i2010
Information Space
Innovation & Investment in R&D
Inclusion

eGovernment Action Plan

Analysis of European target groups related to inclusive eGovernment

27 November 2006

Members of the inclusive eGovernment ad hoc group of the i210 eGovernment subgroup

Chair: European Commission; DG INFSO eGovernment unit

Costas	AGROTIS	Department Of Information Technology Services	CY
Borys	CZERNIEJEWSKI	Institute of Control Systems	PL
Jorma	KARJALAINEN	Ministry of Finance	FI
Peter	KUSTOR	Federal Chancellery	AT
Jean-Jacques	LÉANDRI	Ministry of Finance, department for modernisation of the state	F
Adam	LEBECH	Ministry of Science, Technology and Innovation	DK
Berta	MAURE RUBIO	Ministry for industry, tourism and commerce	ES
Pierre	PECASTAINGS	Ministry of Finance, department for modernisation of the state	F
Jiri	PRUSA	Ministry of Informatics	CZ
Blanca	RODRIGUEZ-ANTIGÜEDAD	Public Administrations Ministry	ES
Natali	SELSKAITĖ	Information Society Development Committee	LT
Tone	SMITH-MEYER	Ministry of Modernization	NO
Pascal	SOUHARD	Ministry of Finance, department for modernisation of the state	F
Diana	STANGU	Ministry of Communications and Information Technology	RO
Aigars	STIRNA	Secretariat of Special Assignments Minister for Electronic Government Affairs	LV
Algirdas	TRAKIMAVICIUS	Information Society Development Committee	LT
Martin	TROY	Information Society Policy Unit, Department of the Taoiseach	IE
João Ricardo	VASCONCELOS	Knowledge Society Agency of the Ministry of Science and Technology	PT
Imke	VRIJLING	Ministry of Interior	NL
Paul	WALLER	Digital Inclusion Team	UK
Mette	WICHMANN SØRENSEN	National IT and Telecom Agency	DK
Birgit	WILDER	Permanent Representation of Austria to the EU	AT

Report prepared by Jeremy Millard
DANISH TECHNOLOGICAL INSTITUTE
Policy and Business Analysis

CONTENTS

1 Background and objectives

1.1 Introduction

This report provides an analysis of European target groups related to inclusive eGovernment. It combines the original report of the rapporteur to the ad hoc subgroup on Inclusive eGovernment (dated 8 June 2006) with a supplement produced as a result of a meeting of the ad-hoc subgroup on 28 June 2006, as well as inputs from the ad-hoc subgroup's meetings in Riga on 13 June 2006, and in Brussels on 8 November 2006. It presents a final considered and detailed view of the current main issues relevant to inclusive eGovernment, as well as a menue of ideas that administrations may choose from in order to move forward on their personal route to achieve inclusive eGovernment currently being prepared as well as more widely.

1.2 The work of the 'Inclusive eGovernment ad-hoc group'

An ad-hoc group devoted to inclusive eGovernment has been created by the European Commission in cooperation with Member States within the i2010 high level group, and in close consultation with stakeholders, to undertake strategic monitoring, roadmap development and the evolution of the European eGovernment Action Plan. The objectives of the 'Inclusive eGovernment ad-hoc group' are to:

- gradually better scope 'inclusive eGovernment'
- set up common and agreed concrete policy priority objectives for 2010
- substantiate the objectives with a roadmap of actions.

According to the ad-hoc group's terms of reference, there in no well defined and scoped view of inclusive eGovernment. One could refer to the Kaplan Report[1] which states: "eInclusion refers to effective participation of individuals and communities in all dimensions of the knowledge society and economy through their access to ICT" and extrapolate this to eGovernment.

In the work of the ad-hoc group it is important to clarify whether the policy objectives to be defined will refer to:

- **participation of all citizens** (including handicaps, persons with limited skills, old persons …) in the eGovernment services provide by ICT -- this basically reflects a 'design for all' approach as *ex ante* interventions on the environments, products and services to ensure that everybody, including future generations, independent of age, sex, capacities or cultural situation, can successfully use services.[2]

- **promotion of special ICT technologies** (in addition to the existing ones) for effective participation in eGovernment, (for handicaps, persons with limited skills;, old persons…) -- here the focus is on special assistance defined as *ex post* interventions to assist disadvantaged users, for example given by persons and/or through products, instruments, equipment or technical systems, offered to a person with disabilities or some other disadvantage in order to prevent, compensate, relieve or neutralise the impairment.

The other important issue for the ad-hoc group is to clarify the bases for discussion:

- the right of all citizens to participate (if I want to, the ICT services should be there, accessible to me)
- the obligation for citizens created by Public Authorities to use ICT (services offered on line only).

[1] eEurope Advisory Group (2005) "eInclusion: new challenges and policy recommendations", co-ordinated by Daniel Kaplan for the European Commission, July 2003: http://europa.eu.int/information_society/eeurope/2005/all_about/advisory_group/documents/index_en.htm

[2] ICTSB (2000) Project Team Design for All, Final Report 15 May 2000

1.3 Inclusive eGovernment: background and scope

1.3.1 Inclusion

Inclusion focuses on all those in society whose life chances and quality of life are reduced or threatened compared to 'mainstream' citizens or groups. Of course, as all individuals or groups in society have different characteristics and different needs, there is no such objective definition of 'mainstream' citizen, and even if such could be agreed in any one time or place, it is a dynamic, ever changing and thus not very useful concept. It is thus more productive, in the context of the present study, to define and analyse inclusion from the perspective of individuals or groups who may be specifically disadvantaged in some way, so that such disadvantage actually does, or is likely to, reduce or threaten their life chances or quality of life.

From the government and public sector perspective, inclusion thus focuses on individuals and groups who require deliberate and special consideration or help in order to ensure that they can access and exploit services, as well as the other socio-economic benefits and support provided by the public sector. These individuals and groups require special consideration in that government has to think about specific ways to support them given that the normal offerings provided by the public sector, or by the market, may not, or may be slow to, offer support. Inclusion is thus also concerned with social solidarity and socio-economic cohesion, ensuring that no one or no group is left too far behind, and that the potential, and indeed the resources, of everyone are recognised and exploited. Thus, inclusion can have an economic as well as social benefit at the societal level.

1.3.2 eInclusion

Starting with this general consideration of inclusion, rather than eInclusion, is deliberate because the former is the real goal, whilst ICT through eInclusion policies, systems and services, particularly those which focus on reducing the digital divide, must be seen as a means to the end of a more inclusive society.

While the penetration of new technologies is mainly driven by market forces, public policies have the task of guaranteeing as broad as possible access to the enabling capacities of ICT. In Europe, the political guidelines laid down by the European Council for the fight against poverty and social exclusion[3] set the objective "to exploit fully the potential of the knowledge based society and of new information and communication technologies, taking particular account of the needs of people with disabilities" in order to prevent the risk of exclusion, while the eEurope 2005 Action Plan (An Information Society for All) aimed at "giving everyone the opportunity to participate in the global information society".

The development of key competencies in ICT – a crucial factor for digital inclusion – is addressed in the Commission Action Plan to promote Skills and Mobility, while the eLearning programme focuses on ICT's contribution to learning, especially for those who, due to their geographical location, socio-economic situation or special needs, do not have easy access to traditional education and training.

All EU Member States are implementing eInclusion policies[4], in the framework of their Information Society strategies as well as of their social policies. New Member States highlighted in their Social Inclusion Memoranda their ongoing and/or planned actions for promoting digital inclusion. An increasingly important aspect of socio-economic and regional inclusion and cohesion policies is the so-called 'digital divide', and there is now strong evidence that this is

[3] See objective 2 (a) in Annex I to the "Fight against poverty and social exclusion: common objectives for the second round of national Action Plans" endorsed by the Council in November 2002: http://europa.eu.int/comm/employment_social/soc-prot/soc-incl/counciltext_en.pdf.

[4] See National Action Plans against poverty and social exclusion 2003-2005: http://europa.eu.int/comm/employment_social/soc-prot/soc-incl/index_en.htm

strongly correlated with the other divides, both acting as a partial cause of them as well as resulting from them.[5]

The digital divide provides a paradox for eInclusion. On the one hand, eServices can reach disadvantaged groups more easily than traditional channels, whereas on the other hand, the new eChannels can (and often do) create their own new divides. Thus, people from already disadvantaged social groups who cannot afford access to and usage of ICT are in danger of falling further behind and of becoming excluded from information society opportunities. Therefore, counteracting the digital divide can be regarded as a policy instrument and a means of promoting social inclusion. The danger is that the current digital divide will widen rather than close if no pro-active policy measures are taken.

The success of strategies for social and digital inclusion is largely dependent on a context-based approach, whereby targeted groups are considered within their geographical, social and cultural environment. Governments, especially local public administrations, are best placed to do this.[6] The ability of the public sector in supporting the 'everyday life processes of citizens', including 'domestication' processes and the citizen's potential to influence technology and service innovation is improved by ICT. Part of this is also improved policies aimed at the overall population supported by ICT, e.g. policies for raising awareness and providing computer literacy, as well as access to common infrastructures of knowledge - e.g. creation of public access points in libraries, community centres, cyber cafés; the provision of Internet connections to all educational institutions, the integration of ICTs in school curricula at all educational levels, development of *e*Learning and tele-education, etc. There is also a need for the provision of adequate infrastructure and access to eServices – especially to underserved or remote areas and groups at risk of exclusion. However, there remains both the challenge and the opportunity to employ more inclusive access technologies, such as digital TV and mobile, and there is some evidence that such approaches, including through specially designed home platforms, have a positive impact.[7]

It appears that many inclusion and equality issues are most critical at the local and regional levels, as it is here that eCommunities, built around eParticipation, grow and flourish.[8] Despite the ability of ICT to ignore geographic distance, eCommunities are still primarily local in nature, and much of this arises from interactions between the citizen, civil organisations and local authorities. More information, particularly from local and regional sources, is needed so that policies to help people access the Information Society can be better targeted. Without action, Europe like many other global regions may become even more polarised between the (e)included and (e)excluded. Education is fundamental to being (e)included, for example, high Internet use seems to remain clearly and consistently related to higher educational and occupational status.

Social inclusion and equality are defined as conditions in which citizens are integrated within society with respect to basic economic, cultural and social conditions, regardless of who they are or where they live. The 2005 EU report[9] concludes that digital and social participation

[5] European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html
[6] European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html
[7] eGovernment policy stakeholders meeting, organised by the eGovernment Unit of DG INFSO, European Commission, 21 September 2005:
http://europa.eu.int/information_society/activities/egovernment_research/doc/policy_stakeholder/egov%20policy%20stakeholders%20report%20jm.pdf
[8] European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html
[9] European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html

appear closely intertwined in a society which becomes progressively more technical and where the technology needs to become more social. Women have overtaken men in the past three years in their pace of Internet take-up, and the over 55s are also increasingly gaining computer skills, and this trend is set to continue. However, the poorly educated and poorly paid are not catching up as quickly and this is denying them new opportunities. Education, age and income remain the most important areas in the social, regional and digital divides. Failing to acquire information skills compounds the difficulties faced by the poor and long-term unemployed, producing the 'eExcluded', but access to the Internet and computer skills can help people escape from, and avoid, poverty. It is here that the eInclusion challenge lies.[10]

There is mounting and clear evidence that ICT plays an increasing role in meeting social needs, increasing welfare, and enhancing social inclusion for two reasons.[11] First, computing and ICT are becoming ubiquitous, and thus indispensable for participation in the knowledge society. Computing devices play an increasingly important role to accomplish tasks in everyday life, to communicate, to have access to information and entertainment services, to work and conduct business and for learning. In this context, there is no longer a 'typical' computer user. Information artefacts are used by diverse user groups, including people with different cultural, educational, training and employment backgrounds, novice and experienced computer users, the very young and the elderly, and people with different types of disabilities.[12]

It becomes a central premise that, in the Information Society, the ability to access, adapt and create knowledge using information and communication technologies is critical to social welfare and inclusion. Second, social welfare and inclusion and eInclusion are interdependent and reinforcing. eInclusion is a component of social inclusion. When individuals, social groups or specific localities experience (usually a combination of linked) problems such as unemployment, poor skills, low incomes, poor housing or bad health in relation to other groups, or at an above average rate, the causes are interconnected, and the effects themselves become causes of further exclusion. For example, poverty is both a key cause of social exclusion and a key effect.

1.3.3 Inclusive eGovernment

Just as eInclusion must be seen simply as a means to the end of increased societal inclusion, so inclusive eGovernment must be seen as the supply and use of eGovernment services which support the ultimate goal of a more inclusive society, and not as an end in itself. Indeed, in the recent eGovernment Action Plan, advancing inclusion through eGovernment has been agreed by the EC and Member States as one of the five major objectives for eGovernment which recognises the role of ICT-enabled public services to help consolidate social cohesion and ensure that disadvantaged people face fewer barriers to opportunities.[13]

There is already a lot of evidence that eGovernment can provide more inclusive services in an effective, appropriate and accessible manner.[14] eGovernment policies targeted at specific

[10] European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html
[11] For example, European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html
[12] Stephanidis, C (ed.), (2001), User Interfaces for All - Concepts, Methods, and Tools. Lawrence Erlbaum Associates, Mahwah, NJ..
[13] European Commission (2006) i2010 eGovernment Action Plan: Accelerating eGovernment in Europe for the Benefit of All, Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions, COM(2006) 173 final, Brussels, 25 April 2006, p. 5.
[14] For example, European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html; Stephanidis, C (ed.), (2001), User Interfaces for All - Concepts, Methods, and Tools. Lawrence Erlbaum Associates, Mahwah, NJ.; Prisma project(2003), Good Practice in eGovernment, eServices for all – treating all users equally,

groups at risk of exclusion, such as younger people in situations of disadvantage, women, low-income, unemployed, retired people, older citizens, ethnic groups, the disabled, etc., can be successful, as long as they are accompanied by a focus on the eSkills of users and staff and on access. For example, the inclusion of citizens by providing appropriate eGovernment services is able to promote fuller employment and thus higher employment rates by equipping disadvantaged individuals with appropriate skills and additional channels to access work, such as by disabled people working from home or in sheltered environments. It also promotes more employment opportunities through boosting the ICT sector.[15]

In addition to specific services and specific excluded groups, the evidence shows that eGovernment is most successful when coordinated widely across the public sector at different levels – European, national, regional, local – as well as requiring the constant commitment and synergy of the main relevant players: governments, private sector and civil society in its various forms. This results in improved cross public sector policies and coordination of social protection, care, and health systems, human capital investment and education/training systems, etc., supported by eGovernment. In appropriate contexts, this needs to be accompanied by international and cross-border eGovernment social inclusion initiatives.

The Kaplan report defined "eInclusion as social inclusion in a knowledge society. Therefore, beyond access to ICT tools and services, beyond even digital literacy, a definition of eInclusion should focus on people's empowerment and participation in the knowledge society and economy: skills and competences (both ICT-related and regarding new ways of working using ICT), awareness and willingness, social capital and the means to grow it are also key factors of eInclusion."[16] Whilst this is an adequate definition if we assume that the knowledge society fully characterises the aspirations of modern European societies, it is perhaps somewhat restrictive at the present time when both understanding and progress towards a knowledge society are incomplete.

The recent UK government report on inclusion through innovation perhaps comes closer to capturing this important, wider context: "There is a tendency in the debate about ICT and eGovernment services to assume that ICT means computers and the Internet, and that addressing the 'digital divide', or disparity between those who have access to and use of ICT and those who do not, simply means getting more socially excluded people online. However, the issues and opportunities are much wider than this."[17]

First, ICT in this context need not be new or novel. Indeed evidence suggests that the majority of people prefer to contact public and private services using what is now a very sophisticated, if somewhat understated ICT device – the telephone. The more recent development of mobile phones has built on this popularity, and the fact that very high proportions of certain excluded groups own mobile phones now provides enormous opportunities to improve contact, communication, and engagement with them. The services provided by a phone are identical whether an individual is calling from a castle or a caravan.

Second, the ICT systems used to support socially excluded people are often 'back office' systems that support better service delivery by service providers. Innovative service delivery systems that facilitate electronic information sharing, better management of information and electronic work management systems, are invisible to service users, except in the outcome of

---

Strategic Guideline, European Commission IST 5th Framework IST Programme: http://www.prisma-eu.org; The Beep project (2003) "Social inclusion" in Best eEurope Practices deliverable D8.1: http://www.beepknowledgesystem.org and http://www.beepsocial.org

[15] European eSkills Forum (2004a), "eSkills for Europe: towards 2010 and beyond: synthesis report", European Commission DG Enterprise and Industry, September 2004: http://europa.eu.int/comm/enterprise/ict/policy/doc/e-skills-forum-2004-09-fsr.pdf

[16] eEurope Advisory Group (2005) "eInclusion: new challenges and policy recommendations", co-ordinated by Daniel Kaplan for the European Commission, July 2003 p. 7.: http://europa.eu.int/information_society/eeurope/ 2005/ allabout/advisory_group/documents/index_en.htm,

[17] Office of the Deputy Prime Minister (2005) "Inclusion through innovation: tackling social exclusion through new technologies", Social Exclusion Unit Final Report, UK Government, Nov 2005, pp. 10-11.

