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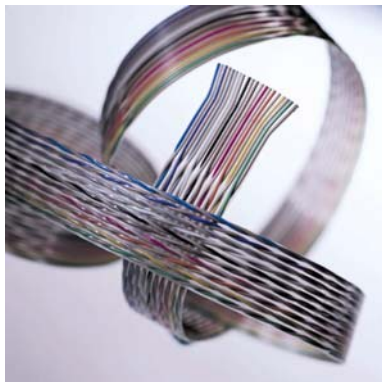


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## eInclusion@EU - Analytic framework

eInclusion and eAccessibility priority issues

eInclusion@EU project team

May 2004



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## Short description

This report presents the results of the start-up work of the eInclusion@EU project. The eInclusion@EU project is a co-ordination action with the objective of contributing to the development of “evidence-based” eInclusion and eAccessibility policies at EU and Member State levels. It provides scientific support to a key policy objective - that of ensuring that EVERY citizen has the opportunity to participate in and benefit from the Information Society. eInclusion and eAccessibility policies directly address these goals and together cover a wide range of potentially at-risk groups, a wide range of issues and potential barriers, and a wide range of possible actions and instruments. There is a pressing need for scientific and research-based inputs to the policy-making, policy implementation and policy evaluation processes in these areas. Such inputs can provide robust, evidence-based criteria for setting priorities, allocating resources and evaluating and benchmarking progress. Also, coordination and facilitation of informed dialogue between the main stakeholders - scientists/researchers, policy makers and user communities - is essential if the ensuing policy approaches and measures are to be well-targeted, practicable with realistic and achievable goals and acceptable. The report begins with an analysis of the overall eInclusion domain. This provides an overview of current policy perspectives, focusing on the policy issues and agendas that have been defined at the EU level. In order to put this current policy perspective in context, a broader examination is then made of the eInclusion domain from an “evidence-based” perspective. This maps in an outline manner what we know (and do not know) about the topic from research to date, and what we know (and do not know) about appropriate and effective policy formulation and delivery. On the basis of this, a framework is developed outlining how the current EU policy agenda could be enhanced and extended in the future. The remainder of the report focuses on the development of initial analyses of the three main domains that have been identified for particular attention in the project - eAccessibility, access to employment and access to online services. For each domain the relevant chapter provides an analysis of the target groups and issues, of the policy space relevant for these target groups and issues, and of the evidence-base needed for effective policy formulation. On the basis of this, a number of priority topics are identified as candidates for attention in the following stages of the project.

## Executive Summary

This report presents the results of the start-up work of the eInclusion@EU project. The project is a co-ordination action with the objective of contributing to the development of “evidence-based” eInclusion and eAccessibility policies at EU and Member State levels. The primary approach involves:

- collation and analysis of policy-relevant information and data from across the EU and internationally
- identification of key topics for detailed attention in the project
- preparation of syntheses of the state-of-the-art on these topics
- convening and facilitation of workshops to support informed dialogue amongst the relevant stakeholders
- preparation of evidence-based policy roadmaps on the key topics to inform future EU and Member State policy.

### Analysis of the overall eInclusion domain

The report begins with an analysis of the overall eInclusion domain. This provides an overview of current policy perspectives, focusing on the policy issues and agendas that have been defined at the EU level. In order to put this current policy perspective in context, a broader examination is then made of the eInclusion domain from an “evidence-based” perspective. This maps in an outline manner what we know (and do not know) about the topic from research to date, and what we know (and do not know) about appropriate and effective policy formulation and delivery.

A number of core factors that can act as barriers to or facilitators of eInclusion are identified, including awareness, motivation, skills, access, accessibility, usability, appropriateness and relevance / usefulness. In addition, some issues that have not so far received as much attention on the research and policy agendas are identified and discussed.

One aspect concerns the need for attention to the “second order” digital divide, linked to quality of use, where those who are already advantaged are getting more from their usage of ICTs with the results being widening divides and increased knowledge gaps. Another concerns the need for differentiated policy and measures targeted to the different behaviours of successive categories of adopters, with particular attention needing to be paid to the so-called “late majority” and “laggards”, and to the ceiling horizon in the diffusion process.

In addition, attention needs to be given to the fact that differential adoption rates occur not just within the population overall but also within subgroups, including those who are more generally at risk of eInclusion challenges. Finally, there is a need for a lot more attention to the processes of technological and socio-technical innovation, including design and development and the social shaping of technology, which has until now been dominated by early adopters. Tackling exclusion requires reshaping of technological innovations according to the interests and needs of wider social groups. A particular case in point of relevance for this project would be the use of Design for All approaches at the design stage of products and standards to ensure the people with disabilities are part of the early adopters.

In addition, it is concluded that there is a need for much more evidence on the actual practical interactions between eInclusion and social inclusion, the effectiveness of particular eInclusion policies, per se, and the effectiveness of particular eInclusion policies in terms of contributing to social inclusion.

## Reinforcing and extending EU eInclusion policy-oriented activity

On the basis of this, a framework is developed outlining how the current EU policy agenda could be enhanced and extended in the future. An important feature of this is the proposal for a more co-ordinated approach between what can be termed the “socio-economic” and “socio-technical” perspectives and between these and benchmarking approaches / expertise. In particular, it is argued that the socio-technical perspective needs to be brought more strongly to bear in wider eInclusion policy and practice, as well as being further developed and expanded to a wider range of target groups and issues.

### *Developing the socio-technical dimension*

Core contributions identified for the socio-technical perspective include identifying and analysing the key functional and technical parameters of ICTs with regard to eInclusion processes, monitoring of emerging technologies and trends from the perspective of their social inclusion implications, analysing how the processes of technology design and development can be better oriented towards socially inclusive principles, and developing RTD programmes oriented towards innovation in socially useful and inclusive applications of ICTs.

So far at the EU level this perspective has been applied mainly in relation to technology developments of particular relevance for disabled and older people. This is an area that needs continued and reinforced attention as there remain many challenges and barriers for these groups and continual technology developments need to be monitored and addressed. In addition, however, it would now be useful to extend the scope of this approach to cover a wider socio-technical remit, including the wider issues of user-centred technologies and technology development processes, innovation in socially useful technologies, and targeted attention to other at-risk groups.

## Analysis of the three domains – eAccessibility, employment, online services

The remainder of the report focuses on the development of initial analyses of the three main domains that have been identified for particular attention in the project - eAccessibility, access to employment and access to online services. For each domain the relevant chapter provides an analysis of the target groups and issues, of the policy space relevant for these target groups and issues, and of the evidence-base needed for effective policy formulation. On the basis of this, a number of priority topics are identified as candidates for attention in the following stages of the project.

### *eAccessibility*

The analysis of the eAccessibility domain provides a review and synthesis of the wide range of issues and of the variety of policy approaches that have emerged to date at EU level, amongst the Member States and internationally. The overarching role that legislation and regulations can play is identified and a range of additional and specific policy instruments are outlined. These include standards / guidelines, education / skills / technical assistance, awareness raising, market encouragement, financial measures targeting costs / affordability, consumer empowerment, monitoring and evaluation, RTD and assistive technology services.

The broad range of legislative / regulatory approaches are then conceptualised and organised into a new framework that helps to identify the modus operandi and likely impacts of particular policy approaches. Distinctions are made between policies that explicitly reference eAccessibility issues and those of a more general nature that may implicitly include eAccessibility issues. In addition, important distinctions are made between three types of legislative / regulatory approach:

- rights-oriented (equality / anti-discrimination) approaches which generally focus on the right to individual accommodations at the local level on a case-by-case basis
- sectoral (positive action) obligations which may have more proactive and wide reaching implications
- enabling provisions that facilitate but do not actively require attention to eAccessibility.

Overall, no normative perspective on what constitutes good practice as regards coherent, comprehensive and effective eAccessibility policy has emerged internationally. In preparing candidate topics for more detailed attention in the project, therefore, a set of both specific and more overarching topics are identified. Specific topics include:

- eAccessibility in public procurement of ICTs
- eAccessibility provisions within digital rights management
- universal service in telecommunications and broadcasting
- eAccessibility within the reasonable accommodation and indirect discrimination provisions of wider anti-discrimination approaches.

The main candidate overarching topic concerns the possibility of working on developing the type of normative good practice framework discussed above. This could serve as a harmonised framework for an open method of co-ordination, including the articulation of shared goals across the Member States, articulation of national approaches tailored to the existing legislative and other contextual factors, and common benchmarking and exchange of good practice.

### *Access to employment*

With regard to the employment domain Europe and the world have witnessed dramatic changes in recent years in the characteristics of firms and enterprises, employment forms, working times and places, as well as in the organisation, speed and intensity of work. ICT can be seen and considered as one of the "drivers" and main "enablers" of these changes, which on balance may cause more problems and restrictions for employment of disabled people, older people and persons and workers who are otherwise disadvantaged.

In the eInclusion project, however, the focus will be on the positive employment-related impacts and potentials from ICT. In the "normal" open labour market, ICT can make a contribution to the eInclusion of at-risk groups through its capacity to provide:

- a means of removing existing barriers posed by workplaces and work organisation for people with functional restrictions due to age or disability
- a tool for increasing the individual flexibility and adaptability of workers/employees vis à vis the changing requirements of the labour market and the altering needs of the employers; and
- an information tool about job possibilities and supportive services.

Important ICT-related issues in connection with the other, supported/sheltered labour market sectors include e.g.

- learning and practising information society working culture and improving ICT-skills and competencies,
- supportive online services in different life situations (work related and others), and
- supporting the transition from the supported/sheltered field to the open labour market sector.

At this stage of the work, the tentative list of priority issues for this domain contains the following four suggestions:

- The implementation of the EU Employment Directive and national legislation on ICT- and risk-group related duties of firms and enterprises
- The national provision and delivery systems for employment and work-related assistive technologies
- The national ICT-skills oriented policies for disabled and ageing workers, and other disadvantaged groups
- The contribution of ICT to work-life balance of ageing and disabled workers, and other disadvantaged groups.

### *Access to online services*

For the online service domain, a review of available evidence revealed that provision of both commercial and public services via the Internet is gaining in momentum and that eGovernment, eHealth, eLearning and eCommerce applications increasingly penetrate the domestic sphere. In the public sphere, touch screen information and self-service kiosks are becoming ubiquitous. Also, for an ever increasing part of the population mobile telephony is becoming a day-to-day experience, and enhanced capabilities such as emergency functionalities and location-based services are beginning to transform the mobile phone from a mere communication tool into a multifunction device enabling location-independent utilisation of online-services.

There is some debate about whether or not these developments have already reached a stage where non-connected citizens actually experience noticeable disadvantages when compared to those utilising online media for their purposes. It is however not under dispute that if and when online services offer better value and/or greater choice in certain service domains – particularly in those that are of public interest such as health care and education - disparities in access to online media present the risk of reinforcing existing societal divides or even generating new ones. The strategic challenge for eInclusion related policies directed towards inclusive online service provision is thus a twofold one. On the one hand, it needs to be prevented that particular population groups ‘fall through the net’ in the sense that they are unable to utilise online services of common interest due to unconsidered user requirements they may have (‘online challenge’). On the other hand, the challenge is to fully exploit the potentials online services may hold to overcome rather traditional forms of societal exclusion (‘online opportunity’).

The broad range of issues emerging in this context can be summarised as follows:

- demand-related issues such as lacking motivation among particular population groups to utilise online services for one’s own development;
- supply-related issues such as lack of recognition of specific requirements certain population groups may have with respect to the services offered;
- mediation-related issues such as restricted availability of the required technical infrastructure (access networks, terminals) among particular population groups.

When it comes to addressing these issues in their totality at the policy level quite different policy lines are concerned, ranging, for instance across telecommunications policy, RTD policy and social policy. Candidate topics identified for more detailed attention in the project concern all three types of issues listed above. In particular, they concern the following questions:

- how to adequately cater for user diversity in inclusive online service provision (supply-related issue);
- how to achieve effective public access provision (mediation-related issue);
- how to build up the capacities required for successfully utilising online services among societal at-risk groups (demand-related issue).

Further to these topics, the question of how the inclusiveness of online service provision can best be monitored – ideally on a European scale - constitutes a more overarching candidate theme.

# 1 Introduction

This document presents the conceptual and analytic framework that has been developed as a start-up input to the eInclusion@EU project and as a resource for the rest of the project's work.

## 1.1 About eInclusion@EU

The eInclusion@EU project is a co-ordination action with the objective of contributing to the development of “evidence-based” eInclusion and eAccessibility policies at EU and Member State levels. The primary approach involves:

- collation and analysis of policy-relevant information and data from across the EU and internationally
- identification of key topics for detailed attention in the project
- preparation of syntheses of the state-of-the-art on these topics
- convening and facilitation of workshops to support informed dialogue amongst the relevant stakeholders, and
- on the basis of all this, preparation of evidence-based policy roadmaps on the key topics to inform future EU and Member State policy.

The field of enquiry covering eInclusion and eAccessibility issues is a very broad one and, of necessity, the project is adopting a pragmatic approach. In particular, the project is working closely with the European Commission services to ensure that the priority topics that are selected are aligned with the Commission's own priorities.

In relation to this, the project's Description of Work (DoW) identifies three core areas – eAccessibility, access to employment and access to online services – as being the core concerns of the project. The more detailed analysis presented in this deliverable provides support for this initial selection of topics for the project. Clearly, however, each of these are extensive fields in their own right and the project will need to be selective in its approach within each field and, where possible, exploit synergies between two or more fields.

Within these three fields, the ultimate selection of policy topics will be oriented towards the identification of areas where the approach adopted by the project can be expected to make the most useful contribution. For example, the focus is likely to be on policy areas where there is already a clear political will but not yet any widely accepted consensus on good practice or harmonisation of policy and policy measures across the EU Member States.

## 1.2 About this deliverable

This deliverable provides a first overview and analysis of the domain of enquiry in order to provide a basis for the remainder of the work of the project. The document is structured as follows.

Chapter 2 presents an analysis of the overall eInclusion domain. This begins with an overview of the current policy perspective (section 2.1), focusing on the policy issues and agendas that have been defined at the EU level. In order to put this current policy perspective in context, section 2.2 then takes a broader look at the eInclusion domain from an “evidence-based” perspective. This aims to map in an outline manner what we know (and do not know) about the topic from research to date, and what we know (and do not know) about appropriate and effective policy formulation and delivery. Section 2.3 then re-visits the EU policy agenda in the light of this evidence-based perspective and presents a framework within which this agenda could be enhanced and extended in the future. Finally, Section 2.4 indicates the specific type of contribution that the eInclusion project expects to make in this context.

Chapter 3 presents the conceptual and analytic framework for the eAccessibility domain. It identifies core target groups and issues (section 3.1), analyses the eAccessibility policy domain on the basis of

existing policy reviews and a new analysis and synthesis prepared within the eInclusion@EU project (section 3.2), provides an analysis of the role of evidence-based approaches in eAccessibility policy formulation (section 3.3) and lists the initial priority topics that have been identified for the eAccessibility policy domain in the project.

Chapter 4 presents a first outline of the conceptual and analytical framework developed for the access to employment and work policy domain. It first provides an analysis of recent trends and changes with regard to employment and work (section 4.1). This is followed by an overview of functional challenges associated with disability or ageing can affect employability and participation in work (section 4.2). Section 4.3 provides an overview of target groups and suggested priority issues, and section 4.4 outlines possible contributions of ICT to employment and work inclusion and pertinent relevant policy activities. Section 4.5 deals with the evidence base needed for policy formulation and evaluation. The final section (4.6) presents the initial list of priority topics that have been identified for further work on this topic within the project.

Chapter 5 presents the conceptual framework that has been developed for the online service policy domain. This starts with an analysis of the target groups and issues that are the subject of the domain (section 5.1), and is followed by an analysis of the policy space that has relevance for addressing these target groups and issues (section 5.2). The subsequent section (section 5.3) provides a discussion of the evidence-base needed for policy support. The final section (5.4) presents the initial list of priority topics in the online services domain that have been identified for more detailed attention in the project.

The final chapter (Chapter 6) outlines the next steps for the work of the project.

## 2 Overview of the eInclusion domain from a policy perspective

This chapter develops a conceptual overview of the overall eInclusion domain. It starts with an outline of the EU activity in this area (section 2.1). This is followed by an overview of theoretical and evidence-based research in the eInclusion domain (section 2.2), including the links between the concepts of eInclusion and eAccessibility and how these can be conceptualised within a coherent analytical perspective. Section 2.3 re-visits the policy agenda from the more scientific and research-based perspective and outlines a framework within which the EU policy agenda can be enhanced and extended in the future. Section 2.4 indicates the aspects of this broad domain where the eInclusion@EU project expects to make its main contribution and outlines the core features of the approach and methods that are being applied in the project.

### 2.1 EU eInclusion policy

As a follow-up of the Lisbon European Council in March 2000, the promotion of social inclusion was incorporated as intrinsic element of the overall strategic objective of the European Union, i.e. the well-known Lisbon agenda: "Becoming the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth, with more and better jobs and greater social cohesion".

e-Inclusion is one of the dimensions of overall inclusion and cohesion policies. In the meaning of the European Commission, e-Inclusion means a twofold approach<sup>1</sup>:

- *Preventing digital exclusion*, i.e. to prevent that disadvantaged people and disadvantaged groups could be left behind in the development of the information society. Digital exclusion may result from a lack of digital literacy, from economic or technical barriers to Internet access, or from a lack of capabilities to use efficiently the new services and facilities linked to information and communication technologies. Literacy, access and use are three key words in policies preventing e-exclusion.
- *Exploiting new digital opportunities* for a better inclusion of socially disadvantaged people or groups, or less-favoured areas. Digital opportunities refer to the distribution and circulation of knowledge resources, the potential of new information and communication services, new job opportunities and better access to employment, and, more traditionally as regards to ICT, overcoming barriers of distance or mobility.

The successive e-Europe action plans (2002 and 2005) included some specific measures related to e-inclusion. In e-Europe 2002, the action line "Participation of all in the knowledge economy" assigned targeted objectives in the areas of "design for all" and "public Internet access points". In e-Europe 2005, e-inclusion is less visible, although underlying the priority given to modernisation of on-line public services (e-government, e-health and e-learning).

Besides the activities of DG Information society, several objectives of e-inclusion have been incorporated for the last four years in various thematic policy areas, among others: the social dimension of the development of the knowledge society (DG Employment); the development and improvement of e-skills in the knowledge economy (DG Enterprise); the development of socio-economic research into social cohesion and inclusion (DG Research); the guidelines of the European structural funds.

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<sup>1</sup> European Commission (2001), *The information society's potential for social inclusion in Europe*, SEC(2001)1428, Brussels, 18/09/2001, p. 5.

### 2.1.1 Knowledge society (DG Employment)

As already mentioned, the Lisbon strategy considers e-inclusion as one of the social dimensions of the development of the knowledge based economy. Within the European Commission, DG Employment and social affairs is in charge of this policy area, currently through its unit "Knowledge society". The ESDIS expert group is a keystone of the activities of DG Employment in this field.

In 2001, the ESDIS group<sup>2</sup> issued a framework report on e-inclusion in the knowledge society. The experts recommended a series of proposals, grouped in 7 policy areas and summarised in Table 2.1. These recommendations cover a range of concerns related to e-inclusion, including e-accessibility issues relating especially to people with disabilities. The report of the ESDIS group was supported by an inventory of e-inclusion practices across Europe<sup>3</sup> and an Eurobarometer survey on the attitudes of European citizens towards issues of social inclusion in the information society<sup>4</sup>.

The Council resolution based on this report<sup>5</sup> took up and endorsed these 7 policy lines, calling on the Commission to take fully into account the challenges and opportunities of e-inclusion within the further developments of the social inclusion strategy, to integrate it in the European employment strategy and in the priorities of the structural funds, and to monitor and analyse the progress of e-inclusion policies within the framework of the employment and social inclusion strategies.

Following this resolution, DG Employment established two targeted working groups, the first one on e-accessibility, and the second one on social and human capital interactions. The activities on e-accessibility resulted in a working document and a Council resolution<sup>6</sup>, published in 2002 and commented further in this report<sup>7</sup>.

The working group on social and human capital in the knowledge society issued a first report in May 2003<sup>8</sup>, with the support of the ESDIS group, and is currently going on with its work. This report introduces new concepts in the analysis of inclusion and cohesion issues in the knowledge society: human capital and social capital.

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<sup>2</sup> ESDIS means "Employment and Social Dimension of the Information Society". ESDIS is chaired by Mrs Luisella Pavan-Woolfe, Director for Horizontal and International Issues in DG Employment and Social Affairs. Within the Commission services, ESDIS meetings are prepared by DG Employment, with contributions from DG Information Society, DG Enterprise and DG Education and Culture.

<sup>3</sup> European Commission, Background document on e-inclusion practices, annex to SEC(2001)1428, op.cit.

<sup>4</sup> Eurobaromètre 55.1 (2001), *Les Européens et la e-inclusion*, INRA Europe, Printemps 2001.

<sup>5</sup> Council resolution of 8 October 2001, e-Inclusion, exploiting the opportunities of the information society for social inclusion, 2001/C 292/02, OJ 18 October 2001.

<sup>6</sup> European Commission (2002), Delivering e-accessibility – Improving disabled people's access to the knowledge based society, SEC(2002)1039

Council resolution 5165/03 e-Accessibility: improving the access of people with disabilities to the knowledge based society, OJ 14 January 2003.

<sup>7</sup> Cf. section 3.2.1.1

<sup>8</sup> European Commission (2003), Building the knowledge society: social and human capital interactions, SEC(2003) 652.

**Table 2-1: Recommendations of the ESDIS group on e-inclusion (2001)**

<b>To tap the information society's potential for disadvantages people by ...</b>	
Appropriate on-line content and services	<p>Making public services accessible to demand profiles, understandable by all people and without technical barriers for disabled persons.</p> <p>Developing quality checks of responses of public web sites to special needs of disadvantaged people.</p> <p>Developing targeted services for disadvantaged people in the areas of social assistance, job opportunities, education and health, notably through interactive e-government.</p> <p>Stimulating on-line activities in the voluntary and non-profit sector.</p> <p>Maintaining complementarity between on-line and off-line services.</p>
Fostering local communities through on-line services and networks	<p>Stimulating local on-line communities, with a priority to networks in disadvantaged urban neighbourhoods and less-favoured rural areas.</p> <p>Serving the needs of peripheral areas through e-government practices</p>
Realising ICT job opportunities for disadvantaged people	<p>Including ICT literacy of low-income and low-educated workers in the Employment guidelines.</p> <p>Fostering the recognition of certificated basic ICT skills, through private / public partnerships.</p> <p>Encouraging conversion courses for "workers at risk" into e-business or ICT skills, involving the social and industrial partners.</p> <p>Facilitating telework for disadvantaged people or areas and making further progress in telework framework agreements.</p> <p>Matching on-line recruitment services with the needs of workers with special needs.</p>
<b>... while removing barriers in the information society by ...</b>	
Raising awareness of the information society's opportunities	<p>Designing awareness campaigns showing the potential benefits of ICT for people at risk of digital exclusion, using appropriate communication channels for these groups.</p> <p>Starting with an integrated e-inclusion strategy, followed up by incentives for access and training.</p> <p>Awareness building of ICT producers and information providers about the interests and concerns of disadvantaged groups.</p>
Making access to ICT available and affordable	<p>Expansion of public Internet access points, including training facilities.</p> <p>Targeted financial incentives encouraging individual purchase or use of ICT by disadvantaged groups.</p> <p>ICT infrastructures for remote or dispersed localities, particularly broadband access.</p> <p>Exploring the opportunities of digital TV and mobile communications for e-inclusion purposes.</p>
Promoting digital literacy for disadvantaged people	<p>Focusing digital literacy activities on basic use of Internet and public on-line services</p> <p>Networking e-learning centres addressing disadvantaged groups.</p>
e-Accessibility: removing technical barriers for people with disabilities	<p>Enhancing the accessibility of ICT equipment and web content for disabled people and implementation of e-Europe actions concerning WAI guidelines.</p> <p>Creating an e-Accessibility expert group for monitoring and benchmarking the progress in accessibility.</p>
<b>... through partnerships of all stakeholders, with an emphasis on the regional and local dimensions.</b>	
Complementarity	<p>Actions in these 7 policy areas should be pursued by involvement of all stakeholders, regional and local actors, and social partners. They should address all various disadvantaged communities, while mainstreaming gender.</p>
Subsidiarity	<p>e-Inclusion policies must rely of the different levels of digital exclusion in member States, regions and localities</p>

Source: European Commission (2001), SEC(2001)1428, pp. 6-7.

Human capital is defined by ESDIS as “knowledge, skills, competencies and attributes embodied in individuals which facilitate personal, social and economic well-being”, while social capital is defined as “networks and participation in public life together with shared norms, values, culture, habits and practices, trust and understanding to facilitate co-operation within or among groups, to pursue shared objectives”.

Using these concepts, e-inclusion can be re-interpreted. “The widespread use of the Internet – and ICT in general - may offer both opportunities and challenges for human and social capital development. It must be weighed against the risk of increased social inequality of access to cyberspace, further fragmentation of people into distinct groupings, and being a possible tool of passive, private entertainment. This situation may be compounded, as some groups are likely to have access to new forms of learning linked to enhanced labour opportunities, to use the Internet for enhanced social interaction as well as for civic and democratic participation<sup>9</sup>.”

The conclusions of the report are formulated as “human and social capital as drivers for employment and social cohesion”, into four areas: learning, the workplace, social cohesion and gender. Among the key challenges identified by ESDIS in these areas, Table 2.2 summarises those that are more directly related to e-inclusion topics.

**Table 2.2 Selected recommendations of the ESDIS group on human and social capital, related to e-inclusion topics (2003)**

Learning	<p><b>Challenge:</b> in the knowledge society, basic e-skills are fundamental, but cognitive, interpersonal and communication related skills are increasingly seen as crucial for a real inclusion and active participation; they are built up through interactions between human and social capital.</p> <p><b>Recommendation:</b> to foster the necessary skills, including not only basic ICT skills but also personal skills such as cognitive skills, learning to learn, teamwork and problem solving</p>
The workplace	<p><b>Challenge:</b> overcoming the risks of polarisation of human capital (between high / low level jobs), of endangering human capital (through intensification of work) and of devaluating social capital (individualisation of work relations)</p> <p><b>Recommendation:</b> to promote specific initiatives aimed at tackling the human capital paradox, i.e. that well educated / trained people have more possibilities and actually access more learning opportunities than low educated / trained people, who should most benefit from training.</p>
Social cohesion	<p><b>Challenge:</b> to develop an alternative framework to the digital divide and the erosion of traditional social capital, in order to harness the ICT potential for social inclusion and better participation of individuals, families and communities.</p> <p><b>Recommendations:</b> to highlight the importance of formal and informal social networks, including the new virtual ones, for social cohesion and quality of life; to continue specific e-inclusion policies for disadvantaged groups and people; to explore the positive role of social economy in building up social capital.</p>
Gender	<p><b>Challenges:</b> to deal with persistent low levels of qualifications for some segments of women, which can constitute an additional barrier to the knowledge society; to exploit the potential of ICT for more family-friendly work schedules and more open work organisation patterns.</p> <p><b>Recommendations:</b> to favour empowerment of women in the knowledge society, to foster equal participation in relevant networks; to consider fully the gender dimension in all the areas mentioned under learning, the workplace and social cohesion.</p>

Source: European Commission, SEC(2003) 652, pp. 20-52.

Most of the conclusions of this report were taken up in a Council resolution adopted at the Council on employment, social policy, health and consumer affairs in June 2003<sup>10</sup>.

<sup>9</sup> European Commission, SEC(2003) 652, op. cit., p. 16.

<sup>10</sup> Council resolution 9688/03, *Social and Human Capital*, 2511<sup>th</sup> Council meeting, Luxembourg, 2-3 June 2003, pp. 24-29

### 2.1.2 e-Skills (DG Enterprise)

Relevant skills are needed for inclusion in the information society, as also underlined in the e-Europe 2005 action plan. The e-skills issue is dealt with by the action line “e-business and e-skills” at DG Enterprise. According to EC documents, e-skills are defined according to a three-layer skills model<sup>11</sup>:

- The ICT skills needed for basic tasks, as a tool for learning and for modern life outside the workplace are often defined as *digital literacy*.
- *E-skills* (or *applied ICT skills* in the terminology of OECD) relate to the ability to use and apply ICT tools in general workplace settings, and to upgrade these skills when business processes and industry structures change.
- *Professional ICT skills* are needed in the ICT industry and in related jobs in the user industries, in order to create, develop, implement, repair or manage ICT tools (hardware, networks and software).

e-Inclusion mainly refers to the first level (digital literacy), although there is a growing emphasis on users’ skills (which rather belong to the category of applied e-skills) in many studies concerning the prevention of social exclusion from e-services, and the exploitation of digital opportunities for all.

In order to address the overall skills issue, the European Commission set up the “e-skills forum”<sup>12</sup> in March 2003, as a result of a process initiated in 2000, after the Lisbon summit. The successive steps of this process were:

- Set-up of the *ICT skills monitoring group*, comprising representatives of the Member States, the Commission, CEDEFOP, OECD and the industry consortium Career-space. First report on ICT skills in Europe issued in September 2001, final report and benchmark report in October 2002.
- Organisation of the *e-skills summit* in Copenhagen (October 2002), strongly supported by the ICT industry (Cisco, IBM, Microsoft, Nokia and HP), and policy declaration at the end of the summit, calling for a closer and stronger involvement of industrial players in European policy for the improvement of e-business and ICT skills.
- Policy decision (EC) and implementation of the *e-skills forum*. The e-skills forum is not anymore made of (mainly) representatives of public authorities in the Member States, as was the ICT skills monitoring group. It is more open to industry and training institutions.

The main tasks entrusted to the e-skills forum are:

- Definition of e-business and ICT skills for specialists and relating job profiles
- Measurement and forecasting of e-skills demand and supply for specialists
- Identification of specific needs of the ICT sector and user industries (with special attention to SMEs)
- Training certifications in the context for lifelong learning and global mobility
- Measures to be taken to attract talents from all age, gender, social, or ethnic origin.

Among these tasks, only the last one directly belongs to the area of e-inclusion. In the activities of the forum, it does not appear on the foreground. The main focus is given to identification of industry needs and recognition of training certifications. Even skills profiles have lost of their importance since the decline of the huge skills shortage.

An on-line forum has been set up and is being managed by CEDEFOP<sup>13</sup>. By July 2004, the Forum will deliver a report analysing the situation and progress made in reducing the e-skills mismatch in Europe, and outlining 10 priority projects at the European level. A final conference is planned in September 2004 at CEDEFOP.

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<sup>11</sup> Go Digital (2002), *E-business and ICT skills in Europe*, Synthesis report of the ICT skills monitoring group of eEurope, European Commission, Brussels, June 2002, p. 11.

<sup>12</sup> <http://europa.eu.int/comm/enterprise/ict/policy/ict-skills.htm>

<sup>13</sup> <http://cedefop.communityzero.com/esf>

### 2.1.3 Socio-economic research on the knowledge based society (DG Research)

The issue of social inclusion in the information society is mentioned in the successive socio-economic research programmes under FP4, FP5 and FP6, but in rather different ways, with different levels of priority and more or less explicitly.

Under FP4, the Targeted socio-economic research programme (TSER) included a specific research area entitled “social inclusion and exclusion”, covering all inclusion and exclusion issues (poverty, migration, marginalisation, urban policy, welfare systems, trends in the organisation of society, etc.). Among the published reports, only one project directly addressed inclusion and exclusion in the information society: the SOWING project<sup>14</sup>. Although this project initially aimed at considering social exclusion as a multidimensional and cumulative process, overlapping several social spheres (work, education, health care, free time activities, housing, cultural life), the empirical work carried out in SOWING was focussed on the exclusion processes resulting from changes at work in the information economy. This option was partly based on a research hypothesis, i.e. that employment is seen as the core of social ties linking people to society, partly on pragmatic aspects of project management, i.e. “re-sizing” the project<sup>15</sup>.

Under FP5, socio-economic research was organised within the “Improving” programme. In this programme, social inclusion is linked with cohesion and there is no explicit reference to what we refer to here as “e-inclusion”, and no project directly linked with this focus. However, considerable effort was made to understand the multidimensional aspects of inclusion and exclusion processes. As a result of a clustering accompanying measure on social inclusion, the Joint Research Centre set up an integrated database of local and national inclusion measures and initiatives in the Member States<sup>16</sup>.

Looking across the Cordis data base of projects and publications resulting from both the TSER and Improving programmes, three clusters of projects related to inclusion can be distinguished: inclusion and education, inclusion and work, inclusion and social welfare systems. A fourth cluster could be named inclusion and cohesion; it mainly contains projects related to migrants and the enlargement process.

Under FP6, and insofar as the contents of the first work programmes and the results of the first calls could be interpreted accurately, e-inclusion appears explicitly in Priority 8 (policy orientated research) – under the heading to which eInclusion@EU belongs. Priority 7 (citizens and governance in the knowledge economy) deals with the issue of social inclusion and exclusion in the same integrated way as the Improving programme.

### 2.1.4 Guidelines of the structural funds - mainly the EQUAL initiative

Through the Community Initiative EQUAL (formerly ADAPT and EMPLOYMENT), the European Social Fund intends to support the European employment strategy and employment guidelines, the national action plans against social exclusion and the Community framework strategy for gender equality<sup>17</sup>. The ADAPT and EMPLOYMENT initiatives (1995-2001) were rather centred on inclusion through work. An evaluation of the contribution of the former EMPLOYMENT Community Initiative to the

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<sup>14</sup> <http://www.uta.fi/laitokset/tyoelama/sowing/frontpage.html>

<sup>15</sup> Schienstock G. et al., *Information society, work and the generation of new forms of social exclusion*, final report ERBSOE1-CT971070, European Commission, DG Research, June 2002, pp. 17 and 28-30.

<sup>16</sup> This data base results from the LOCIN project and is managed by JRC/Ispra: <http://locin.jrc.it/en>

<sup>17</sup> About information society and the European employment strategy: *Strategies for jobs in the information society* (COM(2000) 48 final); *Employment in the information society: quality for change* (SEC(2002) 372).

Information society and gender equality: Community framework action programme *Equal opportunities for men and women in the European Union*, COM(2001) 179 final.

construction of an inclusive information society was carried out by the IST project KISEIS<sup>18</sup>. This evaluation characterises the approach to social inclusion as a “pathway approach”, based on a combinations of five categories of key interventions: contacting and motivating disadvantaged groups; developing skills; ensuring support for social and cultural activities; providing employment guidance and career guidance; developing employment progression measures.

The current EQUAL initiative (2000-2006) adopts a slightly wider scope. There is however a recurrent ambiguity as regards the use of the coupled terms “inclusion” and “information society”, referring in some cases to an overall societal context, in other cases to concrete use and appropriation of information and communication technologies for and by disadvantaged groups. Within the updated EQUAL priorities, objectives related to e-inclusion are mainly underlying in two action lines<sup>19</sup>:

- 1A: employability and re-insertion to work – facilitating access and return to the labour market for those who have difficulty in being integrated or re-integrated into a labour market which must be open to all.
- 3F: adaptability to changes and ICT – supporting the adaptability of firms and employees to structural economic change and the use of information technology and other new technologies

It is however worthwhile to mention that e-inclusion is not a priority as such in EQUAL, but rather a way to achieve other priorities.

## 2.2 Theoretical and research-based perspectives on eInclusion<sup>20</sup>

This section provides an overview of the concept of eInclusion as it has been formulated in the theoretical and research literature in the socio-economic field. The aim is to provide a basis for the development of an overall framework within which to elaborate an evidence-based approach to eInclusion.

### 2.2.1 Inclusion/exclusion, digital divide, cohesion: clarifying the concepts

The eInclusion debate – as it is reflected in the literature - has up to now relied on three core concepts, namely the concepts of social exclusion, of social cohesion and of the so-called digital divide. In the following subsections, these are described in more detail.

#### 2.2.1.1 Social exclusion and inclusion in the knowledge society

*Social exclusion* is a social process, built on social inequalities and leading to the marginalisation of individuals and groups as regards societal goals. Social inequalities (related to a series of factors: gender, ethnicity, age, education, employment, income, professional status, housing, family structure, disability, geographical location, etc.) are the basic roots of social exclusion. Exclusion is defined in relation to a goal: in the case of this project, the development of the information society / knowledge society (digital exclusion or e-exclusion). Exclusion occurs when individuals or social groups are left behind or do not benefit from equal opportunities to achieve societal goals.

*Social inclusion* is also a social process, related to a goal. Social inclusion is not only the symmetric counterpart of social exclusion, aiming at including those who are at risk of exclusion. The process of social inclusion relies on three dimensions:

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<sup>18</sup> O'Donnell S., Ellen D., Duggan C., Building the information society in Europe: a pathway approach to Employment interventions for disadvantaged groups, ITECH Research, Dublin, May 2003.

