An international study of technology initiatives to enhance social inclusion: Extending the reach of what works

A report prepared by IECRC for the Social Exclusion Unit of the Office of the Deputy Prime Minister

Paul Foley and Ximena Alfonso

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Executive Summary

This worldwide study is probably the most comprehensive research project undertaken to investigate the role of technology in addressing social exclusion and promoting inclusion. It provides numerous examples of good practice. However, it also identifies that the benefits of digital transformation frequently fail to reach socially excluded groups.

A new framework is proposed that investigates the way ICT can enhance service delivery. This comprehensive approach highlights the contribution that technology can make in addressing two of the key challenges posed by the Social Exclusion Unit's *Breaking the Cycle* report:-

- The need to improve service design and delivery to extend the reach of what works to those that need it most.
- The need to find ways to roll out these approaches much more widely through mainstream services.

The first chapter introduces the study and establishes the reasons to extend the reach of what works. The next chapter provides an overview of the technology used by 122 international good practice initiatives, the problems they address and the socially excluded groups they target.

The third chapter provides a detailed understanding of initiatives that focus on seven social exclusion problems, these are:-

- Worklessness
- Early years disadvantage
- Homelessness
- Complex & multiple needs
- Educational underachievement
- Health and health inequalities
- Crime

For each problem a thorough insight is provided into the range of activities developed to address the problem and the way technology is used to enhance and transform service delivery. These provide a robust evidence base to underpin recommendations.

The final chapter draws together the recommendations proposed by this report to address the challenges posed by the Social Exclusion Unit's *Breaking the Cycle* report and to extend the reach of what works at international initiatives to the UK.

The need to extend the reach of what works - Chapter 1

A new framework is proposed that investigates the way ICT can enhance service delivery and examines access to information and services by socially excluded groups.

Previous studies have generally assumed that benefits and impacts of ICT are the same for all users. Little or no distinction is made regarding the impact and benefits of ICT for different socio-economic groups. Emerging research is used to show that when socially excluded groups are provided with access to the Internet they make greater use of the technology than the general population and use it to access information that can help to overcome exclusion.

An overview of International initiatives - Chapter 2

A broad overview of the 122 initiatives examined by this study found that just over three quarters focused on health, education or multiple needs problems. The majority of initiatives adopted a traditional approach focusing on raising *awareness* of ICT, providing *access* to ICT or developing ICT *skills*.

One surprising result of this study has been the high proportion of initiatives that use the Internet or portals to deliver information or services to citizens. 93 per cent of initiatives studied use the Internet. Providing services using only the Internet creates a *digital service divide* that excludes direct access for many socially excluded groups. It is not sufficient to suggest that this is not a problem because these services can be accessed by people who are digitally divided at public access points. Many social excluded individuals do not have the desire, mobility, confidence, literacy or skills to do so.

Few of the initiatives were based on 'cutting edge' technology or the innovative use of technology. Most initiatives were based on intelligent use of established technologies.

The 'hardest to reach' groups, such as the homeless or children suffering from violence and abuse, are rarely the main target audience of initiatives. Much more needs to be done to extend services that work to those socially excluded groups that are the hardest to reach.

Exemplar initiatives to enhance social inclusion - Chapter 3

Important activities and considerations underpinning the successful development of many of the initiatives reviewed by this study are provided in the third chapter. Key issues and recommendations for each of the seven problem areas concern:-

Worklessness

The longer term unemployed frequently require a large amount of additional information and support. Some of this information can be provided by websites (e.g. benefits and aptitude tests), other elements require face-to-face contact (e.g. confidence building, interview skills). Careful consideration needs to be given to the additional information and channel preferences that are most appropriate for the target group.

ICT skills and training initiatives are often offered as a method of raising the employability of unemployed groups, these initiatives need to ensure the ICT skills are required in the local economy.

Initiatives that establish a marketplace to 'join' job hunters with employer vacancies need to consider how benefits for socially excluded groups can still be maintained. Marketplace portals usually enable anyone to apply for jobs, not just the socially excluded.

Tele-working can provide employment for the disabled, house bound or those in peripheral regions.

Education

Educational initiatives generally focus on enabling pupils to learn more effectively. Few explicitly focus on pupils underachieving at school. More web sites are required to provide information to parents about how they can support their children's education.

In the UK better use could be made of the Internet or portals as notice boards or meeting places to link employers with schools that might require second-hand computers, sponsorship or help to promote ICT

use and IT careers. Better links could also be developed between schools in the UK and overseas.

Greater use of ICT to monitor child absences and inform parents of non-attendance could have a significant effect in enhancing child safety and reducing truancy.

Early years disadvantage

In the UK more support is required to increase the confidence and knowledge of early year's teachers about the role of ICT in learning.

Web sites and other materials provided by early years teaching organisations need to be considerably developed. There is also a role for these, or other, organisations in providing overviews (for parents and teachers) about the benefits of different educational toys to enhance children's use and knowledge of technology.

More information (web sites and traditional channels) is required for parents (and those planning to have families) about childcare and their role in supporting of their child's early years' education. Information about educational software for home use is particularly important.

Health and health inequalities

Portals can be very effective at providing highly specific health care information and services to connected patients. However, many individuals and groups requiring health care do not use the Internet. Health care organisations need to find ways to provide information and services relevant to patients without ICT through traditional channels.

The Internet and portals provide anonymous access to information, services and counselling for many patients that might be reluctant to obtain this type of information (for example drug and alcohol abuse and sexually transmitted diseases) through traditional channels.

Many people suffering from health problems who are socially excluded require assistance or home care and help from more than one organisation. Back office integration of the databases and care records of organisations providing home care can produce valuable benefits in better co-ordinating care, reducing duplication, more speedily meeting customer needs and providing more holistic and better quality care.

Interestingly, the growing number of elderly people in many advanced countries has stimulated the private sector to develop, and central government to support, some of the most innovative advances in the use of ICT discovered by this study. The opportunity to obtain financial returns from a large and growing market appears to have been a catalyst for innovation.

Homelessness

Homeless people are amongst the hardest to reach of all socially excluded groups. Homeless access to ICT is frequently limited but initiatives have shown that voicemail and email can provide them with a 'virtual mailbox' that enables them to communicate with friends, family and helpers.

More initiatives are needed that address the digital divide for homeless people. More opportunities for access in hostels could enhance their ability to communicate and raise their access to information and the self-confidence of users.

ICT can play a significant role in assisting organisations helping homeless people to coordinate activities more effectively, to offer continuity of help and to offer higher quality services.

Crime

The number of international initiatives recorded by this study as using ICT effectively to address crime is disappointing. Much is being done, but there is considerable scope for further activity.

The Internet and telephone offer considerable opportunities to provide confidential and anonymous drug and alcohol abuse counselling. This type of online service could be adopted more widely.

There is considerable scope for many portals with a crime prevention interest to be more proactive in providing links to other services or portals that can provide valuable assistance to socially excluded groups or the organisations assisting them.

Complex and multiple needs

Initiatives addressing complex and multiple needs are frequently comprised of many of the preceding services and technologies that address the needs of particular groups or individuals. A common theme

of many of these initiatives is the need to better share information or co-ordinate service delivery. There is a strong emphasis therefore on information sharing and remote access to information or services.

Recommendations to extend the reach of what works - Chapter 4

Better knowledge and understanding of the way technology can enhance social inclusion is required to speed the adoption of effective initiatives, to broaden horizons about what can work and to share best practice and tips about how to extend the reach of what works to socially excluded groups.

Evaluation of many initiatives is poor. Poor evaluation perpetuates the cycle of technological uncertainty and a paucity of knowledge about the way digital transformation can enhance social inclusion. There is a need for the best initiatives, such as those highlighted in this report, to be publicised more widely so that service providers are aware of a wider range of initiatives that might enable them to achieve efficiency savings and extend the reach of what works to those experiencing social exclusion.

The establishment of a knowledge base and, more importantly, a practitioner community willing to develop best practice and ideas to encourage social inclusion through digital transformation in the UK is highly desirable.

For service providers, such as local authorities and voluntary groups, a knowledge base or repository would expand their knowledge of what works and, by showing examples that are successful, lead to the quicker adoption of new ideas or services by overcoming the perception of risk often associated with ICT initiatives by policymakers.

For intermediaries, such as out reach workers and voluntary groups, a repository could provide information about initiatives and access to online services. These could provide complementary services, assistance or information to their socially excluded client groups. In this way intermediaries can act as a conduit or agent to extend the availability of information and services provided online to socially excluded groups.

Chapter 1

Introduction: The need to extend the reach of what works

1.1. Background to the research

The Social Exclusion Unit[1] is undertaking a programme, *Inclusion through innovation: Tackling social exclusion through new technologies*, to investigate how technology can be used to enhance social inclusion. This study is one element of the Social Exclusion Unit's technology work programme.

The Government has defined social exclusion as a short-hand term for what can happen when people or areas suffer from a combination of linked problems such as unemployment, poor skills, low incomes, poor housing, high crime environments, bad health and family breakdown.

This study investigates how government, community organisations, voluntary groups and the private sector can use technology to address social exclusion and promote inclusion. The research highlights the contribution that technology can make in addressing two of the key challenges posed by the Social Exclusion Unit's *Breaking the Cycle* report (2004):-

- The need to improve service design and delivery to extend the reach of what works to those that need it most.
- The need to find ways to roll out these approaches much more widely through mainstream services.

1.2. Research objectives

The main purpose of this research is to provide robust evidence and examples of international initiatives where technological solutions have been successfully employed to enhance social inclusion.

[1] Established in 1997 to improve government action to reduce social exclusion by developing joined up solutions to joined up problems.

This chapter provides the background and context for the research. The next chapter provides an overview of key characteristics of 122 international initiatives studied by this project.

Chapter three provides a comprehensive overview of projects using technology to address seven major social exclusion problems. The overview for each problem concludes by highlighting key issues that need to be considered by organisations developing these types of initiatives. Recommendations are also provided about how initiatives addressing these problems can be enhanced.

The concluding chapter provides recommendations about the way technology can be used to provide information and services to digitally connected and digitally divided socially excluded groups and the organisations that assist them.

1.3. The research framework

Figure 1.1 provides an overview of the research framework which underpins this study. This framework has been developed by the research team over the course of several major research projects (Foley et al, 2002; Foley et al, 2003; Foley et al, 2005). It is comprised of two components. The upper part examines the initiatives introduced to encourage citizens to use technology to access information and services. Those that do not have or desire access are digitally divided. The bottom section considers the role of technology in enhancing services in the 'back-office' and at the interface with citizens when providing information and services.

Each will be considered further in the next two sections.

1.4 Citizen access to the Internet and the digital divide

Policies to facilitate citizen access to ICT and the Internet are usually founded on two factors.

First, and by the far the most significant factor, is that equality of opportunity should be provided to all groups in society. This reason is usually put forward alongside the view that whilst lack of access to ICT is not the cause of social exclusion, it has the potential to exclude individuals and groups (Phipps, 2000). Indeed, in November 2002 at the

eSummit Tony Blair (2002) declared 'digital transformation cannot be restricted to the few, our success depends on extending it to the many'. This underlying ethos of this approach is that access for everyone is the goal. No particular reasons or benefits from access are stated. This physical access approach, characterised by the creation of a network of public access points, is observed in many countries when they first recognise and start to address the digital divide.

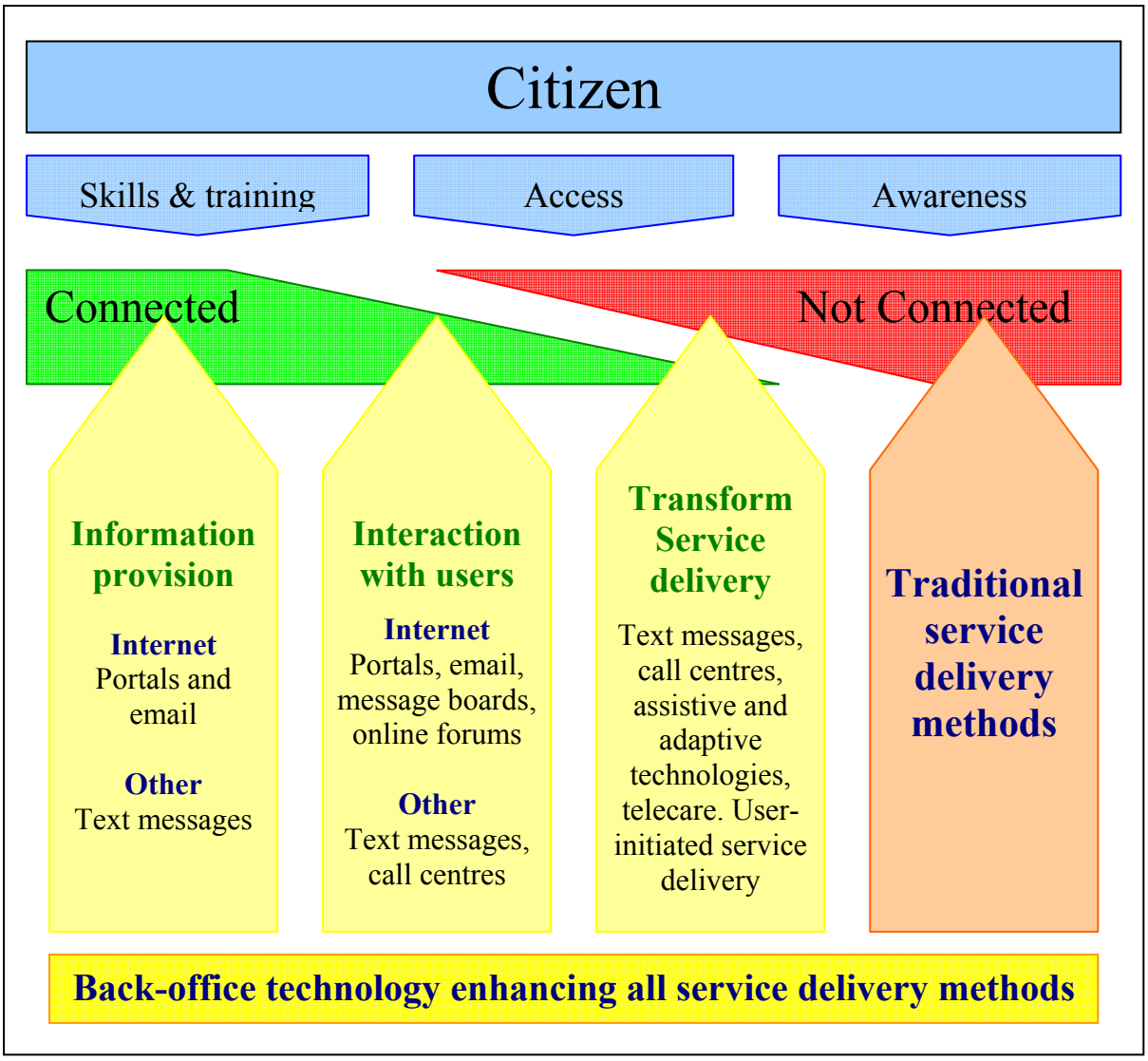
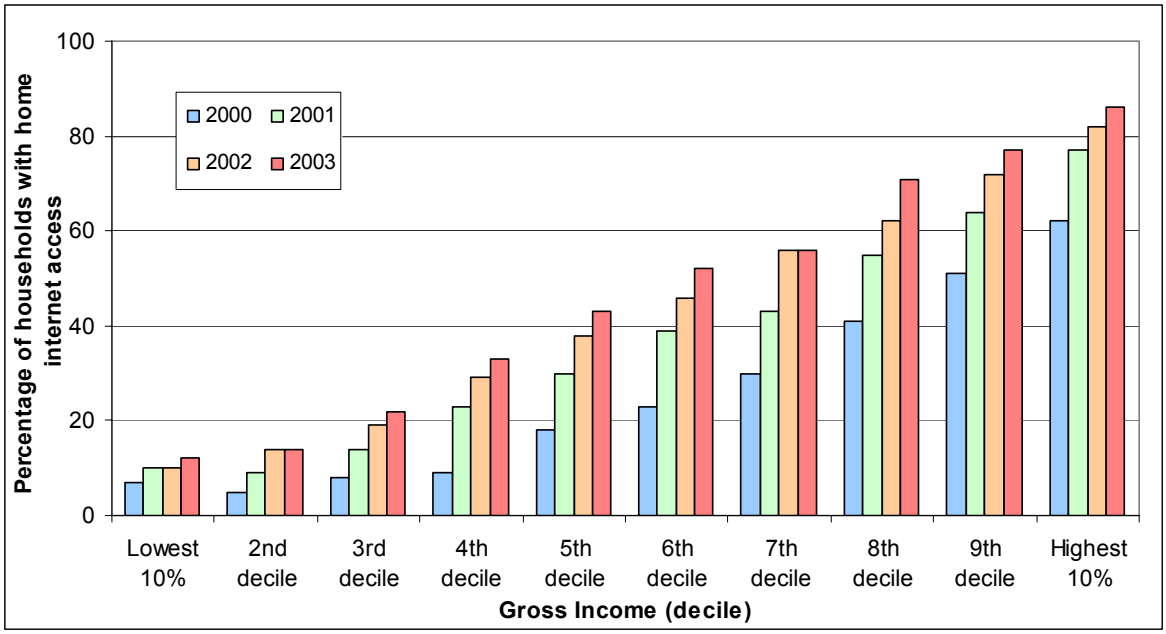


Figure 1.1. The research framework used to underpin the study

The second approach characterises one component of the next stage in ICT policies observed in several developed countries - promotion of the meaningful use of ICT to help ameliorate social problems and enhance social inclusion. This approach, which is more ambitious and more complex, is the primary focus of this study. The ways ICT is used to

provide services to citizens, including the socially excluded, is considered in the next section. The remainder of this section examines the digital divide and initiatives to improve access.

Internet access is not ubiquitous. The most affluent households have seven times the level of home Internet access as the poorest households in the UK, see Figure 1.2. There is a high correlation between low Internet access and low income, a proxy for social exclusion.



Source: ONS Omnibus Survey, Office for National Statistics years 2000 to 2003. The time period for each year is October to September of the year stated in the legend.

Figure 1.2 The percentage of households with home access to the Internet by gross income decile group 2000 to 2003

The Internet is not the only technology that permits access to information and services that can enhance social inclusion. The Cabinet Office report (2004) *Enabling a digitally United Kingdom* examined home and community access to Internet, plus home access to three technologies: personal computer (PC) (i.e. desktop, laptop and palmtop), mobile phones, and Digital television (Digital TV).

The Cabinet Office report created a composite picture of who is digitally engaged, their patterns of use, and the benefits that they are extracting from such use. It also examined who was not digitally engaged, and why.

The report identified four levels of access to these technologies :-

- ***Very high access***: home and community Internet access. Home access to all three technologies.
- ***High access***: home and community Internet access. Home Internet access via at least one technology.
- ***Moderate access***: no home Internet access, but community Internet access. Home access to at least one technology.
- ***Low access***: no home Internet access, but community Internet access. No home access to technologies.

The report looked beyond access and also considered the way technology was used. Three levels of use were defined :-

- ***Unengaged***: those who have never been digitally engaged or who have not been digitally engaged in the last three months.
- ***Digital Communicators and Harvesters***: digitally engaged to communicate in new ways (e.g. text messaging, email) and use interactive content.
- ***Digital Transactors***: digitally engaged to transact, plus all activities of Digital Harvesters.

These two dimensions were joined together to create a digital engagement framework. This provides a framework to position all people in the UK in terms of their digital engagement – low levels of access and use (found in the bottom left sectors of Figure 1.3) to very high levels of access and use (found in the upper right sectors of Figure 1.3). Forty eight per cent of the British adult population are unengaged.

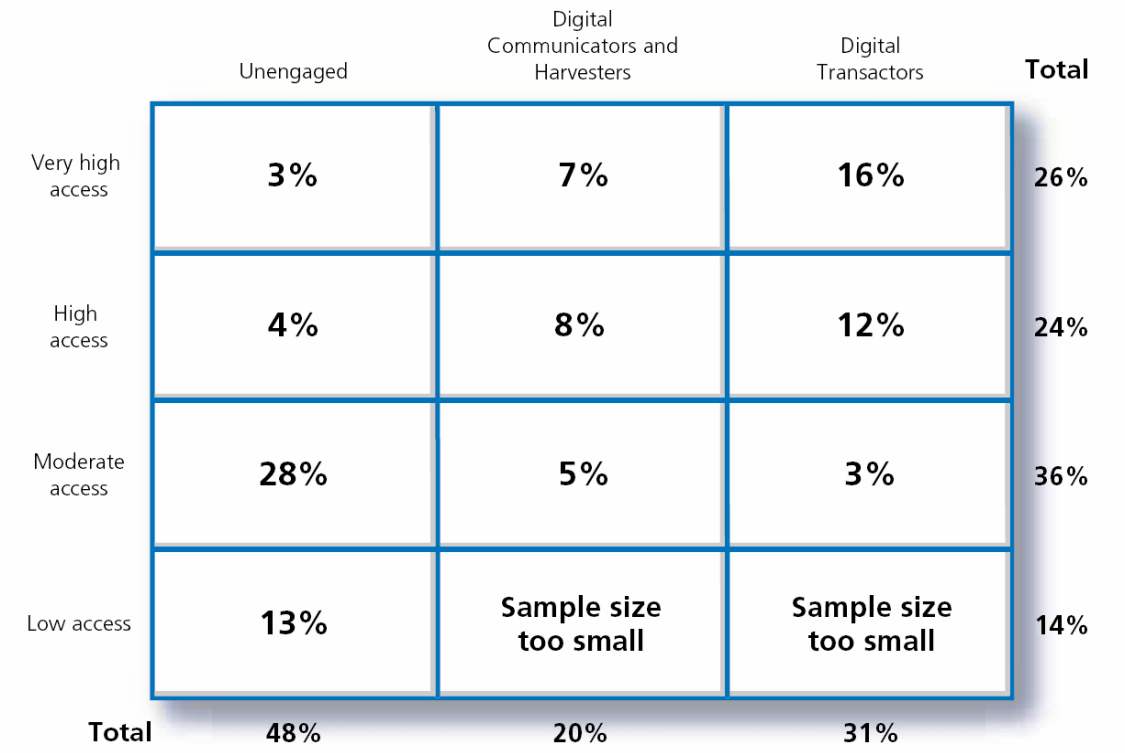
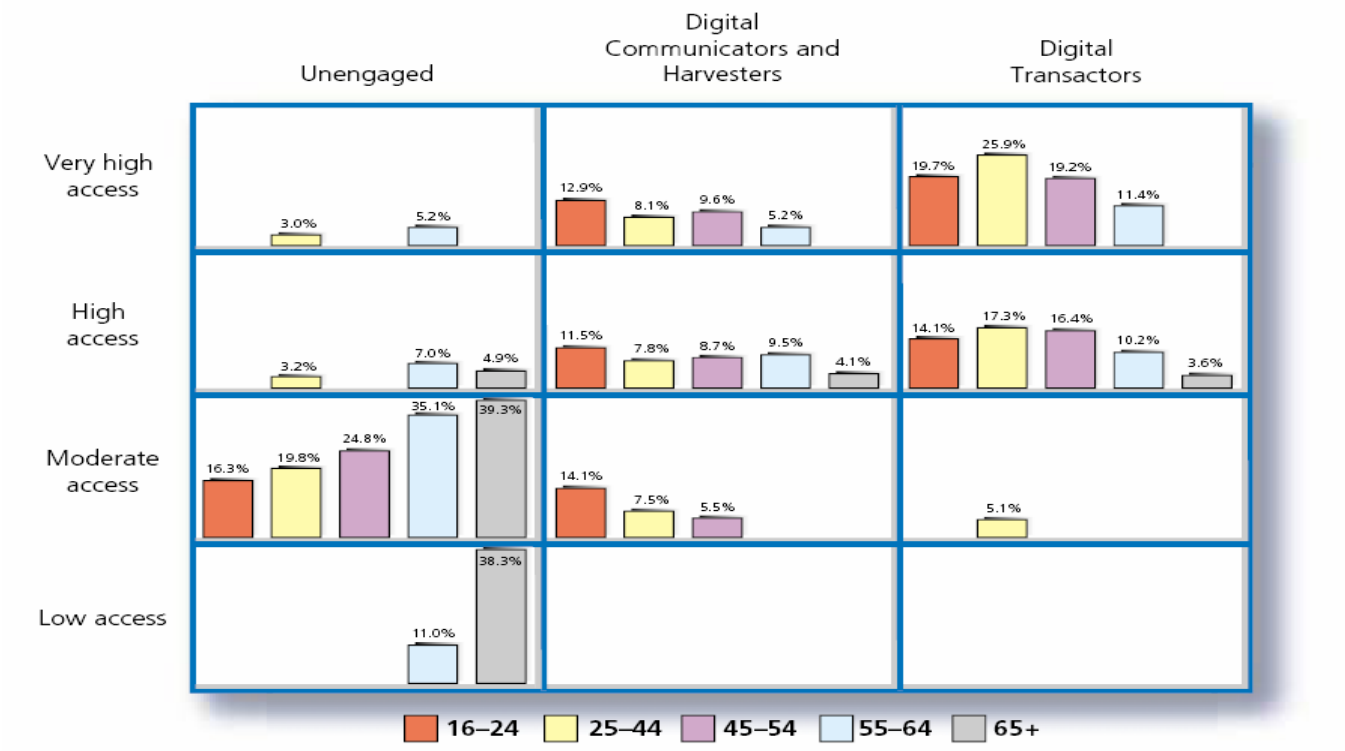


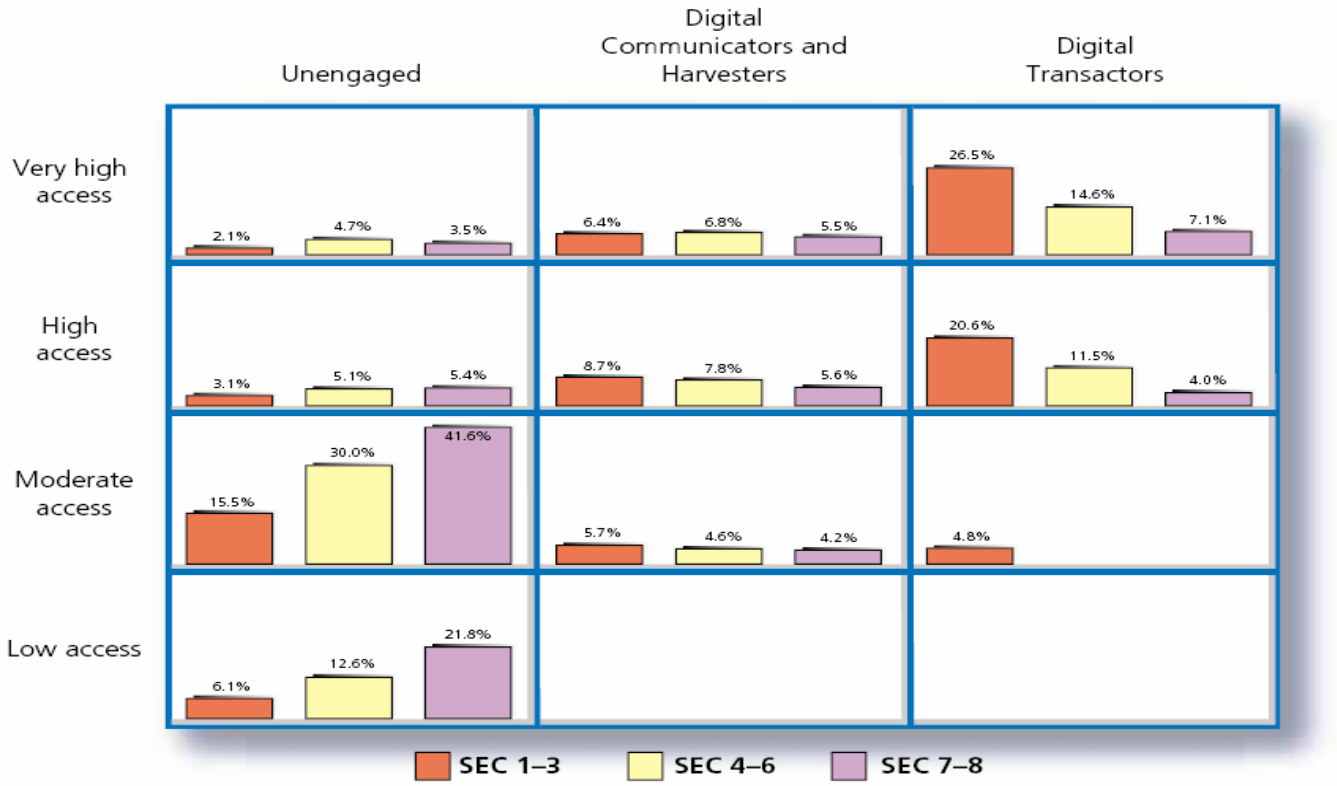
Figure 1.3 British adult population distribution and the digital engagement framework

Figures 1.4 and 1.5 look more closely at the impact of age and socio-economic classification on the digital engagement framework. Seventy eight per cent of people aged 65 and over were in the low or moderate access, unengaged groups. Figure 1.5 shows that people in socio-economic classification (SEC) groups 7–8 (unskilled occupations) are over-represented in the unengaged group.



