order to investigate how technology can specifically engage adults on the peripheries of the learning and tackle educational underachievement.

Co-production and co-design of services is another route to delivering more effective policy outcomes. This approach taps the creativity of a small minority in a target group in order to help the rest, for example, getting ex-criminals involved in anti-crime measures, or ex-hackers involved in computer security. One specific example of this is RIZER[19]. This is a confidential web-based information gateway, which provides information to young people (specifically 11-17 year olds) about the consequences of being involved with crime. The service has been designed with the assistance of ex-offenders.

Government can stimulate innovation by bringing the various communities and user groups together. One potential way of doing this is to run innovation workshops within an innovation funnel process, as illustrated in Figure 16. The workshops bridge the gulf between policy makers, practitioners, academics and ICT experts to develop initial ideas around particular social inclusion objectives. The most promising ideas are taken through successive stages of development and review, with each stage focusing on a smaller set of increasingly developed ideas. The most robust proposals that emerge from the process are then taken forward for piloting.

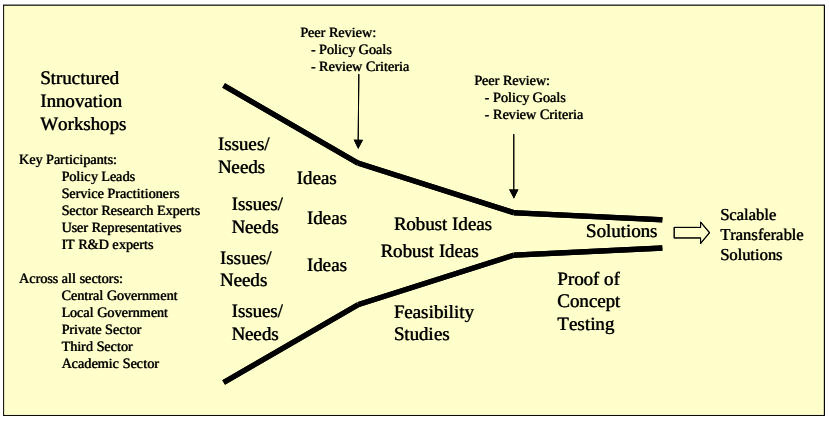


Figure 16 Innovation Funnel Approach to ICT Enabled Policy Delivery

[19] www.rizer.co.uk

5.2 STRATEGIC INFORMATION SHARING

There are two key distinguishable types of data sharing which have the potential to make a difference to the lives of those suffering multiple disadvantages. ICT is a strong enabler for both. Operational data sharing involves the sharing of personal information between agencies to enable more effective, joined-up service delivery for those with complex needs who interact with many different organisations. This level of information can steer operational and tactical decisions relating to intervention at an individual level. Progress around operational data sharing has been slowed by concerns over civil liberties and a defensive position whereby public bodies need to find a legal justification each time they want to share data about individuals. In contrast, strategic information sharing involves aggregate, anonymised information which is used for evidence-based policy-making and for supporting strategic decisions around service deployment. This section is concerned with strategic information sharing.

It is still early days and the full potential of sharing strategic information between local authorities, government and the 3rd sector is yet to be realised. However, a growing number of initiatives are beginning to highlight the benefits.

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Geographical Information Systems (GIS) are a particularly useful enabler as they enable policy makers to analyse data from multiple sources from a geographical perspective. The *Jobcentre Plus GIS tool*[20] is an example of such a mapping system that can be accessed by designated Jobcentre Plus staff and shared with other organisations such as Local Strategic Partnerships (LSP). The GIS tools have been developed to allow the visualisation of administrative information and to combine it with other useful information on a geographic basis.

Liverpool LSP has used the *Jobcentre Plus GIS tool* to identify areas where there are high numbers of incapacity benefit claimants and where it can strategically target its policies for tackling worklessness. Similarly, Kent County Council has used the data to pinpoint lone parent 'hotspots' within the county and thereby more effectively focus policy action.

[20] http://www.seld-ne.org.uk/images/Worklessness%20E.doc

Another example, supporting community safety policy, is COSMOS[21]. This is a GIS-based community safety tool, designed for Crime and Disorder Reduction Partnership (CDRP) agencies in Birmingham. It provides access to multi-agency data through interactive mapping and data query tools, and has been credited with focusing a burglary reduction initiative and helping to deliver against a 25% crime reduction target.

The *Single Non-Emergency Number (101)*[22] is an example of the potential of sharing information among local partnerships to make a difference in real time. In one particular 101 pilot, geographic analysis of call statistics were used to inform real time decisions around the deployment of police, community wardens and partner agencies.

Another example of strategic information sharing specifically targeted at homelessness is *CHAIN*[23]. This is a management tool for evidence-based policy making. It comprises a web-based database of rough sleepers in London, which is used to track the use of services and outcomes as rough sleepers move in and out of homelessness. The database contains basic information, collected by outreach workers, which enables agencies to better coordinate service delivery, target resources and evaluate the outcomes of interventions.

These cases illustrate that *strategic information sharing* is an important enabler to tackling social exclusion at both personal and community levels. By facilitating a better understanding of local patterns of social exclusion and the drivers of social exclusion, such as crime and worklessness, *strategic information sharing* enables more efficient and effective planning and the delivery of services where they are needed most.

While there are obvious benefits, what is less clear is how strategic information sharing can be encouraged and incentivised. One innovative idea, emerging through the Digital Challenge from *Melton Borough Council*[24], is the development of multi-agency research units, 'shared analytic services' for local partnerships. Such a shared

[21] http://www.homeoffice.gov.uk/rds/pdfs06/rdsolr0206.pdf
[22] http://snen.homeoffice.gov.uk/
[23] http://www.broadwaylondon.org/chain/
[24] http://www.digitalchallenge.gov.uk/project-space/digital-melton/digital-melton

service can help to build a single digital view of citizens and their locations, and has the potential to support highly targeted intervention and preventative strategies to tackle social exclusion.

A few ongoing *strategic information sharing* projects that are relevant to digital inclusion are:

- Information sharing is two-way but much of the focus appears to be around what government can share between departments and agencies. One example of information sharing in the opposite direction is where Citizens Advice Bureau have sold aggregate level, anonymous data to government to help improve services.
- DeMontfort University has recently completed a study for the Department of Communities and Local Government on local regeneration information systems[25]. The study team will now investigate the potential of establishing a practitioner community to support the use of information to enhance and monitor regeneration.
- York University is conducting a study on "Sharing information for better service delivery"[26] on behalf of DWP. The research explores the linking together of different pieces of information to help working age people in disadvantaged groups: homeless, drug dependent, ex-offenders or refugees.

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[25] http://www.clip.gov.uk/Documents/CLIP2006%20Conf%204-%20Session%202b%20-%20Paul%20Foley.pdf
[26] http://www.york.ac.uk/inst/chp/admid/index.html

5.3 BUILDING THE EVIDENCE BASE

A solid evidence base is an essential foundation for policy development. This study has identified research as one of the most common types of digital inclusion project. For example, there are periodic national surveys run by ONS, OFCOM and the Oxford Internet Institute to monitor the take-up and use of technology. There is also qualitative research being conducted on large segments of the population who are less likely to use technology or have difficulty using it, such as the elderly and the disabled. The European Commission has an eInclusion research agenda, which will support member states in meeting new targets to halve the 2005 gap in internet usage and digital literacy between the EU population average and disadvantaged groups by 2010.

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, and new customer insight research is needed for smaller disadvantaged groups. In addition, further work is required to develop the aggregate business case for digital inclusion.

Another area that deserves consideration is 'action research'. An example of action research is 'multimedia profiling'. Disadvantaged or excluded groups are assisted in using ICT to help to tell their stories and to highlight the every day problems they face especially when interacting with government, the third sector and private sector. The process of producing multimedia stories is beneficial in itself, but the end product can also be used to challenge service providers and policy makers to understand and tackle the issues more effectively. *Hackney Acting Up*[27] is an organisation that trains people in multimedia profiling to achieve 'person-centred' working. Their approach helps to give a voice to disadvantaged people and communities by giving them other outlets to express themselves. Multimedia profiles can provide a focal point for disparate practitioner communities to communicate effectively in innovation workshops, and to develop solutions.

[27] http://www.acting-up.org.uk/

Something that has not been done before is to explore how legislation relates to the digital inclusion agenda. For example, the Disability Discrimination Act covers public services; public authorities must not treat disabled people less favourably than non-disabled people, and must not fail to make reasonable adjustments to accommodate their needs. Similarly, the Race Relations Act covers the provision of services to non-nationals and ethnic minorities. Other relevant acts include the Equality Act, the Human Rights Act, Homelessness Act 2002, and new legislation around Age discrimination. A mapping of legislation onto the digital inclusion agenda could be helpful to policy makers and service designers in ensuring that new digital services are inclusive.

Developing and sustaining a knowledge base of case studies is an important component of *building the evidence base* and awards schemes can contribute to this. Digital inclusion awards schemes such as those run by AOL[28], BT[29], Microsoft[30], Digital Unite[31] and Sustain IT[32] (UK Ceed) are capable of providing a wealth of innovative ideas, and in some instances case studies of completed projects with evidence of impact. Synthesis reviews of these cases can be used to generate guidance, toolkits and business cases to support the practitioner community.

[28] http://info.aol.co.uk/about/community/innovation/index.adp
[29] http://www.btcommunityconnections.com/
[30] http://www.microsoft.com/uk/community/community/awards/
[31] http://www.silversurfer.org.uk/
[32] http://www.sustainit.org/ewell-being-awards/index.php

5.4 SUPPORTING POLICY MAKERS

Specific activities aimed at policy makers to raise awareness of the opportunities of digital inclusion include:

- Establishing cross-government strategies and working groups to align organisations around common targets.
- Developing communities of interest where policy makers can share knowledge and receive peer support.
- Integrating digital inclusion into policy training.
- Consulting disadvantaged groups, via the third sector, to help policy formation

There are a number of relevant overarching strategies and working groups. These include - the *Digital Strategy*[33], *Transformational Government Strategy*[34] and the social exclusion taskforce action plan *Reaching Out*[35]. Relevant working groups include - the *Alliance for Digital Inclusion*[36] (ADI) and the Digital Strategy Working Group of the *Information Age Partnership*[37]. There are also EU working groups on eInclusion and inclusive eGovernment.

Targets can play an important role by promoting shared responsibility for digital inclusion across government and providing a framework for organisations to join up and partner both within and across sectors. A number of relevant targets and goals currently exist:

- Commitment to ending the digital divide for families with children by the end of the Third Term. (Digital Strategy)
- Goal to make the UK a world leader in digital excellence and the first nation to close the digital divide. (Digital Strategy)

[33] Prime Ministers Strategy Unit (2005), Connecting the UK: The Digital Strategy, http://www.strategy.gov.uk/work_areas/digital_strategy/
[34] Cabinet Office (2005), Transformational Government: Enabled by Technology, http://www.cio.gov.uk/transformational_government/strategy/
[35] Cabinet Office (2006), Reaching Out, http://www.cabinetoffice.gov.uk/social_exclusion_task_force/reaching_out/
[36] http://www.citizensonline.org.uk/adi
[37] http://www.iapuk.org/workstreams

- PSA target to improve the basic skills levels of 2.25 million adults by 2010. (National Skills Strategy)
- European commitment by 2010 to halve the 2005 gap in internet usage between the EU population average and:
    - older people,
    - people with disabilities,
    - women,
    - lower education groups,
    - unemployed,
    - "less-developed" regions.
- European commitment by 2010 to halve the 2005 gaps in digital literacy between the average EU population and the following groups:
    - the unemployed,
    - immigrants,
    - people with low education levels,
    - people with disabilities,
    - the elderly,
    - marginalised young people.
- European commitment to ensure the accessibility of all European public web sites by 2010.

There are few communities of interest that are already established and that can support digital inclusion. The *Digital Challenge and Inclusion Network*[38] brings digital inclusion practitioners and policy makers together around the *Digital Challenge* competition. SOCITM's GovXchange[39] has the potential to be used to support the digital inclusion community through a knowledge exchange platform. GovXchange enables communities of interest to interact and for communication to be captured, indexed and added to a searchable knowledge repository.

The need to understand the issues and opportunities around digital inclusion is just as relevant to the private and voluntary sectors. There are a few initiatives for the 3rd

[38] www.digitalchallenge.gov.uk/
[39] http://www.govx.org.uk/

sector. One is MySociety[40]. This is an initiative that demonstrates to the public and voluntary sectors how to most efficiently use the Internet to improve lives. Some companies offer support to 3rd sector organisations to increase their business capacity and capability, so that they in turn can offer more effective services to their target audience. BT's Community Connections[41] is an example where community organisations submit proposals for awards and winners receive support from BT professionals.

The third sector and industry also have a role to play in aggregating the voice of their customers and clients and presenting the results to policy makers. One example is the *Young People's Information Service* by Brook, the young people's sexual health charity service, which identifies emerging policy issues both through routine data collection and by surveying service users on specific issues. The results are presented to policy makers. Similarly, Advice Northern Ireland[42] gives voice to those experiencing disadvantage and enables policy makers to hear from people often described as "hard to reach". Both of these examples represent electronic consultations through intermediaries. The 3rd sector is often in a better position to consult disadvantaged people than government.

Currently there are no specific training modules around digital inclusion for policy makers. However, the potential to embed an appreciation of digital inclusion into *National School of Government* policy training is worth further exploration.

[40] http://www.mysociety.org/
[41] http://www.btcommunityconnections.com/
[42] http://www.adviceni.net/

6.0 PERSONAL AND COMMUNITY CAPACITY BUILDING

This section covers the role of ICT in helping to meet the priority needs of disadvantaged peoples and places. Relevant activities help to build personal and community capacity, moving away from the traditional 'doing for' model of helping the vulnerable towards a 'do it for themselves' model.