<sup>19</sup> Currently the EQUAL on-line data base does not allow to browse in the texts of the project descriptions in order to look for precise e-inclusion subtopics.

<sup>20</sup> Council of the European Union: Joint report by the Commission and the Council on Social Inclusion. 5 March 2004. 7101/04.

- Overcoming the disadvantages resulting from social inequalities, in order to avoid exclusion processes.
- Harnessing the opportunities offered by the targeted societal goals, in order to reduce existing inequalities and improve the quality of life in society.
- Fostering participation and empowerment in upcoming societal processes, in order to improve individual and collective expression, civic commitment and democratic participation.

Digital inclusion or e-inclusion is the process of social inclusion related to the goal of “a European information society for all”. The definition of e-inclusion, as proposed in the project description eInclusion@EU, encompasses the three dimensions of social inclusion, as far as it concerns digital disadvantages, digital opportunities and digital empowerment <sup>21</sup>.

As noted already in section 2.1, the European Commission also adopted a rather similar definition of the concept of e-inclusion, which is considered by the ESDIS expert group as a twofold approach <sup>22</sup>:

- *Preventing digital exclusion*, i.e. to prevent that disadvantaged people and disadvantaged groups could be left behind in the development of the information society. Digital exclusion may result from a lack of digital literacy, from economic or technical barriers to Internet access, or from a lack of capabilities to use efficiently the new services and facilities linked to information and communication technologies. Literacy, access and use are three key words in policies preventing e-exclusion.
- *Exploiting new digital opportunities* for a better inclusion of socially disadvantaged people or groups, or less-favoured areas. Digital opportunities refer to the distribution and circulation of knowledge resources, the potential of new information and communication services, new job opportunities and better access to employment, and, more traditionally as regards to ICT, overcoming barriers of distance or mobility.

In addition, as also noted earlier, the ESDIS group has recently put the emphasis on human and social capital in the knowledge society <sup>23</sup>, in a direction quite convergent with the third above-mentioned dimension of inclusion (participation and empowerment). Enhancing and increasing social capital is considered as a way to achieve better social inclusion.

#### 2.2.1.2 The digital divide

The term “digital divide” is used to characterise an emerging polarisation phenomenon in society, creating a gap between those who have access to and use the potentialities of the information and communication technologies for their own achievements, and those who are not in a position to access or use these potentialities. The digital divide is usually described and measured by statistical differences in access and use of Internet-related services between different social groups, characterised by demographic variables (gender, age, type of household), socio-professional variables (education, job, professional status, income) and geographical variables (housing, urbanisation, geographical location, regional features, geopolitical factors).

Nevertheless, disparities in access and use of the Internet cannot be analysed as a single divide between those who are either “in” or “out”. The digital divide results from complex interactions between various layers of specific differentiating factors. Some of these factors reveal cultural or behavioural differences, which may be progressively lessening, while other factors are linked to structural inequalities in the organisation of economy and society, which need adequate policy responses <sup>24</sup>.

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<sup>21</sup> eInclusion@EU, Description of work (technical annex to the contract), pp. 6-7.

<sup>22</sup> European Commission (2001), *The information society's potential for social inclusion in Europe*, SEC(2001)1428, Brussels, 18/09/2001, p. 5.

<sup>23</sup> European Commission (2003), *Building the knowledge society: social and human capital interactions*, SEC(2003) 652.

<sup>24</sup> Steyaert J., Gould N. (2004), *The rise and fall of the digital divide*, in Graham J., Jones M., Hick S. (Eds.), *Digital divide and back: social welfare, technology and the new economy*, University of Toronto, Toronto (forthcoming).

The key question is whether statistical deviations in Internet access and use reveal differences or inequalities. Differences can come from different rhythms of adoption of innovations (pioneers, leaders, followers, laggards) or from a diversity of socio-cultural behaviours (younger or older people, urban or rural areas, family patterns, etc.). Differences are a matter of diversity, while social inequalities lead to exclusion or discrimination, linked to the non-use or misuse of ICT. Discriminations can be related to four main areas:

- unequal access to jobs and learning,
- unequal access to new consumer goods and services,
- unequal capabilities as regards reshaping of sociability networks,
- lack of democratic participation and unequal access to public e-services.

Studies of the digital divide are relevant descriptors of e-exclusion and e-inclusion processes. Descriptions, analyses and interpretations of the digital divide, as well as of policies tackling the divide, allow for a better understanding of the concepts of inclusion and exclusion. Moreover, at an international level where the EC terminology e-exclusion/e-inclusion is not used, the digital divide remains a basic concept for analysing the processes of social exclusion and inclusion linked to the information society.

### 2.2.1.3 Social cohesion

Social cohesion is one of the key objectives of the European construction process, as mentioned in the Single European Act, the Amsterdam Treaty and the Lisbon declaration. Practically, social cohesion is often used by EC officials as an overarching objective, covering various issues related to regional disparities, accession countries, employment strategy, gender equality, poverty, etc. There is however no accepted definition of the concept of social cohesion among the academic world. It cannot be defined in relation to any clear counterpart, such as exclusion/inclusion or equality/inequality. Cohesion can be seen as a horizontal issue concerning the forms of solidarity and, in a broader sense, shared social values<sup>25</sup>. A cohesive society has high levels of social support or, according to Putnam's words, a high level of social capital. Putnam however questions the empirical relationships between social capital and social inequalities<sup>26</sup>: most Western European countries, for instance, combine persistent social inequalities with a positive level of social cohesion, due to extended solidarity systems.

Within the scope of the eInclusion@EU project, social cohesion may be understood in a more pragmatic way, taking two aspects into account:

- At the European policy level, social inclusion in general, and particularly e-inclusion, are obviously strong components of cohesion policies. Anything good for inclusion is good for cohesion. Inclusion policies have however to be coherent with other cohesion policies.
- The European "cohesion funds" (ESF and other structural funds) support a lot of initiatives and policies aiming at tackling e-exclusion and fostering e-inclusion. These initiatives have to justify themselves as regards wider cohesion objectives, as defined in the multi-annual plans of cohesion funds.

## 2.2.2 Theoretical interpretations of the concepts

Concepts such as digital divide, e-exclusion or e-inclusion can be interpreted in a more general framework of diffusion and appropriation of innovations in society. Looking at divides, exclusion and inclusion as a process of diffusion of innovations gives a more dynamic picture of evolving social

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<sup>25</sup> Wickham J., Social cohesion, the organisation of work and ICT: drawing out the lessons of the TSER research programme and the key action on socio-economic research, INFOWORK final report (HCPA-CT-2001-60007), European Commission, 2004.

<sup>26</sup> Putnam R.D. (2000), *Bowling alone, the collapse and revival of American community*, Simon & Schuster, New York.

contrasts than “spot photographs” on segmented aspects of social inequalities. Four streams of theoretical interpretations will be briefly presented and commented here:

1. The digital divide is a transitory phase in the market diffusion of Internet-related innovations, according to the classical economic theory of diffusion of innovations.
2. Digital divide, exclusion and inclusion reflect a process of progressive appropriation of evolving innovations by different categories of users, according to Rogers’ “anthropocentric” theory of diffusion of innovations.
3. Exclusion and inclusion are manifestations of knowledge gaps, according to updated reformulation of the knowledge gap hypothesis, which is rather recurrent in communication theory.
4. Exclusion and inclusion result from a process of creation, alteration or maintenance of social rules through communication technologies, according to Giddens’ structuration theory and his followers.

#### 2.2.2.1 Digital divide as a transitory phenomenon

According to the classical theory of diffusion of innovations, any innovation is first of all adopted by pioneers, followed by leading users. Generalisation to the whole economy and society results from increasing scale yields (and therefore decreasing costs) at the production stage and from changes in the consumption patterns, mainly due to market drivers. The well-known S-curve describes the diffusion process, as adoption rate vs. time (Figure 2.1). Analysts usually distinguish four successive periods: early adoption by (rather privileged) pioneers and leading users; take-off, involving more and more users up to about 50% of the diffusion potential and creating a mass “culture” of new products and services; democratisation, in the meaning of progressive market penetration towards a large majority of potential users; and saturation, when diffusion reaches a ceiling. Differences in adoption rates among different groups of users start at the early stage. They amplify themselves during the take-off phase, in such a way that “diffusion divides” can be observed among different groups in society. Differences among subgroups are however narrowing during the democratisation phase. At the saturation stage, only a small proportion of users remains excluded or stays at the margin.

In this interpretation, the digital divide is a transitory phenomenon in the diffusion process of Internet access and use, which should progressively disappear as the diffusion rate reaches its saturation ceiling<sup>27</sup>. The very policy issue is not that of the transitory digital divide, but that of individuals and groups left behind at the saturation stage. Usually, such anti-exclusion policies for minority groups belong to the area of intervention of public authorities, as they go far beyond market mechanisms.

Several critiques are addressed to this classical interpretation, mainly highlighting that Internet access and use are not comparable to the diffusion process of common consumer goods. It is not only a matter of adoption rates, but also a question of appropriation and learning. The rhythm of appropriation and learning is much slower – and much more differentiated among social groups – than the rhythm of expansion of Internet markets. During the “democratisation” phase, some gaps may be narrowing and others extending<sup>28</sup>.

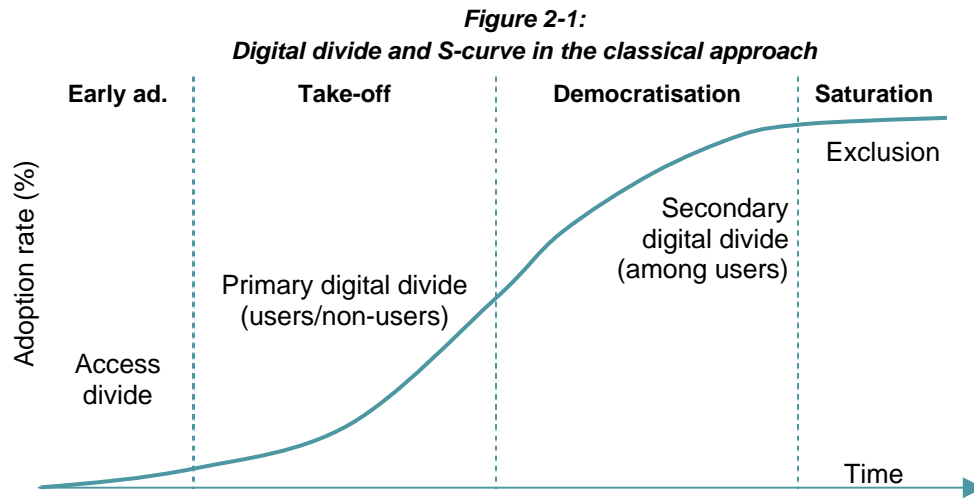
Other authors explain that “democratisation” (i.e. widespread access, as far as the term democratisation may be criticised) does not make the digital divide disappear, but change. At the stage of early adoption, the digital divide is mainly an access divide (Figure 2.1). During take-off, contrasts and inequalities can be observed between users and non-users. Together with more widespread diffusion, a second kind of divide comes over the first one. It describes gaps in the

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27 Giget M. (2001), Une démocratisation plus rapide, dans le dossier La révolution numérique gommara-t-elle les inégalités ?, Le Monde / Economie, 9 janvier 2001.

28 Steyaert J. (2000), Digitale vaardigheden en geletterdheid in de informatiesamenleving, Rathenau Instituut, Den Haag.

qualitative use of Internet services, linked with differentiated skills, culture, capabilities, interests and background of users <sup>29</sup>.



This “second-order” digital divide among users (and not anymore between users and non-users) is typical to the late stage of Internet diffusion, it leads to a wide range of differentiation among users <sup>30</sup>. The digital divide is definitely not transitory, but persistent and continuously moving.

*Impacts of this theoretical insight for the project and for eInclusion policy more generally:*

*Attention must be paid to the “second order” digital divide, linked to the quality of use.*

#### 2.2.2.2 Exclusion and inclusion as differentiated or unequal appropriation processes

Everett Rogers' theory of diffusion of innovations is an attempt to conciliate the classical approach (the S-curve) together with anthropological and cultural factors. Rogers' objective is to understand diffusion of innovations in a social system, beyond market aspects. His approach considers behaviours and relationships of “diffusion agents” and users, mechanisms of conviction and eviction, adoption and rejection, direct paths and detours; it also integrates users' feedback on technology design <sup>31</sup>. Several authors use Rogers' concepts in order to understand exclusion and inclusion processes linked to the diffusion of Internet and e-services for final users <sup>32</sup>.

Summing up roughly the use of Rogers' concepts by analysts of the digital divide, three categories of explicative factors are identified in the social process of Internet adoption and use:

<sup>29</sup> Molnár S. (2003), *The explanation frame of the digital divide*, in the Proceedings of the IFIP summer school “Risks and challenges of the networked society”, Karlstad University, Aug. 2003.

<sup>30</sup> Lenhart A., Horrigan J.B. (2003), *Re-visualising the digital divide as a digital spectrum*, in *IT & Society*, vol. 1 n°5, Stanford University, Summer 2003, pp.23-39.

<sup>31</sup> Rogers E. (1995), *Diffusion of innovations*, Free Press, New York, 4<sup>th</sup> edition.

<sup>32</sup> Extended reference to Rogers' concepts is made by Vendramin P., Valenduc G. (2003), *Internet et inégalités*, op. cit., pp. 42-48; Van Dijk L., De Haan J., Rijken S. (2000), *Digitalisering van de leefwereld*, Cahier 167, SCP (Sociaal en Cultureel Planbureau), Den Haag, mei 2000, pp. 21-34; Steyaert J. (2002), *Inequality and the digital divide : myths and realities*, in Hick S. and McNutt J. (Eds.), *Advocacy, activism and the internet*, Lyceum Press, Chicago, pp. 199-211; Mason S.M., Hacker K.L. (2003), *Applying communication theory to digital divide research*, in *IT & Society*, vol. 1 n°5, Stanford University, Summer 2003, pp. 40-55.

- User-related characteristics of the product and services: complexity, compatibility, testability, visibility and relative advantages.
- Consumers' characteristics, mainly their available resources: cognitive resources, social resources (social capital) and material resources (time and money).
- Distinct profiles of successive categories of adopters, as fast as innovation spreads.

User-related characteristics play an important part in exclusion or inclusion processes, as they can explain what kind of incentives and barriers are perceived by different social categories<sup>33</sup>. Complexity of user interfaces may be perceived as an incentive for pioneers and leading users, while user-friendliness is required for wider diffusion. Compatibility determines to what extent new technologies and services are integrable in existing user environments (professional and/or home environments, computer or media environments, material and cultural environments). Testability refers to the possibilities of experimentation before adoption, for instance in other environments or through proximity networks. Visibility of users reduces uncertainty in the diffusion process: visibility as communication tool, as a form of social distinction or acknowledgement. Relative advantages are not mainly linked to relative technological performance, but rather to efficiency and easiness in comparison with the user situation before adoption of innovation.

According to their perception of user-related characteristics, users will have to mobilise more or less material, cognitive or social resources, whereas these resources are not equally distributed in society. Among material resources, specific attention must be paid to time resources, which are unequally distributed (notably among gender, socio-professional groups and household types). Time resources partly determine acquired e-inclusion skills: users' e-skills are built up through users' practices and scarce time resources are an obstacle to e-skills. Among cognitive resources, three levels are often distinguished: literacy, numeracy (ability to deal with quantitative data) and informacy (ability to retrieve and exploit a wide range of qualitative data). Cognitive resources are acquired by education, training and practice. Social resources rely on social capital: ability to get inserted in various interpersonal networks (at work, school, clubs, associations, family and friends, etc.)<sup>34</sup>.

Inequalities in the field of ICT and e-services do not only merely relate to technical access to the online world but also to uses and contents, and consequently to the required competencies of users.

Available information and services are rapidly increasing, but they are also increasingly diversified, even if this diversification does not always reflect a cultural or ethical optimum. Entertainment web sites (music, games, sports, fan-clubs, jokes, etc.) play an important part in the popularisation of Internet services, sometimes more than serious sites. However, available information on the Internet is becoming increasingly useful for the general public, with a rapid and recent growth of interactive services in the area of tourism, culture, community life, public administration, and general interest. Such services assume a role that was previously played by other medias (radio, TV).

Socio-cultural inequalities, potentially leading to exclusion, are identified in the utilisation of four types of services: information, leisure, services, and knowledge. On-line services are selective in their contents, but also through the browsing procedure. The way of structuring information, presenting it, considering the means to reach it, is not universal but rather related to cultural models<sup>35</sup>. Several factors make on-line information and services not very attractive for less favoured groups. In particular, there is often too little local information, directly relevant for the community in which people live. In multi-ethnic local communities, information often misses cultural diversity. Information is often presented in a form, which requires good reading skills, which favours the more educated. And the supremacy of English is a serious obstacle for many people outside English-speaking countries.

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<sup>33</sup> In this regard attention needs to be given both to usability, in general, and to the specific accessibility challenges that can be posed for people with disabilities; these concepts are explored in more detail later in this chapter

<sup>34</sup> Hargittai E. (2002), *Second-order digital divide : differences in people's online skills*, in *First Monday*, vol. 7 n°4, University of Illinois at Chicago, April 2002 ([www.firtmonday.org](http://www.firtmonday.org)).

<sup>35</sup> Wolton D., *Internet, et après ?*, Champs / Flammarion, Paris, 2000.

Cognitive resources are necessary to place information in its context and to make a use of it. Using e-services requires ability to move in a complex conceptual world, which is not structured and stable as a book but infinite and changing, and to be able to sort and to synthesise information collected. These particular competencies can be classified in three categories<sup>36</sup>:

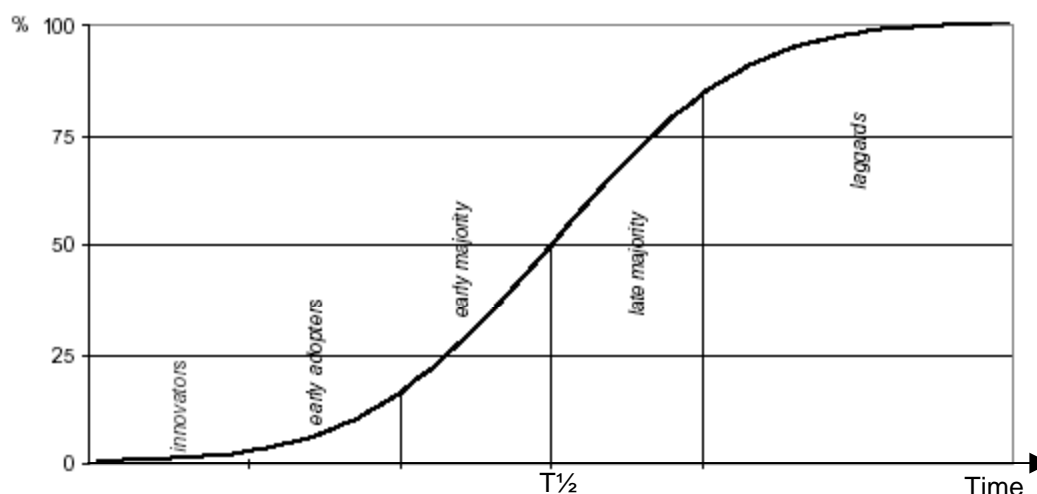
- *Instrumental competencies*. They concern the handling of hardware and software. The (often forgotten) complexity of ICT requires time and technical capabilities, to face repeated bugs and to go beyond the play function of computers.
- *Structural competencies*. They relate to the new way of entering into the contents: to understand, to evaluate, and then to select. These competencies are necessary to use hypertexts, browsers or discussion lists. At this stage, basic knowledge of English often becomes essential.
- *Strategic competencies*. They allow for searching information in a proactive way, using it within one's own personal life, taking decisions and acting in one's personal and professional environment.

Currently, schools and vocational training concentrate their efforts on instrumental competencies (the European driving licence, for example), with the risk to neglect the others, which however play a key role in the social stratification of Internet uses.

Several e-exclusion processes and e-inclusion paths can be explained by access to material, cognitive and social resources. Nevertheless, differences in resource availability and use do not explain all dimensions of the digital divide<sup>37</sup>. Here comes the third Rogers' input: distinct profiles of successive categories of adopters, as fast as innovation spreads.

As shown in Figure 2.2, Rogers re-interprets the S-curve according to behaviours of adopters at the successive stages of diffusion of innovations: innovators are the first 2.5% adopters, early adopters the next 13.5%, followed by early majority (34%), up to first 50% of adopters and a period ( $T_{1/2}$ ) defined as the elapsed time up to 50% adopters, which is the inflexion point of the curve. After inflexion (which means decreasing adoption rates) comes the late majority (34%), followed by laggards (16%), until saturation of the "concerned social system", which is not necessarily equivalent to the whole society.

**Figure 2-2: S-curve revisited by Rogers and behaviours of innovation adopters**



In the case of ICT and Internet-related services, behaviours of each subgroup are linked to inclusion or exclusion processes. Innovators are a minority of pioneers, passionate for technological advances

<sup>36</sup> Steyaert J., Digitale vaardigheden en geletterdheid in de informatiesamenleving, Rathenau Instituut, Den Haag, 2000.

<sup>37</sup> Van Dijk L., De Haan J., Rijken S. (2000), Digitalisation of daily life: an inquiry into ICT and social inequality, in The digital divide : enhancing access to ICT, OECD workshop, Paris, 7 December 2000.

and feeling members of a world-wide virtual community; they strongly influence the Internet imaginary, as described by Castells<sup>38</sup>. Early adopters are experimenters and leading users; they develop innovative uses, fix the agenda, and create demonstration effects. They strongly influence the economic patterns of diffusion and shape the initial digital divide between “included” social groups and “not yet included”.

More significant for inclusion purposes is the early majority. The early majority includes those social groups having a good combination of material, cognitive and social resources, and able to cope with existing user-related characteristics without too many problems. Early majority progressively incorporates new categories of adopters, with more flexible (gender) and lowering thresholds (education level, income, age), until the “natural contagion perimeter” of 50% of the concerned social system. At this moment, the rhythm of newcomers reaches its maximum, and decreases afterwards. Gaps between social groups within the early majority of adopters also reach their maximum: about 80% of adopters among the more favoured groups against 20% in the less favoured groups, according to the figures suggested by Rogers for other innovations.

The late majority becomes included in the diffusion process by means of different arguments. Late adopters are convinced by economic necessity, or by the pressure exerted by the learning, professional or social environment. Efforts have to be made in order to improve material, cognitive and social resources, or to remove barriers due to user-related characteristics (user-friendliness, compatibility, and relative advantage). Demonstration effects are important to convince potential users who are more sensitive to efficiency, reliability and usefulness, than to innovation and performance. Finally, the “laggards” category concerns two kinds of public: on the one hand voluntary resisters, and on the other hand social groups and individuals with low resources, not convinced by relative advantages, who perceive innovation as a constraint rather than an opportunity<sup>39</sup>.

Rogers’ concepts help to understand why inclusion policies have to develop specific arguments, targeted to the different behaviours of successive categories of adopters. These successive categories do not only apply to the whole society: the “concerned social system” may be a subgroup such as disabled people or older people, among which there are also innovators, early adopters, early majority, etc.

Two main critiques are addressed to Rogers’ followers. The first one states that the diffusion of Internet-related innovations does not follow a single S-curve, but successive and interdependent S-curves, because technology evolves faster than the average diffusion speed ( $T \frac{1}{2}$  in fig. 2); required skills for continuous adaptation are cumulative and give a definitive advance to the early majority. “Those who have been using the Internet are developing an increasingly sophisticated set of information seeking and processing skills, and gaps between these advanced users and the late adopters who possess only basic skills are likely to expand<sup>40</sup>.” This is a confirmation of the already mentioned “second order” digital divide.

The second critique refers to the notion of “concerned social system”, which raises subsequent questions: who is outside the concerned social system, and how to define the limits of the social system concerned by an innovation? Steyaert suggests three scenarios, which are relevant as regards e-inclusion<sup>41</sup>:

- Saturation (in better words: ceiling) occurs at a lower level in society because the concerned social system excludes an important part of the population. Critical mass required for efficient use of e-services is not reached in the whole society, but only for some social categories or

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<sup>38</sup> Castells M., *La galaxie Internet*, Fayard, Paris, 2002 (chap. II).

<sup>39</sup> Lenhart A., Horrigan J.B. (2003), *Re-visualising the digital divide as a digital spectrum*, in *IT & Society*, vol. 1 n°5, Stanford University, Summer 2003, pp.23-39.

<sup>40</sup> Mason S.M., Hacker K.L. (2003), *Applying communication theory to digital divide research*, in *IT & Society*, vol. 1 n°5, Stanford University, Summer 2003, pp. 40-55 (p. 46).

<sup>41</sup> Steyaert J. (2002), op. cit., p. 205.

regions – and it may be considered as sufficient and efficient for some commercial e-services providers. In this case, there is a real risk of polarisation between included and excluded groups.

- The ceiling level reaches 85 to 90% of the whole society, as for telephone or television, however with significant pockets of non-access, due to social disadvantages or impairments. In this case, specific policy measures must guarantee access for all to equivalent services, on-line or not, with a specific focus on excluded groups.
- The ceiling level reaches 85 to 90% of the whole society, but not only because of social exclusion, also because a significant amount of persons choose not to use e-services, or give up after unsuccessful trials, or mistrust e-services, or renounce to use some of them for resistive reasons (privacy, boycott, Robinson behaviour, etc.). In this case, inclusion policies have to face both social exclusion and voluntary renouncement, by two possible ways: maintaining diversity in the access channels to services, and improving user-related characteristics of e-services in order to overcome renouncement and mistrust.

*Impacts of this theoretical insight for the project and for eInclusion policy more generally:*

*Arguments and measures for e-inclusion should be targeted to the different behaviours of successive categories of adopters. Particular attention has to be paid to the late majority and laggards, and to the ceiling horizon in the diffusion process. Concepts of user-related characteristics, user resources and categories of adopters may be applied not only to society as a whole, but also for some subgroups in society.*

### 2.2.2.3 The knowledge gap hypothesis

The knowledge gap hypothesis was developed during the seventies by communication researchers, about television and other media. It assumes that as more innovation occurs in information and communication, those in higher educative and cultural categories use them at faster rates than those at lower levels, in order to improve their knowledge capital. Even if the general level of education increases, knowledge becomes more polarised among social groups.

Recent studies of the digital divide confirm that user education and skills are discriminating factors in the use of e-services, one the “access divide” is narrowing. The effective use of e-services relies on cumulative skills developed through the use itself (cognitive and social resources). The “second order” digital divide refers to the ability to deal with continuous evolution and changing complexity of e-services<sup>42</sup>.

If the digital divide looks like a “remake” of the knowledge gap, the policy consequences are nonetheless important. “This argument is nowadays reflected by the frequently made observation that exclusion in the digital age is not so much an exclusion *from* information but rather *by* information. The concept of the digital divide directly relates to the spiral of uneven access to and usage of information and communication technologies and the socio-economic rebound caused. If so, the digital divide, conceived as a digital version of the analogue knowledge gap, conflicts with common social policies and visions of an inclusive information society<sup>43</sup>.”

In other words, inequalities and exclusion are inherent to the development of the information society, and a totally inclusive information society is an illusion. Reduction of inequalities should be achieved through policies “sheltered” from the e-society, rather than “all on-line for all” policies.

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<sup>42</sup> Hargittai E. (2002), op. cit. ; Molnár S. (2003), op. cit.

<sup>43</sup> Selholfer H., Hüsing T. (2002), The digital divide index : a measure of social inequalities in the adoption of ICT, Empirica, Bonn, communication to IST 2002- Bridging the digital divide, Copenhagen, November 2002.

*Impacts of this theoretical insight for the project and for eInclusion policy more generally:*

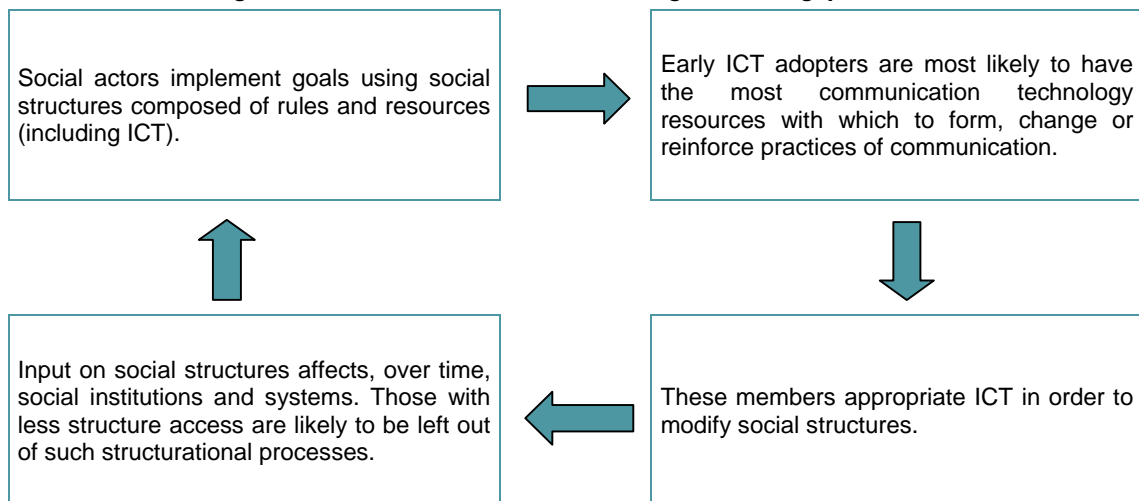
*If the knowledge gap hypothesis is taken for granted, the risk of exclusion due to the “second order” digital divide must be considered as the most significant. “All on-line for all” policies are not really adequate to tackle knowledge gaps generated by ICT, they must be completed by other policies “sheltered” from ICT.*

#### 2.2.2.4 Exclusion and inclusion in adaptive structuration theory

Inspired from earlier works of Anthony Giddens in the eighties, adaptive structuration theory assumes that ICTs are used to reinforce influence on society by social groups who acquired a comparative advantage at the first stage of diffusion of a new technology, and who succeeded in maintaining this advantage. These “communicators” intend to create systems of social rules answering to their interests and goals, and become bounded by their own creation. Early adopters are able to shape technological innovation and leading applications, while followers become users, not “shapers”. The most significant divide line does not separate users and non-users, but shapers and non-shapers.

“The rapid evolution of ICT, which meets the increasing demand for the more sophisticated and efficient processing of information determined to be valuable by those who negotiate what has value in society, has ensured that those already possessing sophisticated resources and skills continue to shape the technology. The outcome is a technology that primarily meets the needs of those who adopted it first, and the unintended consequence is that those already excluded fall further behind<sup>44</sup>.” This process is summarised in Figure 2.3.

**Figure 2-3: A structural model of digital divide gaps effects**



Source : according to Mason S.M. & Hacker K.L. (2003), op. cit., p. 50

According to this theory, exclusion is not an effect of Internet diffusion, but the manifestation of its unequal appropriation by some leading social groups, who use it in order to shape both technology and society. Tackling exclusion should need to shape technology for a wider range of social groups.

<sup>44</sup> Mason S.M., Hacker K.L. (2003), op. cit., p. 50.

*Impacts of this theoretical insight for the project and for eInclusion policy more generally:*

*Structuration theory highlights the relevance of the process of social shaping of technology, which is until now dominated by early adopters. Tackling exclusion supposes to reshape technological innovations according to the interests and needs of wider social groups. A particular case in point of relevance for this project would be the use of Design for All approaches at the design stage of products and standards to ensure the people with disabilities are part of the early adopters.*

### 2.2.3 Socio-political interpretations of the concepts

In the analysis of e-inequalities, three categories of interpretations are generally proposed. Different actors support each one. The first interpretation explains inequalities by market deficiencies: better market efficiency should reduce inequalities. The second interpretation of inequalities start from the principle that access to the Internet is crucial; it is a question of democracy. It suggests that there is an unexploited potential of ICT that can support social cohesion and the integration of the less favoured groups. The third interpretation puts the emphasis on inequalities that pre-existed the digital divide. The first interpretation can be easily criticised, but the two following ones require a more in-depth analysis. They are not exclusive; they rather represent two different approaches to common objectives of social inclusion.

#### 2.2.3.1 e-Inequalities are due to lack of market efficiency

Within various international bodies (OECD, G8, European Commission), the digital divide is often analysed as a consequence of market deficiencies. A better working of market mechanisms and increased competition would make it possible to reduce the costs and to make ICT products and services accessible by the greatest number, and therefore, it would help to reduce the divide.

Therefore, as first indicators of the digital divide, the OECD analyses the diverse levels of liberalisation of the telecommunication markets. Liberalisation is presented as the key factor that can lead to price reduction and to an increase in the investment and offer of innovating products. In a same logic, the costs of products and services are also regarded as a key factor in the diffusion and uses of ICT and access to Internet. From this point of view, promoting access and use of Internet and the reduction of the digital divide needs accelerated network developments and moderated regulation, aiming at increasing competition between networks and e-services suppliers. This strategy relies on the assumption that social advantages for everybody will derive from positive economic externalities associated to a broad diffusion of the uses of ICT and e-services.

This socio-political interpretation relies on the classical theory of diffusion of innovations and suffers similar weaknesses. The first one is to consider that the appropriation of ICT by the greatest number of persons derives naturally from a price reduction and that cost is a key factor compared to other factors. However, many research results suggest that cognitive and social resources of the users are at least as important as material resources. Price decrease of ICT goods and services is not sufficient to attract persons with low incomes, since income is as much an indicator of socio-cultural capital as of buying power.

A second weakness is linked to the controversial evaluation of the social benefits of the telecommunications liberalisation in Europe. The concept of universal service, as designed 15 years ago, does not cover access to Internet-related services, neither for the general public nor for specific disadvantaged groups. The question of whether mobile telephony and broadband access should be included in the definition of universal services is still in debate and is an important issue to be taken

into account in eInclusion policy<sup>45</sup>. Moreover, competition has not always led to equality among consumers. For instance, rural or remote areas have less access to broadband, they are often confronted with higher costs for services of less capacity and quality; conversely, large metropolitan areas benefit from positive effects of competition between operators.

*Impacts of this socio-political insight for the project and for eInclusion policy more generally:*

*e-Inclusion cannot be achieved solely through improvement of market mechanisms. Exclusion may result from perverse effects of policies that can be assessed as successful from an economic point of view, but not so much from a social point of view. The issue of extension of the definition of universal service remains relevant for e-inclusion.*

### 2.2.3.2 Using ICT and Internet as tools of social inclusion

A second socio-political approach to e-inequalities promotes generalised access to the Internet and e-services under the most democratic conditions, in the purpose of social progress. "All on-line for all" should allow for tackling exclusion and promoting inclusion: including everybody in the information society; fighting dualisation; building a virtual "global village", improving public services, modernising democracy, giving an new impulse to community life.

#### Societal utopia

Several authors question the socio-political relevance of the utopian view developed by Internet pioneers and highlight the ambivalence of this societal utopia<sup>46</sup>. On the one hand, it supports many creative uses, particularly to the benefit of less favoured groups. On the other hand, the utopian view also becomes a marketing argument, entailing strong pressures on young people and families, and building a new "model" for youth.

Critiques of the e-utopia underline that the Internet is a tool, which makes it possible to do a number of things better and quicker, but it does not replace social interactions and it is not a substitute for social links. Besides the question of social inequalities, everyone is not fond of technology, within whatever social group. Limitation to technological diversity in access to information and services is a source of exclusion of some individuals in all the social groups. In the coming years, together with increasingly widespread use of ICT by larger groups in wider social categories, a more realistic approach to the potential and limits of e-services should emerge, to the detriment of techno-societal utopias.

#### Simultaneous exclusion risks and inclusion hopes

Exclusion risks and inclusion hopes are simultaneously present in all the areas of application and use of e-services. For instance, exclusion risks may concern remote areas, workers without computer familiarisation, less favoured groups as regards economic and cultural resources. However, simultaneously, the inclusion potential of ICT is recognised, to the benefit of remote areas, as a tool for work inclusion, as an effective support to associations working with less favoured groups.

Culture is another field where exclusion risks and inclusion hopes appear simultaneously. The interest of a generalised access to e-information and e-services is moderated by the fear of cultural

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<sup>45</sup> This issue has been addressed in the *Report of the Inclusive Communications (INCOM) Subgroup* (of the Communications Committee – COCOM). Brussels, 27 January 2004. COCOM04-08

<sup>46</sup> Wolton D., *Internet, et après ?*, Champs / Flammarion, Paris, 2000.

Breton Ph., *Le culte de l'Internet, une menace pour le lien social ?*, Editions La Découverte, Paris, 2000.

Finkielkraut A., Soriano P., *Internet, l'inquiétante extase*, Éditions mille et une nuits, Paris, 2001.

Steyaert J. (2002), op.cit.

homogenisation. Nowadays, Internet contents reflect the culture of the dominant users. However, democratisation and diversification of web-active groups can allow more diversity in cultural expressions. Internet also offers scattered communities a means of social reliance and cultural existence.