Source: Cabinet Office (2004) Enabling a digitally United Kingdom

Figure 1.4 Age distribution on the digital engagement framework



Source: Cabinet Office (2004) Enabling a digitally United Kingdom

Figure 1.5 Socio-economic classification distribution on the digital engagement framework

These two features (age and social class) are closely related to social exclusion. Additional analysis of confidential ONS data was provided by the eGovernment Unit to look more closely at access amongst particular socially excluded groups. A statistically significant association (chi square $p<0.001$) was found between lack of access to the Internet, Digital TV and mobile phone ownership by unemployed households and households containing someone with a long term illness.

These results demonstrate that a large proportion of socially excluded groups do not have access to ICTs and/or are unengaged. As a result they are unable to access information and services provided electronically and are thus digitally excluded, see Figure 1.6.

Policies to overcome the digital divided are usually comprised of three components. These are initiatives to

- Promote ***awareness*** of the benefits of ICT
- Provide ***access*** to ICT
- Provide ***skills and training*** to use ICT more effectively

These three components are shown in figure 1.6.

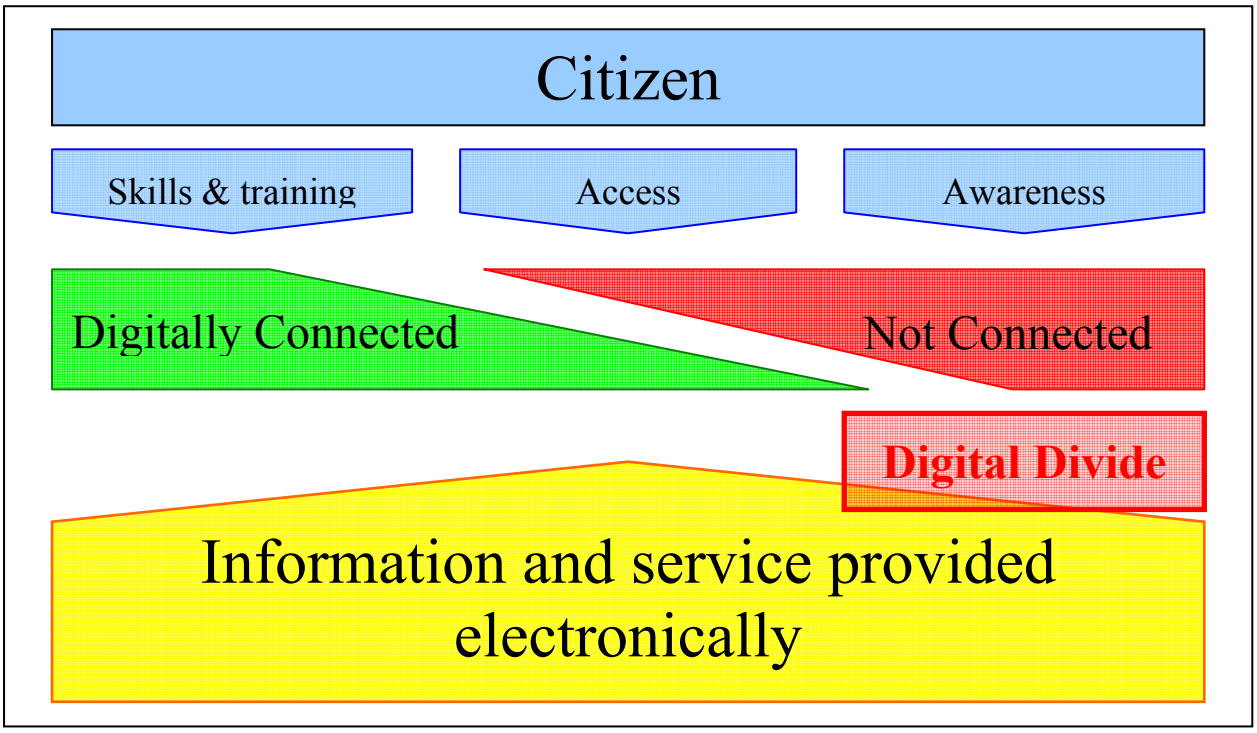


Figure 1.6 The digital divide and policies to enhance digital inclusion

The need to raise ***awareness*** about ICT and the benefits that ICT based services provide is an important step to help bridge the digital divide by encouraging access, use and adoption. Awareness raising initiatives have, predominately, focused on the general importance of ICT and the need for people to get connected. Socially excluded groups, particularly the elderly and disabled, often are unaware of the benefits and practical value that ICT can play in their day-to-day lives and in enhancing inclusion. Advances have been made, but finding an appropriate trigger or message to inform different socially excluded groups about the benefits of ICT is still an important and challenging task.

Lack of ***access*** is usually attributed, primarily, to a lack of affordability. Therefore, access initiatives have traditionally focused on providing ICT access to the widest audience possible, especially those unable to afford it. Initiatives are frequently backed by a strong policy push from government. For example in the UK the government provided 6,000 public access points by 2002, as one element of a broader policy to provide access to the Internet 'for everyone who wants it by 2005'. This type of initiative has been very popular across the world. For example, the Skills.net (www.skills.net.au) initiative in Australia; Smart Sites (www.fis.utoronto.ca) in Canada; Poor People Technology (www. islamonline.net) in Egypt; @Brest (www.a-brest.net) in France (see Appendix 4). Internet public access points have been successful in providing access to those who are mobile and desire it. However, they have been less successful in reaching some socially excluded groups. The strong focus of access initiatives to overcome problems of affordability has meant that other accessibility barriers are sometimes overlooked. Groups such as the disabled have problems with accessibility and usability. Others with poor literacy need further help.

This study found that ICT ***training and skills development*** initiatives are numerous and differ in scope, format, objectives and targeted audience. Many training initiatives have been successful in targeting each socially excluded group in a distinct manner and in recognising the different needs of each group. The most popular targets of training initiatives found by this study are the disabled, the elderly, the unemployed and women trying to re-enter employment. Many initiatives focus on the training with the specific aim of increasing employability. This is understandable given the pervasive character of ICT in many areas of work. A lack of ICT skills can reduce chances of employability.

However, an almost exclusive focus on the opportunities that ICTs provide for securing employment as a means for reintegration into society, is an oversimplification of the more complex processes and support required for socially excluded trainees. Section 3.2 focuses on worklessness initiatives.

1.5 Technology and the provision of information and services

This study adopted a broad definition of technology; encompassing a range of technologies including ICT (Internet, email, data management and data sharing), mobile phones, Digital TV, assistive technology[2], telecare and sensors or tracking devices (see Appendix 1). These technologies might be used at the 'interface' with the socially excluded person to provide information or services. Alternatively, the service may be delivered in traditional ways but it might be enhanced by the use of technology in 'back-office' activities see the dark yellow box at the bottom of Figure 1.7. It is also possible technology may be used both at the interface and in back-office activities; this is demonstrated by the three yellow arrows in Figure 1.7. Figure 1.7 shows the different ways technology can be used.

[2] Assistive technology: products or services designed to enable independence for disabled and older people.

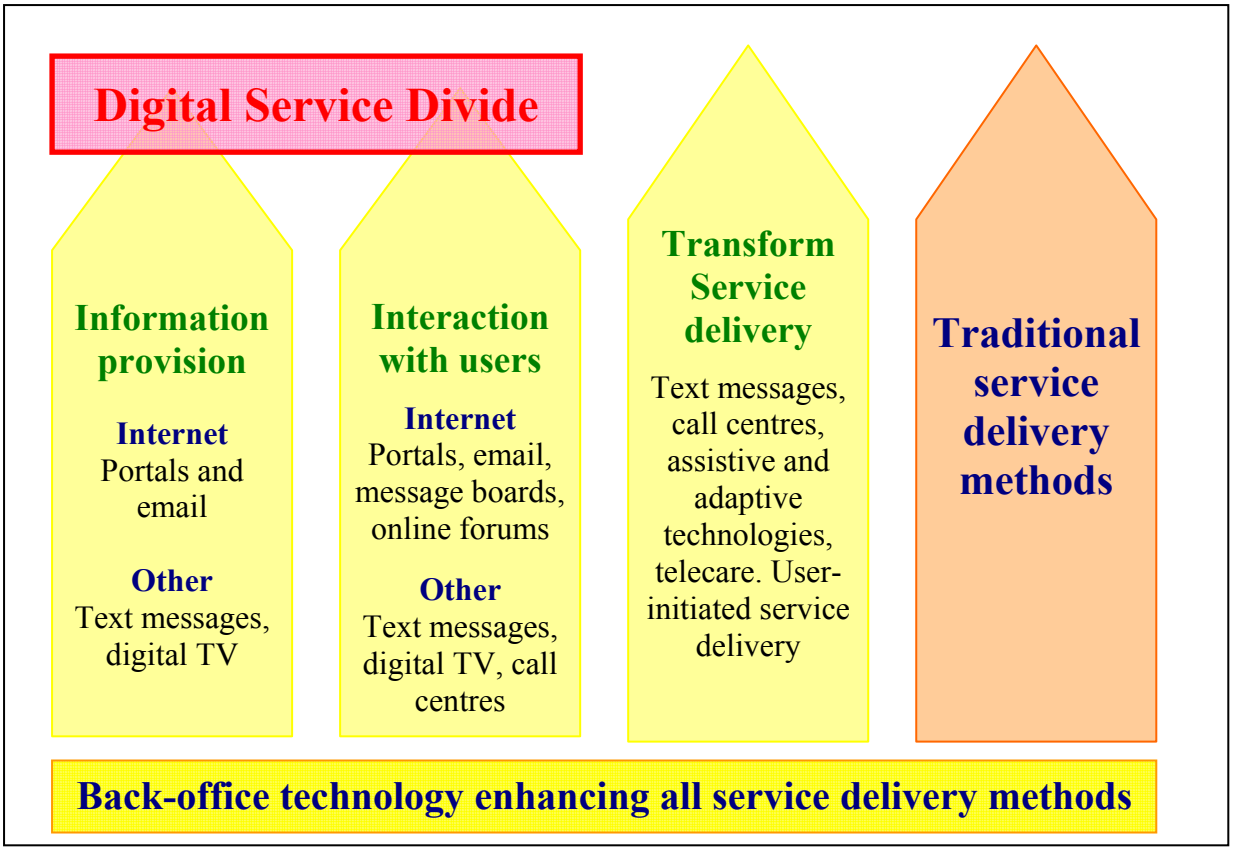


Figure 1.7 How technology can be used to enhance information and service provision

The yellow arrows in Figure 1.7 show that ICT can be used at the interface with users in three different ways. The Internet, mobile phones and Digital TV can be used as the medium or channel through which information is provided (see the left hand arrow in Figure 1.7), these technologies can also allow services to be delivered and interaction or communication to take place between the provider and the user (the second arrow to the left of Figure 1.7). These services can only be used by citizens using ICT. A *digital service divide* exists because information resources and interactive services provided directly to users cannot be utilised by citizens or socially excluded groups if they are not able to use technology to access them.

The two arrows on the right of Figure 1.7 demonstrate how technology can be used to transform the way services are provided and how it can enhance traditional service delivery methods. Several projects examined by this study use technology to transform services to socially excluded groups. Good examples are provided by health care projects (see the

case studies in 3.5) which use technology innovatively to support independent living and care of the elderly and disabled.

Several projects, particularly those co-ordinating services to families with complex or multiple needs, use 'back office' technology to share information between organisations and thus better co-ordinate services to socially excluded families or individuals through traditional methods. These projects demonstrate how technology can be used to meet the needs of socially excluded groups, even if they do not possess any of the technologies required to access information or services provided electronically.

1.6 The case for intervention and further research

The benefits of ICT for socially excluded groups remain largely unknown because there is a paucity of research. This study will help to fill this gap.

Literature generally assumes that benefits and impacts of ICT are the same for all users. Little or no distinction is made regarding the impact and benefits of ICT for different socio-economic groups.

A few studies are starting to emerge that suggest considerable benefits can arise for socially excluded groups in using ICT (Intergovernmental Advisory Group, 2003; NOIE, 2003; Foley and Ghani, 2005). These studies generally examine benefits that arise when citizens use ICT to access online information and services. Studies of the use of ICT to transform service delivery and enhance traditional methods are scarce.

More research in this area will provide an evidence base to establish whether there is a case for greater use of technology to meet the needs of socially excluded groups.

Results of the most significant study found in this area are shown in Figure 1.8. A research study (Foley et al, 2003) compared access and use to information pertinent for social inclusion between two socially excluded groups – those that had not used the Internet in the last year and those that had home Internet access. The objective of the research was to see if the Internet provided socially excluded groups with enhanced access to information.

Figure 1.8 shows that socially excluded people with access to the Internet found a greater amount of information about a range of topics

than socially excluded people without Internet access. The most significant differences are for job opportunities information, education and training information and health information.

The information sought most regularly by non-Internet users in the last year was information about government and council services and benefits information (both required by 36 per cent of non-users). Interestingly, a similar proportion of Internet users had accessed online information about government and council services (42 per cent of Internet users). Benefits information got lower levels of online use because it was perceived as very difficult and unfriendly to use.

If the level of use of online information is used as a surrogate for beneficial impact amongst socially excluded groups it is apparent that the Internet is not just providing wider opportunities. These opportunities are actively being seized by all socially excluded groups. In the same study (Foley et al, 2003) access to most types of information by the socially excluded Internet users also exceeded the level observed by the ONS in national studies of the general UK population.

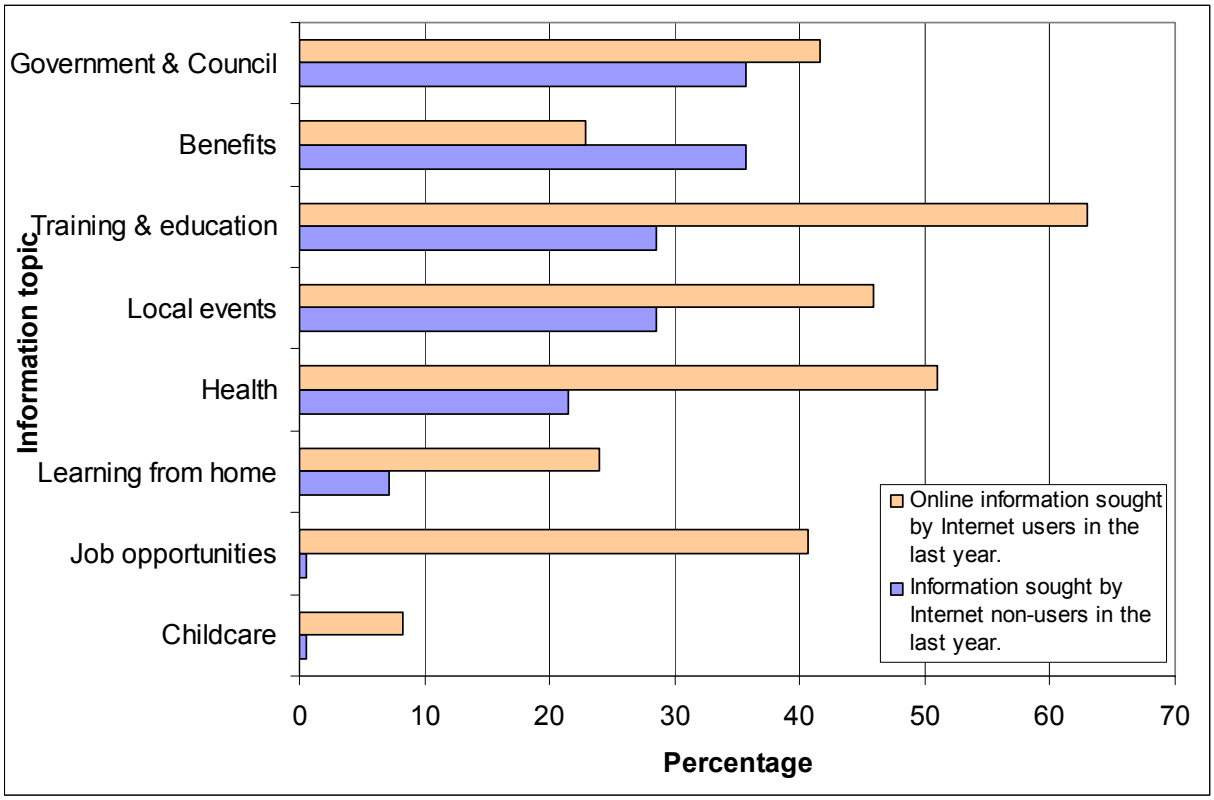


Figure 1.8 A comparison of information sought by socially excluded Internet users and non-users

Evidence is also emerging to suggest that when socially excluded households are connected to the Internet they use it more than other groups. Table 1.1 shows that in the UK Internet use at home amongst social group E (unskilled occupations and unemployed) is greater than for social group A (managerial and professional occupations) and the average observed for all households in England. This suggests that when those in social group E have invested in Internet access they make far greater use of it than those in social group A. This might be because Internet access is undertaken as a rational economic decision by those (with lower levels of disposable income) in social group E and having invested in the technology they make sure that it is well utilised.

Table 1.1 Use of Internet by those with home access by social class, 2005

Social Class (SC groups)	% of users with metered Internet connection at home	% of users with unmetered Internet connection at home	Average minutes per session spent online by ummetered users	Average MB download per month by broadband users
A	55	45	15.3	545.0
E	46	54	17.9	939.3
England	**49**	**51**	**16.9**	**803.4**

Source: ICT Research Survey of 7,015,957 English Internet users in June 2004. Unmetered access refers to users who have unlimited telephone dial-up access for a monthly fee. Metered users pay (per minute) for the amount of time they have telephone dial-up access to the Internet.

This overview of research about the benefits and use of ICT by socially excluded groups in England shows that the few studies that have been undertaken suggest benefits that should enhance social inclusion. The limited research undertaken has generally investigated the direct use of ICT by socially excluded groups. This study is thought to be the first to examine the full extent of ICT use to enhance social inclusion through the utilisation of technology at the customer interface, to transform service delivery and to enhance traditional service delivery.

1.7 Conclusions

This research is probably the first study to investigate the role of technology in addressing social exclusion and promoting inclusion. A new framework is proposed that investigates the way ICT can enhance service delivery and that examines access to information and services by socially excluded groups.

This comprehensive approach will highlight the contribution that technology can make in addressing two of the key challenges posed by the Social Exclusion Unit's *Breaking the Cycle* report (p7):-

- The need to improve service design and delivery to extend the reach of what works to those that need it most.
- The need to find ways to roll out these approaches much more widely through mainstream services.

Numerous examples of international initiatives where technological solutions have been successfully employed to enhance social inclusion are reviewed. These provide a robust evidence base to underpin recommendations concerning the way government, community organisations, voluntary groups and the private sector can better use technology to enhance social inclusion.

Chapter 2 An overview of international initiatives

2.1 Introduction

The first part of this chapter provides a brief summary of how the analysis of international initiatives using ICT to enhance social inclusion was undertaken. The second section provides an overview of key results from the worldwide study.

2.2 The problem oriented approach adopted for the study

Addressing the two challenges posed by the Social Exclusion Unit's *Breaking the Cycle* report necessitated an approach that was able to accommodate and investigate three inter-linked key areas. These are shown in Figure 2.1. The three factors characterise the fact that socially excluded groups or individuals suffer from multiple problems that central and local government and other organisations try to provide services to alleviate.

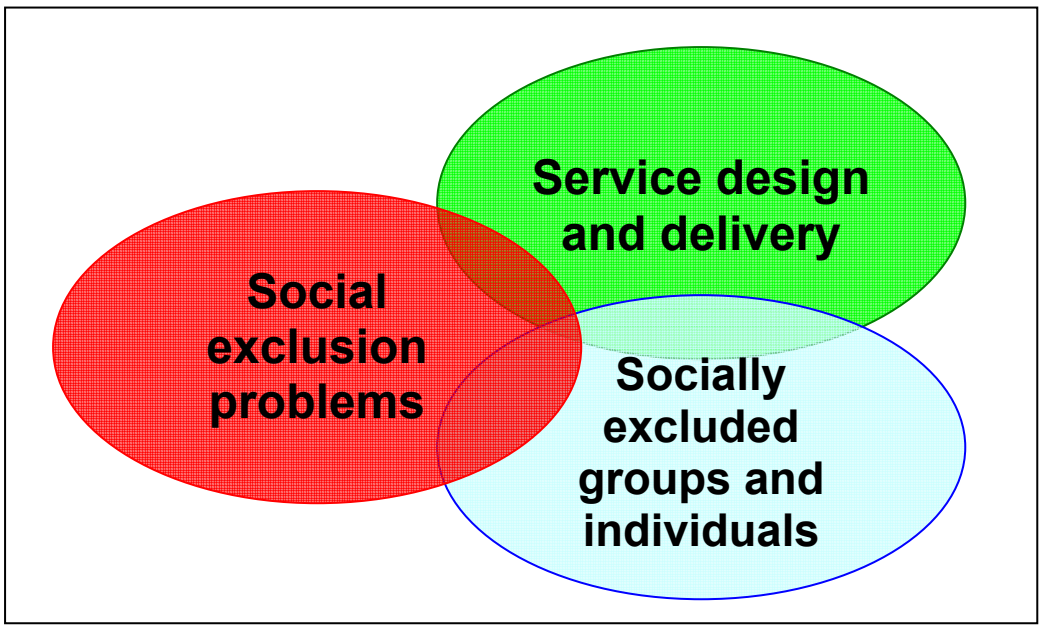


Figure 2.1 The three areas of focus for the study

Improvements in service design and delivery have to be judged against their ability to address problems. To find out what works it is necessary to examining the efficiency of services in meeting the needs of socially

excluded groups and individuals. Only by addressing these three inter-related factors is it possible to find out how service design and delivery can be improved to extend the reach of what works to those that need it most.

After discussion with the Social Exclusion Unit it was decided that the best focus for the project was to concentrate on seven key problems frequently facing socially excluded groups. It was thought that this provided a better focus than trying to look at all socially excluded groups and trying to accommodate the diversity of problems and services that might be provided to alleviate them, or to consider all the services that might be provided to socially excluded groups.

The seven major social exclusion problems that provide the focus for this study are:-

- Worklessness
- Educational underachievement
- Crime
- Homelessness
- Health and health inequalities
- Early years disadvantage
- Complex and multiple needs

Further details of the way these seven problem areas were investigated and conceptualised can be found in Appendix 1.

2.3 The international context for the research

To find the widest possible range of initiatives using technology to enhance social inclusion the Social Exclusion Unit decided, as part of its wider *Inclusion through innovation: Tackling social exclusion through new technologies* programme, to undertake an international study. Researchers searched for suitable initiatives using six languages. They had extensive linguistic skills and come from diverse cultural backgrounds. Each researcher was responsible for examining technologies used to promote social inclusion in a continent of the world where they are currently located or were previously living. Figure 2.2 shows the continents for which the five researchers were responsible, their native country and the languages each researcher speaks.

The researchers' local knowledge and linguistic skills were vital in determining the transferability of ideas from the given international setting to a UK context.

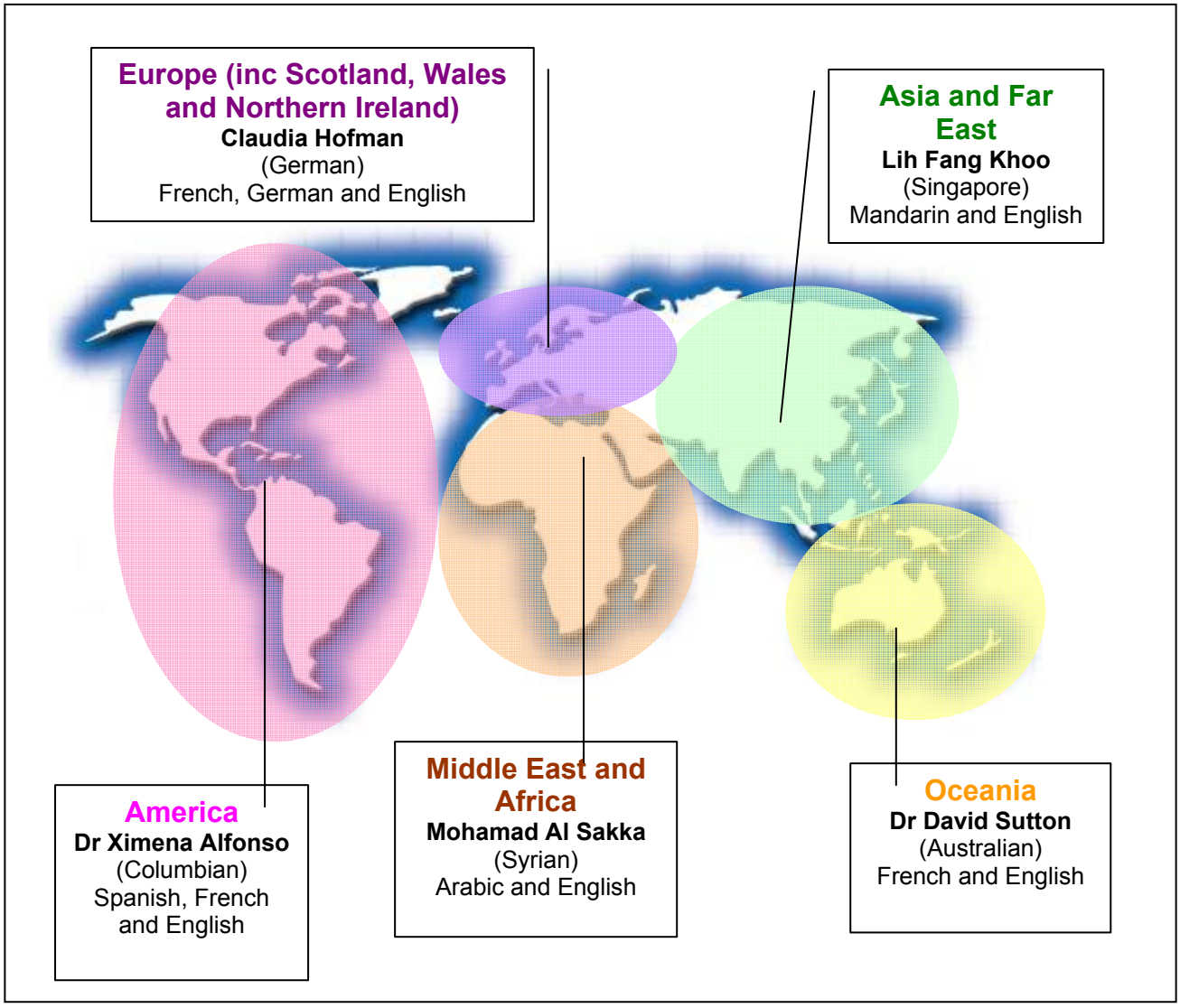


Figure 2.2 The worldwide geographical knowledge and linguist skills of researchers

2.4 Investigating international initiatives

One hundred and twenty two significant initiatives were found from 36 countries during the research (see Appendix 4). Initiatives were regarded as significant if they used technology to focus on the seven major social exclusion problems chosen for the project, if they made innovative use of technology or if they were successful in meeting the needs of a particular group or in addressing an exclusion problem.

The research used Internet search engines to examine key words (see Appendix 1) describing:-

- The seven exclusion problems (35 key words)
- Information and communication technologies (10 key words)
- Groups (children, homeless) that might be affected by the seven problems (10 key words)

Internet searches were undertaken using key words from each of the three categories above. In total each researcher undertook approximately 3,500 searches, the five researchers made approximately 17,500 searches. To enhance the study the *Queryster* search engine was used. This replicated each search across ten different search engines (including Google, Yahoo! and Alta Vista). Thus in total approximately 175,000 searches were undertaken.

To supplement the web based searches and improve the rigour of the study two additional methods were used to obtain information. The first method was to contact 14 representatives of the Members of the European Union Committee of the Programme to Combat Social Exclusion (see Appendix 5). These individuals and organisations were asked about the use of ICT to enhance social inclusion in their country at national, local and project level.

The second method was to examine international eGovernment best practice web sites, such as eForum and Better eEurope Practices, to obtain details of ICT initiatives and best practice.

2.5 An overview of the international initiatives

The 122 projects found by the study were categorised according to five themes, see Table 2.1. Only 13 of the projects focused on a single theme; this is shown in the blue cells of Table 2.1. The majority of projects had multiple objectives. For example 11 per cent of projects provide users with access to technology which provided immediate access to services that enhanced social inclusion.

It was noted in the previous chapter that a physical access approach, characterised by the creation of a network of public access points with associated initiatives to increase awareness and provide skills

training, is observed in many countries when they first recognise and start to address the digital divide.