6.1 PERSONAL CAPACITY BUILDING

6.1.1 Overview

Maslow's Hierarchy of Needs theory suggests that those who have the most complex needs in society may be less likely to be motivated to engage with information technology. They are more likely to be motivated by their basic needs around the issues of poor housing, low income, crime, safety, ill health, poor skills and worklessness – the key drivers of deprivation. However, applications of technology can help to address these basic needs, often without the need for extensive ICT skills. Such applications help to build personal capacity and increase self-sufficiency. Personal capacity is the ability to use personal resources to achieve goals. It encompasses attitudes, skills, knowledge, experience and interpersonal skills. Figure 17 illustrates some example digital inclusion projects mapped against *Maslow's Hierarchy of Needs* and a more comprehensive table of examples is provided in Annex B.

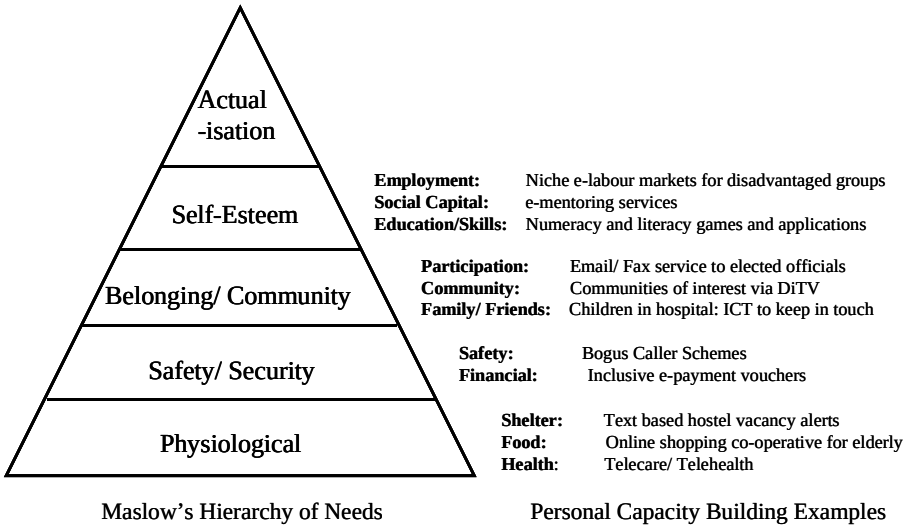

Figure 17 ICT focussed on 'Maslow' Needs

In contrast to service transformation activities, personal capacity building projects tend to focus on issues that are at the boundary of, or beyond mainstream government service provision. Initiatives are highly focused on the priority needs of the individual and are 'stepping stones' towards digital and social inclusion. Projects are more often than not delivered in partnerships, with the third sector playing an important role. The sections that follow are structured around *Maslow's Hierarchy of Needs*, and highlight example activities.

6.1.2 Physiological Needs

There are a number of digital inclusion projects that help meet people's physiological needs around health, food and shelter.

Telecare[43] is an excellent example of digital inclusion, which gives vulnerable people the opportunity to live at home rather than in institutional care, under the safety umbrella of household sensors and alarms. Recipients benefit from technology but do not need to have any ICT skills. The *Preventative Technologies Grant* provides £80m funding over 2 years to local authorities starting in April 06 to support Telecare initiatives. An additional programme, *The White Paper Long Term Conditions Whole*

[43] www.cat.csip.org.uk/telecare

System Demonstrator[44] aims to cover a population of million people (not one million installations) over three sites. There are also major programmes at a local level, such as Newham's Advanced Telecare Programme[45], which will cover 4,000 homes by the end of 2007/8. In additional to social outcomes, Telecare can deliver efficiency savings by reducing nugatory visits to accident and emergency, and avoiding institutional care costs.

There are examples of technology supporting those with mental health problems. Telecare can help dementia sufferers live at home safely, for example by installing gas cooker sensors and providing electronic tags to sufferers who tend to wander. ICT can also support therapy. The Addictions UK[46] programme uses technology to deliver distance based cognitive behaviour therapy in an efficient and effective way through the telephone, text messaging, the Internet and DVD's. The potential to run e-clinics for people with less severe mental health problems is also being investigated in North Lincolnshire.

There are a number of 'food' based digital inclusion initiatives that have been identified during this study. The application of smart card technology to provide improved access to free school meals for disadvantaged pupils, and to meals on wheels for the low income elderly has been tried and tested both in the UK and abroad. These types of schemes also have the potential to promote healthy eating.

Online shopping could be especially relevant to the elderly but there are many barriers that include: lack of access to technology, the complexity of transactions, delivery charges and the need to have a bank account to make electronic payments. There are a number of schemes that address these barriers.

The *Companion* project in Bristol[47] provides online shopping access in people's homes and uses a bar code reader as the input device rather than a keyboard. *Market-Eze*[48] is a social enterprise in Manchester that aims to provide an online shopping

[44] http://www.ehiprimarycare.com/news/item.cfm?ID=2212
[45] http://www.newham.gov.uk/News/2006/October/neatscheme.htm
[46] http://www.addictionsuk.com/hom.cgi
[47] http://www.connectingbristol.org/case-studies/the-companion/
[48] http://www.adactushousing.co.uk/customerinformation/yourspace/MarketEze/

service to residents in sheltered housing with a link-up to a local credit union to support electronic payments. The *Market-Eze* solution is potentially scaleable. Also the London Borough of Harrow and Digital Unite[49] are tackling the skills and knowledge gap around online shopping and partnering to teach older people how to shop for groceries online in libraries.

There are also teleshopping schemes, such as Age Concern's *Easyshop*; clients without internet access receive a weekly phone call to order shopping, and then their chosen supermarket delivers to their door. Technology can ensure that vulnerable old people, particularly those suffering from dementia and living alone, remember to eat regularly.

There are many ICT applications around housing and planning. Mobile services are especially relevant for the homeless due to the high take-up of phones. One such example is hostel vacancy alerts which can be delivered electronically via SMS/ Text. The emergence of new WiFi 'clouds' over city centres combined with the increased take-up of Voice over IP (VoIP) have real potential for delivering free access to essential services for the homeless. There are also applications giving residents a greater voice in planning decisions. Ealing Community and Voluntary Service's (ECVS) approach is to develop a web site to promulgate planning decisions to local community groups, who in turn consult local members and aggregate responses. This approach gives a voice to people who would not ordinarily get involved in local decisions.

6.1.3 Safety and Security

Information Technology can help to improve safety, and the perception of safety among vulnerable groups. At a national level the *Single Non-Emergency Number* (101) could, if the decision is made to roll it out nationally, increase the sense of security for vulnerable people living in deprived neighbourhoods blighted by anti-social behaviour. In South Yorkshire a person can report anti-social behaviour as and when it occurs, from their living room on TV, or whilst on the move through their

[49] http://www.harrow.gov.uk/ccm/content/news-and-events/press-releases/dec-06/harrow-libraries-internet-shopping-project.en

mobile phone, before further damage is done[50]. There are many other related digital inclusion examples such as community safety alarms, bogus caller schemes, domestic violence monitoring technology and anti-bullying services via SMS.

Financial security is an important issue for many vulnerable people. For deprived and disadvantaged groups, financial exclusion can be the difference between a household being able to raise the standard of living or sliding further into poverty and social disadvantage. Access to inclusive financial services is therefore an important building block to achieving social inclusion. Pre-pay credit cards, vouchers to pay for services online for those without bank accounts, innovative forms of financial education such as 'eBay training schemes' and the use of technology to enable electronic transactions via Credit Unions are all existing examples of initiatives supporting digital inclusion and financial inclusion.

6.1.4 Social Belonging

Information and Communications Technologies can be used to reduce isolation by increasing social interaction, extending social networks over greater distances and putting people in contact with their peers. Use of social technologies, e.g. chatrooms, blogs, text messaging, podcasts and email, for digital inclusion applications is growing. There are many innovative examples.

The *Reading Circle*[51] is an interactive digital TV service provided by Kirklees Council, which supports a community-reading club and enables members to discuss books and submit comments. The *L'Enfant@l'hopital* initiative in France provides long-term hospitalised children, between the ages of two and eighteen, with access to computers, learning and communications. It helps them to establish and maintain dialogue with family, schools and friends.

There are, of course, many examples of using the Internet to increase social belonging but traditional technologies can sometimes be more inclusive and achieve similar

[50] http://www.easyconnects.org.uk/tv/access.htm
[51] http://www.kirklees.gov.uk/community/readingcircle/readingcircle.shtml

objectives. For example, *VoiceMail4All*[52] is a free service offering a voicemail number to anyone who does not have a permanent place to stay and who does not have their own telephone number. This can be used to find a job, hear from family and friends, keep in touch with support workers, or look for more permanent housing.

Technology is also being used to increase civic engagement and participation in local decision-making. *WriteToThem*[53] is a web site run by charitable organisation MySociety. The site enables users to contact any of their elected representatives including members of parliament and local councillors. Kirklees Council's *Chatback*[54] service provides an SMS engagement channel that is being piloted by young people aged 13 to 21. At a national level there is an also opportunity for technology to support the *Together We Can*[55] campaign. This is a cross government campaign to empower more citizens to influence public policies and services.

One of the most important uses of social technologies for the vulnerable is providing peer support and advice. *Contact a Family*[56] is a national registered charity for families with disabled children. It provides a web based linking service whereby users can register to be contacted by other families across the world who are in similar situations. A particularly innovative approach to peer-peer services is to turn support service users into volunteers. *The Listening Eye*[57], for example, is a national telephone helpline for those having difficulty with their eyesight. It is staffed by people with a visual impairment themselves and with a wide experience of coming to terms with it. Such schemes are based on a virtuous circle of service users becoming volunteers to in turn help new users. Technology is particularly important to facilitating this approach, especially where the volunteers are housebound. New virtual call centre technology using voice-over-IP enables volunteers to sign-in from their own home and offer small amounts of their time to answer the phone.

There are of course downside issues with social technologies that need to be considered when developing services. One issue is ‘digital ghettoisation’ where

[52] http://www.voicemail4all.org.uk/
[53] http://www.writetothem.com/
[54] http://www.kirkleesmc.gov.uk/sms/index.shtml
[55] http://www.togetherwecan.info/
[56] http://www.cafamily.org.uk/
[57] http://www.whitestick.co.uk/listen.html

people choose to interact with the same communities online that they do offline in a way that actually reinforces isolation. Also, some social technologies can tend to be hijacked by a few, potentially articulate people. This can sometimes push out those who could benefit most. Social technologies sometimes need strong moderation and careful design to avoid this.

6.1.5 Status and Self Esteem

Digital inclusion activities can lead to increased self-esteem by helping people to re-engage in education, gain basic skills, improve life skills and overcome disadvantages to gain meaningful employment.

Technology supports distance learning for those who are remote, mobile or would prefer to learn anonymously due to a particular stigma associated with a course. It can also help people learn at their own pace. IBM's *Reading Companion*[58] is an example of technology supporting basic literacy. Users log on to the *Reading Companion* web site and are presented with material to read. An on-screen mentor, or companion, "reads" a phrase to the user and then provides an opportunity for the user to read the material, using a headset microphone. This is checked for accuracy and gives the user an opportunity to try again, or offers the correct reading of the words on the screen. As the user's skill improves, the technology reads less material so that the learner reads more.

Notschool.net[59] is an online community that aims to engage young people who have been out of the more traditional educational systems for a variety of personal and logistical reasons. It is specifically aimed at those for whom traditional alternatives such as home tutoring have not worked. *Knowsley Plus One Challenge*[60] is a project that also uses text messages and e-mail to send revision tips and provide wake up calls to pupils who are persistently late for school.

ICT can provide a hook to engage disaffected youth in purposeful activities. Some examples, which use technology and help to build self esteem include:

[58] http://www.readingcompanion.org/
[59] http://www.notschool.net/
[60] http://www.knowsleyclcs.org.uk/plusone/

- Drama sessions for disaffected youth to role play and produce a DVD of their experience that they can show to family and friends.
- 'Street sport' sessions with disaffected youth that can be videoed for friends and family.
- Creating music, sound and video for local community TV, radio or web sites.
- Interactive games, used in the right context by youth workers, can encourage mental and physical progression and also the development of soft skills such as communication and teamwork.

Mentoring schemes can provide valuable support to those at risk of exclusion. Technology can help in the establishment of mentoring relationships and increase their effectiveness by allowing more frequent and varied forms of contact than would otherwise be achieved. ICT can also help to sustain mentoring programmes and create virtuous circles where former students become mentors. IBM runs a scheme where staff mentor school students by email. This is targeted on deprived areas and particularly focussed on business studies and ICT courses. It has the effect of creating self-esteem, as there is someone taking a close interest in a young person who would not ordinarily have much support.

For the elderly mentoring may also be effective but services need to be carefully tailored as older housebound people can reject outside help in order to maintain their independent identities and self-esteem. Peer mentoring or befriending schemes can be particularly effective. One example is the *Sunshine Project*, run by Help the Aged, which provides mentoring through ICT training in care homes and also runs a befriending scheme. The scheme introduces people to ICT in general, particularly email, as a means of communicating with family and friends outside the care home. Volunteer mentors provide support during the training sessions and continue to visit after the training has been completed.

Finally, there are examples of ICT applications that support disadvantaged people in gaining employment. *MegaNexus*[61] is a web based social networking tool which

[61] http://www.meganexus.com/

operates in a number of areas in London. It aims to connect disadvantaged people together. It also opens up employment opportunities by connecting them to local support agencies and by facilitating job brokerage. *Slivers of Time*[62] is a service which brings employers with 2-3hrs of work together with people who are looking for work. It is effectively a reverse auction of people's time and is particularly helpful to disadvantaged groups that might only be able to work for short and irregular periods of time.