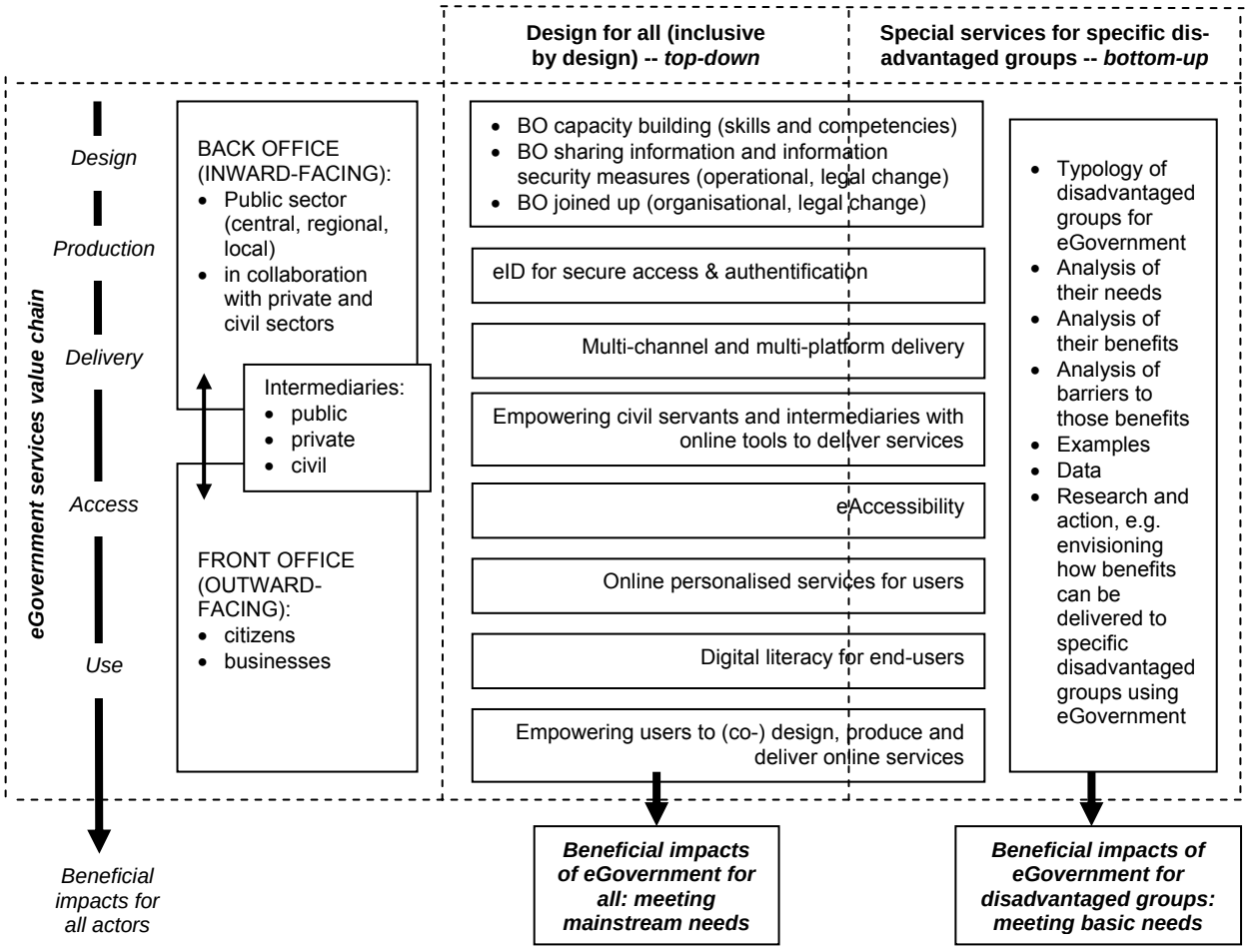
better services. Such service delivery can thus include human intermediaries (whether formal or informal, or from the public, private or civil sectors) who deliver services using ICT to, or on behalf of, end-users who only experience a familiar human contact and a service fulfilled.

Third, some of the more obviously present ICT hardware like telecare, CCTV security cameras, remote health monitoring, and smart cards, can provide immediate advantages to excluded people but do not require the user to have any technical knowledge or training to derive benefit.

1.3.4 Synoptic map of inclusive eGovernment

The figure below provides a synoptic map of the overall inclusive eGovernment terrain, summarising the main issues which the inclusive eGovernment ad-hoc subgroup needs to take into account.[18] There are two main dimensions. First, an eGovernment services 'value chain' which traces their design, production, delivery, access and use, and which should ultimately lead to some beneficial impacts. The second dimension consists of two main approaches to inclusion policy, on the one hand, universal design-for-all (or inclusive by design) which implies developing services from the outset (*top down*) which can be used by everybody regardless of whom they are, and, on the other hand, providing specific assistance or services tailored to specific groups (*bottom up*) which, often building on design-for-all services, offers unique services to particular groups and which are not designed for use by everybody.

Synoptic map of inclusive eGovernment terrain: key issues to be addressed



[18] Derived from the document ""Analysis of European target groups related to inclusive eGovernment: draft final report, 22 October 2006", prepared for the Inclusive eGovernment ad-hoc subgroup.

1.4 Objectives and structure of this report

This report is an initial analysis of European target groups related to inclusive eGovernment presented to the Inclusive eGovernment ad-hoc subgroup. According to its terms of reference, the analysis should take into account the following issues:

1. the definition of the target groups of inclusive eGovernment with a differentiation of them by two criteria:
   - geographical : i) EU level, ii) national level, and iii) the European Commission
   - their characteristics.
2. the identification of barriers to inclusive eGovernment in terms of
   - access which prevent people from getting Public Administration services
   - realising benefits, such as i) quality of life, and ii) economics (savings); special attention should be paid to the definition of 'benefit'. For each target group, this definition will take into account both administrative burdens and less favoured people.

The rest of this report is structured as follows:

- Section 2: overview of inclusive eGovernment target groups
- Section 3: overview of inclusive eGovernment benefits
- Section 4: overview of inclusive eGovernment barriers to those benefits
- Section 5: options for administrative actions towards the i2010 inclusive eGovernment goal

Note this report is intended to provide a pragmatically oriented summary overview of target groups, barriers and benefits of inclusive eGovernment, rather than a fully comprehensive review or detailed academic study. Each part of the report could, if requested, be developed further with additional, more in-depth analysis and reference to empirical studies.

2 Overview of inclusive eGovernment target groups

Note, this analysis has not considered businesses as target groups nor public sector employees themselves, although these groups could have been examined with a wider remit. The focus here is purely on citizens as individuals and in socio-demographic and community groups of various kinds.

Three target group taxonomies are examined, each from a specific perspective relevant to inclusive eGovernment. First, taxonomies based on generic types of disadvantage where the distinguishing factors are the socio-economic situation of the users themselves and the problems they face. Second, a taxonomy based on whether or not the user her- or himself actually uses government or eGovernment services for their own benefit or for the benefit of others. Third, a taxonomy based on the geographic level of the service supplier. The first type of taxonomy, informed by the other two, is then used in section 3 to develop an approach to examining the benefits which eGovernment could bring to the disadvantaged groups proposed. It should, however, be stressed that the purpose here is not to develop a fully comprehensive taxonomy applicable in all situations, but to explore various ways of defining disadvantage amenable to being tackled by eGovernment.

2.1 Target groups by user characteristics and problems

These taxonomies are based on how disadvantage does, or is likely to, reduce or threaten the life chances or quality of life of individual citizens or societal groups, using the following criteria:

- These taxonomies should reflect as much as possible actual user behaviour in day-to-day life situations in relation to fulfilling (or attempting to fulfil) the needs different groups have.
- The groups should reflect as much as possible real practical problems, benefits and barriers, i.e. reflect real differences in the way services could be offered and benefits realised, in order to provide a basis for policy development and the agreement of actions which address the needs of the different actors involved.

- The groups should provide a common working segmentation useful across Europe.
- Group taxonomies should be conceptually simple for ease of understanding, whilst sufficiently sensitive to enable realistic analysis.
- There should not be too many groups otherwise analysis will become bogged down in detail.
- Overall, taxonomies should be of direct practical relevance to the work of the ad hoc subgroup on inclusive eGovernment.

The taxonomies are drawn from a survey of EU policy and other studies,[19] designed to enable analysis on the basis of barriers and benefits, and thereby appropriate policies and actions. The main sources are outlined in the following sub-section.

2.1.1 Main sources

The following main sources provided direct input to this supplement:

1. The six generic groups suggested in the first draft of this report:
   - Physiological/mental disadvantage: including short/long term health problems
   - Behavioural disadvantage: criminal behaviour (+ victims), substance abuse
   - Socio-economic disadvantage: low income/poverty, worklessness, homelessness, educational under-achievement including low literacy
   - Demographic disadvantage: gender, age (old, child/youth)
   - Ethnic and cultural disadvantage: ethnic/racial minorities, language minorities, cultural minorities, religious minorities
   - Geographic disadvantage: rural areas, peripheral/remote/island, inner-city, old-industrial, etc.

2. The suggestions made by the UK Representative to the Inclusive eGovernment ad-hoc subgroup:
   - Complex multi-need
   - Young disadvantaged
   - Homeless
   - Unemployed
   - Disabled
   - Educationally disadvantaged
   - Rurally deprived
   - Frequent movers
   - Refugees & asylum seekers
   - Older people
   - Ethnic minorities
   - Victims (crime, domestic abuse,…)
   - Problem families, teenage pregnancies
   - Drug abusers
   - People on low income.

3. The Council of the European Union (2006) *Joint Report on Social Protection and Social Inclusion*, 7294/06, Brussels, 13 March 2006. This report does not provide any ready taxonomies of socially excluded groups, but a brief review of the contents provides some valuable insights which could be reflected in the ad hoc subgroup's work in order to provide comparability, as well as access to suitable data.

   Page 10 of the Joint Report confirms seven so-called key policy priorities:
   - labour market participation
   - modern social protection systems

[19] Such EU policy and other studies refers to all the references included in this report, plus Millard, J. (2005) "Conceptual and analytical framework for eGovernment", part of Deliverable D1.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

- disadvantages in education and training
- child poverty and assistance to families
- decent housing
- access to quality services
- overcoming discrimination and increasing the integration of people

In addition, the report examines the following not mentioned above:
- disability
- older people (and pensions)
- single parents
- large families
- young people at risk
- ex-prisoners
- addicts
- health and long term care
- female labour force participation
- poverty (as an issue directly underlying many of the above)

The report also highlight the importance of multiple disadvantages. In terms of the indicators and data provided on social protection and social inclusion, these include:
- at-risk poverty
- poverty risk by household, work intensity of household, activity status, those in-work
- regional cohesion
- long term unemployment
- jobless households
- early school leavers not in education and training
- low reading literacy performance of pupils
- life expectancy
- employment gap of immigrants

Some of the other data provided cover:
- old age and survivors benefits
- sickness, health care
- disability
- unemployment
- family and children
- housing and social exclusion n.e.c.
- early school leavers
- educational attainment by age and gender
- exit age from labour force
- risk of poverty amongst older people.

Finally, in its technical annex the report provides a Commission Staff Working Document multi-dimensional analysis based on the indicators, covering:
- the income dimension of poverty and social inclusion, including at-risk-of-poverty measures including by age, for children, for single adult households, by gender
- the labour market dimension of poverty and social inclusion, split into:
  - the individual perspective, including long-term unemployment
  - the household perspective, e.g. jobless households, children in jobless households
  - income and employment, including whether at work or not at work, work intensity of households with or without dependent children
  - regional cohesion and labour market outcomes, including regional employment rates by gender
- the skills dimension, including early school leavers, reading literacy
- the health dimension, including life expectancy, access to health services.

2.1.2 Some working taxonomies by user characteristics and the problems they face

1. Families and children at risk, including single parents, large families
2. Young people at risk, including teenage pregnancies
3. Homeless, poor housing, frequent moving
4. Unemployment and job problems
5. Older persons
6. Disabled
7. Poor education and training, including low literacy
8. Criminal or other illegal behaviour, including ex-prisoners:
   i) undertake illegal behaviour of many types, whether defined as criminal or civil offences, such as vandalism, graffiti spraying, noisy or rowdy behaviour, illegal parking and traffic offences, other breakers of civil law, and other behaviour likely to occasion nuisance or disturbance to others
   ii) undertake criminal behaviour of all types, whether or not custodial
   iii) undertake substance abuse of whatever type.
9. Victims of behaviour causing physical/mental suffering or damage (including of crime, domestic abuse, etc.)
10. Ethnic and cultural/language minorities, including immigrants (refugees and asylum seekers could be included here or as a separate group), including:
    i) ethnic or racial minority group, including immigrants or subsequent generation immigrants, and those habitually discriminated against by the dominant ethnic or racial group, whether or not this is sanctioned by social mores or laws (such as the Romanies, or national minorities in other countries like the Russians in the Baltic States)
    ii) cultural or language group, for example because of religious belief and value systems (like Catholics in Northern Ireland, Muslims in many European countries), or non-religious belief or value systems such as minority nationals or speakers of minority languages), although most if not all of these are normally no longer reasons for disadvantage in Europe as long as the individual upholds the law.
    iii) foreigners, not all of whom are disadvantaged but eGovernment can increase their isolation.
11. Geographically deprived, include citizens whose life chances or quality of life are threatened or reduced because they live or work in areas which suffer from various forms of disadvantage (normally in terms of inferior infrastructures and/or socio-economic development), for example in:
    i) rural areas
    ii) peripheral or remote island areas
    iii) inner-city areas
    iv) old-industrial or otherwise disadvantaged areas.
12. Health and long term care, including:
    i) long-term physically disabled in any way, whether this be visual impairment, reduced dexterity, reduced muscular control or similar conditions, etc.
    ii) long-term mental disability
    iii) short-term physically ill
    iv) short-term mentally ill
    v) perhaps also life-style health problems like obesity and stress.

The following points should also be noted regarding the taxonomy above:

i) Complex multi-need has not been specified as a separate group, given that, by definition, it covers many of the above and is thus difficult conceptually to tackle. However, the specific needs of multiple deprivation are extremely important and need to be tackled as such, so a multi-needs group could be included in the next stage of work.

ii) Low income and poverty have not been included as it can be argued that these factors underlie many of the problems manifest in many of the above groups, rather than constituting a distinctive group in its own right.

iii) It was suggested on 28 June that the ad hoc group focus on eGovernment as eAdministration only, for example by not examining education, health, etc. If this were done, groups 11 and 12 would be removed, and perhaps also group 10.

iv) The groups as listed above are not in any specific order, although there are possible ways to cluster them. For example, along dimensions in terms of socio-demographics, related directly to (whether caused by or causing) poverty and low income, a behavioural dimension, etc. A more sophisticated analysis could be undertaken at a later stage which maps benefits, barriers and actions along these or other dimensions of exclusion, which would then enable the multiple nature of exclusion and deprivation to be better understood and addressed. For example, an individual user may be mapped simultaneously as having low educational attainment on a socio-economic dimension, be a substance abuser on a behavioural dimension, and live in a rural area where traditional services are less well developed on a geographic dimension. The co-location of these three types of exclusion or disadvantage in such a mapping exercise could make it easier to understand the combination of (e)services and actions necessary to enable that specific individual to improve his or her life chances and quality of life. Another individual may have similar attributes on two of the dimensions, but be different on the third, and would thus need (somewhat) different support. For example, a well-educated (perhaps student) individual who is a drug abuser and lives in a rural area. Such an approach would not only be useful for socially excluded individuals but also for service personalisation more generally also among so-called 'mainstream' users. This would, in fact, be a useful tool for any form of service personalisation..

It should, however, be stressed that the purpose of this review is not to develop a fully comprehensive taxonomy applicable in all situations, but to explore and illustrate different ways of defining disadvantage amenable to being tackled by eGovernment for the purpose of targeting action. Different countries have developed their own way to segment and target disadvantaged users, determined by their specific situation and need. For example, some research from a UK perspective but using international examples has adopted a problem-based approach:[20]

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

Also, carers could be a group.

[20] Foley, P & Alfonso, X (2005) "An international study of technology initiatives to enhance social inclusion: extending the reach of what works", a report prepared by IECRC (International Electronic Commerce Research Centre) for the Social Exclusion Unit of the Office of the Deputy Prime Minister, August 2005.

Another example is the taxonomy used in the Netherlands to profile target groups:[21]

- Benefit claimant (single mother on benefit)
- Volunteer
- Disabled child
- Senile older person (elderly invalid)
- Average family
- Healthy older person
- Chronically ill person
- Pensioner (disability benefit claimant)
- Unemployed

2.2 Target groups by use of (e)government services

This second type of taxonomy is based on whether or not the user her- or himself actually uses government or eGovernment services for their own benefit or for the benefit of others. According to the eUSER study[22] four main types of such service user, which have relevance for inclusive eGovernment, can be identified. The main distinguishing characteristics of each group are summarised in the following table and described in the sub-sections below.

Characteristics of typical user groups

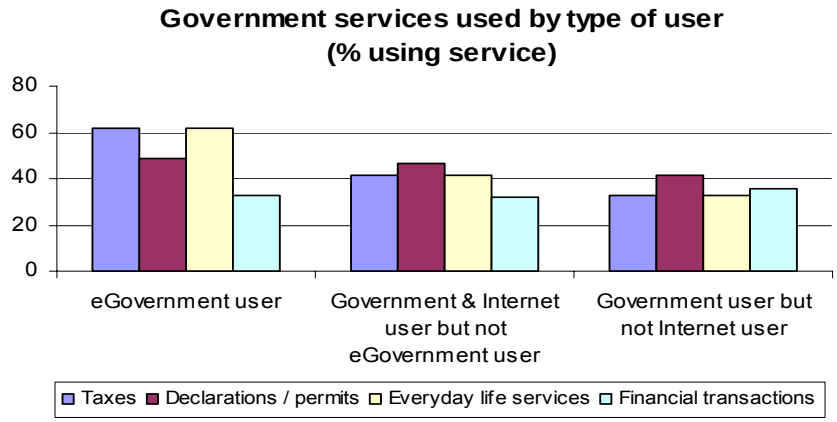
Government users similar to general adult population, except more likely to be:	**eGovernment users** similar to government users, except more likely to be:	**Social intermediaries for eGovernment** similar to eGovernment users, except more likely to be:	**Receivers of partial or full assistance from social intermediaries for eGovernment** similar to eGovernment users, except more likely to be:
• higher educational level • higher income • not-employed, early retired, retired and invalided • aged over 65	• lives in a country with high eGovernment roll-out • lives in a country with high Internet roll-out • has well developed eSkills & eAttitudes • in employment • aged 25-34 • male • uses government services more often • uses a wider range of government service types • uses a wider range a different channels, not only ICT	• early retired, permanently invalided • unemployed • aged 35-64 • lives in a country with not very advanced eGovernment roll-out	• low digital engagement or skills • manual or unskilled occupations • not working or retired • rare Internet user • lives in a country with not very advanced eGovernment roll-out • aged 50 plus • low functional and low leisure online orientation • female • below secondary level education • Internet access outside the home

[21] "Nederland Regelland: nine routes along Dutch bureaucracy", programme on the reduction of administrative burden for citizens, Ministry of the Interior and Kingdom Relations, The Netherlands: http://www.lastvandeoverheid.nl.

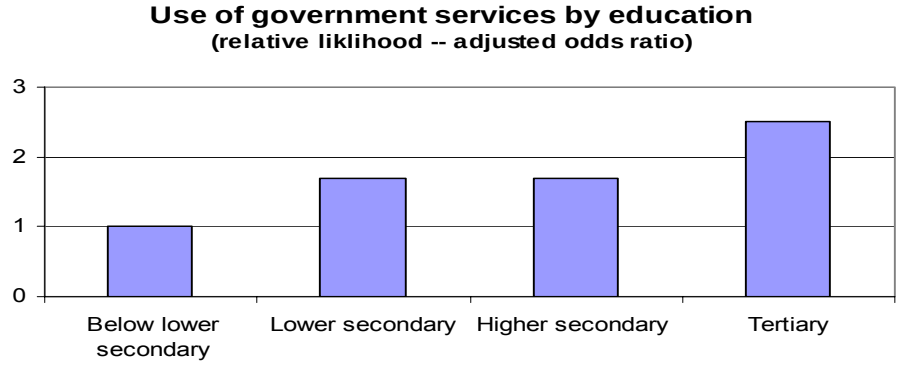
[22] Millard, J. (2006, forthcoming) "Report on current demand/supply match for eGovernment", part of Deliverable D5.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

2.2.1 Government service user

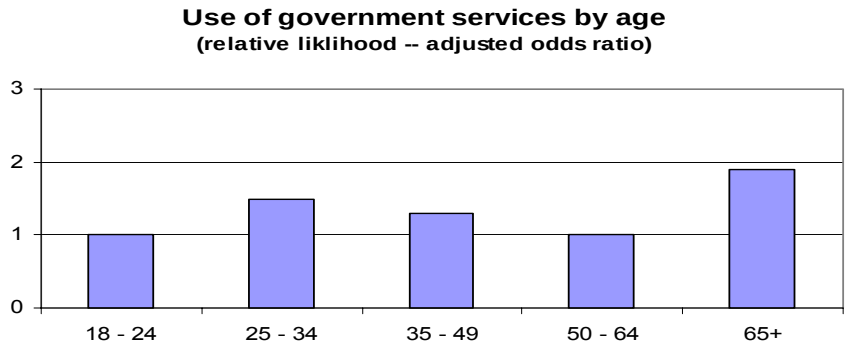
According to the eUSER survey[23], almost 70% of all adults had direct contact with the public administration in the previous 12 months, although the average number of contacts was only 1.6 per person during that period. As shown in the figure below, services relating to declarations and permits are those most used by government (as opposed to eGovernment) users, but these are closely followed by the other types, i.e. everyday life services (such as related to work, housing, education, culture, transport, etc.), taxes and financial transactions.