The remit of this study was to move beyond projects to bridge the digital divide. Table 2.1 shows that this objective was successful: 37.3 per cent of projects provided services and 23.9 per cent involved information sharing. All the other projects concerned traditional digital divide activities (awareness, access and skills) separately or in any combination of the three objectives at the same initiative. It is interesting to note that 50 per cent of all projects allied these more traditional activities with the delivery of services or information. It is not possible to distinguish whether these information access or service activities were developed after providing more traditional digital divide functions. However, our in-depth analysis of initiatives in the next section shows that most of the projects discovered by this study had these elements established from the start.

This highlights that careful consideration of 'additional' social exclusion emphases at the better established traditional initiatives (awareness, access and skills) could be advantageous. Indeed, the database and projects described in the next chapter provide numerous examples of how initiatives focusing on awareness, access and skills could be enhanced to also provide services and information sharing activities that could help to enhance social inclusion.

Table 2.1 The focus for ICT inclusion projects (percentage of projects)

Awareness	1.9				
Access	9.1	1.9			
Skills	9.1	13.9	1.0		
Information sharing	6.7	7.2	4.3	0	
Services	13.9	11.0	6.7	5.7	7.7
Percentage Total	**38.8**	**41.2**	**34.0**	**23.9**	**37.3**
	Awareness	**Access**	**Skills**	**Information Sharing**	**Services**

The proportion of projects found in each of the seven problem areas identified for this study is shown in Figure 2.3. Three problems provide the focus for more than three quarters of all the projects studied. These are projects addressing health, multiple needs and education problems. Only one project focusing on crime reduction was found by the study. Three addressed homelessness problems.

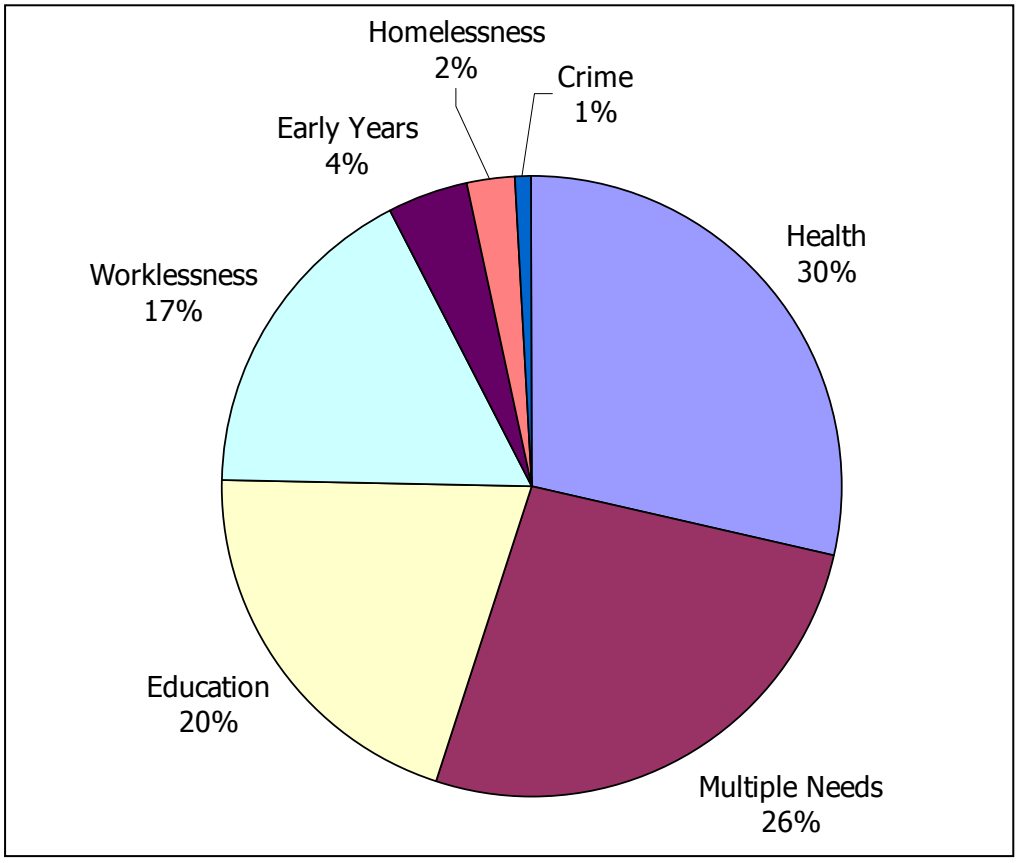


Figure 2.3 Proportion of initiatives found by seven key social exclusion themes

2.3 The technologies

The definition of ICT used for the project and key words to find suitable initiatives were relatively broad; ranging from online and Internet technologies to mobile phones and text messages. Telecare, assistive and adaptive technologies and data sharing methods were also investigated in detail. Despite the breadth of technological definitions

adopted for the study the most commonly used technology at projects was the Internet, see Figure 2.4.

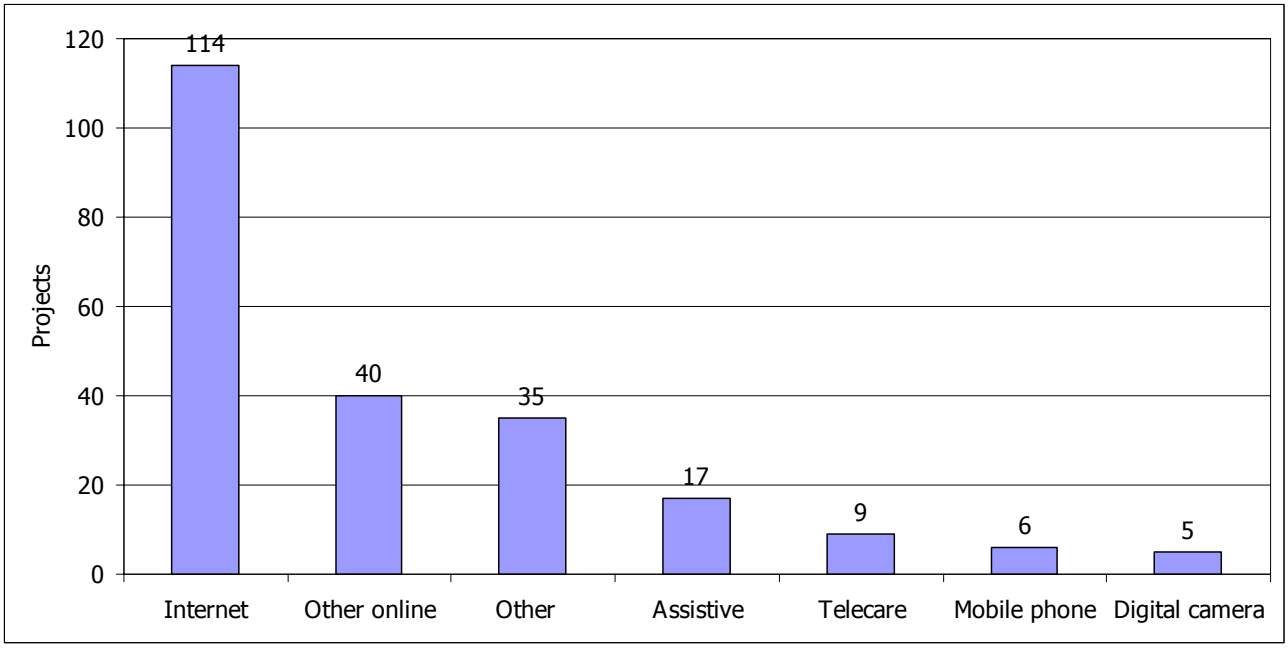


Figure 2.4 Technologies used by the ICT inclusion projects

2.4 The target groups for initiatives

43 per cent of ICT projects (52) provided services or assistance for all citizens, rather than specifically targeting socially excluded groups, see Figure 2.5. Nonetheless, these projects still provided valuable services or help to enhance social inclusion. Amongst the different age groups investigated in Figure 2.5 (see the blue columns) an interesting distribution can be observed. The most common target age group was teenagers. This group represented the zenith for ICT exclusion projects, with a steady and consistent decline in the focus of projects below and above this age group. Whilst this group might have the highest proportion of skilled and confident ICT users one cannot help but feel it would be helpful if more projects were targeted at other groups with less developed ICT skills and confidence. Interestingly, the same number of projects (24) target unemployed groups as target teenagers. Twenty two projects are targeted at disabled groups.

Amongst the thematic groups investigated in Figure 2.5 (see the red columns) the relatively low number of projects targeted at ethnic minorities might be significant. It was expected that a six language study would have had a higher propensity to find initiatives in the

languages that lie outside the 'mother tongue' of countries being studied. But this does not appear to have been the case. The small proportion of projects aimed at homeless people is also disappointing.

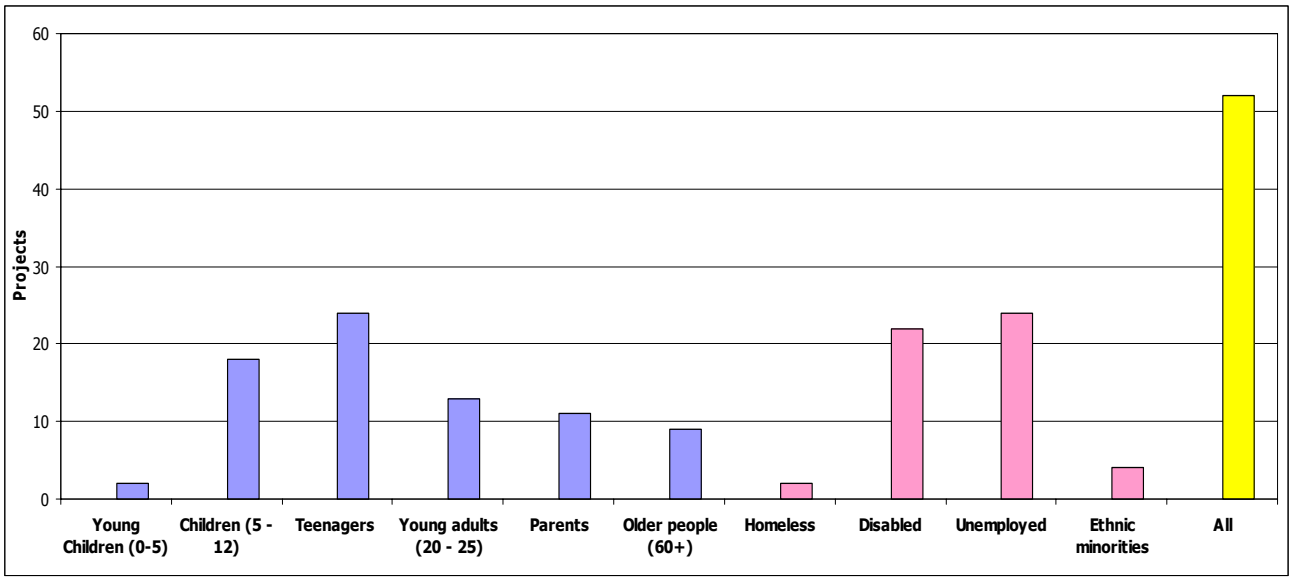


Figure 2.5 Target groups for ICT exclusion projects

It is important to highlight that this study found that the 'hardest to reach' groups such as children suffering from abuse or homeless drug users are rarely the main target audience for most initiatives.

2.5 How technology is used to address problems

Figure 2.6 combines results from Table 2.1 and Figure 2.3 to reveal the different types of initiatives used to address the seven exclusion problems (crime projects are omitted because only one was recorded). The column on the right shows the focus for all 122 ICT projects. The largest differences from this overall pattern can be observed in projects focusing on health problems. These projects had the highest proportion of initiatives providing services using technology (33 per cent). Health projects also had the highest (equal at 25 per cent) proportion of projects providing information.

Homeless projects had the equal highest level of information access. However, none of the projects studied provided services to homeless groups. Educational projects provided the highest levels of access and

skills development initiatives (28 per cent for both). Service delivery was also high (27 per cent) in projects addressing multiple needs.

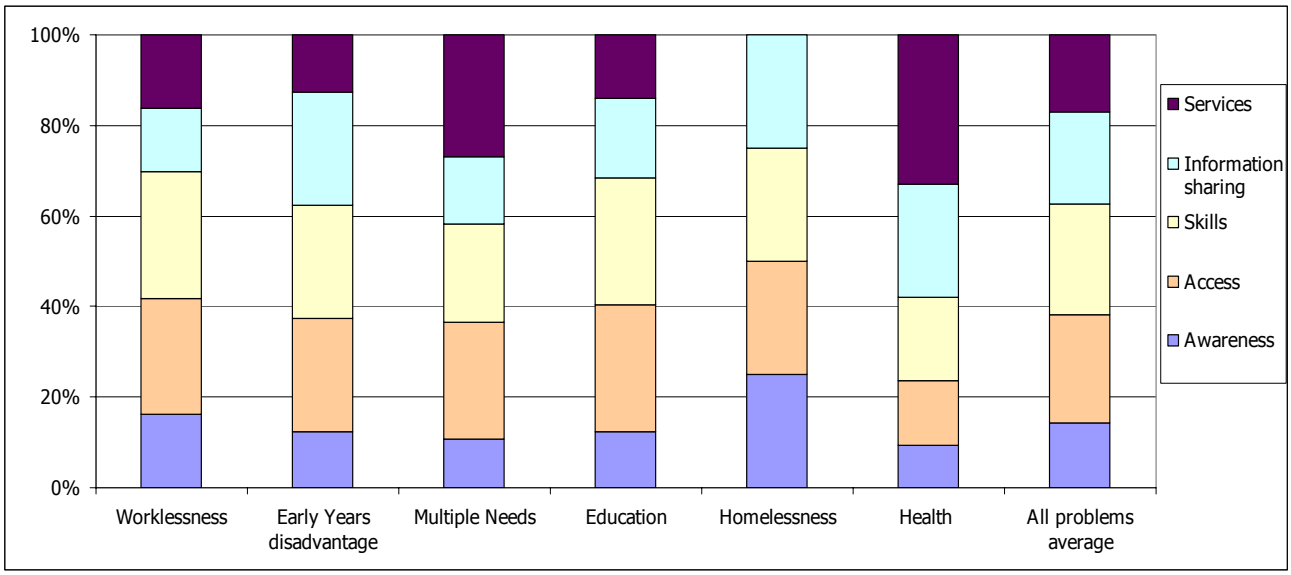


Figure 2.6 The different types of initiatives used to address the seven exclusion problems by ICT exclusion projects

Figure 2.7 provides an overview of where technology was used within the projects. The column on the right shows the types of technology used at all 122 ICT projects. Homelessness and crime projects are omitted because there was insufficient information about where technology was used. Appendix 3 provides an insight to the way technology use was categorised. It is important to note that more than one technology could be used and at some projects technologies were used in more than one aspect of an organisation's activities.

The lower three orange and red boxes in Figure 2.7 provide an overview of how technology was used in the 'back office' to change organisational structure and processes or to modify data storage and analysis methods. Blue boxes focus on technologies that lead to 'front office' changes to service delivery processes and methods. The green boxes provide details of how technology has led to user process driven changes (user requests were usually provided by email or through a portal).

Across all projects the most common application of technology was the development of a web site or portal (36 per cent of all projects). Portals were most prevalent in projects addressing educational needs (54 per cent had portals). However, it is important to note that because of the

web based methodology underlying this research the number of portals found was likely to be relatively high.

Back Office changes (the red layers in Figure 2.7), perhaps reflecting the sharing of data or services information between partners, is most prevalent in projects addressing multiple needs; technology has been used to change back office activities at 34 per cent of these initiatives. This might be indicative of the requirement for partners addressing multiple problems to co-ordinate and share data and information. Back office changes are also relatively high in early years and educational initiatives (33 and 32 per cent respectively).

Projects with the highest levels of user driven changes (the green layers in Figure 2.7) are worklessness and health projects (22 and 20 per cent respectively). User driven change is almost absent from education and early years projects.

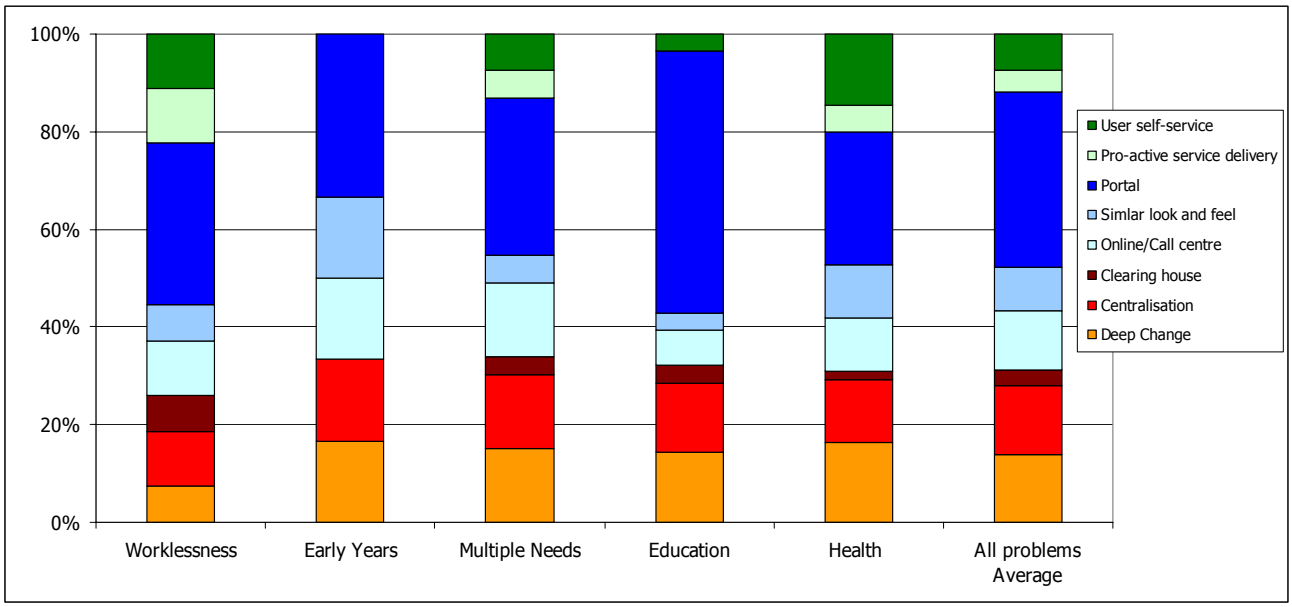


Figure 2.7 Where technology was used by ICT projects to address the seven exclusion problems

It is important to highlight that this study found very few initiatives based on 'cutting edge', 'new' or 'clever' technology. Instead, projects were more frequently based on the clever use of well established technologies to address social exclusion .

The 'hardest to reach', such as children suffering from violence and abuse, are not the main target audience of most initiatives.

2.6 Success and transferability

Several problems arise when trying to assess success at ICT projects. Firstly, web sites, online information and news reports rarely provide details of unsuccessful projects unless they are politically embarrassing or they have consumed significant resources. To be newsworthy projects are generally required to be topical, interesting and successful. For this reason it is possible this project might under-record back-office or organisational changes facilitated by technology because these changes will rarely be regarded as newsworthy unless they lead to significant benefits.

Secondly, success is highly subjective. A very aesthetic portal may not necessarily be 'user-friendly' and it may not provide all the information or services a user requires.

Thirdly, despite the best efforts of our researchers, we could find no clear documented details of formal evaluation of the longer term outcomes and impacts for any of the projects studied. Some have recorded the number of web site visitors or ICT trainees, but none have undertaken more comprehensive evaluation that investigates whether initiatives successfully enhance social inclusion.

With these caveats to the fore it was still thought to be useful to provide a subjective evaluation of the success of projects and the transferability of projects to the UK.

Researchers were asked to provide a score for the success of all initiatives. A ten point scale was adopted where '1' was very unsuccessful and '10' indicated a highly successful initiative. The average mark or success factor for all the for all projects investigated was 7.5

Figure 2.8 shows the success of different types of ICT projects. Information projects were perceived to be the most successful and skills and services projects were perceived to be the least successful. One explanation for this could be that projects providing information are relatively easy to complete. The major activities required to develop projects providing information are 'controllable' and more easily managed, they usually lie within the organisation and little customer inter-action may be required. Conversely, projects providing services

and those enhancing skills have to meet customer needs and be adaptable and flexible to the different and changing needs of socially excluded individuals and groups.

Interestingly, and partially in conflict with the preceding assertion, is the observation that many researchers made that the best projects are often developed from the 'bottom up' or those that have a high level of user input into the design or testing of the initiative. The involvement of socially excluded users appears to be crucial in enhancing the success of projects. A particularly good example of this is provided in Figure 2.9. The most successful projects were perceived to be homelessness initiatives. Both were developed by homeless people who were given access and training to use ICT.

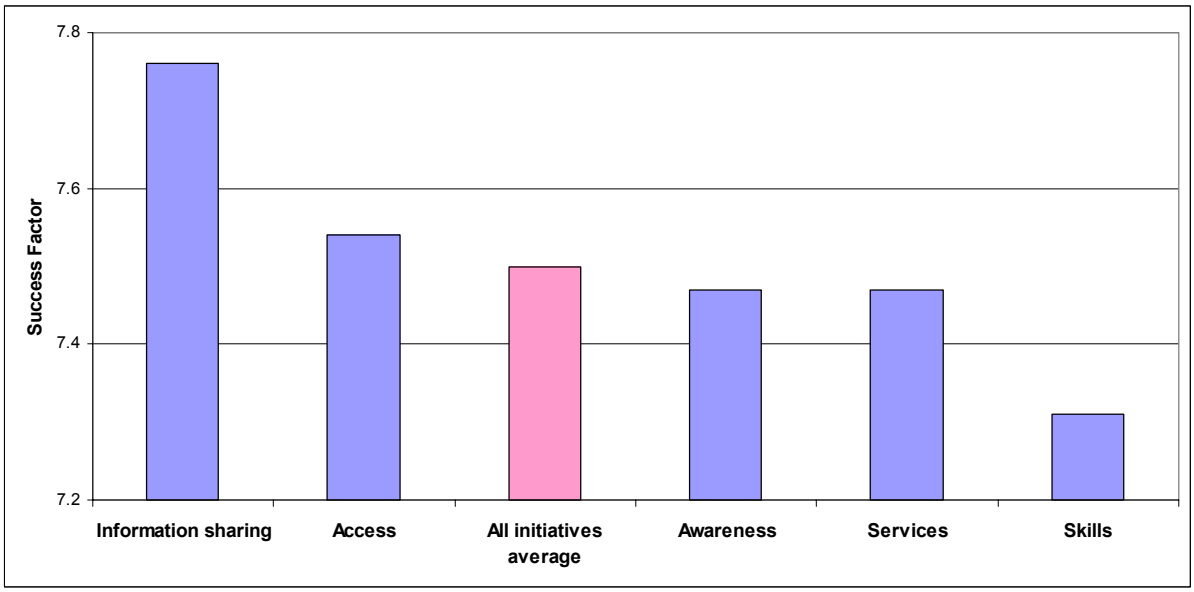


Figure 2.8 The success of different types of ICT projects

Figure 2.9 shows the success of initiatives addressing each of the seven different exclusion problems. Once again the average success factor for all projects is 7.5. The most successful are projects addressing homelessness, but only two projects had this focus. The least successful were projects addressing multiple needs. This relatively low score could reflect the complexity of dealing with these types of multiple problems.

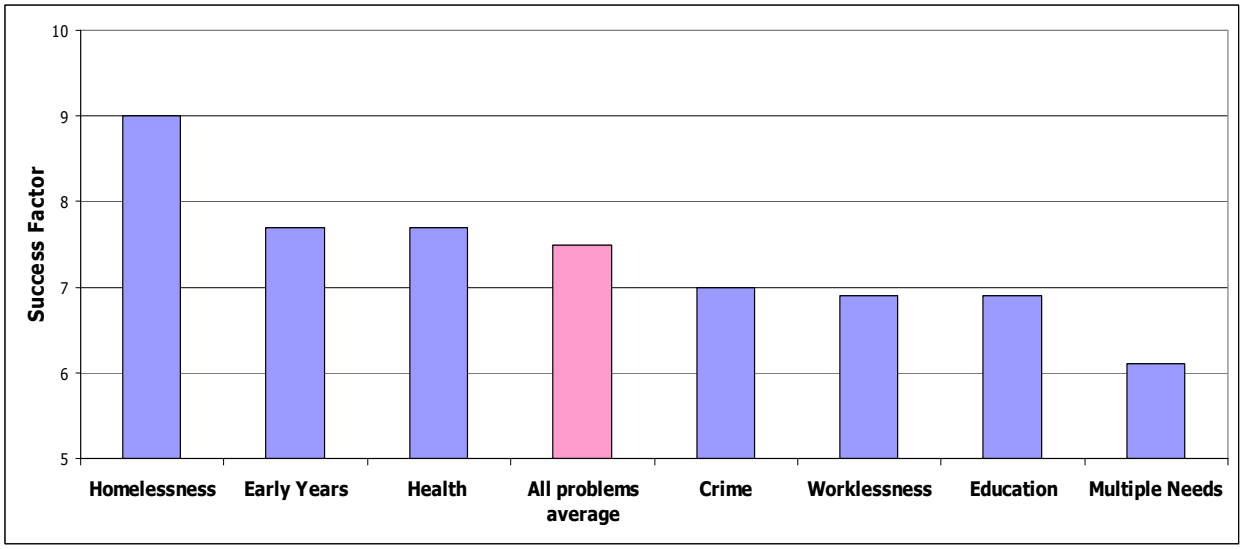


Figure 2.9 The success of ICT projects addressing the seven social exclusion problems

The final criterion to investigate the perceived success of projects was to evaluate the relationship between technology used in different ways within an organisation and success. Figure 2.10 follows the same colour coding pattern as Figure 2.7.

With the exception of 'deep change' (which requires extensive re-organisation within organisations, see Appendix 3) back office use of technology (the red columns) appear to be the most successful. Online access to information and call centres also provide higher levels of success. Interestingly, these initiatives are probably the easiest for projects to control, they are located within an organisation and access by users can be regulated or more easily managed.

The least successful were perceived to be initiatives that used technology to make changes to front office service provision (with the exception of call centres; the blue columns in Figure 2.10) and those that facilitated user process driven changes (the green columns). The least successful initiatives were those that required deep change. As noted above these are the most complex to implement.

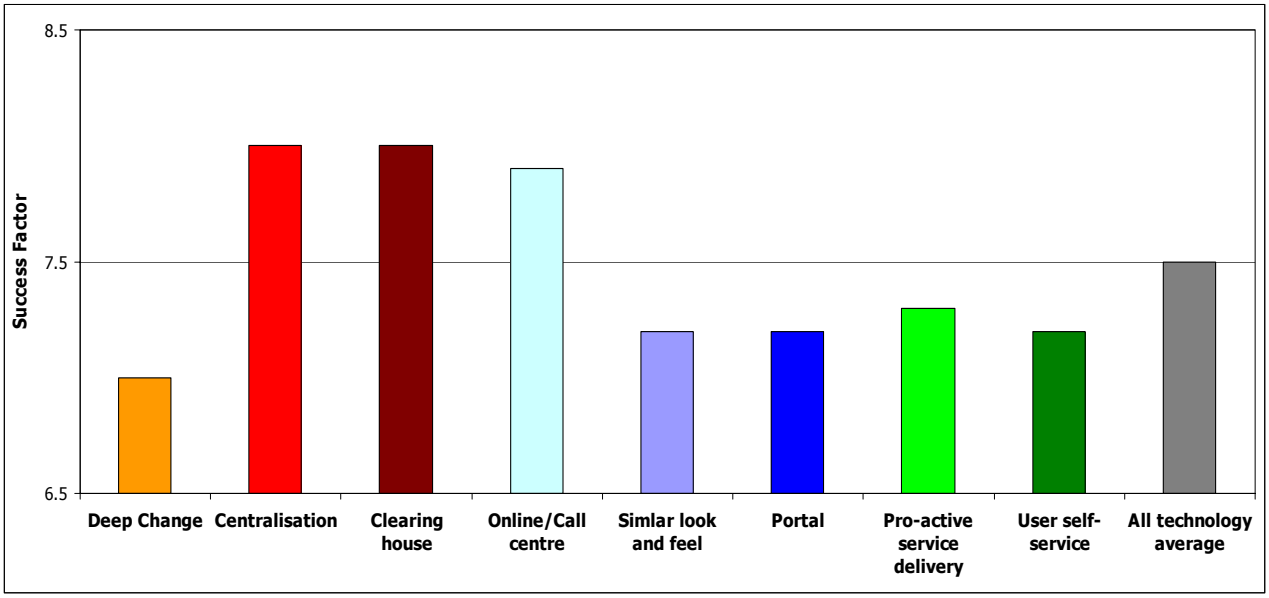


Figure 2.10 The relationship between success and where technology was used by ICT projects

Nearly all projects were thought to be suitable for development in the UK. Researchers were asked to provide a score for the transferability of initiatives. A ten point scale was adopted where '1' was definitely not suitable for the UK and '10' indicated an initiative that should be introduced in the UK. The average mark or transferability factor for all projects investigated was eight.