[62] http://www.sliversoftime.com/

6.2 COMMUNITY CAPACITY BUILDING

6.2.1 Overview

In the same way that ICT can help disadvantaged people to help themselves, it can also give deprived communities the tools they need to tackle local issues. Technologies that support community capacity building initiatives include wireless internet, wired broadband, digital TV, grid computing, kiosks and community notice boards. Schemes typically involve providing universal access via a combination of these technologies to services that meet the specific needs of the local community.

The government is especially committed to community capacity building through the *Digital Challenge*. In April 2005 the UK government set a challenge for local authority partnerships to develop an innovative digital vision for their region and use technology to combat social exclusion and community deprivation. In March 2007 a partnership led by Sunderland was announced as the winner[63].

Some specific examples of technology helping to build community capacity are presented in Table 8 along with evidence of impact.

INITIATIVE	SUMMARY	IMPACT
Netville	A suburban neighbourhood in an outer suburb of Toronto, Canada. Built from the ground up with a series of advanced broadband communication technologies. The network and its services were supplied and operated free of charge by a not-for-profit consortium.	A comparison of wired and non-wired Netville residents was conducted, in terms of their neighbourhood social networks. Compared to non-wired residents, wired residents recognised three times as many of their neighbours, talked to those neighbours twice as often, visited them 50% more often, made four times as many local phone calls, and further boosted their local communication through the use of email.
The Gorbals Library	Flagship regeneration project in Glasgow – library with strong ICT facilities and a resident digital inclusion team providing outreach to the community and community groups and training supported by ICT.	Over 67% of the community engaged with library 105 people in the community assisted into employment 58 local community projects supported
Shoreditch Digital Bridge	Broadband and IPTV based initiative piloted to 200 households and providing applications around crime, money and local issues.	- Increased reporting of graffiti and vandalism. - Increased use of computers via TV.

[63] http://www.digitalchallenge.gov.uk/

INITIATIVE	SUMMARY	IMPACT
East Serve	Broadband service provided to residents in East Manchester through subsidised PCs. Services provided for top community issues e.g jobs. Plus locally created content.	- Unemployed Eastserve customers more likely to look for a job than non-customers. - Increased sense of community spirit measured. - Eastserve customers viewed that the regeneration had resulted in a positive impact on the area, including improved quality of life.
Alston Cyber Moor	Broadband initiative covers 670 homes in a rural area with low IT use and characterised by low paid agricultural and seasonal labour.	- Retired people using computers as much as the general population in the UK, when normally a lot lower. - Nearly half of people with disabilities using computers for hobbies and interests. - Nearly twice as many people are using sophisticated private sector services online e.g. banking and shopping, compared to the rest of the country. - Over three quarters have experienced educational benefits, they feel more proficient with IT. - 82% of users agree it has made a different to their lives.
Carpenters Connect	Project to wire up 600 flats in an estate in Newham. Each home was provided with network points to connect either a TV set-top box or a computer. Community TV, internet access, email and access to council services were provided.	- Over 2/3 used the internet. - 30% households with children used it to help with homework. - 17% helped to develop local content - Around 2/3 used it to access local information.[64]
Aston Pride NDC	WiFi cloud installed via school estates to cover deprived community. ~500 families have been provided with a computer + access. Short 40min parent and pupil training sessions held after school – based on applications such as education, hobbies and shopping. Supplemented by engagement tools e.g. class podcasts to parents, online attendance data, online behaviour data.	Improvement in SATs results Increased business activity in the community supported
ICT Test Bed	More than 750 computers put in the homes of pupils in Barking and Dagenham.	Schools are reporting a number of benefits like improved ICT skills and better communication between school and home.

[64] DfES (2004), Wired up Communities Evaluation: Findings from the Carpenters Estate

INITIATIVE	SUMMARY	IMPACT
LSPTV	East Durham Local Strategic Partnership (LSP) initiative. The LSPTV system consists of 40 plasma screens installed in leisure centres, schools, shops, cafes, community centres and post offices relaying localised, multi-media content to the community around crime, health, employment, environment, education.	Increased awareness and take-up of local services achieved. Evidence of increase in enquiries for security grants and support services such as domestic violence and drugs counselling. Evidence of increase in uptake of youth projects and services for the elderly.

Table 8 Impact of Area Based IT Initiatives

There are community projects under development, which should be closely followed. One such project is the *Oakgrove Millenium Village*[65]. This is a new development of 2,000 intelligent homes in Milton Keynes of which 30 % is social housing. Fibre to the home (FTTH) will be installed to provide universal access to a next-generation broadband network[66]. It is planned that the first homes be available as early as 2007. The uptake and use of this network and the impact on the community will be interesting to compare to the positive experience of Netville in Table 8.

In practice the priority needs of deprived communities are dealt with by Local Strategic Partnerships. These partnerships develop community strategies to deliver against Local Area Agreements (LAA). Currently there is no requirement for partnerships to consider the role of ICT in helping to deliver against LAAs. However, feedback from one of the more successful community capacity building projects indicates that a digital strategy aligned to the community strategy is an important driving force to the success of community capacity building initiatives.

6.2.2 Urban Initiatives

In addition to those services detailed in Table 8 there are other urban initiatives worth highlighting. Specifically, there are many initiatives to install WiFi in city centres, including:

- BT's *Wireless City* initiative to install WiFi in 12 UK city centres[67].

[65] http://www.oakgrove-mk.org/links.asp
[66] http://www.miltonkeynespartnership.info/media_centre/press_releases.php?ID=38
[67] http://news.bbc.co.uk/1/hi/technology/4993038.stm

- *The Cloud*[68] is a company that is setting up wireless zones in nine cities including London, Manchester and Birmingham.
- The *Technology Mile*[69] has been developed by the London Borough of Islington. It provides free wireless internet to local businesses, residents and visitors, including access to a range of services via the council's web site.

There are many other wireless initiatives either operational or in the pipeline. Objectives vary from supporting local businesses on a fee-paying basis to supporting public sector workers or providing free access to residents and visitors. However, to date, few of these seem to have fully considered the social exclusion potential.

Other technologies also have exciting potential. The first communities to switchover to Digital TV, or those that are picked for the potential large-scale telecare pilots, are worth special consideration for testing complementary digital and social inclusion initiatives.

The increased access to community radio and TV that new technologies such as the internet and DiTV provide deserves renewed consideration in the context of improving community cohesion. Community radio can help to re-establish informal communications networks that have been eroded by unemployment and also build community optimism. It can be an effective channel for connecting communities and hard to reach groups to the agencies tasked to serve them. Organisations as diverse as the police, social landlords or residents groups can produce weekly slots and enjoy greater engagement with the public. Radio Regen[70] is a good example of community radio in action. The process of developing content can be particularly engaging for young people and encourage intergenerational and cross-community interaction.

Electronic notice boards displaying community TV channels have also been shown to be an effective way of communicating with the public and particularly contributing to safer neighbourhoods. However, their use extends well beyond community safety into communicating with hard to reach groups in an efficient and effective way. Example

[68] http://www.thecloud.net/
[69] http://www.islington.gov.uk/Leisure/freeinternetaccess/technologymile.asp
[70] http://www.radioregen.org/

applications include: anti-bullying, healthy eating, anti-smoking advice, missing persons, civic pride videos and job advertisements. Community Communication Network[71] (CCN) is an example commercial service provider to local government.

6.2.3 Rural and Suburban Initiatives

Rural and suburban areas can present a more difficult set of challenges to city centres in developing community capacity building initiatives that exploit ICT. This is because greater distances and lower population densities stress the limits of communications technologies and can reduce the economic case for infrastructure rollout in comparison to urban areas. However, there are examples that also cover more rural areas.

WiFi is being deployed in rural areas. *Norfolk Open Link*[72] provides outdoor WiFi coverage around Norwich city, with a coverage area up to 30 square kilometers. It is planned to extend coverage to twenty rural locations in the district of South Norfolk. Use of the network will initially be restricted to public-sector workers.

Stratford Unplugged[73] is a project to support visitors to Stratford-upon-Avon. They can hire a personal digital assistant (PDA) which provides internet access, an interactive map and a guide to the tourist hotspots. The system also uses WiFi, however, as with the urban based WiFi initiatives the potential to use the infrastructure for digital inclusion applications is as yet unexplored.

Locally created content around community history can help community cohesion. Cambridgeshire Community Archive[74] project provides tools for community groups to publish content on the Internet. Created by village based community groups, it is focused on the compilation of computer-based collections of photographs, images, written word reminiscences and sound recordings. Content is uploaded at local community access points. Living Archive[75] is a similar project, which created records on the lives of older people in and around Milton Keynes, one of the fastest growing

[71] www.ccn.uk.net
[72] http://www.norfolkopenlink.com/
[73] http://news.bbc.co.uk/1/hi/technology/4633741.stm
[74] http://www.cambridgeshire.gov.uk/leisure/archives/projects/communityarchives.htm
[75] http://www.livingarchive.org.uk/docs/whoweare.html

new towns. The project helped old-time residents retain their community history as their old rural communities were transformed. It also helped give new arrivals the experience of coming into a new place that had a sense of history. CD-ROM's, radio and video documentaries were developed to distribute content.

Ruralnet Online[76] is an example of a service run for rural communities to provide online advice and support around the use of information and communications technologies. It includes access to an online panel of experts, a community directory and online tools such as collaboration space.

The concept of twinning communities with similar communities is not new. However, the concept of 'digital twinning', where areas of ubiquitous access and high use of technology are twinned with disadvantaged places with low use, is an innovative one from Cambridgeshire County Council[77].

6.2.4 The Sustainability of Area Based Solutions

The lack of sustainability of community digital inclusion initiatives is a recurring theme. Many projects attract the capital to reach an operational stage, but then do not attract sufficient revenue to cover running costs. Developing a robust business model at the outset is not easy. Kiosks provide a good example of this. To maximise the digital inclusion potential of kiosks they should be installed in deprived areas and provide access to relevant public services. However, to cover running costs a revenue stream is required which can in practice mean delivering complementary private sector services. But to maximise revenue it is better to place the kiosks in less deprived areas, which of course runs counter to the original digital inclusion objectives.

The work of the AIMES centre at Liverpool University is particularly innovative with respect to achieving a sustainable business model. The centre is developing a community grid of services with the vision of creating a new 'fifth utility'[78] to make

[76] http://www.ruralnet.org.uk/about.htm
[77] http://www.digitalchallenge.gov.uk/project-space/citizen-first-2013-digital-services-for-all/citizen-first-digital-services-for-all
[78] http://www.digitalchallenge.gov.uk/project-space/imagine-2013-a-digitally-inclusive-society/201cimagine201d-2013-a-digitally-inclusive-society

access to electronic services as common and ubiquitous as water and electricity. Services are being designed with this utility concept in mind and with the objective of delivering highly affordable computing to excluded sections of the community. Based on thin client technology proof of concept pilots will be run with private sector partners to offer complementary revenue generating services, charged for on a return-on-benefit basis[79]. This has the potential to drive access costs down to very low levels.

Business models that are not based on private sector revenue generation tend to charge users for access to services. They tend to offer a mix of packages with very low cost access to basic services cross-subsidised by higher charges for premium level services. However, this model is by no means guaranteed to deliver sustainability. An analysis of the different business models for community capacity building is needed to help LSPs and Local Authorities that are embarking on such projects in the future.

[79] Return on Benefit is a sustainable concept for public sector ICT projects where private sector partners or departmental supporters fund projects out of the benefit they receive from them.

6.3 BUILDING ICT SKILLS AND TRUST

This section specifically highlights activities to improve ICT skills for disadvantaged groups. The most effective schemes are those that are tailored to individuals needs and concurrently build personal capacity. Case studies that have been highlighted in previous sections such as Bristol's *Companion* project, which helps the elderly to shop online, are good examples of how to deliver basic ICT training at the same time as helping trainees to become more self-sufficient at addressing their needs.

6.3.1 Research and Evidence

Research and evidence indicates that many of those who do not currently engage with digital technologies or digital services are not motivated to do so. In a 2005 survey of UK adults by the Office for National Statistics (ONS), 47% of non-Internet users gave as their primary reason for non-use as they "*do not want to, do not need to or have no interest*"[80]. Lack of motivation was the top reason given. There is also evidence that usage of the internet is believed by some non-users to be an individualistic, lonely activity that is an end in itself rather than a support tool to help address personal needs and pursue interests.

Evidence from research by GLE oneLondon[81], indicates that these motivational barriers can be overcome even for some of the most disadvantaged people with complex needs:

- To engage people, the focus needs to be firmly on the application of ICT rather than ICT itself. Attitudes can change positively when applications of ICT that deliver personal benefit are understood.
- Cost and skill barriers can be more easily overcome when individuals fully understand the potential value to them as this enables them to prioritise use of their scarce resources e.g. time and money.
- There is no one single application to mass-motivate people to engage. Rather, fine segmentation and targeted activities around personal benefits are required to motivate greater usage.

[80] http://www.statistics.gov.uk/StatBase/ssdataset.asp?vlnk=6939&Pos=&ColRank=1&Rank=432
[81] http://www.gle.co.uk/onelondon/

The lessons are that ICT training needs to be much less focussed on the technology itself and less designed around the prescriptions of training providers and the ICT industry. Instead it should be based around the needs of the individual and firmly rooted within the context of their family and community life. Research is backed by evidence from schemes where ICT has been used as means to an end in delivering applications of personal value to disadvantaged groups. Such schemes are particularly powerful as they build both social and digital capacity concurrently.