Using multivariate statistical analysis techniques, the data show that a citizen's educational level is the most important factor determining whether or not they use government services, for example, citizens with a tertiary education are 2.5 times more likely to be government users than those with the lowest educational level.
Other important factors include income, where citizens with over median income are 1.3 times more likely to be government users than citizens below the poverty level, and employment status which shows that not-employed citizens, followed closely by those who are early retired and invalids, are marginally more likely to be government users than other groups. Finally, citizens in the over 65 age group are 1.9 times more likely to be government users than the 18-24 age group.



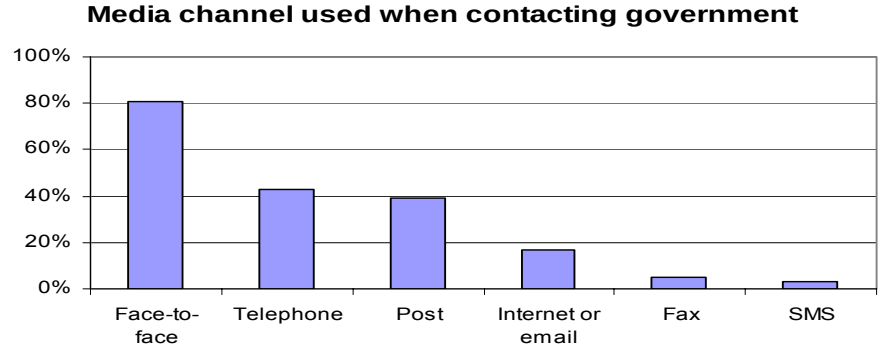
[23] The eUSER survey in 2005 provided a statistically valid telephone interview sample of about 10,000 adults at home across ten EU Member States (the Czech Republic, Denmark, France, Germany, Hungary, Ireland, Italy, Poland, Slovenia, and the United Kingdom), as well as studies on the supply side, on good practice and on user-orientation issues related to eHealth, eGovernment and eLearning services: http://www.euser-eu.org.



The data overall paint a picture of the typical government service user as an able, well educated and higher income citizen who is in an older age group, and who is not working because of unemployment, invalidity or retirement. Therefore, such citizens are those who couple the abilities and background to know about and access government with a strong need for such services. The issue remains that those citizens without such abilities and backgrounds, but who similarly need government services, are more likely to be socially excluded from using them.

2.2.2 eGovernment service user

The eUSER data show that the media channel used when contacting government is still overwhelming face-to-face. However, there are very large differences between countries, so that Denmark is the leading country in the sample with over 40% of government users using eChannels, whilst in the Czech Republic the figure is less than 9%. Also, in the UK and Ireland the use of the postal services and the telephone has overtaken face-to-face. Overall, new ICT media provide access for about 20% of all contacts with government, 17% of this via the Internet or e-mail and about 3% via SMS.



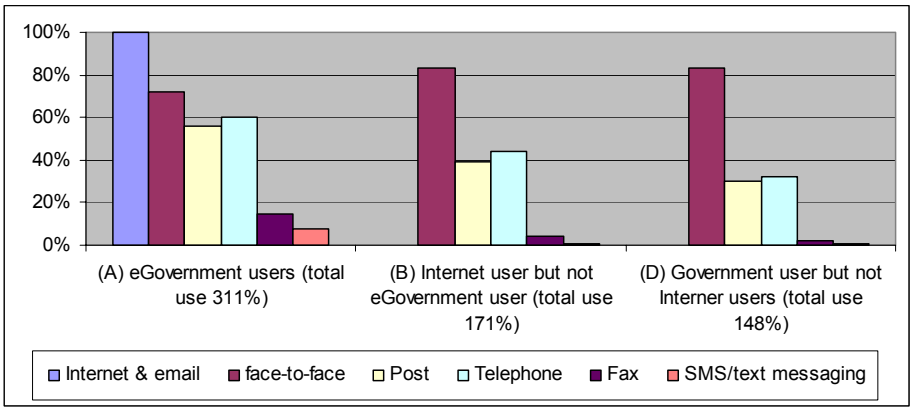
Other data from this survey show that eGovernment users are more likely, when compared to government users, to use services supporting everyday life (such as related to work, housing, education, culture, transport, etc.), closely followed by taxes. Much of this is accessing information, but there is also increasing communication with civil servants. More formal and binding transactions, on the other hand, involved in calculating and submitting tax returns, making declarations or applying for permits (such as to the police or for building permission), and for receiving financial benefits and grants, are less popular as online services, but still increasing. Clearly the latter services can be more intimidating as they require the provision of personal data, and often the perceived need for more face-to-face and real time interaction which can be more difficult to mediate electronically.

There is a strong tendency for the eGovernment user to use a wider range of government services, whether or not accessed online, than non-eGovernment users. In addition, as shown in the figure below, eGovernment users use government services on average 3.1 times a year compared with non-eGovernment users who only tend to use government services 1.5. times a year. Further, eGovernment users are 'flexi-channellers' and 'channel balancers', in that 60% to 70% of them also use other channels and freely make channel choices suited to their preference, to the specific service and to the specific task in hand.

This is in some contrast to non-eGovernment users who tend much more to be 'single channellers', relying mainly on the face-to-face channel to access government services. The strong overall conclusion is, therefore, that the individual eGovernment user tends to use government services more than non-eGovernment users, to use a wider range of such services, and to do so through a more flexible channel mix, which includes both electronic and traditional channels. The behaviour of eGovernment users is thus typically quite different from government users.

The profile of eGovernment users is also quite different from government users. According to the eUSER multivariate data analysis, the factors determining whether or not an individual is likely to be an eGovernment user are country, Internet, or skill related, whilst socio-demographic factors are much less significant.

Media channels used for government services by type of user



Thus, an individual living in a country with high Internet availability and high roll-out of eGovernment services, and having well developed eSkills and eAttitudes, is highly likely to use eGovernment. The only important socio-demographic factor seems to be labour market status, i.e. where citizens in employment are 2.4 times more likely to be eGovernment users than retired persons. This is in some contrast to users of government services generally (rather than eGovernment services specifically) where, education, income, labour market status and age are the most important factors. Encouraging eGovernment use is thus more a question of providing access and skills, rather than tackling income, education or age, although the latter are important for wider inclusion issues, and this clearly has important policy implications.

However, it is still the case that those eGovernment users who use the Internet from PC platforms tend to be in higher income groups, of lower age and with a tertiary education. In contrast to this, the eUSER data show that access to eGovernment services through hand-held devices, like mobile phones or PDAs (personal digital assistants or organizers, i.e. 'm' or mobile government), is both becoming more important generally, and is particularly important for people who are otherwise likely to be digitally excluded. These include groups with below secondary level education, those not working (but not unemployed) or those invalided, as well as those living in countries where access is a greater problem.

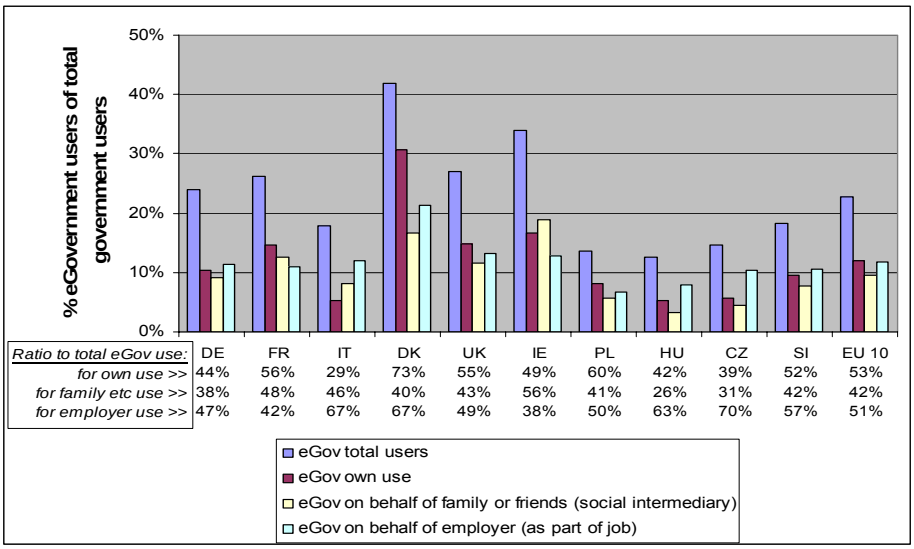
2.2.3 Social intermediary for eGovernment

The figure below shows that using eGovernment services on behalf of others (i.e. as a 'social intermediary' in a context of what can be termed the 'social use' of eGovernment) is undertaken by about 11% of all users of government services. The data also show that 53% of users of eGovernment do so for their own purpose, 51% as part of their job, and 42% on behalf of family or friends, the latter thus being termed 'social intermediaries' for eGovernment.

In terms of national differences, countries with the highest eGovernment use are also those with the highest use on behalf of family or friends, i.e. Ireland, Denmark, the UK and France. In addition, Ireland and France stand out as having greater use for family and friends than they do for their employer, and are also conspicuous as having by far the highest ratios of use for family or friends in relation to total eGovernment use, perhaps because of their strong family and community centred culture.

Further, it can be seen that the New Member States have the lowest eGovernment use for family or friends in terms of total government use, as well as an average or a lower than average percentage in terms of total eGovernment use. The former relates to their lower overall use of eGovernment, and the latter, perhaps, to the higher ratio of total eGovernment use on behalf of their employer. The latter appears to be an important route in the New Member States for people to become familiar with eGovernment.

eGovernment users: on whose behalf (own purpose, for family/friends, or for employer)



This picture changes, however, when it comes to the number of people assisted by social intermediaries, as shown in the figure below, where the NMS are all above the mean of 2.6, with the Czech Republic soaring to 5.3. This may be due to the fact that the NMS, particularly those in this sample, generally have greater access problems and lower digital skills, so that more of the population may need to use eGovernment via the more skilled social intermediaries. Part of the explanation for this could also be that it reflects different levels of development (particularly sophistication and user friendliness) of eGovernment services in these countries.

The mean of 2.6 other persons assisted by social intermediaries for eGovernment, coupled with the generally high numbers of such intermediaries (10% of total government users and 42% of

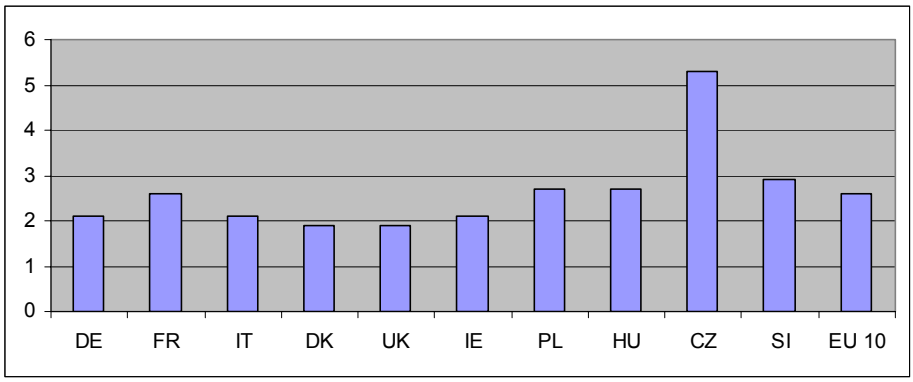
eGovernment users), indicates that the phenomenon is probably a lot more widespread and important than has previously been appreciated.

The eUSER multivariate data analysis shows that there is a quite striking profile of a social intermediary for eGovernment as one who tends to be a user of a large number of different eGovernment services, with both a functional and leisure orientation to the Internet, and who belongs to the group of early retired, permanently invalided, not employed, or otherwise not working before the formal retirement age.

Moreover, social intermediaries tend to have well developed application and technical digital skills, to be interested in new technology, to have a mixed educational background (either very little or very high), and to live in countries which are only 'emerging' in terms of eGovernment readiness, as opposed to those which are 'intermediate' or 'advanced'. They also tend to be male, between the ages of 35 and 64 and with quite low income, although these latter factors are not statistically significant. Thus, overall, social intermediaries are far from being typical eGovernment users or Internet 'nerds', but are instead likely to be individuals with plenty of free time and with good digital skills and orientation in not very advanced eGovernment countries. Such people, of whom there could be a large number, represent an important resource to help deliver the benefits of eGovernment.

There is also some evidence of civil servants acting as intermediaries as part of their job.[24] User inclusion and personalisation strategies could include a 'one-to-one' relationship between the citizen and the public sector, where an individual civil servant, a small team of civil servants, or an electronic agent, have the responsibility to fully support individual (or groups of) users, whether these be citizens or businesses.

Average number of other persons assisted by social intermediaries for eGovernment



This concept could be crystallised around the term 'citizen account manager' (in order to draw an analogy with 'key account managers' in business), citizen service activist, and the term 'street-level bureaucrat' has been used. Intermediated and personalised support and services can best be provided in this way to users if deep knowledge is available about each individual, obtained both through highly intelligent ICT systems, including electronic agents, but also, critically, through human and personal experiences based on tacit knowledge which ICT cannot always capture and which is only built up through trust established by contact over time. Thus,

[24] Such as civil servant 'intermediaries' operating out of small citizen offices located in the more deprived areas of Berlin, and using a digital suitcase to visit old people's homes, hospitals and the like, as Information empowered front-line staff. Also, in Seattle in the USA a system of mobile civil servants visiting citizens, rather than citizens travelling to the town hall, is being established based on the capabilities of the city ICT backbone. See Millard, J. and Shahin, J. et al (2006) "Towards the eGovernment vision for EU in 2010: research policy challenges", for the Institute of Prospective Technological Studies, Seville, Spain, European Commission, DG JRC

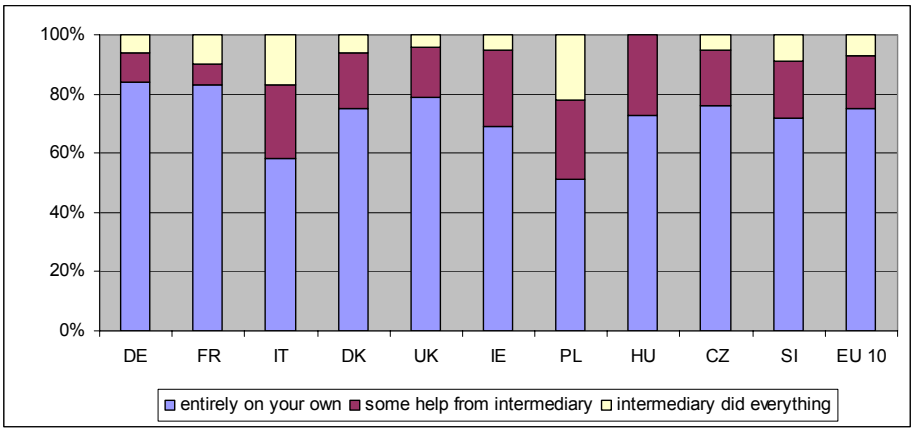
this role moves on from the earlier one-stop-shop concept, in which a user approached a single desk (or portal) for further access to different services, but where the desk officer did not necessarily have any prior relationship with the user, to a concept based on longer-term and more stable relationships.

2.2.4 Receiver of assistance from a social intermediary for eGovernment

The figure below shows that on average 18% of all eGovernment users receive some help from an intermediary, whilst 7% receive complete help. Support from an intermediary is highest in the New Member States, which may be due to greater access problems and lower digital skills, so that more of the population may need to use eGovernment via the more skilled social intermediaries. This probably also reflects different national levels of eGovernment service development, particularly in terms of sophistication and user friendliness. Italy and Ireland are the only older Member States with greater than average numbers of users receiving help from a social intermediary.

As with social intermediaries themselves, the profile of the typical citizen receiving assistance in using eGovernment, derived from the eUSER analysis, is also highly specific. Such assisted users are very likely to have low digital engagement and skills, to be in manual and unskilled occupations, to be a rare Internet user and to live in countries with low Internet penetration. They also tend to be aged 50 and over, to demonstrate a markedly low functional and low leisure online orientation, to be female rather than male, with below secondary level education, unemployed or not working, with an income below the poverty level or no higher than median income, to have Internet access outside the home, and to have started to 'use' the Internet only very recently. These latter factors are, however, not statistically significant.

eGovernment users receiving support from a social intermediary



2.3 Target groups by geographic level of supplier

The third target group analysis is based on the geographic level of the service supplier.

2.3.1 National level

National level inclusive eGovernment services cover all those supplied within a specific Member State, context, and also include for the purposes of this analysis services targeted at:

- local users
- regional users

- national users
- sectoral users.

2.3.2 EU level

EU level inclusive eGovernment services cover all those supplied which have a trans-national or trans-European scope. These can be broadly defined as services which the Member States either cannot or will not provide on their own (and which are also not subject to the subsidiarity principle), but which are deemed to be necessary or useful either politically or by users or user representatives. Present types of EU level inclusive eGovernment tend to fall into one of four categories:

1. Pan-European: are relevant for, and can be used from, anywhere in EU25+, such as services provided by European-wide institutions or networks (the IDA Programme focuses on such eServices where these involve G2G and are based on treaty obligations).
2. Cross border: are relevant for, and can be used by minorities, business networks, civic networks, etc., straddling one or more Member State borders.
3. Multi-national: serving two or more (parts of) Member States not necessarily adjacent, such as cooperation between two cities in two different Member States to jointly develop and/or provide an eGovernment service for use by their own citizens or businesses, so that for example economies or scale or scope are created and needs in more than one Member State are satisfied
4. Replication, good practice, knowledge transfer, i.e. one or more (parts of) Member States replicate, or learn from, the eGovernment of others by adapting to their own conditions and culture. This may be part of an Open Method of Coordination framework and may include peer review, actions within a common framework, benchmarking, good practice exchange, etc., but it may also be the more informal and bottom-up collaboration between two or more Member States to learn from or assist each other.

2.3.3 The European institutions

Inclusive eGovernment services provided by the European institutions cover all those supplied because of:
- treaty obligations
- specific agreement with Member States.