### Citizens' Internet, non-profit Internet and democracy

Ambivalence is also a factor in the relation to the links between Internet uses and the strengthening of democracy, through a series of convergent topics: e-government; citizens' Internet, ICT for the non-profit or voluntary sector, etc. Democracy is a strong component of inclusion and cohesion.

The issue of inclusion and cohesion through democracy is too often reduced to the topics of e-government and e-administration. In order to avoid digital disadvantages, the key challenge of e-government policies is to maintain diversity in the relationships with public administrations, otherwise it will create exclusion where it did not exist before. In order to promote digital opportunities and digital empowerment, the question is whether e-administration can lead to new behaviours as regards ICT and e-services.

As suggested by some analysts, it is necessary to link e-administration to a new offer of local information, in a synergy with local services and trades, local associations, cultural services, services for specific social groups, etc. New on-line forums, e-dialogue, e-discussion between policy makers and citizens can improve the democratic debate, provided that the other forms of discussion and dialogue are maintained. Moreover, e-services in the field of democracy are not limited to contacts with administrations and policy makers; they also concern the associative life. In this area, new potentialities are open for associations, social services and non-profit organisations in general.

*Impacts of this socio-political insight for the project and for eInclusion policy more generally:*

*Generalisation of access to Internet-related services as a privileged tool for social inclusion reveals several ambivalences, which must be carefully studied. Positive experiments and good practices are numerous, but the reverse effects too. If Internet is associated with too many hopes, it can only disappoint. There is a recurrent risk to give technological answers to non-technological problems.*

### 2.2.3.3 e-Exclusion as a consequence of other inequalities

This third socio-political interpretation can be summarised as follows: inequalities related to access and use of Internet-related services are not revealing new social divisions, they are a consequence, in the area of ICT, of social, economic, geographical and cultural inequalities that largely pre-existed the Internet. The digital divide reflects other inequalities. Be they related to households, countries or regions, gaps in access and use of ICT-related services reflect existing gaps in education levels, life standards, consumption patterns, position on the labour market<sup>47</sup>.

Focusing only on the digital divide is dealing with an effect and neglecting its causes. Bridging the digital divide does not address the roots of social inequalities. Conversely, reducing social inequalities will reduce e-inequalities<sup>48</sup>.

Is the Internet a mirror, which simply reflects the inequalities, or a prism, which amplifies the spectrum of the existing inequalities? The question is not ingenuous, because the political answers are different. If it is only a mirror, then social policies are the more relevant and quite exclusive solution. If it is a

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<sup>47</sup> Frissen V., *The myth of the digital divide*, in Cammaerts B., Van Audenhove L., Nulens G., Pauwels C., *Beyond the digital divide: reducing exclusion, fostering inclusion*, VUB Brussels University Press, 2004, pp. 17-33.

<sup>48</sup> Steyaert J., *Digitale kansen en burgerschap*, in Steyaert J., Swinnen H. (eds.) *Het soortelijk gewicht van social belied*, Verwey-Jonker, Utrecht, Nederland, pp. 117-130.

prism, it is then necessary to act jointly on the social policies and the policies dealing with the diffusion of an extended access and collective uses of Internet-related services. The second assumption is probably the right one, because Internet diffusion transforms existing differences and inequalities, in a transition stage from the industrial society to an information and knowledge society. This transition is still to be built; it is not given by technology.

*Impacts of this socio-political insight for the project and for eInclusion policy more generally:*

*Even if e-inclusion is a strong component of social inclusion, the latter cannot be achieved only by means of e-inclusion policies, either at the level of the whole society or at the level of specific disadvantaged groups. The most successful e-inclusion policies might be those which are really integrated in wider social inclusion policies, in order to tackle both the causes and effects of social inequalities.*

#### 2.2.4 Changing perspectives and moving targets

It is clear from the previous sections that the eInclusion domain – in the sense of a dedicated research and policy field – is still evolving and that this process is strongly related to the political and scientific “career path” the Information Society concept is taking.

Historically, the scientific/political discussion of the rise of knowledge as a factor of production and the role ICTs may play in this context traces back to the early 1970s when the Japanese Computer Usage Development Institute published a report entitled “The Plan for Information Society: A National Goal Towards the Year 2000”<sup>49</sup>. As a kind of policy roadmap the report emphasised the increasing importance of ICTs. This discussion was however not taken up in the North American and European policy arenas at that time. Rather, a scientific discussion emerged that circled around the transformation of the industrial society into a post industrial one. This discourse was mainly initiated by the work of Daniel Bell<sup>50</sup>.

During the 1980s these ideas were taken up by more popular scientific authors such as Alvin Toffler (The Third Wave) and John Naisbitt (Ten Megatrends). Over-simplifying this discourse one could say that the transforming power of ICTs was seen as the “holy grail”. A more critical discourse of was lead in rather close scientific circles<sup>51</sup>.

During the 1990s the concept of the Information Society was broadly taken up in the policy area – at first in North America and somewhat later in Europe. The more or less scientifically grounded Information Society concept was translated into a widely accepted policy paradigm. As it is often the case with such paradigms, everybody understands what they mean until they are asked to explain it<sup>52</sup>.

Following a rather euphoric phase, the discussion appears to have now reached a more critical stage – particularly in Europe. After an initial “hype” some authors now ask what the real essence of the much-lauded Information Society actually is<sup>53</sup>. The most widely recognised protagonists driving this

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<sup>49</sup> See Yoichi, I., Birth of Joho Shaki Concepts in Japan and Their Diffusion Outside Japan, in: Keio Communication Review, 13 (1991), pp 3-12.

<sup>50</sup> See Daniel Bell, The coming Post Industrial Society, A Venture in Social Forecasting, New York 1973

<sup>51</sup> See Webster, F.: Theories of the Information Society, New York 1995 and Lyon, D., Roots of the Information Society Idea, in: Heap, N. et. al. (Ed.), Information Technology and Society, London 1995, pp 54-73.

<sup>52</sup> See Frank Bannister and Dan Remenyi, The Societal Value of ICT: First Steps Towards and Evaluation Framework, WWW.ejise.com

<sup>53</sup> See Dietr klumpp et. al., next generation information society ? Notwendigkeit einer Neuorientierung, Mösslingen-Thalheim, 2003.

more critical discourse are probably Manuel Castells<sup>54</sup>, Scott Lash<sup>55</sup> and Armand Matterlat<sup>56</sup>. These authors reject the technology-centred mind set dominating previous discourses and emphasise multi-faceted impacts of ICTs on society as a whole (culture, economy, knowledge generation and transfer, consumption and leisure and so on).

While Castells emphasises the transforming power ICT gains, particularly through networking, Lash focuses on the concept of information as such: "First and foremost perhaps is to look at the paradox of the information society. This is, how can such a highly rational production result in the incredible irrationality of information overload, misinformation, dis-information and out-of-control information. At stake is a dis-informed information society".

Mattelart analyses the Information Society from a political-economic angle focusing on a critical analysis of tendencies towards increasing market deregulation and decreasing political control closely connected with the spread of ICT-mediated economic and societal processes. In doing so he criticises political and economic interests actually standing behind the powerful enforcement of a "global information society". His concerns mainly relate to the global activities of the "mega-media-corporations" contributing to world-wide cultural depletion.

Apart from all of this, the complexity of the issues involved – for instance the dynamic nature of the digital divide and the variety of options for policy interventions being discussed under different policy lines – has tended to hinder the development of a more holistic framework for eInclusion policies. Not surprisingly, the evidence base that would be relevant in this context has tended to be "scattered" across different scientific fields and research disciplines (e.g. technology research and development, socio-economic and market research as well as research related to poverty and social inclusion as discussed in more detail in the subsequent chapters of this report).

It should also be noted that eInclusion policies have the character of addressing a "moving target" rather than of a "definite approach". As new technologies - and societal practices relating to them - tend to continuously emerge, corresponding "new" issues can be expected to emerge on the eInclusion policy agenda.

### 2.2.5 Relationships between eInclusion and eAccessibility

Finally, it is important to give some consideration to the relationships between the terms "eInclusion" and "eAccessibility". For purposes of this project, eAccessibility is viewed as one (core) component of the wider eInclusion concept. It encompasses issues and concerns that relate most closely to the particular functional difficulties experienced by disabled people and older people, because of disability or the ageing process. In this sense, eAccessibility has been viewed as a subset of the wider eInclusion domain, focusing on technical barriers for people with disabilities<sup>57</sup>.

Historically the focus on eAccessibility has come from the traditions of disability research and disability policy. In this context, the notion of "accessibility" has been linked especially to the challenges that the environment can pose for people with disabilities. These include challenges presented by the physical environment for people with sensory and mobility disabilities and by the information/knowledge environment for people with intellectual disabilities. Hence, a central aspect of the eAccessibility approach is to ensure that the physical and information/knowledge dimensions of the Information Society are such that they do not make it harder for people with disabilities to use them, or even prevent them from using them at all. In fact, the scope is much wider than this and includes consideration of all situations where there may be barriers to effective usage of ICTs, such as noisy

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<sup>54</sup> See Castells, M., *The rise of the Networked Society, The Information Age: Economy, Society and Culture*, Vol. 1, Malden, Mass., Oxford, 1996

<sup>55</sup> See Lash, S., *Critique of Information*, London, 2002

<sup>56</sup> See Matterlat, A. *The Information Society: An Introduction*, London, 2003.

<sup>57</sup> eInclusion: The Information Society's potential for social inclusion in Europe. SEC (2001) 1428

environments, situations where one-handed or hands-free use is required, the needs of people who are left-handed and so on.

There is also a more positive side to eAccessibility, focusing on the positive potential of the new tools and services of the Information Society to overcome previous barriers to accessibility that were faced by disabled people. These opportunities are presented by inherent properties of the tools and services of the Information Society, such as their virtuality (enabling them to be accessed from anywhere) and the flexibility of modes of delivery and access (multimedia and multi-platform capabilities mean, at least in principle, that barriers experienced by people with sensory disabilities can be reduced or eliminated).

These two sides of eAccessibility are now well recognised in scientific research<sup>58</sup> and in policy<sup>59</sup>. They are also closely linked with the Design-for-All (DFA)<sup>60</sup> perspective and approach, whereby the emphasis is on designing the tools and services of the Information Society in a way that meets the requirements and characteristics of the widest possible range of people and circumstances. An important aspect of the DFA approach is the requirement for seamless connectivity of assistive technology<sup>61</sup> in supporting accessibility in the Information Society. In a narrow sense, assistive technologies cover the various specifically designed devices and software applications that enable alternative or augmented forms of interaction by disabled people with the tools and services of the Information Society. In a broader sense, they encompass any online applications and services (eHealth, eCare, eShopping, eWork and so on) that are developed to support or otherwise open up new opportunities for participation and access for disabled people and older people<sup>62</sup>.

Following from this, the schema in Figure 2.4 situates "eAccessibility" as one (important) element of the wider eInclusion concept. For purposes of the project, the "eAccessibility" domain is conceptualised as relating to functional and other requirements in relation to ICT products or services that arise in physical, sensory or cognitive areas of activity, for example because of disability, age, illness or injury.

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<sup>58</sup> PROMISE (1998) *The Promise of the Information Society*. STAKES: Helsinki

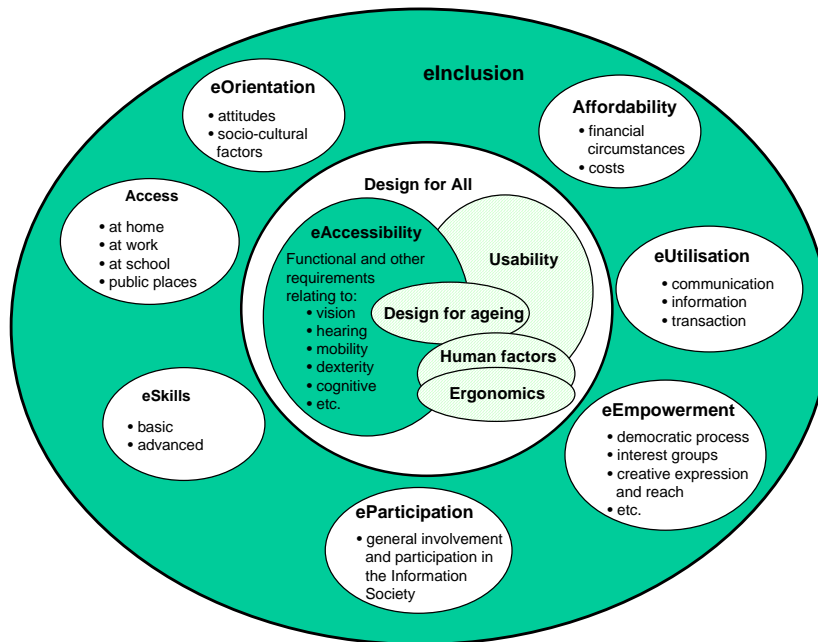
<sup>59</sup> European Commission (2002) *Delivering eAccessibility*. SEC(2002) 1039

<sup>60</sup> This area is being developed within the work of the European Network of Centres of excellence in design-for all (EdeAN) and the eInclusion project will seek to liaise closely with the work of this and other relevant networks

<sup>61</sup> Assistive technology, sometimes also referred to as 'rehabilitation technology' or 'technical aids', is the term used to describe technological products and systems that are of particular benefit to people with disabilities and/or older people. It can include "any item, piece of equipment, product or system, whether acquired commercially, off-the-shelf, modified or customised, that is used to increase, maintain, or improve functional capabilities of individuals with cognitive, physical, sensory or communication disabilities" (definition used in the US "Technology-Related Assistance for Individuals with Disabilities Act" of 1998).

<sup>62</sup> See PROMISE project for a compilation of the many new opportunities presented by the Information Society, op cit

Figure 2-4: Relationships between eAccessibility and eInclusion



It is important to recognise that accessibility challenges are not the only eInclusion issues that disabled or older people are likely to face. For people with disabilities, for example, income levels are typically lower than average and unemployment levels are higher. Therefore they are likely to share eInclusion challenges with other disadvantaged groups in society as well as having the added barriers posed by lack of eAccessibility.

In the schema, “eAccessibility” is represented as comprising a subset of the wider “Design for All” concept and also as being linked to concepts such as “usability”, “design for ageing”, “human factors” and “ergonomics”. The Design for All concept and approach is an all encompassing one that recognises the diversity of people in their functional abilities, requirements and preferences and, especially, the continuum of functioning along which we are all located and along which our position varies depending on whether we have particular disabilities, age-related changes, injuries or illness, as well as on whether we are tired, are taking particular medications, are operating in suboptimal (e.g. noisy or outdoor) environments or in constrained circumstances (e.g driving) and so on. Design for All draws on the various disciplines that were outlined earlier – accessibility-related approaches addressing the needs of people with disabilities, design approaches oriented towards meeting the changing requirements associated with ageing processes and usability approaches addressing both the commonalities and differences in people’s preferred interaction styles with ICT products and services (including human factors and ergonomics as specific sub-disciplines).

Design for All and eAccessibility address one part of the wider eInclusion domain, with a particular focus on inherently human attributes and the design of ICT systems and services to take account of these in all their diversity and in the wide ranging environmental circumstances within which users will interact with ICTs. They comprise a fundamental pre-requisite for eInclusion for many people, in particular for people with long-standing disability or other functional or activity limiting restrictions. If ICT products and services are not designed in ways that take these factors into account then people with disabilities will be excluded from the very beginning.

## 2.3 Towards an evidence base for a holistic eInclusion policy framework in the EU

As already described in section 2.1, eInclusion is clearly on the EU agenda to a significant degree. The most directly active units are DG Employment in the context of the “knowledge society” theme and DG Information Society in the context of its work on eAccessibility. There has also been the benchmarking work carried out within the context of the eEurope initiative. This section raises some key issues that need to be taken into account in further developing this EU agenda and, on the basis of this, elaborates a framework for further developing an evidence-based approach to eInclusion policy in the EU.

Arising from the discussion of the theoretical and research perspectives on eInclusion in section 2.2 a number of key issues can be identified that need to be borne in mind in developing a framework for evidence-based eInclusion policy.

### eInclusion policy needs to be clearly linked to social inclusion policy...

To begin with, the objectives of eInclusion policy must be to ultimately foster increased social inclusion rather than to encourage usage of ICTs for their own sake amongst disadvantaged or potentially disadvantaged groups. There are two main implications of this - eInclusion policies need to be embedded within wider social inclusion policies and we need to know more about the actual contributions that increased usage of ICTs can make towards greater social inclusion.

So far, however, the linkages between eInclusion-specific policy and activity, on the one hand, and wider social inclusion policy and activity, on the other hand, is still relatively under-developed. This is apparent from the recent Joint Report by the Commission and the Council on Social Inclusion of March 2004. In relation to the extent of attention to eInclusion in the national action plans on social inclusion (NAPs/inclusion), the report concludes that:

*“...All in all, the impression is more of isolated initiatives and actions than broad ranging strategies...[and that]...only few NAPs attribute a really strategic importance to eInclusion.”*

The report also notes that there are often relevant activities happening in the Member States in the eInclusion field that are not reflected in the NAPs and this results in missed opportunities for exchange of practices and policy responses.

Finally, the report notes that:

*“...[in the eInclusion field] we are still far from a system of indicators which could really allow the monitoring of progress at national level.”*

### ...But there is also a continuing need for dedicated units focused in eInclusion

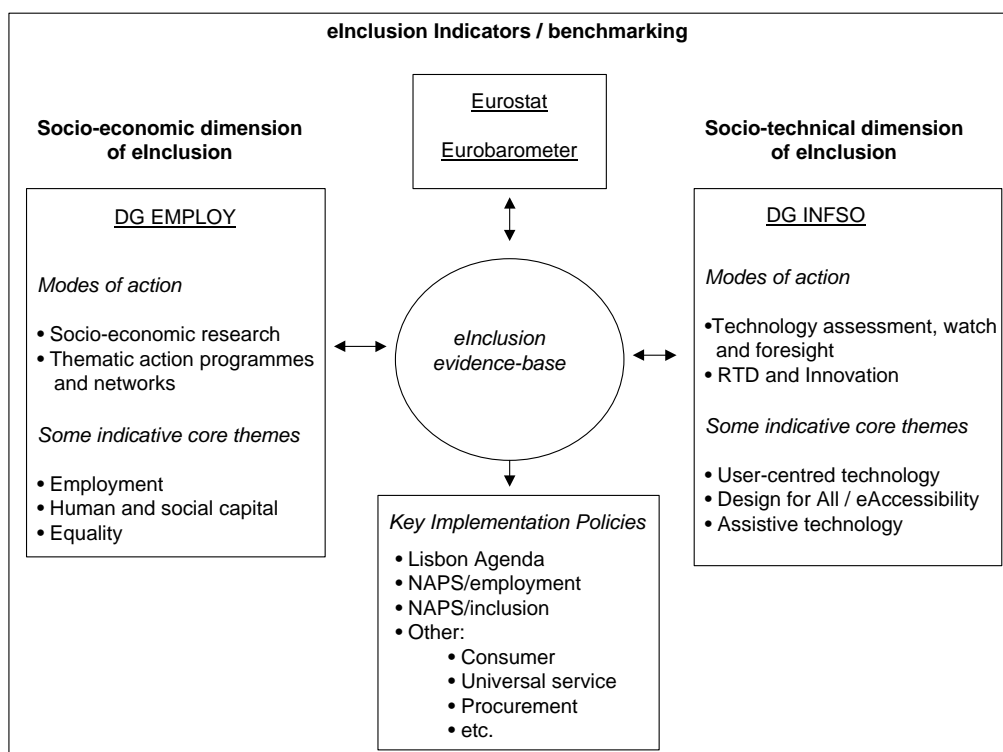
The conclusions in the Joint Report suggest that although eInclusion policy and activity needs to be embedded in wider social inclusion policy, there remains a continuing need for focused leadership and input from units with a specific eInclusion focus within the European Commission in order to further the eInclusion dimension of wider social inclusion policy. The focus of such work needs to be on developing an evidence-based understanding and knowledge base and ensuring transfer and uptake of this within the wider social inclusion field.

### Both socio-economic and socio-technical perspectives and inputs are needed

In order to develop effective, evidence-based eInclusion policy we need to know both about the social and economic processes that are involved and about the technical and functional characteristics of the range of (evolving) technologies and applications that have a bearing on these social and economic processes. The former can be addressed through socio-economic perspectives and approaches and the latter through socio-technical perspectives and approaches. In addition, these two approaches can be complemented by specific expertise in the development of eInclusion indicators and utilising

these for purposes of benchmarking. Figure 2.5 provides a schematic framework indicating how these approaches can combine to provide an eInclusion evidence base to support the formulation and implementation of effective eInclusion policies and measures.

**Figure 2-5 Components of evidence-based EU eInclusion policy**



### Need to reinforce and extend the socio-technical perspective and approach

One of the problems with eInclusion policy to date has been the lack of multidisciplinary perspectives and exchange, especially between social and more technically-oriented research and expertise. In particular, there has not been nearly enough socio-technical input to mainstream social inclusion / eInclusion policy and activity.

Such socio-technical input is crucial in order to:

- identify and analyse the core functional and technical parameters of ICTs with regard to eInclusion processes
- monitor emerging technologies and trends from the perspective of their social inclusion implications
- analyse how the processes of technology design and development can be better oriented towards socially inclusive principles
- develop RTD programmes oriented towards innovation in socially useful and inclusive applications of ICTs.

So far within EU-level activity this perspective has been applied mainly in relation to technology developments of particular relevance for disabled and older people. This is an area that needs continued and reinforced attention as there remain many challenges and barriers for these groups and continuing technology developments need to be monitored and addressed. In addition, however, it would be appropriate to extend the scope of this approach to cover a wider socio-technical remit, including the wider issues of user-centred technologies and technology development processes, innovation in socially useful technologies, and targeted attention to other at-risk groups.

There remains much more work to be done

More generally, the analysis presented in section 2.2 indicates that work on the eInclusion domain is in many respects still in its infancy. Although there has been a lot of policy activity in the Member States, some co-ordinated within an overall strategic vision and much comprising quite uncoordinated separate initiatives, the evidence-base upon which to formulate effective policy is still under-developed as is our knowledge of how effective existing policy approaches actually are. In addition, there are many specific topics that warrant attention.

Figure 2.6 summarises the various types and levels of barriers / facilitators to eInclusion that have emerged from a more detailed analysis of the core topical domains to be addressed by the this coordination action (these analyses are presented in the subsequent chapters 3, 4 and 5).

**Figure 2.6 Barriers / Facilitators of eInclusion**

<b>Awareness</b> • Basic • Second-order	<b>Motivation</b> • Getting started • Second-order				
	<b>Access</b> • Location • Quality  Particular relevance: • low income • unemployed • ICT-free work	<b>Accessibility</b> • Access tools • Content  Particular relevance: • disability • ageing • difficult environments	<b>Usability</b> • Access tools • Content  Particular relevance: • inexperienced • occasional users • low e skilled	<b>Appropriateness</b> • Language • Culture  Particular relevance: • linguistic minorities • ethnic minorities • specific socio-cultural preferences	<b>Relevance / Usefulness</b> • Applications • Content  Particular relevance: • spatial / temporal challenges • service / information access challenges • restricted social networks / capital
	<b>Skills</b> • Basic • Second-order				

As shown later in more detail, these can substantially affect the opportunities for at-risk groups to access and gain benefits from ICTs. To arrive at a more holistic eInclusion perspective all of these dimensions need to be addressed in a coherent and comprehensive policy approach.

In view of the under-developed knowledge base currently available for policy formulation it is, however, difficult to identify a comprehensive set of concrete options for policy intervention that goes beyond those issues already addressed within current policy frameworks.

**Table 2.3 Indicative listing of eInclusion issues warranting attention**

Field of action	Indicative listing of issues to be further explored
Awareness	<ul style="list-style-type: none"> <li>• options for awareness building among actors/organisations working in the field of social inclusion about the potentials ICT may offer with respect to their 'mission'</li> <li>• options for taking the offer to the people (e.g. awareness building measures addressing particular vulnerable groups in the context of existing social inclusion measures; by developing arguments for different categories of adopters)</li> <li>• options for awareness building among eService providers (particularly in fields of public interest such as health, education and so on), network operators, ICT equipment providers about the requirements, interests and concerns of vulnerable groups</li> </ul>
Motivation	<ul style="list-style-type: none"> <li>• options for context-related demonstration of the benefits ICT may hold for vulnerable groups (e.g. tying ICT-related measures into local activities in education, local development and so on)</li> <li>• options for addressing the 'voice divide' (e.g. measures encouraging self expression of vulnerable populations and communities in the virtual space)</li> <li>• options for addressing issues holding vulnerable groups back from utilisation of online technologies such as lack of trust and confidence in quality/usefulness of content (e.g. involving the target groups in the development of eInclusion measures, developing quality criteria/guidelines )</li> </ul>
Access	<ul style="list-style-type: none"> <li>• the possible contribution multiplatform access to services/information of public interest for disadvantaged groups (e.g. access to eGovernment for non-computer users)</li> <li>• the contribution different kinds of access-related supportive measures can make to support online access of different vulnerable groups (e.g. PIAPs run by public libraries, commercial Internet cafés, Internet cafés run by voluntary organisations/self help groups)</li> <li>• the contribution broadband access can make with respect to the social inclusion of different vulnerable groups (e.g. the role of broadband access in enabling/supporting online usage patterns supportive to the goal of social inclusion)</li> </ul>
Skills	<ul style="list-style-type: none"> <li>• options for skills development addressing instrumental, structural and strategic capabilities of different vulnerable groups and categories of users (e.g. people with cognitive impairments , early school leavers, occasional users)</li> </ul>
Accessibility	<ul style="list-style-type: none"> <li>• accessibility requirements of different vulnerable groups and options for addressing these (e.g. people with different kinds disabilities, people with functional restrictions stemming from the process of biological ageing, people accessing services in difficult environments such as from public eGovernment kiosks)</li> </ul>
Usability	<ul style="list-style-type: none"> <li>• usability requirements of different vulnerable groups and categories of adopters and options for addressing these (e.g. people with different kinds of disability, inexperienced and occasional users)</li> </ul>
Appropriateness	<ul style="list-style-type: none"> <li>• requirements of different vulnerable groups concerning the appropriateness of content presentation and options for addressing these (e.g. linguistic minorities, people possessing low levels of literacy, people with specific socio-cultural preferences/capabilities such as 'entertainment-oriented' computer users)</li> </ul>
Relevance	<ul style="list-style-type: none"> <li>• options for developing tools/applications supporting disadvantaged individuals (e.g. topic-related eLearning tools addressing people facing language/literacy problems)</li> <li>• options for developing specific measures addressing disadvantaged communities (e.g. building up social capital and a sense of community through setting up internet cafés and local networks in deprived areas)</li> <li>• options for harnessing ICT to improve/augment more 'traditional' services/measures directed towards disadvantaged groups (e.g. on request online support in writing an application for employment)</li> </ul>

Based on the analysis hitherto presented, Table 2.3 presents an initial listing of issues that are needed to be further explored in this context.

This listing highlights some of the key themes emerging from the more in-depth investigation of the topical domains that will be addressed by the project, as presented in chapters 3, 4 and 5. At the current stage, such a listing must necessarily be indicative and of a rather generic nature. Some of them will be further explored during the course of the eInclusion action and, at a later stage, the project hopes to make a useful contribution in further differentiating and expanding this listing.

Finally, as indicated in section 2.2 there are some overarching aspects that need to be addressed if policy is to be effective. These are presented again here for convenience:

- attention must be paid to the “second order” digital divide, linked to the quality of use
- if the knowledge gap hypothesis is accepted, the risk of exclusion due to the “second order” digital divide must be considered as the most significant; general policies aiming to facilitate access are not really adequate to tackle knowledge gaps generated by ICT, they must be completed by other policies “sheltered” from ICT
- arguments and measures for e-inclusion should be targeted to the different behaviours of successive categories of adopters; particular attention has to be paid to the late majority and laggards, and to the ceiling horizon in the diffusion process; concepts of user-related characteristics, users resources and categories of adopters may be applied not only to society as a whole, but also for some subgroups in society.
- structuration theory highlights the relevance of the process of social shaping of technology, which is until now dominated by early adopters; tackling exclusion supposes to reshape technological innovations according to the interests and needs of wider social groups; a particular case in point of relevance for this project would be the use of Design for All approaches at the design stage of products and standards to ensure the people with disabilities are part of the early adopters
- eInclusion cannot be achieved solely through improvement of market mechanisms; exclusion may result from perverse effects of policies that can be assessed as successful from an economic point of view, but not so much from a social point of view; the issue of extension of the definition of universal service remains relevant for eInclusion
- an uncritical view that generalised access to Internet-related services is a key to increasing social inclusion reveals several ambivalences, which must be carefully studied; positive experiments and good practices are numerous, but the reverse effects too. If the Internet is associated with too many hopes, it can only disappoint; there is a recurrent risk to give technological answers to non-technological problems
- even if eInclusion is a strong component of social inclusion, the latter cannot be achieved only by means of e-inclusion policies, whether at the level of the whole society or of specific disadvantaged groups; the most successful eInclusion policies might be those which are really integrated in wider social inclusion policies, in order to tackle both the causes and effects of social inequalities.

In addition, we need much more evidence on:

- the actual practical interactions between eInclusion and social inclusion
- the effectiveness of particular eInclusion policies, per se
- the effectiveness of particular eInclusion policies in terms of contributing to social inclusion.

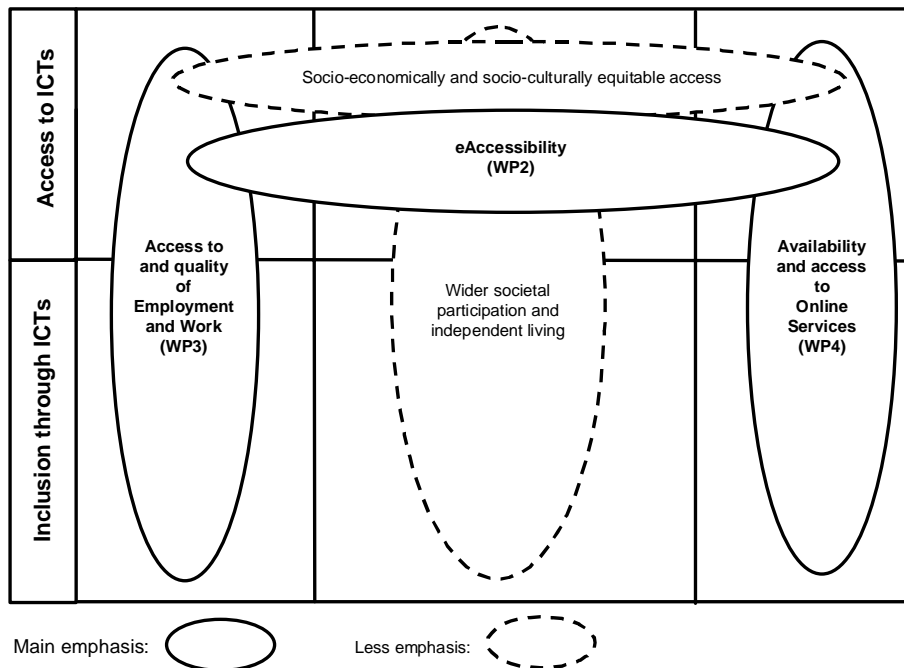
## 2.4 The scope and approach of the eInclusion@EU project

From the analysis and discussion in this chapter so far it is clear that the eInclusion (and eAccessibility) domain is a very broad-ranging and complex one. No single project such as eInclusion@EU could attempt to cover this field in its entirety and there is a need to focus the project on some specific issues where some real value-added can be contributed.

### 2.4.1 Focus on three core topics

Based on an initial analysis of the field of enquiry, the project's Description of Work identifies three core topics – eAccessibility, access to employment and access to online services - for detailed attention in the next stages of the project. The results of the analytical work carried out so far support this pre-selection and do not suggest a need for any significant shift in focus. Figure 2.7 gives a schematic presentation of how these domains are being addressed in a coherent manner in the project.

**Figure 2-7: Segmentation of the overall domain for eInclusion@EU purposes**



To begin with, the degree of accessibility or otherwise of ICTs represents a fundamental “gate keeping” factor that affects the possibility of disabled people and many older people to participate in the Information Society. As such, it is a horizontal issue that cuts across all ICT technologies and application domains.

The widest possible access to employment for all groups in society is considered fundamental to the achievement of social inclusion. Its importance derives from the access to income, to opportunities for skills development and for social capital formation and many other aspects. ICTs have a central role to play in relation this – they can create new employment opportunities and facilitate access, but they can also pose new barriers for various groups.

In addition, the workplace is a key environment for accessing ICTs and for developing ICT skills that can be transferred into the home and wider spheres of life. These issues are of central importance for people with disabilities and an ageing workforce, as well as for other groups who may experience difficulties or challenges in relation to employment (e.g. people with childcare or eldercare responsibilities, those with lower skill levels and so on).

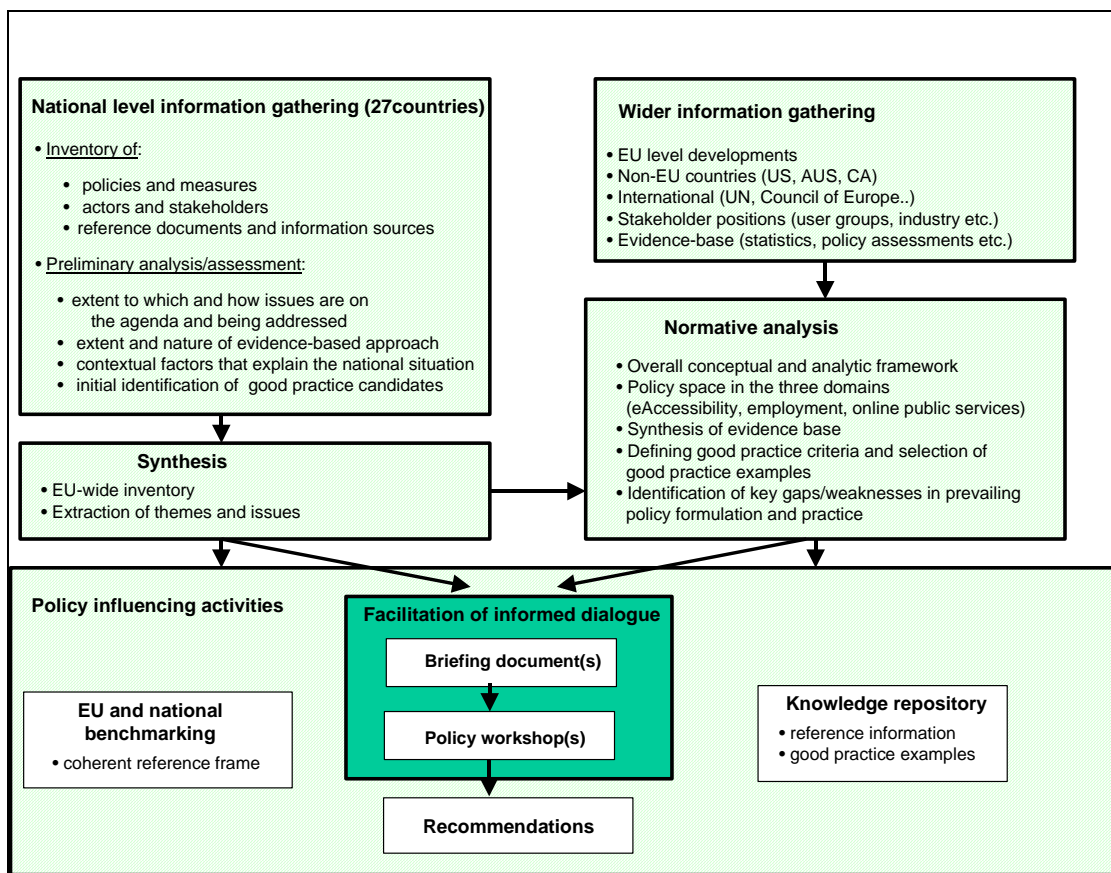
Finally, the importance of inclusive online services is underlined both by the growing importance of online services of general interest (eHealth, eLearning, eGovernment, eCommerce) in everyday life

and by evidence of significant disparities in society in relation to the personal capabilities needed to effectively use these services. There is the risk, therefore, that existing disadvantages may be exacerbated because of exclusion from the new possibilities offered by the online world. These issues are of central importance for people with disabilities and older people, who may be especially in need of access to such services, as well as for other groups who may experience difficulties or challenges in relation to service access (e.g. because of language barriers) or particular needs as regards content (e.g. ethnic minorities).

### 2.4.2 The evidence-based perspective and approach

Finally, the overall evidence-based approach of the project is summarised in Figure 2.8 overleaf. It can be seen that the concept of “evidence-based” is applied in two distinct yet inter-related ways in the project.

**Figure 2.8 Overall evidence-based approach of the project**



At one level, it describes the “open method of co-ordination” approach that is at the core of the policy influencing activities of the project. This involves systematically collating information on policy approaches and implementation measures in different countries and regions, and presenting this in a forum where policy makers and other key stakeholders can share, discuss and learn from each other’s experiences.