The most transferable initiatives were perceived to be those concerned with crime prevention and homelessness. However, there were only three projects in these two categories. The crime prevention project, developed in Germany, provided confidential information and anonymous consultation for young people with drug abuse problems. The three homelessness projects had slightly different emphasis. Two projects developed in Canada encourage homeless people to reintegrate into society. The third project, written and developed by homeless US young people, examines causes of homelessness and provides advice on how to overcome them.

Amongst the initiatives that were more prevalent those focusing on overcoming health problems were perceived to be the most transferable. The least transferable projects were thought to be those focusing on early years disadvantage and worklessness. These initiatives were

usually thought to be less suitable for transfer because similar initiatives already existed in the UK.

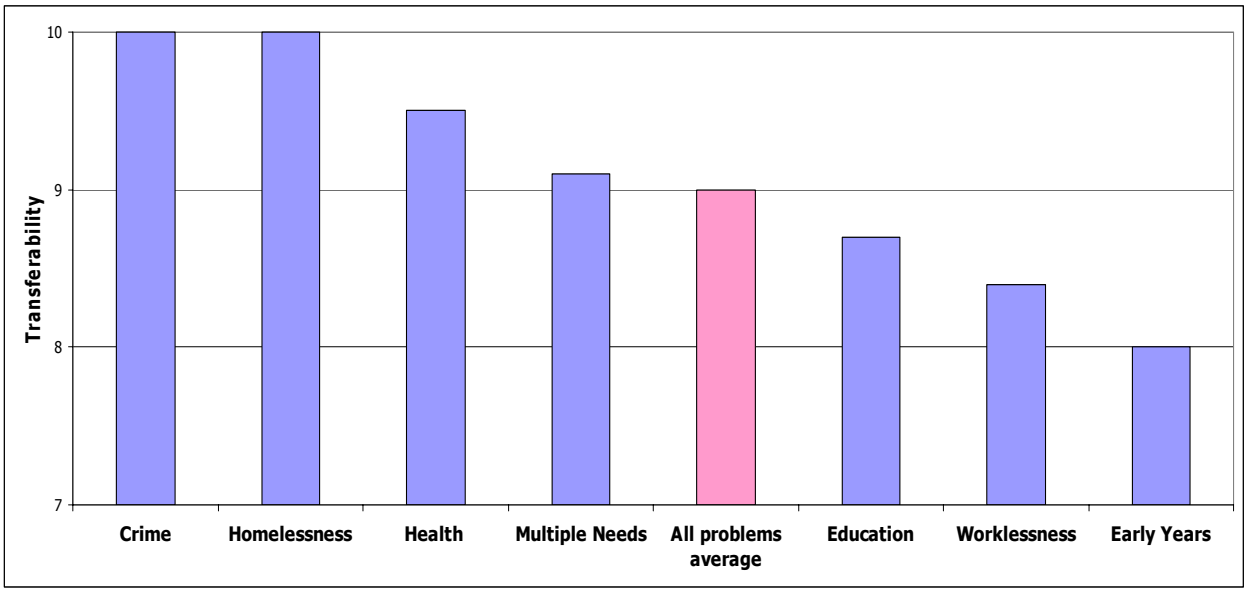


Figure 2.11 The transferability of ICT projects

2.7 Conclusions

This chapter provides a broad overview of the initiatives found in this study (a list of the initiatives can be found in Appendix 4). The next chapter provides a more detailed 'problem focused' review of initiatives.

It is important to highlight two key observations. Firstly, few of the initiatives were based on 'cutting edge' technology or the innovative use of technology. Most projects were based on intelligent use of established technologies.

The 'hardest to reach', such as children suffering from violence and abuse, are rarely the main target audience of initiatives. Much more needs to be done to extend services that work to the hardest to reach.

Chapter 3 Exemplar initiatives to enhance social inclusion

3.1. Introduction

This chapter describes important components and considerations underpinning the successful development of many of the projects reviewed by this study. This information will provide a better understanding of the range of activities, services, technologies and beneficiaries that need to be considered by anyone developing policies or initiatives that use ICT to enhance social inclusion.

This overview draws together information from international initiatives investigated by this study. In total this overview has examined 122 eGovernment projects designed to address social exclusion or promote social inclusion. A list of key characteristics investigated for each initiative can be found in Appendix 2.

Initiatives developed to address each of the seven major social exclusion problem areas investigated by this study are examined in turn.

For each problem a similar approach is adopted. Key socially excluded groups targeted by the initiative are described together with the range of services developed to address the problem. Key elements or services provided by each project are considered by investigating the ability of each project to provide information, to interact with users or to transform the way the service is delivered. At the end of the each review conclusions and recommendations are proposed to extend the reach of what works at international initiatives to the UK

At the end of these conclusions one or two case studies are used to provide a better understanding of the way some of the projects have been developed. The case studies are presented using a similar approach. Key details concerning the title of the project, problem area, target group and focus for implementation are presented in blue at the start of each case study. Information is then provided about project objectives, context and achievements. Each case study concludes with project contact details.

This approach conforms with the three areas of focus for the study (problem, service, excluded group) identified in the Chapter 2 and Figure 2.1. The seven problem areas investigated are:-

- Worklessness
- Educational underachievement
- Early years disadvantage
- Health and health inequalities
- Homelessness
- Crime
- Complex and multiple needs

3.2	Worklessness
Information and services provided	**For individuals:** ICT training; benefits information; child care support and facilities; drug and alcohol abuse support; confidence building; CV surgeries; job application and interview skills training; psychometric aptitude tests; salary survey information; online jobs noticeboards; email and sms messaging of vacancies; weekly jobs newspapers. Technology to enable home working. **For businesses:** online jobs and vacancies market place; information about grants and loans to support the employment or training of socially excluded workers; employment law information; tele-working information; information about employing disabled workers and workplace ergonomics.
Socially excluded groups targeted	Early school leavers, youths at risk, unemployed, lone parents, rural dwellers, disabled and women.
Technologies used	Internet for portals and online jobs 'market places', Digital TV, kiosks, newspapers.

Worklessness projects can be comprised of up to five key elements.

1. ICT training and skills development
2. Information to support job hunters
3. An online database or marketplace for Curriculum Vitae (CV)
4. An online database or marketplace for job vacancies
5. Information to encourage businesses to employ socially excluded groups.

Some projects only have one of these five elements; few provide all the elements in a cohesive or seamless package.

ICT training and skills development projects are undertaken for a number of reasons. Many want to provide the requisite skills and opportunities to socially excluded groups so that on the simple basis of equity the socially excluded are not 'digitally divided' and they have the same access to online information and services as the rest of the 'connected' population. In the Middle East ICT training initiatives are frequently targeted at women. Women there tend to use ICT less than men. Some schemes also promote equal rights for women, particularly equity in the workplace.

The level of ICT skills offered by projects ranges from simple taster or introductory courses to the Microsoft Certified Professional exams that 25 long-term unemployed residents of Ballymun in Ireland took over an 18 month period between 1996 and 1997. This project highlighted many key issues that project developers need to consider if they believe skills development will enhance the employability of those who successfully complete courses. Firstly, discussion is needed with local employers to establish that the skills are deficient in the local economy and the training and qualifications provided for socially excluded groups are recognised and required by local employers. Secondly, partnership or liaison with employers can help to ensure that job vacancies will be offered to successful trainees.

The Ballymun project also highlights the need to consider the wide range of support that can be required to assist ICT trainees or to enable any socially excluded person to obtain employment.

The range of **information to support job hunters** and those completing ICT training courses is considerable. Information on all of the following topics has been provided by initiatives:-

- Benefits information (TIC – www.tic-rhonesud.com)
- Child care support (Gersemploi – www.gersemploi.com)
- Drugs and alcohol counselling (Drug.com – www.grugcom.de)
- Confidence building (Merc@dis - www.mercadis.com)
- Careers guidance (Equal Lot – www.cg46.net/equal)
- Psychometric aptitude analysis (Arbeitsagentur – www.arbeitsagentur.de)
- Help in developing CVs and CV clinics (Maison de l'Emploi – www.maison-emploi.com)

- Interview and application form skills development (Jugendserver – www.jugend.info)
- Salary and job description information (Centre for Shared Telematic Resources – www.cfnti.net/telecentros/ditic)
- Support (confidence building and practical) after commencing a new job (Fondation Kraizberg – (www.kraizberg.lu)

Several projects provide several of the elements on web sites, but none provided all of the above information. One element not observed at any of the projects was information about transport. This has been found to be important in expanding the geographical job search horizons of some individuals.

Some of the above information is better suited to an online environment than others. For example the anonymity provided by the Internet when undertaking psychometric tests or receiving drugs or alcohol counselling can be comforting for some socially excluded individuals. But confidence building and practical childcare support can only be effectively provided by face-to-face contact.

At many initiatives the web site acted as a signpost to the practical provision of child care and other support provided at the training centre or employment project. Some projects have expanded their geographical coverage and overcome access problems for disabled and elderly groups by providing mobile ICT facilities, usually on converted buses or coaches. Others, such as the Borris community programme in Ireland (borris.ie) provide information by Digital TV.

The TARDIS (Targeted delivery of information and services) project, which operated in Manchester, UK and Barcelona, Spain, used kiosks to enable neighbourhood access. Kiosks have posed problems at some initiatives when they breakdown. Frequently, problems or breakdowns are not reported quickly and the widely distributed nature of kiosks can be problematical in lengthen the time and cost of making repairs or updating hardware.

There are two main outcomes from ICT training and job hunting support services. For some projects the limit of their activities is to train or provide information. Users are then reliant on traditional methods or other projects to find employment or further training opportunities. Some projects also store information about individuals who complete

training courses and require a job or they collect information about anyone who is looking for a job. This information is then made available to employers.

The preceding elements of this overview have largely concerned the use of technology to provide ICT training or to 'push' information to socially excluded users. The Internet is also used in many worklessness projects to collect or 'pull' information from employers. By combining information about job-seekers with information about job vacancies an employment marketplace has also been created by some projects.

An online database of job vacancy information collected from employers has been developed at some projects. Careful coding enables jobs to be interrogated easily and quickly by potential employees. The Profesia initiative (profesia.sk) developed in the Slovak Republic and eJob (eJob.ro) in Romania provide examples of projects that have created online marketplaces to link job seekers with businesses seeking employees. Interestingly the Profesia online initiative now also produces a weekly newspaper with job details so that those without access to the Internet can still obtain relevant information.

One problem for those hoping to provide jobs to encourage social inclusion is that it is very difficult to restrict those looking for jobs or those wanting to post their CVs on a web site to only socially excluded groups. This problem has been partially addressed by some projects by contacting businesses and informing them of the benefits of employing socially excluded individuals.

Information to encourage businesses to employ socially excluded groups has been provided by some projects. Groups working to promote the employment of disabled groups have provided information about employment law and details of grants and loans to support the employment or training of socially excluded workers. The Merc@dis initiative in Spain (mercadis.com) is a particularly good example.

Some projects, most notably Telework Poland (telepraca-polska.pl), have advocated the merits of teleworking as a way to enable more disabled workers to obtain employment. The telework initiative provides basic information about teleworking as well as information about employing disabled workers and workplace ergonomics. The initiative has also partnered with a jobs marketplace portal in Poland to expand its ability to reach businesses.

Teleworking is also being used by an eWork initiative in Norway (www.engerdal.net) to provide employment in the peripheral regions of Norway. The project found industrial sectors and work tasks suitable to be undertaken by teleworkers and then sent representatives to Oslo to find businesses that would outsource jobs to teleworkers. This innovative method of moving 'work to the workers' required a great deal of confidence building amongst companies to encourage them to consider long distance teleworking. The scheme has also created tele-cottages that have the appropriate technology to enable teleworking in the rural areas of Engerdal and Porsanger, in Northern Norway. Similar initiatives in non-rural areas have also provided the required technology for users in their own home. An initiative in Naestved, Denmark constructed 22 tele-homes and won the Telework 2000 award for the best initiative for socially excluded groups (www.naestved.dk).

Key Issues and recommendations

- ICT access and training and skills development initiatives represent a first step or policy emphasis for many countries or communities trying to overcome the digital divide.
- ICT skills and training initiatives are often offered as a method of raising the employability of unemployed groups, these initiatives need to ensure the ICT skills are required in the local economy.
- The longer term unemployed frequently require a large amount of additional information and support. Some of this information can be provided by websites (benefits and aptitude tests), other elements require face-to-face contact (confidence building, interview skills). Careful consideration needs to be given to the additional information and channel preferences that are most appropriate for the target group.
- Projects that establish a marketplace to 'join' job hunters with employer vacancies need to consider how benefits for socially excluded groups can still be maintained. Marketplace portals usually enable anyone to apply for jobs, not just the socially excluded.
- Tele-working can provide employment for the disabled, house bound or those in peripheral regions.

Merc@dis

Problem:	*Worklessness and disability*
Target Group:	*Unemployed, disabled*
Focus:	*Spain and Chile*

Project Objectives

The Merc@dis project has created a 'marketplace' portal bringing together disabled people seeking work and employers with job vacancies suitable for people with disabilities. The project plays an important role in raising the awareness of employers about the benefits of employing disabled workers. Information and web links of interest to disabled people are provided at the portal. The initiative has recently been replicated in Chile.

Background

The Merc@dis project formally started on 16th March 1999 when an agreement was signed by Fundación Telefónica, to financially support the project, and the Asociación Telefónica de Ayuda al Minusválido (ATAM), who agreed to provide technical support for the project.

The project addresses the longstanding problem of re-integrating disabled into society and the workplace. The project addresses the needs of disabled people by providing them with information and web links to sites that assist the disabled.

The project has assumed a strong campaigning stance with the objective of changing employers attitudes about the role disabled people can play in the workplace and the benefits of employing disabled workers. Companies and business organisations are regularly targeted by promotional activities. Businesses are provided with information about legal issues concerning the employment of disabled people, grants and loans to support the employment of disabled people, health and safety at work, and the needs of disabled workers.

The project provides help, on a consultancy basis, to employers and individuals to answer questions about any issue related to employment.

Outputs and achievements

The primary achievement of the initiative is the creation of an authoritative web site that provides information about employment issues for both the disabled and employers. The web site has forums to enable disabled people to communicate with each other about employment and day-to-day issues.

The most notable feature of the portal is the jobs marketplace. This provides details about jobs provided by employers (type of job, activities, qualifications, hours,

duration and location) that can be searched by disabled people looking for jobs. Alternatively, prospective employers are also allowed to search the database for possible candidates.

The site provides information about job searching and writing CVs. Information is also available on a variety of courses that range from self-help courses (courses aimed at improving interpersonal relationship through overcoming shyness, avoiding manipulation and learning how to meet new people and develop social capital) to history courses, language courses, career orientation courses and computer skills courses. The web page provides the disabled with the facility to register for any of the courses; it also provides information on grants and application procedures.

A good practice guide has been developed targeted at disabled individuals searching for employment, disabled people entering employment, and businesses hiring disabled people. The guide is based on real-life cases and depicts the unique experiences of disabled people undergoing the processes from searching for a job to entering employment. For example, the guide provides support and advice on how to deal with discrimination and other barriers that are commonly encountered by disabled people. The guide relates the experiences of businesses that have hired disabled people. The portal is a good source of up to date information about the specific needs and concerns of disabled people. Information is provided on events, forums and seminars that address a range of disability issues from early support for blind children to psychological issues and physiological issues of different kinds of disability.

In March 2005 the database held the CVs of 799 disabled people searching for employment and one hundred and six people had been placed in employment. The site has received more than half a million visits (hits) in the last two years.

The portal has placed great emphasis on making sure that its web content and access software offer a high degree of access and usability for disabled visitors. The site has won several national awards for accessibility and design. The site complies with the World Wide Web Consortium's Web Content Accessibility Guidelines (v1.0) which explain how to make Web content accessible to people with disabilities and define target levels of accessibility. These guidelines are shortly to be replaced by version 2.0, this revision develops guidelines for a wider range of technologies

Further Details

Ricardo Gaitán Pacheco
Fundación Telefonica
Gran Via, 28, 2a planta
Madrid 28013, Spain
☎ +91 584 06 60
Ricardo.gaitanpacheco@telefonica.es
www.mercadis.com

3.3	Educational underachievement
Information and services provided	**For teachers:** ICT; training; portals with lesson plans, materials and teaching resources; brokerage facilities to link pupils, schools and employers; video-conferencing for joint teaching activities and employer ICT and careers support. **For pupils:** portals with information and research materials; brokerage facilities to establish links with overseas pupils and employer mentors; online and telephone confidential counselling and help; video making and multimedia skills development opportunities. **For parents:** online and telephone confidential counselling
Socially excluded groups targeted	Children from socially excluded households, disabled pupils, single parents.
Technologies used	Computers, recycled computers, computers adapted for disabled use, mobile computing buses, digital video cameras, video editing, SMS text messages.

Few of the educational projects specifically targeted issues associated with educational underachievement. Most were concerned with enabling pupils to learn more effectively and with assisting teachers to teach more effectively. Whilst these elements will undoubtedly help teachers to better educate underachieving pupils none of the projects had this as a specific remit. Education projects can be grouped into four key groups, these are:-

1. ICT access and technologies for disabled and younger pupils.
2. Information to enhance education.

3. Projects promoting communication between teachers and pupils.
4. New approaches to education facilitated by ICT.

None of the projects examined in this research provide all these elements in a cohesive or seamless package.

ICT access and technologies for disabled and younger pupils

ICT access projects predominantly focus on methods to provide computers to schools or socially excluded groups. In rural areas where computing resources are limited, computing resources are often 'shared' by providing mobile ICT facilities, usually on converted buses or coaches. In Brest, France, mobile facilities travel to deprived communities and provide children access to computing, multi-media equipment, educational software and trained ICT assistants (www.a-brest.net). In developing countries, where they are usually at early stages of adoption, initiatives frequently focus on the provision of access. In India the highly successful 'hole-in-the-wall' computing initiative was developed by a curious and philanthropic businessman to provide Internet access to some of the most deprived areas of Udangg, New Delhi and other cities, see the case study at the end of this section.

One method for schools to acquire more computers is to obtain older computers from businesses. Computer 'recycling' for schools has been very well developed by the German public private partnership D21 project (www.initiatived21.de/english). The partnership is the largest in Germany and is comprised of more than 400 representatives from leading ICT businesses, such as Cisco, IBM, Microsoft and Siemens. The advisory council for the partnership is chaired by the German Chancellor. One component of the project is the development of an online marketplace for schools which links schools with businesses that are able to provide second-hand computers and other hardware. The initiative also develops other types of sponsorship between schools and industry; this includes the registration of more than 1,700 employees to promote ICT and ICT careers, support for teacher ICT training and the development of online teaching materials. This type of initiative could produce considerable rewards if replicated in the UK.

In many schools the needs of many disabled groups have been accommodated by the purchase of specially adapted hardware and

software. Equipment suitable for younger pupils is described in section 3.4.

The European Union Schoolnet project (www.eun.org), developed with business partners (Apple, IBM, Intel and Sun), has developed five show-case 'Schools of tomorrow' in selected schools across Europe to provide real examples of some of the technologies that can radically change teaching and education.

Out of school hours and during holidays many schools remain open to enable the local community to have access to computers, the Internet and learning materials. This can be a positive use of resources in deprived areas, but many socially excluded people who did badly at school have an aversion to returning to a formal learning environment (Foley et al, 2002). Security concerns have also been problematical at some initiatives.

Information to enhance education

Many portals and websites exist in the UK (TeacherNet, National Grid for Learning, Primary Resources, Teaching Ideas and Topmarks) and internationally (European Schoolnet and eSchola) that provide information for teachers and pupils. Interestingly, very few provide information for parents. This could be a major omission since research has shown that parental involvement in a child's schooling is a significant influence on pupil performance (parental input is more significant than social class and the level of parental education; DfES, 2003).

Information provided on these sites is usually provided by government organisations or contributed and shared by teachers. Schoolnet is typical of many of the initiatives, but it works at the European scale. It is linking together existing national, local or specialised teaching resource repositories, encouraging new online publications and providing an easily searchable and reliable level of quality and structure to the resources provided. The project is also testing and demonstrating new technology and materials that can be used in schools. A separate section of the web site also provides information for school managers and administrators.

Schoolnet has also developed a safer use of the Internet project that has produced a number of recommendations, with supporting materials, to

promote safe use of the Internet. Topics covered included the dangers for children using the Internet, parents' concerns about being less Internet literate than their children, advice about blocking and filtering software and the need to promote safety awareness.

Projects promoting communication between teachers and pupils

Several international web sites (but few of those in the UK) provide the opportunity for schools, teachers and pupils to communicate with each other. Many offer international links. This 'marriage' or 'pen-pal' type brokering service is sometimes provided passively in the form of a notice board at others technology or hosting services are provided to facilitate communication.

eSchola (www.eschola.eun.org), a Europe wide initiative, provides a notice board function for 'twinning' schools. Other projects have included contributions on the themes 'your country in my eyes', 'what did you do on 3rd May?', 'my school bag', 'painting Europe' and the compilation of an encyclopaedia of European scientific discoveries.

Schools have also linked together to enable pupils to undertake joint projects. In Cyprus the Oddyseus (www.edc.uoc.gr/forum) project used video-conferencing to enable schools to communicate together and develop joint activities.

Throughout the world schemes have also been established to provide confidential counselling help to children. In Australia Kidshelp (www.kidshelp.com.au) has been created to give information and advice to children on a range of problems. The service offers web counselling and email counselling. This initiative spawned Parentline (www.parentline.com.au) a confidential telephone counselling service providing professional counselling and support for parents and everyone who cares for children. All of these sites have extensive information resources about common problems facing children (and in the case of Parentline – parents). Links to these types of counselling services and web sites could usefully be added to any project providing services to children, parents or on school web sites.

A similar initiative has been implemented in the UK; ChildLine (www.childline.org.uk) has been answering phone calls from children to advise and inform them about a range of problems from bullying and eating disorders and racism to safe surfing, since 1986. Since 1998

ChildLine has developed the CHIPS initiative (ChildLine in Partnership with Schools) to better link its activities with primary and secondary schools. The project has developed services and resources to help specialist and hard-to-reach groups of young people, such as deaf children and those with learning difficulties. CHIPS also helps schools set up schemes that encourage pupils to support one another.

New approaches to education facilitated by ICT

A few projects have used ICT to enhance teaching and child safety. Probably the most effective of all the educational initiatives reviewed in this study is the use of SMS text messaging to enhance child safety and reduce school truancy. UK studies show telephone, voicemail or email contact with parents reduces overall truancy rates by 2 per cent and saves 4.5 hours of administrative staff time a day. In Singapore a text back system has been developed to enables parents to provide reasons for child non-attendance.

An OfCom study (2005) found that 90 per cent of 25 to 44 year olds had a mobile phone. These types of child safety and truancy initiatives could provide major benefits if introduced in the UK. In England 50,000 children are truant every day (DfES, 2004) and research has shown that Children are more likely to be truant if they come from poor families (Cambridge University, 2003). A Youth Justice Board MORI survey (2004) of young people shows that those who play truant are more likely to offend than those who do not, with two-thirds (65 per cent) of truants having offended, versus less than a third (30 per cent). The National Audit Office (2005) found that pupils with high absence rates are likely to leave school with few or no qualifications. Truancy amongst children from socially excluded households reinforces the inter-generational cycle of poverty and deprivation.

The L'enfant@l'hopital initiative is a particularly good example of a project designed to meet the needs of a specific educational group – long-term hospitalised children, see the case study. This initiative enables children to maintain their educational progress from their hospital bed. Importantly, it also provides children with the opportunity to maintain communications with their school friends and family. The project also enables children to communicate with an array of other interesting people, ranging from professors and museum curators to world travellers.

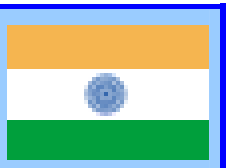
ICT has also been used to reduce inequalities and promote interaction between young people, adults and the elderly. In the US the George Lucas Foundation that documents and disseminates the ways ICT can be used to enhance learning (www.edutopia.org). One very successful project is the plugged in Greenhouse, an after school initiative aimed at African American children from deprived areas of East Palo Alto, California. Pupils use digital cameras to produce videos and dramas. The project develops pupil's confidence, communications skills and ability to use many different types of multimedia ICT.

Similar initiatives in France have encouraged pupils, adults and elderly groups to work together to produce living histories of local towns and villages (www.webtrotteurs-quartiers.org). Alize productions in St Quentin, France (www.alize-productions.fr) developed a project with socially excluded 15 to 21 year olds from the inner city to produce films about their life, intergenerational links, the police and their families. These films were shown on local cable television channels and audience levels were so good the project has been expanded to other locations and some have been shown on national television.

Key Issues and recommendations

- Educational projects generally focus on enabling pupils to learn more effectively. Few explicitly focus on pupils underachieving at school.
- In the UK better use could be made of the Internet or portals as notice boards or meeting places to link employers with schools that might require second-hand computers, sponsorship and to promote ICT use and IT careers. Better links could also be developed between schools in the UK and overseas.
- More web sites are required to provide information to parents about how they can support their children's education.
- In the UK the ChildLine initiative should consider developing an email or web based channels for helping children. Similar confidential counselling services for parents could also be beneficial.
- Greater use of ICT to monitor child absences and inform parents of non-attendance could have a significant effect in reducing truancy.

Hole in the Wall



Problem:	*Educational underachievement*
Target Group:	*Children, youths, teenagers*
Focus:	*National spread, India*

Project Objectives

The main objective of the project was to provide underprivileged children, with little or no formal education and living in poverty, with access to computers and the Internet. This has been achieved by creating outdoor kiosks providing free, unlimited computer access to children of all ages (0-18). Kiosks were constructed so that a monitor was visible through a glass plate built into a wall. The PCs driving the monitor were usually placed on the other side of the wall in a brick enclosure.

Background

The first experiment was conducted in Udangg in 1995 and was followed by other experiments in Kalkaji, New Delhi, and Shivpuri. The experiments were initiated by NIIT Limited, an Indian software and training multinational, through its Centre for Research in Cognitive Science. The success of early experiments led to the establishment of Hole in the Wall Education Limited in 2001 for the sole purpose of continuing the experiments. The company is a joint venture company between NIIT Limited and the International Corporation, the industrial financing arm of the World Bank.

The project is based on the concept of 'minimally invasive education', a pedagogic method through which curiosity leads children to explore and learn without external support. The underlying approach is that an adequate level of curiosity can cause learning amongst groups of children. As the children explore their environment, they relate their new experience with their previous experience and thereby new learning takes place.

Outputs and Achievements

Early results showed that children are capable of learning themselves how to use computers, irrespective of educational background, literacy levels, ethnicity, gender, geographic location and intelligence.

Having installed the PC, children were usually left to explore the devices without being given instructions. They were only monitored using a remote computer and on occasions, hidden video cameras. Once available, the kiosk was used immediately by children, usually between five and 16 years old. Children using the computers had a very limited understanding of the English alphabet and frequently could not

speak English. Children formed impromptu classes to teach one another and invented their own vocabulary to define computing terms, for example, "sui" (needle) for the cursor, "channels" for websites and "damru" (Shiva's drum) for the hourglass (busy) symbol. Children quickly became proficient in most of basic computer operations and were able to discover and use most of the material available on the Internet. In Madantusi, where English is not taught, children learnt and were using around 50 English words. They have understood the meaning of these words (such as "file" or "view") and more impressively have learnt how to pronounce them correctly from the PC.

Using the Hole in the Wall initiative children learnt to do most of the following tasks in approximately 3 months:-

- Windows operation functions (click, drag, open, close, resize, minimise, menu navigation)
- Draw and paint pictures on the computer
- Load and save files
- Play games
- Run educational and other programs
- Play music and video, view photos
- Browse and chat on the Internet
- Set up email accounts
- Simple trouble shooting
- Download and play games

Technology

Due to concerns about vandalism, wear and tear of keyboard keys and the susceptibility of computers to dust and abrasion no keyboards were provided. Instead, a specially designed joystick mouse was developed by NIIT's Centre for Research in Cognitive Science. This allowed users to control the movement and press keys on screen based key board.

Internet Connectivity was provided using leased lines, ISDN lines and Dial-up connections. In the locations where there was inadequate telecommunications infrastructure cached web content was provided to simulate web access.

Computers are placed in a brick enclosure with thicker-than-normal walls to minimise the impact of high daily fluctuation in temperatures and dust.

Ventilating fans were used to maintain ambient temperature, particularly in summer. They also maintained a higher air pressure inside the kiosk. Blowing air out from any minor cracks of holes in the kiosk was important in ensuring dust particles did not get inside the kiosk.