6.3.2 ICT Skills Activities

UK Online Centres[82] provide an essential service to those who have little or no experience of using PCs or the Internet. There are over 6000 centres based in community centres and libraries throughout England. These offer taster sessions and support for complete beginners. They can provide an effective channel for reaching disadvantaged groups, because many of them are based in centres such as *SureStart*[83] or *Connexions*[84] where ICT support can be delivered concurrently with social support and advice. University for Industry (UfI), which runs *UK Online Centres*, plans to run pilots specifically for hard to reach groups in 2007; focusing on mental health, teenage parents, children in care, chaotic families and the elderly. The centres can also be a route to IT qualifications such as the *European Computer Driving Licence*[85]. Importantly, they can lay the foundations for further education. *Learn Direct*[86], which is also run by UfI, provides access to many online and community based courses. While providing access and ICT skills is core to the centres' role, there is an increasing shift towards a broader digital inclusion remit which sees the centres supporting the delivery of online public services and progressing their users towards social outcomes such as employment.

National awards schemes can be used to promote an increase in ICT skills. The *Microsoft Community Learning Awards*[87] provides grants of £2500 to community groups and registered charities throughout the UK that are seeking funding for ICT

[82] http://www.ufi.com/ukol/default.asp
[83] http://www.surestart.gov.uk/
[84] http://www.connexions.gov.uk/
[85] http://www.bcs.org/server.php?show=nav.5829
[86] http://www.learndirect.co.uk/
[87] http://www.ukcommunityawards.com/

skills projects for disadvantaged young people and adults in their area. Up to 30 awards are made annually.

Digital champions are being increasingly recognised as an effective approach to help to engage people who are currently not using ICT. This was evidenced in the Digital Challenge, with around 20% of the bids proposing to establish networks of IT ambassadors and advocates. The main role of these champions is to remove IT training barriers and link people, services and spaces together. Champions are most effective when they are embedded in local communities and have strong links to relevant community groups. This helps local community organisations to create additional champions and achieve multiplier effects. Ideally these schemes also lay the groundwork for students to become volunteers, creating a virtuous circle that sustains the programme. Example initiatives include:

- *Everybody Online*[88]; this is a programme designed to help communities and individuals in disadvantaged areas engage with digital technology. The programme targets areas with low internet connectivity and employs a locally based champion to promote internet access in that area. The role of the champion is to foster a network of community based public internet access points and develop learning programmes with partner organisations and volunteers. The focus in on working with the community to remove barriers to access, for example, by setting up childcare so that parents can attend taster sessions or ensuring that access is during hours that users need. The programme is around 4 years old and is being expanded to cover Wales[89] and areas of Northern Ireland.
- *Digital Inclusion Champions Initiative*[90]; a programme run by the Scottish Executive to establish eight Digital Inclusion Champions, each based within a Local Enterprise Company (LEC) and working in Social Inclusion Partnership (SIP) areas across Scotland.
- *Community Information Line*[91]; a project in North Cornwall also known as Rural eChampions, which made use of community volunteers to promote

[88] http://www.citizensonline.org.uk/everybodyonline
[89] communities@one: http://www.walescoop.com/site/template.asp?pID=1&sID=68&lID=1
[90] http://www.ltscotland.org.uk/communities/digitalinclusion/index.asp
[91] http://www.productshare.org.uk/pp/publication/results.asp?categoryidproject=6000

egovernment services within rural communities. Two specific kinds of support emerged from the study. Volunteers either walked people with low ICT skills through service processes directly, or alternatively they raised awareness among the IT literate who then went and used the services themselves at home or work. Evaluation of the project indicated that awareness of benefits raised by volunteers resulted in higher levels of engagement in egovernment.

The London School of Economics is conducting action-based research on an estate in Lambeth. The Penceil[92] project aims to help individuals develop their own training based on known skills deficiencies, aspirations and the barriers that they face in their daily lives. ERoSH[93] and IT company Digital Unite are working together to install IT training programmes in sheltered housing communities for older people. The training packages are tailored to the specific needs of the housing community. The programmes are also sustainable. At the end of the training the community is left with a package that includes a community web site, email, plus locally trained volunteers to manage the system, the computer club and to mentor new beginners.

6.3.3 Case Studies

There are many examples of successful initiatives to engage people in the use of the technology. Some characteristics of innovative initiatives include:

- **Peer to Peer Training**; The *Australian Seniors Computer Clubs Association*[94] (ASCCA) is a national association for seniors and technology. The services, training and advice provided by the association creates a trusted environment in which older people feel confident. Seniors have confidence in the training and support that they are given because tutors are fellow club members who are often of a similar age with similar life experiences.
- **Intergenerational Training**; *Internet Rangers*[95] is a scheme where children can take their parents or grandparents to school to teach them how to use computers and the internet.

[92] http://penceil.lse.ac.uk/
[93] http://www.shelteredhousing.org/
[94] http://www.seniorcomputing.org/
[95] http://www.internetrangers.co.uk/

- **Integration of virtual and physical activities**; *WebPlay UK*[96] is an Internet-based project that enables primary school children from rural and urban areas to work with a professional theatre company to create, produce and perform short plays. The plays are then uploaded onto a specially created website. For many schoolchildren, *WebPlay* is their first introduction to the internet and the project develops their awareness of, and skills in, using the internet as a means of communication.
- **Linking to Life Stage**; the *EQUAL* Project in Latvia provides ICT training for the unemployed which is linked to job searching, writing CVs and using relevant electronic services.
- **Content Creation**; The *World War II Remembered*[97] project by the BBC encouraged older people to interact with the BBC's People's War initiative by using new technology, often for the first time. It enabled hundreds of people with no previous training or computer access to join in and contribute their stories to the growing web archive.
- **Mobile Access to Training**; the *Digivan*[98] is a custom built mobile classroom that offers computer-based training to people in isolated urban areas free of charge.
- **Home Based Training**; Leicestershire CareOnLine[99] provides some of the hardest to reach groups in Leicestershire with home access to computers and special equipment. The service makes use of outreach workers to provide one-to-one training at home.
- **Digital Volunteering**; the BVSC[100] run a volunteer scheme to recruit local people willing to give up some of their time to teach basic ICT skills.

Approaches to basic ICT training can tend to be too focused on specific homogenous groups for example ethnic minorities, the elderly or the young unemployed. This approach lacks diversity and can reinforce divisions between groups within communities. It is preferable to adopt, where possible, more heterogeneous

[96] http://www.webplay.org/
[97] http://www.cultureonline.gov.uk/projects/in_production/world_war_ii_remembered/index.html
[98] http://www.peabody.org.uk/pages/GetPage.aspx?id=123
[99] http://www.leicscareonline.org.uk/
[100] http://www.bvsc.org/

approaches to training based on common areas of interest such as the needs of the local community.

6.3.4 ICT Trust

Improving the safety and security of the online environment was a government commitment in the Digital Strategy[101]. Key activities include; the establishment of a multi-agency national internet safety centre, working with the banking industry to make the sector a market leader in terms of online authentication, activities to deal with unsuitable material online, and raising awareness of good practice in operating safely online. Since the publication of the digital strategy the government has launched ITSafe[102] a service to provide home users with advice on protecting computers, mobile phones and other devices.

[101] http://www.strategy.gov.uk/downloads/work_areas/digital_strategy/digital_strategy.pdf#search=%22connecting%20the%20UK%22

[102] http://www.itsafe.gov.uk/about/index.html

7.0 ICT ENABLED SERVICE TRANSFORMATION

This section focuses on government services for the most disadvantaged. ICT can help to transform public services both at the customer interface and within the back-office. There are three sub-sections that follow. The first highlights transformational government policy and presents examples relevant to social inclusion. Subsequent sections cover two important enablers for service transformation; operational data-sharing to reduce gaps in service provision and supporting frontline staff in designing and delivering services for disadvantaged groups.

7.1 SERVICE TRANSFORMATION

The eGovernment programme has been a pillar in the UK's drive to transform public services. The early focus of eGovernment was on making best use of new e-channels such as the internet, interactive digital television, mobile phones and kiosks. Early services that achieved reasonable levels of usage naturally focussed on earlier adopters of technology such as high rate tax-payers, car owners, home owners and people incorporating businesses. The relevance of eGovernment has therefore been low for the most disadvantaged. The survey evidence indicates that usage is low for those at risk of social exclusion, especially working age people without qualifications and those in social housing. However, there are a few exceptions. eGovernment use by those without work is higher than average, reflecting the popularity of electronic job searches and www.jobcentreplus.gov.uk. Furthermore, new mass-market services, such as www.nhsdirect.gov.uk are very popular and much more relevant to the population as a whole.

Policy has now shifted away from eGovernment as a niche area of service delivery towards mainstream modernisation, using ICT to support the transformation of public services around the needs of citizens, businesses and frontline service providers. This shift in focus is encapsulated in a strategy launched in 2005, *Transformational Government - Enabled by Technology*[103]. This has, in turn, increased the relevance to the social exclusion agenda. It is those with the most complex needs who present the greatest challenge to government service delivery and who disproportionately suffer the consequences of poor services and gaps in provision. People with higher personal

[103] Cabinet Office (2005), http://www.cio.gov.uk/transformational_government/strategy/

capacity are better placed to deal with poor government services and absorb the impact in terms of time, cost and stress. The social inclusion opportunities of *Transformational Government* are therefore highly significant, and include:

- Closing the gaps in service provision through data sharing.
- Supported access to services through trusted intermediaries.
- Greater reach of services by using technology to move the point of service delivery out of traditional locations into the community and people's homes.

With the opportunities come risks. The reality is that the goals of *Transformation Government* are potentially more difficult to achieve for those with complex needs and interactions with government. In many cases the quick wins, in terms of efficiency gains, could be around transforming services for 'easier to reach' segments with mainstream needs. There are risks therefore that the most disadvantaged will miss out, at least in the short term. There are also risks that in the short-term *Transformational Government* will increase digital exclusion as:

- Government makes more value added services available electronically that are not available through traditional means, to encourage channel shift.
- Channels are rationalised to achieve efficiency gains for interactions with the many, disproportionately reducing choice and increasing the isolation of the few.
- Major transformations do not fully factor social inclusion in at the outset in the absence of customer insight and a champion to represent the needs of specific groups.

However, the opportunities are significant and the above risks are well recognised; it is a clear goal of *Transformational Government* that everyone benefits from it. The service transformation agenda is therefore an essential part of the digital inclusion landscape and a good measure of success will be to specifically assess, at periodic intervals, how much services have improved for the most vulnerable.

7.1.2 Transformation Examples

Many people suffer greater financial disadvantage than they need to because of low take-up rates of benefits; estimates of the problem are as high as 1 in 10 people under-claiming. Some local authorities are transforming the way they deliver benefit services to tackle this issue. Rotherham Metropolitan Borough Council, for example, has developed a system for first time claimants to check the eligibility for over 60 benefits available from various agencies[104]. Claimants complete a single electronic claims form in a single visit.

The *Link-Age*[105] programme is another good example of transformational government to join up services across and beyond government and simplify how people are able to access the services and help they need. There are two key components; *Joint teams* and *Alternative Offices*. *Joint Teams* are formed from staff across multiple agencies but operating as a single team. They undertake single visits, taking claims across the range of benefits and, at the same time, undertaking financial assessments for services. *Alternative Offices* receive and verify claims made by older people before forwarding them on to DWP for entitlements to be assessed. Both of these initiatives reduce duplication of effort by benefit claimants and move the point of delivery either into the home, or a more convenient location in the community. The *Link-Age Plus*[106] programme is an extension of this to introduce 'One-stop shops' to help deliver key services to older people. The effectiveness of *Link–Age* could possibly be enhanced through the use of technology, e.g. tablet PCs or mobile technologies. *Link-Age Plus* centres could also have a role in engaging older people in ICT in the same way that some *Sure Start* centres are co-branded as UK Online Centres.

There are also examples of service transformation in health services. *Broomwell Healthwatch*[107] provides telemedical monitoring services to GPs to reduce the constant travelling backwards and forwards to hospitals for tests that some patients experience, especially in remote areas. The services enable people to have quick, professional readings of their tests in their GP surgeries, in drop in centres or even in their own homes. The information is then transmitted by telephone to a 24-hour

[104] http://www.rotherham.gov.uk/graphics/Benefits/e-Benefits/
[105] http://www.dwp.gov.uk/publications/dwp/2004/linkage/
[106] http://www.devon.gov.uk/linkageplus.htm
[107] http://www.broomwellhealthwatch.com

monitoring centre in Manchester where clinical staff analyse the data and within minutes can have a telephone discussion with the patient and the GP to decide on treatment. The technology reduces the waiting time for diagnosis and yields efficiency gains by reducing hospital visits or referrals. This technology effectively extends the reach of specialist services and makes them available more locally. In another example, Leeds General Infirmary[108] makes use of text messaging to deliver test results, avoiding the need for patients to make unnecessary trips into hospital.

For social housing, *Virtual Viewings* simulates the experience of looking around a property, walking into the rooms, garden and looking out through the windows. It offers social housing applicants the same type of service offered by estate agents.

There are a number of specific opportunities to deliver the transformational government vision to disadvantaged people and communities:

- The network of UK Online Centres uniquely offers assisted access to electronic services. Centres are able to train people how to use electronic government services and where to find them. Evidence from similar schemes at a local level indicates that there are two target segments for this type of support: those with low ICT skills who can be walked through service processes directly, and the IT literate who can be made aware of services so that they can use them at home or work. In this respect UK Online has a large target audience and great potential for extending the reach of transformational government to disadvantaged groups and beyond. eGovernment research by UfI finds that there are 6.6 m who are digitally excluded and also have high social needs. They could be helped in their contact with government by the network of centres[109].
- Intermediation, and the 'Citizen's Agent' concept that has been successful for *Link-Age* could be more widely deployed. The barriers to achieving this could be lowered by developing national intermediation standards, and making it easier for intermediaries to fill forms on behalf of others.