At another level, the concept refers to the desire to ensure that the formulation and delivery of policy is appropriately informed by scientific evidence. This involves collation of evidence of the impacts of policy and assessment of the extent to which policy formulation and delivery takes an evidence-based approach in practice.

### 2.4.3 Preliminary analyses of the three thematic domains

The remainder of this report focuses on presenting initial analyses of the three thematic domains – eAccessibility, access to employment and access to online services – which are being addressed in the project. These analyses will provide the starting point for the application of the approach outlined in Figure 2.8 to selected priority policy issues for each of the domains.

## 3 The eAccessibility component in eInclusion

This Chapter presents the conceptual and analytic framework that has been developed for the eAccessibility policy domain. It first provides an analysis of the target groups and issues that are the subject of the domain (section 3.1). This is followed by an analysis of the policy space that has relevance for addressing these target groups and issues (section 3.2). The subsequent section (section 3.3) provides an analysis and discussion of how the notion of “evidence-based” can be applied in relation to this eAccessibility policy space. The final section (3.4) presents the initial list of priority topics that have been identified for attention in the eAccessibility data gathering and workshop activities of the project.

### 3.1 Target groups and issues

Although the concern with eAccessibility has its origins in the disability field, and people with disabilities are a core target group, it is important to locate this within the broader frame of reference that is adopted within the Design for All approach. Within this broader approach, anyone may be faced with eAccessibility challenges, that is, challenges in the utilisation of ICT products or services that relate to functional requirements arising from physical, sensory or cognitive areas of activity. For some people, these requirements may be enduring ones (e.g. because of enduring physical, sensory or cognitive disability, because of being left-handed and so on). For others, they may be temporary (e.g. because of having a broken wrist) or circumstantial (e.g. because of being in a noisy environment, outdoors, driving and so on).

The data and analysis presented in the following section is intended to be illustrative rather than exhaustive. Its main purpose is to provide a sufficient level of detail and structure to support the analytic and conceptual work at this stage of the project.

#### 3.1.1 eAccessibility challenges

Physical, sensory and cognitive capabilities vary widely across people and the requirements placed on these capabilities also vary widely depending on the characteristics and features of the ICT products or services in question and the environments within which they are being used. Therefore, there is potentially a very broad range of eAccessibility challenges that need to be addressed.

A useful taxonomy and cross-mapping of disabilities and ICT features has been prepared by the COST 219 action<sup>63</sup>, as outlined in Figure 3.1. This taxonomy indicates a wide range of areas of functional difficulty and how these relate to a wide range of ICT-related features.

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<sup>63</sup> Roe; Patrick R.W. et al. (1995), Consumer Overview. In: Roe; Patrick R.W (Editor), Telecommunications for all, office for Official Publications of the European Communities, Luxembourg, 1995. p 22.



This definition indicates two main types of solution:

- accessible mainstream ICT products and services (accessible ICTs)
- specialised accessibility tools (assistive technologies).

Ensuring that mainstream ICTs are accessible is a fundamental requirement. There are a wide variety of products, services and product features that need to be considered in this regard. Table 3.1 provides an indicative listing of some core accessibility issues and requirements. It is not at all intended to be exhaustive but merely to give an indication of the variety and range of issues.

**Table 3-1: Indicative range of accessibility issues and solutions**

Functional challenge	Relevant products / services / features	Accessibility challenges	Mainstream accessibility solutions	Assistive technology solutions
Vision	<ul style="list-style-type: none"> <li>• Visual displays and visual content (computers, web, display phones, ATMs, visual component of TV and multimedia etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Access to visual information</li> </ul>	<ul style="list-style-type: none"> <li>• Adjustable font sizes, colours, contrast etc.; alternative non-visual media</li> </ul>	<ul style="list-style-type: none"> <li>• Screen readers and voice synthesisers; Braille displays; magnifiers</li> </ul>
Hearing	<ul style="list-style-type: none"> <li>• Voice based devices and content (voice telephones and telephony services, answer machines, call centres, audio component of TV and multimedia)</li> </ul>	<ul style="list-style-type: none"> <li>• Access to spoken and other auditory information</li> </ul>	<ul style="list-style-type: none"> <li>• Adjustable volume, coupling to hearing technology, alternative non-auditory media</li> </ul>	<ul style="list-style-type: none"> <li>• Text telephones and text telephony; text telephone relay services</li> </ul>
Physical (strength, dexterity, reach etc.)	<ul style="list-style-type: none"> <li>• Input devices (keyboards, mouse, telephone handsets, touch screens, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Access to physical control systems</li> </ul>	<ul style="list-style-type: none"> <li>• More controllable features, choice of controls</li> </ul>	<ul style="list-style-type: none"> <li>• Key guards; alternative input devices etc.</li> </ul>
Cognition	<ul style="list-style-type: none"> <li>• Information based products and ancillaries (content of services, instructions, etc.)</li> </ul>	<ul style="list-style-type: none"> <li>• Access to information, communication</li> </ul>	<ul style="list-style-type: none"> <li>• Access to information, communication (plain language, use of images / illustrations)</li> </ul>	<ul style="list-style-type: none"> <li>• Alternative languages e.g. (Tele)Bliss</li> </ul>

### 3.1.3 Numbers Affected

It is important for policy-making to have information on the numbers of people affected by the various types of eAccessibility challenge such as those that were discussed in the previous section. Such data is needed for assessing the scale and importance of the issue, for setting priorities and for deciding on the most appropriate ways to address the different issues. For example, local or individual solutions might be appropriate for very rare eAccessibility challenges but more global, generalised action would be required for more frequent and widely occurring challenges.

Estimating the numbers of people for whom different types of eAccessibility challenge arise is not a straightforward or easy task. To begin with there are the problems posed by varying definitions of disability and of disability-related factors in statistical data gathering at national and other levels. Although there have been various internationally agreed definitional and classificatory systems (such as the World Health Organisation's ICHID system that was agreed in 1980 and the new ICF system

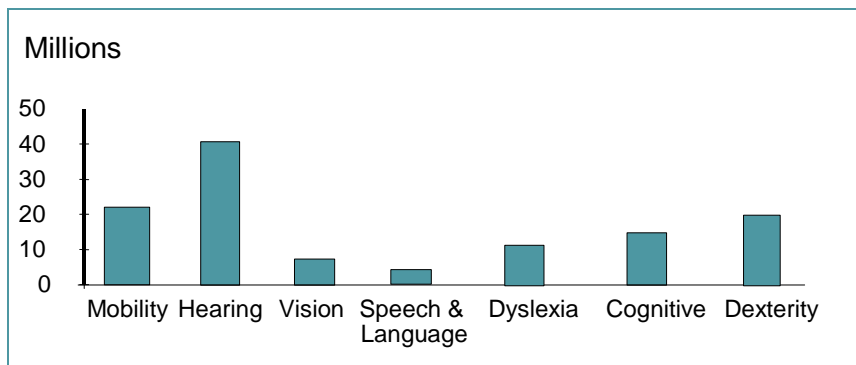
that was developed to replace this in 2001), the availability of statistical data related to such systems is very limited (for example, as noted in the Eurostat compendium on disability statistics in 1995<sup>64</sup>). Typically, statistics reflect the more traditional diagnostic approaches that tend to be found in state social security and disability registers. This type of data may sometimes be useful for management and resource allocation purposes but statistics based on activities rather than medical conditions, and on the limitations in functioning experienced by individuals, are needed for formulating policy in relation to accessible products and services.

A number of recent studies have attempted to produce data to highlight the large numbers of people who may experience accessibility issues when trying to use ICT.

### Estimates of the numbers of people with various disabilities

Figure 3.2 presents estimates of the numbers of people in the EU 15 with various disabilities in the early 1990s. As the likelihood of many forms of disability increases with age it can be expected that these numbers are increasing as the European population ages.

**Figure 3-2: Estimates of the numbers of people with disabilities (EU 15)<sup>65</sup>**



Overall, it can be estimated that somewhere between 10% and 15% of the European population have a disability of some form, with some having multiple disabilities. This would represent a total of between 40 and 60 million people in the old EU 15, representing perhaps between 48 and 72 million people in the current EU 25. This is a sizeable segment of the European population and clearly warrants a high priority on the policy-making agenda.

Because the precise nature and degree of disability in a particular area can vary widely, it is also important to have more specifically dis-aggregated data. Table 3.2 presents some indicative European data in this regard. There are various other sources providing more detailed information on specific groups, for example, people with hearing impairments<sup>66</sup>.

<sup>64</sup> Eurostat (1995) *Disabled Persons Statistical Data – Second Edition*. Luxembourg: Office for Official Publications of the European Communities.

<sup>65</sup> Source: PROMISE (1998), adapted from COST 219 (1994)

<sup>66</sup> Graham, J. and Martin, M. (2001) *The prevalence of deafness and hearing impairment*. In: Ballantynes Deafness: Sixth edition. London: Whurr Publishers.

**Table 3-2: Estimated percentage of the population in Europe with problems using information and communication technology<sup>67</sup>**

	%
Wheelchair user	0.4
Cannot walk without aid	5
Cannot use fingers	0.1
Cannot use one arm	0.1
Reduced strength	2.8
Reduced coordination	1.4
Speech impaired	0.25
Language impaired	0.6
Dyslexic	1
Intellectually impaired	3
Deaf	0.1
Hard of hearing	6
Blind	0.1
Low vision	1.5

### eAccessibility challenges amongst older people

A recent European-funded project (SeniorWatch) collected representative European (EU 15) data on eAccessibility issues for older people (aged 50 years and above). The survey asked respondents about limitations in functioning which they experienced in activities related to seeing, hearing, dexterity and mobility. The data generated gives estimates of eAccessibility-related functional limitations being experienced by older people in the general population across Europe (Table 3.3).

It can be seen that large numbers of older people reported either moderate or severe difficulties in areas relating to ICT usage. Difficulties included reading small print (47.8 million), hearing (38.2 million), moving around (34.0 million), typing on a keyboard (19.0 million) and using cash points (15.6 million). Again, it is clear that eAccessibility challenges are widespread amongst older people in Europe and warrant a high priority in policy.

**Table 3-3: eAccessibility challenges amongst older people (aged 50+) in EU 15<sup>68</sup>**

eAccessibility Challenge	Degree of disability			
	Moderate		Significant	
	%	N (millions)	%	N (millions)
Reading small print	27.1	33.2	11.9	14.6
Using cash points	9.1	11.2	3.6	4.4
Typing on keyboard	11.0	13.5	4.5	5.5
Moving around	18.4	22.5	9.4	11.5
Trouble hearing	26.5	32.4	4.7	5.8

### Need for better data

The data sources outlined above provide a useful but only indicative view of the numbers of people facing eAccessibility challenges in Europe. This is an area where more and better data would be very useful, not so much for demonstrating the high relevance for policy (this is something that is now well demonstrated and well accepted) but for enabling robust cost-benefit assessments to be made in

<sup>67</sup> Gill, J. Access-Ability: Making technology more useable by people with disabilities. [www.tiresias.org/guidelines/access-ability/](http://www.tiresias.org/guidelines/access-ability/)

<sup>68</sup> [www.seniorwatch.de](http://www.seniorwatch.de)

relation to the question of the economic case for (or against) eAccessibility, in general, and particular policy approaches, in particular. For example, it will be important to be able to quantitatively assess the economic and other costs of not addressing eAccessibility or of not addressing it in particular ways. Such exercises require better data on the eAccessibility challenges that people are facing and on the consequences of such challenges (for example, in lost earnings and various other forms of exclusion).

The new International Classification of Functioning, Disability and Health (ICF) should be used as a basis for future data gathering. This was endorsed by all 191 WHO member states for use in each country as the international standard to describe and measure health and disability. It classifies health and health-related states into two parts. Part 1 classifies *functioning and disability*. Part 2 addresses *environmental and contextual factors*.

Functioning and disability in Part 1 are described from the perspectives of the body, the individual and society, formulated in two components: (1) bodily functions and structures, and (2) activities and participation. This approach is intended to enable the classification of positive functioning as well as negative experience associated with disability. *Functioning* is a generic term intended to encompass all body functions, activities and participation. Similarly, *disability* is used as an umbrella term that encompasses impairments, activity limitations and participation restrictions. "Activity limitations" replaces the former "disabilities" in the ICIDH 1980 and "participation restrictions" replaces the term "handicaps".

One of the key features of the ICF approach is that the notion of disability is mainstreamed and recognised as a universal human experience. Also, the inclusion of "contextual factors", in which environmental factors are listed, allows to record the impact of the environment on the person's functioning.

This new ICF approach provides a framework within which eAccessibility-related data could be systematically and consistently generated for the first time. This aspect will be addressed further in Section 3.3.

#### 3.1.4 Types of approach and levels of implementation of eAccessibility solutions

Finally, it is worthwhile to briefly draw attention to the fact that there are, in principle, a variety of types of approach and levels of implementation of eAccessibility solutions.

To begin with, there is the distinction that has already been made between:

- Accessible mainstream ICTs, and
- Specifically designed assistive technologies.

From many different perspectives – mainstreaming, cost-effectiveness and so on – it is clearly preferable to maximise the availability of accessible mainstream ICTs and minimise the necessity for specifically designed solutions. However, as the latter will always be required to a certain degree, part of the accessibility requirement of mainstream ICTs is to interface with these more specifically designed tools and there is also, of course, a need to ensure the availability and ongoing development of such assistive technology solutions.

With regard to the promotion of accessible mainstream ICTs, key issues for policy include:

- how to encourage and / or require the design, development and delivery of accessible products and services; this needs to address the challenge of ensuring accessibility throughout complex value chains involving different manufacturers and service providers (terminal equipment, operating systems, application software, online services and content, and so on)
- how to assess and allocate any additional costs that may accrue in regard to such accessibility requirements.

With regard to the promotion of specifically designed, assistive technology tools, key issues for policy include:

- how to stimulate an efficient and effective marketplace for these niche market products and services
- whether and how to provide public support in this area.

The following section looks in more detail at the various dimensions of this policy space.

## 3.2 The eAccessibility Policy Domain

This section presents a first effort to develop an overall conceptual / analytic framework that can capture the important elements of the eAccessibility domain in a manner that is useful both for the eInclusion@EU project's internal purposes and for a wider audience. This is not a simple task, as will be indicated in the review of some existing efforts in this area.

In fact, there are two approaches that can be adopted in the development of a comprehensive conceptual / analytic framework for the eAccessibility policy space. One approach would be to address the task in a top-down, deductive manner based on a theoretical analysis of the variety of types of policy approach that have relevance for the issues and target groups discussed in section 3.1. The other approach would be to address the task in a bottom-up, inductive manner based on inventorying actual policies in the field and analysis and modelling of these empirically identified instances. In their pure forms, both approaches pose challenges at this stage of the project.

On the one hand, difficulties are posed for the top-down, deductive approach because of the relative newness and complexity of the eAccessibility field in policy terms. In addition, there are complexities raised by the fact that this is a rapidly changing space in terms both of technology (and the eAccessibility issues that are raised) and of the framing conditions presented by the dispositions of key stakeholders in the field (e.g. policy, the public sector, employers, industry and user / consumer organisations) towards eAccessibility.

On the other hand, the absence at this stage of the project of a systematic and comprehensive inventory of actual policy approaches across Europe and internationally makes it difficult to rely only on a bottom-up, inductive approach (later in the project it is expected that such an inventory will be available).

For practical reasons, therefore, the approach adopted in the current analysis involves a hybrid of the top-down, deductive and bottom-up, inductive approaches. The emphasis is not on producing exhaustive lists of actual policy initiatives but more on identifying *types* of policy approach and how they relate to the overall set of issues that can be identified for the various target groups discussed earlier.

### 3.2.1 Review of relevant source materials

For present purposes, a variety of source materials have been collated and analysed in order to provide useful insights for the development of the eInclusion conceptual / analytic framework. Directly related to the eAccessibility field are recent reviews of the policy situation and / or required policy developments in the EU, Australia and the US, respectively. Also relevant for this field is the analysis by the Council of Europe of the impact of new technologies on the quality of life of people with disabilities. In addition, the recent work by the Council of Europe on inventorying and analysing disability policies more generally is also of relevance.

#### 3.2.1.1 Recent reviews of the domain from an EU perspective

Two recent reports that have attempted to map the eAccessibility policy domain from an EU perspective provide a starting point for the analysis. These are the Commission Staff Working Paper

on “*Delivering eAccessibility*”<sup>69</sup> and the eEurope eAccessibility expert group’s report “*A Review of Legislation Relevant to Accessibility in Europe*”<sup>70</sup>. In addition, the COST 219 and COST 219bis projects have produced various reports of relevance, the most recent and perhaps most comprehensive being *Bridging the Gap?: Access to telecommunications for all people*<sup>71</sup>.” The following sections extract and summarise the main elements of these reports from the perspective of the conceptual / analytic work in the eInclusion@EU project.

### The Commission’s “*Delivering eAccessibility*” report

This report was designed to aid further understanding of the need for eAccessibility in furtherance of EC ambitions within its employment and social policy fields, although it also has a somewhat wider scope and coverage. The report concludes that eAccessibility is a multidimensional concept requiring actions in different policy areas and utilising RTD&D and other EU funding.

Three main types of policy or instrument are identified as being of central relevance in relation to promoting eAccessibility:

- technology and standards
- legislation and persuasion
- education and information.

As well as specific actions in each of these areas, the report concluded that there is a need for a *more co-ordinated and focused approach* by the key players involved in eAccessibility activities and in the application and development of existing and new instruments in the three areas. As a concrete measure to support this it is proposed that a *dedicated web portal on eAccessibility issues* be set up and maintained by the European Commission. Another core recommendation is that *disabled people* themselves should be *encouraged and empowered* to take more control over the development of the mechanisms for delivering eAccessibility in all three of the areas outlined above. It is proposed that both the establishment of the portal and the degree of involvement of disabled people in the various areas should be subject to *benchmarking*. Specific recommendations were also made with regard to the three sets of instruments. These are summarised in Table 3.4 overleaf.

The report also introduces a somewhat different analysis of the policy domain, whereby measures aimed at improving eAccessibility at the European level are deemed to be of three main types:

- Human rights policies
- Social inclusion and employment policies
- RTD&D and Standardisation actions.

In addition, the report refers to the conclusions of a draft report on the eEurope 2002 Action Plan’s achievements in relation to eAccessibility, where it was noted that legislation in this area could become outdated due to rapid technological development. Because of this, a combination of legislative / regulatory measures is needed:

- General legislation
- Specific legislation
- “Soft law”
- Reference to relevant standards.

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<sup>69</sup> European Commission (2002) *Delivering eAccessibility: Improving disabled people’s access to the Knowledge Based Society*. Commission staff working paper (with the support of the High Level Group on the Employment and Social Dimension of the Information Society (ESDIS) and the active involvement of its eAccessibility working group) Brussels 26.9.2002. SEC(2002) 1039

<sup>70</sup> eEurope eAccessibility expert group (André Gubbels and Erkki Kempainen) (2002) *A review of legislation relevant to accessibility in Europe*. Final draft, November 15, 2002

<sup>71</sup> COST 219 bis (2001) *Bridging the Gap? Access to telecommunications for all people*.

### The eAccessibility Expert Group's "Legislation Review" report

This report collates available information (via the members of the eAccessibility expert group and sources such as COST 219 bis) and discusses the types of approach to addressing eAccessibility in Europe. It also makes an initial effort towards developing a conceptual framework for legislation in this area.

One aspect considered is how accessibility relates to non-discrimination and in this context it is noted that equality can be understood in different ways, for example, formal equality, equality of opportunity and equality of results.

It is also noted that, to achieve desired equality outcomes for disabled people, positive action is required as well as formal equality. For example, the Madrid Declaration<sup>72</sup> combines the concepts as follows: *Non-discrimination + Positive action = Social Inclusion*.

The report notes that the Commission's Communication "*Towards a Barrier-Free Europe for People with Disabilities*"<sup>73</sup> recognises that accessibility is a key factor in enabling equal opportunities for people with disabilities. It is also noted that although there are various international agreements in relation to equality and non-discrimination (e.g. UN, EU Treaty of Amsterdam and EU Charter of Fundamental Rights), the principles are often expressed in different ways in national legal systems.

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<sup>72</sup> Madrid Declaration. European Congress on Disability. Madrid 2002.

<sup>73</sup> COM (2000) 284 final of May 2000

**Table 3-4 Specific Measures recommended in “Delivering eAccessibility”**

Policy Mechanism	Recommended Specific Measures	Actors
Technical / standards	<p><b>Application of WAI guidelines to public sites in Europe:</b></p> <ul style="list-style-type: none"> <li>• Regular common method based monitoring process</li> <li>• Regular monitoring and update of standards</li> <li>• Extension of scope of web sites to be monitored (in line with Council resolution)</li> </ul> <p><b>Standardisation actions:</b></p> <p><b>Production of harmonised standards</b></p> <ul style="list-style-type: none"> <li>• Mandates from the EC to the standards bodies where necessary</li> <li>• Public funding of the work of convenors and secretariats</li> </ul> <p><b>Compliance with common requirements and test methods</b></p> <ul style="list-style-type: none"> <li>• All parties (manufacturers, test institutions etc.) to comply and avoid national deviations</li> </ul> <p><b>Information, consultation, evaluation</b></p> <ul style="list-style-type: none"> <li>• Full and effective implementation of the Design for All concept (Mandate 283 etc.) in standardisation work</li> <li>• Public funding for this</li> </ul> <p><b>Consumer participation</b></p> <ul style="list-style-type: none"> <li>• Public funding and preparatory training for this</li> </ul> <p><b>RTD</b></p> <ul style="list-style-type: none"> <li>• FP6 to support actions to promote eInclusion, including both empowering technologies and barrier-free technologies, including take up of results</li> <li>• Adaptability of 6FP to overarching priorities (e.g. eEurope 2005)</li> <li>• User participation in projects, as well as in evaluation and review activities</li> <li>• Co-ordination between EU and national RTD programmes, in line with ERA</li> </ul>	<p>European Commission, Member States</p> <p>Commission, Member States</p>
Legislative / Persuasive	<p><b>Legislation</b></p> <ul style="list-style-type: none"> <li>• EU Anti-discrimination Directive on disability, beyond the employment domain</li> <li>• Encouragement of private enterprise to make ICTs accessible, including requirement in public procurement based on EU procurement directives</li> <li>• Exceptions to copyright consistent with the EU Directive to enable dissemination of protected material in accessible formats for the use of disabled people</li> </ul> <p><b>Persuasive measures</b></p> <ul style="list-style-type: none"> <li>• eAccessibility mark for goods and services that comply with eAccessibility standards</li> <li>• Ensure large enough European space (harmonisation) to persuade more commercial goods and service providers to offer accessible products (e.g. VAT exemptions)</li> </ul>	<p>European Commission, Member States, Private sector</p> <p>Commission, Member States</p>
Educative / Informative	<p><b>Centres of Excellence and networking in Design for All</b></p> <ul style="list-style-type: none"> <li>• Ensure network is totally inclusive and covers all Member States</li> <li>• Design for All Curricula to be adopted by relevant educational authorities in all Member States</li> </ul> <p><b>User capacity building and empowerment</b></p> <ul style="list-style-type: none"> <li>• Awareness raising amongst older and disabled people of the opportunities of ICTs and the Internet</li> <li>• Vocational programmes to improve the employability of people with disabilities in KBS jobs</li> <li>• Exploit lifelong learning principles and facilities to upgrade the skills of people with disabilities</li> </ul> <p><b>Integration of disabled students into normal schools</b></p> <ul style="list-style-type: none"> <li>• Ensure that multimedia materials and use of ICT do not create new barriers</li> </ul> <p><b>General vocational training</b></p> <ul style="list-style-type: none"> <li>• Ensure that eAccessibility becomes a regular part of all vocational education at any level (e.g. web masters, multimedia authors and software developers)</li> </ul>	<p>Commission, Member States, Disability NGOs</p>

In reality, international, European and national legislation interact in many ways. There are binding international agreements, as well as recommendations. Specific national legislation expresses how these principles have been balanced with a variety of other principles and interests (e.g. merit, protection, freedoms etc.).

The report notes that accessibility legislation on the Information Society relates to a complex field where specific and new interpretations of accessibility are constantly under development. Moreover, equal access regulations can be expressed in different, mutually non-exclusive ways in national legal systems and this is an issue that concerns several areas of policy and law. For this reason, a comprehensive balanced policy framework is needed.

With regard to accessibility, legislation can be enabling (e.g. allows exceptions to be made), promotive (e.g. expresses goals) or set obligations.

It is also possible that legislation can pose barriers to accessibility under some circumstances (e.g. copyright protections for digital materials that does not provide exceptions for provisions to make the materials accessible for people with disabilities).

As also noted in the Commission Paper on “*Delivering eAccessibility*”, a combination of legislative / regulatory measures is needed, including general legislation, specific legislation, “soft law”, and reference to relevant standards. It is important to analyse which types of measures are effective in each context.

The report also provides some specific recommendations, as summarised in Table 3.5.

**Table3-5: Proposals in the eAccessibility Expert Group’s Report on Legislation**

- **Ensure that *non-discrimination legislation* has been enacted as a *general right* and that it is implemented in all relevant specific areas of legislation at European and national levels**
- **The *EU Directive on equal treatment in employment and occupation* should be implemented effectively and good examples should be developed and disseminated**
- ***Existing measures in telecommunications* to improve accessibility should be implemented by Member States and the Commission**
- ***Holistic accessibility policies and legislation* with regard to *telecommunication terminal equipment and services* should be prepared, learning from international examples, and using in each context appropriate legislative and persuasive measures**
- **Further analysis of the situations and concepts with regard to *copyright issues* is needed: every Member State should have an exception to copyright for the benefit of disabled persons**
- **The possibilities to introduce accessibility requirements in *public procurement* should be actively used**
- ***Follow-up* of actual implementation of eAccessibility measures.**

In relation to follow-up, it is proposed that at European level it might be possible to agree upon a limited number of *indicators* or at least follow-up themes<sup>74</sup>. It is suggested that the *preambles of the relevant directives* could be one source for the formulation of indicators.

Finally, it is noted that technology is changing rapidly and that there is a strong trend towards convergence of different technologies. For these reasons it is argued that both *general* and *technology-specific* accessibility requirements are needed. Within specific legislation both general and

<sup>74</sup> It would be important, of course, to involve industry in the process of setting any standards or indicators if compliance is to be achieved.

more specific legal measures are needed. Progress in the area should be based on the observance of technology trends, existing and emerging services and on user needs.

### The Bridging the Gap? report

This report focuses primarily on access to telecommunications equipment and services. Some of the analyses were drawn upon in the eAccessibility expert group's report and have already been mentioned in the previous section. In this section, the focus is on extracting other relevant analyses for our purposes.

### Need for integrated approach across the value chains

In the Introduction it is noted that in order to deal with the complex chains involved in the telecommunications sector there are separate EU Directives relating to the networks and to the terminals that are used with them. However, consumers just want end-to-end communication and this split does not improve the opportunities to promote accessible communications for people with disabilities. Also, the split may become less relevant with the convergence of telecommunications, broadcasting and multimedia.

### Current EU legislation is only "halfway" legislation

One contribution (by Erkki Kemppainen)<sup>75</sup> concludes that there has been progress at the level of *policies and legislation* in relation to addressing the needs of disabled users since the beginning of *telecommunications* liberalisation in Europe, but that such progress has been frustratingly slow and it is still only "halfway" legislation. A user perspective has been brought into telecommunications legislation and users with special needs have been recognised at certain points. What is needed now is that the Commission and Member States *use the powers* given in the Directives (on Terminal Equipment and on Universal Service and Users' Rights) in order to achieve a more accessible society. At the same time policies need to be strengthened so that more actions can be specified towards this goal. It is also concluded that because needs may change as technology develops, the most fundamental requirements should be about the equal right to communicate and should not be tied to specific technologies.

### Lack of a consistent approach across the Member States

Another contribution (by Mike Martin)<sup>76</sup> reports on the results of a *survey of national regulators* in relation to their attention to the needs of disabled users. It was concluded that all of the countries that responded had some level of regulation or obligation on telecommunications operators to implement provisions for disabled and elderly people. However, there was no consistent approach to this across countries and what was on offer for disabled or elderly users varied widely. Three different models for providing funding for services for disabled and older users were discerned – the state provides the funding, the designated provider(s) does directly, or there is a universal service fund to which all operators contribute.

In relation to determining the needs of disabled people, it was concluded that there was a lack of awareness within the national regulator organisations and a lack of resources being applied to determining requirements. The overall conclusion was that there is little consistency across Europe and no harmonisation of strategy or implementation of the "very fine sounding phrases such as 'Universal Service'" and that "...clearly the European Commission's concepts of Universal Service are not being extended fully, or in any consistent manner across Europe and *more work is required to look at the details of the reasons why and how the situation can be improved*".

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<sup>75</sup> COST 219 bis (2001) Bridging the Gap? Access to telecommunications for all people. Chapter 3.5.2 *Legislative Development in Europe*. Pages 145-153.

<sup>76</sup> Ibid. Chapter 3.5.6. COST 219bis National Telecommunication Regulators Questionnaire. Pages 170-178.

Apart from this activity within the Universal Service area, at the time of the survey it did not appear that broad-based horizontal legislation (e.g. in the anti-discrimination domain) was being used in relation to access to telecommunications services.

### Providing accessible telecommunications terminals within the universal service framework

Another contribution (by Tony Shipley)<sup>77</sup> provided an analytic perspective on how universal service relates or could relate to the supply of *telecommunications terminals*. The analysis focused on the problem that the objectives of universal service cannot be met if accessible terminals are not available and affordable for users with disabilities. The double disadvantage for disabled users lies in the difficulty of finding equipment suited to their specific requirements and then, when it can be found, of having to pay significantly higher prices for it. Higher prices arise because apparatus designed for the mass consumer market frequently lacks features that would make it accessible; where the needs of disabled people are only met by niche market players then the inevitable consequences are restriction of choice and higher costs. Such cost differentials can be considerable; a real-time text-messaging terminal may cost several times as much as an ordinary voice handset and more than twice as much as an e-mail terminal.

This contribution argues that whilst under the universal service regulations issues of “accessibility” and “affordability” of (basic) telecommunications services can and to some extent are required to be addressed at the national level, with due regard to prevailing national circumstances, this does not apply in the case of goods (e.g. terminals). In other words, under the single market rules there is no scope for national intervention to place obligations on terminal equipment manufacturers. A proposed solution to this would be to include the availability and affordability of accessible terminal equipment as an obligation upon designated universal service providers. There would be four elements to this approach – obligation on designated service providers, mechanism for recovery of net costs from a universal service fund, management systems guided by an advisory group to determine and review what terminals to include, and a regulatory and monitoring function to ensure effective working of the scheme.

Finally, the contribution notes that there are various ways that availability and affordability of accessible terminal equipment can be legislatively addressed. One way is through the universal service mechanism discussed above. Other ways would be to introduce a direct state subsidy or the use of legislation (as in the US) aimed at equipment manufacturers and calling for accessibility of their products. Neither should be ruled out at present although both would appear to create conflicts with European law if applied at the national level at the present time. The universal service model is therefore put forward as being the quickest, simplest and arguably the most effective means of making accessible and affordable communications equipment available to people with disabilities. For example, it can probably be introduced by way of Statutory Instrument rather than primary legislation.

### The role of standards

Finally, there is a useful contribution (by Knut Nordby)<sup>78</sup> on the role of *standards* in the achievement of accessibility. This contribution argues that standards are needed to:

- Ensure conformity with minimum agreed level of *function or quality*
- Ensure proper *inter-working* of equipment and services from different manufacturers and service providers
- Ensure good *usability* and *accessibility*

And are also valuable to:

- Ensure high *transfer of learning* across product producers.

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<sup>77</sup> Ibid. Chapter 3.5.3. Telecommunications Terminals Supply – A Universal Service Model. Pages 154-161.

<sup>78</sup> Ibid. Chapter 3.5.7. Standards and Accessibility to ICT by All. Pages 178-190.

In relation to eAccessibility legislation / policy, standards can have considerable value for purposes of quoting in legislation and for reference in procurement. They can also be used to show compliance with *Essential Requirements* in EU Directives and for *CE Marking*.

However, the author argues that liberalisation, deregulation and privatisation of the telecom industry in Europe has had a detrimental effect on the industry's attitude towards standardisation. There is now an overruling commitment to satisfy the needs of shareholders rather than the needs of customers. Standardisation work is regarded as too costly to justify spending the necessary resources, and the only reason for participating by some larger players in the field is to stop any standards that run counter to their interests.

As will be noted later in section 3.2.4, however, there is now an increasing amount of standardisation activity, in Europe and internationally, involving or related to people with disabilities.

### 3.2.1.2 Interplay between rights-oriented and universal service legislation in Australia

Another contribution in the COST 219bis book (by Gunela Astbrink)<sup>79</sup> focuses on the legislative situation in *Australia*. Of particular interest is the interplay between the Disability Discrimination Act (DDA) of 1992 and the Telecommunications Act of 1997 (and the Telecommunications (Consumer Protection and Service Standards) Act 1999 in creating a framework for building better access to and equity in telecommunications for people with disabilities. It is also noted that consumers have played a vital role - legislation empowered involvement and this in turn influenced legislation and regulations.

In Australia, these two pieces of legislation are inextricably linked in a number of ways. Complaints of discrimination under the DDA influenced the insertion of particular clauses in the Telecommunications Act and the latter refers back to the DDA with reference to the supply of services to people with disabilities.

The DDA is broad-based legislation with few references to telecommunications. Complaints of discrimination are lodged with the Human Rights and Equal Opportunity Commission for mediation. If the mediation is not successful legal decisions are handed down. The most notable case (Scott vs. Telstra in 1995) concerned the lack of availability of text telephones under the same rental scheme as a standard handset. It was found that there had been discrimination and Telstra initiated an expanded text telephone provision programme in response.

However, based on the Australian experience the author argues that it is preferable for progress to be made other than through discrimination cases. To guide this process the DDA encourages organisations, government and non-government, to develop a Disability Action Plan to indicate how they will improve accessibility and includes an implementation timeframe (this also reduces the likelihood of a discrimination case being taken, of course). The two main operators – Telstra and Cable & Wireless Optus – have both prepared such plans (Telstra was the first major Australian corporation to do this). Of course, even with these provisions in Australia, there are still many outstanding issues that need consumer input and consultation (e.g. are timeframes being adhered to?).

In relation to the two Acts addressing telecommunications legislation, the sections on Universal Service Obligations, the National Relay Service and Industry Development Plans are all relevant, as are the Telecommunications (Equipment for the Disabled) Regulations of 1998. Universal service providers are obliged to *offer a disability equipment program* and *consult with consumers* about the equipment to be supplied as specified by the 1998 regulations. The *National Relay Service* is a 24-hour service funded by the federal government and run by an independent organisation (ACE), with carefully constructed performance measures. It is overseen by the government regulator (the Australian Communications Authority) which conducts an annual Consumer Forum to ensure that ACE is delivering the service required.

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<sup>79</sup> Ibid. Chapter 3.5.4. *Legislation in Australia*. Pages 162-167.

Many new carrier licences have recently been granted and one of the conditions is the provision of an *Industry Development Plan*. This specifically mentions the requirement for the reporting of a carrier's relationships in connection with the production and supply of equipment for use by people with disabilities and the reporting of research and development to address the needs of people with disabilities.

The Telecommunications Act also states that *consumer representation may be funded by the federal government* to ensure that consumers are informed about telecoms developments and that consumer interests are clearly presented to government and to industry. This is very important with the deregulation of the market and the many changes occurring in the provision of products and services. Three organisations are funded, including TEDICORE representing people with disabilities. Funding is also provided for research on consumer issues.

The legislation also requires telecoms companies to have formal avenues in place for *consumer consultation*. Effectiveness requires "people willing to get together, acknowledge difference and yet also to find common ground."

### 3.2.1.3 Review of the US situation

The recent "*The Accessible Future*" report by the US National Council on Disability<sup>80</sup> provides a review and analysis of US developments in relation to eAccessibility. The US contribution (by Chris Law and Greg Vanderheiden)<sup>81</sup> to the "*Bridging the Gap*" report also provided a brief overview and commentary on US developments. Both focused especially on three laws:

- Americans with Disabilities Act (ADA) of 1990
- Section 255 of the Telecommunications Act of 1996
- Section 508 of the Rehabilitation Act, as amended in 1998.

The *ADA* does not place any direct requirements on manufacturers in relation to accessibility of their products, although it may require the customers of manufacturers to have accessible products if they are used in connection with their delivery of services to the public (e.g. ATMs). The ADA Accessibility Guidelines (ADAAG) have specific guidelines for some devices (e.g. telephones, ATMs, Assistive Listening Systems).