3 Overview of inclusive eGovernment benefits

In this section, first the benefits for disadvantaged users are examined in relation to the specific user characteristics typology presented in section 2.1 above. Here, each specific disadvantaged group is taken in turn and the potential benefits of eGovernment are examined. Subsequently, a wider approach to benefits is presented according to a generic analysis, based on a survey of EU policy and other studies[25], by making a tripartite categorisation of benefits into supply side, the user interface. and the demand side. This tripartite approach is useful as the types and

[25] Such EU policy and other studies refers to all the references included in this report, particularly Office of the Deputy Prime Minister (2005) "Inclusion through innovation: tackling social exclusion through new technologies", Social Exclusion Unit Final Report, UK Government, November 2005, pp. 12-13 . Other sources consulted include Rambøll Management (2003, 2004) Top of the web: survey on quality and usage of public e-services, prepared for the European Commission eGovernment Unit, Brussels, November 2003; PRISMA (2002) eStrategies for government, Prisma Strategic Guideline 10, Prisma, a research action supported by the Information Society Technologies Programme of the European Union, 2000-2003, contact http://www.prisma-eu.net; SIBIS (2003) 'Benchmarking e-Government in Europe and the US'. http://www.empirica.biz/sibis-mirror/files/WP5_No8_e-Government_2.pdf.

focus of actions (policies and ICT development) and stakeholders involved are different in each case. The three types of benefits are sketched in sub-sections 3.2, 3.3 and 3.4, after which is added a recent analysis of some demand side benefits undertaken by the eUSER project.

3.1 Benefits for target groups identified by user characteristics

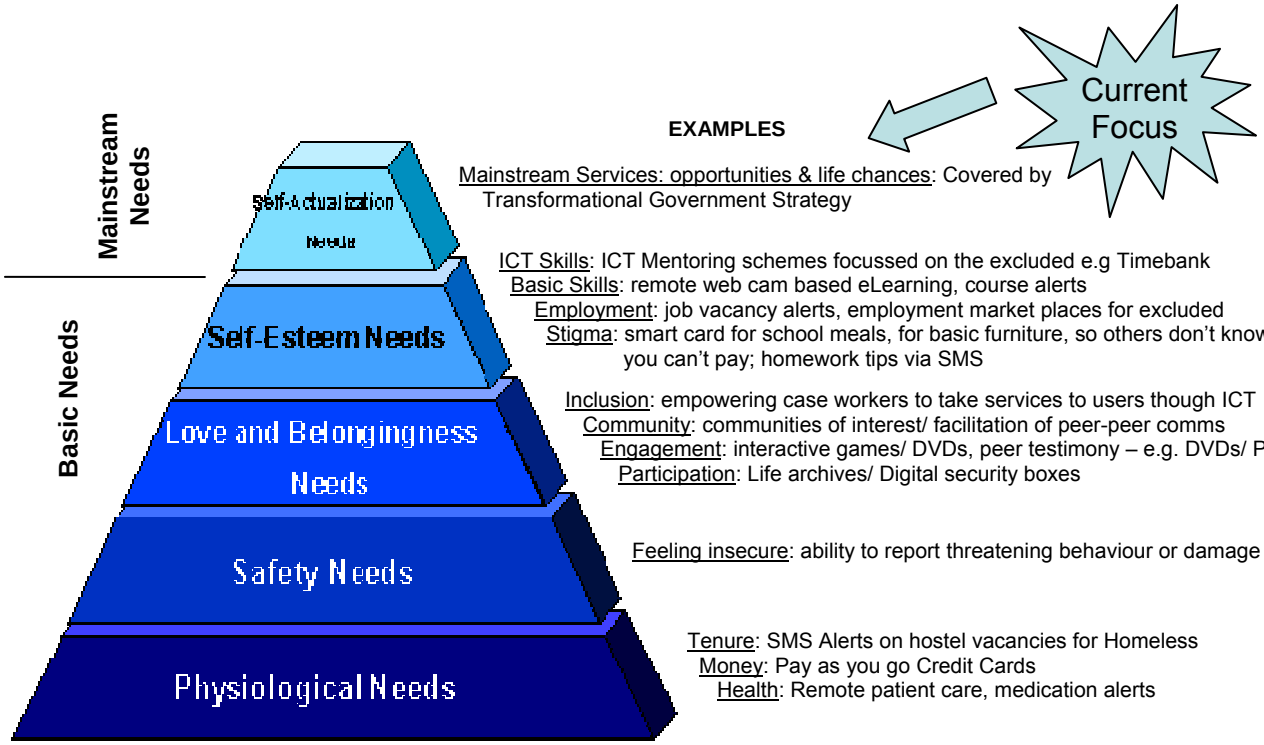
3.1.1 Determining needs

The benefits gained by disadvantaged groups, whether through the direct or indirect use of eServices are manifold, but include better service access; easing their daily life burdens (such as engaged with public administration), improvements to government-citizen relations, better access to education, training, work and jobs, improvements to their personal capacity (quality of life and life chances), and enhancing their social networks and participation.

It is important to focus on, and include, disadvantaged groups because their needs have typically been over-looked in favour of 'mainstream' needs. One way to unpick and facilitate this is to use Maslow's needs hierarchy, as shown in the figure below where the needs of disadvantaged groups can be more clearly articulated as often distinct and specific when compared to those of mainstream users, as well as with users having other types of disadvantage.

The figure shows that many of the pressing needs of the disadvantaged are not currently being met. Government ICT policy has typically not addressed these needs, but rather focused on ICT access and use to meet the mainstream needs of the mainstream population. The focus has been on existing services, often irrelevant to the disadvantaged groups. To the right of the pyramid, some examples are given of how each type of need could be met. To date the best examples of meeting these basic needs through eServices have been small scale and through the civil sector (NGOs, community and voluntary groups, etc.)

Maslow's needs hierarchy adapted to individual needs (source: Digital Inclusion Team, UK, 2006)



3.1.2 Benefits by target group

The following mapping of benefits by target group according to Maslow's needs hierarchy remains a first attempt.

Target group	**Benefits which (e)government may be able to promote** • Ultimate benefits for all groups include better life chances and quality of life, through improving personal capacity and better access to, and participation in, social networks. • All groups can also benefit from joined up services which both tackle different problems, and also see them as a whole manifest in a unique individual situation, including early warning for intervention. • Note, this table is tentative and speculative at this stage.	
Non socially excluded	Benefits resulting from better access to and use of mainstream services	
1. Families and children at risk	a) Physiological	• Income and housing support
	b) Safety	• Support for safety in the home (e.g. advice and equipment) • Protection against domestic abuse
	c) Love & belonging	• Support for child care in or outside home • Peer support by linking families with similar problems, and/or mentor schemes linking problem families with families who have solved their problem(s) or in the local community • Better embedding in local community through family and young children clubs
	d) Self esteem	• Support for improved parenting skills • Support to juggle work and family responsibilities • E.g. smart payment cards (e.g. for basic furniture, school meals, etc.) so others don't know can't pay
2. Young people at risk	a) Physiological	• Income and housing support
	b) Safety	• Advice on crime avoidance (young people are amongst the most affected by street crime) • Improved policing through improved communication with young people
	c) Love & belonging	• Engaging young people through projects like interactive games/DVDs/podcasts, peer testimony • Teenage and youth support through online communities (clubs), help lines, etc.
	d) Self esteem	• Homework tips via SMS • Skill and work support (e.g. eLearning using games, and work role simulations)
3. Homeless, poor housing, etc.	a) Physiological	• Income and housing support • Better matching of need, financial ability, location, type of housing to vacancies and availability • SMS alerts on available accommodation such as hostel vacancies for homeless
	b) Safety	• Advice on crime avoidance (homeless people are amongst the most affected by burglary and street crime) • Improved policing through improved communication with homeless people
	c) Love & belonging	• Peer support by linking the homeless in local self help groups, perhaps shared accommodation (with or without supervision) • Better embedding in local (settled) community through neighbourhood schemes
	d) Self esteem	• E.g. enabling the homeless to access other services (and work) without revealing they have no address
4. Unemploy-ment and job problems	a) Physiological	• Income and housing support
	b) Safety	• ?
	c) Love & belonging	• Peer support by linking the unemployed (and under-employed) in local self help groups • Better embedding in local community through job and interview skills clubs
	d) Self esteem	• Better job sector information and matching of individual need,

Target group	Benefits which (e)government may be able to promote • Ultimate benefits for all groups include better life chances and quality of life, through improving personal capacity and better access to, and participation in, social networks. • All groups can also benefit from joined up services which both tackle different problems, and also see them as a whole manifest in a unique individual situation, including early warning for intervention. • Note, this table is tentative and speculative at this stage.	
		skills, location with vacancies • Job vacancy alerts, employment market places • Skill and work support (e.g. eLearning using games, and work role simulations)
5. Older persons	a) Physiological	• Income and housing support • Pension/benefits information and access
	b) Safety	• Senior-Link visitor credential checking • Digital Security boxes
	c) Love & belonging	• Personal care and support • Peer support by linking the older people in local self help groups • Better embedding in local community through neighbourhood initiatives
	d) Self esteem	• Life archives • Providing access by rest of society (civil community as well as local firms, etc.) to experience and skills of older persons through semi-retirement or after retirement on voluntary basis.
6. Disabled	a) Physiological	• Income and housing support (including where housing needs to be adapted to cater for disabled needs) • Medication and support alerts • Remote care and support
	b) Safety	• Advice and support on personal safety, e.g. safety in the home equipment • Disabled-Link visitor credential checking
	c) Love & belonging	• Peer support by linking minorities local self help groups (needs to be bottom up and typically dependent on champions and leaders) • Better embedding in local community through neighbourhood initiatives
	d) Self esteem	• Skill and work support (e.g. eLearning using games, and work role simulations) tailored to disabled needs • Skill and work support linked to disability needs • Access to personal records
7. Poor education and training	a) Physiological	• Income and housing support
	b) Safety	• ??
	c) Love & belonging	• Access to eLearning and eTraining courses • Communities of learning and peer-to-peer
	d) Self esteem	• Basic skills: remote web cam based eLearning, course alerts • ICT skill mentoring schemes (e.g. Timebank schemes) • Skill and work support linked to disability needs • Education and training information
8. Anti-social & criminal behaviour	a) Physiological	• Income, housing and health support
	b) Safety	• Better information and monitoring, e.g. of drugs, drug abuse. domestic and neighbourhood disturbances and crime • Improved probation and ex-prisoner supervision • Better crime reporting • Better policing and detection • Better criminal justice systems
	c) Love & belonging	• Improved care in the community • Peer support by linking people with similar behavioural problems in local self help groups • Better embedding in local community through neighbourhood initiatives
	d) Self esteem	• Skill and work support (e.g. eLearning using games, and work role simulations)
9. Victims of anti-social or criminal behaviour	a) Physiological	• Health, especially psychological, support
	b) Safety	• Neighbourhood and community watch schemes • Improved justice and due process
	c) Love & belonging	• Better redress systems (e.g. appeals and complaints against judicial and other decisions, access to ombudsman, better auditability • Peer support by linking victims in similar circumstances and problems in local self help groups • Better embedding in local community through neighbourhood

Target group	Benefits which (e)government may be able to promote • Ultimate benefits for all groups include better life chances and quality of life, through improving personal capacity and better access to, and participation in, social networks. • All groups can also benefit from joined up services which both tackle different problems, and also see them as a whole manifest in a unique individual situation, including early warning for intervention. • Note, this table is tentative and speculative at this stage.	
		initiatives
	d) Self esteem	• Support in coping, acquiring new skills (e.g. coping skills), getting back to work, etc.
10. Ethnic and cultural / language minorities	a) Physiological	• Income and housing support • Anti-ghetto formation initiatives
	b) Safety	• Advice on crime avoidance (ethnic/cultural minorities are amongst the most affected by street crime) • Improved policing through improved communication with ethnic/cultural minorities
	c) Love & belonging	• Tailored services in appropriate languages, addressing appropriate needs, etc. • Better information and access to specific services (including cross-border where minorities are divided by borders) • Peer support by linking minorities local self help groups (needs to be bottom up and typically dependent on champions and leaders) • Better embedding in local community through neighbourhood initiatives
	d) Self esteem	• Skill and work support (e.g. eLearning using games, and work role simulations) relevant for ethnic/cultural group
11. Geographi-cally deprived	a) Physiological	• Locally/regionally designed employment, housing and support initiatives
	b) Safety	• Anti 'crime and grime' initiatives linked to local/regional needs
	c) Love & belonging	• Community formation and support amongst what may be scattered communities and populations • Tailored community based services addressing specific geographic disadvantage
	d) Self esteem	• Place-wellness and cultural initiatives promoting identity of locality/region both internally and to outside work (including place branding) • Skill and work support linked to local/regional economic needs
12. Health and long term care	a) Physiological	• Medication and support alerts • Remote care and support • Income and housing support • Medication alerts • Health information
	b) Safety	• Advice and support on personal safety, e.g. safety in the home equipment • Health-Link visitor credential checking
	c) Love & belonging	• Peer support by linking minorities local self help groups (needs to be bottom up and typically dependent on champions and leaders) • Better embedding in local community through neighbourhood initiatives
	d) Self esteem	• Access to personal medical records • Education and training information, e.g. for rehabilitation after illness, part-time and specially designed work, etc.

3.1.3 Synthesised benefits across all target groups

The specific benefits for each target group can be synthesised across all of the target groups as in the table below.

Main types of benefit across all disadvantaged groups

Physiological needs

Tenure:

- Housing support, including where special housing is needed for specific needs (e.g. SMS alerts on available accommodation such as hostel vacancies for homeless)
- Better matching of need, financial ability, location, type of housing, etc. with vacancies and availability
- Anti-ghetto formation initiatives
- Locally/regionally designed employment, housing and support initiatives

Money

- Income support
- Pension/benefits information and access

Health

- Remote care and support
- Psychological care and support
- Targeted health information
- Medication and support alerts

Safety needs

Victims of others' behaviour

- Better information, monitoring and reporting of threatening behaviour or vandalism, thus improved policing
- Advice on crime avoidance
- Protection against crime and abuse
- Neighbourhood and community watch schemes
- Better information, monitoring and early warning of safety issues
- Support for personal safety in the home and on the streets (e.g. advice and equipment)
- Visitor credential checking

Love and belongingness needs

Individual inclusion

- Personal care and support in or outside the home
- Personal support by peer linking, through mentor schemes, help lines
- Tailored redress systems (e.g. louder and better share of voice, appeals and complaints against judicial and other decisions, access to ombudsman, better auditability)
- Appropriate languages and styles for minorities
- Creation of and access to individual life archives, including information held by the public sector

Community

- Enhancing social networks
- Better embedding of individuals/families in local community through self-help groups and clubs
- Community formation and support amongst dis-jointed communities and populations
- For example, through projects like interactive games/DVDs/podcasts

Engagement and participation

- Enhancing participation in social, economic and political issues
- Opportunities to influence, design and deliver own services and situation
- Opportunities to influence societal policy on group and generally

Self esteem needs

ICT skills

- ICT skills for everyday life
- ICT skills for employment

Basic skills and competencies

- Improvements to personal capacity, quality of life and life chances
- Vocational skills and competencies information and support
- Non-vocational skills and competencies (e.g. living, coping, parenting, community)
- Enabling others to understand problems and access the competencies and skills of the disadvantaged
- For example, eLearning using games, SMS tips, work role simulations

Employment

- Improved access to education, training, work and jobs
- Better job information and matching of vacancies with individual need, skills, location, etc. (e.g. job vacancy alerts, employment market places)

Stigma

- Easing daily life burdens (including engagement with public administrations and with other service providers)
- Accessing services and support without revealing disadvantage except to those who need to know
- For example, smart payment cards (e.g. for basic furniture, school meals, etc.) so others don't know can't pay

3.2 Supply side benefits

Supply side (service push) benefits are those which result from the supply of inclusive eGovernment services, and include the following:

3.2.1 Economic performance

Better targeted and greater use of inclusive eGovernment services will result in greater use of ICT which is one of the motors of increased economic performance and greater efficiency, and can be a driver for both increased employment opportunities and greater overall wealth in society, to the benefit of all citizens including those at risk of exclusion.

3.2.2 Strategic planning and service targeting

ICT enables a better understanding of the nature, incidence, and causes of social exclusion and facilitates improved planning to address it. Through the collection and sharing of information the public sector can develop a much better understanding of the patterns of social exclusion and the needs of excluded people. This allows the development and monitoring of evidence-based social exclusion strategies which can be much more effectively and efficiently targeted where they are needed.

3.2.3 Decision- and policy-making

ICT enables a better functioning and efficient decision-making process with the public sector built upon knowledge management, and, in particular, initiatives centred on new approaches to communication and knowledge sharing, both within individual agencies and across jurisdictional boundaries. Improving decision-making often develops in tandem with public sector innovation, for example in tackling social exclusion. New forms of decision-making are also linked to evidence-based policy making. Extending consultation to involve community experts and stakeholder groups whilst speeding up the process from research to policy-making to delivery, can be best achieved through maximising new knowledge management tools and techniques in areas such as communication, collaboration, security, data modelling and forecasting.

3.3 User interface and service delivery benefits

User interface and service delivery benefits are those which result from successful matching between service supply and service demand for inclusive eGovernment services, and include the following:

3.3.1 Integrated user-centred services

More effective, integrated, and user-centred services, by providing support and new opportunities for service providers to better design interfaces and deliver services.

3.3.2 Personalised and targeted services

More personalised and targeted services, both in relation to specific users and also specific user groups.

3.3.3 Delivery and channel strategies

Improved strategies for:

i) Service delivery: the fundamental difference between the public and the private sectors needs to be borne in mind, i.e. that governments cannot choose their customers and that the market mechanism, although important, is unlikely to provide widespread solutions in the context of inclusive eGovernment services. Moreover, fully 'joined-up' government often implies a 'one-stop-shop' (single entry point), for example around citizen life events, integration across borders, etc., and implies full vertical and horizontal integration in the back-office enabled by ICT, whether or not the user is presented with an electronic service interface.

ii) Channel selection: designing a suitable channel mix (i.e. multi-channel) means being able to juggle the different demands of users across different channels. In order to do this, standard building blocks and common standards for interoperability are required. Investment is critical, as is the long term view, especially as it is not easy to simply drop existing channels, but there is a need to balance efficiency and universal access. There are different types of users (e.g. based on age, skill, location, etc.), but also different types of service transaction, for example the Internet is useful for structured information, whereas phone and face-to-face are often better for more unstructured and personal information. Also the same user could prefer different channels at different parts of the transaction, e.g. online submission of a form, but complaints may be by phone. Both the different types of user and the different types of transaction phases in user sessions, as well as switch points between channels, have an impact on the choice of channel.

3.3.4 Service initiation and control

Better design of how services are initiated and controlled: eGovernment services can be designed in order to adapt both their initiation and control to suit the type of service, the type of user and the type of transaction. Present strategies include one or a mix of the following:

i) proactive, where the agency has all or most data needed to execute the service and takes the initiative to deliver to the user in a timely and appropriate fashion without the user needing to conscientiously take action
ii) self-service, where the end user him or herself takes the main or full responsibility for initiating and controlling the service, including supplying data, making decisions and determining the timing
iii) user customisation, where a user is able to customise the initiation and control of the service as well as its content, format, delivery mode, etc., in order to suit his or her specific characteristics and needs
iv) intermediation, where a professional (such as a civil servant or someone in the private sector) or informal volunteer initiates and controls the service on behalf of (as well as with the permission and connivance of) the end user.