Investments and Costs

Funding for the Hole in the Wall experiment is provided by a variety of sources including the Indian government, the World Bank and the International Finance Corporation.

Development Timetable

The first Hole in the Wall computer kiosk went online on the 26th January 1999. By September 2003 there were 80 kiosks connecting approximately 7,500 children around the country.

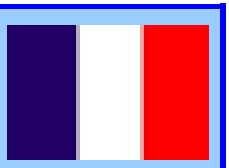
The Hole in the Wall initiative commenced in Kalkaji, India in 1999 and expanded to other locations throughout India (Shivpuri, Madantusi, Madangur, Sindhudurg) and other countries such as Egypt and Cambodia.

Further Details

Ms. Leena De Chakravarty
Hole-in-the-Wall Education Ltd.
2nd Floor, Synergy Building
Indian Institute of Technology
Hauz Khas, New Delhi 110016
INDIA
☎ +91 (11) 2658 1017 through 1020
Fax: +91 (11) 2658 1022

hiwel@niit.com
www.niitholeinthewall.com

L'Enfant@l'hopital



Problem:	*Educational underachievement, early years disadvantage*
Target Group:	*Children, youths, teenagers*
Focus:	*France*

Project Objectives

The L'Enfant@l'hopital initiative provides longer-term hospitalised children, between the ages of two and eighteen, to have access to computers and learning, communications and entertainment software packages.

Background

L'Enfant@l'hopital initiative was established in 1984 to enable children in hospital to benefit from computer facilities. Initially children were provided with basic PC applications. However, rapid technological advances have enabled children to access and use an impressive array of applications. The main aim has been to enable children, suffering long term illnesses or those in isolation wards, to achieve some degree of continuity with their natural environment. This means providing children with technological applications that allow them to continue their education; maintain contact with friends, family and schools; and to access entertainment material.

Outputs and Achievements

Providing children with a computer and Internet access has proved to be an effective method to encourage children to continue their education and maintain their social lives.

The L'Enfant@l'hopital initiative provides what has colloquially become called a 'new family circle'. The 'circle' includes the children, medical personnel, teachers and family members, this has helped to enhance the experience of being hospitalised. Stimulating curiosity and providing opportunities for entertainment has been important in allowing children to pass their time more enjoyably and productively in hospital. The initiative has encouraged a fuller participation in society by teenagers suffering from diseases such as anorexia, compulsive eating and also by those who have attempted suicide.

Computers are easy to sterilise, this means the initiative has also been beneficial for children receiving treatment that requires sterile conditions when they are in isolation wards. In these cases a computer with Internet access can reduce the feeling of isolation by allowing children to sustain communication with friends and relations.

The high level of support from hospital staff and private sector donors, such as IBM and BIC, has been important in ensuring the success and longer-term sustainability of the L'Enfant@l'hopital initiative.

Technology

The initiative makes use of a specially designed software package called Kanari software. Kanari is a computer software interface package specially designed for the need of sick children, it integrates the different applications it provides into a single platform making it flexible yet, simple to use. The Kanari software is secure, economic and provides each user with autonomy to undertake searches, use programs and services, and establish and maintain dialogue with family, schools and friends.

Children are able to create their own space through an intranet application. The software also provides secure connections for dialogue with interesting volunteers such as, people travelling around the world, with whom it is possible to exchange messages and pictures. Children can also exchange experiences with professionals such as architects or museum curators. Kanari software incorporates a security safeguard system that ensure a complete 'ring fenced' solution designed especially for the target audience. Dangers of children having free access to the Internet and other software is overcome as the Kanari software enables an intranet to be set up, within which each user's environment can be tailored to suit their specific needs, it can also be carefully monitored. The software also incorporates word processing and a wide variety of teaching applications. These are supported by 250 teachers throughout France. This makes it very easy for children to maintain and continue their education from hospital.

Development Timetable

Basic computer facilities have been provided to hospitalised children since 1984. In 1998 the L'Enfant@l'hopital was enhanced with the adoption of Kanari software and the initiative was extended to cover all of France.

Further Details

Ms A Dunoyer de Segonzac
Deleguee General
L'Enfant a l'Hopital
86 rue Cambronne
75015 Paris, France
☎ +33 1 43 06 70 01

anndunoyer@enfant-hopital.org
www.enfant-hopital.org
www.kanari.com

3.4	Early years disadvantage
Information and services provided	**For teachers:** ICT training and confidence building. **For pupils:** bespoke learning centres and adapted computing equipment. **For parents:** portals for parents those planning to have children about childcare and early years educational support for children.
Socially excluded groups targeted	Children from socially excluded households, disabled pupils, single parents.
Technologies used	Computers, computers adapted for young children's use.

As the preceding chapter showed (Figure 2.3) early years disadvantage was a topic where very few projects have been found, there was also very little information about the use of ICT by pre-school children. In comparison with the preceding section on general education, which had many noteworthy projects and initiatives, early years issues seem to have been forgotten.

It is strange that there are few international studies. The benefits of ICT for addressing issues of early years disadvantage have been well recognised (Qualifications and Curriculum Authority, 1999) for a number of years. The Qualifications and Curriculum Authority report *'Early Learning Goals'* highlighted that before the age of five children should be finding out about, and identifying the uses of technology in their everyday lives, and they should also be using computers and programmed toys to support their learning.

The 2003/4 Qualifications and Curriculum Authority Annual Report (2004) stated that 'the use of ICT is increasing in foundation stage settings and there are examples of very good practice although overall

provision is varied'. They also noted that 'technology is not always sufficiently embedded in practice. Many practitioners are not confident enough with their own use of ICT to allow children to use technology to enhance their learning in all areas. An increasing number of local authorities are developing guidance in this area and most report that further training is needed to increase practitioner confidence and understanding of ICT as a tool for learning.'

Only three noteworthy projects could be found that focus on early years disadvantage and pre-school education. Nonetheless, they provide a flavour of the range of information that could be provided and how successful initiatives can be developed.

In the Slovak Republic a web portal (www.babetko.sk) has been established to provide information about childcare for prospective parents, parents and guardians. The project was developed by young parents, one of whom was a doctor, who saw a gap in providing information to young parents. The site provides information and advice on parenthood; children and babies; services for families, mothers and children; sales of children's goods in the shops (e.g. prices of nappies); calculations of fertile days; ovulation; due date and other services and information. Discussion groups have been created, input is also provided by health and child care professionals. The site is accessible through Internet, email and WAP mobile phones. The portal exceeded 55,000 visits a month nine months after launch, 26 per cent of users are expecting children and 33 per cent have a child of less than one. In the Slovak Republic the site has spawned competition from others. In the UK no site with this range of assistance could be found.

Probably the best known and most widely established early year's project is the KidSmart early learning programme. This project, supported by IBM, started in the USA, the programme has now expanded throughout the world. The project is based around a child friendly computer cubicle, known as 'young explorer learning centres'. These centres consist of a computer with educational software housed within colourful furniture. Recent reviews have shown that most pre-schools prefer standard computer keyboards to membrane keyboards and small sized mice are more ergonomic for younger children.

In the UK more than 490 of these centres have been provided to 48 local education authorities. One objective of the programme is to place the centres in pre-school facilities in socially excluded areas.

Independent evaluation of the initiative (Siraj-Blatchford, 2004) highlighted the need to make ICT resources more generally available to the early education sector and to fully integrate them into pre-school curricula. The Developmentally Appropriate Technology in Early Childhood (DATEC www.ioe.ac.uk/cdl/dated) project provided an overview of suitable technologies, but this project ceased in 2001. No similar independent overview of technology suitable for early year's children appears to exist.

The KidSmart evaluation study also noted that lower socio-economic groups were more likely to be playing games on their home computer and for considerably longer periods of time than their middle class counterparts. The children of middle class parents were more likely to be using educational software. This led to the recommendation that parents should be helped to support the education of their children through the development of parental partnerships and resources should be made available to support active networks of parents and teachers.

The preceding section (3.3) noted the important role of parental input, but the scarcity of web sties providing educational support information for parents. This scarcity of information was also apparent in the UK when trying to find early years support.

Key Issues and recommendations

- In the UK more support is required to increase the confidence and knowledge of early year's teachers about the role of ICT in learning.
- Web sites and other materials provided by early years teaching organisations need to be considerably developed. There is also a role for these, or other, organisations in providing overviews (for parents and teachers) about the benefits of different educational toys to enhance children's use and knowledge of technology.
- More information (web sites and traditional channels) is required for parents (and those planning to have families) about childcare and their role in supporting their child's early years' education.

3.5	Health and Health Inequalities
Services and Information provided	**For individuals:** general and specialised healthcare information, drug and alcohol abuse support, chronic and long-term illness support, independent living, access to public health services, improved access to healthcare in remote areas, assistive technologies; telemedicine – better and longer patient care at home, real-time consultation and diagnosis, faster and more coordinated emergency response. **For practitioners delivering services:** knowledge management systems and database integration/access, improved co-ordination of service delivery, improved management of daily tasks with time savings, online access to user information (medical records etc.) from remote locations, access from remote locations to service provision information (to remotely arrange and/or co-ordinate doctors appointments or home-help etc.), support for diagnosis and consultation during surgery, call centre centralisation.
Socially excluded groups targeted	All groups, particularly the long-term and chronically ill, the disabled, the elderly, young children and rural dwellers.
Technologies used	Portals, remote computing equipment, call centres, mobile phones, video conferencing, 3G phones, PDAs, assistive technology, digital cameras, all technologies supporting telemedicine services.

Projects addressing health and health inequalities mostly focus on the need to provide faster, easier and enhanced accessed to quality health services and health information. Health related initiatives usually comprise one or more of the following key elements.

1. Information delivery.
2. Use of knowledge management systems and databases for better co-ordination of service delivery.
3. Delivery of healthcare services through telemedicine.

ICT is most commonly used in healthcare initiatives to enhance the distribution of information by making it more widely available and/or easier to access. The most significant advances appear to be in the areas of telemedicine and related technologies. These technologies have the potential to make major transformational changes in home care and the support of the elderly, patients with long-term illnesses and those in remote locations.

Information delivery

The use of ICT to share and distribute information is becoming ubiquitous in the health sector. Many of the healthcare related initiatives examined by this study were designed for the sole purpose of using ICT as an information distribution channel. Internet portals are, by far, the most commonly used type of ICT. The transformational value of portals is minimal because they are typically used as complementary channels for the distribution of information and, on occasions, services which are also available through traditional channels. A key lesson to be drawn from the use of portal is the effectiveness with which they allow information to be targeted at highly specific and narrowly defined socially excluded groups. For example, Health Infonet in Australia (www.healthinfonet.ecu.edu.au) provides specialised information for the precise health needs of indigenous people. Stop Tabac in Switzerland (www.stop-tabac.ch) provides support for smokers to stop smoking. DarujKrv.sk in Slovakia aims to increase the level of blood donations.

Another advantage of portals is that they usually provide more and better information, frequently in an easier to use format, than is usually possible through traditional channels, such as libraries or health centres.

The Autism Association in Montreal developed a comprehensive portal (www.autisme-montreal.com) targeted at the parents of autistic children. This portal goes beyond providing parents with information on autism; it also provides information on related issues such as treatments, access to services and links to relevant institutions. Furthermore, the portal allows access to specially designed software to coach parents on teaching techniques for autistic children and

educational software with games and learning resources that autistic children can use.

Until recently most portals were run on simple platforms designed purely to publish information, recently the use of more sophisticated platforms allowing interactive capabilities has become common practice.

Interrogation and search facilities at many portals have improved considerably and some also now provide a sufficiently high level of interaction to enable the delivery of services. Communication with health care professionals and, through chat groups or online forums, with people in a similar situation who can provide mutual support to others is slowly becoming commonplace. For example, the Somazone portal in Australia (www.somazone.com.au) provides specialised information on drug abuse related problems and harm reduction programmes. The portal provides users with the opportunity to anonymously submit questions and, if desired, have free consultations with a health care professional or counsellor.

Despite the many benefits provided by portals, their main disadvantage is that they can only be accessed by people who are connected to the Internet or those who make use of Public Internet Access Points. In other words, those who have overcome the digital divide. Most socially excluded groups however, remain digital excluded as well socially excluded and therefore do not benefit directly from portals. This is particularly relevant in relation to many of the hardest to reach socially excluded groups. The needs of those not connected should not be forgotten, organisations supporting socially excluded groups with health care problems need to find ways to ensure that the information and services provided by portals can be provided to their clients using 'traditional' delivery channels

Knowledge management systems and databases to better share information and co-ordinate service delivery

Many healthcare initiatives make use of technology at the interface with the patient. However, the largest benefits for those unable to access or use these technologies (and possibly all patients) arise from the use of technology in back-office operations. Back office technology provides the back-bone of many healthcare initiatives through better sharing of information, enhanced communication and improved co-ordination of service delivery. The use of knowledge management systems and

databases has improved the management of information and increased the speed and accuracy of data storage, retrieval and dissemination. Most importantly perhaps, knowledge management systems have enabled better co-ordination, mobilisation and use of the knowledge and skills of health care and other professionals, particularly those working in remote locations away from hospitals or healthcare centres, to enhance service delivery.

For example, the TenCare initiative (described in the case study) in Germany makes use of a database containing information for the elderly and people with disabilities. Information is provided about medical symptoms and care for a huge array of medical conditions. 'Mobile' health care equipment and computers with remote access to centralised databases of patient and healthcare information is also used to support health care professionals working at remote locations. Improved support for home emergencies is also provided. However, the initiative also enables the health care visitor to obtain information about other services that could be relevant to house-bound patients, in this way a more holistic and co-ordinated 'package' of support can be provided that meets the many needs of patients. Information and services that can be provided include 'meals-on-wheels', social services information and benefits information.

Where the services of complementary health care organisations are co-ordinated through a single system ICT makes it possible to better co-ordinate service delivery. Remote online access enables health care visitors to co-ordinate and arrange doctors' appointments, social services visits, meals-on-wheels or other support services that might be needed.

Telemedicine and the delivery of healthcare services

The greatest transformational value of healthcare initiatives is likely to arise from the use of telemedicine in three key areas:-

- Patient care at home
- Patient care in medical centres and hospitals
- Independent living

Patient care at home – telemedicine has increased the quality of healthcare services provided for patients requiring long-term care at home. Initiatives are most commonly targeted at the elderly, the disabled, the chronically ill, the long-term ill and individuals in remote

areas. Telemedicine applications, for the care of patients at home, are usually designed to enhance information sharing and to better co-ordinate service delivery, rather than to be used by the patients themselves. The TenCare initiative is a particularly good example, some components of the initiative were noted above and a complete description is provided in the case studies the end of this section. The TenCare initiative established an integrated technical, organisational and process-oriented approach for the care of patients at home. The main objectives were:- to improve communication and information flow between the different service centres and mobile working professionals. The project was especially successful in demonstrating the beneficial effect that the use of simple ICT tools such as computers, PDAs, mobile phones and digital cameras can have in improving patient home care.

Patient care in medical centres and hospitals – Telemedicine has provided important benefits to the care of patients in hospitals or medical centres located in remote areas. The most noteworthy examples are initiatives in Australia, New Zealand and Japan where videoconferencing and image transfer technology is being used for real-time consultation and diagnosis. Asahikawa Medical University in Japan makes use of telemedicine to establish international video links with specialised hospitals in Boston (USA) to provide real-time consultation and diagnostic support during operations. Telegyn, a similar initiative in Cyprus, has developed a health telematics system linking a remote health centre to a larger General Hospital. The link enables real-time diagnosis for biopsies in gynaecological cancer.

Telemedicine has also provided benefits for emergency response services. Emergency_112, another initiative developed in Cyprus, established a mobile system for the management of pre-hospital patients during emergency responses. The system allows specialist physicians located at a hospital or call centre, to co-ordinate paramedic staff at the site of an accident or emergency. The initiative reduces treatment times, improves medical diagnosis and reduces costs.

A range of specialist emergency equipment suitable for mobile use at the site of emergencies has been developed. The equipment is able to transmit heart rate, blood pressure and other critical bio-signals and images to an emergency call centre. This enables specialists and physicians to direct and co-ordinate pre-hospital care more effectively and arrange for appropriate emergency care immediately the patients

arrive at a hospital. The initiative has enhanced patient care, improved recovery rates and reduced fatalities.

Independent living – In the UK and many other countries, the percentage of the elderly population is increasing and many older people want to live in their own home as long as possible. New technologies provide a means by which it is possible to find ways to ensure personal safety and support the daily living activities of the elderly and disabled. The European initiative, Supporting Independently Living (SILC), has recognised these needs and developed a project based on the principle that the need for safety and support can be met by two approaches:- human assistance (like meals on wheels and mobile nurses) and assistive technology (like emergency assistance, environmental control, improved telecommunications and telemedicine). Projects such as SILC (www.fortec.tuwien.ac.at) help to improve the quality of life of the elderly and disabled. They can also help to reduce care costs by reducing the need for institutional care.

New technologies play an important role in enhancing the efficiency and effectiveness of services supporting independent living. For example, the SILC project developed an innovative and intelligent wrist-worn warning system. The wrist band monitors bio-signals and automatically alerts healthcare and medical staff when medical intervention is needed. A similar system was developed at the Vitaphone initiative in Germany, further details are provided in the case study. The initiative has designed and developed bespoke mobile phones to monitor the heart functions of patients with coronary heart diseases. Bio-signals are automatically transmitted to a centralised medical call centre that co-ordinates healthcare monitoring and service delivery.

The use of telemedicine to support independent living has led to the development of easy to use but reliable technologies. The growing magnitude of those requiring home care has been recognised as a potentially lucrative market by many innovative technology companies. Increasing health care costs have also prompted governments to consider the role of new technology and experiment with new care solutions.

Some projects report that healthcare insurance frequently does not support the purchase or replacement of ICT facilitated healthcare equipment for home care. If patients start to purchase these units

independently this could become a significant issue. Some commentators have suggested that common design standards are required to ensure the complementarity of home care equipment. They also suggest that agreed standards might make it easier for healthcare insurers to more easily understand, cost and accommodate home care technologies in their insurance schedules and quotations.

Key Issues and recommendations

- Portals can be very effective at providing highly specific health care information and services to connected patients. However, many groups requiring health care do not have access to or use ICTs. Health care organisations need to find ways to provide information and services relevant to patients without ICTs through traditional channels.
- The Internet and portals provide anonymous access to information, services and counselling for many patients that might be reluctant to obtain this type of information (for example drug and alcohol abuse and sexually transmitted diseases) through traditional channels.
- Many people suffering from health problems who are socially excluded require assistance or home care and help from more than one organisation. Back office integration of the databases and care records of organisations providing home care can produce valuable benefits in better co-ordinating care, reducing duplication, more speedily meeting customer needs and providing more holistic and better quality care.
- ICT can play a significant role in enabling healthcare workers in remote locations to access patient records and seek the advice of doctors and other healthcare professionals. The use of digital imaging and video imaging equipment, together with biomedical monitoring equipment, can enable surgeons and others to advise and better co-ordinate patient care, particularly at accidents and emergencies.
- Interestingly, the growing number of elderly people in many advanced countries has stimulated the private sector to develop, and central government to support, some of the most innovative advances in the use of ICT discovered by this study. The

opportunity to obtain financial returns from a large and growing market appears to have been a catalyst for innovation.

- The establishment of standards for remote home care equipment could help to assist the integration of different home care technologies. This may also enable healthcare insurance companies to clarify their position regarding the support or replacement (in the event of damage or failure) of home care technologies in insurance schedules and quotations.

Vitaphone

Problem:	*Health and Health inequalities*
Target Group:	*Elderly & disabled; chronically ill; coronary heart disease; diabetics; obesity*
Focus:	*National spread, Germany*

Project Objectives

Vitaphone is a German initiative that makes use of especially designed mobile phones and ICT applications to transfer biochemical signals from patients to health professionals. The system was designed to support doctors and specialist in caring for patients who suffer from chronic diseases, primarily coronary heart disease. Vitaphone has enhanced remote diagnostic and therapy services and has improved response rate times in emergencies.

Background

The initial idea for vitaphone originated when a cardiologist identified a contradiction between recommending patients with coronary heart disease to exercise and the fear of the patients that they would suffer from heart attacks or other complications while they did so. The system was developed by experts from different professional specialist disciplines, including cardiology, biomedicine internal medicine and electronics. The initial concept was developed into a complex system that enhances disease management through the use of ICT. The system has been developed around specially designed mobile phones and monitoring cards that facilitate remote diagnosis and treatment. It can also summon faster assistance when an emergency arises. These devices are also useful in improving communication between patients, carers and family, particularly during emergencies.

Output and Achievements

Vitaphone has developed different types of mobile phones with different functions that address the specific needs of the disabled and elderly suffering from chronic or terminal illnesses. A 24 hour medical call-centre has been established that co-ordinates information collection and distribution, it maintains contact with patients and their carers or doctors and in emergencies co-ordinates the required medical response. This is a good example to illustrate the use of databases and knowledge management systems to better co-ordinate service delivery discussed throughout this section.

Vitaphone has provided patients with increased mobility, security and an improved quality of life. Doctors have also benefited from having enhanced access to data such

as electrocardiogram results; this has enabled faster and more accurate diagnosis and therapy. The most noticeable benefit has been the increased speed of response and medical treatment when users report chest pains or heart attacks. The system currently has approximately one thousand mobile users in Germany.

The Vitaphone initiative brings together many of the elements highlighted by the overview of health care initiatives earlier in this section. The initiative has developed an holistic approach that makes it possible to deliver a better quality health service by using ICT to:- better co-ordinate and share information; to provide faster emergency response services; and by providing users with new, safe and reliable technology capable of supporting independent living.

Technology

The specially designed mobile phones used by the Vitaphone initiative have fewer and bigger keys to facilitate easier use by the elderly or disable users suffering from coronary heart disease or other chronic conditions.

The phones provide immediate links with family doctors, the Vitaphone GmbH medical centre, carers and family. The system also uses specially adapted monitoring-cards and loop recorders to take electrocardiograms and automatically send the information to health professionals. An additional feature is the incorporation of GPS tracking systems to enable immediate and precise location of individuals in emergencies.

Development Timetable

Vitaphone was founded in 1999 to develop technologies to transmit biological signals and biochemical information through the use of new technologies. The project is ongoing and it is predicted that the market for this service will continue to expand.

Further Details

Vitaphone GmbH
O 7, 18
68161 Mannheim, Germany
☎ +49 6 21 17 89 18 99

info@vitaphone.de
www.vitaphone.de

TenCare

Problem:	***Health and Health inequalities***
Target Group:	***Elderly & disabled; chronically ill; terminally ill; individuals in remote areas***
Focus:	***Rural area in North-Rhine, Germany***

Project Objectives

The TenCare project was established to provide a comprehensive and integrated technical, organisational and process-oriented approach to the care of older people and other patients at home. The project was initially developed as a pilot. Businesses that partnered in the development of the project were then encouraged to further develop and market viable technologies or services.

The project was successful in improving the quality of life for vulnerable groups, particularly the elderly and the disabled. It also improved information access for users, carers and doctors.

Background

The TenCare initiative used existing mobile and telemedicine technologies to improve service quality and efficiency, particularly in rural areas. The system supported the activities of mobile nurses and other care professionals assisting elderly and disabled such as meals on wheels, health care visits, transportation for the elderly and disabled and response to home emergency systems.

Output and Achievements

Many components of the project provide examples of 'good practice'. Most notably, the initiative acknowledged the need to get users involved in the design and development stages of the project. This was achieved by undertaking a series of validation workshops with representatives of the different service categories:- mobile care, home emergency system, meals on wheels and transportation services for disabled. The workshops were useful to evaluate users' reactions and important lessons were learnt. For example, workshops found that the mobile health care staff did not like to take the suitcase with computers and other equipment with them, even when they saw positive effects for patients. The suitcases were considered to be too heavy and bulky. As a result the contents of the suitcases were changed from a laptop, a camera and a mobile phone to a just a PDA and/or mobile phone. Through experience, mobile carers identified that digital cameras were not needed every day but that twice a week was sufficient to ensure robust recording of the healing process for patients that had undergone surgery or suffered injuries.

The TenCare project successfully demonstrates how simple ICT tools such as computers, PDAs, mobile phone and digital cameras can have a very beneficial effect on the care of patients at home. The project also demonstrates that telemedicine does not always need to make use of innovative and sophisticated technologies to be successful. Sometimes simple but reliable technologies are more appropriate because they provide better usability and functionality. A key advantage of telemedicine is not the development of revolutionary technology, but the effective use of ICT (frequently common technology such as lap top computers and PDAs) to better co-ordinate health care services.

Patient response to the TenCare initiative was also positive; many reported improved healthcare quality, even in isolated areas. The TenCare project ended with the delivery and deployment of the business and route planning technology to care organisations and users. The benefits of the system are now being realised by the organisations using the technology. Perceived benefits of the system are better access to and co-ordination of information used by health care institutions, professionals and citizens, this provides enhanced access to the appropriate information required for disease and illness prevention, diagnosis and therapy. The system enables the sharing of simple and complex information between hospitals, general practitioners, social service providers and patients. Complex information is used for tele-consultation, this improves diagnosis and supervision of patients at home and other remote sites. This leads to be more efficient patient referral and better response and care in emergencies.

Technology

The TenCare initiative made use of simple technologies such as mobile-phones, hand-held-computers and digital cameras to more efficiently organise the daily work schedule of mobile health care workers. Technology and systems used by the initiative include mobile telephony, email, taking and transmit digital photos. Technology used enabled to organise duty rosters and route planning. The project also provided mobile health care workers with better information about patients, address lists and consultation facilities before they commenced their 'rounds' and via the service centre when they were visiting patients. All the technology (mobile phone connected to the D2 GSM network; digital camera; standard notebook PC with an electronic address-book and PC-GSM-card) required by mobile care workers was provided in a briefcase. GPS navigation equipment to provide navigation details was also provided for use in the cars of mobile workers.

Development Timetable

The Ten -Care project ran from January 1999 to June 2000

Further Details

Simon Robinson
Empirica
Oxfordstrasse 2
53111 Bonn, Germany
☎ +49 2 28 98 53 00

Simon.robinson@empirica.de
www.empirica.com/TenCare

3.6	Homelessness
Services and Information provided	**For individuals:** ICT access, ICT training, access to public services, voice mail service, awareness raising of homelessness problems.
Socially excluded groups targeted	Homeless
Technologies used	Computers, Internet, voice mail, databases, information systems.

Homeless people are amongst the hardest to reach of all socially excluded groups. Using technology to foster inclusion amongst this group of individuals is particularly difficult. The complexity and multiplicity of problems experienced by homeless people (including health problems, low income, high mobility, poor access to services and social isolation) exacerbate the problems that this group have in accessing, using and benefiting from ICTs and the range of ICT based services that might be helpful to them.

The most effective method of assisting homeless people and fostering inclusion is through direct contact. Few homeless people have regular access to ICTs. The role of ICT is probably therefore in supporting organisations assisting homeless groups or in providing better access to information and services in homeless hostels. Direct contact with homeless people provides the best opportunities to promote the benefits of ICTs and training about the way they may provide access to

information, services or a communications medium that might be beneficial.

Initiatives designed to encourage social inclusiveness of homeless groups need to address the digital divide as much as the digital services divide. To bridge the digital divide homeless initiatives need to:-

- Raise **awareness** amongst homeless individuals about the specific benefits that ICT based services can provide (e.g. search for housing accommodation, public services, jobs or communicating with friends or relatives).
- Provide public **access** points for homeless people. Access initiatives need to focus on making public access points available in the most convenient locations for homeless people. For example, the TARDIS project in the UK provided ICT access points in the Big Issue Office in Manchester.
- Deliver ICT **training** programmes for homeless individuals. Training initiatives need to be sensitive to the array of complex needs suffered by homeless people. This means initiatives should go beyond providing training of ICT skills or simply focusing on job searching.

To be effective, initiatives have to be designed, developed and implemented with the specific needs of homeless individuals in mind. A focus on the general importance of ICTs and a simplistic goal of bridging the digital divide will be neither sufficient, nor effective.

Overcoming the digital divide for homeless people is an objective that will take a long time to realise. Therefore, more initiatives are needed that provide ICT based services for organisations helping homeless people. This will enable homeless individuals that do not have access to ICT to still benefit from improvements in information and services provided through ICT. ICT should make it possible to bundle together the different information and services provided to homeless people through a single portal or web site. This site should be highly beneficial in its own right but local organisations, dealing with particular local needs, should also be able to add the extensive centralised list of information or services to their own web sites or services packages so that the quality of assistance they provide to their workers and volunteers is enhanced and subsequently the quality of services offered to homeless people is also improved. This type of centralised system

(with local 'personalisation') is especially beneficial when one considers the multiplicity and complexity of needs experienced by people experiencing homelessness.