*Section 255* requires manufacturers of telecoms products and service providers to make these accessible whenever this is *readily achievable* (i.e. can be done with little effort or expense). In the case of manufacturing, equipment or customer premises equipment must be "designed, developed and fabricated to be accessible to and usable by individuals with disabilities". In the case of telecommunications services, services must be accessible to and usable by individuals with disabilities. It also has a requirement in relation to *compatibility*, whereby when the above requirements are not readily achievable, then it is to be ensured that the equipment or service is compatible with existing peripheral devices or specialised customer premises equipment commonly used by individuals with disabilities to achieve access (again with the "readily achievable" proviso).

*Section 508* requires the US government to purchase accessible Electronic and Information Technology (E&IT) whenever it is not an "*undue burden*" to do so. It applies to all federal agencies when they develop, procure, maintain or use technology for use by staff, or by the public who get information or services from the agency.

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<sup>80</sup> *The Accessible Future*. National Council on Disability. June 21, 2001.  
<http://www.ncd.gov/newsroom/ublications/accessiblefuture.html>

<sup>81</sup> Ibid. Chapter 3.5.5. Recent Legislative Development in the USA. Pages 168-170.

## A civil rights orientation

The review by the National Council on Disability posed three basic questions:

- Is access to E&IT<sup>82</sup> for people with disabilities sufficiently fundamental to rise to the level of a civil right?
- Which laws establish civil rights protection around E&IT access and how are these laws being applied and enforced?
- What changes in law or practice would be most effective in fulfilling the goals of E&IT access equality for all Americans?

The report reviews the issues “through the prism of the civil rights laws” that have been adopted to enhance information access and create information equality. Against this background, it is concluded that:

*“To say that people have no right of access to these technologies is to say nothing less than that they have no right to earn a living, get an education, withdraw money from their own bank accounts, buy a public transit ticket, or communicate with their families across the country.” “[The] concern is with accessibility and usability of information that in law and custom is routinely available to all and expected by all.”*

## Historical evolution of eAccessibility as a civil right

To begin with, the report notes that the notion that eAccessibility is a civil right of people with disabilities has emerged in ways that sometimes parallel the development of the right to physical access to the built environment but also takes very different pathways in some respects. In comparison to access to buildings, the eAccessibility domain has a more complex interdependence between technology and law. In addition, there is the fact that rapid changes in E&IT dramatically alter the economics of accessibility.

The Architectural Barriers Act (1968) applied to federally funded buildings and facilities and was the first recognition and attention to the proactive approach where accessibility issues are addressed at the design stage to pre-empt problems down the line. It was also the first time that private sector entities were required to take or forgo certain actions solely because of their impacts on the rights and lives of people with disabilities. Coverage was gradually extended until, with the ADA, it now applies to all public buildings and all private entities and commercial facilities that meet the law’s definition of “public accommodations”.

Civil rights protection for racial and ethnic minorities and women (in the 1960s) extended in the 1970s to people with disabilities with the Rehabilitation Act of 1973 and its historic Section 504 which outlawed discrimination on the basis of disability in programs operating with federal financial assistance and required provision of reasonable accommodations to avoid such discrimination. This provided a model for major subsequent enactments, including the ADA. At that time it included provisions for access to information (e.g. the availability of interpreters), but idea that mainstream technology could/should be modified was not on the agenda then.

Legal coverage has since extended to public and private entities whether or not they receive federal funding, and now also extends to unequal treatment or denial of access resulting from the inaccessibility of mainstream E&IT. In addition, design requirements have been successively broadened to include manufacturers of televisions, manufacturers and sellers of telecoms equipment and services, and all manufacturers or vendors who wish to sell E&IT to the Federal Government.

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<sup>82</sup> Note: The term Electronic and Information Technology (E&IT) is coming to be the preferred terminology in the US

## Facilitating factors in the US

Some key factors that have helped the US situation to move such a long way in a generation are identified in the report.

One important factor was the *cross-disability elaboration of the meaning of access*. Of central significance in this regard was the concept of “meaningful” access – the right to fully participate in the enjoyment of whatever opportunities, benefits, programs or services an organisation covered by the law offers – and the recognition that, increasingly, people have little choice but to access things through technology-mediated ways.

Another important factor was the emergence of *accessible design*. Within this paradigm the focus is to cater for the broadest range of people including people with disabilities and people with differing communication preferences or styles. This reduces the number of occasions requiring individual accommodations and fundamentally alters the economics of accessibility. The approach was increasingly addressed in law as developments in technology have made it feasible. Perhaps the purest legal expression was in the Television Decoder Circuitry Act of 1990 that required the inclusion of a closed-caption decoder chip in all TVs with 13-inch or larger screens. This spread the cost of decoders across the whole base of TV purchasers at a negligible added cost per set. In addition, as it applied to all manufacturers (and importers of TVs for use in the US) and only after a 3-year gearing-up period, there was no competitive distortion or imbalance in the marketplace. Other laws in this field included the Hearing Aid Compatibility Act of 1988 that applies to manufacturers and importers of telephones.

Finally, the emergence of the *era of interconnected computers and devices* meant that standalone or specially designed assistive technology solutions could no longer suffice. The notion of “compatibility” also emerged as a fallback requirement when accessibility of mainstream devices and systems is not possible.

## Legislative models

Three legislative models are identified in the US analysis:

- leverage model
- technical assistance model
- enforcement model.

An example of the *leverage model* alone, without enforcement, was the first of three versions of section 508 in 1986. As this was then devoid of enforcement it was doomed to fail.

The *technical assistance model* has emerged as awareness has grown that, in both mandatory and voluntary settings, success depends on the availability of technical assistance and on effective co-ordination and sharing of scarce expertise in the field. The clearest example was in the Tech Act (1988), now the Assistive Technology Act (1998), which provided resources at state level and was non-coercive. Later, the civil rights statutes continued to give heavy emphasis to technical assistance within their enforcement models. The continued importance of the technical assistance approach underlines the complexity of the field.

The *enforcement model* is now an important tool. However, the disability civil rights laws are not absolute in their requirements – where excessive costs or other factors make a proposed action or remedy an “undue burden” or render it “not readily achievable” then the laws will not insist it be done. In such cases alternatives need to be found, but each of these is subject to the same tests.

The fundamental assumption of the laws is that where technology or other means exist for making data available on equal terms to people with and without disabilities, these means should be utilised whenever possible.

## US model not perfect

Despite the major developments in the US, the report concludes that the legal model there is not perfect. In particular, there is no overall national E&IT accessibility policy. In fact, the situation is one of a patchwork of laws that cover certain equipment and services in some situations but not others, utilise different economic defences, apply to different entities in different ways depending on whom they are dealing, and even define certain terms such as “telecommunications equipment” in different ways.

Many factors are identified as contributing to the lack of a more coherent and comprehensive approach, including attitudes about regulation, fears about costs, residual doubts about the capacities of people with disabilities and agency jurisdictional lines that are not conducive to co-ordinated policy. Two core overarching factors are identified:

- there has been no real national discussion about how much universal E&IT accessibility would really cost and, hence, no consensus has been reached on how such costs should be allocated
- there have been no means for dramatising the real costs of inaccessibility for the millions of individuals it affects or for society as a whole.

In this regard, the report draws a contrast with the way that Universal Service in telecommunications has been dealt with in the US, where there was a national public-private partnership to meet and allocate the costs and where there was no pre-occupation with whether a particular phone company could or could not afford to connect a particular town or farm. It is argued that there is a need to make E&IT access a consensus value in society. The marketplace cannot be expected to do it on its own and anyway, to a large extent, inaccessibility does not lead to loss of business, per se. Table 3.6 summarises the detailed recommendations that are made in the report with a view to improving the American situation.

**Table 3-6: Recommendations in the “Accessible Future” Report**

Action domain	Detailed recommendations
1. Incorporate E&IT Accessibility into the Agency Planning and Government-Wide planning Process at All Levels	<ul style="list-style-type: none"> <li>• By presidential order, promulgate and implement a national E&amp;IT accessibility policy</li> <li>• Utilise the mechanisms offered by GPRA (Government Performance and Results Act)</li> <li>• Utilise the mechanisms offered by Information Policy and Information Management</li> <li>• Federal Employee Training (supplementary training and resources where the use of assistive technology or other factors alters or individualises the training process for employees with disabilities)</li> <li>• Ensure alternative measures when E&amp;IT access is not possible</li> </ul>
2. Review the Federal Contracting Process to Encourage Diffusion of Accessibility	<ul style="list-style-type: none"> <li>• Opportunities to address in grants and contracts</li> <li>• Development of model contract language</li> <li>• Contractor and Grantee Technical Assistance</li> </ul>
3. Establish Federal Web Site Quality Control	<ul style="list-style-type: none"> <li>• Auditing Federal Web Sites</li> <li>• Automate the Review Process</li> </ul>
4. Systematically Address the Question of Cost-Effectiveness	<ul style="list-style-type: none"> <li>• Presidential Commission</li> <li>• White House Conference</li> </ul>
5. Involve Consumers in the Accessibility Process	<ul style="list-style-type: none"> <li>• Consumer Advisory Panels</li> <li>• Consumer support to industry</li> </ul>
6. Enrich the available resources for implementation of Section 508	<ul style="list-style-type: none"> <li>• Additional guidance</li> <li>• Undue burden auditing</li> <li>• Verification of agency self-evaluation questionnaires</li> <li>• Compulsory technical assistance</li> <li>• Litigation Posture</li> <li>• Reduce the 505 exemptions granted for intra-federal-agency contracts</li> </ul>
7. Record-keeping and data collection	
8. Statutory review and recommendations	
9. Reinvigorate the quality and focus of ADA enforcement	<ul style="list-style-type: none"> <li>• E-Commerce, Public Terminals and the Internet (assess applicability of Title III to the Internet; standards and requirements for accessibility of public terminals)</li> <li>• Equal Employment Opportunity Commission (EEOC) (update its technical assistance and advisory materials for private sector employers to reflect the high priority on E&amp;IT accessibility)</li> </ul>
10. Intensify monitoring and enforcement under section 255	<ul style="list-style-type: none"> <li>• FCC enforcement (new generation of wireless telecoms/CPE – what features can be made fully accessible under current conditions)</li> <li>• Remedies for violation of section 255 (e.g. of consumer bypassed the section 255 complaints process and went to the courts)</li> <li>• Market monitoring reports</li> <li>• Definition of covered telecoms services (especially in relation to “information services”)</li> </ul>

The report's overall conclusions are as follows:

- The adverse and predictable results of E&IT inaccessibility on the lives of people with disabilities constitute discrimination, albeit unintentional, where technology that could substantially reduce the disparity exists but is not used
- Existing civil rights laws appropriately take costs into account in determining whether particular E&IT-oriented accommodations or accessibility strategies are too costly. But they do so in ways that accentuate the size and visibility of such costs while concealing the costs of access denial

- The current legal framework for E&IT accessibility is actually a patchwork of laws governing certain categories of technology in some settings, other categories in other settings, but nowhere reflecting an overview or comprehensive assessment of either the issues or the solutions
- Without partnership with government and consumers, the marketplace is not well suited to redressing the E&IT access gap on its own. Normal competitive pressures do not operate to encourage fully accessible design of mainstream E&IT products, though the latent demand for such products is considerable
- Changes in technology and in the interpretation of all civil rights laws emanating from the courts will require rethinking of both our definition of E&IT and our approach to advocacy on behalf of its heightened accessibility.

#### 3.2.1.4 Council of Europe

Over the years the Council of Europe has given some attention to the role of and access to ICTs for disabled people as well as to broader aspects of disability law and policy.

##### ICTs and quality of life of people with disabilities

One recent report<sup>83</sup> was produced with a view to developing draft recommendations for the Council of Ministers on devising a policy on new technologies for the benefit of all individuals. The Committee collected data from member states of the Partial Agreement in the Social and Health Field of the Council of Europe, from European international non-governmental organisations and from other organisations. The report is structured according to the policy areas of the Council's Recommendation No. R (92) 6 on a coherent policy for people with disabilities which recommends that the governments of all member states develop comprehensive and co-ordinated national disability policies, taking into account all successive stages in the integration process and all areas of community life, such as prevention, diagnosis, treatment, education, vocational guidance and training, employment, social integration, information and research.

The Council of Europe's activity in this field is derived variously from:

- Article 10 of the European Convention on Human Rights<sup>84</sup>, which states that "everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers."
- Article 15 of the European Social Charter<sup>85</sup>, which addresses the right of physically or mentally disabled persons to vocational training, rehabilitation and social resettlement. It states that, with a view to ensuring the effective exercising of this right, the Contracting Parties undertake to take adequate measures for the provision of training facilities (where necessary in specialised institutions, public or private) and measures for the placing of disabled persons in employment
- Article 15 of the Revised European Social Charter<sup>86</sup>, which addresses the right of persons with disabilities to independence, social integration and participation in the life of the community. With a view to ensuring the effective exercise of this right the Contracting Parties undertake measures to provide persons with disabilities with guidance, education and vocational training, promote their access to employment and promote their full social integration and participation in the life of the community.

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<sup>83</sup> Council of Europe (2002) The Impact of New Technologies on the Quality of Life of People with Disabilities. Report prepared by Theo Bougie for the Committee of Experts on the Impact of New Technologies on the Quality of Life of Persons with Disabilities (Partial Agreement) (P-RR-NTH)

<sup>84</sup> European Convention on Human Rights. Strasbourg: Council of Europe.

<sup>85</sup> 1950 European Social Charter. Strasbourg: Council of Europe. 1961

<sup>86</sup> Revised European Social Charter. Strasbourg: Council of Europe. 1996

In the report the term “quality of life” is understood as “the process of fulfilling one’s needs and pursuing one’s interests, preferences, values and aspirations in different spheres and phases of life.” This is in line with the definition of the World Health Organization<sup>87</sup>.

The report provides an overview of the types of legal and political approaches identified in the member countries. It begins by noting that most countries are in the process of designing national legislation on disability that are based on the United Nations Standard Rules on the Equalization of Opportunities for Persons with Disabilities<sup>88</sup> to create a society with equal opportunities for all, including people with disabilities.

As regards *human rights legislation*, the report notes that some countries have produced *specific legislation* on the rights of persons with disabilities (e.g. the ADA in the US). Although these have had positive impact on the creation of an accessible society for persons with disabilities, the many practical and specific solutions have added to the original building or relied on using extra services. Such results are not creating accessibility via integral design but via extra options.

Other countries address the issue through *integral legislation*, where the rights of persons with disabilities are addressed within general law and arrangements for all where possible. Additionally, such countries need policy on specific services, such as assistive technology, for those who need it.

As regards *assistive technology services*, the report notes that the wide variations across countries that were documented in the HEART study still appear to prevail. Market development in the assistive domain is also identified as an important requirement. The point is strongly made that the policy and research focus on Design for All needs to be accompanied by an additional policy on assistive technology.

### [Reviews of disability legislation and policy](#)

Another line of work by the Council of Europe has focused on compiling and assessing legislation amongst the member states to counter discrimination against persons with disabilities<sup>89</sup>.

### [Evolution of the EU situation](#)

To begin with, the report provides an overview of the evolution of the EU situation. Following the Commission Communication of 1996 the Council reaffirmed its commitment to the principle of equality of opportunity in the development of comprehensive policies in the field of disability, and to the principle of avoiding or eliminating any form of negative discrimination on the sole grounds of disability<sup>90</sup>. The next step was the inclusion in the Amsterdam Treaty of a general anti-discrimination article<sup>91</sup>. For the first time disability is explicitly mentioned in a European Treaty and the need for combating discrimination on this ground is publicly acknowledged.

The Communication from the Commission “Towards a Barrier Free Europe for People with Disabilities”<sup>92</sup> was adopted on May 12, 2000. This addressed some key EU policies that can

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<sup>87</sup> WHO (1994) Quality of Life. Working Group WHO QoL. Geneva: WHO.

<sup>88</sup> UN (1994) The Standard Rules on the Equalization of Opportunities for Persons with Disabilities. Resolution 48/96. New York: UN

<sup>89</sup> Council of Europe (2003a) Legislation to counter discrimination against persons with disabilities. 2<sup>nd</sup> Edition. Strasbourg: Council of Europe.

<sup>90</sup> Resolution of the Council and of representatives of governments of the member states meeting within the Council on equality of opportunity for people with disabilities – 20 December 1996.

<sup>91</sup> Article 13: Without prejudice to the other provisions of this Treaty and within the limits of the powers conferred by it upon the Community, the Council, acting unanimously on a proposal from the Commission and after consulting the European Parliament, may take appropriate action to combat discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation.

<sup>92</sup> COM (2000) 284 final of May 2000

contribute to the improvement of access for people with disabilities. Particular emphasis is placed on achieving greater synergy between related issues in the field of employment, education and vocational training, transport, the internal market, information society, new technologies and consumer policy.

Also in 2000, the Council adopted the Directive on “Establishing a general framework for equal treatment in employment and occupation”<sup>93</sup>. This prohibits any discrimination, direct or indirect, on the grounds of religion or belief, disability, age or sexual orientation. With regard to disability, the Directive recognises that the *failure to provide reasonable accommodation* in the workplace can constitute discrimination, unless such measures would impose a *disproportionate burden* on the employer. It does not aim to achieve identical results for people with disabilities but rather to ensure that people with disabilities are afforded *an equal opportunity* to achieve those results.

The Community action programme to combat discrimination (2001 to 2006) was adopted in 2000. It supports activities such as analysis and evaluation, development of capacity to combat and prevent discrimination and raising awareness.

The Charter of Fundamental Rights proclaimed by the European Council in Nice on December 2000 includes the prohibition of any discrimination on the ground of disability (Article 21). It also recognises “the right of persons with disabilities to benefit from measures designed to ensure their independence, social and occupational integration and participation in the life of the community” (Article 26). This approach of enabling people with disabilities to full and equal enjoyment of their rights was endorsed by the Council in its Decision establishing 2003 as the European Year of People with Disabilities.

### Anti-discrimination provisions across Europe

This section of the Council of Europe report draws attention to the variety of different levels and types of provision that relate to equality and / or anti-discrimination. This is important as it influences the types of approach that are possible / favoured and the types of outcomes that are achieved in different countries.

To begin with the report notes that the use of the term “*discrimination*” in the different national legislation varies according to a number of criteria. This includes:

- the objectives pursued (prevention of prejudicial treatment and / or elimination of environmental barriers)
- factors of distinction - in contrast to other groups, persons with disabilities have disadvantages that result not only from treatment by others but also from their impairment; also can have distinction within the group of persons with disabilities - not all persons with disabilities need the same measures of promotion and therefore many provisions in various fields of legislation relate only to disabilities of certain degrees
- the extent to which / ways in which positive discrimination is addressed in the anti-discrimination legislative context.

Member States use different approaches in this area. In particular a distinction can be made between the ideas of “*anti-discrimination*” or “*fundamental equality*”, on the one hand, and the concept of “*preferential treatment*” or “*compensation of given disadvantages*”, on the other hand. These are not mutually exclusive.

Systems based on anti-discrimination need to provide judicial remedies for those affected. Under the so-called “*preferential treatment*” approach the focus is on identifying areas where disability typically leads to disadvantages and improving the situation by positive/active measures. This area can include a broad range of types of action – employment quotas, special mobility allowances, access to information, allowances and so on.

Rules prohibiting discrimination or demanding equal treatment of persons with disabilities and non-disabled persons vary in legal status, legal quality and strictness across the member states.

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<sup>93</sup> Directive 2000/78/EC. Official Journal. L 303, 2.12.2000, p.16

Preferential treatment arrangements also vary in legal status. Some of these differences emanate from the *different legal and constitutional systems* in the member states.

Some countries have anti-discrimination rules or equal treatment provisions that *explicitly cover persons with disabilities*. There are usually no references to the degree of disability in any of these constitutional provisions. Most others have more general provisions in these areas that cover disabled people by implication. In these cases, the national courts have decided that these also cover people with disabilities.

In relation to legal effects on public authorities and institutions, provisions in written constitutions are especially relevant in countries with a federal system. In some countries (e.g. Belgium, Germany and Switzerland) the rules are also applicable in the private sector as a result of the interpretation of private law principles in the light of the constitution.

There are also many forms of anti-discrimination provisions outside of constitutions. For example, some countries have *provisions in criminal legislation* to strengthen the application of anti-discrimination provisions and enhance equality of treatment (e.g. Finland, France, the Netherlands, Austria and Portugal). There have also been provisions in other fields of legislation, such as the anti-discrimination legislation addressing employment and access to goods and services in Ireland and in the UK.

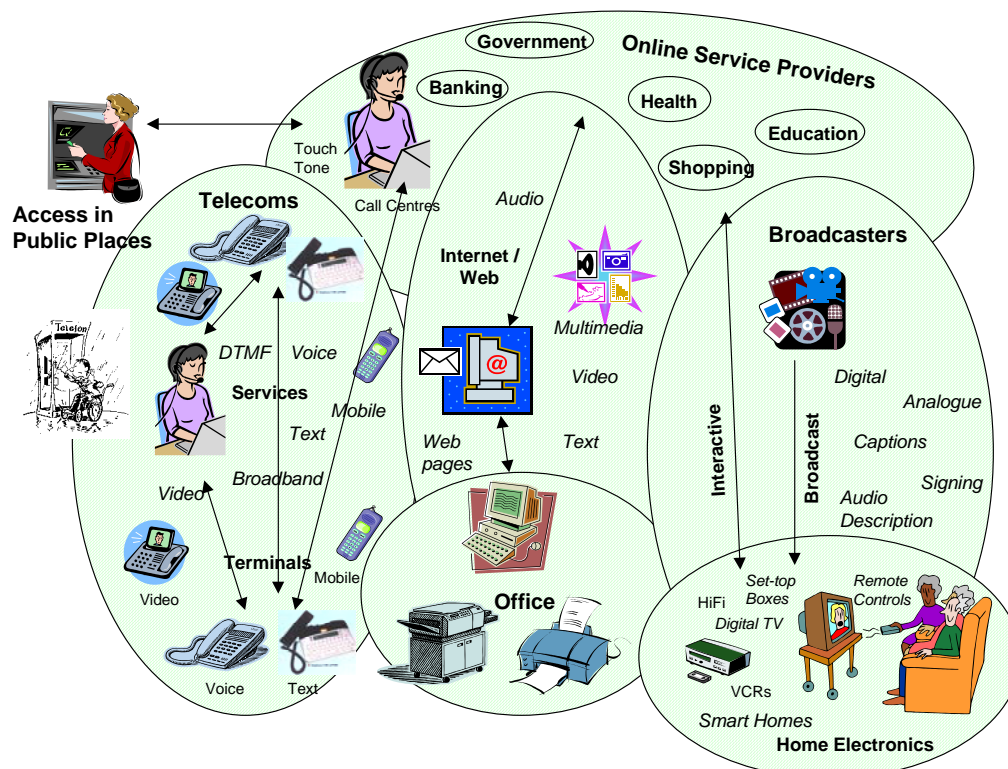
### 3.2.2 Developing a comprehensive and coherent policy framework

The various background materials presented and discussed in the previous two sections provide a starting point for the development of a comprehensive and coherent framework. Section 3.2.2.1 takes the analysis of issues and target groups in section 2.1 as its starting point and looks at the scope of the domain that needs to be addressed by policy, with a focus on the sectors, value chains and ICT products and services that are involved. Section 3.2.2.2 takes the policy reviews and analyses that were presented in section 3.2.1 as its starting point and looks at the range of types of policy approach and measure that have relevance for achieving the desired eAccessibility outcomes across this broad domain.

#### 3.2.2.1 Coverage of the dimensions of eAccessibility

Figure 3.3 provides a schematic view of some of the core elements of the Information Society / ICT space that has relevance for eAccessibility policy formulation.

Figure 3-3: Sectors, value chains and ICT products and services



It can be seen from the Figure that a number of traditionally different sectors are involved, including telecommunications (services and equipment), broadcasting, home electronics, and computing and electronic office equipment. Increasingly there is convergence and blurring of the boundaries between these domains. A variety of locations of usage are also indicated, including the home, the office and public places.

An important point to emphasise in this regard is the fact that eAccessibility is not solely a question of accessible web sites, even if this is one central issue for the policy agenda. For example, there has been a long history of effort to try to achieve accessibility in basic telephony services and work in this area is far from complete<sup>94</sup>. In addition, the emergence of mobile telephony as a ubiquitous feature of contemporary life needs to be given central attention. Apart from issues such as the basic accessibility of handsets there is also the growing use of mobile devices to access eServices. This introduces a whole new set of accessibility challenges. Linked to this is the question of the scope of policy instruments in the telecommunications field, such as Universal Service Obligations, and whether these should be extended to cover mobile services, the internet and broadband access. A separate but interconnected issue here is the current lack of scope under the EU internal market rules for national intervention to place accessibility obligations on terminal manufacturers as terminals are not covered under the EU Universal Service Directive.

Another area that needs attention is smart homes. The increasing addition of intelligence and networking of devices in the home, as well as the accessing of eServices in various ways from the home, raises new accessibility issues and challenges. Other developments in the security area, such as biometrics, also need to be considered, as these can also raise new accessibility issues, for example to ensure that iris recognition systems are designed to take into account the needs of users

<sup>94</sup> eAccessibility issues in the telecommunications area are dealt with in some depth in the recent report of the INCOM group to the Communications Committee (COCOM): *Report of the Inclusive Communications (INCOM) Subgroup* (of the Communications Committee – COCOM). Brussels, 27 January 2004. COCOM04-08

who are very short or very tall or who use a wheelchair, and fingerprint systems can be problematic for those with damaged fingers or with prosthetic hands<sup>95</sup>.

The complexities of this broad domain have certain implications for eAccessibility policy formulation. One implication is that eAccessibility policy needs to be sufficiently wide reaching to cover all of the elements and all of the locations of usage. Another implication is that attention needs to be given to where the eAccessibility responsibility and / or most effective point of intervention lies in the complex value chains that are now involved in the Information Society.

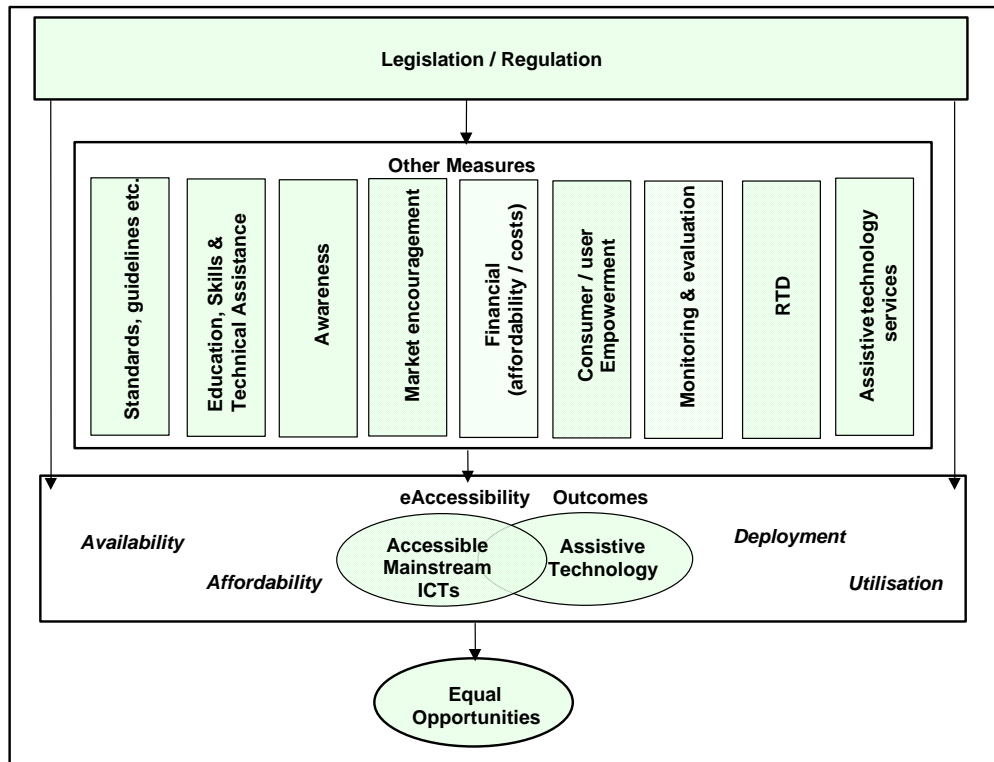
An important related consideration, already raised earlier, concerns how best to balance efforts oriented towards accessible mainstream products and services, on the one hand, and specifically tailored (assistive technology) solutions, on the other hand. In the telecommunications domain, for example, end-to-end text telephony can be provided either through dedicated, niche market text telephones (as is currently the case) or through the incorporation of a text telephony capability that is mainstreamed into all telephone handsets.

### 3.2.2.2 The spectrum of policy approaches and measures

Figure 3.4 provides a schematic organisation of the main types of policy approach and measure that can be identified from the policy-oriented analyses and reviews that were discussed in section 3.2.1.

Starting from the bottom, it can be seen that the ultimate objective of eAccessibility policy is the achievement of equal opportunities in all aspects of life where ICTs are important and where lack of ICT accessibility can affect such equality of opportunities. Two main types of eAccessibility outcome can contribute to this – accessible mainstream ICTs and specific assistive technology solutions. For these to be effective they must be available and affordable, must be deployed in the relevant sectoral context (e.g. the workplace or public places) and must, of course, be utilised by those who stand to benefit.

Figure 3-4: Dimensions of the eAccessibility Policy Space



<sup>95</sup> see Gill, J. (2004) Access-Ability: Making technology more useable by people with disabilities. [www.tiresias.org/guidelines/access-ability/](http://www.tiresias.org/guidelines/access-ability/)

In relation to policy approaches and measures, an overarching legislative / regulatory level is identified as well as a number of supplementary measures.

Legislation / regulation has a key role to play as attention to the full range of eAccessibility issues would be unlikely if the matter were left solely to market forces to address. Section 3.2.3 looks at the broad legislative / regulatory space that has relevance in this area.

However, legislation / regulation alone cannot provide the whole solution and additional measures are required to support and facilitate the various players in the field. The main supplementary domains identified in the schema are:

- Standards, guidelines and other such instruments
- Education / skill development / technical assistance
- Awareness-raising
- Market encouragement
- Financial supports (towards affordability / costs)
- Consumer / user empowerment
- Monitoring and evaluation
- RTD
- Assistive technology services.

These are addressed respectively in sections 3.2.4 to 3.2.12.

### 3.2.2.3 National, EU and International levels of action

Before looking in more detail at each of these areas, it is also necessary to give some consideration to the levels of action – national, EU and / or international – that have relevance for the domain. In fact, national policies in many spheres, including eAccessibility, are increasingly affected by policies and agreements that have been implemented at other levels. This is clearly the case for the EU Member States in relation to areas where the EU has legislative competence and also arises at the international / global level in some instances.

Figure 3-5: Schematic view of EU and international environments

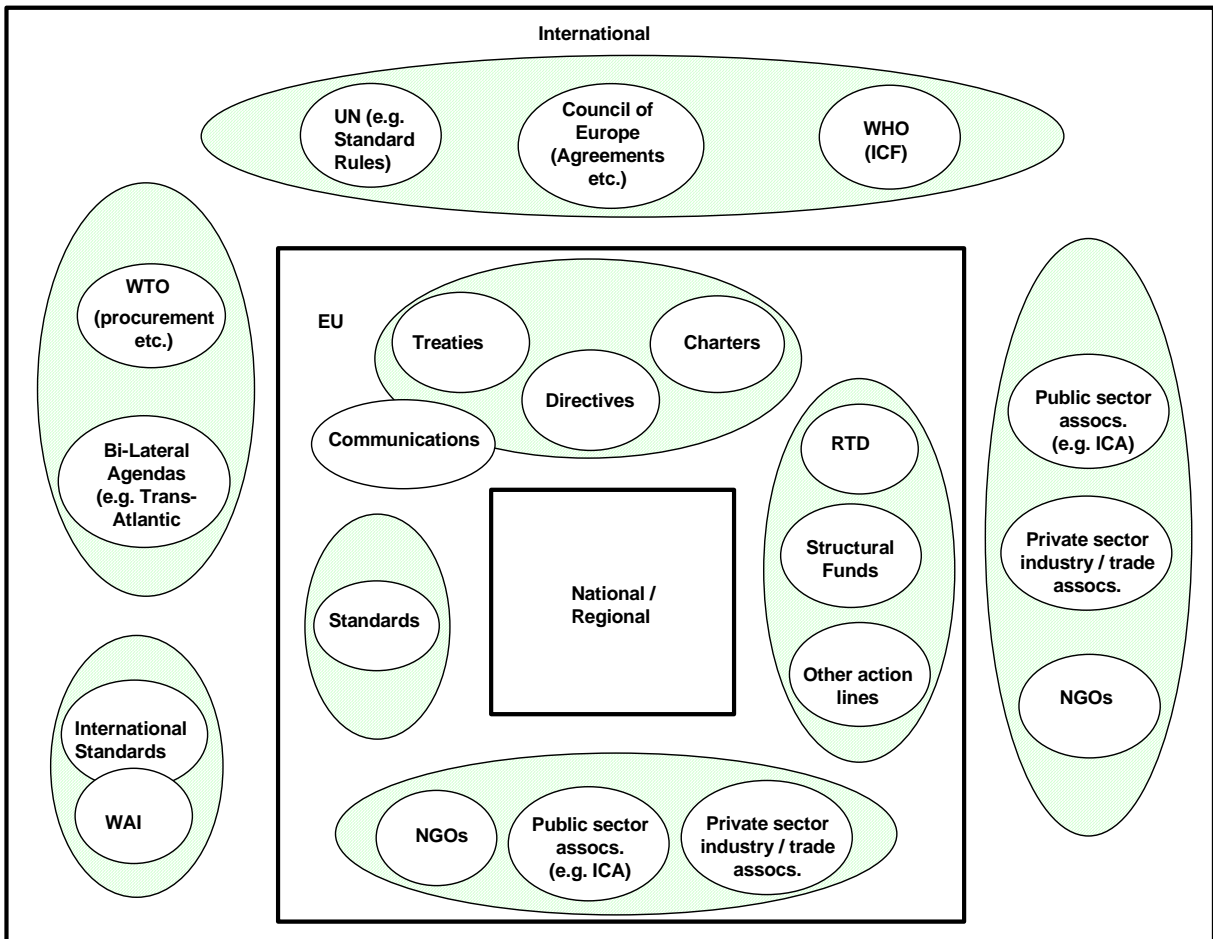


Figure 3.5 presents a schematic view of the different levels of policy in terms of the national / international dimensions, along with some examples of policies and policy-related processes and stakeholders at the different levels that can exert influence at the national (and often sub-national) level. This aspect will be analysed in further detail at a later stage in the project.

### 3.2.3 Legislation / regulation

The legislative / regulatory space in relation to eAccessibility policy is a complex one. Part of the complexity derives from the complexity of the field itself, with a wide range of ICT products and services, of types of eAccessibility issue and solution, of different sectors, of different players making up key value chains, and of different locations and contexts of use. Another complexity comes from the fact that regulatory policy, in general, has traditionally tended to be compartmentalised along sectoral lines, for example, telecommunications services, telecommunications equipment, broadcast services, and so on. As a consequence, existing provisions are not necessarily ideally positioned to address the new environment of convergence.

Another layer of complexity comes from the fact that existing eAccessibility legislation / policy has tended in many instances to have evolved in a somewhat piecemeal fashion. This has been linked in part to the historical evolution of technology and services and the associated historical evolution of regulatory focus and content and, in part, to the wider historical evolution of civil rights and equality oriented policy in general, and disability-oriented policy in particular. This somewhat piecemeal trend is apparent in the evolution of both EU and US policy in the eAccessibility field even though the precise forms of policy and approach that have evolved are quite different.

Against this background it is important to state that neither the European nor the international policy spaces in question are very well-formed at present and this is changing rapidly in response to a number of factors, including technology and service evolution, the increased priority being given to disability policy and the increased priority and attention being given to eAccessibility policy. For these reasons the eAccessibility policy situation internationally represents something of a patchwork at the moment, with different issues being addressed in different countries as well as different policy approaches being employed to address similar issues across countries.