[108] http://www.leedsth.nhs.uk/news/newsitem.php?newsID=169
[109] http://www.helpisathand.gov.uk/news/uk-online-information/research-and-reports/

- Customer Relationship Management (CRM) can help to personalise and join-up services. Southwark's customer service centre is an example which allows the analysis of usage trends to support continuous improvement and the tracking of service history to personalise services. For those with complex needs CRM offers the prospect of more failsafe services, which prevent them falling through gaps in provision.

7.2 OPERATIONAL DATA SHARING

The sharing of strategic level, anonymised data has been covered earlier in the context of evidence-based policymaking and service planning. The section deals with the sharing of individual, personal or operational level data, which is a key enabler of the transformational government vision and contributes towards:

- More efficient, personalised and customer-focussed public services.
- Reduced regulatory burden on citizens and business by avoiding duplicate requests for information from different agencies.
- Increased innovation - data sharing can foster innovation.

Most importantly, in the context of digital inclusion, operational data-sharing can help to identify vulnerable people and ensure that they do not fall in between gaps in service provision across agencies. The risk of falling between gaps is larger for disadvantaged people who typically have multiple contact points with government and agencies. Data sharing helps to manage these multiple interactions. It helps agencies better target support to the most disadvantaged by coordinating their efforts and focussing on the unique needs of individuals.

The Ministerial Committee on Data Sharing (MISC 31) [110] was established to develop the Government's strategy on data sharing across the public sector and to help ensure the right balance is achieved between the sharing of data for public service improvements and the provisions in the Data Protection Act. This act protects the individual's right to privacy and confidentiality particularly for sensitive information such as medical history, personal taxation or criminal records. Achieving the balance is crucial to improving services while retaining public trust. It has been historically difficult to achieve this and progress has been slow, as agencies have naturally erred on the side of caution. Data protection legislation is sometimes used as justification to for not joining up information and services, but the reality is that the Data Protection Act is not a significant barrier in itself and it is a lack of clarity among practitioners that is often the key issue. Outputs from MISC31 help to address this issue, and include:

[110] http://www.cabinetoffice.gov.uk/secretariats/committees/misc31.asp

- A statement on the government position on data sharing.
- A 3-5 year strategy.
- Guidance for public servants who handle private data.

The government released a vision statement on data sharing in 2006[111]. The Information Commissioner is developing further guidance and a framework code of practice. These will help public sector organisations ensure that their sharing of personal information respects personal privacy. Effective partnerships are an important foundation to data sharing and these codes of practice and guidance will help to establish effective partnerships. There are already examples at a local level, for example Bristol City Council has developed a code of practice for data sharing with the local health authority[112].

Specifically linked to social exclusion, the government has announced a programme of data-sharing pilots to explore alternative approaches to improving outcomes for those with multiple needs.[113]

Although progress has been slow there are good examples of data sharing. The Department for Work and Pensions (DWP) has shared information with HMRC to target people over the age of 60 who are not claiming Pension Credit but who might be entitled to do so[111]. This has enabled a targeted approach to proactively contacting people who might qualify while concurrently improving efficiencies by avoiding contact with people clearly not entitled to it. DWP is also looking at other approaches to simplify benefits payments. A successful application for one benefit could, for example, automatically lead to a passport or automatic entitlement to another. A specific example would be to automatically gather information to help identify entitlement to council tax benefit amongst customers claiming pension credit, so that relevant information only needs to be provided once by claimants.

[111] DCA (2006) Information sharing vision statement
[112] Bristol City Council (2006), Connecting Bristol – Building Momentum for Change, pg 13
[113] HM Government (2006), Information Sharing Vision Statement, pg 7

Data sharing can support health service reforms. *Electronic care records*[114] will allow information about patients to be as mobile as patients are themselves. This means, for example, that if someone is seriously injured while on holiday, a local doctor can treat them with immediate access to the patient's medical records from their home surgery. This approach could particularly benefit people who live chaotic lives and who frequently move location.

In education, DfES have given ten local authorities partnerships £1 million each to develop and test new ways of information sharing and multi-agency working through *Identification, Referral and Tracking* (IRT) projects. The focus was on data sharing between relevant agencies around specific children with additional needs.[115]

There are examples of local authorities sharing information with partners around vulnerable people:

- Homeless; *NOTIFY*[116] is a system that enables London boroughs to share information on homeless families and individuals living in temporary accommodation in London. The aim is to improve service delivery especially for people moving between boroughs.
- Vulnerable Children; the *London-wide Child Protection on Line (CPoL)*[117] will be the first project specifically to provide secure, auditable electronic access to Child Protection Registers (CPRs) for all authorised A&E clinicians and social care professionals.
- Asylum Seeking Children; the *National Register of Asylum Seeking Children*[118] will provide rapid and accurate information to statutory agencies requiring vital information on unaccompanied asylum seeking children.
- Mental Health; Shropshire county council has led the development of *Integrated Mental Health Records*[119] which can be accessed by multiple partner organisations.

[114] http://www.connectingforhealth.nhs.uk/delivery/programmes/nhscrs
[115] DfES (2004) Developing Information Sharing and Assessment Systems
[116] www.notifylondon.gov.uk
[117] http://www.cpol.nhs.uk/
[118] http://www.nruc.gov.uk/
[119] http://www.fame-uk.org/archive/strand/shropshire.aspx

'Enabling infrastructure' is being put in place to share data. *Government Connect*[120] delivers tools to enable local authorities to share information securely. It will also enable data sharing between central and local government, and eventually there is the potential to link government to third sector organisations. Examples of data sharing between government and the third sector include:

- Citizens Advice Bureau's (CAB) partnership with Woking and Uttlesford District Councils.[121] The councils gave authorised CAB staff self-service access to housing benefit and council tax benefit information about their clients.
- One government department is conducting an information-sharing audit with a third sector intermediary. Customer advisors from the 3rd sector organisation are logging the information they need from central government during interviews and this is being compiled to form an aggregate 'information needs' statement. This can then be used to develop a self-service interface to back-office systems to reduce manual contact between the organisations, increasing both efficiency and responsiveness for clients.
- Similarly, one council has developed a free online service, accessed via a dedicated portal on the council's website where Citizen's Advice Bureau advisors can go to find comprehensive information about council services. The portal contains an A-Z of the information most relevant to CAB clients.

There are also examples of data sharing within the 3rd sector. For example *LINK*[122] is a secure, web-based client recording system which allows an organisation to input and monitor details of clients and the work done with them. Homelessness agencies are using *LINK* to help ensure that services can be more effectively delivered to clients. Third sector capacity building initiatives, like the *ICT hub*[123], could help to encourage data sharing within the sector and with government.

[120] http://www.govconnect.gov.uk/
[121] http://www.citizensadvice.org.uk/index/aboutus/citizensconnect/egovernment.htm
[122] http://www.ris.org.uk/index.asp?sid=52&mid=5
[123] http://icthub.org.uk/

In the push to increase data sharing, care still has to be taken to achieve the right balance with service confidentiality. There are examples where any hint of increased data sharing could impact willingness to access services and run counter to social inclusion policy goals e.g. young people using sexual health services. Clearly, each case needs to be made on its merits by balancing the benefits of information sharing against the potential unintended consequences.

In conclusion, data sharing is an essential part of the drive to transform services and holds great potential to benefit the lives of the most disadvantaged. There are more and more examples across and in between the public and 3rd sector, and *MISC 31* outputs should accelerate progress by providing clarity and guidance to practitioners.

7.3 SUPPORTING FRONTLINE STAFF

Information technology has an important role to play in empowering frontline staff to improve and transform services for the hardest to reach. There are two specific areas relevant to digital inclusion, covered in the sections that follow:

- Making the best use of mobile technology tools so that service providers can 'reach out' and move the point of service delivery from traditional locations such as government points of presence on the high street, to less traditional locations in community centres, streets, estates and people's homes.
- Building the capacity and capability of services designers and practitioners so that they are both aware of the opportunities of ICT and are able to take advantage of them.

7.3.1 Tools for Front Line Service Staff

Mobile technology can help front line staff be more productive and have a more fulfilling job by allowing them to spend more time in the community with service users. Frontline workers with accurate and up to date information at their fingertips can help to deliver more effective services to people in their own homes or at other more convenient locations than traditional government offices. Local authorities are increasingly deploying mobile technologies to the advantage of vulnerable people. Examples include:

- **Mobile Service Delivery**; The *Benefit Express Service Team*[124] (BEST) is a team of visiting officers from Halton Borough Council, delivering real–time, online access to benefit claim records which can be updated from citizens' homes. The general concept is based on sending a team of mobile operatives into a housing estate or shopping centre with a highly mobile, visual presence (Benefits Express Bus). Teams are equipped with laptops, linked in real-time (by 'GPRS' mobile phone links) with the benefits processing section at head office. Similarly, Leeds City Council have successfully demonstrated the use of *digital pen and paper*[125] for recording information on tasks completed on

[124] http://www2.halton.gov.uk/content/socialcareandhealth/socialbenefits/benefitsexpress
[125] http://www.leeds.gov.uk/innovation/pens.html

behalf of clients in their homes. The solution has delivered significant improvements in the level of service clients receive, by enabling care workers to spend more time caring for them and less time on bureaucracy.

- **Mobile Access to Client Case History**; *Hertfordshire Social Services*[126] have provided caseworkers with remote access to their case management system. The technology enables front-line workers to check case information and to search for services directly from the client's home. Similarly, *Cambridgeshire County Council*[127] has enabled ambulance crews to remotely access its social care database which helps them to make more effective decisions when attending incidents. For example, in the case of an elderly person, ambulance crews could contact a care worker or relative to help as an alternative to an unnecessary trip to hospital.
- **Mobile Incident Reporting**; London Borough of *Haringey Street Scene*[128] project uses PDAs to allow Street Wardens to report incidents wirelessly whilst in the field. Incident categories include, 'anti-social behaviour', 'vehicles', 'graffiti', 'fly-tipping', 'highways', 'lighting' and 'street cleaning'. *Barnsley*[129] has deployed technology in a similar way to Impact Officers, with the aim of enabling them to spend over 90% of their time in the community working with tenants in their core role controlling antisocial behaviour in estates. The technology allows more effective incident reporting and resolution and especially benefits deprived communities where incidents are higher.
- **Mobile Work Scheduling;** Harlow Council implemented a *Responsive Repairs Project*[130] for social housing problems. Craftspeople called in to fix repairs use mobile technologies to access their appointments and to log job completions in real time. The technology has been credited with reducing repair response times to 12.5 days from over 45 days at the start of the project.

[126] http://www.productshare.org.uk/pp/publication/detail.asp?id=20935
[127] www.blackberry.com/uk/news/pdfs/cambridgeshire_casestudy.pdf
[128] http://www.productshare.org.uk/pp/publication/detail.asp?id=20943
[129] http://www.productshare.org.uk/pp/publication/detail.asp?id=20927
[130] http://www.productshare.org.uk/pp/publication/detail.asp?id=20925

The increasing rollout of WiFi across cities for public sector workers to use represents an opportunity for local authorities to take more advantage of mobile technologies in transforming service delivery.

Central databases and service portals accessible across practitioner communities are also key tools for empowering frontline workers. For example, *UKrefugesonline*[131] is a database of services for victims of domestic abuse. Domestic violence practitioners are able to access the database 24 hours a day, 7 days a week securely across the Internet. Similarly, launched in October 2005, *Homeless UK*[132] provides a website containing information about over 8,000 services including hostels, advice and support services. Registered local agencies that refer homeless people to hostels are able to access up to the minute information about available vacancies in hostels and housing.

7.3.2 Building Capacity and Capability in the Practitioner Community

The examples in the previous section are growing in number but are still uncommon and relatively cutting edge. A scaling up and broadening of the type of tools that have clearly demonstrated impact for both front line workers and their clients is required. Raising awareness of what works and providing implementation toolkits where appropriate are example activities to achieve this aim.

The *Local eGovernment Programme*[133] has established a number of projects that offer toolkits and support to the service design community for reaching disadvantaged people. Key projects include:

- ***The Digi-TV Programme***[134] provides a 'How To' guide and a 'Starter Kit' which enables all local authorities to publish services on digital interactive TV. The programme has also negotiated central contracts for local authorities to access all major platforms such as Sky and Virgin services. In the context of Digital Switchover the *DigiTV* programme's tools are a major opportunity for

[131] https://www.ukrefugesonline.org/
[132] http://www.homelessuk.org/
[133] http://www.localegov.gov.uk/
[134] http://www.digitv.gov.uk/site/content/view/19/63/

reaching people who are unlikely ever to use mainstream forms of digital technology like PCs.

- **Frontline Mobile Technologies**. *Project NOMAD*[135] has developed a set of products to support local authorities wanting to establish a mobile working operation.
- **SMS Text Messaging Toolkit.** The iTex toolkit[136] offers local authorities off-the-shelf solutions to delivering services via text messaging.
- **Communities of Interest**. *VOICE*[137] is a toolkit for Local Authorities which provides parish and town councils, neighbourhood groups and the voluntary community sector with a selection of online tools, including open source software to build their own website. *VOICE* can also help these groups create online communities where people can gather to discuss issues, find information, organise, and engage.