Centrepoint, a non-profit agency in Shreveprot, Los Angeles developed an information management system that includes a database and a computerised tracking system capable of recording and monitoring services provided to homeless people. The tracking system helps social service organisations and voluntary groups to avoid duplication of their efforts. All those accessing and sharing information on the system are able to enhance the effectiveness of their services and better co-coordinate help for homeless people. The system records the identities of individuals, what help they have received and what help they require. In this way there can be some stability in help provided even if the homeless person does not always return to the same organisation or hostel for assistance. Longer duration programmes such education, healthcare or drugs treatment can therefore have some continuity, wherever the person seeks help

Some social agencies in San Francisco have also made free voice mail services available for homeless people. This service provides homeless people with a way for potential employers, social service agencies, friends and relatives to contact them.

Very few initiatives were found that made use of ICT to foster the social inclusion of homeless people. The most noteworthy examples are provided by two homeless shelters in Canada providing homeless individuals with ICT access and support. These initiatives are described in the following case study.

Key Issues and recommendations

- Homeless people are amongst the hardest to reach of all socially excluded groups. Homeless access to ICT is frequently limited but initiatives have shown that voicemail and email can provide them with a 'virtual mailbox' that enables them to communicate with friends, family and helpers.
- More initiatives are needed that address the digital divide for homeless people. More opportunities for access in hostels could enhance their ability to communicate and raise their access to information and the self-confidence of users.

- ICT can play a significant role in assisting organisations helping homeless people to coordinate activities more effectively, to offer continuity of help and to offer higher quality services.

ICT Access for the Homeless

Problem:	*Homelessness, social isolation*
Target Group:	*Homeless*
Focus:	*Homeless shelters , Canada*

Project Objectives

This project provided homeless people with access to ICTs in a non-coercive manner. The underlying aim was to provide a means of communication that could foster voluntary education and self-empowerment to aid and support the reintegration of homeless people into society.

Background

The originator of the project was Le Gîte Ami, a homeless shelter in Hull, Canada. The primary aim of Le Gîte Ami, since its establishment in 1983 was to provided homeless people with temporary shelter for up to seven days per month. During their time at the shelter homeless people could obtain free meals, have access to housing research resources and also obtain income, mainly through employment. The provision of temporary shelter was undertaken on the basis that self-empowerment was vital in encouraging and supporting homeless individuals in their own efforts to reintegrate into society and develop social capital.

Rejoining society is a complex and difficult process that many homeless perceive as inappropriate and coercive, especially when they have suffered isolation for an extended period of time. Le Gîte Ami identified the potential that ICTs offered to facilitate voluntary education and self-empowerment.

Outputs and Achievements

Initially there was scepticism about providing ICTs to homeless people, this was mostly founded on preconceived ideas about a limited role for homeless shelters. Le Gîte Ami however, was innovative and constantly on the look out for tools that might motivate and encourage homeless individuals to participate more fully in society. For example, in addition to providing ICTs, the shelter hosted an activity called L'Université de la rue. This activity brought together University professors and shelter users to discuss different subjects, such as philosophy, politics and physics with the objective of enabling homeless people to learn in an open context, each individual was free to participate and benefit as they saw fit. The usual outcome was that individuals staying at the shelter were motivated to use the Internet and other tools available at the shelter to further investigate subjects that had been of interest or use to them during discussions. These experiences often acted as catalysts to regain self-confidence and discover alternative ways of reintegrating into society through approaches that differ from traditional approaches.

Le Gîte Ami was a sound and robust project because it took into account the diverse needs of people esperiencing homelessness and understood the complexity the processes required to reintegrate them into society. The initiative recognised that providing help to overcome emotional barriers, such as raising self-confidence and self-esteem, was as important as helping with socio-economic factors like searching for accommodation or a job. Like many voluntary sector initiatives raising sufficient funds to maintain the project was a primary concern. Eventually, the shelter had to shut down (precise date unknown) because of lack of funding.

Similar initiatives have been developed by other shelters. An example of a successful initiative has been the Le Répit Du Passant shelter. This shelter has a different approach to the way it performs its traditional shelter role, but similarly to Le Gîte Ami it provides Internet access for homeless people. A stronger emphasis is placed on the use of ICTs to search for jobs rather than for self-empowerment in general. Le Répit Du Passant has provided Internet access for homeless individuals since May 2000. The project provides two programmes of Internet access. One provides ICT skills training three times per week during a four weeks period. The other programme provides unsupervised access to computers with Internet access.

Technology

The integration of ICTs enabled Le Gîte Ami to provide homeless people with an alternative but beneficial method of non-coercively facilitating the reintegration of homeless individuals into society.

The Internet frequently provided homeless people with a practical and efficient research tool for finding employment and housing as well as providing access to government information on social programs. Email was also used to establish, regain and maintain relations with friends and family.

Trained facilitators were present four nights a week at the Le Gîte Ami shelter to provide help and support to use computers and the Internet. The unique needs of each individual required facilitators to be flexible, resourceful and skilled. They also required knowledge about local circumstances, the need of social excluded groups and the potential uses for technology.

Further Details

Gaetan Albert
President du CA
205 Street St. Cyprien, Rimousk
Quebec, G5L 3J4, Canada

☎ +41 87 22 65 59

www.rimouskiweb.com/repitdupassant/

3.7	Crime
Services and Information provided	**For individuals:** portals crime prevention statistics and information. **For crime prevention organisations:** CCTV, DNA and fingerprint identification. **For community organisations:** portals with crime prevention statistics and information
Socially excluded groups targeted	All groups, particularly teenagers and drug users.
Technologies used	Portals, CCTV, DNA and fingerprint identification, RFID.

As the preceding chapter showed (Figure 2.1) crime is a topic where very few projects have been found. One problem with trying to identify the role of technology in addressing crime problems is that crimes include a wide range of offences - ranging from terrorism and murder to littering and motoring offences. Crime is generally broken down into two components crime against people and crime against property. Crimes are generally thought to occur when three elements come together:-

- A motivated offender.
- A suitable target (a vulnerable person or unprotected property).
- The absence of other people who could prevent the offence from being committed (including the police, security officers, neighbourhood wardens and the community).

Technology has already played a role in addressing all three of these elements. Tagging is becoming more widely introduced as a means of restricting the actions of potential offenders. Radio Frequency Identification Devices (RFIDs) and other tracking devices can be attached to property to aid the identification and recovery of stolen goods. CCTV and automatic number plate recognition can be used to

monitor areas liable to crime and disorder or to record vehicles used in the perpetration of a crime

Drug related crime is the area that the only significant initiative found by this project addressed. The DrugCom initiative (www.drugcom.de) in Germany is a portal where young people can learn about the effects of drug use, undertake multiple choice interactive behavioural tests and receive confidential and anonymous online drug counselling. None of the drug counselling initiatives found on the Home Office's crime reduction web site (www.crimereduction.gov.uk) offer a similar service. The national drugs helpline offers a 24/7 confidential telephone helpline and online information (www.talktofrank.com) largely in the form of a gazetteer. UK sites could enhance their portals to offer the same level of interaction and practical help as the German portal.

Indeed, the UK resources found by this study to address crime (www.crimereduction.gov.uk,www.talktofrank.com, www.renewal.net) provide an example of how difficult it must be for organisations trying to develop new initiatives or services that utilise technology. These sites provide a great many statistics and descriptions of problems but they offer little practical support in developing a project or efficiently introducing technology.

Toolkits or policy guidance are rarely supported by case studies or real life examples. None focus specifically on the socially excluded or hardest to reach groups. Each has a particular theme (crime or neighbourhood renewal) that rarely acknowledges the multiple problems frequently leading to criminal behaviour or the needs of socially excluded groups.

There is considerable scope for these types of portals to describe and pro-actively bundle together links to other services or portals that can provide valuable assistance to socially excluded groups or the organisations assisting them at the local level to combat crime. These links or online services could then be easily reviewed, adopted and used (by out reach workers, added to the organisations own web site or integrated with traditional service offerings) by some of the organisations receiving Building Safer Communities funding or other forms of support their own local activities to prevent crime.

Whilst ICTs can, in some instance, contribute towards crime monitoring and prevention it is also true that ICT in itself is a medium for crime and

fraud. These can take the form of activities such as online credit fraud, pornography, child abuse, hacking, virus distribution and identity theft). The need for enhanced online security measures is therefore also important.

Key Issues and recommendations

- The number of international projects recorded by this study as using ICT effectively to address crime is disappointing. Much is being done, but there is considerable scope for further activity.
- The Internet and telephone offer considerable opportunities to provide confidential and anonymous drug and alcohol abuse counselling. This type of online service could be adopted more widely.
- There is considerable scope for many portals with a crime prevention interest to be more proactive in providing links to other services or portals that can provide valuable assistance to socially excluded groups or the organisations assisting them.

3.8	Complex and multiple needs
Information and services provided	**For policymakers and organisations:** ICT training, portals with information about best practice; case studies; potential partners at home and overseas. **For practitioners delivering services:** Database integration/access between partners to assess customer needs, online access to user information (medical records etc.) from remote locations, online access from remote locations to service provision information (to remotely arrange and/or co-ordinate doctors appointments or home-help etc.), video conferencing and 3G phones for remote consultation with professionals, call centre centralisation.
Socially excluded groups targeted	All groups, particularly youths at risk, lone parents, rural dwellers, elderly and disabled.
Technologies used	Portals to enable access information, secure extranets for access to information, remote computing equipment, call centres, video conferencing, 3G phones, PDAs, assistive and adaptive technology.

Projects addressing complex and multiple needs are frequently comprised of many of the preceding services and technologies that address the needs of particular groups or individuals. A common theme of many of these projects is the need to better share information or co-ordinate service delivery. There is a strong emphasis therefore on information sharing and remote access to information or services. Initiatives addressing complex and multiple needs usually have one or more of the following key elements.

1. Databases of information, knowledge and best practice for policymakers and service providers.
2. Information sharing between service providers.
3. Use of technologies allowing access to information and professionals from remote areas.

No projects were found that provided all the above elements in a cohesive or seamless package.

Best practice information for policymakers and service providers. Several projects have been developed at the national and international scale to share and develop 'best practice'. At the international level the European Union Telematics Applications Programme supported the development of the Citizen's Access to Networks and Services (CANS) initiative (www.cans.nssl.co.uk). The project provides information to local authorities and other providers about how they can use telematics (wireless communications for the collection and dissemination of data or information) to more efficiently provide services. The UN is amongst a number of organisations supporting an initiative focusing on drug related harm reduction (particularly HIV/AIDS) in Eastern Europe. Partners in this project include 27 countries including Slovenia and Kyrgzstan. The project aims to develop an online information centre to provide access to information and the development of best practice about developing harm reduction policies and sharing ideas and new developments amongst policymakers, health professionals, service providers and NGOs. The Internet has provided a very effective method of communicating the latest information, including drug trial results, across international borders and providing a forum for all interested groups to develop ideas and seek answers to common problems.

In Central and South America the Ayuda Urbana initiative (www.ayudaurbana.com), supported by the World Bank, aims to share knowledge about the fight against poverty.

Internet hosted best practice sites and forums have also acted as a useful virtual notice board to seek help or partnership with other public or private sector groups in the same country or overseas.

In Germany the Digital Opportunities Foundation (www.digitale-chancen.de) provides a national online knowledge base for organisations concerned with the digital divide.

Key outcomes and lessons from these projects include:-

- Communities of practice are a very effective vehicle for learning for all concerned, from practitioners and policymakers to academics and hospital consultants.
- National and international initiatives can become vehicles for attracting the interest, support and partnership with the private sector in developing innovative ways to tackle the problems of socially excluded groups.
- Only at the national or international scale is it sometimes possible to generate the critical mass of resources and users to ensure the required level of information, knowledge and discussion needed to make users feel it is worthwhile being connected. A portal with new or constantly changing information appears more dynamic to users; critical mass is necessary to generate the volume of new information or contributions required.
- What constitutes "best practice" is subjective. A community is useful because it allows people to explore the principles that underlie a successful practice and discuss ideas in ways that make them relevant to local circumstances.
- Respond to the needs of participants. The learning community is best encouraged by a variety of activities that enhance each contributors' effectiveness and ability to share knowledge.

In the UK there is not an online knowledge sharing initiative that focuses on the use of ICT to enhance inclusion. The establishment of a series of case studies and other knowledge or, more importantly, a community willing to develop best practice and ideas to encourage social inclusion in the UK is highly desirable.

Social exclusion and methods to meet the needs of complex and multiple groups is a highly complex and constantly evolving field. A central repository of knowledge, initiatives and a forum to share ideas could enhance the effectiveness of many policymakers, practitioners and service users. As this report has shown there is a great deal that can be learnt from analysing other initiatives. Other people's ideas can also act as a catalyst for change, development and innovation.

Information sharing between service providers is frequently vital at the local scale to co-ordinate access to information and the delivery of

services to better meet the requirements of individuals and households with complex and multiple needs. The Infoville initiative in Villena, Spain (www.ovsi.com) has been particularly successful at involving several tiers of government, other service providers and technological partners in making their services and information available to each other. The project has also provided citizens (independent of social, economic, physical or educational circumstances) with a fast, secure and low cost way to access a wide range of local services and information. Local development and a focus on partner and citizen needs' have been important in ensuring the success of the project. The project is thought to be responsible for encouraging Internet adoption at a rate twice the normal level in Spain.

The Infoville project, like several in the preceding section, highlighted the need for a critical mass of contributors and users to engage in a new initiative. The widespread acceptance and use of the Carte Totem payment card used by many socially excluded groups on La Reunion (a French overseas Department near Mauritius) has been critical to the success of the project (www.regionreunion.com). Carte Totem is one of the case studies provided at the conclusion of this section. Development of a sufficient mass of partners, contributors or information is also critical in projects aiming to share information or better co-ordinate services to socially excluded groups.

A careful focus on customer and partner needs is thought to be at the heart of several successful initiatives, including CANS and Ayuda Urbana. Problems usually associated with partnership development (goals, roles, habits, rules and beliefs) at some initiatives, can become exacerbated when partners are also reluctant to embrace ICTs.

Use of technologies allowing access to information and professionals from remote areas

Technology can help to provide information and/or expertise to service providers when they are in the 'field'. This is really a simple (two directional extension) of the principals of the preceding section. Service provider staff frequently need up-to-date information about users when they are in their home or at any other remote location. Mobile phones, PDA and laptop computers all now have the capability to cost effectively access or send information to remote databases. This can greatly enhance the quality and efficiency of service delivery. In many

rural areas service users can now receive the same quality of service or information as their urban counterparts, the telemedicine case study in section 3.7 illustrates these advantages.

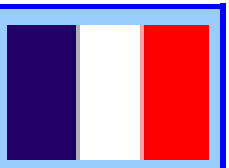
The two way nature of communication, particularly with the development instant video communication on 3G phones, can be particularly useful for health care projects and those providing services to elderly, disabled and unwell people. 3G phones provide health workers with the ability to instantly contact a health care (or other) professional or consultant and better communicate visually the magnitude of an individual's problems or the nature of a difficulty relating to their home of neighbourhood.

3G phones have also been used to provide sign language support, from a central call centre or service centre, for staff assisting deaf service users in remote locations. The French virtual sign language project provides an example of how this type of initiative can be developed.

Key Issues and recommendations

- Communities of practice are a very effective vehicle for learning. Social exclusion and methods to meet the needs of complex and multiple groups is a highly complex and constantly evolving field. A central repository of knowledge, initiatives and a forum to share ideas could enhance the effectiveness of many policymakers, practitioners and service users.
- If a central repository is established a critical mass of resources and users to ensure the required level of information, knowledge and discussion will be required to make users feel it is worthwhile being connected. This will probably only be achieved by a national initiative.
- What constitutes "best practice" is subjective. A community is useful because it allows people to explore the principles that underlie a successful practice and discuss ideas in ways that make them relevant to local circumstances.
- National and international initiatives can be important vehicles for attracting the interest, support and partnership with the private sector in developing innovative ways to tackle the problems of socially excluded groups.

Carte Totem



Problem:	*Complex and multiple needs*
Target Group:	*Elderly, disabled, low income families*
Focus:	*La Reunion (French overseas Department)*

Project Objectives

The project enables all citizens, particularly those from disadvantage groups such as the elderly and youths from low income families, to benefit from a range of community services using a bar coded pass card. The pass card can be used to access and pay for services such as schools dinners, meals on wheels for the elderly, childcare payment and other local information and services.

Background

In 2002 in Le Port – a relatively depressed town on the island of La Reunion (a French overseas Department near Mauritius) – the Centre Communal D'actions Socials (community social service centre – CCAS), part of the municipal council, launched the Carte Totem project. The project enables those who are most socially disadvantaged, to access community services using a bar coded pass card. The card provides access to some public services and can be used to make payments without the need to use money.

Outputs and Achievements

The initiative has helped to foster social cohesion by allowing citizens from a disadvantaged area to benefit from sharing in a collective system of economic rejuvenation. Carte Totem has helped to ensure equal access to services for all citizens and better management and co-ordination of family support services. Equal opportunities have been provided to all by providing card holders with automatic access or lower tariffs for local amenities and other services. Distribution of cards has targeted socially excluded groups (on the basis of their family income level) first. The project has been taken up by neighbouring municipalities such as La Possesion and St Paul. Development of the project required the co-operation of numerous providers of local services, these included 31 schools, eight creches, one swimming pool, 350 shops which installed loyalty systems, 50 clubs and associations and social centres. The public and private sector partnership established by the project has therefore been considerable. Interestingly Carte Totem is one of several projects that served as the basis for a subsequent project called La Carte de Vie Quotidienne (Daily Life Card) which is being trialled in 13 locations in France.

Technology

Two different types of bar coded cards have been developed. The first type are more basic cards, these enable socially excluded family members to obtain access to activities taking place in town. The second type are more sophisticated credit type cards. They can be 'recharged' by users with monetary value to enable payment for goods and services. These cards are only issued to the head of the family and they allow him/her to manage the 'family account'. Cards can also be used to allow access to multi media centres providing Internet access and similar services.

In addition to the cards, machines are needed to read the cards and allow access to services. For Type 2 cards recharging posts have been created where value can be added to the cards and can be used in conjunction with bank cards. Ten recharging posts have been established for 40,000 cards.

Investments and Costs

	Initial development cost	Running cost	Funding
Pilot project	Euro 221,499 (£150,000)		European FEDER Euro 132,899 (£92,000) Region de La Reunion Euro 44,300 (£30,500) Local CCAS Euro 44,300 (£30,500)
Phase two		Euro 169,325 (£117,000)	European FEDER Euro 95,774 (£66,000) Region de La Reunion Euro 31,925 (£22,000) CCAS Euro 41,624 (£28,500)

Development Timetable

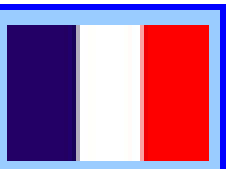
The pilot project started in 2002 and at present the project is ongoing.

Further Details

Service Communication de la ville du Port
Mairie du Port
9 rue Renaudiere-de-Veaux, France
BP 2004 97821 Le Port Cedex
☎ +33 262 42 87 00

Mairie.port@wandoo.fr

Virtual Sign Language



Problem:	*Complex and multiple neds*
Target Group:	*Disabled - deaf and hard of hearing*
Focus:	*Toulouse local authority area, France*

Project Objectives

This project enables deaf and hard-of-hearing people in the municipal area of Toulouse, France, to have better access to the public services. The project enhances public service delivery by providing deaf people with better access to presentations and other material provided by the local authority website. In addition better access to various administrative forms is provided and sign language support is provided to enhance communication with municipal staff members at the Town Hall. Sign language support is provided by machines and software. These enable staff to communicate in Language des Signes Francais (French Sign Language) with deaf citizens; bespoke assistance is also provided for form-filling and other services. Improved access for deaf and hard-of-hearing users is also provided at the local authority Web site, this is facilitated through the use of videos in French Sign Language.

Background

The project was originated by Websourd, a Toulouse based company set up to develop technology for deaf people. Technological developments have focused on the use of Web sites and video conferencing software. The development of video screens using French Sign Langauage was the company's first experimental application of this software. Websourd, in collaboration with the local authority in Toulouse, developed this system for the first time on an experimental basis. Building on the success of the pilot, concepts have been developed by Websourd and the Mairie de Toulouse in conjunction with France Telecom. Websourd is now developing the system for other applications and offering it to other local authorities.

Outputs and Achievements

The initiative has been very successful in achieving its objective of enabling deaf people to make full use of the administrative services of the Mairie de Toulouse without relying on outside assistance. An important factor contributing to the success of the initiative has been the clear objectives established for the project from the start. Whilst the objective of "helping deaf people to enhance their relationship with the Town Council" may appear simple it has been a consistent driving objective for the project. This clear and simple objective enabled better targeting of activities to meet the particular needs of a socially excluded group. Another factor

contributing to the success has been the widespread public and private sector support for the initiative. Partnership with commercial organisations was particularly useful.

Technology

- 1024 ADSL broadband link (France Telecom guarantees the quality of the broadband service as part of the partnership contribution)
- Dedicated Websourd PC Platform plus webcam and microphones

Part of the Mairie de Toulouse web site has been dedicated to the project and associated services for the deaf and hard-of-hearing. The project has also made use of video conferencing software called 'visiophone' developed by France Telecom in conjunction with Websourd. The visiophone requires a PC, a webcam, a microphone and dedicated video-conferencing software (Econf produced by France Telecom). The visiophone links the deaf user to a French Sign Language interpreter at the Town Hall or other remote location. This interpreter translates all communication between the deaf user and members of staff involved in providing help, advice and services.

Investments and Costs

It was not possible to obtain detailed information about costs and benefits.
However, running costs are known for the visio conference component:-

- ADSL broadband is provided at a cost of EUR 45 (£31) per month
- Translation of forms into French Sign Language video format is undertaken for EUR 2,033 (£1,400) per form
- Websourd platform purchase and web site installation EUR 4,245 (£2,900)
- Annual subscription for Vision-Interprétation Websourd video conferencing system (for an unlimited number of location) is EUR 23920 (£16,500)

Development Timetable

The project started in early 2002. Websourd was first implemented on the Mairie Toulouse Web site in January 2004. The project is still being developed and enhanced, more pages suitable for use by deaf and hard of hearing users are constantly being added.

Further Details

Ms. M Calestani
Bureau de M. Jacques Tournet
Directeur des Systemes Informatique de la Mairie de Toulouse
25 Rue Valade 31000 Toulouse, France
◎ +33 561 22 35 31
marie-josee.calestani@mairie-toulouse.fr
www.mairie-toulouse.fr

Ms M Al Rubaee
Websourd
BP41125
31036 Toulouse, France
◎ +33 5 61 44 72 11
Marina.alrubaee@websourd.org
www.websourd.org

Chapter 4 Conclusions and recommendations to extend the reach of what works

4.1 Introduction

This study has identified numerous excellent projects and ideas that warrant replication in the UK. It has also highlighted a few failures, several deficiencies and many opportunities that should be seized to enhance social inclusion in the UK.

The preceding chapter provided conclusions and recommendations for each of the seven problem areas investigated in this study. The purpose of this final chapter is to provide observations and conclusions about the way technology has been used to improve services. Recommendations and a plan for future action are proposed so that organisations addressing social exclusion problems can use technology more effectively.

Using this action plan we are able to highlight the contribution that technology can make in addressing two of the key challenges posed by the Social Exclusion Unit's *Breaking the Cycle* report (p7):-

- The need to improve service design and delivery to extend the reach of what works to those that need it most.
- The need to find ways to roll out these approaches much more widely through mainstream services.

4.2 The citizen, access and socially excluded neighbourhoods

The first chapter of this report highlighted that a large proportion of the UK population are not connected to the Internet, DigitalTV or mobile phones. There is a high correlation between a lack of access to these technologies and many of the factors that characterise social exclusion (worklessness, poor health and low incomes). Many of the socially excluded are on the wrong side of the digital divide.

There are many ways that technology can be used to enhance social inclusion. Several projects, including the TenCare and Vitaphone case studies, demonstrate how technology can be used innovatively to

support independent living and care of the elderly and disabled. Other projects, such as the Profesia newspaper in the Slovak Republic, use traditional service delivery methods alongside online channels to provide information and services to groups not connected to the Internet. Several projects, particularly those co-ordinating health care or services to families with complex or multiple needs, use 'back office' technology to share information between organisations and thus better co-ordinate services to socially excluded families or individuals. These projects demonstrate how technology can be used to specifically meet the needs of socially excluded groups, even if they do not possess any of the technologies required to access information or services provided electronically.

One surprising result of this study has therefore been the high proportion of projects that use the Internet or portals to deliver information or services to citizens. 93 per cent of projects studied use the Internet (see Figure 2.4). Providing services using only these technologies creates a *digital service divide* that excludes direct access for many socially excluded groups.

It is not sufficient to suggest that this is not a problem because these services can be accessed by the digitally divided at public access points. Many social excluded individuals do not have the desire, mobility, confidence, literacy or skills to do so. It is important, wherever possible, that portals and Internet projects provide the same service and/or same quality of service by alternative or traditional channels (e.g. printed media, phone or outreach worker) for people that do not have access to the Internet.

Another observation that has significant implications for the socially excluded is that many services are offered to an amorphous, probably middle class, public. Information and services are rarely targeted at specific groups and only very rarely are the needs of the socially excluded catered for. The hardest to reach groups, such as homeless people, are virtually forgotten at most portals providing information or services.

In the late 1990's the Internet was heralded as the technology that could provide customers with a personalised service, better able to meet their needs. Some projects have used technology to provide a more personalised service. Several of the health care initiatives

studied enable care staff to interrogate remote databases and provide patients with a wide range of care options, support services and appointments at times that meet their schedules. One of the homeless projects found by this study managed to ensure the continuity of bespoke service and support to homeless individuals whichever hostel they went to in Shreveport, Los Angeles.

Regrettably few Internet based projects provide information or services specifically for the socially excluded. The Directgov portal, developed by UK central government as their flagship Internet portal and promoted as 'the place to turn for the widest range of government information and services', is one of the few that targets help at particular audience groups, such as parents, motorists, the over 50's and the disabled. This more personalised service is offered by 'bundling' together services and information that should be useful to the audience group. This is a laudable and innovative approach.

4.3 Technology

There has been a tendency amongst some policymakers and project developers to consider technology issues and social issues independently. The separation of technological and societal considerations is probably one reason for the proliferation of policies and initiatives promoting physical access to ICT rather than promoting meaningful use of ICTs to help ameliorate social problems. The physical access approach, characterised by the creation of a network of public access points, is observed in many countries when they first recognise and start to address the digital divide.

The successful use of technology to enhance social inclusion requires careful consideration of the complex relationship between ICT and the broader social context, social purpose and organisations involved in developing a project (Warschauer, 2004). Many public access points have provided computers to access the Internet. But by failing to provide training and support they ignore the wider social circumstances (such as a perceived lack of need, confidence and computing and literacy skills) that prevent some visitors from using computers. User involvement in project development has been an important contributing factor in the success of many projects.

Technology is one element that can be used in projects to address social exclusion problems. As the previous section highlighted it can

be used in the 'back office' to automate and/or integrate data processing activities that can help to co-ordinate the more efficient delivery of better quality information and services to socially excluded groups. Even this role for technology, which usually goes unseen by the socially excluded service user, needs to carefully consider the social and organisational contexts and changes that will result from the introduction of technology to enhance inclusion.

Technology should not be perceived as an external factor that can be introduced to overcome social problems. Instead it is one of several factors, albeit one of the most topical at present, that can help to enhance social inclusion. Too often technological development and innovation are presented as a solution in search of a problem, rather than commencing with an evaluation of social need and then considering how technologies and technological solutions might help to assist in solving a problem.

As well as considering the use of technology to address social exclusion it is also important to consider the way socially excluded groups use technology. The Merc@dis case study has won several awards for its ease of use, it complies with the World Wide Web Consortium's Web Content Accessibility Guidelines. The guidelines have a three point scale; grading sites from 'A' for basic accessibility, 'AA' for higher level accessibility to 'AAA' for near perfect accessibility. UK government guidance for third round Implementing Electronic Government (IEG) statements urged UK authorities to work towards 'AA' standards. A SOCITM study (2005) found that the 18 highest performing UK councils only achieved level 'A' conformance.

World Wide Web Consortium's guidelines highlight technical accessibility requirements. Many sites are also written in a way that is not easily accessible for users with poor literacy. Seven million adults in Britain lack functional literacy and numeracy skills (Blair, 2002). The online behaviour of lower-literacy users is radically different to that of higher-literacy users (Nielsen, 2005). Lower-literacy users cannot understand text by glancing at it, they do not scan text, they read word for word and frequently skip over large amounts of text or information if they think it is too complicated. The 'search' function creates problems for lower-literacy users because they have difficulty spelling query terms and difficulty

understanding what they regard as the weird, out of context snippets of text returned by search queries. Interestingly, Nielsen's (2005) research found that revising the text on web sites to meet the needs of lower-literacy users also raised user satisfaction and usability for higher-literacy users.