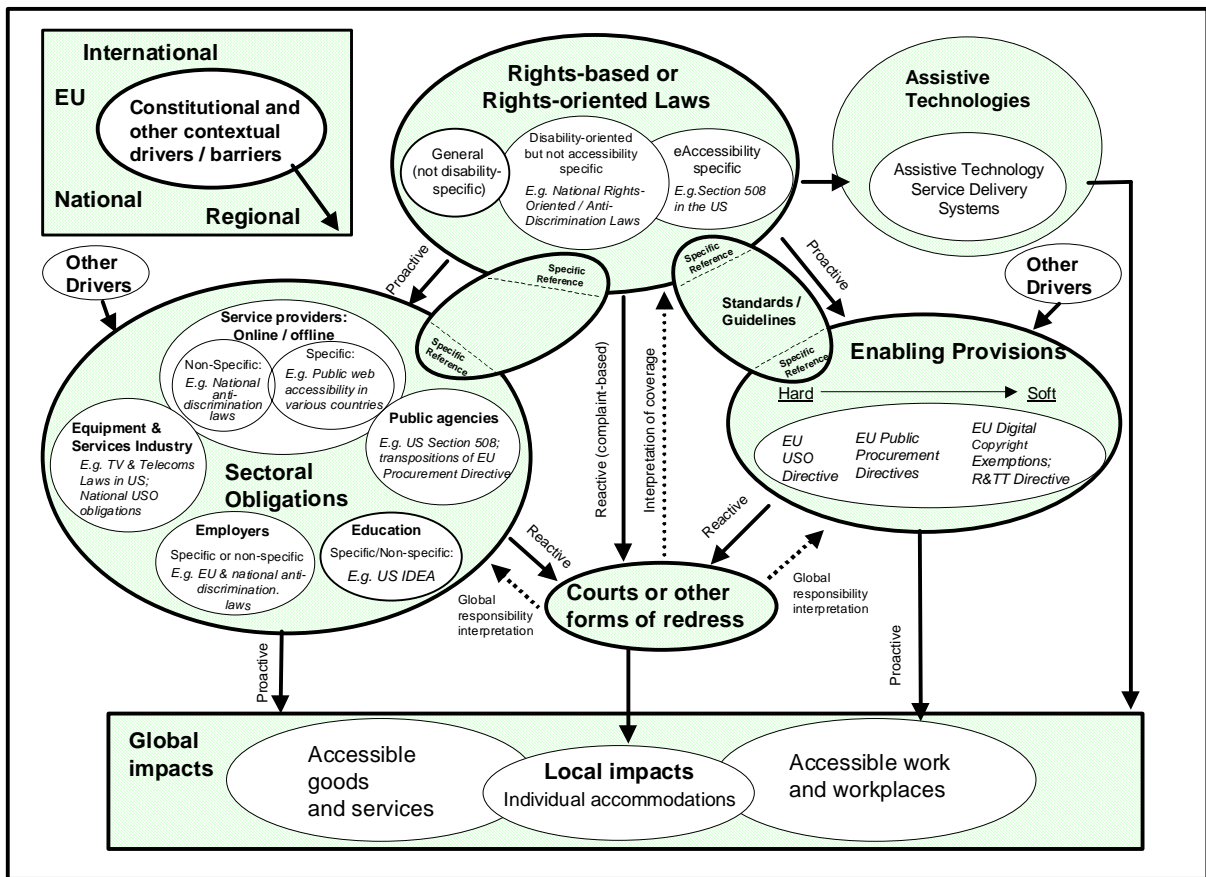
At this stage of the project, therefore, the main emphasis in our policy analysis has been to try to develop a coherent view of the main types of legislative / regulatory policy approach and measure. This will provide a framework within which to locate the specific national approaches and measures that are identified during the national data-gathering phase of the project. Subsequent to this, it will, hopefully, provide a common framework that will facilitate shared understanding across policy-makers at EU level and Member State level and enable appropriate benchmarking and consensus formation on best practice. In this way, it is hoped that the conceptual and analytic structuring of the domain will facilitate the formulation of harmonised EU (and international where appropriate) and Member State legislative / regulatory approaches.

Figure 3.6 presents an initial schema that aims to identify the main dimensions and distinctive policy approaches in relation to legislation / regulation. Some indicative examples of particular legislation / regulations are provided where relevant. The schema is not intended to be exhaustive at this stage but merely to provide a conceptual / analytic framework that helps to develop an understanding of the policy space, its constituent elements and the types of eAccessibility outcomes that various elements can achieve.

One aspect that is not addressed in any detail is the interactions between regional, national, EU and international levels of policy and action. For the moment the schema is a generic one, with examples of actions at various levels included. In subsequent phases of the work a more systematic sorting of the types of policy and measure appropriate to the different levels will be developed.

Finally, before discussing the various aspects of the schema in Figure 3.6, it is important to note that different policy approaches have been used in different countries to address similar problems and also that, in a given country, as illustrated in the discussion of the Australian situation, different policies can have overlapping implications and impacts.

Figure 3-6: Overview of the legislative / regulatory environment for eAccessibility



### 3.2.3.1 Local versus global impacts

A core distinguishing factor in relation to eAccessibility legislation and regulation concerns the level and scope of the eAccessibility impact. In the schema in Figure 3.6 an important distinction is made between laws / regulations that have their impacts primarily at a local level and those that have more global impacts.

#### Complaint-based approaches tend to have local impacts...

Many “rights-based” or “rights-oriented” laws (e.g. in the anti-discrimination or equality fields) can be termed “reactive” in the sense that they give individuals rights of complaint and redress in the event of a perception that their rights are not being respected, that they are being discriminated against or that they are being otherwise treated unfairly.

They are here termed “reactive” as opposed to “proactive” because they generally do not place proactive requirements on the relevant sectoral players (e.g. on employers or on service providers) but instead require an individual (or in some cases organisations representing an individual) to take a case to an appropriate authority for arbitration / adjudication.

Such legislation typically specifies the appropriate forum for arbitration / adjudication. This may be a court of law, an employment tribunal, a specific equality arbitration forum and so on. The types of powers vary depending on the legislation and / or forum, and may include financial compensation as well as orders in relation to the cessation of any discrimination or other form of inequality that may be determined. By their nature, such approaches typically have their impacts at the local level (e.g. an accessibility provision by an individual employer) and therefore may have limited value in terms of proactively influencing the wider environment so as to prevent discrimination arising for others.

### ...but may also have more global and proactive impacts

However, depending on the type of action and / or the interpretation and jurisdiction of the complaints authority, reactive complaints can sometimes lead to requirements for or agreements to proactive actions with much wider reach and implications than the original complaint.

In the US, for example, there have been various “class actions” in relation to the ADA (although none addressing eAccessibility as of yet as far as we are aware) or actions that have been settled as class actions (e.g. in relation to accessibility of public transport). In Australia, however, as already noted earlier, there has been at least one example of a court judgement influencing a telecoms operator to make global provisions to increase eAccessibility (in this case in relation to provision of text telephone terminals on a rental basis).

### Dependency on the competence of the adjudicating body

Another issue here concerns the extent to which the adjudicating authority has the technical or other knowledge upon which to make sound judgements (e.g. in relation to what is possible and whether it is a “reasonable accommodation”, is “readily achievable”, and so on). This concern has prompted efforts to provide advisory materials to the courts in the US and also has lead to arguments that all courts should have expertise on “accommodations” for disabled people.

### Degree of specificity of legislation

In relation to the specific issue of eAccessibility rights, there are a number of forms of rights-oriented laws that have potential relevance. First there are laws that specifically make reference to rights in relation to eAccessibility. An example here would be the rights to complaint and redress that are included within the section 508 public procurement legislation in the US (in fact, this civil rights aspect is not the main feature of this law and the most powerful features are the sectoral obligations that are placed on federal agencies).

Then there are laws that do not make a specific eAccessibility-related reference but nevertheless have been or could be interpreted as covering eAccessibility issues. This is an area where there has been a certain amount of debate and controversy in some countries. For example, in the US the courts appear to have not yet adjudicated on whether Internet accessibility of online service providers is covered under the ADA, despite the fact that the Department of Justice has issued its view that it is favourable towards such an interpretation. Likewise, in at least some parts of the UK there appears to be a lack of clarity about this aspect in relation to the DDA. Box 1 provides an excerpt from an analysis of these issues in the UK situation. This gives a useful overview of the range of issues that can arise in relation to eAccessibility in the context of non-specific anti-discrimination legislation.

#### *Box 1*

*Analysis of the case for Web accessibility under the provisions of the DDA in the UK<sup>96</sup>*

*A recent legal analysis has tried to demonstrate that the accessibility of Web sites provided by service providers does fall within (Part III of) the DDA in the UK, with compliance with the W3C guidelines, Level A, being the suggested initial legal standard that could be deemed a reasonable adjustment. The foundations of the argument were based on developments in Australia and, to a certain extent, the United States but the author also concluded that, considering the provisions of the Act, in itself, a disabled person could bring an action in relation to web accessibility under the Act.*

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<sup>96</sup> Sloan, M. (2001) Web Accessibility and the DDA. Journal of Information Technology and Law. Issue 2. 2001

*However, whilst this may seem relatively straightforward on paper, in reality there are many practical problems. The nature of the Act and in particular the Code of Practice is to encourage dispute resolution before a case reaches court. Thus, like in the US, it may be that the courts are never given a chance to make an express judgement on the issue. This attempt to avoid legal action combined with a lack of knowledge about disability rights in the disabled community means that many sites will carry on, often in ignorance, to be inaccessible.*

*In the view of the author, this problem is compounded by the powers of the Disability Rights Commission (DRC) which, like its Sex Discrimination and Race Relations counterparts, has no real teeth. Whilst they may support and provide legal assistance to disabled persons, certain criteria have to be met regarding the complexity of the case. There is also no provision for the Commission to bring an action on its own or even to put forward its view in any cases that do come to court. This is in stark contrast to the situation in the United States, as in the *Hooks v Okbridge* case where the department of Justice provided a "friend of the court" contribution, or even the European Court of Justice where interested parties are allowed to make submissions on issues of principle (in the latter case the European Commission is automatically consulted on every case).*

*The provisions being of a civil rather than a criminal nature also hamper the influence of the court. Hence, at least in Scotland, there cannot be any punishing element in the court's determination. This lack of a deterrence means that service providers may not be motivated to take action until a successful test case is brought that reaches court and forces them to take notice. At this stage, it would seem that service providers aware of the provisions might not really expect a case to be brought and, if they were aware, they might expect that a case could easily be paid off before reaching court – which might be far cheaper than paying the Web design agencies to 'redo' their site.*

*The issue of cost is also relevant. Whilst legal aid may be available for claims over £1,000, many claims will arguably be for less than this and rather for a court order. Even with legal aid, the high costs incurred by an individual to take on a blue chip company could be prohibitive as the defendant with deeper corporate pockets can afford to appeal the case further and further.*

*Despite these concerns, there may however be a more positive outlook. The Royal National Institute for the Blind has been active in encouraging the adoption of accessibility and the DRC has also suggested that it will be highlighting this area. However, it is suggested that only through the power of the media and potential damage to a high profile service provider's goodwill that a culture change will actually be initiated and an accessible Web site will become the expected standard.*

Finally, where eAccessibility is specifically referred to in legislation, the nature of the reference is also an important factor. If the reference is framed in terms of, or backed up by, specific requirements then it is likely to be more effective (for example, if reference is made to relevant eAccessibility standards). However, a balance may need to be struck in relation to how requirements are stated, for example between generic functional or performance requirements and more specific technical requirements, in order to remain technology-neutral.

### 3.2.3.2 Enabling provisions

At the EU level, in particular, a number of current policy provisions and related approaches are what may be termed “enabling” in their implications. These types of provision have emerged especially within the context of the general liberalisation of markets, on the one hand, and development of an internal European market, on the other.

Thus, the EU approach to universal service in telecommunications emerged at a time when there was a preoccupation with avoiding anything that would hinder or distort the liberalisation of the telecommunications marketplace and the fostering of competition. Accessibility therefore tended to be couched in enabling terminology – national regulators “may” do or be required to do various things. The latest Directive of 2002<sup>97</sup> is potentially stronger in this regard than its predecessors. However, it may still be significant that the strongest statement of requirements in relation to eAccessibility is in the Preamble, that the statements of requirements in the main text are quite general and are not backed up with reference to specific requirements or standards, and that there are various provisos (such as use of the term “where appropriate”) in the requirements on Member States.

As regards public procurement, the revised EU Directives now include clauses encouraging the inclusion of accessibility criteria in public procurement (Directive 2004/18/EC of 31 March 2004 on the co-ordination of procedures for the award of public works contracts, public supply contracts and public service contracts; Directive 2004/17/EC of 31 March 2004 co-ordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors).

The preambles<sup>98</sup> state that:

*“Contracting authorities should, whenever possible, lay down technical specifications so as to take into account accessibility criteria for people with disabilities or design for all users.”*

The specific Articles on technical specifications<sup>99</sup> state that:

*“Whenever possible [these] technical specifications should be defined so as to take into account accessibility criteria for people with disabilities or design for all users.”*

An earlier clarifying Communication from the European Commission<sup>100</sup> provided a variety of examples of how such eAccessibility criteria might be addressed in practice.

Likewise, in the public procurement area, the main development to date at EU level has been the interpretative communication that clarified that the EU public procurement directives do not prevent accessibility issues being addressed in tender specifications and award criteria. As will be indicated in the next section, it is now proposed to further strengthen the EU approach in this area.

Other EU enabling provisions are to be found in the telecommunications terminal equipment area and in digital copyright. The EU Directive on telecommunications equipment<sup>101</sup> has relatively strong statements in relation to eAccessibility in the Preamble and also (Article 3.3e) states that the Commission “*may so decide that apparatus within certain equipment classes or apparatus of certain*

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<sup>97</sup> Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users’ rights relating to electronic communications networks and services (Universal Service Directive)

<sup>98</sup> Paragraph 29 of Directive 2004/18/EC and paragraph 42 of Directive 2004/17/EC

<sup>99</sup> Article 23, Paragraph 1 of Directive 2004/18/EC and Article 34, Paragraph 1 of Directive 2004/17/EC

<sup>100</sup> Communication of the Commission on the Community law applicable to public procurement and the possibilities for integrating social considerations into public procurement – COM (2001) 566 Final; 15.10.2001

<sup>101</sup> Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity

*types shall be so constructed that... (e) it supports certain features in order to facilitate its use by users with a disability*'. The EU digital copyright directive<sup>102</sup> allows Member States to make exceptions to copyright rules and protections in order to facilitate accessibility for disabled people.

In general, approaches aimed at enabling eAccessibility can be strengthened if reference is made to specific technical standards or performance requirements.

Finally, it is also possible that enabling provisions such as those outlined above could provide the basis for reactive initiatives by individuals or organisations and that resulting judgements could have more global implications in terms of impositions of sectoral obligations such as those to be discussed in the following section. However, this would depend on somewhat serendipitous occurrences and is not generally the intended mechanism in these enabling provisions.

### 3.2.3.3 Sectoral obligations

Specific sectoral obligations in relation to eAccessibility can have the most far-reaching and proactive impacts. Two main target groups for such obligations can be distinguished:

- ICT product manufacturers and service providers
- Sectors where ICT products and services are accessed and used in everyday activities.

#### Obligations on ICT equipment and services industry

Within the wider ICT sector it is the telecommunications services sector that has probably had the longest history of attention to eAccessibility issues. Before the era of liberalisation and privatisation public telecom service providers often made at least some provisions for disabled users. These may have been addressed in various ways, such as through nationally imposed universal service obligations, through other formal obligations specifically oriented towards disabled people or through discretionary services provided on the initiative of the telecommunications service provider. The advent of liberalisation and privatisation brought these issues into focus, with the concern being expressed that in a competitive marketplace no one would provide for eAccessibility. A number of countries now have universal service obligations that specify what must be provided for disabled users, who should provide it and how this should be paid for. As already noted, the EU Universal Service Directive enables (and, at least in the Preamble requires) eAccessibility issues to be addressed in the national transpositions of the Directive.

Apart from within the universal service context, the only other apparent examples of direct obligations on the ICT equipment and services industries are those on the TV and telecommunications industries in the US that were discussed earlier in section 3.1.3<sup>103</sup>. An important issue that arises here concerns the nature of the obligation, both with regard to the level of eAccessibility aspired to (e.g. by standards referenced in legislation / regulations) and to the interpretation of provisos such as "readily achievable".

More generally, however, direct obligations on the ICT product and service providers are clearly an example of proactive provisions where the reach and impact is potentially global rather than local.

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<sup>102</sup> Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society

<sup>103</sup> These include requirements on TV manufacturers/importers to include built-in caption decoders, on telephone manufacturers/importers to include hearing aid compatibility features, and wider requirements on the telecommunications equipment and services industry to provide accessible products and services where this is readily achievable.

## Obligations on other sectors

eAccessibility can also be promoted through the placing of obligations on other sectors.

Requirements can be placed on employers (public and/or private) in the context of anti-discrimination and other equality-oriented provisions. The same considerations that were discussed in relation to rights-based laws in general also apply here, namely, the issues posed by the typically reactive requirements of such legislation, the extent to which eAccessibility is specifically referenced and/or an eAccessibility requirement is interpreted / determined, and the nature of any "reasonable accommodation" or other such economic provisos. An important question here concerns the degree to which eAccessibility is being covered in the transposition of the EU employment anti-discrimination directive at national level and the effectiveness of such measures in achieving widespread impacts.

Requirements can also be placed on providers of goods and services (as they are in the US under the ADA and in some EU countries under anti-discrimination legislation, for example, in Ireland and in the UK). Such requirements may be on traditional service providers or on the newer online providers. The same considerations as outlined above for the employer obligations also arise for service providers, with the added complication of whether or under what circumstances online service providers are covered. In some countries there have been determinations or agreements that where the online element (e.g. ATMs in banking) is a core feature of service access / delivery then an eAccessibility requirement can be identified under anti-discrimination legislation.

Another aspect concerns requirements that public web site should be accessible. In the EU, a Council Resolution has urged this on the Member States<sup>104</sup> and some countries already have legislation in place to support this.

There has also been quite an amount of attention to eAccessibility at all levels of education, including access to ICT-based tools and content in both offline and online modes. The IDEA (Individuals with Disabilities Education Act) legislation in the US is an example of this, reinforcing the provisions of the Americans with Disabilities Act. Again, the same considerations in relation to proactive and global approaches versus reactive and local approaches arise, as well as with regard to the degree of specificity of more general educational legislation and regulations in relation to whether and how eAccessibility is covered.

Finally, there is often more scope for imposing obligations on the public sector than on the private sector. One aspect of this concerns the inclusion of requirements for eAccessibility in public procurement. The section 508 regulations in the US have been trailblazers in this area. The process of national transposition of the revised EU Public Procurement Directives provides a real opportunity for activity in this field in Europe.

### 3.2.3.4 Assistive technology

Finally, for completeness, it is important to give some consideration to legislative / regulatory provisions in relation to assistive technology to support eAccessibility. The main mechanism for public policy in this area is through assistive technology service delivery systems. Because it will take a long time before proactive initiatives requiring accessibility of mainstream ICT products and services have a comprehensive impact and because there is likely to always be a residual of intractable accessibility problems with mainstream approaches, the extent to which assistive technology is widely available and affordable will have an important bearing on the overall achievement of eAccessibility goals.

There is quite a lot of variation in the assistive technology services across Europe, including variation in the content of the services and in the contexts towards which they are oriented (workplace, education, everyday life and so on). Most services provide support for individuals but some also

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<sup>104</sup> Council Resolution of March 2002, "on the eEurope Action Plan 2002: accessibility of public websites and their content"

support employers to accommodate the needs of employees. Issues around assistive technology services are addressed in somewhat more detail in section 3.2.12.

### 3.2.4 Standards<sup>105</sup>

As already noted in section 3.1.1, standards can play an important role in relation to eAccessibility through ensuring:

- conformity with a minimum agreed level of *function or quality*
- proper *inter-working* of equipment and services from different manufacturers and service providers
- good *usability* and *accessibility*
- and also can be valuable through ensuring:
- high *transfer of learning* across product producers.

In relation to eAccessibility legislation / policy, standards can have considerable value for purposes of quoting in legislation and for reference in procurement. They can also be used to show compliance with *Essential Requirements* in EU Directives and for *CE Marking*.

#### 3.2.4.1 About standards

A standard is an agreement by the industry to make a product or run a service in a specified (i.e. standardised) way. There are two basic forms of standards:

- Industry or *de facto* standards (created by industry itself)
- Formal or *de jure* standards (formally adopted by standards organisations).

Most standards are industry standards and most are voluntary, that is, they are used at the discretion of manufacturers and service providers. If a standard is specified in a law or regulation it becomes mandatory.

Standards can be *open* or *closed*. Open standards, usually formal standards, are open to all to use while closed standards (e.g. Windows) are usually proprietary and not freely accessible by other members of industry. Use of standards to show compliance with EU Directives is not mandatory and manufacturers may use their own methods of showing compliance. However, meeting the requirements of a relevant standard is taken as compliance with the relevant Directive.

There are three levels of standards and standardisation – national, regional (Europe – CEN for general standards, CENELEC for electric standards, ETSI for telecom standards), and global (ISO for general, IEC for electric, ITU-T for telecoms).

There are four trends in European standardisation that are rapidly changing the traditional standardisation arena:

- Co-ordination of all standardisation in Europe (more coherence and harmonisation, avoidance of replication etc.)
- Increased request for user participation in standardisation (more involvement, e.g. ETSI User Group; also ANEC – European Association for the Co-ordination of Consumer Requirements – is deeply involved in advancing user needs)
- Proliferation of fora and consortia (with no formal mandate in relation to *de jure* standards, for example, W3C, WAP,, UMPTS, MPEG etc. – create industry standards or pre-standardisation material for formal standards organisations)

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<sup>105</sup> Part of the material in this section has been taken from Knut Nordby's contribution to Cost 219 (2001) Bridging the Gap? Chapter 3.5.7. Standards and Accessibility to ICT by All. Pages 178-190

- Increase of global standardisation of ICT (increased realisation that many standards such as DECT, UMPTS and WAP must be global; also ITU-T now has a Human Factors focus (Question 4 (SG 4 / 2) that will address telecoms for older and disabled people – often based directly on ETSI TC HF).

#### 3.2.4.2 Standardisation relevant for disabled and older people

The broad field of standardisation as it relates to the needs of disabled and older people is not a core topic for in-depth investigation within the eInclusion project, although the role of standards in specific areas (such as eAccessibility standards in public procurement) will be addressed. This section therefore provides just an overview of some developments in the standardisation field without attempting to be at all exhaustive.

Historically, apart from a few exceptions such as the notch on the '5' key and the inclusion of an inductive coil in some telephone handsets for coupling to hearing aids, there was little effort to direct standardisation activity towards the needs of disabled and older people. However, there are now a number of standards (ETSI, ITU-T and ISO/IEC) that pertain to usability for disabled and older people – see ETSI DSR/HF-00019 for an annotated list.

In 1998 and 1999 the European Commission issued Mandates to the European standardisation bodies in order to stimulate increased attention to eAccessibility in standards work. The ICT Standards Board (ICTSB) has a working group on Design for All and Assistive Technology (DATSG) with the aim to ensure effective co-ordination between the various ICT-related standardisation activities at European level in relation to design-for-all and assistive technologies.

Within ETSI the Technical Committee – Human Factors (TC-HF) has emerged as a key player in the area and there are currently 13 Specialist Task Forces (STFs) working within ETSI in this field. The standardisation work of the International Telecommunications Union (ITU-T) is also addressing aspects of this field.

In Europe, in addition to the activity in the telecommunications area, CENELEC in conjunction with the Ipv6 Forum has also started an initiative on Smart Homes and Home Networking.

In the US there is work by ANSI on standards relating to the Universal Remote Control (URC) and there are plans to transfer this to the international scene via ISO.

Recently there has been a focus on the drafting of standards or other technical reference documents for the express purpose of referencing in legislation, regulations, procurement and so on. Examples include the standards prepared by the US Access Board<sup>106</sup> and those produced by the National Disability Authority in Ireland<sup>107</sup>, as well as the earlier work within the ACCENT project<sup>108</sup>.

#### 3.2.5 Education / Skills / Technical Assistance

The importance of supporting skills development and provision of technical assistance in the implementation of eAccessibility policy has been frequently underlined.

One major EU initiative is the development of a network of Centres of Excellence in Design for All (EDeAN)<sup>109</sup> and the current preparation of a standard curriculum on Design for All. This has the potential to have wide reach and impact amongst the design community in Europe.

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<sup>106</sup> Electronic and Information Technology Accessibility Standards ARCHITECTURAL AND TRANSPORTATION BARRIERS COMPLIANCE BOARD [Published in the Federal Register on December 21, 2000] 36 CFR Part 1194 [Docket No. 2000-01] RIN 3014-AA25

<sup>107</sup> [www.accessit.ie](http://www.accessit.ie)

<sup>108</sup> [www.statskontoret.se/english/accenteng.htm](http://www.statskontoret.se/english/accenteng.htm)

<sup>109</sup> [www.edean.org](http://www.edean.org)

There are many other ongoing educational initiatives in other contexts, such as open universities, adult education centres and within organisations of older and disabled people where users are active participants in identifying and solving eAccessibility challenges.

As well as educational initiatives, provision of technical assistance at appropriate levels also has an important role to play. For example, public procurers are likely to need support in addressing eAccessibility, at least in the initial stages. This is an aspect that has been given a lot of attention in the context of the section 508 provisions in the US. Other sectoral actors, such as employers and educational institutions may also need to be supported through technical assistance. In addition, it has become clear that technical support is needed for arbitration or adjudication processes in relation to eAccessibility issues. More generally, as will be discussed further in section 3.3, technical support is needed in support of various aspects of policy formulation.

Another relevant issue here is the importance of training of users, teachers and carers in usage of assistive and other technologies. Lack of training has been found to be an important factor in abandonment of technology<sup>110</sup>.

### 3.2.6 Awareness

A more general requirement for achieving eAccessibility goals is to raise awareness of the issues across all levels of society. This includes policy-makers, industry, employers, educators, service providers, the general public, and those who are directly faced with eAccessibility challenges themselves, including organisations for disabled and older people. As noted by the US National Council on Disability, eAccessibility needs to become a highly regarded consensus value in society.

Various examples of initiatives in this area can be pointed to. The EU-funded DASDA project<sup>111</sup>, for example, focused on developing awareness-raising and informational materials on Design for All targeted towards various key players, including senior management, marketing, designers and procurers.

### 3.2.7 Market encouragement

As well as specific obligations on the mainstream ICT product and service industries, there is also an important contribution that can be made through policies that encourage the market to address eAccessibility issues. There are various possible approaches in this regard, including:

- tax incentives for eAccessibility-oriented activities
- positive weightings for eAccessibility provisions in public procurements
- encouragement of active competition to be a universal service provider in telecommunications
- encouragement of co-operation across the value chain to ensure end-to-end eAccessibility.

There is also a need to stimulate market attention to technologies that can support independent living for older and disabled people, for example intelligent systems in the home and ambient environment. This could be facilitated through support for technology transfer between the mainstream and assistive technology industries, as well as through more general support for the emergence of a dynamic assistive technology industry in Europe<sup>112</sup>.

In addition, market encouragement should also address disabled and older people and their organisations, and raise awareness of the need to demand accessible products. Often, older people

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<sup>110</sup> Chris Abbott (2002) *Special educational needs and the Internet – issues for the inclusive classroom*. London: Routledge/Falmer. ISBN 0-415-26801-8; for an example of a specific training intervention in this field in Ireland see [www.crc.ie/aphrodite](http://www.crc.ie/aphrodite)

<sup>111</sup> [www.design-for-all.info/](http://www.design-for-all.info/)

<sup>112</sup> Price-Partnership and IRV (2000): *Study on technology trends and future perspectives within assistive technologies*. European Commission, Information Society Directorate General

buy products that are almost from the beginning not accessible for them. Without a demand for accessibility it will be difficult to encourage the market.

### 3.2.8 Financial measures

Relevant financial measures include provision of subsidies for end users to ensure affordability of eAccessibility solutions, support for the costs (if any) that eAccessibility imposes on the ICT and other sectors, and regulation of the distribution of costs (if any) across the different sectors and players.

Affordability of eAccessibility solutions can be a major barrier for people with disabilities. To begin with, people with disabilities often have low incomes. In addition, where specific eAccessibility solutions are required, for example assistive technology, this imposes an additional cost over and above the costs of the mainstream product or service that they wish to use. There is also the fact that assistive technologies, in themselves, are often very expensive, in part because of the limited niche markets that may be involved and in part because of distortions in the market that can arise in this sector because of pricing structures geared towards organisational purchasers. As discussed in Section 3.2.12, there is considerable variation across Europe in the range of assistive technologies for which financial supports are provided and in the amounts of support that are provided under assistive technology services.

Another area where the issue of financial measures may arise is in relation to supporting industry and service providers where they have additional costs imposed because of a requirement to provide accessible products and services. This issue has been most to the fore in the telecommunications sector, specifically in relation to the costs that may be incurred in fulfilling universal service obligations. There is also the related issue of how such costs should be shared or apportioned across the various players in an industry or sector. As noted earlier, in the case of universal service obligations in telecommunications, there has been some analysis of the scale of the actual costs that may be involved in meeting the needs of people with disabilities and who should bear them<sup>113</sup>. These types of analyses need to be revisited and not lost sight of because of the current focus on web accessibility in particular.

Other financial issues arise in relation to the costs of including eAccessibility requirements in public procurements of ICTs and how these may be distributed across purchasers and suppliers. Some analyses of this issue in the US context are discussed in more detail in Section 3.3.2.5.

### 3.2.9 Consumer / user empowerment

This is another important area for policy to address. In a complex field such as eAccessibility, it is difficult for individual users and / or their representative organisations to have the technical skills to deal with the many different aspects of the domain. This limits their capacity to influence processes that affect them. There is also the fact that the larger industrial players have much greater resources (technical, financial and legal) and therefore negotiations in relation to eAccessibility are often on a very uneven playing field. For these reasons it is important to provide mechanisms for real and effective input by users, including technical, financial and legal support as required.

At the European level ANEC provides the consumer input to standardisation, including standards in relation to eAccessibility. However, consumer participation in the work of national standards bodies is uneven, being developed to a certain extent in only eight of the 15 EU and 3 EFTA countries<sup>114</sup>. It has been found that consumer representatives in all EU and EFTA countries see the lack of resources as the main obstacle to stronger consumer participation in standardisation.

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<sup>113</sup> For example, Analysys (1995) *ibid*

<sup>114</sup> According to results of an ANEC study on the national arrangements for consumer representation in standardisation published in 2001 (ANEC2001/GA/014)

In addition, as mentioned earlier, consumer activity in demanding accessible products should be encouraged and supported. If the enormous purchasing power of older and disabled consumers were to be focused on this issue then industry could be expected to listen.

### 3.2.10 Monitoring and evaluation

Another important requirement for policy is to put in place appropriate and effective monitoring and evaluation processes. These include technology (and policy) watch functions, monitoring of policy implementation and evaluation of impacts.

One important approach in this regard is the "open method of co-ordination" that is being applied in various EU policy fields, including the overall Lisbon Agenda and the employment and social inclusion policies. The approach includes setting of agreed targets, to be reached through policy measures appropriate to local circumstances, and agreement on indicators against which to objectively assess progress. Sharing of experience and good practice is also an important element of the approach. This model could also be usefully applied in the field of eAccessibility and, indeed, the approach adopted in the eInclusion project can be considered to be an informal effort to promote such an open method of co-ordination in a limited number of areas of the eInclusion and eAccessibility policy fields.

Section 3.3 discusses these issues in more detail in the context of encouraging and developing a more evidence-based approach to policy formulation and delivery in these fields.

Also relevant in this regard are the issues of testing, benchmarking and labelling of the eAccessibility of products and services. This may become increasingly important if public procurement in Europe begins to address eAccessibility in a substantial manner.

### 3.2.11 RTD

Public policy also has an important contribution to make through support for RTD. Both RTD on the accessibility of mainstream ICTs and RTD on assistive technologies are required, as well as research on factors affecting uptake of solutions.

The successive European Framework Programmes for RTD have supported a lot of activity in these areas and there are networks such as the Association for the Advancement of Assistive Technology in Europe (AATE) that promote awareness-raising and exchange. There is also a lot of national level activity, both in universities and specialist research centres. However, a co-ordinated and well-functioning European Research Area has not really emerged as of yet in this field, especially one that is self-sustaining without funding under the EU RTD programmes.

Also relevant in this field is the extent to which technology transfer is taking place. In this regard, the current status of technology transfer between the mainstream and assistive technology sectors has recently been investigated and a distinction has been made between transfer mechanisms for product-based "narrow" technology (micro-level) and those for "broad" and generic technology which can be used in several products (macro level)<sup>115</sup>:

*"The technology transfer models needed for applying broad technologies need to be open and flexible. They should allow a large number of prospective technology providers to be monitored and for the appropriate selection of the best choice for the development of an assistive technology product. Keeping up to date with this technology is not a simple task for the assistive technology sector and requires a relatively large effort."*

*"The narrow technology, a single product, where one or a number of new technologies, materials or components are integrated into a useful application, is more common in the assistive technology domain. In this case the components are not necessarily the ultimate*

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<sup>115</sup> Price-Partnership and IRV (2000): *Study on technology trends and future perspectives within assistive technologies*. European Commission, Information Society Directorate General;

*state of the art, for these are often too expensive and not cost effective. The technology transfer will be much more directly related to the detailed market mechanisms. The assistive technology market structure is relatively complex due to the high number of intermediaries (prescriber, advisor, procurer and deliverer/after sales support), that are involved in the process."*

The importance of the knowledge infrastructure, in particular, in the context of technology transfer and the European assistive technology infrastructure was also pointed to in the research<sup>116</sup>:

*"In general little attention is paid to the knowledge infrastructure. The knowledge and information structure has to deal with regional, national and international co-ordination, which is not done well. Much of the research is hampered on the way to implementation due to this aspect of insufficient organisation and "horizontal" transfer of knowledge."*

Within the mainstream technology transfer process, technology transfer includes both technologies and products and the following main actors have been identified<sup>117</sup>:

- *Technology producers*: a technology is developed by technology producers and then transferred to technology consumers. Technology producers are the people who conduct the technology application activity and first generate the idea for matching a technology to a new application. This group includes independent inventors, and R&D people at universities or federal or corporate laboratories.
- *Technology consumers*: technology consumers translate the idea into a prototype technology. They include government agencies, private sector manufacturers or intellectual property brokers.
- *Product producers*: product producers transform the technologies into products in order to sell them to product consumers in the marketplace. They include manufacturers, distributors and value-added retailers.
- *Product consumers*: these are the people who buy the products in the marketplace, and they include end-users and family members, and professional service providers.
- *Resource providers*: these are most critical for transfers of technologies lacking sufficient market incentives for the private sector to fund independently particular orphan products. They include government agencies, private insurance companies, and technology transfer intermediaries

### 3.2.12 Assistive technology services

Finally, as already noted earlier, assistive technology services have an important role to play in the overall achievement of eAccessibility. A number of studies have indicated the variability in levels of service across Europe<sup>118</sup>.

The recent study for the European Commission's Employment and Social Affairs Directorate<sup>119</sup>, for example, found significant differences as regards levels of information provision, prescription, assessment, delivery, financing and so on. These differences reflect, at least in part, differences across countries in the way that overall social protection is organised.

As well as these differences, however, some recurring themes and issues were identified from an end-user perspective. These included the need for more user participation in the process of selecting assistive devices, enhanced professionalism of prescribers and assessors, more product evaluation,

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<sup>116</sup> *ibid*

<sup>117</sup> Lane (1999) *A model of Technology Transfer for Industrial Competitiveness*, In *Assistive Technology on the Threshold of the New Millenium*, AAATE Proceedings, c. Buhler and H. Knops (eds.), 1999, IOS Press

<sup>118</sup> HEART study: <http://www.hi.se/English/heart.shtm>:

Deloitte & Touche (2003) [europa.eu.int/comm/employment\\_social/fundamental\\_rights/pdf/glance/comparativeStudy.pdf](http://europa.eu.int/comm/employment_social/fundamental_rights/pdf/glance/comparativeStudy.pdf)

<sup>119</sup> Deloitte & Touche, *ibid*.

and the development of financial rules to ensure that the most appropriate product is provided at an acceptable cost. Other factors identified as affecting the extent to which appropriate assistive technology is provided, and often the end user costs that are involved, included the cause of disability, personal circumstances, socio-economic status and geographical location.

On the supply side, the assistive technology markets are quite fragmented, both geographically and sectorally. Although the internal market principles apply to assistive technology in the same way as for other products, there can be difficulties getting products included in the various public health care or social systems which finance assistive devices. Another core issue is the role of intermediaries in this area. Health insurers and local or regional public authorities and care providers often have a determining influence on regulation and provision of assistive technology.

This is an area that could benefit significantly from an EU-driven initiative. In fact, the European Commission has begun to give consideration to initiating a dialogue with the relevant stakeholders in order to increase market transparency and facilitate exchange of good practice.

### 3.3 Evidence-base needed for policy formulation and evaluation

A core focus of the eInclusion@EU project is on evidence-based approaches to policy. For the project's purposes "evidence-based" is an umbrella term that encompasses the variety of ways that policy formulation and evaluation processes can be supported by systematic and robust information, analysis and assessment.

#### 3.3.1 Need for a coherent, comprehensive and appropriate policy approach

To begin with, it should be clear from the analysis and discussions in earlier sections that one of the challenges for policy-making in the eAccessibility domain derives from the complexity and multi-dimensionality of the domain. Some of these elements of complexity are briefly outlined below. However, it must be emphasised that the intent of this complexity analysis is not at all to suggest that complexity is a barrier to progress in this field. In fact, there are many things that can be done and the reason for pointing to the various complexities in the area is merely to help ensure that policy is appropriately informed and formulated.