3.4 Demand side benefits

Demand side (service pull) benefits are those which result from the demand or use of inclusive eGovernment services, and include the following:

3.4.1 Service access

Improved access to services, thus providing opportunities to develop a more flexible approach to service availability, and to the way services are accessed (for example, online 24/7, in large font or different languages, etc.). This includes:

i) information: finding out what is on offer – the online provision of information about services such as employment, health, and social support. This provides a one-way channel of communication from government to citizens, although it can be more interactive and allow the user to conduct focused searching for information.

ii) transaction: doing business remotely – the process whereby a citizen can interact and transact with a service. This includes applying for a benefit or service by telephone or online, or making a payment of a parking fine using a secure Internet link.
iii) interaction: keeping in touch electronically – two way communication between service providers and their clients, which includes e-mailing or texting information and reminders.

3.4.2 Ease administrative burden

Reduced administrative burden through savings in time and money, better accessibility, more convenience, greater transparency and greater flexibility. For example, new services can be offered which enable tracking and tracing of a user enquiry or case through the public administration, which is very difficult using traditional channels.

3.4.3 Government-citizen relations

Improved relationship between the government and the citizen, for example whether the government acts as transaction machine, trusted adviser, and guardian angel vis à vis the citizen.[26] If a citizen merely wants to perform a necessary transaction with government then one-go, real time on-line government, will be relevant. If however, the citizen wants some support in making a decision or even decisive help in managing a crisis situation then s/he may require government to act as trusted adviser or guardian angel, often in a personalised, one-to-one face-to-face relationship, but supported by ICT in the back-office.

3.4.4 Access to education, training, work and jobs

Better access to work and the job market: ICT changes the nature of a considerable number of jobs, in a way that allows the development of a more inclusive labour market. It introduces opportunities for home working, more flexible working patterns, better engagement in the workforce of disabled people and a range of new jobs.

3.4.5 Personal capacity

Improved personal capacity to increase quality of life and life chances: ICT helps individuals to address some of the key drivers of social exclusion which reduce life chances and life quality. For example, by providing better support for families and parents, re-engaging young people with education, supporting the sick, building safer neighbourhoods, etc.

3.4.6 Social networks and participation

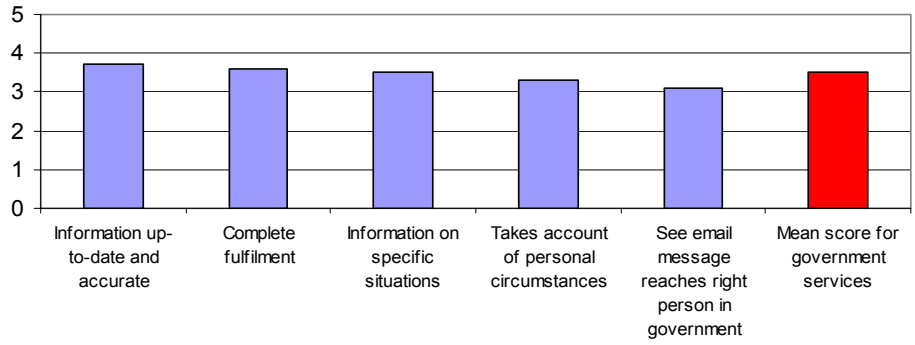
Support to social networks and civic participation: entertaining content, for example, news, music and games, opportunities for low-cost shopping, and building and maintaining social contact with others are some of the most commonly cited reasons why the majority of people use the Internet. The opportunity to pursue individual interests and activities online often serves as the 'hook' or incentive that initially engages people with the Internet. The opportunities for communication with friends, family, or new communities of people who share interests is one of the most striking and liberating aspects of ICT; whether this is lonely or isolated grandparents receiving e-mailed pictures of grandchildren, or disadvantaged people with an interest in football finding like-minded enthusiasts online. Equally community participation and democracy through new technology is slowly but steadily emerging in local communities, sometimes very effectively involving those who were previously indifferent or excluded.

[26] EDS (Electronic Data Systems Corporation) (2005), Delivering modern services strategy: EDS input to first stages of eGovernment Unit consultation in the UK, London, England

3.5 Benefits of eGovernment experienced and perceived by users

The eUSER survey[27] found that eGovernment users are generally quite positive with an overall satisfaction score of about 3.5 out of 5. The most valued benefit is up-to-date and accurate information, closely followed by complete service fulfilment, then sufficient information about specific situations, next taking account of personal circumstances, and finally the least valued but still important benefit is transparency. The 'Top-of-the-Web' survey found that the most widely reported benefit from using eGovernment among users is saving time and gaining flexibility. eServices are an improvement because the users can access the service on-line, 24-hours-a-day, instead of only during office opening hours. However, service improvements on top of these channel improvements are only experienced by 30-40% of the users. This indicates that eGovernment services are basically only off-line services which are now offered on-line without any additional refinement or development.[28]

Mean eGovernment satisfaction score (1 to 5)



The eUSER survey also shows that eGovernment services are rated at a very similar level as government services, which indicates that adding online services to the government service portfolio does not seem so far to have changed such perceptions very much. This can be interpreted both positively, that the early days of online services with all the attendant difficulties have been very successful, or more negatively, that online services should be improving service quality and hence satisfaction rather than simply replicating it.

4 Overview of inclusive eGovernment barriers

As was the case for the benefits of inclusive eGovernment in section 3, the barriers to those benefits are first examined in relation to the specific user characteristics typology presented in section 2.1 above. Here, each specific disadvantaged group is taken in turn and the potential barriers of eGovernment are examined. Subsequently, a wider approach to barriers is presented according to a generic analysis, based on a survey of EU policy and other studies[29], by making a tripartite categorisation of barriers into supply side, the user interface, and the demand side.

[27] Millard, J. (2006, forthcoming) "Report on current demand/supply match for eGovernment", part of Deliverable D5.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

[28] Rambøll Management (2003, 2004) Top of the web: survey on quality and usage of public e-services, prepared for the European Commission eGovernment Unit, Brussels, November 2003.

[29] Such EU policy and other studies refers to all the references included in this report, particularly Office of the Deputy Prime Minister (2005) "Inclusion through innovation: tackling social exclusion through new technologies", Social Exclusion Unit Final Report, UK Government, November 2005, pp. 12-13 . Other sources consulted include Rambøll Management (2003, 2004) Top of the web: survey on quality and usage of public e-services, prepared for the European Commission eGovernment Unit, Brussels, November 2003; PRISMA (2002) eStrategies for government, Prisma Strategic Guideline 10, Prisma, a research action supported by the Information Society Technologies Programme of the European Union, 2000-2003, contact http://www.prisma-eu.net; SIBIS (2003) 'Benchmarking e-Government in Europe and the US'. http://www.empirica.biz/sibis-mirror/files/WP5_No8_e-Government_2.pdf.

This tripartite approach is useful as the types and focus of actions (policies and ICT development) and stakeholders involved are different in each case. The three types of barriers are sketched in sub-sections 4.2, 4.3 and 4.4, after which is added a recent analysis of some demand side barriers undertaken by the eUSER project.

The current MODINIS study[30] provides a working definition of an eGovernment barrier as "characteristics – either real or perceived – of legal, social, technological or institutional context which work against developing eGovernment at the EU level, either: because they impede demand, by acting as a disincentive or barrier for users to engage with eGovernment services; or because they impede supply, by acting as a disincentive or barrier for public sector organizations to provide eGovernment services."

4.1 Barriers for target groups identified by user characteristics

The table below focuses on specific barriers to the potential benefits presented in section 3.1 which could be realised for each target group through eGovernment, and also includes access and use barriers. Note, most of the barriers given for non-socially excluded groups in the first row also apply generically to the socially-excluded groups, so are not repeated in this table for each of the latter.

Target group	**Barriers**		
	Barriers to access	**Barriers to use**	**Barriers to benefits**
Non socially excluded	• No need for service • Access cost constraints, and inability or lack of willingness to pay • Access too complicated	• No awareness of service • Lack of appropriate (digital) skills • Lack of appropriate motivation • Service content not relevant • Poor quality service interface and low ease of use	• Service not personalisable • No single identifier • Data protection fears
1. Families and children at risk	• Lack of space for ICT	• Time problems, e.g. juggling and coping with many family and household tasks	• Difficulties in reconciling the individual needs of the different family members (e.g. of the child cf. with the parent) as these may be in some conflict • Lack of ability to use service appropriately to help specific situation which is typically quite unique for different families • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most families typically need high human-touch support instead of, or in addition to, own use of eServices
2. Young people at risk	• Lack of sufficiently robust or powerful equipment and infrastructure to meet demands of young people	• Unattractive (e.g. insufficiently entertaining) service formats	• There may be lack of trust (in both or either directions) between the different generations, e.g. between the young person, on the one hand, and society's institutions and authority figures on the other • Lack of ability to use service appropriately to help specific situation which is typically quite unique for different young people • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most young people typically need high human-touch support

[30] Oxford Internet Institute (2006) "Breaking Barriers to eGovernment: Overcoming obstacles to improving European public services", Modinis study, Contract no. 29172, A Legal and Institutional Analysis of Barriers to eGovernment, Draft Deliverable 1b WP1, Submitted 31 May 2006, p. 7.

Target group	Barriers		
	Barriers to access	**Barriers to use**	**Barriers to benefits**
			instead of, or in addition to, own use of eServices
3. Homeless, poor housing, etc.	• Lack of sufficiently robust equipment and infrastructure to meet demands of poor housing • Lack of space for ICT or poor location of access in relation to housing or homeless situation	• Lack of, or poor, usage conditions and facilities	• Problems in being able to improve housing due to low income, inability to move, family circumstances, etc. (issue of complex multi-need) • Lack of ability to use service appropriately to help specific situation which is typically quite unique for different individuals with housing problems • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most individuals with housing problems typically need high human-touch support instead of, or in addition to, own use of eServices
4. Unemployment and job problems	• Lack of access at work to ICT, which is often a substitute for own access to eServices	• Lack of work-related ICT skills which is often a boost for own use of eServices	• Problems in being able to improve employment situation due to low educational level, inability to move, family circumstances, etc. (issue of complex multi-need) • Lack of ability to use service appropriately to help specific situation which is typically quite unique for different individuals with employment problems • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most individuals with employment problems typically need high human-touch support instead of, or in addition to, own use of eServices
5. Older persons	• Access offers, conditions and marketing rarely adapted to needs of older users	• Use constraints due to age, e.g. problems with concentration and memory	• Lack of ability to use service appropriately to help specific situation which is typically quite unique for different older people with housing problems • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most older people typically need high human-touch support instead of, or in addition to, own use of eServices
6. Disabled	• Access constraints due to disability, e.g. wheelchair access to PIAPs • Access offers, conditions and marketing rarely adapted to needs of disabled users	• Use constraints due to disability, e.g. no assistance for hearing or visually impaired	• Lack of ability to use service appropriately to help specific situation which is typically quite unique for different disabled persons • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most disabled persons typically need high human-touch support instead of, or in addition to, own use of eServices
7. Poor education and training	• Poor understanding of necessary access requirements and conditions • Access offers, conditions and marketing rarely adapted to needs of poorly educated users	• Poor understanding of necessary use requirements and conditions	• Problems in being able to improve educational level due to low income, inappropriate employment situation, family circumstances, etc. (issue of complex multi-need) • Lack of ability to use service appropriately to help specific situation which is typically quite unique for different individuals

Target group	Barriers		
	Barriers to access	**Barriers to use**	**Barriers to benefits**
			with low educational levels • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most individuals with low educational levels typically need high human-touch support instead of, or in addition to, own use of eServices
8. behaviour	• Normal access may be difficult due to social stigma and shunning	• User ICT skills and habits (where these exist) directed at undesirable behaviour, rather than at beneficial behaviour or at attempts to change behaviour	• Problems in being able to improve behavioural patterns due to low income, low educational level, housing and family circumstances, etc. (issue of complex multi-need) • Lack of ability to use service appropriately to help specific situation which is typically quite unique for different individuals with behavioural problems • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most individuals with behavioural problems typically need high human-touch support instead of, or in addition to, own use of eServices
9. Victims of criminal behaviour		• Use retarded because needs are often highly personal and emotionally perceived	• Lack of ability to use service appropriately to help specific situation which is typically quite unique for different victims • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most victims typically need high human-touch support instead of, or in addition to, own use of eServices
10. Ethnic and cultural / language minorities	• Access constraints due to language or cultural norms and mores • Access offers, conditions and marketing rarely adapted to needs of ethnic or cultural minorities	• Use constraints due to language or cultural norms and mores	• Benefits difficult to achieve as they often depend on group-wide action and coherence rather than purely individual incentives, and may require sanction or action from the group leader or champion
11. Geographically deprived	• Poor access conditions due to location, e.g. lack of broadband • Poor service roll-out, e.g. due to lack of local critical mass • Access offers, conditions and marketing rarely adapted to needs of geographically disadvantaged areas	• Poor user environments, e.g. lack of supportive facilities in rural or poor areas	• Lack of ability to use service appropriately to help specific situation which is typically quite unique for different geographical areas
12. Health and long term care	• Access constraints due to health, e.g. being bedridden • Access offers, conditions and marketing rarely adapted to needs of poorly educated users	• Use constraints due to health, e.g. problems with concentration and memory	• Lack of ability to use service appropriately to help specific situation which is typically quite unique for different sick persons • Inappropriate channel blend (e.g. ICT, telephone, in-person) given that most sick persons typically need high human-touch support instead of, or in addition to, own use of eServices

4.2 Supply side barriers

Supply side (service push) barriers are those which prevent or inhibit the supply of inclusive eGovernment services, and include the following:[31]

4.2.1 Roll-out of relevant ICT infrastructures

Barriers are organisational, financial, legal and technical impediments or bottlenecks to getting the relevant infrastructures in place, including broadband and mobile infrastructures, as well as appropriate, and affordable, hardware and software.

4.2.2 Finance and business case

Barriers are:
i) Financial inhibitors, including a poor understanding of the costs and likely returns of eGovernment services, and little use of cost-benefit analyses, key performance indicators, appropriate business cases,[32] proper financial control and evaluation, etc.
ii) Lack of appropriate evaluation of inclusive eGovernment services, including lack of real understanding or awareness of user needs, as well as low visibility and awareness, poor marketing and no development of good practice learning systems.

4.2.3 Leadership and organisation

Barriers are:
i) Lack of leadership and senior commitment, specifically political, strategic and administrative leadership.
ii) Resistance to change in organisational structures and relationships.

4.2.4 Work processes and skills

Barriers are:
i) Workplace and process inflexibility, covering work processes and practices
ii) Lack of appropriate staff skills and working cultures.

4.2.5 Coordination, supply chain and content

Barriers are:
i) Poor coordination: lack of coordination and harmonisation can impede the roll-out of eGovernment services both within a specific department or agency but also especially between different jurisdictions at different levels and in different geographical contexts.

[31] In addition to the other sources referenced, the main sources here are European Institute of Public Administration (2005) “Organisational changes, skills and the role of leadership required by eGovernment”, for the European Public Administration Network eGovernment working group, on behalf of the Luxembourg Presidency, 12 May 2005; Millard, J., Kubicek, H., Westholm, H., Cimander, R., Iversen, J.S. (2004) Reorganisation of government back-offices for better ePS – European good practices (back-office reorganisation), prepared for the European Commission eGovernment Unit, Brussels, January 2004. Available from: http://europa.eu.int/egovernment and http://www.beepgovernment.org; and Millard, J. (2006 forthcoming) ”Taxonomy of main existing and potential government activities, tasks and roles” part of a study on ”ICT-driven models of eGovernment”, the Institute of Prospective Technological Studies, European Commission, DG JRC, Sevillas, Spain.

[32] OECD (2005), “The Business Case for eGovernment” chapter 4 in “eGovernment for Better Government”, Organisation for Economic Co-operation and Development, Paris, 2005.

ii) Lack of supply chain coherence, related to the above but specifically in terms of poor liaison between the different actors along the supply chain consisting, for example, of public-private partnerships, as well as partnerships with civil sector actors such as NGOs, which could be particularly significant in reaching disadvantaged groups.
iii) Lack of provision of appropriate (i.e. needed and useful) service content.

4.2.6 Legal, regulatory and policy frameworks

Barriers are lack of appropriate legal and regulatory provisions, for example in relation to roles and responsibilities, data privacy, data sharing, etc. This could also relate to a poor policy environment which is not able to ensure proper market functioning and adequate fiscal policies.

4.2.7 Interoperability and data sharing

Barriers are:
i) Lack of technical interoperability between the different supply-side agencies, and between legacy and new systems, lack of appropriate and agreed standards, and problems with technical performance.
ii) Lack of information and data sharing between different agencies and jurisdictions, as well as across public, private and civil sectors.

4.2.8 Trust, privacy and ethics

Barriers are:
i) Lack of trust between agencies that others will perform appropriately and use data responsibly.
ii) Problems with privacy and ethical issues, both in relation to the protection of data belonging to individual citizens as well as concerns about intrusion into the lives of citizens.

4.3 User interface and service delivery barriers

User interface and service delivery barriers are those which prevent or inhibit successful matching between service supply and service demand for inclusive eGovernment services, and include the following:

4.3.1 Visibility, findability and accessibility

Barriers are:
i) Lack of visibility of the service and findability (how easy is it to find the service), related to user awareness of opportunities and availability of service.
ii) Availability of the service, including physical accessibility (geography and time), technical accessibility, affordability of the service in terms of access costs and if a direct payment is necessary, appropriate language and cultural orientation of service presentation.

4.3.2 Utility, usability and flexibility

Barriers are:
i) Poor utility and usefulness of the service, i.e. relevance of service content to the user's specific needs
ii) Poor usability and ease of use,
iii) Flexibility, covering choice of ways the service can be used and delivered, choice of content, etc.

4.3.3 Service quality

Barriers are:
i) Poor content quality. including conformance to legal and professional standards, comprehensiveness, reliability and accuracy.
ii) Ease of use, efficiency, responsiveness, system reliability, system familiarity, loading time, page layout, readability, interruptability (i.e. how easy is it to interrupt service use and resume later without having to re-start), etc.[33]
iii) Navigability, number of clicks, appropriate links, etc.
iv) Customisation and personalisation, i.e. whether the service can be personalised (both for individual and group use), whether it can be adapted to national and ethnic groups, different cultural orientations, etc.
v) Inappropriate to specific user need, for example software for the visually impaired

4.3.4 Assurance and trust

Barriers are
i) Low levels of assurance and trust in the service provider's ability to provide high quality, relevant services, with quality certificates, etc.
ii) Low levels of trust in the service in relation to user data protection and privacy, such as fears about 'Big Brother', as well as user resistance to digital signatures and on-line payments (lack of trust in complex technology).

4.3.5 Service fulfilment

Barriers are uncertain service fulfilment, i.e. how effective is the service in achieving overall user real-world user goals and expectations, for example did the user successfully register his/her car, pay tax, access housing information, register for higher education, etc.