It is also important to highlight the need for many portals to provide information in more than one language, at present Directgov only appears to offer access in English. Good practice examples in the UK do exist. For example, the Leicester City Council portal supports six languages to meet the needs of their multi-racial community.

4.4 Pilots, funding, learning and evaluation

The *Breaking the Cycle* report posed two challenges - the need to improve service design and reach and then to roll out successful approaches more widely. Innovation is required to improve service design and reach. The success of projects and approaches can only be determined by evaluation, results then need to be passed on through learning.

There is a danger with the rapid development of eGovernment service delivery around the world that many services will be provided that 'fit' all users and the additional requirements of excluded groups and opportunities to better meet their needs are not realised. Many existing examples of good practice highlight how e-services can benefit excluded groups, but poor project evaluation and dissemination of findings impede further roll out of good practice. Learning from other projects tends to be poor (Foley et al, 2005).

The speed with which electronic service delivery has been embraced has left little time for evaluation to be undertaken and even less time for results to be interpreted and aggregated into a form usable by organisations responsible for delivering electronic services. There are few centralised learning resources available to assist organisations involved in addressing social inclusion. The few that do exist have not embraced the role of technology and electronic services nor have they fully utilised technology themselves to share learning and provide information and services. Groups such as Renewal.net and BMESpark (www.bmespark.org.uk) focus on complementary but narrowly focused audiences (neighbourhood renewal and black and ethnic minorities respectively). There is a much wider range of

organisations that should be interested in using technology to improve service design and provide successful approaches more widely. A separate, broader focused learning repository with a greater emphasis on the provision of practical help to organisations using technology to promote social inclusion is required.

The information required by a repository about the use of technology to promote social inclusion is time consuming but relatively easy to collect. This project has been as thorough as possible (within the resources available) in undertaking more than 175,000 online searches to find the best initiatives available in six languages that address seven problems. Nonetheless, we know that while this study provides a great deal of information, for some problems the depth of information required by organisations can only be met by additional research.

The costs for a single local authority or regional organisation in creating a sufficiently comprehensive repository of information and services probably exceed the local benefits, unless they recoup costs by charging organisations beyond the developer's local boundaries for using the service. An international or nationally funded approach is therefore appropriate. Further details about the content and approach that should be adopted by a learning repository are provided at the end of this conclusion.

Evaluation of projects for socially excluded groups, perhaps during the examination of projects for inclusion in a repository and more widely, needs to be mindful of several issues regarding the needs and benefits for socially excluded groups. Indeed, it is possible these issues might be one reason for the lack of information and services specifically targeted at socially excluded groups found by this study.

Providing information and services to the general population or one user group can be relatively easy. Accommodating the needs of the socially excluded usually adds an additional layer of complexity and cost. If organisations then cater for the even more multifarious needs of the hardest to reach additional layers of complexity and cost frequently arise.

The best example of this is the provision of 18 months ICT skills to long-term unemployed trainees at the Ballymun project, in Ireland, reviewed in section 3.2. This hard to reach group needed

considerable extra training, benefits advice and social and personal support to place them in employment in an area where jobs were scarce. The cost per trainee of reaching this hardest to reach group would have been many times higher than the cost of providing ICT skills to a confident and better educated person looking for employment in London.

Higher costs are frequently encountered in providing services to the socially excluded and hardest to reach. At a time when the Gershon review and other efficiency measures are being introduced, pressure on organisations to become more cost-effective might cause them to overlook or ignore the more costly needs of the socially excluded. Measures have to be taken to ensure the needs of the socially excluded are not forgotten in the drive to efficiency.

The Ballymun example also highlights the importance of geography and local circumstances. Different environments create different social needs and different opportunities for employment. In Ballymun high level ICT skills were required to enable trainees to be employed. In London, where there is an ICT skills shortage, competition for jobs is less intense; trainees can find jobs with lower level skills and the overall cost of providing training that places them in employment is considerably less than in Ballymun.

In any evaluation, ranging from individual projects to entire local authority eGovernment performance reviews, care has to be taken in carefully considering local circumstances and investigating the extent to which services meet the needs of the socially excluded rather than the general population. The need to recognise these differences and additional costs is as important for those developing projects as it is for those evaluating and comparing them.

It is interesting that Local Area Agreements (ODPM, 2004), announced in October 2004, enable local authorities and their partners to negotiate targets and outcomes for their areas with central government. The simplified funding streams enabled by the Local Area Agreement pilots could provide localities with the flexibility required to find local solutions to local problems and place greater emphasis (without penalty) on the needs of the socially excluded and hardest to reach. Since the pilots focus on three themes very similar to those examined in this study (children and young people, safer and

stronger communities and healthier communities and older people) it may be possible to extend the reach of what has been shown to work in this report to those that need it most.

4.5 Technology and the provision of information and services: A user perspective

The framework used to structure this study (see Figure 1.1) demonstrated how technology can be used to enhance information and service provision. This section of the conclusion examines services provided directly to the digitally included citizen. The next section examines how technology can be used to enhance services to the digitally excluded.

Services provided directly to digitally included citizens are characterised by the services represented by the two arrows on the left of Figure 4.1. A *digital service divide* exists because information resources and interactive services provided directly to users cannot be utilised by citizens or socially excluded groups if they are not able to use technology to access them. Information and interaction initiatives do not meet the needs of digitally divided.

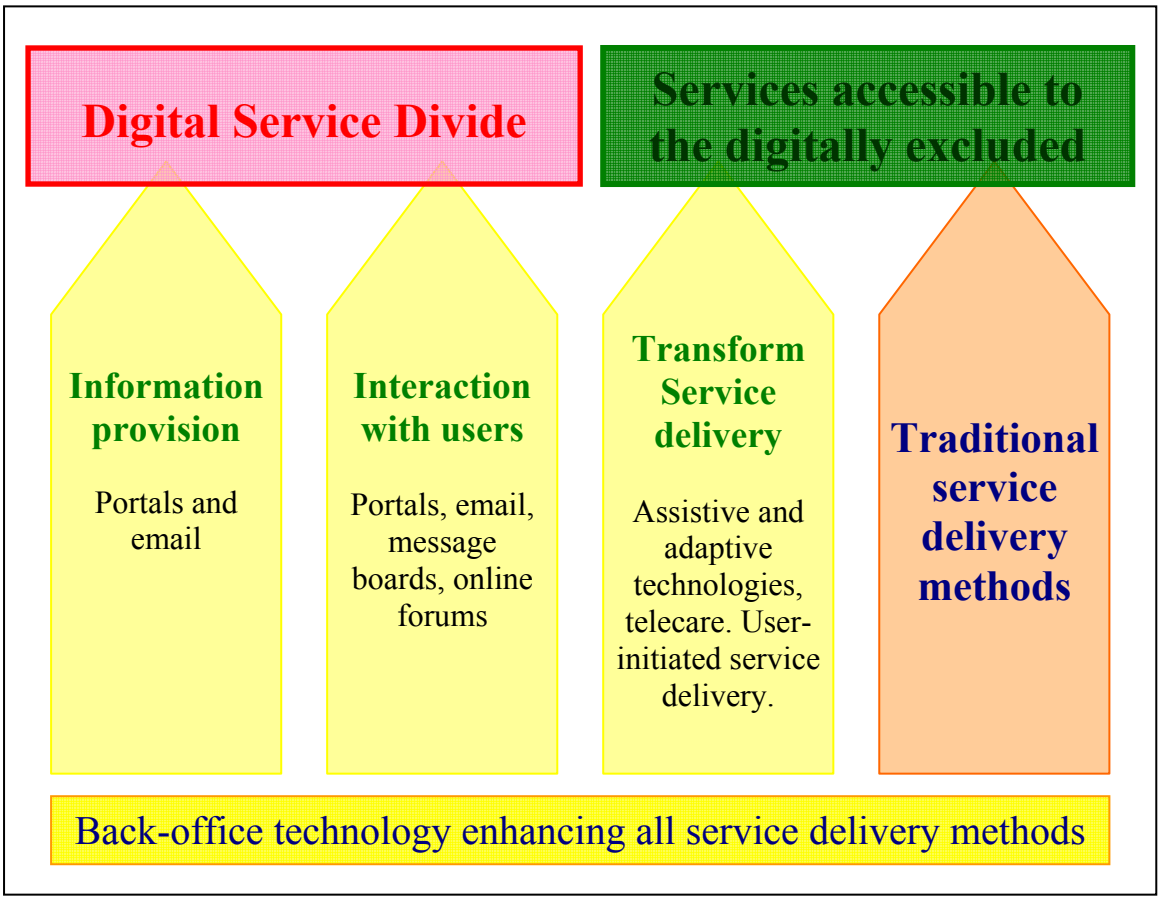


Figure 4.1 The role of technology in assisting the four key methods of information and service delivery

The Internet and portals, which constitute the largest group of initiatives found in this study, offer considerable advantages for the digitally connected. They frequently provide greater convenience because they enable service access from home or workplace 24/7. Many online services are more comprehensive than traditional offerings. Some organisations and portals, such as Directgov, have also recognised how service quality can be enhanced for users by joining (or bundling) information from more than one organisation in a searchable format at one site (or at each of the contributing organisation's site). This type of partnership enables each contributor to provide a better service and users are generally able to access more extensive and better quality online services. Duplication can also be reduced.

The previous chapter provided an overview of the wide range of services provided by many organisations to address the seven

problems. It was also noted that none of the projects provided the full range of information or services that could be given to users. It is probable that many projects simply did not realise the full range of information or services that could have been provided. Alternatively some might not have been able to find a partner or web link able to provide the information or service.

Organisations need to think more carefully about the breadth of needs of their socially excluded users. They then need to find partners or link their own portal or services to other providers that can provide relevant complementary information. There is undoubtedly a role for a learning repository to provide examples of the breadth of services offered by different projects to socially excluded and hard to reach groups. This role would have considerable practical benefits if the repository provided immediate access to a range of links (to online information and services) that any project could select from and chose to provide on their own web site. This would enable all projects to provide a more extensive and bespoke service. Such an approach would also change a static learning repository into a much more dynamic and practically focused service repository of information and services that could be immediately used to support socially excluded groups.

The creation of a learning and service repository meets the *Breaking the Cycle* report's challenge to extend the reach of what works and roll out relevant services alongside mainstream services.

Regrettably, many portals and online service projects fail to provide the same services (or same quality of service) via alternative or traditional channels, such as the phone, outreach worker or (at the Merc@dis project) through a newspaper. It is unclear from our study whether this is an oversight or a deliberate method to reduce costs by not offering the service through dual channels. The Merc@dis newspaper appears to have been an afterthought following the success of the online initiative.

4.6 Technology and the provision of services to digitally divided users

The preceding section highlighted how many initiatives fail the digitally divided. However, the benefits offered by technology do not

need to by-pass socially excluded users. The two arrows on the right of Figure 4.1 demonstrate how technology can be used to transform the way services are provided and how it can enhance traditional service delivery methods by automating back office activities and joining information and databases with partner organisations.

Many portals and online services fail, at present, to meet the particular needs of the socially excluded and hardest to reach. It is therefore necessary to consider how the benefits offered by technology can reach those that are digitally divided and forgotten by the majority of online information and service providers.

The greatest benefits for the socially excluded will probably lie in using technology to enhance the quality of services and effectiveness of organisations already assisting socially excluded groups. This idea is regarded as a complementary approach, to be developed alongside many of the more direct technologically oriented recommendations put forward in this conclusion. Both approaches, in tandem, will maximise the benefits of technology for the socially excluded. Indeed, some components, such as the learning or services repository, will be valuable to both groups.

In many local communities the needs of the socially excluded, particularly the hardest to reach, are met by *intermediaries*, such as out-reach workers and community or voluntary groups. At the neighbourhood level community organisations and voluntary groups usually understand the diversity between different socially excluded groups, different generations, different genders and different neighbourhoods. They have a unique ability to reach specific socially excluded groups and the hardest to reach.

Many intermediaries (from the public, voluntary and private sectors) have a neighbourhood focus to their activities. Other organisations operate at a regional or national scale, but have a much narrower focus (on a particular problem) when assisting socially excluded groups, for example the Royal Institute of the Blind (RNIB) or ChildLine. For ease of reference these groups, whether operating at the neighbourhood or national scale, will be collectively known as community organisations.

Few national or international initiatives are developed to assist community organisations. Sharing of best practice appears to be

limited and national and international links between groups that target similar socially excluded groups are frequently not well developed. The relatively small size of many community organisations, means their limited time and financial resources have to focus on their key local or thematic socially excluded group. Their ability to consider the additional needs of their target group or to find additional sources of complementary assistance that might be available, through traditional or online channels, is therefore limited. Computing resources and skills are sometimes limited in these organisations as well.

Nonetheless, they provide the best, and possibly (for some who will never use technology) only, method of providing the benefits of better information and services provided by technology to socially excluded groups.

By making community organisations aware of the information and services provided at portals or available centrally from a repository they will be better able to use these sources in their day-to-day activities to provide a better service to their socially excluded clients. In this way community organisations can act as an agent or intermediary to provide some of the information and services available online to socially excluded groups.

This approach is obviously dependent upon the IT skills and computing resources available to community organisations and additional support may be required for organisations if this approach is to have widespread use. Community organisations, like small businesses, ideally need assistance to resolve problems immediately when they arise. A repository could provide this assistance 24/7 through a number of methods, such as case studies, frequently asked questions pages, online forums or call centre advisers. Technology has considerable potential to resolve community organisation's problems and enhance local capacity building.

A key constraint in undertaking these activities for community organisations at present is probably their limited time and resources to search online for suitable complementary information or services. By providing high quality resources and access to services at a repository this task would be far easier. If information and service resources were already packaged in 'bundles' of information and

services suitable for particular socially excluded or hardest to reach groups their task would be simple. Community groups should also be encouraged to place links to the information on their own web site, if they possess one.

A repository would also provide a valuable tool in enhancing local capacity building. Easier recognition of complementary information or service providers might also reduce duplication and enhance local collaboration. For example a review of the local voluntary organisation landscape for Deptford Task Force in 1992 identified a variety of underused agencies which, despite their close proximity, had few contacts with each other.

However, it must also be acknowledged that greater awareness of alternative information or service providers could have divisive results. Unknown or unpopular neighbourhood providers could be marginalised by the ability of individual organisations or partnerships to more easily identify and obtain complementary services from other providers. Duplication would be reduced and cost efficiencies might be enhanced. But local capacity and knowledge would be reduced. The maintenance and development of a healthy local community organisation sector would thus be undermined.

This approach, focusing on the provision of high quality information and services to and through community organisations assisting the socially excluded, provides an additional method of ensuring the *Breaking the Cycle* report's challenge of 'extending the reach of what works to those that need it most' is met.

4.7 The role for government

The Social Exclusion Unit and Office of the Deputy Prime Minister should seek to facilitate or encourage activities to happen that will not occur organically at the local or regional level.

Government needs to act as a co-coordinator of best practice and learning. The creation of a learning and services repository will act as a catalyst for change that will:-

- Improve service design and delivery and extend the reach of what works to those that need it most.

- Roll out these approaches much more widely through mainstream services.

Immediate access to information and services relevant to socially excluded groups will assist the socially excluded, community organisations and all tiers of government.

Easier access to more personalised or relevant information for the socially excluded that are able use technology will improve the relevance and quality of services they are able to access.

Community organisations will be provided with a comprehensive overview of the activities of organisations working with similar socially excluded groups. This may extend their awareness of how their service can be improved or assist them to overcome problems they are encountering. The ability to obtain immediate access to online information or services that they can use to enhance their own services to socially excluded groups will enhance the quality of services they provide.

Local authorities and larger organisations would be able to build upon the success of existing good practice to tailor their services to meet the needs of the socially excluded. Provision of appropriate bundles of information and services that they can immediately place alongside their own services could enhance the breadth and quality of service they are able to offer. In addition, there could be benefits in reducing the duplication of service or information provision. The repository might also highlight opportunities for partnership between organisations at regional and local levels.

The repository could also help information and service providers to ensure their portals meet the technical, linguistic and literacy standards appropriate to the needs of socially excluded users.

If the repository offered a notice board function it might also provide a valuable national role in encouraging schools, businesses, community organisations and other groups to join together (within groups or between groups - e.g. schools and businesses) to explore the mutual benefits that each might attain. For example, the national D21 initiative in Germany links schools with businesses that are able to provide second-hand computers, hardware and other support.

Detailed specification of the content and role of a learning and services repository to meet the needs of the socially excluded is a task beyond the scope of this report. However, we would be happy to develop these ideas further. Nonetheless, a number of disparate but valuable ideas arise from the initiatives examined in this study.

Critical mass: It is vital that any portal has a critical mass of users that are able to learn from and contribute to a community (by providing case studies, participating in online or telephone forums or undertaking learning visits). Interest, dynamism and contributions to a portal can be achieved through the development of regular newsworthy events. Sponsored awards for exemplar initiatives, perhaps awarded bi-monthly focusing on one of the seven problems investigated in this study would encourage initiatives to contribute information and raise the profile of the site.

What works: Initial ideas about what works and the 'bundles' of information and services that should be provided for users and community groups should be developed with users and community groups to ensure that content and presentation methods meet user needs. However, once established careful monitoring (perhaps by hits or links to web pages or online peer review or voting) of the use of information (preferable by different user groups) will enable the most useful information and services for particular groups to be easily identified. Users and community groups could also be invited to highlight deficiencies. Information or services could then be commissioned to 'fill' these gaps.

Innovation: Some projects found in this study have been developed by technologists trying to find a practical use for their technology. The most successful projects found by this study have frequently been developed from the bottom-up, local needs can generate technological solutions. However, these projects have rarely stretched the boundaries of technological innovation, perhaps because local groups do not have the technological knowledge to extend the limits of what may be possible. Users and community organisations could be invited to submit ambitious ideas on how technology can address local social exclusion problems. These suggestions could then be submitted to a panel of technologists or entered in a competition, where the winning idea is developed by sponsoring technology companies. Innovative solutions might then be developed and

'brought to market' and all feasible ideas could be distributed to technology companies to encourage them to think more innovatively about the way technologies can be developed to meet the needs of socially excluded groups.

The repository will be a source of assistance for community organisations, the socially excluded and all tiers of government. The benefits to each group of a repository are described below.

Benefits to community organisations: Community organisations work closely with many socially excluded groups and the hardest to reach. They provide the primary conduit through which the digitally divided can benefit from technology. A repository would help community organisations to more easily access examples of best practice that might broaden their horizons of the way technology can enhance their services. Local capability would be improved and co-ordination to reduce duplication could be facilitated.

High quality information and services bundled together at a repository would enable community groups to more easily access and incorporate complementary services in their existing activities. This should enable them to provide better quality services to socially excluded groups.

A repository would also provide a method and catalyst to share bottom-up good practice. It could identify projects suitable for further support, development and roll-out. It would also provide a platform for community organisations to influence government and encourage technology companies to think more innovatively about the role of technology in meeting the needs of the socially excluded.

Benefits to the socially excluded: It will be possible to bundle the information and services provided at a repository by problem or by potential user groups (e.g. single parents, disabled, workless). A repository therefore has the capability to offer information or services directly to socially excluded groups. Indeed, access to a repository, primarily intended for community or government groups, may be one way of decreasing the stigma that some users may feel about accessing the information. In the same way that Directgov provides access for different audience groups, information and services provided at a repository could be targeted at many different socially excluded audience groups.

Benefits to government: All tiers of government provide mainstream services that could be better targeted at digitally connected and digitally excluded socially excluded groups. They need to be made more sensitive to the needs of socially excluded groups.

A repository could provide guidance on how technical, linguistic and literacy standards could be enhanced to enhance social inclusion. By bundling together high quality information and services many government portals would be able to more easily provide a range of additional services that would better meet the needs of socially excluded groups. Better understanding of additional or complementary information or service providers could help to enhance services and reduce duplication.

4.8 Conclusions

This concluding chapter has provided several recommendations that highlight the role of technology in enhancing social inclusion for groups that are digitally included and those that are not.

These recommendations address the challenges posed by the Social Exclusion Unit's *Breaking the Cycle* report (p7). The challenges are comprised of three key elements that form a virtuous cycle in using technology to enhance social inclusion. Figure 4.2 shows how improvements in service design and delivery can enable mainstream services to better incorporate the needs of the socially excluded. Better sharing of initiatives that work and a bottom-up role for community organisations acting as a catalyst for new services, ideas and uses for technology can help to further improve the design and delivery of services.

The virtuous or learning cycle shown in Figure 4.2 incorporates, in one diagram, many of the key conclusions and recommendations proposed by this study.

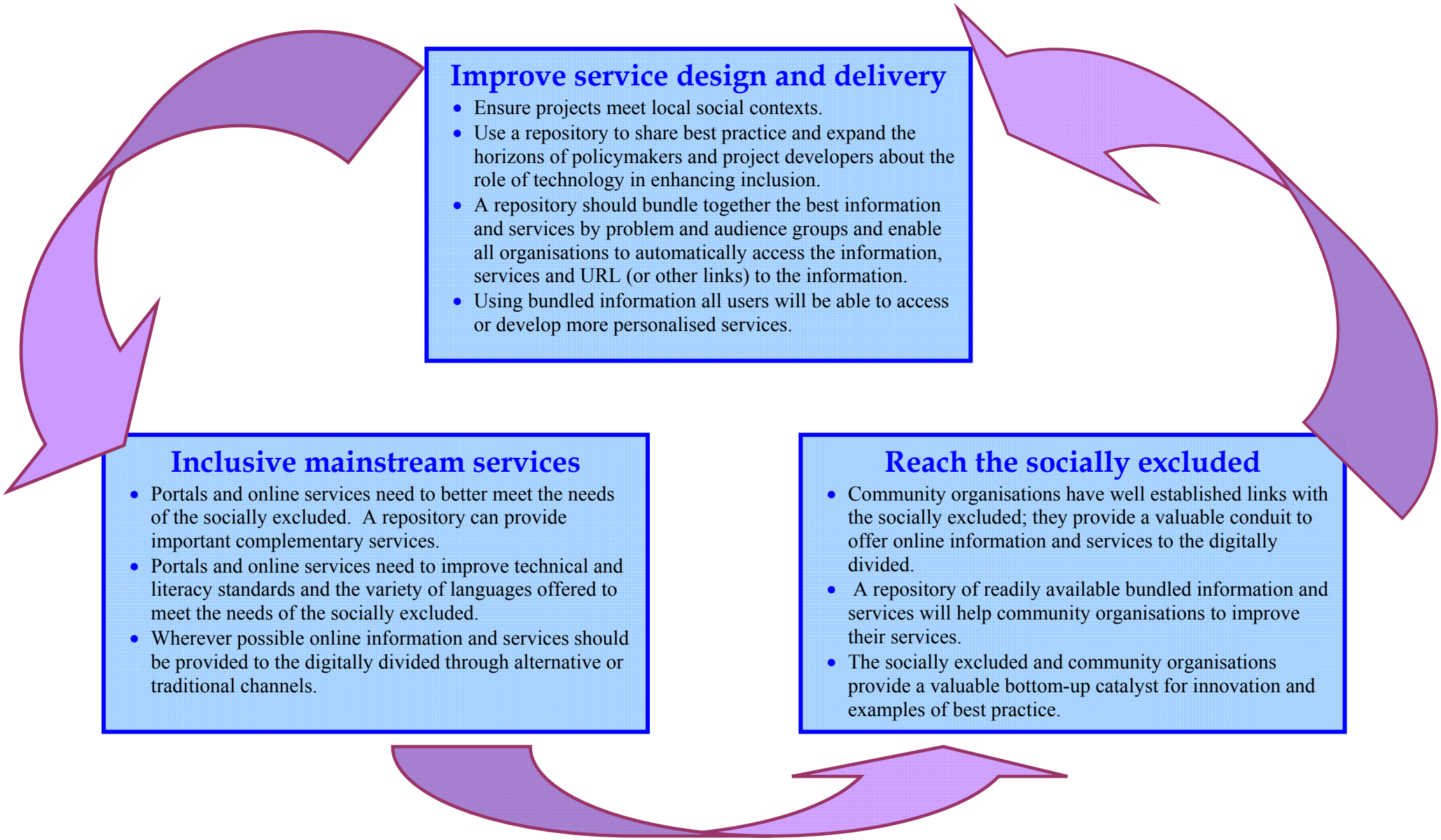


Figure 4.2 Key activities required to enhance the role of technology in meeting the challenges posed by the Breaking the Cycle report

Appendix 1

Key words to describe the seven social exclusion problems

Worklessness

Low skills
Long term illness/disability
Mental health problems
Ethnic penalty/discrimination
Social capital

Educational underachievement

Truancy
Peer pressure to under-perform
Low parental expectation/involvement
Deprived neighbourhoods
Access to home computer

Crime

Drugs
Alcohol
High crime neighbourhoods
Fear of crime
Youth offending
Monitoring ex-offenders/surveillance

Homelessness

Social isolation
Frequent moving
Lack of GP/school/social services

Health and health inequalities

Smoking
Obesity
Coronary heart disease
Mental health stigma
Disability and independent living
Access to services

Early years disadvantage

Child poverty
Workless households
Childcare
Lack of social capital
Parenting skills
Access to benefits

Complex and multiple needs

Information sharing
Key worker support
Access to services
Partnership

Keywords used to describe technology

Technology

Technology
ICT
Internet
Mobile – cell phone
SMS or text messages
Online technology
Computer
Telecare
Data sharing
Assistive/adaptive technology

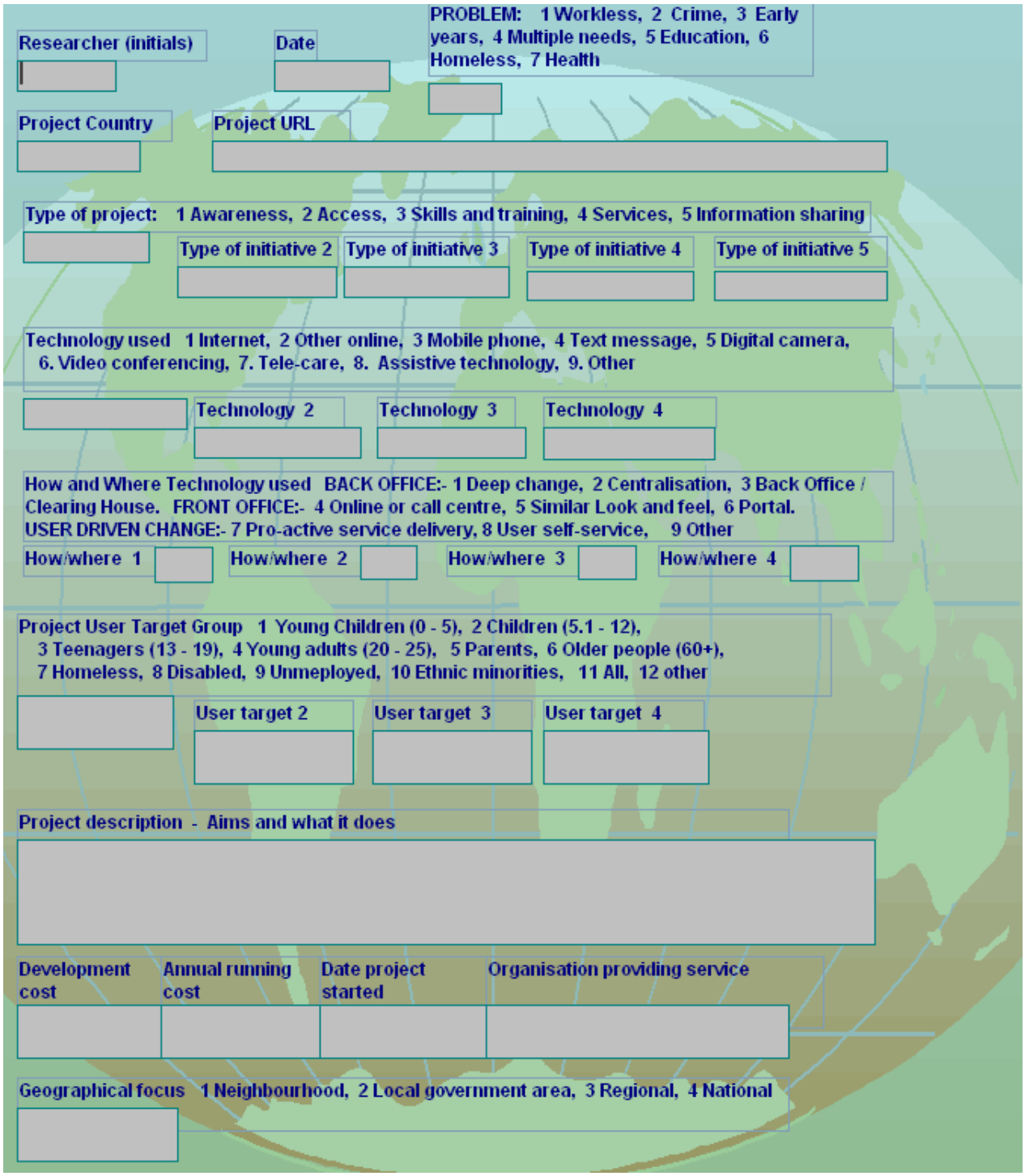
Keywords used to describe socially excluded groups