##### 3.3.1.1 Short-term concrete benefits and longer-term paradigm-shifts

One factor to consider is the fact that the eAccessibility domain is essentially an unbounded one, in the sense that total accessibility for all persons under all circumstances is unlikely to be achievable for the foreseeable future, if at all. In this context, both process-oriented activities (such as the paradigm-shift towards a Design for All philosophy and approach) and the setting of concrete eAccessibility targets for particular product or service types, for particular groups and for particular operational circumstances are needed. Policy-making needs to support an optimal mix of these elements in order to achieve both tangible benefits in the short-term and more far-reaching benefits in the longer-term.

##### 3.3.1.2 Prioritising needs and solutions

There are a very wide range of accessibility issues that result from the myriad possible combinations of functional limitation, environmental circumstances and ICT product/service features. Solutions vary in terms of their availability and ease of achievement. Factors involved are both technical and economic, and the implementation of some solutions (e.g. by industry) cannot be expected overnight if major retooling and other changes are required. For these reasons, eAccessibility policy may need to adopt an incremental approach, with immediate, medium term and longer-term objectives. A systematic body of evidence on needs, on solutions and the costs of implementing them, and on the

costs for particular users of not implementing particular solutions is essential for setting priorities and timeframes.

#### 3.3.1.3 Complex value chains and rapidly changing technologies

Another layer of complexity derives from the characteristics of ICT technologies and of the Information Society products and services that are based on them. One aspect of this complexity comes from the product and service value chains that enable the activities of the Information Society to take place. This poses challenges for eAccessibility policy to develop a co-ordinated and integrated cross-sectoral approach that will assign responsibilities to the appropriate points and players in the value-chain and ensure end-to-end accessibility for users. Another aspect of complexity is associated with the rapidly changing world of technology, with constant evolution in terms of what it is possible to do, how it can be done and the costs of doing things. Policy-making needs to achieve an appropriate balance between dealing with the current situation whilst anticipating future developments.

#### 3.3.1.4 Multiple stakeholders and levels of action

Yet another layer of complexity derives from the variety of stakeholders and levels of action that have relevance for eAccessibility policy. Apart from the product and service value chains discussed above, there are also other players to be considered, such as employers and public and private service providers where accessibility of ICTs is important for employees or for service users. Policy needs to be formulated so that responsibilities are allocated in an appropriate and fair manner and desired outcomes are achieved.

#### 3.3.1.5 Inter-relations between different policy fields

Another factor to consider is that eAccessibility policy cannot be formulated and implemented without consideration of other policy fields. For example, it needs to be situated within overarching policy provisions in relation to the respective rights and responsibilities of individuals, public institutions and the private sector. In addition, eAccessibility policy has importance for how the ICT product and service markets operate and therefore has economic and competitiveness significance at sectoral, national and international levels. There is a need for optimal alignment of these different policy arenas and their associated priorities and objectives.

#### 3.3.1.6 Legacy policies

Another dimension to be considered is the existing legacy of policy both in areas that are of general relevance (e.g. anti-discrimination) and in areas that address particular aspects of eAccessibility (e.g. universal service regulations in telecommunications). As already discussed earlier, existing policy has tended to emerge in a somewhat piecemeal fashion and the current situation is one of a patchwork of laws and other policy approaches. Again, it would be helpful if the evidence-based approach could help in the formulation of new and more integrated / comprehensive policy that capitalises on or, if necessary, supersedes existing (legacy) policy.

### 3.3.2 Types of evidence-based support that can help policy formulation and evaluation

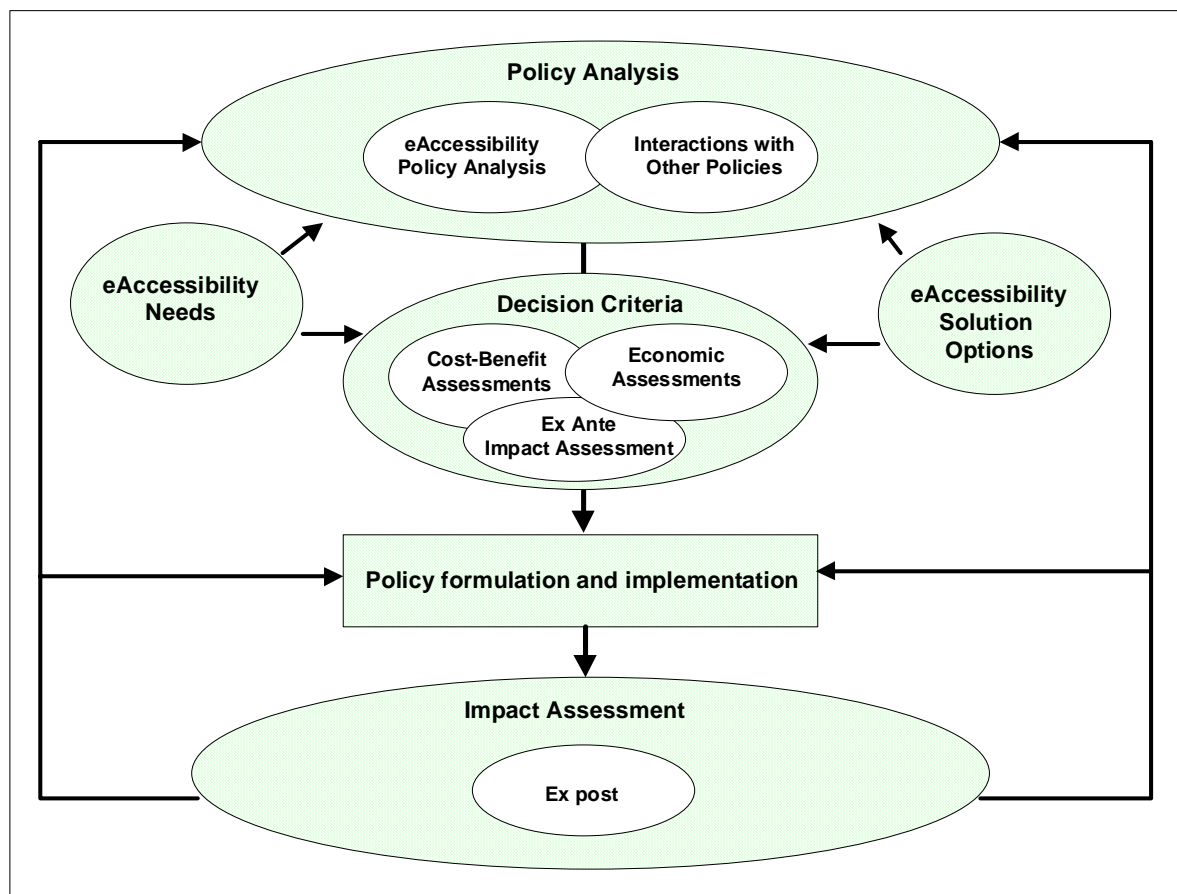
At the outset, it is important to reiterate that the noting above of the complexities of the domain should not be taken as in any way suggesting that action in this field is inordinately difficult or impossible. In fact, there are many things that can be done both to achieve very immediate improvements in eAccessibility and to put in place the conditions for a longer-term (Design for All) paradigm shift. Systematic and, where possible, evidence-based analysis and assessment can help to guide the effective formulation of an incremental and integrated policy approach that will achieve maximum benefits in a fair and cost-effective manner.

Some key types of support for policy include:

- Information on needs
- Information on candidate solutions and their implementation requirements
- Policy analysis (types of policies, their characteristics and their likely impacts)
- Analysis of policy interactions
- Economic assessments of eAccessibility, including cost-benefit assessments (of eAccessibility and of lack of eAccessibility)
- Policy impact assessment.

Figure 3.7 presents a schematic view of these various elements and their relationship to the eAccessibility policy making process.

**Figure 3-7: Elements of eAccessibility Policy Making**



### 3.3.2.1 Information on needs for eAccessibility

One fundamental requirement for effective policy formulation is reliable and accessible information on needs for eAccessibility that can be readily drawn-upon in the policy-making process. Although there is now quite a considerable body of knowledge about the accessibility issues that arise in relation to frequently used ICT products and services, a lot of expertise is typically concentrated in a relatively small number of centres of excellence. Clearly users are the best source of such information, but the extent of leveraging of this depends on the degree of organisation and involvement of users (or potential users) who face the various eAccessibility challenges, and this varies considerably across countries.

A consolidated, evidence-based “handbook” type compilation of eAccessibility needs would provide policy makers with a recognised benchmark statement of the domain. This would be useful as a reference in the often-complex negotiations with stakeholders (e.g. industry, employers and disability

organisations) that underpin policy formulation and implementation in this area. In fact, there are some useful guides already available and these could provide the starting point for a concerted effort to provide a set of EU guidelines in this area<sup>120</sup>.

Another useful support for policy-making would be good quality statistics on the numbers of people affected by particular eAccessibility challenges as well as on the frequency of occurrence of adverse environmental circumstances that affect eAccessibility. Such data would provide a solid evidence-based basis for priority setting, for deciding on the most appropriate policy approaches to particular issues, and for inputting into cost-benefit calculations. The adoption of the WHO's ICF classification, with its emphasis on functioning and contextual / environmental factors provides an opportunity to develop consistent eAccessibility-related statistics across countries.

### 3.3.2.2 Information on candidate solutions and their implementation requirements

Once eAccessibility needs are known, the next challenge is to identify possible solutions to these needs and, for policy, to select between alternative solutions where these are identified. One important consideration here concerns different types of solution in terms of how, where and when they are implemented. Ideally, solutions should be implemented in mainstream products and services at the design stage so that eAccessibility problems are prevented in the first place. At the other extreme are specifically designed, niche market, assistive technologies that must be used to enable accessibility for particular groups and / under particular circumstances. Another important consideration concerns who should be responsible for ensuring eAccessibility and / or supplying the solution. This concerns which points in the ICT product / service value chains are the appropriate ones and / or whether the solution should be a proactive global one or a reactive local accommodation.

Again, it would be very helpful for policy-making to have a consolidated "handbook" that stated fundamental principles in relation to eAccessibility solutions (e.g. that global, proactive solutions are preferred wherever possible) and provided an inventory of quality solutions classified according to type and level of impact, and described in terms of the how, who, where and when of their implementation.

### 3.3.2.3 Policy analysis (types, characteristics and impacts)

As well as the type of mapping of the solution space described in the previous section, there is also a need for the type of analysis of policy approaches that has been elaborated earlier in section 3.2. This type of analysis, involving both conceptual / analytic work and ex ante impact assessments is fundamental to supporting coherent and effective policy-making in the area.

eAccessibility policy-making varies considerably across countries. Part of this relates to prevailing contextual factors in the countries (e.g. in relation to characteristics of the legislative system, attitudes to private sector responsibility and regulation, and so on) but part relates to the rather piecemeal approach to policy formulation in the area. There is clearly a lot of scope for exchange of experiences across countries. For this to be effective, however, it is important that benchmarking of national approaches is carried out within a framework that allows comparisons of "like" with "like" and ensures clear understanding of the origins, intents and impacts of particular national approaches.

This type of analysis also needs to be carried out at the supra-national level, for example, in relation to the competence of the EU in this area and the linkages between EU and national policies.

It is in this area that the eInclusion@EU project expects to make an especially strong contribution through its analytic / conceptual organisation of the eAccessibility policy domain, benchmarking of national and supra-national policy activity and facilitation of informed dialogue and exchange amongst the key stakeholders.

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<sup>120</sup> Gill, J. Access-Ability: Making technology more useable by people with disabilities. [www.tiresias.org/guidelines/access-ability/](http://www.tiresias.org/guidelines/access-ability/)

### 3.3.2.4 Policy interaction analysis

Another important element of the eAccessibility policy development process concerns analysis of the interactions between eAccessibility policies and other policy areas. Examples of issues that have been considered in this regard include the implications, if any, for an equal playing field for bidders if eAccessibility criteria are included in public procurement and how to achieve accessibility in telecommunications (e.g. through universal service provisions) without market distortion. A coherent analysis of such policy interactions and of solutions to the challenges that are posed would be of considerable value for eAccessibility policy formulation.

### 3.3.2.5 Economic aspects of eAccessibility provisions

According to the National Council on Disability in the US, concerns about the economics of eAccessibility have been a major barrier to the achievement of a more coherent and comprehensive overall approach in that country. In addition to this, much of the legislation in the eAccessibility area internationally displays a high cost sensitivity, with provisos such as “reasonable” (accommodation), “readily achievable” and “undue burden” being commonly found. For these reasons it is important to have well-founded analyses and assessments of the economic aspects of eAccessibility provisions, including analyses of how costs should be distributed across the various stakeholders.

In this regard there are a number of promising approaches that could be built upon in the future. For example, approaches that look at the total, lifetime cost of ownership of ICT products for employers emphasise that the purchase cost is often quite a small element of the overall costs in terms of training, support services and maintenance over the lifetime of the product. Hence, any additional costs for accessibility provisions will also be a very small part of the overall lifetime costs.

For present purposes the focus is on the economics of eAccessibility in public procurement because this is the topic that is being given the first detailed treatment in the project. Later in the project, attention may be given to other areas, such as universal service, where some useful economic work has been done<sup>121,122</sup>.

### Costs of implementing the US section 508 standards

One approach is provided in the economic assessment of the US Access Board’s E&IT accessibility standards<sup>123</sup>. This exercise analysed and, where possible, provided quantitative estimates of the costs and benefits of the implementation of the standards in the federal procurement process in compliance with section 508. The analysis included both *direct* and *opportunity costs* associated with the standards.

#### *Direct costs*

Three major sources of direct cost were identified:

- Costs of modifying technology to meet the standards
- Costs of training
- Translation of documents and instructions into alternative formats.

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<sup>121</sup> Analysys (1995) *The Costs, Benefits and Funding of Universal Service in the UK*. Cambridge: Analysys Ltd.

<sup>122</sup> Shipley (2001) *Telecommunications Terminals Supply – A Universal Service Model*. In: Roe, P. (ed.) *Bridging the Gap*, p.154-161. A Cost 219bis publication. European Commission.

<sup>123</sup> EOP Foundation (2000) *US Access Board – Electronic and Information Technology Accessibility Standards: Economic Assessment*.

Another key issue concerned the distribution of costs between the Federal agencies and manufacturers. This was deemed to be largely contingent on the ability of manufacturers, especially software manufacturers, to distribute the costs over the general consumer population. Based on various assumptions it was estimated that the lower and upper bound of the costs of the standards represent 0.01 percent to 0.06 of the total Federal budget and 0.23 percent to 2.8 percent of the amount spent on information technology.

The analysis made a distinction between the software and hardware industries in relation to how accessibility might be achieved.

Software manufacturers were deemed to have a choice between making their software accessible to all consumers, making an accessible version for sale to the federal government, or not modifying their product and ceasing marketing to the Federal government. The analysis assumed that the first option would generally be chosen as this is supported by the cost structures of software development. Box 2 presents a summary of the analysis of the software sector.

Box 2

*Cost analysis of meeting accessibility requirements for the software industry<sup>124</sup>*

*Software manufacturers have a choice to make their software accessible to all consumers, to make an accessible version for sale to the Federal government, or to not modify their product and cease marketing to the Federal government. This analysis assumes software companies choose the first option. They modify and sell one accessible version to both Federal and non-Federal customers. This assumption is supported by the cost structures of software development. Software manufacturers pay millions of dollars to produce their first working product for sale and then can cheaply produce the next copy for only a few dollars. In other words, companies pay relatively high fixed costs to acquire, design, test, and market innovative intellectual property. The material and equipment costs to manufacture products that are sold - floppy discs and CD-ROMs - are inconsequential. Therefore, software firms profit the more they can spread the fixed costs over as many identical units as possible.*

*This incentive is reinforced by software's brief shelf life and by consumer demand. Software firms must recoup their fixed cost investment in just a few years before competitors introduce superior products. The resulting high depreciation rate of the product increases the value of the underlying human capital. Further, consumers are not likely to demand separate versions of software since they are likely to be unaffected or unaware of the accessible features. Consumers that do not want the accessible features can turn them off and still get the same value from the product. For most software features, it is not efficient for companies to divert their most valuable resource - human capital - to produce separate versions if consumers do not value the difference. In other words, a software company is not likely to market an accessible word processor to the Federal government and also market a "non-accessible" word processor to the general public.*

*Given this cost structure of the software market, the analysis estimates that software manufacturers will incorporate accessible features into their products and market them to all of their customers. The major manufacturing cost is the specialized labor that designs and programs the software features. The additional lines of software code impose virtually no material costs. The analysis also assumes that these development costs occur annually and are not tied to a particular software product release. Once each manufacturer invests in obtaining in-house experts on accessible features, the manufacturer will maintain this staff permanently to work on later product upgrades.*

*The analysis measures the accessibility resources devoted to development costs based on discussions with several industry sources and access engineering experts. The analysis also assumes that the ratio of development costs is the same across all manufacturers and across all software products. Therefore, the proportion of labor resources needed to upgrade one word processing program is the same for all other word processing programs and for all other general office software such as spreadsheets, presentation software, and database management.*

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<sup>124</sup> EOP Foundation (2000) US Access Board – Electronic and Information Technology Accessibility Standards: Economic Assessment.

The analysis also looked in more detail at the variety of government purchases of software and identified three main types of relevance:

- General office software
- Mission-specific software
- Information technology and electronic commerce services.

In the analysis it was noted that many of the general office software packages (e.g. Microsoft Office, Lotus Notes and Corel Office Suite) satisfy most of the provisions of the standards already.

More specifically, it was assumed that 30% of such software will satisfy the standards or accessible alternatives will be available (therefore no additional costs). A further 40% will require minor to medium modifications as accessible alternatives may not exist (at a cost of 0.1 percent to 1 percent). The remaining 30% are likely to require significant modifications to meet the standards (at a cost of 1 to 5 per cent). The cost estimations are based on estimates of employee costs for accessibility research and development, labour and design that are all factored into the final product cost (companies studied generally had dedicated divisions or groups addressing accessibility, typically making up 0.2 percent to 0.5 percent of the workforce, with each leveraging a further person year of accessibility activity from other staff).

The costs of modifying mission-specific software was assumed to be higher, ranging from 1 percent to 5 percent.

Hardware manufacturers were also judged to have the same basic choices. The analysis assumed that they will go for the second option and manufacture accessible versions of their products for the Federal government. The basis for this analysis is summarised in Box 3.

The analysis divided hardware into two categories – compatible and self-contained.

### Box 3

#### *Cost analysis of meeting accessibility requirements for the hardware industry<sup>125</sup>*

*This analysis assumes that hardware manufacturers will in general choose the second option and manufacture accessible versions of their products for the Federal government. Hardware manufacturers have different cost structures than software manufacturers. Extra equipment, such as a handset to privately communicate audio information, raises the unit cost of production. In addition, consumer demand is more likely to be affected by incorporating accessible features in hardware than in software. Consumers that do not need accessible features may not be willing to pay for the extra cost. In addition, complying with the standards may require a redesign or reconfiguration of certain equipment. Certain consumers may notice the accessible design changes and may not want them. Therefore, if consumers will value different designs and if there are significant manufacturing costs, the manufacturer is likely to respond with different hardware products for Federal agencies and for other consumers. If the hardware changes are hidden and inexpensive, hardware manufacturers may simply make one version for all consumers. In addition, non-Federal market signals from institutions such as universities, libraries, and others may welcome accessible hardware systems, thus allowing the costs to be dispersed over a larger sector of the market, similar to software producers.*

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<sup>125</sup> EOP Foundation (2000) US Access Board – Electronic and Information Technology Accessibility Standards: Economic Assessment.

Compatible hardware includes products such as desktop and portable computers to which assistive technology can easily be attached or installed (via USB, parallel or serial ports). Although the costs of sourcing products with such “compatibility-derived” accessibility are in principle zero, the analysis included an upper bound cost increase of 5%. However, if first versions of new hardware do not include accessibility features then procurers may have to temporarily forgo productivity improvements whilst awaiting an accessible version.

Self-contained hardware includes products such as information kiosks, copiers and printers to which assistive technology cannot be easily attached or installed. These have to be designed to be accessible and it estimated that 5 percent and 20 percent represent the lower and upper bound of cost increase in this regard.

No additional costs were expected to arise in relation to web-based information systems. Costs in the telecommunications area were allocated to section 255 and for TVs (caption decoder circuitry) to the FCC regulations in this area. Costs for captioning and audio description of multimedia material could not be estimated with available data.

In relation to training, five major categories of costs were identified:

- Training of staff selling products to the Federal government
- Training of Federal procurement officials
- Training of Federal workers on how to use accessible features
- Training of industry customer service representatives on accessible features
- Training of government support staff on accessible features.

#### *Opportunity costs*

A number of possible opportunity costs were also identified, including:

- Delay in procuring new products
- Permanent lag in procuring innovative technology
- Delay in productivity increases
- Consequences of allowing accessibility to override functionality in the procurement process.

#### 3.3.2.6 Cost-benefit assessments (of eAccessibility and of lack of eAccessibility)

Of course the estimation of costs is only one side of the equation and benefits of accessibility must also be identified and, where possible, quantified. The analysis of the economics of the section 508 standards also included efforts to identify and quantify benefits. The specific categories of benefits included:

- Increase in productivity of Federal workforce
- Increased public accessibility
- Lowering of the baseline costs of accommodation
- Reduction in barriers to entry into the federal workforce by persons with disabilities
- Productivity increases by non-disabled Federal employees
- Spill-over effects to the private sector.

There is also a need to quantify the costs of not having eAccessibility as this is something that is often overlooked. In fact, from a societal point of view it could come to be decided that these costs (for those faced with eAccessibility challenges themselves and for society overall) are such as to more than justify any additional costs that are incurred in order to achieve eAccessibility.

### 3.3.2.7 Policy impact assessment

Finally, it is clearly important to assess policies in relation to their impacts. As indicated in Figure 10, both *ex ante* and *ex post* impact assessments have a role to play.

*Ex ante* assessments are needed before particular policy approaches are decided-upon and implemented. In the eAccessibility field, important *ex ante* criteria include:

- Appropriateness – do the objectives, levels of action and targeted outcomes fit with accepted good practice?
- Coherence – does the proposed policy contribute to a coherent approach to the achievement of eAccessibility?
- Cost-effectiveness – is the approach the most cost-effective way to achieve the desired results?

*Ex post* assessments may focus on a variety of dimensions depending on the policy objectives and the nature of the approach.

Policies that provide a right of complaint and a means of redress could be assessed in relation to the numbers of cases that are taken (and estimates of what proportion of overall occurrences of eAccessibility barriers these represent), the profile of outcomes of cases that are taken, factors that affect outcomes (e.g. the knowledge and skills of the various parties), satisfaction with the process and with outcomes, whether outcomes have impacts beyond the immediate cases, and so on.

Policies that impose sectoral obligations could be assessed through monitoring and inventorying of the degree of accessibility of products and services, as well as of the degree to which the experience of eAccessibility barriers is actually being affected in practice.

This aspect will be given further attention in later stages of the work.

## 3.4 Initial listing of priority eAccessibility policy issues

Finally, this section provides an initial listing of some priority topic issues that have been selected as potential candidates for more detailed attention in the subsequent work of the project on supporting informed stakeholder dialogue and preparation of policy roadmaps.

As regards specific policy lines, the following four areas have been identified:

- eAccessibility in public procurement
- Digital rights management (exemptions allowed to enable accessibility for disabled people)
- eAccessibility in universal service in telecommunications and broadcasting
- eAccessibility in anti-discrimination and equality provisions, and associated rights of redress (including the possible role of an ombudsman function).

The project partners have already begun to gather information on policy in these areas in their own countries and the first results of this are provided in the inventory in D1.2.

Decisions on the depth of coverage that will be given to these topics in further work by the project will be made in consultation with the Commission services. The relative merits of looking in a more integrated manner at all relevant policies (such as indicated by the analysis in Figure 3.6) are also currently being considered. This could serve as a harmonised framework for an open method of co-ordination, including the articulation of shared goals across the Member States, articulation of national approaches tailored to the existing legislative and other contextual factors, and common benchmarking and exchange of good practice. Final decisions will include consideration of the Commission's priorities as well as pragmatic issues of time scales and budget.

## 4 eInclusion and eAccessibility of employment and work

This chapter presents a first outline of the conceptual and analytical framework developed for the second core topic of the project - ICTs and their significance for access to employment and work. It first provides an analysis of recent trends and changes with regard to employment and work (section 4.1). This is followed by an overview of some of the ways that functional difficulties experienced by disabled or older people can pose barriers to participation in employment and work (section 4.2). Section 4.3 provides an overview of target groups and suggested priority issues and section 4.4 outlines possible contributions of ICT to employment and work inclusion and pertinent relevant policy activities. Finally, section 4.5 presents the initial list of priority topics that have been identified for further work in this field and deals with the evidence base needed for policy formulation and evaluation.

### 4.1 Recent trends and changes with regard to employment and work

Working life and the world of work in Europe have been changing rapidly in response to business demands and new technology. The European Agency for Safety and Health at work published in March 2002 a Forum Report<sup>126</sup> that summarises the most important of these changes. In the following sections we quote from this report and present some of its most important findings and conclusions:

#### 4.1.1 Changes in the characteristics of organisations and employment sectors

**Increased number and share of SMEs, changes in larger organisations:** The number and percentage of small and medium sized enterprises (SME) has increased. Changes in larger organisations include flatter management structure, fragmentation and increase in complexity and leaner/slimmer management structures.

**Permanent change and reorganisation:** Change and reorganisation have become features of modern industrial life. Reorganisation has been identified as a factor contributing to important causes of accidents and to work-related stress. However, health and safety performance can improve where reorganisation schemes are well planned and well resourced.

**Contracting and outsourcing work:** Another major trend has been for larger organisations to outsource tasks such as maintenance as well as component parts of the core business.

**Growth of the service sector:** A growing proportion of workers is employed in the service sector. Many of these jobs involve contact with members of the public - clients, customers, patients and so forth that can lead to risks of stress and violence at work. The necessity to carry out additional administrative tasks has increased in professions such as health-care work and teaching and there has been an increase in delivering care in the community in the health and social services so more staff work away from a fixed workplace.

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<sup>126</sup> <http://agency.osha.eu.int/publications/forum/5/en/index.htm>

#### 4.1.2 Changes in employment forms, working time and work intensity

The typical traditional job and employment form - working for a single employer, for a wage or salary and with an expectation of long-term employment - became the predominant means of organising industrial work in the nineteenth century. More recently, non-standard employment and work has been gradually increasing and will become an even more significant feature of the future employment and work landscape.

"Non-standard employment and work" is a catch-word for all forms of employment and work that deviate in some respect from the "standard" model of permanent, full time and waged or salaried employment. Concrete non-standard or "alternative" forms of work and employment are e.g. (i) part-time jobs (the is the most frequent and prevalent non-standard form), (ii) self employment, (iii) occasional/casual work, (iv) irregular and/or on-call work, (v) jobs with seasonal, temporary or fixed term contracts, (vi) work in shadow and "black" economy, (vii) homework, (viii) voluntary work, and (viii) different forms of civic engagement.

Non-standard jobs are widely perceived to be low quality - offering low pay, little security, and few opportunities for training and career development. However, this generalisation does not hold for all non-standard work and many non-standard workers enjoy good incomes, job-stability, adequate protections from health and safety risks and opportunities for training and development. Other non-standard workers may be in "precarious" jobs. Precarious jobs offer relatively low wages, provide little job security, are associated with greater exposure to health and safety risks, offer little or no control over workplace conditions or hours of work and provide limited opportunity for training and skill development.

Temporary work has increased rapidly in almost all European countries, as part of the general movement towards increased flexibility in employment. At a European level, working conditions of 'precarious' workers (workers with fixed-term contracts or temporary jobs) are generally worse than those of permanent workers, in particular the physical work environment and conditions of employment. For example, this group of workers is more exposed to physical hazards such as working in painful or tiring positions, high noise levels and work involving repetitive tasks and movements. They generally have less opportunity to develop skills at work and have less access to training. They have less autonomy over their work and time and less opportunity to participate in workplace decision.

On the other hand, workers with permanent contracts are more likely to be exposed to high-speed work and have more stress and mental health problems. Some workers with self-employed status may not have real control over the work or the health and safety elements of the work they are contracted to do. Where a self-employed worker is clearly under the direct control of the employer who contracts them, then some Member States have opted to treat them as employees of the parent company for purposes of the application of health and safety laws.

Working time has changed, for example, where employers have introduced more flexible working patterns to provide services or use plant during more hours of the day. Many organisations are faced with the challenge of planning a streamlined workforce around tight schedules and peaks in production or services.

An important factor, related to the increase in the diversity of working time patterns, is the increase of work intensity in all countries in Europe. Some effects of this increased work intensity are the extended practice of weekend work, the increase of working time schedules with irregular and less predictable working hours, and the use of both very limited hours (involuntary part-time work) and excessively long working hours (involuntary overtime). Developments towards more work intensity and time unpredictability do not seem to have gone hand in hand with an increase in workers' autonomy over work.

### 4.1.3 Changes in the work organisation

According to the Agency report the most important developments in work organisation concern teamwork, (ii) decentralisation of supportive tasks, such as quality and maintenance; (iii) job enlargement, job rotation and interdepartmental job rotation; (iv) knowledge management; (v) teleworking, and (vi) virtual networks, as well as (vii) new working time patterns. Some of these changes have been introduced from a management efficiency perspective and others with the aim to improve work organisation and quality of working life for the employees. Some changes have led to increased intensity of work with the aim of achieving higher productivity. In such cases job demands on workers have risen. Some of the changes have also reduced the possibilities for workers to control their working situations. Perceived lack of control over work is a well-documented factor that contributes to the experience of work-related stress. Workloads have become increasingly complex and diverse but often this is accompanied by a diminishing amount of time available for training.

### 4.1.4 Changes in the workforce composition

**Older workforce:** The first trend is the ageing of the workforce. In all European countries, the average age of the workforce is rising and the percentage of workers over 50 will continue to grow. By 2005, more employees will be in their fifties than in their thirties. The 'deficit model' of the older person and the associated generalisation regarding the supposed gradual loss of all occupation-relevant skills as people grow older has been based on findings that relate to particular human capacities, especially individual sensory functions and on the degeneration of physical powers. However, there are no cogent grounds for generalising these observations. Nevertheless, older workers often do need specific support to cope with the rising job demands because of new organisational practices and new technologies and need to adapt to ever-changing job demands. Workers need more time to acquire and learn new knowledge, time which is not always made available. Ongoing work training programmes need to be adapted to cater for older workers.

**More women in paid employment:** A second trend is the increasing percentage of women in the workforce. In most countries, participation rates of women have risen quite steadily. However, it is uncertain to what extent jobs have been changed on the basis of this. Traditional differences remain in the types of jobs carried out by men and women, the types of employment contracts and in career development opportunities. Many women work in the caring services where there are high risks of stress and violence. More women than men work in jobs where the demands are high but there is little individual control over the work. The 'world of work' is still often based on the needs of the male worker and has not been adapted to the needs of female workers. For example, many tools and equipment have been designed for male rather than female workers and traditional working hours may be difficult for women with family responsibilities. Increasingly, researchers and commentators suggest that a 'gender-sensitive approach' is needed at work to ensure that risks to women are properly recognised and managed.

**Immigration:** A third trend is immigration of new groups into European Member States. In some Member States the trend in immigration is now towards the entry of highly skilled and educated workers. To obtain the full benefit from these new workers, work organisations may have to adapt to accommodate people from different cultural backgrounds and to ensure that communication is effective within the workplace. In contrast there are still many other immigrant workers concentrated in unskilled jobs, characterised by poor working conditions.

## 4.2 Disability and access to employment and work

Disability has traditionally been a barrier to employment and work for many persons. In the digital age there is much less reason for this. Rigid hours and geographical locations are giving way to flexible time and geographical location. Also, the working skills themselves are less motor and more brain intensive. This opens the door to employment opportunities for many groups of disabled people who have been traditionally denied employment on grounds of accessibility and inability to perform the

required tasks. The obstacles hindering various population groups in access to employment and work are the same as the obstacles hindering them in full participation as members of society and as consumers and clients of online services. Various approaches to classifying and quantifying different types of disability have been reviewed in Section 3.1<sup>127</sup>. The indicative range of accessibility issues and "functional challenges" listed in the Table 3.1 of this report are "vision", "hearing", "speech", "physical impairments/dexterity" and "cognition". In connection with access to employment and work, this list can be extended to include physical mobility problems and also literacy and "numeracy" (basic) skill deficits.

#### 4.2.1 Vision impairments

Categories here include low/partial vision, no vision, colour discrimination difficulties and light sensitivity. Persons/employees with partial vision may benefit from magnification (e.g. in the form of an external screen magnifier, a large high-resolution monitor, software that enlarges text, etc.). For persons/employees with no vision, the possible accommodations and provisions include support by a human reader, speech output or different forms of Braille display attached to the computer. For accessing the Internet, persons with no vision can use text based web browsers with screen reading software. More general use of speech output for display-based interfaces (computers, mobile phones, PDAs, photocopiers and so on) is very important for people with low vision. People with difficulty distinguishing colours can benefit from labelling of items, use of X-Chrome lenses or coloured Mylar sheets. People with sensitivity to light can be helped by changing the lighting and using task-oriented or broad-spectrum lighting or even lower wattage. In some cases, installing flicker-free lighting, moving the workstation to another area, and placing blinds on the windows may be helpful.

#### 4.2.2 Hearing impairments

Depending on the severity of the impairment, different degrees of impairment need to be considered, ranging from varying levels of hard-of-hearing to complete deafness. For workers who are hard-of-hearing compatible telephones and accommodations in connection with background noise at their workplaces are probably of greatest relevance. Other possibilities are offered by assistive listening devices to amplify conversation. For deaf persons, conversation can be typed on computer screens that may be quicker and more easily understood than hand-written notes. Text communications (e.g. E-mail and Internet chat) makes real time communication between individuals from different locations possible, although dedicated text telephones may also be needed. Access to sign language can also be important and in some countries videotelephone-based access to sign language interpreters from the workplace is provided.

#### 4.2.3 Speech impairments

Because of the importance of communication, people with speech impairments often develop defensive reactions as a response. This can lead to a combination of physical and psychological problems. Problems may arise in relation to language, articulation, voice and fluency. Screen review utilities make on-screen information available as synthesized speech and pairs the speech with a visual representation of a word, for example, highlighting a word as it is spoken. Other relevant assistive tools are e.g. Object-based communication displays and Talking switches

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<sup>127</sup> See, for example, Gill, J. *Access-Ability: Making technology more useable by people with disabilities*. [www.tiresias.org/guidelines/access-ability/](http://www.tiresias.org/guidelines/access-ability/) for a useful mapping of different disabilities to accessibility challenges and potential solutions

#### 4.2.4 Physical impairments

A possible classification scheme in relation to physical impairments would include gross motor limitations (difficulty standing, sitting, walking, climbing, lifting, moving or transferring objects, and accessing workstations), fine motor limitations (difficulty gripping or pinching objects, using a keyboard or mouse, writing, driving or operating vehicles) and dexterity/clumsiness. Potential workplace solutions will vary according to the nature of the disability and the type of work. For ICT-based work, there are many different accessibility solutions to facilitate interaction, including modifications to keyboards, adjustable keyboard settings, alternative input devices and so on.

#### 4.2.5 Cognitive impairments

The term "cognitive disabilities" refers to disabilities that affect a person's mental processes, including awareness, memory, ability to learn, ability to process information, ability to communicate, and ability to make decisions. Among the most common types of cognitive disabilities, "learning disabilities" refer to a disorder in one or more of the basic mental processes involved in understanding or using spoken or written language, that impacts an individual's ability to listen, think, speak, read, write, spell and do mathematical calculations. In general, the possibility to access information through multiple media can be helpful, as well as usage of clear and simple language, although accommodations for any person/employee with cognitive disability may also need to be selected on a case-by-case basis.

#### 4.2.6 Literacy and "numeracy" skills

Basic skills (including literacy, language, "numeracy" and computer skills) provide the foundation for employability and further learning. Traditionally, literacy has referred to the ability to read and write in a given language. In a modern context, literacy means reading and writing at a level that is adequate for written communication and generally at a level that enables one to successfully function in a society. "Numeracy" is a proficiency that involves confidence and competence with numbers and measurement. It requires an understanding of the number system, a repertoire of computational skills and an inclination and ability to solve number problems in a variety of contexts. "Numeracy" also demands practical understanding of the ways in which information is gathered by counting and measuring, and is presented in graphs, diagrams, charts and tables.

Again, the possibility to access information through multiple media can be helpful, although accommodations will often need to be selected on a case-by-case basis. In addition, more general approaches aiming to ensure that information content and presentation is as clear and simple as possible can be helpful.