It is particularly important for service developers to use the language of the audience that they are serving. The *Everyday English Editor*[138] is a software tool which enables people who produce government information to adapt their English to reflect the vocabulary of people with low levels of literacy or other language barriers. It is based on the logic that it is easier for people to understand words they use themselves. The higher the percentage of 'everyday English', the easier it is for them to absorb what is being communicated.

The private sector has a role to play in capacity building especially in the 3rd sector by sharing their expertise on using technology to deliver services. One example of this is IBM's *On Demand Community*[139]. This is an internal IBM resource designed to enable IBM knowledge & skills to be shared with 3rd sector. It includes resources that staff can pass on such as tools for volunteers and IT advice. The assistance provided by the private sector can also extend to tangible services. For example, BT runs a free web site hosting service for community organisations, and this includes additional support in developing the web services.

[135] http://www.projectnomad.org.uk
[136] ITEX Toolkit, www.projectnomad.org.uk
[137] http://www.e-voice.org.uk/
[138] http://www.optimum-uk.com/Editor.html
[139] http://www-306.ibm.com/software/success/cssdb.nsf/CS/DFOL-6PXSF9?OpenDocument&Site=

There are many pathways to reaching practitioners and service design communities in the public and third sector in order to share good practice and raise awareness around digital inclusion issues. Some examples include:

- *IDeA Beacon Scheme*[140]. IDeA runs a scheme, which identifies excellence and innovation in local government. The scheme exists to share good practice so that all authorities can learn from those that are leading in specific areas. The Beacon Scheme is one of a number of schemes that could possibly be used to identify local authorities that are leaders in digital inclusion, and delivering services most effectively to their most disadvantaged residents.
- *Government IT profession*[141]. An essential foundation to the government IT profession is a core skills framework which covers areas such as service delivery and solutions delivery. The IT profession is one of a number of possible routes for building in 'Design for All' concepts into skills frameworks and equipping IT professionals with the skills to 'social exclusion proof' solutions and services.
- *Service Design Authority*. The *Service Design Authority* (SDA) supported by the Delivery and Transformation Group in the Cabinet Office is responsible for research and development around service transformation and reports into a cross-government board on the transformation of services. The SDA is one of a number of possible routes to developing social inclusion and social equity design principles and ensuring consideration at the earliest stages of major service transformations.
- *SOCITM*[142]. The society of IT managers (SOCITM) network engages IT managers in local government and stimulates debate through periodic reports and events. The SOCTIM network is one of a number of routes to engaging IT managers in issues related to social and digital inclusion.
- *GovXchange*[143]. SIAG (SOCTIM Information Age Group), in partnership with eGov monitor[144] has established *Government Exchange (GovXchange)*

[140] http://www.idea-knowledge.gov.uk/idk/core/page.do?pageId=5096139
[141] http://www.cio.gov.uk/itprofession/index.asp
[142] www.socitm.gov.uk
[143] www.govx.org.uk
[144] www.egovmonitor.com

knowledge sharing platform. It is an initiative to create, collate and disseminate knowledge from across the public sector, based on an active network of communities of practice and interest. It has already started to support a digital inclusion community through recent events, and could usefully complement the *Digital Challenge and Inclusion Network.*

- The *ICT Hub*[145] supports 3rd sector practitioners. It is one of a number of routes to stimulating and sharing good practice in digital inclusion. There is potential to support the transformational government agenda for the 3rd sector and stimulating shared services in the front and back office. There are already examples of shared services within the 3rd sector for examples NSPCC's *CharityShare*[146] project. This is a joint IT support initiative between the NSPCC and The Children's Society.
- The *Innovation Exchange*[147] will be a new website to connect innovators in the third sector, and is an action emerging from the Office for the Third Sector's plan for increasing the role of the sector in public service delivery. This could stimulate digital inclusion.

These opportunities have mainly focussed on ICT communities within government and the 3rd sector. However there is also a need to work outside of these, and in mainstream practitioner communities focussed on delivery to disadvantaged groups around key service areas such as education, health and crime. One of many examples is Renewal.Net[148], which serves the Neighbourhood Renewal policy and practitioner communities.

[145] http://www.icthub.org.uk/
[146] http://www.charityshare.org.uk/
[147] http://www.cabinetoffice.gov.uk/third_sector/public_service_delivery/
[148] http://www.renewal.net/

8.0 SOCIAL EXCLUSION PREVENTION

Technology can contribute positively to preventing social exclusion by facilitating early intervention for people and communities at risk. However, it can also make matters worse. The modernisation of public services can have the unintended consequence of reinforcing disadvantage and isolation by excluding people from value added information and services delivered using technology. The electronic channels of access are often better than other forms of access by design in order to encourage channel shift.

This issue extends beyond public services to an increasingly electronic social and commercial world. The problem is multilayered and requires more than simply making disengaged people aware of the benefits of technology and providing supported or subsidised access to it. Even when people do have the technology, the services they need to access can be inaccessible if service providers have not followed standards for ensuring electronic services are usable be people with specific disabilities.

The marketplace can only go so far to solve these issues. There are clear areas where there are lower incentives for industry investment and where the market is struggling to deliver. Specific areas of concern include:

- Many ICT products and services are developed for the mass-market and unusable by people with special needs or with disabilities.
- Government and industry web sites are often unusable by people with disabilities e.g. impaired vision. Only an estimated 3% of public web sites across the EU comply with the minimum web accessibility standards and guidelines.
- The market appears to be failing the most disadvantaged groups who are least likely to use technology. There are potentially greater incentives for the market to sell new products to, and technology refresh, the ‘digitally included’ than to acquire new, potentially less profitable customers from disadvantaged groups.

It is important to distinguish between groups whom the market is potentially failing and those who have made a conscious decision not to engage in ICT. This section focuses on activities to address the market failures for those who are disadvantaged. This first part of this section highlights *Access and Accessibility* case studies within the digital inclusion landscape. It covers activities such as awareness campaigns and subsidised technology access schemes. It also covers *Design for All* activities to ensure that technology related products and services are accessible and usable by all, including people with special needs. The final part of this section covers the use of ICT to proactively intervene early for those at risk.

8.1 ACCESS AND ACCESSIBILITY

There are many projects and activities that are currently focussed on access and accessibility. In fact, after *research*, this was the most common type of digital inclusion project catalogued. Activities can be subdivided into communications campaigns to raise awareness of benefits, technology access schemes and 'Design for All'.

8.1.1 Communications Campaigns

Lack of motivation to adopt technology is a common reason among those who do not use it. They do not adopt because they feel that it is irrelevant to them and they have no need to use it. Communications campaigns can help to tackle these motivational barriers by raising awareness of the benefits and also focussing on the relevance of applications of technology to people's everyday lives. Campaigns often include some form of fulfilment package or 'call to action', such as signposting a local community internet access point where interested participants can book a taster session. One of the largest communications campaigns over the next few years, which will specifically target 'hard to reach' groups, is around Digital Switchover and is being led by *Digital UK*.

Aside from Digital Switchover, where government has a very clear goal to raise awareness and call people to action, there are few other marketing initiatives specifically targeted at disadvantaged groups. However, there are plenty of examples of communications campaigns targeted at mainstream non-users. *Seeing the*

DiViDe[149] is one particularly innovative example from Chiltern Council to encourage non-internet users to take-up online council services by developing a promotional DVD film and using an "old" technology, the TV, to introduce a "new" technology, the internet. Other examples tend to be private sector led and similarly focussed on mainstream non-users. Communications campaigns are clearly an important tool for bridging the digital divide and helping industry to develop new markets. Examples of live projects include:

- A national initiative to raise awareness of the benefits of information and communications technologies among the over 50s.
- An initiative by a local authority-industry partnership in London to engage non-internet users.

Interestingly, both of the above examples are industry-led reflecting the commercial opportunities of growing the ICT market, but they are also supported by either third sector or government partners, in recognition of the wider social benefits of reducing the digital divide. This form of partnering, especially between industry and the third sector is likely to become increasingly important for reaching the next 25% of individuals who are non-users of ICT. However, the effectiveness of communications campaigns in persuading the 15% of individuals who are also socially excluded is less than clear.

There are examples of campaigns where the target audience is the policy and practitioner community rather than prospective end users. For example, *The Equity Campaign*[150] (Equal Opportunities in IT for Young People), which was launched in September 2005, aims to raise awareness of the impact of the digital divide on educational attainment and create equal opportunities in IT access for young people. This campaign is run through a 3rd sector and private sector partnership and helps to highlight the threat associated with inaction and potential opportunities if the digital divide were tackled for disadvantaged young people.

[149] Seeing the DiViDe (2005), Chiltern District Council
[150] http://www.equitycampaign.com/

8.1.2 Technology Access Schemes

There are many schemes that give free or subsidised technology to disadvantaged groups. Schemes commonly provide access devices such as PCs, laptops, kiosks, and to a lesser extent mobile phones. The provision of support and training is often a critical success factor.

8.1.2.1 PCs and Laptops

There are a number of programmes that provide home computers directly to the disadvantaged either free of charge or for a nominal fee on a loan basis. The focus of many of these schemes has been on school age children. Lack of home access to a computer and the Internet among a minority of pupils is a clear barrier for teachers who fear greater use of ICT in the classroom and for homework could increase disadvantage for those without. Universal home access for pupils is therefore critical for embedding ICT into education more deeply. *Computers for Pupils*[151] is a £60 million, 2-year programme led by DfES and aimed at helping some of the most disadvantaged secondary children improve their education and life skills by putting a computer or other electronic learning device into their homes. The scheme also has broader social goals around engaging parents both in their children's education, and in applications of information technology that can help improve their lives and life opportunities. It could ultimately impact 100,000 disadvantaged households and potentially double this number in terms of total people. A *Home Access Taskforce* has been established to extend the scheme in partnership with industry.

The *eLearning Foundation*[152] has similar objectives to *Computers for Pupils*. Since 2001, the *e-Learning Foundation* has helped 160 schools in the UK give over 30,000 of their most deprived students and their families access to ICT. The scheme is typically based on the loan of equipment to use at home with small monthly donations of £2-£5 when parents are able to. The donations help to refresh equipment and achieve sustainability. The *eLearning Foundation* approach has the potential to increase the sustainability of the *Computers for Pupils* initiative should local authorities choose to use their grants to administer their schemes in this way. On a smaller scale but in a similar way, Harrow schools have clustered together to provide

[151] http://www.teachernet.gov.uk/wholeschool/ictis/computers_for_pupils/
[152] http://www.e-learningfoundation.com

home computing for their most disadvantaged families. Led by *Canons High School*[153], they have been working with partners to fundraise so that 120 families have been able to benefit from home access equipment. The scheme is based on a loan system and also provides subsidised broadband access.

There is also a need to make better use of the equipment that is already available, especially in schools that would otherwise end up being locked away at night. For desktop PCs this could mean considering opening up schools outside normal hours to provide access to equipment and support. In the longer term, a strategy of partially replacing desktops with laptops would increase the capacity for loan schemes. Laptops have greater potential than desktops to support schemes that allow pupils to take computers home with them. Of course this approach could reasonably be extended to other organisations in the public, private and third sector. This could include implementing similar loan schemes, expanding access times to assets, opening up access to new segments or improved marketing of existing schemes. However, it could increasingly also include contributing processing power to social applications of grid computing[78].

Computer recycling can provide cheap second hand computers to people on low income. These schemes have suffered in the past from issues around the transfer of software licenses, the risks around reliably cleansing hard disks of personal data, and the difficulties in providing warranties and ongoing support. However, there is renewed interest, particularly from the ICT industry due to the European Directive on Waste Electrical and Electronic Equipment (WEEE). This directive places a greater obligation on industry for the recovery and re-use of electronic waste through recycling and other forms of recovery. The directive improves the business case for recycling for industry; if recycling is easier due to new recovery schemes then there is less of a barrier for users to buy new machines and they may therefore buy them more frequently, growing the market for PCs as a whole. One such example of computer recycling is the *Burslem Ethical Trust.*[154] This scheme is run as a social enterprise. PCs are collected and recycled for provision to community groups or to developing countries.

[153] http://www.canonsclusterproject.co.uk/cconnect.html
[154] http://www.tecc.org.uk/

Government is already investing to provide home computer access to disadvantaged pupils and in the case of access to DiTV, is providing support to the over 75s and the severely disabled. There may also be business cases for government intervention for other disadvantaged segments. For example, a scheme in Northern Ireland is providing access to all foster homes and there are proposals for similar schemes in England under consideration. In Poland, the *PC for Homes* programme provides no-interest loans for computer equipment for blind and partially blind.

8.1.2.2 Internet/ Broadband

There are programmes that provide free or subsidised Internet access. Those that focus on home access typically concentrate on a particular geographical area and have already been covered in the *Community Capacity Building* section. In the community, *UK Online Centres* provide an essential access support structure for those without home access. The ability of *UK Online Centres* to provide access and support to niche groups, who may have both special and complex needs is an important area of future development and UfI has announced pilots in 2006/2007 to explore this further.

The private sector is also actively playing a role in lowering barriers to access. For example, AOL provides free access to schools and charities from 8am to 8pm seven days a week[155]. There are also opportunities for industry to support the 3rd sector in providing access. For example, BT has been helping Age Concern to bring its community ICT facilities up to a common standard both in terms of equipment and professionalism of support for users of the facilities.

8.1.2.3 Email

Email can improve the quality and extent of people's social and support networks. Everyone has the opportunity to have a free email address, but the key issue is how to access it. UK Online Centres have the potential to offer email services, such as the one within **myguide**, along with support in helping people to use email for the first time, to those who cannot access the Internet in any other way.

[155] http://info.aol.co.uk/about/community/

A South Yorkshire partnership submitted an innovative proposal based on email to the Digital Challenge competition[156]. The proposal was to enable people to register for a directory that lists email addresses and mobile numbers as a digital counterpart to the phone book. The idea has the potential to improve community communication and cohesion.