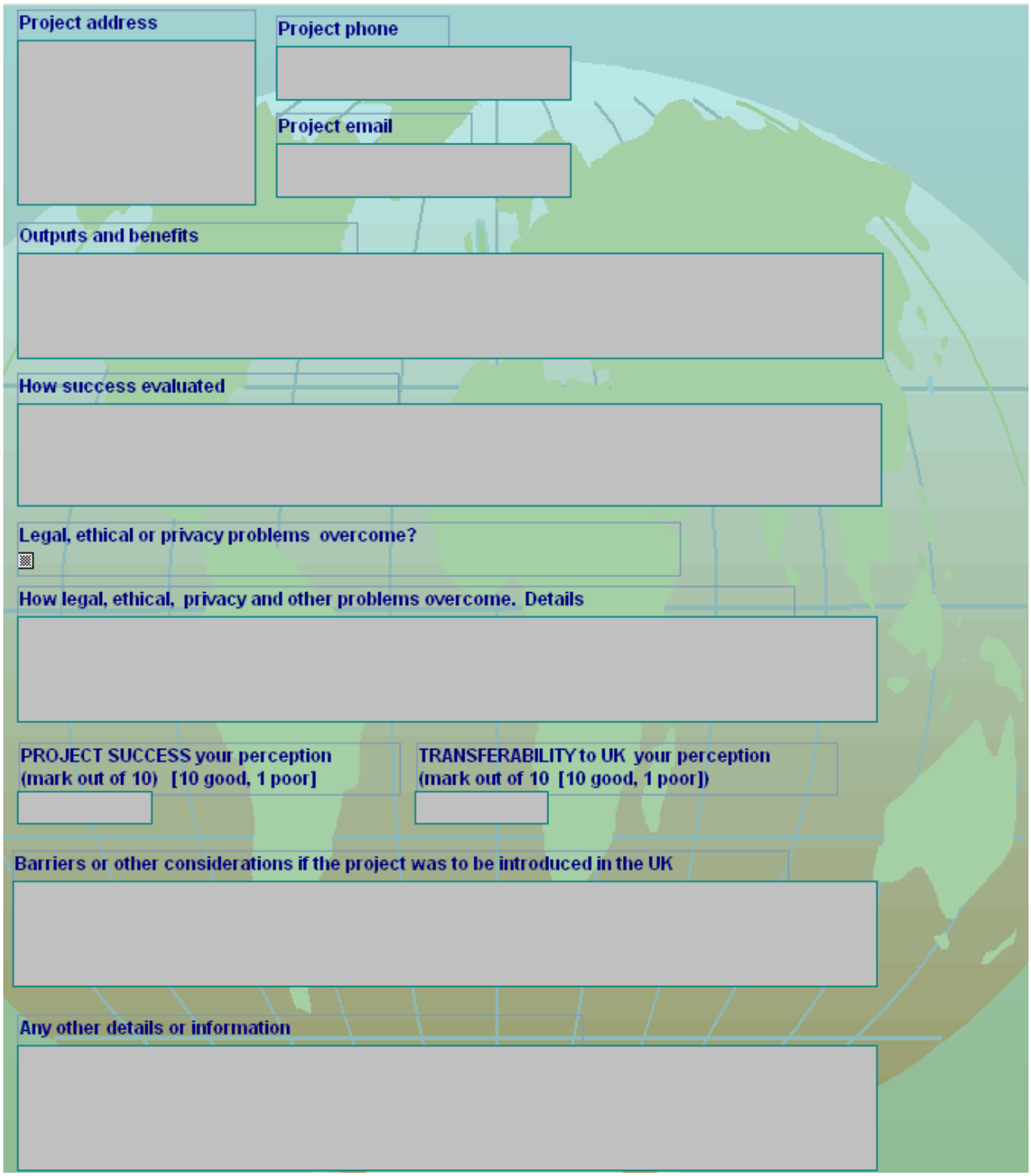
Groups

Children
Youths
Teenagers
Older people
Disabled
Homeless
Ethnic minorities

Appendix 2

An image of the Microsoft Access screen used to collect details about projects




Project address
Project phone
Project email
Outputs and benefits
How success evaluated
Legal, ethical or privacy problems overcome?
How legal, ethical, privacy and other problems overcome. Details
PROJECT SUCCESS your perception (mark out of 10) [10 good, 1 poor]
TRANSFERABILITY to UK your perception (mark out of 10 [10 good, 1 poor])
Barriers or other considerations if the project was to be introduced in the UK
Any other details or information

Appendix 3

Typology used to categorise technologies used by projects in the study

The typology developed to describe the use of technology by service providers distinguished between ***back office*** operations (such as better interrogation of databases that the user may not see) and ***front office*** activities that may be at the interface of where the service is being provided (perhaps through access to a computer by an individual or by a social worker visiting individuals at home with a lap top). A final classification for technology use, that was generally limited to the interface with the user, was ***user process driven*** changes

The ways in which technology was categorised are shown below.

*Technology introduction leading to **Back Office changes** of organisational structure, processes or data storage and analysis*

A. ***Deep change*** technology introduction leading to extensive re-organisation and sharing of information and systems within one organisation or across several organisations.

B. ***Centralisation*** of some/all back office functions (such as data storage).

C. ***Back office clearing house*** guides, registers and routes data or processes. Information all kept in one place but not necessarily automated. Usually cheaper than centralisation, often used when data standards are incompatible.

*Technology introduction leading to **Front Office changes** to service delivery processes and methods*

D. ***Online or call centre access*** Technology permits access to the service or enhanced delivery by 'new' channels (these might include Internet, kiosk, text message or call centre).

E. ***Similar look and feel*** Development of standardised or generic forms, interaction and web pages so that they provide users with similarities across many services.

F. ***Portal*** One-stop shop to provide users with an overview or accesses to related services rather than separate providers or web pages.

*Technology introduction leading to **User process driven changes***

G. ***Pro-active service delivery*** Agency or service provider initiates a service by submitting a completed form or application that the user only needs to confirm to have service or 'improvement' delivered.

H. ***User self-service*** Users can interrogate data, initiate service and arrange for service delivery where and when required.

Appendix 4

International initiatives examined by the study

Name	Country	Description	URL
Awareness Raising	Arabic Countries	UN initiative to raise awareness of projects implemented in Arab countries	www.un.org/arabic
Developing ICT Skills	Arabic Countries	Initiative to support and train poor regions in the use of ICT	www.ictdar.org/arabic
Equality of Rights	Arabic Countries	Raises awareness of socially excluded youths on issues related to equal rights	www.cairoict20.org
ICT Skills for Women	Arabic Countries	Increase access and training of ICT skills for women. Increase awareness amongst businesses of equality opportunities	www.microsoft.com/middleeast/press/presspage.aspx?id=200538
International Telecommunication Union	Arabic Countries	Electronic health system to provide better health services to the elderly, disabled and children	www.itu.int/dms
Adaptive Technology Suites	Australia	Adaptive Technology Suites (ATS) are computer facilities available for use by students with disabilities	www.unisanet.unisa.edu.au/learningconnection/students/disblty/adapt.asp
Health InfoNet	Australia	Improve health of Australia's indigenous people by making relevant, high quality knowledge and information easily accessible	www.healthinfonet.ecu.edu.au
Infoxchange	Australia	Infoxchange Australia is a not-for-profit social enterprise company focusing on community development using ICT as the primary tool to create positive social change	www.infoxchange.net.au
Kidshelp	Australia	Kids Help Line is a national telephone and web based counselling service for young people aged 5 to 18 years. It is free, anonymous and confidential	www.kidshelp.com.au
NSW Telehealth	Australia	Telemedicine connects patients, carers and health care providers, improving access to quality public health care, particularly in rural and remote parts of NSW	www.health.nsw.gov.au
Skills.net	Australia	Community-based program to provide affordable Internet training and access to people who would not otherwise have access to the Internet	www.skills.net.au

Somazone	Australia	Developed by young people for young people focuses on health issues and aims to empower young people to address their physical, emotional and social health needs in a way that is relevant, non-judgmental and anonymous	www.somazone.com.au
Help.gv.at	Austria	Virtual guide to Austrian authorities, offices and institutions. Information about procedures, deadlines, fees. Target information at disable people	www.help.gv.at
Autisme Montre@l	Canada	The 'Autisme Society' of Montreal has set up a web site for all those parents of autistic children (and adults) offering advice, shared experience and learning/teaching/life skills software and techniques.	www.autisme-montreal.com
Centre de Biothique	Canada	Provides an information and support service for all those concerned with development of ICT applications in the socio-medical sector, particularly in respect of monitoring of ethical, legal and social problems of telemedicine and their resolution	www.ircm.qc.ca/bioethique
Communautique	Canada	Aim is to open up access to acquisition of technological expertise/services to all socially excluded groups	www.communautique.qc.ca/accueil
INCA	Canada	The INCA (association for the Blind) has set up day camps for blind people interested in learning more about the Internet and tools for blind users to access this and other technology, based at its technology centre	www.cnib.ca/divisions/quebec/index
L'Ecole eloignee en Reseau	Canada	Portal enabling small remote village schools in Quebec to benefit from a full range of educational facilities and teaching skills using electronic links	www.eer.qc
Le Gite Ami	Canada	Provide access and training to ICT in a homeless shelter. Emphasises self-empowerment and encourages homeless people in their own efforts to reintegrate into society	www.communautique.qc.ca
Ludolettre	Canada	Aims to reduce illiteracy but also assist in the acquisition of citizenship skills for the educationally disadvantaged of the region	www.ludolettre.qc.ca

RAAMM	Canada	Internet café specifically for visually impaired people in the heart of Montreal, with the aim of providing access to the web and a means of reducing social isolation as well	http://www.raamm.org/centrecommunautaire.php
Smart Sites	Canada	Free Internet computer centres	www.fis.utoronto.ca/research/iprp/cracin/research/case.htm
Technology to Promote Equal Employment	Canada	Development of an electronic tool offering continuous support to promote equal employment opportunity, providing details of good practice, and sharing best practice	www.tbs-sct.gc.ca
Teleworking for the Handicap	Canada	Establishment of teleworking for handicapped employees in the Quebec Customs and Excise service to enable them to continue to work	www.ec.gc.ca/act-tia/default.asp?lang=En&n=EDE49A88-1
Ayuda Urbana	Central and South America	Project supported by the World Bank, aims to share knowledge about the fight against poverty	www.ayudaurbana.com
DITIS	Cyprus	Using a combination of Internet and SMS messaging this project allows patients to be looked after at home for longer with the most up-to-date information and support available to carers in the field	http://www.ditis.ucy.ac.cy/
Emergency_112	Cyprus	Established a mobile system for the management of pre-hospital patients during emergency responses that enables better co-ordination between physicians at the hospital and paramedic staff	http://www.medinfo.cs.ucy.ac.cy/html/res_proj_gr.html
Oddyseus	Cyprus	Uses video-conferencing to enable schools to communicate and develop joint activities	www.edc.uoc.gr/forum
Telegyn	Cyprus	A health telematics system linking a remote health centre to a larger General Hospital. The link enables real-time diagnosis for biopsies in gynaecological cancer	http://www.medinfo.cs.ucy.ac.cy/html/res_proj_gr.html
Naestved	Denmark	Constructed 22 tele-homes and won the Telework 2000 award for the best initiative for socially excluded groups	www.naestved.bjnet.dk
Poor People Technology	Egypt	Project that offers new technological solutions making use of the local resources	www.islamonline.net/
ICT skills to reduce unemployment	Egypt/ Emirates	Uses ICT to reduce unemployment by matching job vacancies with suitable candidates	www.precomii.com

Supporting Independently Living Citizens	European Union	Project based on the principal that the need for safety and support can be met by two approaches: human assistance and assistive technology	www.fortec.tuwien.ac.at
Citizens Access Network Services	European Union	The project provides information to local authorities and other providers about how they can use telematics (wireless communications for the collection and dissemination of data or information) to more efficiently provide services	www.cans.nssl.co.uk
Schoolnet	European Union	The European Union Schoolnet project and business partners (Apple, IBM, Intel and Sun), have developed five show-case 'Schools of tomorrow' in selected schools across Europe to provide real examples of some of the technologies that can radically change teaching and education	www.eun.org
Developmentally Appropriate Technology in Early Childhood	European Union	Provided an overview of suitable technologies, for early year's children	www.ioe.ac.uk/cdl/datec/aims.htm
@Brest	France	Enables inhabitants of the Kerourian quarter of Brest (especially the young without home computers and those living some way from the Multimedia centre) to access mobile computer facilities and trained personnel	www.a-brest.net
Alter Net	France	Facilitate access to computers and the web via free workshops and a mobile 'cyberbus' in the most disadvantaged and isolated regions. Focuses on women and young unemployed	www.matisson.com/alternet
Apf Moteurline	France	Portal set up by the French Paralysed Association (APF) to provide information to physically handicapped people and to their families/carers and to interested professionals	www.apf-moteurline.org
Carte Totem	France	Introduction of a card enabling citizens of disadvantaged areas of the island of Reunion to benefit from sharing in a collective system of economic rejuvenation and social cohesion	www.mairie-toulouse.fr
Coll'text	France	Textile collection and recycling scheme set up as part of a programme to improve levels of employment for disadvantaged and unemployed women in Corsica	http://i.ville.gouv.fr/divbib/doc/bastia.html

Enfant Hopital	France	Provide IT hardware and educational and communications software (including Internet access and French 'Kanari' educational software) to long-term hospitalised children	www.enfant-hopital.org
Equal Lot	France	Reduce unemployment in rural areas and for those people who have no access to ICT facilities. Also targets young unemployed and handicapped people.	www.cg46.net/equal
Gersemploi	France	Inter institutional web portal for all employment seekers in the Gers department (county) including those in isolated rural areas, and those with limited mobility (single parents, handicapped etc) to access employment services and jobseeker aids	www.gersemploi.com
Handiplace	France	Portal focusing on employment, social inclusion and professional training for disabled workers	www.handiplace.org
ICT Access	France	Enable access to information and services relevant for socially excluded groups that otherwise would have limited access to ICT	www.nantes.fr
ICT Access for ALL	France	Facilitate access for all, especially those disadvantaged by the digital divide, and ensure that development of ICT in the community does not accentuate existing social exclusion	www.agglo-montbeliard.fr
KidSmart Early Learning Programme	France	Pioneered by IBM, a major reinventing education project targeted at primary school children (3 to 6 years of age) mainly in disadvantaged areas	www.kidsmartearlylearning.org/
Maison de l'Emploi	France	Internet portal serving as a platform for employment seekers from all local areas and especially those most disadvantaged, and businesses recruiting.	www.maison-emploi.com
Operation Telecite	France	Enables young people from disadvantaged city suburbs to make films about their area for television	www.alize-productions.fr
Quartier de Kervenanec	France	Development of an ICT facility and Internet point in the Kervenanec quarter of Lorient, to provide ICT access	www.lorient.com/kervenanec
Reseau	France	Enables unemployed in East Paris to access ICT equipment and learn how to use it to assist them in enhancing their employability	www.reseau2000.net

Revediab	France	Creation of a diabetes portal for a regional health service offering - improved education for patients, improved cooperation amongst health workers, free consultations for all, improved links between hospital and community	www.revediab.fr
TIC	France	Improves ICT use in development projects in a socially disadvantaged region south of Lyon where unemployment reached 24 per cent	www.tic-rhonesud.com
Vichy Diabete	France	Provides an information service to the diabetics of the Vichy area	www.vichy-diabete.com
Virtual Sign Language	France	Provides machines and software at the town hall in Toulouse to enable staff to communicate in FSL (French Sign Language) with deaf citizens and assist them with form filling and other services	www.mairie-toulouse.fr
Web trotters	France	Socio-educational project aimed at reducing inequalities in access to ICT and promoting interaction between young people of all backgrounds and adult townspeople	www.webtrotteurs-quartiers.org
Alfa-Portal Literacy Learning	Germany	eLearning portal for illiterates. Allows self-instruction and individual learning modules according to the knowledge of the user	www.apoll-online.de
Arbeitsagentur	Germany	Service targeted at unemployed people. Allows job searching and advertising, of qualification courses.	www.arbeitsagentur.de
Bundesministerium fur Gesundheit und Soziale Sicherung	Germany	Computer use by nurses to enhance service delivery. Nurses use computers with voice recognition software to document health assessments of patients	www.bmgs.bund.de
Digital Opportunities Foundation	Germany	The project consist of a national online knowledge base for organisations concerned with the digital divide	www.digitale.chancen.de
Digitale Chancen	Germany	Raises people's awareness of the Internet and provides support for first time users	www.digitale-chancen.de
Drug com	Germany	Drug use online consultation. Young people can examine their own behaviour with multiple choice tests. Personal anonymous consultation is provided	www.drugcom.de

Frauen Geben Technik	Germany	Initiative to increase internet usage amongst women by offering internet courses, free of charge	www.frauen-technik-impulse.de
Ganz einfach Internet	Germany	Internet access targeted are people who are 50 and over and suffer from limited mobility	www.50plus-ans-netz.de
Initi@tive D 21	Germany	Public-private partnerships to bring almost all social groups in contact with all kinds of ICT	www.initiatived21.de
Jugend ans netz	Germany	Equips youth clubs with pc and Internet access	www.jugend.info
Jugendserver	Germany	Database aimed at providing comprehensive access to information spanning the entire field of youth and youth work	www.jugendserver.de
Open the doors	Germany	Network to reduce the discrimination of people with mental illnesses. People suffering discrimination can report it to the BASTA team	www.openthedoors.de/de/
Schulen ans Netz	Germany	Use of ICT to support teachers. Examples include - services that engage students with the subjects of exile, migration and intercultural education; interactive platform for women in schools	www.schulen-ans-netz.de
TenCare	Germany	Initiative established to provide a comprehensive and integrated technical, organisational and process-oriented approach to the care of older people and other patients at home	www.empirica.com/TenCare
Vitaphone	Germany	Use of ICT to transfer biochemical signals through new methods of tele-communication Services provided to disabled and elderly people	www.vitaphone.de
Web.Punkte	Germany	An initiative to reduce the digital divide and to improve communications infrastructure in the area of Bremen. Greater Internet access is provided by allowing the general public to have access to schools ICT equipment after school hours	www.webpunkte-bremen.de
Webforall	Germany	Internet access initiative targeted at disabled people	www.webforall.info
TenCare	Greece	Provide standardised, reliable and easily accessible medical information without occupying a doctor. Basic and specialised medical knowledge regularly updated for different patient groups	www.empirica.com

Internet and Information Access	Hungary	Provide Internet access, as well as online content and advice to the whole Hungarian public educational structure	www.eisz.hu
Hole in the Wall	India	Provide poor children with computer and Internet access through outdoor kiosks	www.niitholeinthewall.com
Ballymun	Ireland	The Ballymun project highlights the need to consider the wide range of support that can be required to assist ICT trainees or to enable any socially excluded person to obtain employment	www.ballymun.org
Borris	Ireland	The Borris community programme is an ICT access initiative providing information by Digital TV	www.borris.ie
eEnabling Life Event Data	Ireland	Use of ICT to modernise services. Three-interlinked projects(Civil Registration Modernisation Programme, Child Benefit System Re-design, REACH Inter-Agency Messaging)	www.groireland.ie.
Fountain	Ireland	Training project for school "drop-outs" which designed bespoke programmes to overcome low esteem as well as skill shortage	www.models-research.ie
Volunteers Inputs to Access Learning	Ireland	Infrastructure for trained volunteers to be on call to visit the homes of visually impaired people to help them with the routine and the unusual needs of using new 'cutting edge' speech and magnification technology	www.ncbi.ie/volunteer/vital.php
Telemedicine Asahikawa	Japan	Ophthalmology telemedicine services offered to people in remote areas	www.asahikawa-med.ac.jp/dept/mc/ophtha/en/telemed.html
Almotamar	Jordan	Improve the technological knowledge of children at school	www.almotamar.net
Women ICT Skills	Jordan	Partnership with Cisco Systems to provide ICT training to women	www.un.org/arabic/ch3_pg2htm
APSCC	Korea	Uses satellites to provide Internet access, helps to reduce the digital divide	www.apscc.or.kr/pub/coverstory_fall1.asp
IT Braille Equipment	Lebanon	Provide IT Braille equipment and training in schools, universities and homes to match academic ambitions and employment market demands. Equalize opportunities for visually impaired in education and employment	www.escwa.org.lb/nfb/about.asp

Saradar	Lebanon	ICT access initiatives using a mobile caravan to provide access in remote and deprived areas	www.saradar.com
Using ICT to Reduce Poverty	Lebanon	International initiative using ICT to reduce the level of poverty in rural areas	www.un.org/arabic/documents
Fondation Kraizbierg	Luxembourg	Funding to enable the Kraizbierg workshop co-operative to provide IT training and facilities so that handicapped and unemployed people can develop skills and re-integrate into society	www.kraizbierg.lu
Mobile Government	Malta	Mobile government infrastructure-brings together mobile telecoms providers, telecom regulator and government IT agencies. Users can access government services and receive notifications via mobile phone	www.mobile.gov.mt
Awareness Raising	Middle East	Raises awareness of human rights in Arabic countries	www.un.org/arabic/hr/index.htm
Trapveld	Netherlands	Improve the position of residents in the labour market, foster general ICT skills, strengthen social cohesion through intensive contacts between groups of residents	www.trapveld.nl
Computer Access	New Zealand	To provide low cost computers for schools and community groups by recycling donated (usually government and business) computers	www.canz.org.nz
Computers in Homes	New Zealand	Aims to narrow the digital divide in less-advantaged New Zealand communities whose schools are in the Decile 1 socio-economic category	www.computersinhomes.org.nz
eWork Jobs	Norway	Provides employment in the peripheral regions of Norway. The project found industrial sectors and work tasks suitable to be undertaken by teleworkers and then sent representatives to Oslo to find businesses that would outsource this work or jobs to teleworkers	www.engerdal..net
Telework	Poland	Enables more disabled workers to obtain employment by providing information about teleworking and about employing disabled workers and workplace ergonomics. The initiative has partnered with a jobs marketplace to expand its ability to reach businesses	www.telepraca-polska.pl

eJob	Romania	Created online marketplaces to link job seekers with businesses seeking employees	www.mcti.ro
Babetko	Slovak Republic	Web portal established to provide information about childcare for prospective parents, parents and guardians	www.babetko.sk
Profesia	Slovak Republic	Created online marketplaces to link job seekers with businesses seeking employees. The initiative also produces a weekly newspaper so that those without access to the Internet so they can still obtain relevant information	www.profesia.sk
Home of Information	South Africa	Access to information relevant to survival and for community-building within an integrated regional and national network	www.unesco.org/most/africa1.htm
Centre of Shared Telematic Resources	Spain	Tele-working centre training disabled people in ICT and supporting their access to the labour market	www.cfnti.net/telecentros/ditic
Eskuar	Spain	Web site targeted at disabled people, including blind people, those with cognitive impairment, the deaf, people with limited mobility, those with limited vision and visitors	www.eskuar.bizkaia.net
Infoville	Spain	The project has provided citizens with a fast, secure and low cost way to access a wide range of local services and information	www.ovsi.com
Merc@dis	Spain	Portal bringing together disabled people seeking work and employers with job vacancies suitable for people with disabilities	www.mercadis.com
MISS	Spain	Central management of information and services that flow from the City Council to citizens and vice-versa. Integration of information systems and interactive databases to improve quality, efficiency and accountability of public services.	www.bcn.es
Ravalnet	Spain	Provides Internet access and familiarity with computers to youth with difficulties to access job market, the elderly, immigrants and long-time unemployed	www.ravalnet.org
TARDIS	Spain and UK	Provides access to ICT through the use of kiosks located in strategic positions intend to encourage use by specific socially excluded groups	www.sociology.mmu.ac.uk/doc/MCIN%20paper%20v3.doc

Computer Supported Community Networks	Sweden	Housing Association offering free connection to a local intranet. Provides social contact and information to simplify every day life. Targeting unemployed, immigrants and single-parents.	www.stir.ac.uk/schema/conf/LocalNets
Internet Voting	Switzerland	Provides disabled and citizens abroad with an efficient means of participation in the democratic process	www.geneve.ch/ge-vote
Stop tabac	Switzerland	A one stop web site to inform smokers and assist those wishing to give up smoking	www.stop-tabac.ch
The National Programme for IT Diffusion	Syria	Mobile ICT centres reaching remote and poor villages to teach ICT skills	www.scs.org.sy
Translation of Software Applications	Syria	An initiative launched by the Syrian Computer Society to overcome language problems, involves translating key software applications to enable use by everyone	www.scs.org.sy
Almotamar	Tunisia	Initiative to encourage young people to provide bright ideas in any ICT field	www.almotamar.net
ICT Skills	United Emirates	Aims to reduce unemployment among Emirates citizens by improving ICT skills	www.sheikhmohammed.ae/arabic
ICT Skills for Orphan Children	United Emirates	Training in ICT skills for orphans	www.sheikhmohamammed.ae
Edutopia	USA	Schools project aimed at increasing the participation of disabled children through technology	www.edutopia.org/php/article.php?id=Art_992&key=188
Life on the Streets	USA	Provides an inside look at the issues of homelessness by young people who know them firsthand. Includes use of digital cameras, development of a website and use of the internet by young people who have experienced homelessness	www.globalschoolnet.org/programs
Networking Academy	USA	Association between Cisco and schools that helps children develop practical networking knowledge skills	www.bssc.edu.au/public/learning/ict_training/cisco/netacad.p
Open Door	USA	Adult literacy practitioners, students and administrators have their own portal providing direct access to the most powerful resources available on the Internet for literacy programs	www.opendoor.com/hfh
Plugged In Greenhouse	USA	Targeted at African American children to help them build confidence	www.edutopia.org/php/article.php?id=Art_992&key=188

Appendix 5

Members of the Committee of the Programme to Combat Social Exclusion contacted by the study

Country	Organisation
Austria	Bundesministerium fuer soziale Sicherheit und Generationen
Belgium	Ministerie van soziale Zaken, volksgesondheit en leefmilieu
Denmark	Socialministeriet
Finland	Ministry of Social Affairs and Health
France	Ministere de l'Emploi et de la Solidarite
Germany	Bundesministerium fuer Familie, Senioren, Frauen und Jugend
Greece	Ministry of Labour and Social Security
Ireland	Department of Social, Community and Family Affairs
Italy	Ministero del Lavoro e delle Politiche Sociali
Luxembourg	Service National d'action Sociale
Netherlands	Ministry of Social Affairs and Employment
Portugal	Instituto para o Desenvolvimiento Social
Spain	Ministerio de Trabajo y Asuntos Sociales
Sweden	National Board of Health and Welfare

Appendix 6

UK initiatives examined by the study

Name	URL
BMESpark	www.bmespark.org.uk
Child Line	www.childline.org.uk
Crime Reduction	www.crimereduction.gov.uk
Directgov	www.direct.gov.uk
Leicester City Council	www.leicester.gov.uk
National Drug Helpline	www.tlaktofrank.com
National Grid for Learning	www.ngfl.gov.uk
Primary Resources	www.primaryresources.co.uk
Renewalnet	www.renewal.net
Teaching Ideas	www.teachingideas.co.uk
TeachNet	www.teachnet.gov.uk
Topmarks	www.topmarks.co.uk

Appendix 7

Glossary

3G Phones	Third Generation Phones
Broadband	High-bandwidth Internet access.
Cable modem	Device that enables to connect computers to a local cable TV and receive data at about 1.5 Mbps
Database	A means of storing data in an organised manner
Digital TV	Digital Television
Extranet	A private network that uses the Internet protocol and the public telecommunication system to share part of a business's information or operations securely
ICT	Information and Communication Technology
Internet	The Internet is simply a worldwide system of computers through which any one computer can gain access to other computers. Technically what distinguishes the Internet is its use of protocols called TCP/IP (Transmission Control Protocol/Internet Protocol)
Intranet	A private network that is contained within an enterprise
Online	A condition of being connected to a network of computers or other devices
ONS	UK Office for National Statistics
PC	Personal Computer
PDA	Personal Digital Assistant
Tele-cottage	A building, usually situated in a rural area, equipped with computers and electronic communication links, used for teleworking
Tele-working	Working from home by means of an electronic communication link with an office

Video conferencing	A live connection between people in separate locations for the purpose of communication, usually involving audio and often text as well as video
Web, The	A system of pages composed of graphics, sound, text and user input linked together via the Internet
Website	A related collection of worldwide Web files that includes a beginning file called a home page

Appendix 8

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Paul Foley

pdfoley@btinternet.com

+44 (0) 7796 174330