4.3.6 Availability and compatibility of delivery channels

Barriers are:
i) Lack of availability pf appropriate delivery channels, whether face-to-face, post, telephone, as well as the whole array of 'e' channels (Internet, PC, mobile, digital TV, cable, broadband, GRID, ambient technology, electronic agents like avatars, etc,) but also human and organisational intermediaries, etc.
ii) Lack of coordination and compatibility between the different channels and adequate understanding of how these can be related to the changing and dynamic needs of the specific user, specific service and specific task in question.
iii) Lack of appropriate delivery and channel strategies, for example, balancing between channels, channel switch points, etc.

4.4 Demand side barriers

Demand side (service pull) barriers are those which prevent or inhibit the demand or use of inclusive eGovernment services, and include the following:

[33] The most recent eAccessibility survey of public web-sites showed that relatively few (only 3%) achieve W3C Web Content Accessibility Guidelines, and that 70% showed relatively pervasive failures: UK Presidency of the EU (2005) "eAccessibility of public sector services in the European Union: executive briefing", published under the auspices of the European Public Administrations Network (EPAN), November 2005: http://www.cabinetoffice.gov.uk/e-government/eaccessibility.

4.4.1 User access

Barriers are:
i) Poor user access to appropriate technical infrastructures and facilities, including lack of physical accessibility seen from the user's perspective.
ii) Unsuitable location of appropriate technical infrastructures and facilities, for example, in the home, at work, at some other place like a public or shared office, seen from the user's perspective.
iii) Large number and type of offices and/or agencies to be contacted, and the number of contacts necessary.
iv) The complexity and demands of the eService, whether seeking information about government services, undertaking communication with agency staff before, during or after use of government services, undertaking transactions with the agency during use of government services, whether seeking anonymity when using government services or wishing / needing to be identified.
v) The user's lack of access to easy to use and appropriate identity and authentification systems.

4.4.2 Cost to user

Barriers are:
i) Inability to acquire ICT access and facilities due to cost constraints
ii) Lack of user willingness to pay for the eService, if there is a specific charge, and how this relates to charges through other media.

4.4.3 User competence

Barriers are:
i) Low functional literacy and numeracy.
ii) Low or inappropriate digital literacy, i.e. ICT skills and competences.
iii) The user's inability to understand and articulate their needs for (e)government services.

4.4.4 User motivation

Barriers are often directly related to the type of user, their specific needs and their social situation, and include:
i) Lack of perception, awareness and knowledge of specific services and their value relevant to the user's needs and situation.
ii) Poor user digital orientation and attitude, for example leisure or functional, technical or applied
iii) Lack of motivation to use the (e)service.

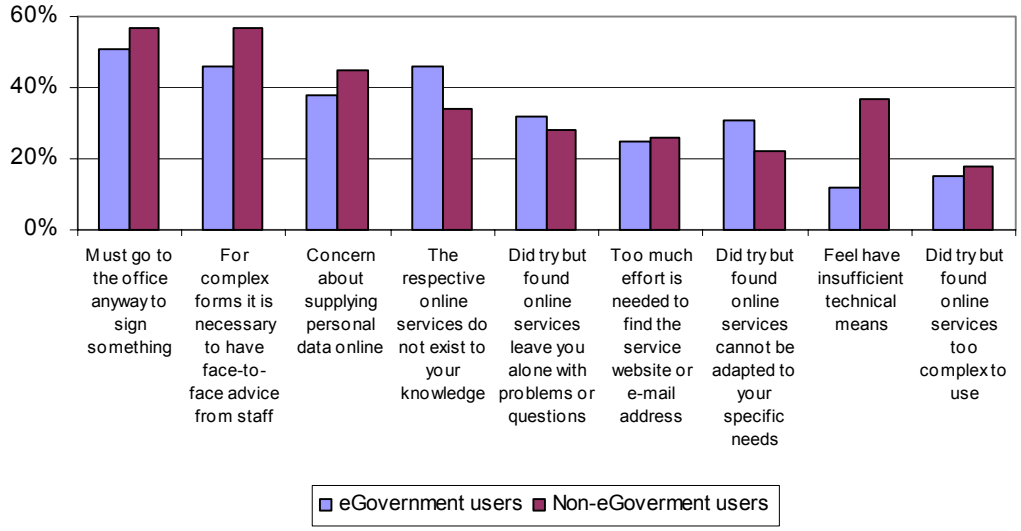
4.5 Barriers to eGovernment experienced and perceived by users

According to the eUSER study[34] the barriers cited by users which they say prevent them using (more) eGovernment services, the most important is that well over half of potential users think they need face-to-face contact for a specific service, and that online services will be too complex to use. There are also important privacy fears about supplying personal information online, and problems with knowing about a service.

[34] Millard, J. (2006, forthcoming) "Report on current demand/supply match for eGovernment", part of Deliverable D5.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

On average 32% of eGovernment users cite specific barriers compared to 37% non-users, which seems to show that once eGovernment is used, the overall perception of barriers may decline. However, eGovernment users more often mention being left alone with problems or questions and that eGovernment services are not adaptable to their own specific needs, which may be unsurprising as these issues are likely to appear most strongly during actual use. Perhaps these concerns are reasons why those who use eGovernment are also high users of other channels (especially face-to-face, telephone and post), which may provide forms of government-user interaction which online services are (to date at least) less successful at doing. eGovernment users are also more likely to have knowledge about the non-availability of online services, but are least likely to report any complexity issues as barriers.

eGovernment barriers: users and non-users



5 Options for administrative actions towards the i2010 inclusive eGovernment goal

In the examination of barriers to access, use and benefits (presented in section 4.1) it is sometimes quite difficult to separate out the barriers between the three columns, especially between use and benefit. Also many barriers to benefits appear quite similar across the groups. At this level of analysis, therefore, one conclusion may turn out to be that, although many (though not all) of the benefits are relatively unique across the different disadvantaged groups, many barriers (though not all) are quite similar.

However, it must also be recognised that this paper is an initial analysis only, which has not been able to analyse each of the target groups individually in any depth. It therefore seems quite likely that, if this were to be done, a greater understanding of barriers, and indeed of benefits, for specific target groups could be achieved. For example, one of the options below is for a set of detailed behavioural studies of one or more target groups be carried out in order to better understand their real needs in real situations, both for government services generally and also in terms of how ICT could support these.

5.1 Overview of options to tackle barriers

Despite this caveat about the need for detailed behavioural analyses of specific target groups, it is possible at this stage of the analysis to generalise across the target groups in terms of the main barriers which seem to be important, as summarised in the table below. On this basis, it is thus also possible to suggest a series of options for policy objectives and actions to tackle the barriers.

Main barriers related to disadvantaged groups	Main options for removing or mitigating barriers
Supply-side barriers • Lack of understanding about what (different types of) disadvantaged groups want and need • Poor availability of relevant ICT infrastructures • Lack of sufficiently robust or powerful equipment and infrastructure for a wide variety of often demanding user environments • Difficult to make financial and business case • Unaware leadership and inappropriate organisational arrangements • Inappropriate work process and staff skills • Poor coordination, supply chain and content • Inappropriate legal, regulatory and policy frameworks • Poor interoperability and data sharing • Lack of trust and privacy rules within public sector	**Supply-side options** • Undertake detailed behavioural studies of disadvantaged groups to better understand their real needs in real situations, both for government services generally and how ICT could support these. • Develop and implement programmes for rolling out specific eGovernment services for disadvantaged groups and providing them with broadband (high speed) access • Consider universal access, codes and charters • Ensure the coordination of public intervention at different levels • Continue to promote design for all • Design special services for specific disadvantaged groups
User interface and service delivery barriers • Poor service visibility, findability accessibility • Poor service utility, usability and flexibility • Poor service quality and fulfilment • Inappropriate channel availability and compatibility (e.g. ICT, telephone, in-person) given that many disadvantaged users need high human-touch support instead of, or in addition to, own use of eServices • Lack of appropriate service offers, conditions and marketing targeted at specific disadvantaged groups	**User interface & service delivery options** • Understand how to segment users • Contextualise inclusion in its local context • Exploit the contributions non-public sector actors can make in designing and delivering services • Ensure appropriate ICT channels for different disadvantaged target groups • Promote flexi-channelling for an inclusive society • Promote personalised pro-active services • Ensure services are responsive to the changing needs of disadvantaged groups • Promote personalised services through close government-citizen relations • Promote individual self service • Develop guidelines for the design and delivery of quality eGovernment services for specific disadvantaged groups • Ensure better marketing, targeting and promotion of eGovernment services for specific disadvantaged groups

Demand side barriers
• Cost to user:
  • lack of financial resources to acquire or use ICT equipment, or develop skills for ICT use
• User access:
  • lack of space for ICT in demanding environments
  • lack of time to use ICT in quickly changing and demanding environments
  • poor user environments, e.g. lack of peace, quiet, supportive facilities, etc.
• User competence and skills:
  • lower skills because of lower educational achievement and lack of opportunity to use ICT
  • lack of possibility to transfer ICT skills acquired at work to ICT skills needed for personal life
  • lack of ability to use services appropriately to help specific situation which is typically quite unique for each individual user (arguably, disadvantaged users need more targeted and fully personalised services than mainstream users)
• User motivation
  • lack of trust (in both or either direction) between the disadvantaged user and the service supplier or mediator
  • for certain types of disadvantaged users (such as cultural groups, criminal groups, etc.), benefits may be difficult to achieve as they often depend on group-wide (or group leader) action or sanction, rather than purely individual incentives.
	Demand side options
	• Recognise and support social use of eGovernment
	• Continue to promote own use of eGovernment
	• Encourage user-driven innovation
	• Promote digital literacy of disadvantaged groups
	• Subsidise (access to) equipment and services for disadvantaged groups
	• Focus on the next generation

As a result of the preliminary analysis in this paper, each of the above options is analysed in more detail in the following sub-sections.

5.2 Supply side options

5.2.1 Undertake detailed behavioural analyses of specific target groups

As indicated above, the work undertaken in this paper is perforce but a first tentative step in analysing analysis of the target groups of inclusive eGovernment, the next step should include some quite detailed behavioural studies of one or more target groups in order to better understand their real needs in real situations, both for government services generally and also in terms of how ICT could support these.

This should be done by identifying a set of core disadvantaged groups, their needs, the benefits eGovernment can provide to meet these needs, the barriers to these benefits, and how to tackle the barriers through government and other action. Different countries could work on different sets of disadvantaged groups, but it will be useful to also agree a core set so that experiences can be directly exchanged and compared.

This work should:

- examine existing evidence and case studies, from across Europe and beyond, both of how particular types of disadvantaged users behave in their day-to-day life situations in relation to fulfilling (or attempting to fulfil) the needs they have -- as in this study, reflecting some of the work done in the UK, the use of Maslow's needs hierarchy seems to be a useful tool in this context
- examine examples and case studies which illustrate what is possible to support these life situations using ICT
- put this in the context of new and emerging possibilities using ICT in both the front- and back-offices
- be married to a vision of how government agencies, in cooperation with both private and civil sectors where appropriate, can transform public service delivery to particular types of disadvantaged groups as well as how wider support can be provided.

It was also noted in section 2.1.2 that many disadvantaged individuals have complex multi-needs which are not easily captured in any taxonomy. However, it is still important to break down and analyse the different needs before attempting to re-combine them within the context of the individual user, as well as attempting to ensure that the government response can take a similar holistic approach. ICT can, of course, also be a powerful tool in facilitating this.

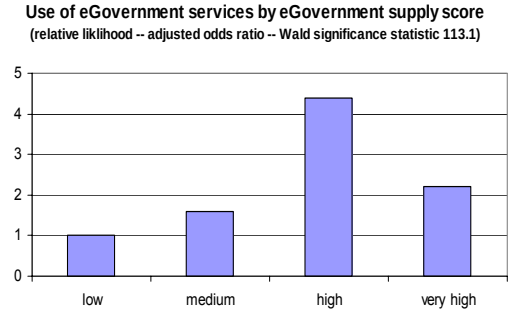
5.2.2 Develop and implement programmes for rolling out equipment and services appropriate for disadvantaged groups and providing them with broadband access

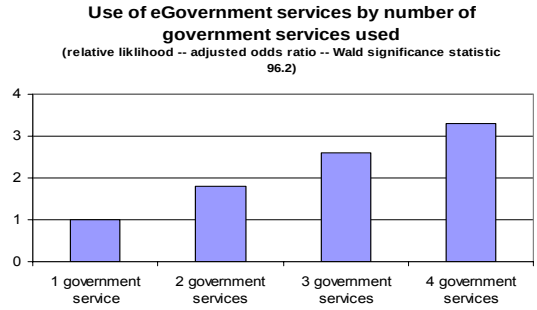
The eUSER survey[35] has shown that supply-side conditions, particularly the roll out of eGovernment services, and to a lesser extent user skills and digital literacy more generally on the demand side (see section 5.4.4 below), are the most strongly correlated with high and beneficial use of eGovernment services. Such factors seem to be more significant for eGovernment take up than socio-demographic factors like income, gender, labour force status and education. Thus, in addition to recognizing and promoting flexi-channelling and the social use of eGovernment, inclusion policy should also promote wider own-use eGovernment take up and this needs the availability of and access to appropriate services and appropriate bandwidths. This paper has shown that, when European Member States are compared, the most important factors are not socio-economic but rather related directly to eGovernment supply

[35] Millard, J. (2006, forthcoming) "Report on current demand/supply match for eGovernment", part of Deliverable D5.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

and Internet penetration, as well as to individual skills and online engagement. These 'first-order' factors can be tackled within the present policy time frame as concrete strategies with relatively easily recognized and measurable results and impacts.

Thus, an unemployed person is much more likely to be an eGovernment user if living in Denmark than in the Czech Republic. It is only when the analysis focuses on the situation within a specific country, that the 'second-order' socio-economic factors become important, so that, for example, in Denmark it is also the case that a person in work is more likely to be an eGovernment user than an unemployed person.





5.2.3 Consider universal access, codes and charters

Universal access can be an important component of inclusion and cohesion policies for citizens. What can be done to ensure that as many people as possible have access to services? Basically, there are three kinds of potential barriers to universal access, and, consequently, three types of initiatives needed to address them:[36]

- Access costs, for example in relation to infrastructures, technical hardware and software and connection costs, in relation to ability to pay or affordability. Where such access costs are too high, special assistance could be given, for example, in libraries and other community facilities, and the market environment needs to be improved, such through competition policy.
- Lack of skills, such as low all-round skills and low (digital) literacy, can be tackled by improved training opportunities, for example in schools, as part of adult education programmes, at work, and special initiatives for 'at risk groups'.
- Usability barriers, such as lack of user-friendly service design interfaces and devices, and insufficient consideration given to users with special needs. 'Design-for-all' may be needed as ex-ante implementation of design principles facilitating 'access for all', as well as assistive technologies' as ex-post adaptation of technologies towards the requirements of people with special needs.

The principle of universality implies that all have equal access to, and equal opportunity to use, all services included in the USO (universal service obligation). In the context of the Information Society in Europe this does not at present apply to broadband, although much current discussion is moving in this direction. The USO could be related to a citizens' charter and based upon standards of access, range and quality of services, fulfilment criteria, affordability, skills needed, incentives, etc., and could contribute to measures to reduce the digital divide, or at least not to exacerbate it.

Many countries are now issuing charters and codes which specify and summarise what citizens and businesses can expect from government, what their rights and responsibilities are, what standards they should expect, how to complain and seek redress, etc. Such codes and charters

[36] Beep (2003) "Social inclusion" in Best eEuropean Practices deliverable D8.1: http://www.beepknowledgesystem.org and http://www.beepsocial.org

can relate both to the public sector generally as well as specifically to eGovernment. A good example is the Netherlands which has published a ten-point eCitizen service code.[37] The basic question addressed in such codes is what can citizens expect when eGovernment is finally implemented? Issues covered range from choice of communication channel, the transparency of the public sector, personalised, up-to-date and accurate information, as well as citizen access to all the data the government possesses about them.

5.2.4 Ensure the coordination of public intervention at different levels

A recent EU report[38] concluded that coordinated public intervention at different levels is absolutely necessary to tackle and support social inclusion and regional cohesion in the context of the knowledge society. This will also involve commitment of, and synergy between, other relevant players: the private sector and civil society in its various forms.

Within the public sector, and between all public service providers some of which may be private or civil sector partners, there is often poor coordination along the service supply chain and poor provision of appropriate content. Often this is also related to unaware leadership and inappropriate organisational arrangements, as well as inappropriate work process and staff skills. Underlying issues can also include inappropriate legal, regulatory and policy frameworks, poor interoperability and data sharing, and the lack of trust and privacy rules within public sector and with other providers. This also makes it difficult to make the financial and business case for inclusive eGovernment services. These supply side issues also tend be barriers to eGovernment more widely, but tackling them in the context of inclusive eGovernment will also require specific and sustained focus.

Coordinated intervention also requires addressing the following issues:

- The success of strategies for social inclusion is largely dependent on a context-based approach, whereby targeted groups are considered within their geographical, social and cultural environment.
- Provision of adequate infrastructure and access to services – especially to underserved or remote areas and groups at risk of exclusion – is crucial for guaranteeing European standards of social inclusion and regional cohesion.
- Social inclusion and participation depends on the level of both general and digital literacy of users, as well as on the availability of content and services responding to their specific needs.
- Although various policies and strategies have been implemented so far, their impact is not easily identified because of inadequate, or lack of, proper measurement, indicators and benchmarking.

5.2.5 Continue to promote design for all

Design for all (or inclusion by design) is defined as *ex ante* and often top-down interventions on the environments, products and services to ensure that everybody, including future generations, independent of age, gender, capacities or cultural situation, can successfully use services.[39] This implies developing products and services usable by everybody, thereby serving two purposes at the same time. First, meeting the needs of consumers who have difficulty using some products, and second meeting the needs of companies who want to expand their potential

[37] The Dutch eCitizen service code, by Matt Poelmanns, Director of the Netherlands eCitizen Programme, at the European Institute of Public Administration (2005) Workshop “The digitisation of European public administrations: what’s the political dimension of electronic governance?”, Maastricht, 1 April 2005.
[38] European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html
[39] ICTSB (2000) Project Team Design for All, Final Report, 15 May 2000.

market. This means taking the following into account when conceiving products and services using the design for all principle:

- that the environment we live in has been and continues to be designed for human beings, by human beings, so it follows that it must be the environment that adapts to our needs and not the other way around
- there is an enormous diversity among users' physical, cognitive, sensorial, dimensional and cultural characteristics
- users evolve throughout their lives and their abilities and attitudes change with time
- users are the best source of information for adapting products and services to their needs and expectations.