8.1.2.4 Mobile Phones and PDAs

Mobile phone recycling is commonplace. Some schemes send reusable phones to developing countries with poor access to landlines. However, most schemes either recycle components or refurbish phones and sell them again. Resale often generates revenue for charities that collect old phones. There are a few programmes to reuse mobile phones for vulnerable people. For example, Hounslow runs *fonesforsafety*[157], a programme to re-use unwanted mobile phones to help victims of domestic violence communicate in an emergency. *Phone4life*[158] is a US based non-profit organization seeking to improve the lives of senior citizens, victims of domestic violence and adults with serious disabilities by distributing mobile phones with free call minutes and capable of making emergency calls.

The *Learning2go*[159] project in Wolverhampton has distributed Personal Digital Assistants (PDAs) to more than 1000 pupils in over 20 schools. These devices provide a bridge between school and home. They have been integrated into lessons and homework and have contributed towards measurable improved levels of literacy.

8.1.2.5 Kiosks

Kiosks can provide free community based access to government services and have a role to play in supporting social inclusion. Many local authorities have deployed kiosks but one of the key issues with them is sustainability. The bulk of cost is in revenue payments to cover licensing and maintenance. This makes them a relatively expensive option for service delivery in the long run. The *Access East Sussex*

[156] http://www.digitalchallenge.gov.uk/project-space/digital-outreach-teams-making-it-personal/digital-outreach-teams-making-it-personal
[157] fonesforsaftey
[158] http://phone4life.org
[159] http://www.espresso.co.uk/news/press_releases/051026_wolves_pda.html

Partnership[160] is following a new more sustainable approach. The county will have more than 50 kiosks in place by the end of 2006. The bulk of these kiosks will be away from traditional places like council offices and in locations such as supermarkets, village stores and post offices. They will provide access to community information and public services. To improve sustainability, they also will provide access to revenue generating services such as email, mobile phone top-ups and downloads, and prints from digital photographs. This approach improves the business case for investing in kiosks and increases their importance to digital inclusion.

There is plenty of relevant government and 3rd sector content that is already available for kiosks. *StartHere*[161] is an example. It is an electronic information service that runs on a range of digital media including touch screen kiosks, and BT on-street kiosk phones. It provides a signposting service and has been used in a number of kiosk projects including deployment in Tower Hamlets.

8.1.2.6 Digital Interactive TV (DiTV)

The digital switchover *Help Scheme* will start providing support, from 2007, to millions of the most vulnerable people in society – those over the age of 75 and those with serious disabilities. These are people who are major consumers of public services and who are overwhelmingly on the wrong side of the digital divide. They are also the least likely to be ever persuaded to get a PC to access the internet. However, with support from their carers, they could take advantage of simple services via DiTV or IPTV. If *Help Scheme* recipients are provided with a broadband capable set top box with a simple browser this would remove a major barrier to internet connection by eliminating the need to buy a PC. This would enable both private and public sector service providers to offer to connect these boxes to provide paid or free services relevant to the *Help Scheme* audience. Digital Switchover therefore represents an historic opportunity to transform the nature of the digital divide in the UK, and support social inclusive policies for disadvantaged people and deprived communities. Specific opportunities include:

[160] http://www.citixone.com/home.php?page=cs01
[161] http://www.starthere.org/

- Help the UK meet it's objectives under the *EU Riga Declaration*[162] to halve the gap in Internet usage by 2010 for groups at risk of exclusion.
- Join-up with the government's Telecare goals and targets. There is a great deal of overlap between audiences for Telecare and the Digital Switchover *Help Scheme* and some real synergies.
- DiTV has the potential to reduce loneliness and isolation among the over 75s through community TV, community radio and existing DiTV social networking applications such as reading clubs.
- Local Authorities could use DiTV channel to provide simple services to users and carers, based on readily available tools from the *DigiTV* national programme. Services as diverse as GP appointment bookings, local job searches, community book clubs, air quality readings, confidential sexual health information and interactive contact with social services are now common via DiTV.
- Existing Central Government services could be delivered to the over 75s and disabled such as NHS Direct Interactive, Directgov Interactive and Transport Direct.
- The BBC's new media services such as iPlayer could feasibly be delivered more widely to the population if the *Help Scheme* set top box could support broadband. This would make available non-linear schedule TV services and access to BBC archives to the over 75s and disabled.
- Major 3rd sector organisations have existing advice services that could be offered via DiTV e.g. Help the Aged and Citizens Advice Bureau.
- UK Online Centres could ensure sustainable community based support for DiTV services and offer the potential for DiTV to be a stepping-stone to internet based services.
- DiTV can be used to monitor energy consumption, an issue of particular concern to the elderly in Winter.

These are potential opportunities to be explored. However, it is recognised that digital switchover is an immensely complex project and opportunities to join-up, such as those mentioned, need to be explored with care to ensure no negative impact to core

[162] http://europa.eu.int/information_society/events/ict_riga_2006/index_en.htm

switchover goals. That said, the current help scheme box actually precludes interactivity and this represents a missed opportunity[163].

8.1.3 'Design for All'

80 million people in Europe live with some form of disability, with over half of these out of work. In the UK, it is estimated that some 8.6m people (15% of the population) live with vision impairment, and this figure excludes some from other groups such as those with dyslexia, usually estimated around 19% of the population. Around 17m people in the UK are estimated to have a long-term condition.

The internet is unique in its facility for opening up services to a wide range of people who have some form of disability. Services that use the internet could open up public services to large groups of disadvantaged citizens who had previously been excluded or at least seriously hampered in accessing public services. The problem is that many internet based services are not in fact accessible[164], and many ICT products are not designed to be used by people with disabilities. The UK is actually doing well by international comparisons[165] but there is a lot of room for improvement.

There is legislation in place that is relevant to accessibility for example, the Disability Discrimination Act 2005 places a duty on all public sector bodies in Great Britain to promote disability equality. Known as the Disability Equality Duty, this means that public authorities must plan for and take account of disability equality in day-to-day service delivery, building it in from the beginning, rather than making adjustments at the end. However, aside from the legal and moral imperatives, there are also clear opportunities. Designing a product or service to be accessibility by a minority can actually deliver improved usability for all. In the case of web sites this principle is supported by evidence. 'eAccessibility' improves the usability of online service for all users, not just a niche audience. In addition, there is evidence of a return on investment for organisations that have taken this seriously and, as a result, opened up their services to new audiences.

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[163] http://www.digitaltelevision.gov.uk/pdf_documents/consultations/cons_draftcorerevreq.pdf
[164] Cabinet Office (2005), eAccessibility of public sector services in the EU
[165] EIAO (2006), The European Internet Accessibility Observatory Project, Submission to the Expert Group Meeting on E-Participation and E-Government, 27-28.July, 2006, Budapest

The scope of policy and practice in this area includes standards, guidance, product innovation and assistive technologies.

8.1.3.1 Standards, Guidance and Kite marks

There are standards for the accessibility of web based services in particular the Web Accessibility Initiative (WAI) Guidelines from the World Wide Web Consortium (W3C)[166]. If these standards are followed, websites can be made more accessible to a very wide variety of people with disabilities. The UK government has issued guidelines[167] to service managers and designers to assist them in designing and maintaining accessible web sites. However, standards alone are not sufficiency for ensuring accessibility. An investigation[168] carried out by the Disability Rights Commission (DRC) showed that nearly half (45%) of the problems encountered by disabled users cannot be attributed to violations of the WAI Guidelines. In response to this finding, the DRC developed PAS 78: a guide to good practice in commissioning accessible websites[169]. This extends the WAI guidelines, focusing on the process for designing inclusive websites.

Some countries have also established organisations to test services and issue kite marks for those services that reach a specific standard. An example of this is the system of independent quality checks and quality marks on web sites for the elderly and blind in the Netherlands.

One issue is that the current range of standards tends to be focussed on the internet and therefore less relevant to multi-channel services. It would be useful to consider how to update the guidance to reflect this.

There is much guidance on the supply side to help designers but it is equally important for service users to be able employ the accessibility features of their equipment to set them up to suit their own particular needs. General awareness of these features, especially for computers, is quite low yet they could benefit all users. Training in the use of these features needs to start at school, with the aim of raising

[166] http://www.w3.org/WAI
[167] http://www.cabinetoffice.gov.uk/e-government/resources/handbook/introduction.asp
[168] http://www.drc-gb.org/library/website_accessibility_guidance/formal_investigation_report_w.aspx
[169] http://www.drc-gb.org/pas

awareness of how to set up computers and avoid stress/strain problems at the earliest opportunity. Such intervention at schools can also prevent bad habits developing from an early age. Aside from training there are also products that provide users practical assistance. *Web Adaptation Technology* (WAT)[170] is an IBM led initiative in partnership with accessibility experts *Abilitynet*. It provides a free download, which reconfigures browsers to build in accessibility options, including text to speech. It works with most web sites whether or not accessibility enabled.

8.1.3.2 Product Innovation

There are examples of products and services that have been designed from the outset to be simple, accessible and usable by all. BT's "big button" phone is one such example. This is a simple product designed for people with visual impairments, but it is now one of BT's best sellers as it is easier to use for all.

The **myguide**[171] website is a good example of a service innovation underpinned by the 'design for all' principle. **myguide** provides a gateway to the internet through a dedicated site where users can change the font size and colour of the text, hear the words on the screen and have access to online tutorials on how to use the internet and email. Essentially it provides an easy introduction to the internet. It has been designed, with active participation from consumers, to address the lack of accessibility that would otherwise hinder many UK citizens using the internet. There are plans to maximise the use of **myguide** by, for example, using it within UK Online Centres as a way of supporting the many people who are introduced to the Internet there.

Sign Video is a particularly innovative way of opening up services to the deaf and hard of hearing. The Greater London Authority (GLA) has developed a videophone service which allows the deaf and hard of hearing to call anyone in their local council via a qualified sign language interpreter. The *SignVideo Call Centre* service allows access to a sign language interpreter within one hour, compared with booking lead times normally measured in weeks. Some London boroughs such as Islington have

[170] www.webadapt.org
[171] http://www.myguide.gov.uk/UFICybrarian/Home.do

now started to provide sign video services. *Significan't*[172] is a social enterprise that provides video signing services to public and private sector bodies. There is growing interest in a national service due to the Disability Discrimination Act, which obliges public and private sector service providers to open up their services to sign language users.

SMS/ text messaging also helps to make services more accessible. *SMS4deaf*[173] is an innovative free text messaging service, which provides the hard of hearing an opportunity to text Kirklees Council on any matter relating to the services they provide.

8.1.3.3 Assistive Technologies and Support

Accessibility is really about making changes or adjustments to computers and electronic services so that they are easier to use. These adjustments need to be made for example, for people who have difficulty reading the screen, using the mouse or using the keyboard. Assistive technologies are hardware or software products that make computers more accessible and make it easier for individuals with disabilities to use them. Examples include:

- Adapted keyboards with large keys or special mice /trackballs.
- Text reading facilities which read text aloud for the visually impaired e.g. *ReadPlease*[174].
- Word prediction software which predicts the words that users are typing for those with literacy difficulties.
- Voice recognition software to covert voice to text for those with physical difficulties or dyslexia.

There are obstacles to the deployment of assistive technologies in the workplace. The tendency for outsourcing of corporate ICT services and the economies of scale associated with standard desktops for all employees are barriers. Lack of awareness among potential users is also a barrier. People who are at risk of losing their jobs at

[172] http://www.significant-online.co.uk/
[173] http://www.kirklees.gov.uk/community/health-care/deafinfo/allvideos.shtml#deaf3
[174] www.readplease.com

the onset of disability particularly need to be given advice and the adaptive equipment to help them to stay on in full time employment. This approach benefits all concerned:

- Employees avoid losing their job and maintain their quality of life.
- Employers retain experienced staff who can maintain or increase their productivity through assistive technology.
- Government avoids costs associated with increased state dependence.

These benefits could, in part, be achieved by raising awareness of the options and providing support to employers, unions, IT directors, GPs who sign of statutory sick pay and benefits advisors. The quality of support needs to be robust and ensure the right kit for the right person. There are a number of relevant services and projects that are providing such support, led by *Abilitynet*[175]:

- An assessment service to recommend tailored solutions to individuals who are having difficulty using computers; a recent innovation is the addition of remote assessment service via web camera over the Internet. This service has been tested successfully in Scotland.
- A Disability Champions programme to train staff in LearnDirect centres on accessibility.
- A capacity and capability building programme for the 3rd sector working with the *ICT hub*.

Assistive technologies can also help special needs pupils become more self-sufficient in their learning and therefore free up scarce special needs teacher time. *ACE Centres*[176] focus on the use of technology for young people with physical and communication difficulties. They offer services including in-depth individual assessments, information, and specialist training for parents and professionals.

Other countries have also been deploying assistive technology support:

[175] www.abilitynet.org.uk
[176] http://www.ace-centre.org.uk/

- In Cyprus the *Accelerate* project has installed adaptive technologies in libraries for use by the blind and partially sighted.
- Optical scanning equipment has been installed in public libraries in Ireland for Internet access for the blind and partially sighted.
- In France *Recherche et diffussion des technologies au service* provides specialist tutor support for the disabled and elderly in 'drop-in centres'.

There is much happening in the UK in this area but more could be done especially at a national level, to ensure that all those with disabilities or at the onset of disability are made fully and accurately aware of the options open to them.

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8.2 SUPPORTING EARLY INTERVENTION

The Government's social exclusion action plan, *Reaching Out*[177], made the case for intervention as early as possible in the lives of those at risk of social exclusion, given the potential downstream costs to society associated with inaction or late action. ICT can facilitate this process by helping to identify those most at risk through, for example, multi-agency risk assessments to prioritise intervention. ICT can also support early intervention activities around communications and education.