5.2.6 Ensure specific assistance and special services are available for each disadvantaged group

Specific assistance is defined as *ex post* and often bottom-up interventions to assist disadvantaged users. Such assistance can be given by persons and/or through products, instruments, equipment or technical systems, offered to a person with disabilities or some other disadvantage in order to prevent, compensate, relieve or neutralise the impairment. Assistive technology and services, for example, can be split into 3 types: user-technology interaction, inter-personal communication, and supporting users in everyday life.[40]

5.3 User interface and service delivery options

5.3.1 Understand how to segment users

According to EDS,[41] there is a need for a more sophisticated approach in the future to user segmentation by service. A key element here is not just understanding the composition of target groups, particularly when these are disadvantaged in some way, and what drives satisfaction, but also the various relationship types which citizens want to enjoy with government, and the roles of the various delivery channels. As in the analysis undertaken for this paper (section 2.1), segmentation should reflect as much as possible actual user behaviour in day-to-day life situations in relation to fulfilling (or attempting to fulfil) the needs different groups have. It should also take account of real practical problems, benefits and barriers, i.e. reflect real differences in the way services could be offered and benefits realised, in order to provide a basis for realistic and operational user segmentation based on sound policy development and actions which could support the different actors involved.

In this context, there is also a need to cement the link between improved understanding of citizen need and the process of service design. Sophisticated, citizen focused service design which links together user segmentation, policy analysis, business process design, ICT system design, and staff training and cultural change within the delivery organisation, is absolutely essential if public value is to be maximised.

5.3.2 Contextualise inclusion in its local context

Our understanding of inclusion itself is subject to different definitions and contexts. For example how do we define a specific type of exclusion, what are the mechanisms involved, is it an issue the public sector can tackle, and how should it be done? This could make it difficult to recognise a common European approach and vision, but we can do this by fostering coherent and consistent understanding across borders. A better understanding is needed of the political

[40] Prisma project(2003), Good Practice in eGovernment, eServices for all – treating all users equally, Strategic Guideline, European Commission IST 5th Framework IST Programme: http://www.prisma-eu.org
[41] EDS (Electronic Data Systems Corporation) (2005), Delivering modern services strategy: EDS input to first stages of eGovernment Unit consultation in the UK, London, England.

implications of public services and governance for inclusion, for example what do we really mean by inclusion, efficiency and effectiveness, and are there trade-offs between them?

It appears that many inclusion and equality issues are most critical at the local and regional levels, as it is here that eCommunities, built around eParticipation, grow and flourish.[42] Despite the ability of ICT to ignore geographic distance, eCommunities are still primarily local in nature, and much of this arises from interactions between the citizen, civil organisations and local authorities using both ICT as well as traditional forms of communication. More information from, and involvement, by local and regional sources, is needed so that policies to help disadvantaged users access eGovernment services can be better targeted and localised. Without action, Europe like many other global regions may become even more polarised between the (e)included and (e)excluded.

5.3.3 Exploit the contributions non-public sector actors can make in designing and delivering services

Public private partnerships (PPPs) typically involve a government making a formal agreement with a private sector partner to take over or support an existing public sector function, or a new function which both contribute to, in order to achieve one or more business advantages. However, PPPs are not only economic, but can also deliver organisational and social benefits if well defined and executed, although they can also be controversial and run into legal and political resistance if all stakeholder interests (including those of users and civil servant staff) are not fully taken into account. It is also necessary to consider not only the short term but also the longer-term implications of PPPs, for example, the duration of commitment, and thus typically the financial costs and benefits over a longer period, and the effect this will have on the competence and wider responsibilities of the public sector.

If well designed and implemented PPPs can provide win-win-win benefits for the public and private sectors as well as for users. In the context of inclusive eGovernment they can be instrumental in involving the private sector in providing services for disadvantaged groups by demonstrating that a market does indeed exist because there is genuine demand and that such demand can often be pooled across a number of different agencies and geographic areas thereby making it potentially viable.

The role of the public sector in PPPs, on the other hand, can include:
- the disbursement of benefits to citizens and businesses
- providing staff and other government resources and expertise
- integrating service provision with longer term socio-economic development and public value benefits
- ensuring accountability and participation in service design, production and delivery.

The typical role of the private sector in PPPs can include:
- assistance with change management and BPR, given that the private sector is typically more advanced in this than the public sector
- better design and delivery of standard (shared) services
- a focus on generating business benefits
- the input of investment resources which can sometimes help to stabilise government budgets
- technical experience and capability
- shouldering much of the risk

Particularly in the context of inclusive eGovernment, but also in relation to government services more generally, there is still great untapped potential to develop public-civil-partnerships

[42] European Commission (2005) "e-Inclusion revisited: the local dimension of the information society", DG Employment, SEC(2005)206
http://europa.eu.int/comm/employment_social/news/2005/feb/einclusion_en.html

(PCPs). In these, the civil sector, and particularly local communities, as social entrepreneurs and local service providers, can reach people below the radar of many statutory services, win their trust, and tailor services to local and specific needs, aspirations and circumstances. Community as a social enterprise can identify untapped needs, harness under-utilised local resources and deliver innovative and value for money services. These can be funded either by sales to citizens direct, by local fund-raising, or by contracts with government and business. Communities can complement universality with innovation, and public funding with local roots. The challenge of the community sector is to create the 'disruptive innovations' that change our whole models and perspectives on delivering services, and to find ways of scaling up and rolling out new models of delivery, in a genuine culture of social enterprise, that anticipates needs rather than just reacts to them.

Because of its voluntary ethos and its roots in communities, social enterprise and social entrepreneurs can generate trust, cooperation and voluntary action by citizens and communities. In an age where we are recognising that better health and education, lower crime, and environmental sustainability, cannot be achieved without citizens' participation – in healthier living, in learning beyond the classroom, in recycling – the ability of the voluntary and community sector to stimulate voluntary action and generate trust is a critical asset. Such trust and initiative provides the ‘glue’ of community, and at the right scale. However, at the same time, the community sector must still take efficiency as seriously as quality and innovation. Resources must not be wasted, though the measurement of efficiency will probably be just as much by social factors as economic, and judged in relation to the positive impacts it provides rather than as an end in itself.

In order to promote the independence and viability of the civil and community sector in providing services to disadvantaged groups, the devolution of budgets may need to go down to citizens and communities – for example disabled people receiving direct payments – opens up a different form of accountability, i.e. direct to the citizen, rather than via the state. This could include neighbourhood based grant giving, for instance, through citizen's juries, community empowerment networks or community foundations. Another guarantor of independence for the community sector in the future could be access to and control over assets, including financial, human and material. Communities can play a role both as a service provider, and as ‘choice advisors’ or ‘brokers’ helping to inform citizens, particularly the most disadvantaged, of the services available to them, and negotiate packages of support to meet their needs.

Two and three way partnerships between the public, private and civil sectors, should be better exploited based on the different roles, expertise and strategic interests each has to offer to inclusive eGovernment. For example, the private sector is likely to be strong in the effective use of ICT for driving forward efficiency and raising standards, in cutting costs and increasing output values, and in finding ways to pool and release demand so as to provide longer tern self-financing solutions. The civil and community sector is likely to be less capable in using ICT but often couples a social service ethos with local knowledge, resources and activity. The public sector itself has the responsibility to develop services not just to serve immediate user need but also to implement wider societal policies, to set and maintain service standards regardless of location or group, and to ensure that no one is excluded, particularly the weakest and poorest members of society, which the private sector need not address.

5.3.4 Ensure appropriate ICT channels for different disadvantaged target groups

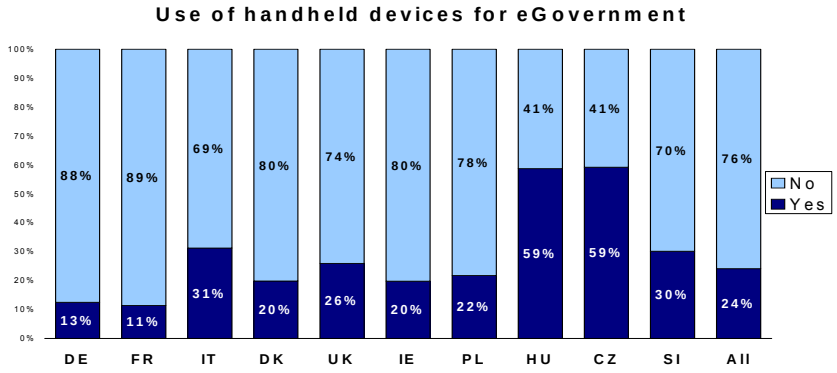
It is clear that there is a serious eGovernment digital divide, and that online services seem, even more than traditional government services, to be used by a social elite rather than by a representative cross section of adults. However, traditional channels, including the increasingly important telephone-based services, are likely to continue to be offered and used by all types of users, including those beyond the digital divide. Moreover, these human and physical channels are more and more supported and enhanced by ICT as part of the user interface of a transformed and digitised back-office. In addition, there are burgeoning examples of eChannels which are increasingly being used by those beyond the digital divide, such as mobile devices.

This paper has not looked at digital TV, as it is not yet widely rolled out for government services, but also here the potential seems significant.

For the foreseeable future there will inevitably remain a significant number of people without any means of access to the Internet or, even if they have, without the skills or motivation to use it. Two types of measure have importance for this group. In the first place, measures to ensure that alternative, more traditional modes of access (face-to-face, telephone) remain available and accessible must be developed in parallel with online offerings of services of public interest. In addition, measures that seek to facilitate wider (and cheaper) reach of relevant services by providing multi-channel service delivery, including utilisation of more widely available devices and platforms such as SMS, digital TV and mobile devices, also have an important role to play.

For example, eUSER[43] provides evidence that handheld devices (like mobile phones and PDAs), providing mobile as opposed to fixed access to services, are increasing in importance and are particularly being used by people who are otherwise likely to be digitally excluded both in general terms as well as from eGovernment. These include females, those with below secondary level education, those not working (but not unemployed) or those invalided, and because they may live in countries where access is a greater problem. As the figure below shows, users in the New Member States rely on hand-helds much more than in the older Member States when using eGovernment, although Italy followed by the UK are also relatively high. The overall goal must be equivalent quality of service, whatever the mode of access.

Whilst the situation is improving quite quickly with the extension of terrestrial broadband coverage, industry experts estimate that as many as 20 million European households are likely still to be without broadband access by 2012, unless appropriate public intervention policies are initiated. Even where broadband is available, take-up is still very low at about 8% for Europe as a whole. Clearly, more needs to be done here as broadband is a key enabler.[44]



Apart from broadband, several technology access platforms deserve specific attention. First, multi-media home platforms using, for example, digital TV which could be rolled out relatively cheaply through a public procurement process. The aim should be both easy and cheap access for all to eGovernment services, as well as to dynamise local economies. Many countries have already taken this route, including Italy, Belgium, Finland, and Korea. Second, mobile will become ever more important for delivering government services in the future. mGovernment is becoming a necessity, otherwise there is a risk of neglecting a very large number of users, particular those with disadvantages of various kinds.

[43] Millard, J. (2006, forthcoming) "Report on current demand/supply match for eGovernment", part of Deliverable D5.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

[44] European Commission (2005) "eGovernment policy stakeholders meeting 21 September 2005, Brussels, Final report": http://europa.eu.int/information_society/activities/egovernment_research/index_en.htm

5.3.5 Promote flexi-channelling for an inclusive society

Much of the evidence presented in this paper shows that a multi-channel, rather than single channel, strategy can successfully reach out to existing users in new ways, as well as to previously excluded users, both by providing new channels and through better tailored and more appropriate services. Although the face-to-face and increasingly telephone channels remain most important, particularly to disadvantaged groups, the use of electronic channels is rapidly increasing and channel balance is dynamic and evolving. ICT in the back-office can also help the civil servant provide better services to users in traditional ways, and this may be for the time being more important.[45]

There is evidence that appropriate channel strategies, built on good user research, increase service uptake and channel migration, as well as generate cost efficiencies within individual public sector departments.[46] There can also be increasing user fulfilment given that, in the absence of well thought out channel strategies, many citizens regularly demonstrate they are prepared to trade off inconvenience, poor environments and service for the reliability of traditional channels. Experience of the multi-channel approach shows that success means:[47]

- providing better services for the user, which are flexible, accessible, direct, rapid, complete, of high quality, easy to use, more secure and ensure fulfilment
- channel strategies should be designed to match channel features with actor requirements (e.g. user needs, cost efficiency, etc.), and a business case needs to be developed to provide the basis for rational decision making
- appropriate organisational requirements in terms of organisational integration, administrative or legal rules
- appropriate human resource requirements in terms of staff culture, ways of working, jobs and roles, numbers, qualifications, skills and competencies
- technological architectures must be in place which enable channels to interoperate instead of merely co-existing, i.e. they must ensure integration of channels and applications, take account of phases in user sessions and switch points between channels, as well as the re-use of data and of generic service components, and this will often require the integration of backend business processes.

Examples of successful multi-channel strategies from the private sector include Amazon (the most successful eRetailer) which now is also moving to multi-channel and exploring ways to acquire physical outlets, for example by entering into cooperation with the book store retailer Waterstones in the UK. This is both good for Amazon and Waterstones by developing physical coffee shops, environments for reading, discussion groups, etc. Also, Tescos (the UK's largest retailer) is both increasing its physical and e-outlets. There seems to be a strong move in some sectors to multi-channel and switching between channels, so that more 'e' leads to more 'p' (physical), and vice versa. The public sector should learn from this, especially in policies to support an inclusive society. Wider evidence from other areas of ICT application shows that creating more online participation does not mean creating less human or physical participation, but typically quite the opposite.

Despite the benefits of a multi-channel strategy for inclusion, there is much evidence of strong moves away from multi- towards single ICT channels. The efficiency programme in the UK targets services where most of the users are already online, such as students applying for higher education. Government to business online services like corporation tax are already mandatory for large businesses in many countries (Spain, Denmark, UK) and are fast also becoming so for SMEs (Denmark). Even where multi-channel options are maintained, all are

[45] OECD (2005), "Multi-channel service delivery" chapter 2 in "eGovernment for Better Government", Organisation for Economic Co-operation and Development, Paris, 2005.
[46] EDS (Electronic Data Systems Corporation) (2005), Delivering modern services strategy: EDS input to first stages of eGovernment Unit consultation in the UK, London, England.
[47] Millard, J and Shahin, J, et al (2006 forthcoming) "Towards the eGovernment vision for EU in 2010: Research Policy Challenges", chapter on "2020 visions", Institute of Prospective Technological Studies, Sevilla, Spain, European Commission DG JRC

rapidly becoming supported by ICT and shared databases. The move to the single 'e' channel means the full automation of services which can sometimes lead to less information being accessible, for example when citizens cannot change or even check their medical records, although it should also be borne in mind that the traditional system may not have been any better than this and that provision costs also need to be considered.

Problems and tensions could arise if the movement to a single eChannel quickens and extends to non-specialists target groups, perhaps triggering a 'reverse-engineering' of eInclusion in the medium to longer term. When everything is 'e' and 'e' is virtually without cost, and if efficiency is prioritised higher than inclusion, human contact will become expensive, given that labour costs compared to other costs will rise dramatically. Thus, the already included and better-off citizens will use their resources and skills to access human contact with government in situations where this gives them a better service (for example, in terms of personal advice, care, social support, etc.). The excluded and worse-off citizens will, however, only have recourse to the ubiquitous and inexpensive 'e' services, and will not be able to supplement these with human contact. The e-exclusion of today will thus be replaced by the h-exclusion of the future, where 'h' refers to human service contact. The EU will need to run h-inclusion programmes.[48]

This paper has shown, however, that flexi-channelling is extremely important in its own right and may not be a temporary phase at all. It involves informed and skilled users switching between channels according to their personal preferences, to the service being accessed and to the task involved, and is strongly associated with both greater and more successful use of government services generally. Such flexi-channelling strategies are used much more by eGovernment users than others, and this is often a deliberate choice based on each channel's own strengths and weaknesses, which taken together are highly complementary and beneficial to users.

Extrapolation into the future leads to the prediction that most if not all activities which become 'routine', which manipulate, match and mine data, and which require access to information and systematised intelligence, will become codified and automated by ICT, resulting in the squeezing out of direct human presence. In the future, on the other hand, human presence will focus even more than at present on activities which humans are innately better equipped to do than machines. Fortunately, this still appears to encompass a large potential area of growth in the numbers and quality of tasks, revolving around the use and creation of implicit and tacit knowledge. These areas include care, teaching, consulting, counselling, advising, controlling and coordinating, decision- and policy-making, creating, brainstorming, empathising, socialising, etc. In each case, of course, such human presence will increasingly be strongly supported by powerful ICT systems.[49]

5.3.6 Promote personalised pro-active services

As back offices become more and more integrated and able to share data and resources, an interesting and growing strategy at the front-office is the ability to offer users a personalised pro-active service. This is a service for which the relevant public sector agency takes full responsibility to initiate, deliver and fulfil. Thus, the input and responsibility of the user is minimised and may even disappear altogether. Such services are therefore sometimes termed 'disappearing services' and could be extremely relevant for disadvantaged groups.[50]

[48] Millard, J and Shahin, J, et al (2006 forthcoming) "Towards the eGovernment vision for EU in 2010: Research Policy Challenges", chapter on "2020 visions", Institute of Prospective Technological Studies, Sevilla, Spain, European Commission DG JRC

[49] Millard, J and Shahin, J, et al (2006 forthcoming) "Towards the eGovernment vision for EU in 2010: Research Policy Challenges", chapter on "2020 visions", Institute of Prospective Technological Studies, Sevilla, Spain, European Commission DG JRC

[50] Millard, J., Kubicek, H., Westholm, H., Cimander, R., Iversen, J.S. (2004) Reorganisation of government back-offices for better ePS – European good practices (back-office reorganisation), prepared for the European Commission eGovernment Unit, Brussels, January 2004. Available from: http://europa.eu.int/egovernment and http://www.beepgovernment.org

A pro-active service is not relevant for all types of service, but tends to be restricted to services for which most if not all necessary data already exist within the public sector. The responsible agency is thereby able to shift much responsibility and immediate control away from the user, by offering a more or less complete personal service without the need for initiation or action by the user. Most pro-active services are those for which typically:

- the agency is legally obligated to implement, thus placing responsibility for whether the service is accessed and used mainly on the public sector itself
- the agency itself already possesses most if not all necessary data (including personal user data), or which it can legally obtain from other agencies or organisations, to provide the service – this also means that the need for users to obtain and retain receipts relating to various relevant transactions is reduced or completely removed
- there is a high degree of integration and interoperability between back-offices
- there are no legal barriers to agencies using user data they already have, and that the user does not object to such use.

5.3.7 Ensure services are responsive to the changing needs of disadvantaged groups

When providing services to users, the public sector must be constantly context and location aware of the user's needs and situation through monitoring, as well as through intelligent and complex decision-making. This implies extreme flexibility in system design so that it can respond to needs and demands as these change. An important component would be automatic scenario and simulation development, as well as impact assessment prognoses, in order to react appropriately to actual situations as well as anticipated future probabilities, without (necessarily) the conscious or direct intervention of civil servants or users, although this also needs to be possible. This could include automatically triggered responses to actual or threatening crisis or emergency situations.

In such a task, the public sector will also face the challenge that some users do not wish to receive the service, or cannot use it, despite it being offered, or 'pushed onto' the user, so that intelligence should also be used to cater for this. The implication is also that the service must, in certain situations, as determined either by civil servants or the user or by the system itself, be capable of being invoked, opened-up, closed-down, and being moved from invisible to visible mode, or vice versa.