Technology can add a new dimension to existing intervention options that make them more engaging and effective. For example, a common intervention approach is that of 'life-swapping', which in various forms helps to communicate the testimony of people who have suffered the consequences of their actions to those at risk of similar consequences. It is clear that this activity can be enhanced when the ICT dimension of is explored. Testimony can be communicated interactively and remotely through email, DVD, video link or even through interactive *SimCity*[178] or *Second Life*[179] style games.

Given the potential business case there is much interest in early intervention to support social inclusion. Promising early intervention options have been identified such as *Teens and Toddlers*[180] for reducing teenage pregnancy, parenting classes, and behaviour therapy for troubled children. All of these have potentially unexplored technology dimensions. Only a few examples of programmes that actually use technology to support early intervention have been found during the course of this study, most commonly in the areas of offending and crime prevention. Some examples are presented in Table 9. Given the few examples found, it appears that the contribution of ICT to supporting early intervention is under-exploited and this is an opportunity for further work.

[177] http://www.cabinetoffice.gov.uk/social_exclusion_task_force/publications/reaching_out/
[178] http://simcity.ea.com/
[179] http://secondlife.com/
[180] http://www.teensandtoddlers.org/

PROGRAMME	SUMMARY OF INTERVENTION
The Children's Index[181]	A national information-sharing index for England to support better communication among practitioners across education, health, social care and youth offending. It will enable early identification of needs and more effective action to address these needs.
Primary Intervention Project – Kent County Council[182]	This project uses ICT to assist the development of an integrated response to support early intervention and tackle a number of the root causes of youth crime. The project will target six schools in three wards of high social deprivation in Thanet and develop a model for family based early intervention within schools and their communities, particularly for those families at risk and characterised by inter-generational criminality.
Rapid response service delivery - Southampton City Council	This project aims to electronically co-ordinate interagency referral systems and some centralised aspects of service delivery for social care in Southampton. The project brings together health and social care professionals through the means of an electronically transmitted single assessment. A 'real time' identification of needs and risks enables a rapid response, and links to major initiatives (e.g. NHS & Care Direct) to deliver services and prevent avoidable hospital admissions and facilitate early discharges.
FAME Integrated mental health care records.[183]	Social care teams share responsibility for mental health services with health authorities. The sharing of information between the two can enable more timely and effective joined-up intervention. FAME is a national framework to join up this information from respective systems and to provide a virtual integrated record onto a computer screen for multi-agency Mental Health practitioners to access.
Hero-one Spirit – Tavistock Institute[184]	An intervention aimed at learning for crime prevention. A programme that targeted 'at risk' and offenders too young for prison. The programme was based on 'blended e-learning'. An interesting component was 'life swapping' – getting young people to step into the shoes of offenders by communicating with and video linking to inmates on death row, St Quentin.
RIZER – Galleries of Justice[185]	*RIZER* is a confidential web-based information gateway which provides information to young people (specifically 11-17 year olds) about the consequences of being involved with crime. It uses material designed by ex-offenders and video-streamed advice and guidance, communicating messages in a form that engages young people and retains their interest (for example, through interactive games and music).
Baby Think It Over[186]	"Baby think it Over" baby simulators, if integrated into broader programmes, can be a useful addition to sex education and parenting programmes to tackle teenage pregnancy.
Assistive Technologies - *Abilitynet*	*Abilitynet* is raising awareness of assistive technology options open to employees at the onset of disability to help to prevent a downward spiral into long-term sick leave and

[181] http://www.everychildmatters.gov.uk/deliveringservices/index/
[182] http://www.kent.gov.uk/SocialCare/carers-and-family-support/primary-intervention-project/
[183] http://www.shropshire.gov.uk/mentalhealth.nsf/open/4057B1B040C16394802571550035 74C8
[184] http://www.learningcitizen.net/articles/OneSpiritasocialentr.shtml
[185] http://www.rizer.co.uk/
[186] http://www.dfes.gov.uk/teenagepregnancy/dsp_content.cfm?pageid=220

PROGRAMME	SUMMARY OF INTERVENTION
	eventual state dependency.
Beat the Dealer[187]	An interactive game with a strong anti-drugs message.
Ask Brook [188]	Brook, the young people's sexual health charity, provides confidential information, support and signposting on sexual health for young people under the age of 25, via a freephone helpline, a password-protected online enquiry service (Ask Brook), and a text message service (services staffed Monday-Friday 9-5).
Boys2Men – Coram Family[189]	The Boys2Men project uses technology as a hook to engage BME boys in social care and at risk of falling into social exclusion in a mentoring programme. The programme makes use of video and music technology. It aims to make them more self-aware and develop their ability to build strong relationships and to cope with difficulties when they arise.

Table 9 ICT supporting early Intervention

[187] http://www.youngaddaction.org.uk/game/kong_27.swf
[188] https://ssl500.securepod.com/brook/submission/brk_welcome.asp
[189] http://www.coram.org.uk/sfvcyp/boys2men.htm

ANNEX A PERSONAL CAPACITY BUILDING ACTIVITIES vs MASLOW'S HIERACHY OF NEEDS

'MASLOW' NEED	FOCUS	EXAMPLE DIGITAL INCLUSION INITIATIVES	EXAMPLE
PHYSIOLOGICAL	**Health**	Interactive health information services	NHS Direct Interactive: Heath information and self–diagnosis available via interactive digital TV – an electronic channel available to some harder to reach groups.
		SMS/ Text based health services	GIRLS sexual health Textback Service; users can send in questions by text message and receive a text message response from a sexual health outreach worker.
		Telehealth and Telecare in homes	Preventative Technologies Grant: £80m grant over 2 years to local authorities starting in April 06 to support Telecare initiatives: technology that allows people to live independently in their own home through: fall detectors, activity sensors, pendant alarms, and transmission of medical information to health care professionals.
		Telehealth on the move in the community	Vitaphone: ECG-recording cell phones which, in an emergency, can be accurately located via GPS (Germany)
	Food/ Nutrition	Online grocery shopping scheme for the elderly using bar code readers	Companion project; about 40 people in Bristol, most aged over 80, have used the Companion regularly to order groceries independently from home. They use a PC operated, not by a keyboard and mouse, but by a bar code scanner.
		Online shopping for sheltered housing communities	Market-Eze; a simple one-stop facility that residents in sheltered accommodation can use to order their weekly shopping and have it delivered to their door.
		Improvement of care services such as meals on wheels through telecare.	NeAT; Newham's advanced telecare programme includes future plans around carer monitoring to improve the effectiveness of services such as Meals on Wheels.
		Tuition in how to shop online for older people.	Harrow Libraries Online Shopping Project; a pilot project run by the London Borough of Harrow in partnership with Digital Unite to teach older people how to shop for groceries online.
		Technology support for distance based Cognitive Behaviour Therapy for Alcohlism	Addictions UK; The Addictions UK programme uses proven treatment methodologies including cognitive behaviour therapy and 12 step coaching. The programme is delivered in many ways, including; telephone, text messages, the internet and DVD's

'MASLOW' NEED	FOCUS	EXAMPLE DIGITAL INCLUSION INITIATIVES	EXAMPLE
		Smart card access to meals on wheels and school dinners	Carte Totem; bar code based smart card issued to socially excluded/ low income for access to public services - meals on wheels, school dinners etc. (France)
	Shelter/ Housing	Online information and advice for the homeless	Homeless Information pages; One stop shop information service on housing health and money issues for homeless
		ICT enabled training and support for the homeless	It's your move; a support package which includes as interactive computer game in cartoon format to help guide homeless people through preparations needed to move into their own accommodation.
		Use of technology to promulgate local planning decisions to local community groups and to aggregate responses from residents who would not ordinarily have a voice.	Ealing Community and Voluntary Service; is developing a website that enables community groups to access details of new planning applications and helps them to respond – giving people a voice that they might not otherwise have in local decisions.
		Accommodation vacancy alerts for the homeless	SMS/ Text based hostel vacancy alerts to the mobile phone
SAFETY/ SECURITY	**Safety**	Multi-channel anti-social behaviour reporting service	Single Non-Emergency Number; will provide an anti-social behaviour reporting service via electronic and conventional channels.
		Community alarm service to request immediate local help	AlertBox is an electronic form of neighbourhood watch which enables people to warn their neighbours of any trouble or threat, or request their help in an emergency, by simply pressing a button.
		Bogus caller services	SeniorLink Bogus Caller scheme uses a 'door alert' button that offers people greater reassurance and security when answering the door to unexpected and bogus callers.
		SMS/ Text based anti-bullying services	Text Someone; Text Someone enables schools to offer pupils the chance to text, e-mail or call 24 hours a day 7 days a week, to report any problems they may be encountering including bullying or any antisocial behaviour.
		Domestic Violence Monitoring Services	Careline Alarm; homes are wired up with the hidden audio system, which can be activated by at risk residents in seconds. Residents can also sound the alarm by pressing a button on a wristband or necklace.

'MASLOW' NEED	FOCUS	EXAMPLE DIGITAL INCLUSION INITIATIVES	EXAMPLE
	Finance	Real-time online financial advice	ADVICEKIT; real time online advice to a citizens advice bureau adviser. Also, self-serve information that covers debt and benefits.
		Inclusive Payment Systems	Pre-Paid Cards; the bank-less are excluded from many of the benefits of the information society such as online shopping. Pre-paid credit cards can offer a solution e.g. www.idtprime.com.
		Online Payment Vouchers	UKASH; pay online with vouchers bought with cash from retail outlets and Paypoint sites.
		Mobile access to Credit Union services supported by financial education	Reading's Digital Challenge Bid included an inclusive payment scheme. The proposal was to establish a partnership between Reading Credit Union and Vodafone to provide digital access to a Credit Union Account. This was supported by educational services regarding financial literacy/money management provided through a wide range of channels.
SOCIAL/ BELONGING/ NETWORK SUPPORT	**Family/ Friends**	ICT support to maintain contact with family and friends	The L'Enfant@l'hopital initiative provides longer-term hospitalised children, between the ages of two and eighteen, with access to computers, learning and communications. It helps to establish and maintain dialogue with family, schools and friends. (France)
		Realtime web based counselling service for children covering family relationships	Kids Help Line; Australian web counselling (real time 'chat') and e-mail service around important issues such as family relationships.
		Video based communication between prisoners and their families	FilmIT –Video communications helps to reduce alienation from outside life and maintain family support networks.
		Contact and communicate with families for peer support	Contact a Family is a national registered charity for families with disabled children. It provides a web based linking service whereby users can register to be contacted by other families across the world affected by a particular condition by e-mail.
	Community	Free voicemail communications service for disadvantaged people	VoiceMail4All is a free service offering a voicemail number to anyone who does not have a permanent place to stay and who does not have their own telephone number. This can be used to find a job, hear from family and friends, keep in touch with support workers, or look for more permanent housing.
		Networked communities of interest for example around book reading	Reading Circle; a community reading club that enables members to discuss books and submit comments via the internet and digital TV.

'MASLOW' NEED	FOCUS	EXAMPLE DIGITAL INCLUSION INITIATIVES	EXAMPLE
	Participation/ Engagement	Provide electronic access to MPs and elected representatives	WriteToThem is a web site run by charitable organisation MySociety. The site enables users to contact any of their elected representatives including Members of Parliament and local councillors.
		Engage young people through SMS/ text based services	Chatback; Kirklees Council's 'Chatback' project, provides an SMS engagement channel that is being piloted by young people aged 13 to 21.
STATUS/ SELF ESTEEM	**Education/ Skills**	Use the multimedia dimension of ICT to provide self-help reading improvement	Reading Companion; users log on to the Reading Companion web site and are presented with material to read. An on-screen mentor, or companion, "reads" a phrase to the user and then provides an opportunity for the user to read the material, using a headset microphone. This is checked for accuracy and gives the user an opportunity to try again, or offers the correct reading of the words on the screen. As the user's skill improves, the technology reads less material so that the learner reads more.
		Use technology to re-engage those outside mainstream education and at risk of underachievement	Notschool.net; is an online community that aims to engage young people who have been out of the more traditional educational systems for a variety of personal and logistical reasons. It is specifically aimed at those for whom traditional alternatives such as home tutoring have not worked.
		Use technology to support those in education but at risk of educational underachievement	Knowsley Plus One Challenge; offers additional revision classes and subject specific revision templates and provides pupils with a full personal revision portfolio, an interactive website, and uses text messages and e-mail to send revision tips and provide wake up calls to pupils who are persistently late for school.
	Life Skills	Mentoring services supported by technology	IBM Scheme: IBM staff mentor school students by email; targeted on deprived areas; helps with business studies, IT courses etc but has the effect of creating self-esteem as there is someone taking a close interest in a young person possibly without much support.
		Virtual Vaults for state and personal information	Virtual Life Portfolio: An online life management tool which enables homeless people to keep records of all personal information in one place e.g. birth certificate, benefits information, educational records.

'MASLOW' NEED	FOCUS	EXAMPLE DIGITAL INCLUSION INITIATIVES	EXAMPLE
	Employment	Use of technology to 'reverse auction' peoples time, for employers to buy	Slivers of Time; Service which brings employers with 2-3hrs of work together with people who are looking for work. Particularly, helps some disadvantaged groups that might only be able to work for short, and irregular periods of time.
		Use technology to create niche employment market places for the disadvantaged.	MegaNexus; is a web based social networking tool which operates in a number of areas in London and aims to connect socially excluded people, provide access to people, organisations, opportunities and information to find employment, and connect local support agencies to enable job brokerage