5.3.8 Promote personalised services through close government-citizen relations

A user personalisation strategy could include a 'one-to-one' relationship between user and the public sector, where a government representative (an individual civil servant, a small team of civil servants, and/or an electronic agent) has the responsibility to fully support individual (or groups of) users, whether these be citizens or businesses. This support could include all areas of life or business covered by legislation or other standards, and could consist of standardised and personalised services, advice, and all relevant types of help and assistance. Such an approach would be extremely relevant for disadvantaged groups compared to mainstream users who tend to be more pro-active in their approach to (e)government services. This concept could be crystallised around the term 'citizen account manager' (in order to draw an analogy with 'key account managers' in business), citizen service activist, or sometimes the term ''street-level bureaucrat' has been used. This is, in essence, a type of civil servant intermediary. At the European eGovernment Ministerial Conference in late November 2005, the term customer-service-director was also suggested.[51]

The citizen account manager, or citizen service activist, role requires a new approach amongst most public sector staff, who will thus exist almost exclusively to provide services directly or indirectly to users. The word 'servant' in 'civil servant' thus comes full circle. The civil servant is

[51] The European eGovernment Ministerial Conference, "Transforming public services", 24-25 November 2005, Manchester, England, under the UK Presidency.

no longer a 'bureaucrat', and the public sector no longer a 'bureaucracy'. 'Service' is the catch-and byword for the function of government, and this directly addresses the public value vision in this study. Many of the recent moves in Europe to down-size the back-office (i.e. bureaucracy) and up-size the front-office (i.e. service), through savings in the former which release resources for re-deployment to the latter, are partial moves this direction.[52]

Personalised support and services can best be provided in this way to users if deep knowledge is available about each user, obtained both through highly intelligent ICT systems, including electronic agents, but also, critically, through human and personal experiences based on tacit knowledge which ICT cannot capture and which is only built up through contact over time and experience. Thus, this role moves on from the earlier one-stop-shop concept, in which a user approached a single desk (or portal) for further access to different services, but where the desk officer did not necessarily have any prior relationship with the user, to a concept in which longer-term and more stable relationships are built up over time.

5.3.9 Promote individual self-service

As public sector back offices become more and more integrated and able to share data and resources, it is possible to offer pro-active services, as described in section 5.3.6, which require little or no responsibility from, or action by, the individual user. However, another important strategy resulting from these same developments shows how it is also possible to offer the individual user, not less but, greater responsibility and control over a given service, which may be appropriate for some target groups. In the case of government becoming pro-active in service delivery, the digitisation and interoperability of data enables the relevant agency, rather than the user, to take most, if not all, responsibility and control for the service. However, the reverse is also a possibility, i.e. enabling transparency for individual users to have direct access to, and control over, certain data and service components, because these data are now electronically accessible wherever they are within the public sector, making it possible for individual users to access and use them on their own initiative. Thus shifting responsibility and control for a service either to the agency or to the individual user are both enabled by digitisation and interoperability, and whether one or the other takes place is now a policy, rather than a technical, decision within the prevailing legal, ethical and cultural framework.[53]

Shifting significant responsibility and control to individual users, thus enabling 'do-it-yourself' types of service, may not be relevant for all types of user or service, but seems to be most appropriate for services for which typically:

- The agency is not legally obligated to initiate, thus placing responsibility for whether the service is accessed and used fully on to the individual user
- The agency does not itself already possess most if not all necessary data (particularly personal user data), including those which are possessed by other agencies or organisations, to provide the service
- Although there often needs to be a high degree of integration and interoperability between back-offices, so that their data are electronically accessible to the individual user wherever they are within the public sector, there may be legal restrictions placed on the different agencies in sharing personal user data with each other
- There are no legal, ethical or technical barriers to users taking more responsibility and control.

[52] Although it is not a given that savings in the former are not instead used for other purposes, including tax cuts: Millard, J., Kubicek, H., Westholm, H., Cimander, R., Iversen, J.S. (2004) Reorganisation of government back-offices for better ePS – European good practices (back-office reorganisation), prepared for the European Commission eGovernment Unit, Brussels, January 2004. Available from: http://europa.eu.int/egovernment and http://www.beepgovernment.org

[53] Millard, J., Kubicek, H., Westholm, H., Cimander, R., Iversen, J.S. (2004) Reorganisation of government back-offices for better ePS – European good practices (back-office reorganisation), prepared for the European Commission eGovernment Unit, Brussels, January 2004. Available from: http://europa.eu.int/egovernment and http://www.beepgovernment.org

5.3.10 Develop guidelines for the design and delivery of quality eGovernment services for specific disadvantaged groups

Guidelines for the design of quality eGovernment services for specific target groups should be developed. These should build on existing guidelines and best practices from different Member States and service providers, to develop a European wide information resource on eGovernment service design, including appropriate standards, which maximises usability (ease and simplicity of use), experience (time and effort savings, e.g. through up-to-date and accurate information), fulfilment (service realisation, i.e. users actually achieving what they set out to achieve), and the personalisation of eGovernment services to suit individual needs to be used within a multi-channel environment complementing other channels, including face-to-face, telephone, etc.

5.3.11 Ensure better marketing, targeting and promotion of eGovernment services for specific disadvantaged groups

It is clear that significant barriers to take-up exist, many of which decrease significantly once eGovernment services are used. Much of this is lack of awareness and unfounded reservations or fears on the part of prospective users, although both these issues vary considerably depending on the type of potential user, so that clear marketing, targeting and promotion will also be needed in many instances.

What is required is not only focused awareness raising of eGovernment services, but also efforts and supports to change the behaviour of the target groups. These could include specific campaigns as well as clear incentives to use, such as less bureaucracy, lower fees where these exist, easier deadlines, special offers, etc. This should include ensuring that eGovernment services actually save users time and effort, and are easy and simple to use so that the fear and experience of complexity is reduced as much as possible.

5.4 Demand side options

5.4.1 Recognise and support the social use of eGovernment

Users often report that they do not care how a service is delivered, or who delivers it, as long as it is easy, cheap, quick and provides service fulfilment. The evidence and analysis presented in this paper show that there are two often overlooked strategies for including disadvantaged users in the benefits provided by government services, i.e. flexi-channelling and the social use of eGovernment through social intermediaries. From the strictly ePolicy perspective this could provide a challenge as both involve the blending of electronic and non-electronic channels. As in other policy areas, it is necessary to avoid the trap of assuming that the eChannel provides all the answers, particularly when seen from the perspective of the (disadvantaged) citizen.

On the one hand, using non-electronic channels, including social intermediaries, could be a barrier to users' own use of eServices, but on the other hand, intermediaries are clearly already able to include many citizens who would otherwise be excluded. The eUSER project[54] shows that using eGovernment services on behalf of others (i.e. as an 'intermediary') is undertaken by about 11% of all users of government services. The data also show that 53% of users of eGovernment do so for their own purpose, 51% as part of their job, and 42% on behalf of family or friends, the latter thus being termed 'social intermediaries' for eGovernment In addition, the data indicate that each social intermediary supports about 2.6 other users.

[54] Millard, J. (2006, forthcoming) "Report on current demand/supply match for eGovernment", part of Deliverable D5.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

The types of individuals receiving assistance from social intermediaries for eGovernment tend to be those who are otherwise beyond the digital divide and excluded from eGovernment, as well as from other Information Society benefits, and who are living in countries which are not leading in eGovernment. The social intermediaries themselves represent a potentially rich resource, given that up to half of all eGovernment users are already acting in this way and assist many other individuals. It is clear that such social use assistance networks bringing online benefits to a large number of people, who would not otherwise enjoy them, already exist. It is also likely, of course, that this is nothing new, and that such social networks have existed at family and community levels helping to disseminate the benefits of public and private services long before the Internet provided another channel. Policy design should recognise and promote these networks in a flexi-channel future.

One way of envisaging the social use of eGovernment is as a powerful transition phase for many, prior to their own use of eServices. This is certainly the historical pattern of diffusion of new technology in which leaders (temporarily) assist laggards, such as radio in the 1920s, TV in the 1950s, and PCs and telecottages in the 1980s and 1990s. However, we also need better understanding of whether intermediaries ultimately act as a barrier or a steppingstone to own use of eGovernment services.

In addition to social intermediaries, which already seem to be widespread, there are also many other types of intermediaries which could be exploited. There are different functional models and types including formal, informal, paid, voluntary, professional, untrained, etc., which include:

- Private sector actors and organisations are already playing an important supporting role in the implementation and delivery of government services, for example private professionals like architects, lawyers, accountants, as well as private sector networks like banks, post offices, garages and shops. The private sector is also playing an significant role in the delivery of public services (education, health care, etc.), following the increasing trend for outsourcing and privatisation.
- Civil Service Organisations (CSOs) and Non-Government Organisations (NGOs), such as leisure and sports clubs, churches, charities, housing associations, pressure and interest groups, etc., could play a role in designing, producing and delivering services, as well as defending citizen's interests and shaping and communicating citizens' needs, and supporting the implementation process with education and guidance.
- Government civil servants who are either specialised (such as planners, medical practitioners), or more general (e.g. one stop shop, 'street level bureaucrats', 'citizen-account-managers' – see section 5.3.8 above).
- Other public sector agencies, like post offices, transport agencies, health centres and hospitals, etc.
- It may also be expected that new types of intermediaries, such as virtual (e-agents or brokers) and physical (social actors, trainers, or citizens themselves) will emerge as the new technologies become available. Even if usability is improved, it is expected that not everyone will have access to, or indeed wish to use, electronic public services. In such cases, intermediaries could be needed.

5.4.2 Continue to promote own use of eGovernment

Despite the importance and desirability of the social use of eGovernment for disadvantaged groups, as well as of other non-eChannels, however, this paper has shown that people who themselves use eChannels for government seem thereby to increase their overall interaction with government and to obtain important benefits which non-eGovernment users do not readily enjoy. So, although the weaker and digitally excluded members of society will continue to be served particularly by traditional channels, and increasingly by mobile devices or social intermediaries, the overall benefits they receive from government are still likely to remain considerably less than mainstream eGovernment users. Thus, it remains important to promote the digital literacy and skills of disadvantaged groups, as well as provide them with easy access to appropriate services.

5.4.3 Encourage user-driven innovation in eGovernment services

Much current thinking in eGovernment is predicated on the concept of user- or citizen-centric systems.[55] The next step, within a ten to fifteen year time frame, should transform this into a strategy for user-driven innovation. This means not just designing government and services for users and taking their needs fully into account (i.e. user-centric), but drawing users and/or user groups themselves fully into the processes whereby government and services are determined and (co)created (i.e. user-driven). To borrow a phrase, not just 'government for the people' but also 'government by the people'. ICT can be a transforming instrument to help us achieve this.

User-driven innovation in the public sector includes but is not just about user self service, or the personalisation of services. These are both examples of the user-centric approach, i.e. where the user, in essence, only reacts to what is offered, although could make some choices within the offer. Going much further, user-driven innovation brings users (both individuals and groups) firmly into the whole process of service and content design, production and delivery, before they themselves as users also use the service. It provides the ultimate feedback loop, and perhaps the perfect 'market' model, but also throws up dangers and challenges.

There are many examples of user-driven services from the commercial world, albeit most are unintended and not consciously enabled by the product/service providers themselves. For example, the mushrooming of SMS messaging is an example where users saw a possibility in existing technology and drove it forward. There are many similar examples in the Internet context, which has of course been developed largely bottom-up deliberately to include the facilitation of user-driven services. The open source community, specifically for example Linux, is almost a perfect illustration. In the world of manufacturing, kite-surfing and mountain bikes stand out as products consumers themselves started to design and build because they were not available, before the companies understood the latent demand.

The use of new social software and social network tools, both so-called Web 1.0 tools like email, instant messaging, web pages and discussion boards, as well as so-called Web 2.0 tools like newsfeed (RSS), podcasting and MP3 players, webcasting, web blogs, and wikis, as well as gaming and simulation applications (such as the Sims and HotDate, which were both invented or strongly modified by users), is starting to explode. They are already revolutionising the nature, products/services and business models of many market sectors by democratising the tools of both production and distribution and ensuring much closer market matching between supply and demand than has ever been possible before.[56]

These technologies are now poised to do something similar in the civil and public sectors, and there are already a few interesting examples many of which are also based on the increasing availability of other technologies like professional cameras, radio and mobile transmitters and receivers, audio equipment, sensors, multi-media mixing, etc, which means that the use of these technologies need not be restricted to governments or the private sector but can also be used by citizens to create their own services. In the Netherlands, a protest group of people who live near Schiphol airport has developed a measurement system for noise pollution caused by aircrafts based on sensor technology. The system has been installed in the gardens of the protesters and records the level of noise produced by aircraft. The noise data are electronically collected and published on a website http://www.geluids.net/. This citizens' initiative resulted from dissatisfaction with the measurement methods of the federal government which was not considered to be objective in its figures about noise pollution in the neighborhood of Schiphol. As citizens own the equipment and have the skills to conduct the measurements themselves, this was quite easy to organise. The measurements and the publishing of the data on the website have had a substantial impact on the Schiphol expansion debate. More than ever

[55] For example, the Cobra recommendations: European Commission, 2004f, "Cobra recommendations to the eEurope Advisory Group: eGovernment beyond 2005 – modern and innovative Public Administrations in the 2010 horizon", 3rd eEurope Advisory Group meeting, Amsterdam, 27-28 September 2004.
[56] Anderson, C (2006) "The long tail -- why the future of business is selling less of more: the new economics of culture and commerce", Hyperion, New York.

before in this debate, a group of citizens was able to come forward and promote its interests with substantial impact. They were able to underpin their arguments with statistics and therefore became a leading and influential stakeholder in the Schiphol debate. In this case, the trend of professional hardware and software becoming commodities caused the emergence of user-driven services. Moreover, the Dutch government has been outstripped by a group of citizens who developed their own service and took over its tasks.

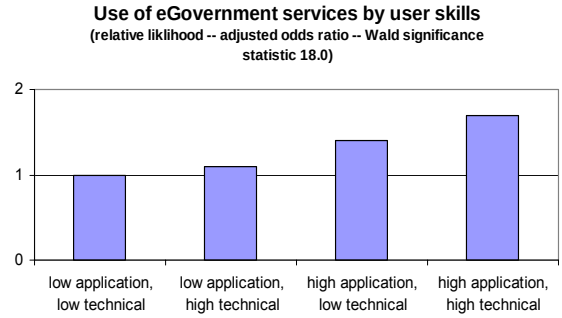
According to Leadbeater (2005), the 21st Century is seeing the emergence of user-driven communities of innovation which will open up and, in many cases, overturn the 20th Century mass-production model. In this vision, which we are already starting to see, creating new products and services becomes a participative, democratic activity sustained by these communities and not just by companies. This changes the role of design and designers. Design used to be done by specialists for users, as two distinct groups. From now on, in a growing number of fields, design will be done with users and by them, as they co-create products and services with specialists, thus blurring these two groups. Why not in (e)government? At the European eGovernment Ministerial Conference in late November 2005,[57] the term 'co-creation' was suggested as equivalent to the term 'user-driven innovation'.

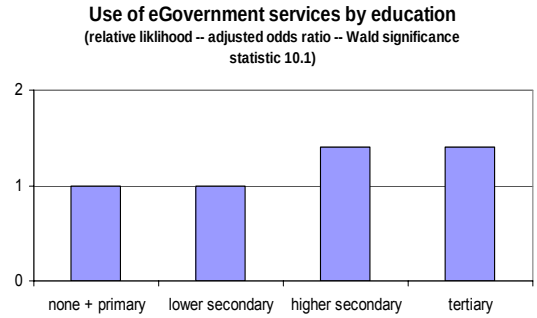
The challenge for the public sector is how to enlist users as co-producers and co-designers in the way the computer games industry has. If only 1% of (e)government users become involved in designing and producing public sector services, that is a huge increase in the development workforce and potentially a huge increase in the relevance and use of services.

5.4.4 Promote the digital literacy of disadvantaged groups

The eUSER survey[58] has shown that, after supply-side conditions like the roll out of eGovernment services (see option 5.2.2 above), user skills and digital literacy on the demand side are the next most important determinants of high and beneficial use of eGovernment services. Such factors seem to be more significant for eGovernment take up than socio-demographic factors like income, gender, labour force status and education. Thus, in addition to recognizing and promoting flexi-channelling and the role of the social use of eGovernment, inclusion policy should also promote wider own-use eGovernment take up and this needs a strong focus on promoting the digital literacy of disadvantaged groups. These 'first-order' factors can be tackled within the present policy time frame as concrete strategies with relatively easily recognized and measurable results and impacts.

The following figures show that higher user eSkills lead step by step to higher use of eGovernment, so that users with the most developed eSkills tend to use eGovernment services





[57] The European eGovernment Ministerial Conference, "Transforming public services", 24-25 November 2005, Manchester, England, under the UK Presidency.
[58] Millard, J. (2006, forthcoming) "Report on current demand/supply match for eGovernment", part of Deliverable D5.2, eUSER Project, an IST Sixth Framework Programme R&D project: http://www.euser-eu.org.

1.8 times more frequently than those with the lowest eSkills. In terms of user education, which is the most significant socio-economic predictor of eGovernment use, the highest educated are only 1.4 times as likely than the lowest educated to use eGovernment, and that this is not a consistent step-wise increase.

Part of a strategy to promote the digital literacy of disadvantaged groups will be training and educational initiatives for citizen ICT and Internet skills, particularly around the needs of different user groups, and with a particular focus on personalising services and balancing between service channels. This should build on existing initiatives using a mix of online and offline components, with appropriate standardisation across Member States, for example building on the European Computer Driving Licence.

5.4.5 Subsidise (access to) equipment and services for disadvantaged groups

As noted in section 2.1.2 above, low income and poverty tend to underlie many of the problems many disadvantaged users have, as well as compound barriers of access to appropriate eGovernment services through lack of equipment and infrastructures. Although some of the new channels (like mobile phones) are much less expensive as well as being easier to use compared to the more tradition PCs and Internet, their acquisition can still be a huge burden for some groups. One part of a strategy for inclusive eGovernment should therefore also consist of direct financial support for the acquisition of equipment and infrastructure and/or the provision of free or subsidised facilities, including PIAPs (Public Internet Access Points), and special facilities in places where certain groups congregate (like homeless hostels).

5.4.6 Focus on the next generation

The up-coming generation may change our understanding of inclusion. Many youth today have grown up with computers and the Internet, so their attitudes to the use of what the older generation terms ‘new technology’, as well as to (e)services generally, already appear to be completely different. It is possible to envisage that within 10 to 20 years, when the youth of today become responsible citizens and workers, concepts of (e)government and (e)inclusion will change dramatically if not disappear altogether. The technology will probably also have changed out of all recognition. However, this does not absolve us from tackling current issues and problems, but simply warns us against adopting a Micawber-like solution to these problems by doing nothing on the assumption ‘that something good will turn up’.

For further information about the eGovernment Unit:

European Commission
Information Society and Media Directorate-General
eGovernment Unit

Fax (32-2) 29-6 41 14

E-mail EC-egovernment-research@ec.europa.eu
Website http://ec.europa.eu/egovernment_research