#### 4.2.7 Mobility impairments and other restrictions

Many of the difficulties faced by individuals who are disadvantaged in the workplace are linked to the imperative to "go to work". That one leaves the home to go to work became an accepted norm in the industrial age and travelling long distances is commonplace in an age of mass transit systems and personal motorised transport. Generally we accept the disadvantages the routine travel to work brings, in return for the economic benefits. But there are many groups in society whose mobility is restricted, typically through (i) temporary illness or disablement, (ii) permanent disability or long-term illness, (iii) childcare responsibility, (iv) caring for sick/disabled relatives, (v) not owning a vehicle/not being able to drive in an area where there is a "public transport vacuum", etc. Amongst those classed as seeking work, men are in the majority in the first two categories, while women dominate the latter three. There is an increasing public policy focus on such groups within the context of analysing - and seeking remedies for - social exclusion. The culture of commuting is a major contributor to social exclusion in these instances.

The use of ICT offers a degree of flexibility of location that can help to overcome mobility restrictions. The essence of the advantage is that the rigid connection between work and a physical workplace is severed: modern ICT allows access to work even where physical access to the workplace remains

problematic. Work may be undertaken at home, or closer to home. The key point is that ICT may be used as a vehicle for equalising opportunity. This has knock-on implications for HR practices, particularly in relation to gender and disability discrimination practices. Case law is beginning to develop in the US in this regard.

## 4.3 Target groups and priority issues

ICTs can present special challenges, especially to particular groups. For example, people with disabilities, low-skilled workers, older workers and women returning to the labour market can have particular problems in a labour market increasingly dominated by ICTs and higher skills. Their concerns can be positively addressed by task splitting, designing new job profiles, developing new skills assessment tools and learning plans and guidance, providing coaching and mentoring, as well as more traditional forms of up-skilling. New and flexible forms of employment and production can help to reconcile work and private life whilst improving productivity. But they need to be designed, adapted and targeted properly. Traditional working hours and practices can be exclusive and affect the ability to recruit people. Health and childcare services must be adapted, as flexibility increases the demand for social and family support services. This flexibility includes, for example, childcare and support for other dependants, health and care services so they can be accessed out of working hours.

### 4.3.1 Target groups of efforts to improve access to employment and work

#### 4.3.1.1 People with disabilities

Disability has traditionally been a barrier to employment for many persons. Many people with disabilities are excluded from the labour market. High general unemployment makes it even more difficult for a disabled person to find a job. ICT makes it possible for new, more flexible ways of working. Rigid hours and geographical locations are giving way to flexible time and geographical location. Also the working skills themselves are less motor and more brain intensive. This opens the door to employment opportunities for many groups of disabled people who have been traditionally denied employment on grounds of accessibility and inability to perform the required tasks.

As part of their manifesto on employment issues, the European Disabilities Forum (EDF) believes that "information technology as a tool for employing new and hitherto unemployed groups of disabled people is an important aspect of the Information Society". Equally, the group Information Society DisAbilities Challenge (ISDAC) has stated that more than one in ten citizens of the European Union are disabled in some way that affects their ability to fully participate in society. As many as one in three people with disabilities could make a significantly increased contribution to society and the economy if they became empowered through the use of Information Society tools.

The European Union is strongly committed to improving the position of people with disabilities who, as a group, presently face numerous barriers throughout the 15 Member States, for example in gaining access to employment and to full social inclusion. On average, the participation rate of severely disabled people in the EU workforce is under 35%, compared to 70% for workers without disabilities. After the Lisbon Economic Council, a target was agreed to raise the employment rate for people with disabilities to that of those without disabilities by 2010.<sup>128</sup> The employment Equality Directive<sup>129</sup> contains a number of specific provisions on disability discrimination. Notably, the prohibition of discrimination is complemented by a duty on employers to provide reasonable accommodation for

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<sup>128</sup> Van Lin, M. u.a. (2002): Active Labour Market Programmes for people with disabilities. P. 5

<sup>129</sup> European Commission (2003): Equality, diversity and enlargement.

disabled persons where this would enable them to participate in employment.<sup>130</sup> However this duty will not apply where this would impose a "disproportionate burden" on the employer.

#### 4.3.1.2 Women

The Information Society provides a real opportunity to promote gender equality and reshape working and everyday life. However, greater efforts need to be made to ensure that the potential benefits are realised and to avoid the risk of reinforcing existing types of segregation. At present, as a relatively low number of women pursue studies in science and technology, women have less chances to reap the employment benefits of new technologies (e.g. in terms of high-skilled jobs in the ICT industries, where women are underrepresented). This requires further efforts to promote familiarisation with ICT in schools in ways that are not gender biased and to boost skills levels, while also promoting flexibility in working time and security for workers. A continued increase in the participation of women in the labour market is crucial for achieving the Lisbon targets on employment, particularly by encouraging older women to stay longer in the labour market and by facilitating participation for mothers with small children.<sup>131</sup>

A very visible impact of ICT on the labour market is the increased demand for ICT specialists. The consequence of convergence is creating the need for persons with new skills that cross over the barriers between traditional disciplines (computer scientists, information documentation specialists etc.). There is a wide and growing "skills gap" because the strong demand for 3<sup>rd</sup> level/university ICT specialists currently outstrips the supply of suitably qualified persons. New initiatives like additional third level capacity are needed in some Member States. Currently, far more men than woman are attracted to ICT professions. There is a need to encourage woman to enter these occupations. Universities need to forge new partnerships with industry to ensure that courses deliver the skills needed in industry. An important initiative in this area involving some of the leading ICT players in Europe is aimed at a better (generic) description of skill requirements of the ICT industry.

#### 4.3.1.3 Migrants

Given ageing and related skills gaps, fulfilling the Lisbon objectives by 2010 and beyond will notably depend on the shape and dynamics of immigration in the EU. Economic immigration could be relevant for overcoming short run labour shortages in several sectors. In the long run, immigration may have an impact on the way in which the EU copes with ageing and demographic imbalances and their impact employment and economic growth. The EU must primarily mobilise its current human resources, including migrant workers currently residing legally in the EU. The contribution of immigrants to employment and economic growth will depend on their integration in the labour market and their successful inclusion into society. The unemployment gap between EU nationals and non-EU nationals must be reduced. Employment-oriented measures should be related to comprehensive integration strategies, with due consideration given to the impact of migration on countries of origin. Examples include promoting full participation and employment for second generation migrants (who often experience serious social and employment problems), addressing the specific needs of immigrant woman, and fighting illegal immigration and undeclared work.

Examples of important ICT themes related to the employment and work of migrants are (i) the employment potential of multilingual migrant workers in teleworking, (ii) ICT as facilitator and assistant in social integration, (iii) access of migrants to technical infrastructure in public resource centres, (iv) special provisions for digital literacy of migrants, (v) ICT potentials for maintenance of contacts with the country of origin, as well as (vi) migrants and transfer of work-related skills and qualifications.

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<sup>130</sup> Council Directive 2000/78/EC of 27 Nov. 2000; establishing a general framework for equal treatment in employment and occupation; Art. 5

<sup>131</sup> European Commission (2003): The future of the European Employment Strategy (EES). A strategy for full employment and better jobs for all

#### 4.3.1.4 Low-skilled workers<sup>132</sup>

Across all industries, the complexity of jobs is increasing. Especially in firms that make large investments in research and development, ICT or other technological and organizational developments, there is a growth in relative skill demand. Less skilled workers often do not possess adequate skills to operate the new technologies and processes. Several authors argue that it is not only the introduction of information technology but also organizational change that induces 'skill-biased technological change'. Actually, they assume that it is the *combination* of related innovations in information technology, workplace reorganization, and the introduction of new products and services that is responsible for the importance of upgrading the skills of the labour force. This also means that the extent to which the complexity of jobs increases is much larger than the upgrading of the skills related to technology as such.

The need for (continuous) upgrading of the skill level in most occupational fields threatens the labour market position of low-skilled workers who are crowded out of their traditional occupational domains. This means that low-skilled workers are either locked into poorly paid elementary jobs with flexible contracts that further weaken their labour market position or are crowded out of employment entirely. A similar argument applies to female employees who have spent considerable periods outside the labour market to care for their children and to older employees who have outdated skills.

Many policy makers and experts argue that low-skilled workers can also benefit from the changes in the demand for skills if they receive additional training. From this perspective, the 2003 Employment Guidelines of the European Commission, derived from the Lisbon agenda of the European Council, are targeted on a substantial increase in the adaptability of workers to the changing demands in the labour market and improvements in access to training, in particular for low-skilled workers (European Commission, 2003a).

#### 4.3.1.5 The unemployed

The relationship between ICT and employment is complex and ambivalent. On the one hand, the ICT induced organisational changes and productivity increases can be seen as an important cause of unemployment; on the other hand, improvement of ICT skills has proven to be a successful and efficient way of bringing the unemployed back to work and employment. In our project we will concentrate on the second causality and explore the positive potentials of ICT for labour market reintegration of the unemployed.

#### 4.3.1.6 Carers

Carers are defined as people who are looking after, or providing help for a sick, disabled or elderly person living in their own or another household. Carers are often partners or family members, but they can also be friends or neighbours. Care can range from helping with the shopping on a regular basis to providing continuous care. Caring for someone can be physically exhausting and emotionally stressful. Carers often feel isolated, unsupported or alone. Working as a carer is unpaid and brings no status or contract of employment. Many people give up their paid job or reduce their hours to care for someone; they miss out on job opportunities and face the prospect of financial hardship because they have no chance to build up savings or a pension. Carers play a vital role in the community and almost all carers need some help and support to enable them to continue to care. One of the most important things they need is help to stay in work and in touch with the working world. The key word for this help is "reconciliation", meaning compatibility of employment/work with their care duties and activities. ICT can make an important contribution to this reconciliation.

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<sup>132</sup> Quoted from De Grip A. & Zwick T., The employability of low-skilled workers in the knowledge economy.  
[http://rlab.lse.ac.uk/lower/final\\_papers/grip.pdf](http://rlab.lse.ac.uk/lower/final_papers/grip.pdf)

#### 4.3.1.7 Older workers and elderly

"Demographic change will continue to drastically alter the structure of the workforce in coming decades across Europe. This will lead to a diminishing supply of labour, which could have an impact on productivity and competitiveness. A greater understanding is needed of how the labour market and the working lives of people will need to adapt to an "ageing workforce" that also has to cope with technological changes and an increasingly global economy. During the 1990s the trend was for older workers to be excluded from the labour market. Increasingly there will be a need to reverse this trend in order to cope with these demographic changes. Education and training systems are going to need to adjust to these changes in order to ensure that all workers, including older workers, have the necessary competence to meet these new demands, perhaps, on their longer working lives - thus the growing importance of lifelong learning"<sup>133</sup>.

New technologies like computers alter skill requirements. A survey among the Finnish work force in 2000 found that, in all age groups, the majority of workers use computer applications or equipment connected to computers daily in Finland. The study revealed also a clear relationship between age and mastery and learning of the new computer systems. Older workers experienced more often difficulties with the computer applications than the younger ones. The age-related difference was higher among female workers.

A study on the implementation of ICT in a call centre revealed that, as a result of new technology in customer service tasks, evaluation of the feeling of being productive at work, the opportunities to use ones abilities, level of interesting work and job appreciation was most positive in the oldest age group. In contrast to these positive evaluations, the older workers felt more often than the others that the work pace, things to be remembered, rules to be taken into consideration, difficulty of tasks, and monitoring of their work had increased.

Regarding problems with the system's usability, the oldest group had experienced more problems than the youngest group with the following issues: working out how to use the system, understanding how the information on the screen relates to what the employee is doing, finding the information wanted, information difficult to read, too many colours, an inflexible help facility, losing track of where you are in the system, system response times are too quick, information does not stay on the screen long enough, working out how to correct errors and having to spend too much time correcting errors.

There is a widespread belief that older people have a more negative attitude toward automation than younger people. Some studies have revealed differences between age groups in the ways of learning data systems. However, stereotyped attitudes dominate the discussion about ageing people and computers. When new computer applications are implemented, the right timing of the computer training and more time to get practice in real daily work situations are of crucial importance. Information overload is a risk especially under poor ergonomic conditions. With increasing age, elimination of the impacts of distracting factors in the environment, typically noise and poor lighting conditions, is more difficult. These hamper concentration ability and direction of attention, which in turn may lead to errors in memory functions, e.g. material to be learned is not processed in the short-term memory. The most problematic situation is among the less-educated elderly workers in routine tasks. They have had fewer possibilities for positive learning experiences and career development. Age-conscious personnel policy means that company-specific measures should be planned for all age groups"<sup>134</sup>.

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<sup>133</sup> Quoted from Friedberg Leora, The impact of Technological Change on Older Workers: Evidence from Data on Computer Use, NBER Working paper No. w8297, May 2001

<sup>134</sup> See the above Quoted study from Huuhtanen and also Finnish studies by Piirainen et al as well as See also <http://www.esf.ie/publications/2004/Ageing%20&%20Labour%20Markets.PDF>

## 4.3.2 Relevant questions and priority issues

### 4.3.2.1 The implementation of EU-Employment Directive and national legislation on ICT- and risk-group related duties of firms and enterprises

In the employment field, there are some aspects of European legislation that have the potential to become highly relevant with regard to improving the accessibility of working environments and ICT for at risk groups. They create a general duty for public and private employers to make their facilities and information technologies accessible to employees who have disabilities, by utilising principles of design for all and/or reasonable accommodation.

**The Council Directive 2000/78/EC of 27 Nov. 2000** establishes a general framework for equal treatment in employment and occupation<sup>135</sup>. It lays down a general framework for combating discrimination, e.g. on the grounds of disability. The directive includes also articles about reasonable accommodation for disabled persons and positive action. Member States should have implemented the Directive by December 2003.

The directive outlaws direct discrimination as well as **indirect discrimination**. The latter is defined as an apparently neutral provision or practice which puts people with disabilities at a particular disadvantage compared with other persons, unless that provision or practice is objectively justified. Similarly, the directive makes employers responsible for providing **'reasonable accommodation'** for disabled people to enable them to access, participate in and advance in employment. In order to make a 'reasonable accommodation', employers may need to respond to the specific functional abilities of a disabled person by, for example, providing or modifying equipment or facilities, or by changing practices or procedures. One kind of reasonable accommodation involves the **provision of assistive technologies** and/or equipment based on "Design for All" (DfA) principles to the worker who needs it. Therefore, "reasonable accommodation" is an important legal concept that could become highly relevant with regard to improving the accessibility of the working environment and ICT. It creates a general duty for employers to make their facilities accessible to employees who have disabilities.

Most European countries have **national laws and regulations** that aim to ensure that costs of **workplace adaptations** for people with disabilities can be partially, and sometimes fully financed. In general, little use is made of these possibilities. The main reasons are ignorance of what is available, the administrative burden or simply underestimation of the real capabilities of disabled people to perform jobs in regular enterprises. Most employers and co-workers are not aware of the potential for disabled persons to work on their premises. Awareness of the very real possibilities for integrating disabled persons and adapting regular workplaces is very poor. Sometimes a disabled worker may be reluctant to ask for alterations from a fear that the request will have a negative influence on the final recruitment decision.

Yet, in many European countries significant efforts are being made to optimise workplace adaptations for people with disabilities. Different methods are being established and used for assessing the person and the workplace. Information campaigns are being organised, mostly at regional level. Many projects get financial support from various authorities. Specific databases on assessment of needs and possible solutions exist. But, what is not organised is sharing of information, knowledge, and experience. Databases are often not accessible for practical use. They mostly only exist in the local language.

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<sup>135</sup> Council Directive 2000/78/EC of 27 Nov. 2000; establishing a general framework for equal treatment in employment and occupation

#### 4.3.2.2 The national provision and delivery systems for employment and work-related assistive technologies

Assistive Technology (AT) refers to products, devices or equipment that are used to maintain, increase or improve the functional capabilities of people with disabilities. They play an increasingly central role in equalising opportunities for people with disabilities in all aspects of life, since these technologies can contribute to providing compensation for functional limitations and help tackle barriers in all types of environment.

Already today it is estimated that more than 20,000 assistive technologies related products represent a market volume of over 30 billion Euro. Furthermore, it is anticipated that the ageing of society will lead to an increase of people with registered disability from the current 11% to 17% by 2020, and thus a greater demand for technologies, which allow people to participate more fully in society and enjoy a greater quality of life. ATs therefore have a major role to play in the field of disability to complement policies aimed at ensuring the rights of people with disabilities and equality of opportunities as well as the support provided by family, friends and society as a whole.

In this context DG Employment and Social Affairs launched a study "Access to Assistive Technology in the European Union", which was completed in June 2003 and published early in 2004<sup>136</sup>. Overall, the study stresses the lack of market transparency and efficiency partly due to the **complexity of both the regulatory environment and the delivery systems** of ATs. While the offer of AT products is extremely diverse in the EU, availability and accessibility to information on the solutions available is very problematic at all levels. Most producers are highly specialised micro-enterprises (with the exception of some global players such as the producers of hearing aids whose number is however decreasing) and their resources and capacity to invest in product and market development are restricted. Finally, the **complexity and the diversity of the health care and social welfare systems** under which the delivery systems are covered appear to have a negative impact on the availability of ATs. This means that there are certainly issues to be addressed by public authorities and intermediary organisations like social security, health and care insurance, that organise and regulate the provision of assistive devices.

In order to ensure adequate and transparent information (e.g. in form of "one-stop-shops") the Commission is now considering - on a European level - the possibility of initiating dialogue with the relevant stakeholders in order to increase market transparency and facilitate the exchange of good practices. The eInclusion project can make a valuable contribution to the establishment of such dialogue. Further information on the kind of contribution that could be made and the way that it can be achieved can be found in section 4.5 of this Chapter.

#### 4.3.2.3 National ICT-skills oriented policies for the elderly and disabled workers

As already mentioned in section 4.3.1.5 on the unemployed, ICT-skills oriented policies are frequently implemented with an explicit aim to maintain and improve access of various at-risk groups to employment and work. Pertinent national policies are implemented at national, regional and local level and consist of a large variety of measures and programmes. A substantial part of them are organised by the employers in the form of internal or external (further) education, others are offered and carried out on an individual base by private providers and by the state. Up to now, European research and exchange of experience was mainly organised concerning good and best practice in connection with such measures and programmes.

For purposes of the eInclusion project it would be useful to achieve a more complete picture and also to gather **information on problems and failures, as well as on effects and efficiency of implemented measures and programmes**. The envisaged exchange of experience could focus on

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<sup>136</sup> [http://europa.eu.int/comm/employment\\_social/publications/2004/cev503003\\_en.pdf](http://europa.eu.int/comm/employment_social/publications/2004/cev503003_en.pdf)

employment/work related ICT-skills and concentrate on the two specific at-risk groups of the disabled persons and older workers. Further information can be found in section 4.5 of this Chapter.

#### 4.3.2.4 The contribution of ICT to adequate and flexible employment and to work-life balance of older and disabled workers

Modern information and communication technologies play an important role as tools contributing to work-life balance and to the reconciliation of employment/work and other life spheres and activities. Up to now, European research and exchange of experience focused mainly on reconciliation of work and care for children and older persons. Correspondingly, most research projects dealt with families, women and single parents as providers of such care.

In the eInclusion project it may be of value to initialize the discussion and exchange of information and experience on another life-balance and reconciliation perspective. **This might focus on disabled people and older people, two groups that normally are considered as recipients of care and support only, and investigate the possible contribution of ICT to the reconciliation of work/employment and other life spheres and activities of members of these two population groups.** Activities and research questions which might be of particular importance are **telework, voluntary work and civic engagement, and different forms of part-time work as well as flexible employment, work organisation and retirement schemes.** Again further discussion about the possible focus of this topic can be found in section 4.5 of this Chapter.

### 4.4 Possible contribution of ICT and relevant policy activities

In connection with access of at-risk group members to employment and work, new information and communication technologies can make following contributions:

- ICT as **"assistant" and compensator of functional limitations and facilitator of employability.** Can be further structured depending on the particular functional limitations in question (e.g. physical mobility, motility, orientation/cognitive, health/illness, mental, sensory (visual, hearing, ...), literacy, "numeracy").
- ICT as a **tool for increasing the individual flexibility and adaptability** of workers/employees vis à vis changing demands on labour market and changing needs of the employers
- ICT as a **tool for information** about (i) possibilities, offers and supportive services for the groups at risks, (ii) their resources, skills and potentials and awareness raising in the sense of (iii) improving the attitudes of "normal" employees towards the members of at risk groups and (iv) increasing the readiness of firms and organisation to employ members of at-risk groups
- ICT as a **tool facilitating the empowerment, (self-)organisational capacities and the articulation of interests** as well as the representation of the at-risk groups in the political opinion forming and decision making process
- ICT as a **tool for improvement of work quality and generator of jobs** suitable for employment of members of groups with special needs

The focus of the eInclusion project will lie on the first three contributions of this list.

#### 4.4.1 General employment policy and EU-Employment Strategy 2003-2006

The issue of social inclusion, and particularly the e-inclusion aspect, is addressed by the EU's employment policies. The Communication of the European Commission on "Strategies for jobs in the information society" [COM (2000) 048] addressed the need to combat a growing "digital divide" between those who do and do not have access to the knowledge based society. A report drawn up on the basis of this Communication stresses the "job potential of the information society" due to opportunities created by the new information and communication technologies, but also points out that the "European information society is still largely exclusive", and raises the issue of "information society skills gaps". The report asks for an integral, co-ordinated strategy for information society challenges in four domains: learning, working, public services and the enterprise. Several of the objectives and actions proposed directly relate to social inclusion, for instance the goal to "promote employment of

people with disabilities in the information society". In this context, the report quotes the EDF (European Disabilities Forum) and the IsdAC (Information Society disAbilities Challenge) who believe that information technology has a high potential for inclusion of people with disabilities. The annual EU Employment Guidelines have been adapted to integrate specific social inclusion targets for Member States and Social Partners in the area of learning (schools, teachers), the labour force (skills, teleworking, work organisation) and equality (women in technology).

The recently published EU-Employment Strategy (EES) 2003-2006 is based around three overarching objectives of **full employment, quality and productivity in work and strengthened social cohesion and inclusion**. The specific guidelines of the EES are titled as follows:

- Prevention and activation
- Entrepreneurship
- Addressing change and promote adaptability
- Develop human capital
- Increase labour supply and promote active ageing
- Gender equality
- The integration of the disadvantaged
- Making work pay
- Transforming undeclared work
- Addressing regional disparities.

The success of the employment policy depends on the quality of implementation. The 2003 NAPs (National Action Plans) are generally well developed baseline documents but only rarely constitute the central instrument for discussing and defining national employment priorities. In particular, the involvement of parliamentary bodies needs to be raised in profile. Social Partners as well as regional and local authorities are seen as important partners for national governments but their involvement in the NAPs could be improved.

Member States are increasingly attempting to report on budgetary priorities in connection with the NAPs, but the information remains patchy. Information on the implementation of the NAP and on delivery services concentrates on the role of the PES (Public Employment Services), and little consideration is given to other delivery services such as education and training, and social services.

#### 4.4.2 Specific approaches and strategies regarding employment of disabled persons<sup>137</sup>

##### 4.4.2.1 Active labour market programmes

- Intensive counselling and job-search assistance
- Vocational rehabilitation
- Subsidised employment
- Supported employment
- Sheltered employment
- Incentives for starting enterprises by disabled people
- Combined measures.

But in most of the countries little or nothing is known about the employment effects of the application of the measures reported. Evidence based conclusions on employment effects are mostly lacking,

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<sup>137</sup> Van Lin, M. u.a. (2002): Active Labour Market Programmes for people with disabilities. P. 15f

due to poor programme participation statistics, lack of monitoring and follow up studies, as well as general weakness in evaluation methods.<sup>138</sup>

#### 4.4.2.2 Legislative policies

Legislative policies provide general provisions that should stimulate (or "prevent") certain behaviour of employers, as well as of people with disabilities themselves.

- Employment quota scheme
- Anti-discrimination law
- Job protection rights
- Registration

#### 4.4.2.3 General activities from the Public Employment Services (PES)

Traditionally, the Public Employment service (PES) has played an important role in implementing employment strategies. However, in many countries, the PES is no longer the sole actor responsible for initiating and providing employment and training measures for people with disabilities.

#### 4.4.2.4 Persuasion policies

Persuasion policies - like information and public awareness campaigns to reduce prejudices, emphasize qualities of people with disabilities, present models of good practice, etc. - are used as a "softer" approach to influence employers and people with disabilities towards certain employment behaviour. Compared to Active Labour Market Policies, the effects of persuasion policies is in many cases intangible.

### 4.4.3 Employment and work related proposals from the ESDIS High Level Group

As already mentioned earlier in this document, the ESDIS group has developed policy- related proposals on how to harness ICT adoption and diffusion in order to support societal cohesiveness. These proposals have also relevance for the field of employment and work and can be grouped into four different categories:

#### 4.4.3.1 Realising ICT job opportunities for disadvantaged people

Social Partners, when implementing the Employment Guidelines which call on them to provide every worker with the opportunity to achieve ICT literacy by 2003, should ensure that low income and lower-educated workers are not left behind.

Member States, in partnership with private actors, should provide incentives for the unemployed to get a recognised certificate of basic ICT skills, like the European Computer Driving Licence (ECDL).

Interested unemployed or workers at risk of exclusion should be appropriately encouraged to take up conversion courses in ICT or e-business expert skills, involving partnerships with the relevant industries.

Telework should be facilitated for disadvantaged people by specific incentives, and generally, by further progress in telework framework agreements, investment in advanced communication infrastructures and the provision of broadband links to "e-work" facilities.

On-line recruitment sites matching job markets to workers with special needs, e.g. for those with disabilities, should be promoted, by the public employment services and other services, and by support for adequate private initiatives.

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<sup>138</sup> Van Lin, M. u.a. (2002): Active Labour Market Programmes for people with disabilities. P. 47f

#### 4.4.3.2 Removing barriers by raising awareness of the ICT opportunities

To attract technology shy or resistant people, awareness campaigns should be expanded in communities at risk of digital exclusion, communicating the specific benefits for disadvantaged people, and using channels that are appropriate for their way of life.

Awareness measures should be designed as a first step in an integrated eInclusion strategy, followed-up by incentives for access and training.

ICT producers, information providers and political actors should be sensitised to the special needs of disadvantaged people in terms of ICT equipment and on-line content and in terms of opportunities for removing barriers for work.

#### 4.4.3.3 Removing barriers by making access to ICT available and affordable

Public authorities and public-private partnerships should set up user-friendly Public Internet Access Points (PIAP) in all local communities as requested by eEurope, while prioritising locations which are favourable for disadvantaged people, offering on-site training facilities, and being accessible for persons with disabilities. A register of PIAP locations should be established in every Member State to facilitate the take-up.

Targeted financial incentives that encourage the individual purchase or use of ICT by disadvantaged people should be further developed, building on successful best practices.

ICT infrastructures for remote or dispersed localities, particularly broadband access, should be developed as an important element of eInclusion.

As advanced mobile communications and digital TV increasingly provide new opportunities for eInclusion, appropriate measures should be considered to accelerate these effects.

#### 4.4.3.4 Promoting digital literacy for disadvantaged people

Digital literacy initiatives for disadvantaged people should be expanded, focusing on the basic usage of the Internet and of public online services, and should be carried out in an accustomed environment and by trainers that understand specific learning needs.

Networks of eLearning centres should be forged to provide disadvantaged communities with access to learning tools which they could not afford on their own.

#### 4.4.3.5 eAccessibility: tackling technical barriers for people with disabilities.

Efforts to enhance the accessibility of ICT equipment and web-content for people with disabilities should be speeded-up by the implementation of the eEurope actions concerning the adoption of "Web Accessibility Initiative" (WAI) Guidelines, the conformity of legislation with eAccessibility principles, the networking of "Design for all" competencies and related curricula, and the publication of Design-for-all Standards.

The eAccessibility Expert Group should continue to monitor these actions and draw-up benchmarks on the adoption of the WAI Guidelines in the Member States.

#### 4.4.3.6 Creating and strengthening awareness of the intrinsic potential for disabled people to perform tasks in regular enterprises

Within the EU progress is being made in integrating disabled workers in enterprises and in improving their working conditions. Creating further awareness of this potential is very important and it is therefore recommended that:

- information campaigns be launched at national and at EU level on support for integrating people with disabilities into enterprises;
- co-operation in sharing methods and information between national centres working on workplace adaptations be improved;

- activities to improve access to public transportation be promoted;
- the financial support mechanisms for workplace adaptations at national level be improved, made transparent and that the procedural burdens be reduced;
- studies be launched at both national and EU level on the economic effects of integrating disabled people into the regular working environment.

## 4.5 Initial listing of priority issues and evidence base needed for policy formulation and evaluation

### 4.5.1 Suggested priority themes and issues

In reference to section 4.3 above we suggest that initial consideration could be given to concentrating and focus the work of the project in the employment/work domain on four following priority themes and issues:

- 1: The implementation of EU Employment Directive and national legislation on ICT- and risk-group related duties of firms and enterprises**
- 2: The national provision and delivery systems for employment and work-related assistive technologies**
- 3: National ICT-skills oriented policies for older people and disabled workers**
- 4: The contribution of ICT to adequate and flexible employment and to work-life balance of older people and disabled workers**

Themes 3 and 4 are also relevant to the online services topic of the project and the employment / work aspect might be addressed jointly with the work on that topic.

In order to facilitate policy formulation / evaluation and supporting informed dialogue the following is a first suggestion for the type of data and information that could be gathered with the help of consortium partners and national correspondents. Both sections contain only preliminary and first ideas, a detailed collection strategy will be discussed and prepared later in the initial phase of WP3.

### 4.5.2 General data and information concerning all four suggested priority themes

- National data and information on the size/number of members of the at-risk groups that can have problems with access to employment and work
- National data and information on employment, employment rates and employment conditions of the at risk-group members
- National data and information on the legal framework and other regulations of labour market access and employment of at risk group members
- National data and information on legal assistance and possibilities to claim "equal" access to employment and work and protest against other forms of work-related discrimination
- National data and information on the work satisfaction, work quality and working conditions of the at-risk groups members
- National data and information on the readiness of the firms and enterprises to employ members of the at-risk groups; perceived and factual pertinent obstacles
- National data and information on the usage of ICT by the members of various at risk groups, if possible differentiated by the place and purpose (at home, at work/for professional and other purposes)
- National data and information on the employment and work support for the members of at risk-groups and their use of pertinent institutions and services

- Data and information on relevant studies, statistics, surveys as well as the national policy debate and public discourse on eAccessibility and eInclusion issues
- ....

#### 4.5.3 Specific data and information concerning each priority theme

##### 4.5.3.1 The implementation of EU-Employment Directive and national legislation on ICT- and risk-group related duties of firms and enterprises

- National data and information on the legislative regulatory framework and duties of firms and enterprises
- National data and information on the workplace adaptations, their costs and financing (if available)
- National data and information on subsidies for firms and enterprises which employ members of the at-risk groups
- National data and information on complaints about direct and indirect work-related discrimination
- ...

##### 4.5.3.2 The national provision and delivery systems for employment- and work-related assistive technologies

- National data and information about the legislative and regulatory framework for the use of assistive technologies
- National data and information about the state levels and institutions playing important roles in AT provision and delivery processes
- National data and information about the employment- and work-related usage of assistive technologies
- National data and information about the AT-related information, prescription, selection, delivery, financing, etc. mechanisms, procedures and pertinent key-actors
- National data and information on the supply side of the market (authorisation, standards, classification systems, ..)
- ...

##### 4.5.3.3 National ICT-skills oriented policies for older and disabled workers

Will be developed later in co-operation with WP4.

##### 4.5.3.4 The contribution of ICT to adequate and flexible employment and work-life balance of older and disabled people

Will be developed later in co-operation with WP4.

## 5 eAccessibility and eInclusion in relation to public services

This chapter presents a conceptual framework that has been developed for the online service policy domain. It first provides an analysis of the target groups and issues that are the subject of the domain (section 5.1). This is followed by an outline of the various policy lines that are concerned in relation to the goal of inclusive online service provision (section 5.2). The subsequent section (section 5.3) provides a discussion of the evidence-base needed for policy support. The final section (5.4) presents the initial list of priority topics that have been identified for attention in the data gathering and workshop activities of the project.

### 5.1 Target groups and issues

#### 5.1.1 The societal relevance of online services

Despite its considerable impact on policy formulation, the concept of the Information Society is receiving increasing criticism in the scientific arena in relation to its conceptual specificity, and some authors even believe that it bears little relation to any graspable reality.<sup>139</sup> However, it would be clearly beyond the scope of this co-ordination action – of which the focus is on evidence based policy support rather than on scientific theory development - to attempt a redefinition of this concept or even its specification.

For our purposes, therefore, it is useful to start from the observation that a core characteristic of what is usually referred to as the Information Society (IS) or the Knowledge Based Society (KBS) is the emergence of a socio-technological environment where access to information and interpersonal communication is becoming available through a variety of access technologies. Within such an environment new forms of technology-mediated communication, collaboration and social as well as economic interaction emerge. As highlighted by recent research in the field of human computer interaction, "...existing computer-mediated human activities undergo fundamental changes, and a wide variety of new ones appear, such as access to on-line information, e-communication, digital libraries, e-business, on-line health services, e-learning, on-line communities, on-line public and administrative services, e-democracy, tele-work and tele-presence, on-line entertainment, etc. From a specialist's device, the computer is being transformed into an information appliance for the citizen in the information society".<sup>140</sup>

It is beyond dispute that the online world is gaining in relevance not only for professional computer users such as scientific or business users but also for large parts of the overall population. For instance, it has been predicted that online services such as eBanking and eShopping will have penetrated three quarters of all German households by the year 2010, and that email, SMS and advanced voice services will have reached an even higher penetration level by then.<sup>141</sup> Already today, about two thirds of the overall population are online in some European countries, either at work or at

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<sup>139</sup> Cf. e.g. Dieter Klumpp (2003): Informationsgesellschaft – nur eine "symbolische" Diskussion ? In: Dieter Klumpp et. al. (Ed.) (2003), next generation information society ? Notwendigkeit einer Neuorientierung, Mösslingen-Thalheim 2003, pp 25-42 and Cf. Lawrence Angus, Ilana Snyder and Wendy Sutherland-Smith (2004): ICT and educational (dis)advantage: families, computers and contemporary social and educational inequalities. In: British Journal of Sociology of Education, Vol. 25, No. 1, February 2004 and Jan Steyaert (2002). Inequality and the digital divide: myth and realities. In: S. Hick & J. McNutt (Eds.), Advocacy, activism and the internet (pp. 199-211), Chicago: Lyceum Press

<sup>140</sup> Clark, A.; Concejero, P.; Selhofer, H.; Stephanidis, C. (2002): Beep Domain Rationale: Social Inclusion , internal working document. BEEP – Best eEurope Practices, IST project, IST-2000-26224, p. 1

<sup>141</sup> Cf. Franz Büllingen, Peter Stamm (2001): Entwicklungstrends im Telekommunikationssektor bis 2010, Bad Honnef, pp. 69-92

home.<sup>142</sup> Provision of both commercial and public services via the Internet is gaining in momentum and eGovernment, eHealth, eLearning and eCommerce applications increasingly penetrate the domestic sphere.

In the public sphere, touch screen information/self-service kiosks are becoming ubiquitous, and the next generation digital media kiosks are supposed to soon enable travellers, vacationers and shoppers to download music to MP3 players, laptops or to a CD, print vacation photos, change flight arrangements on the internet or purchase games and ring tones for cell phones.<sup>143</sup> Also, for an ever increasing part of the population, mobile telephony is becoming a day-to-day experience, and enhanced capabilities such as emergency functionalities<sup>144</sup> and location-based services<sup>145</sup> are beginning to transform the mobile phone from a mere communication tool into a multifunction device enabling location-independent utilisation of online services.

It may be argued that the developments briefly sketched above merely increase the consumers' choice, and that it therefore should be left to the market whether or not services that are now becoming imaginable actually will find their users. The fact that different population groups – including those who are not at all interested in any kind of ICT-enabled activities - may have different preferences as regards online content and services may not necessarily result in a digital divide warranting counteracting policy intervention respectively.

For instance, those who prefer rather traditional modes of interacting with their local authorities may not necessarily be disadvantaged solely because they do not utilise eGovernment or eHealth applications as long as 'traditional' services are available that meet their needs and expectations. In the European Union, for instance, currently about two in five of those who do not use the Internet agree strongly that it is "not something for me [them]", and this is especially the case in countries where Internet penetration is already high.<sup>146</sup> However, if online services offer better value and/or choice when compared with traditional services, those who are not capable to access and/or successfully utilise online technologies for their purposes may indeed become disadvantaged. It is difficult to assess if this is actually the case. To this end much more evidence would have to be available.

Nevertheless, it is beyond dispute that networked ICTs increasingly influence the way economic and social life is organised<sup>147</sup> and, from the citizens' perspective, online technologies appear to gain in

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<sup>142</sup> According to Internet World Stats in Sweden Internet penetration has reached 76,9% of the population in 2004. Cf. <http://www.internetworldstats.com/stats4.htm> (retrieved on 13th May 2004)

<sup>143</sup> cf. KISS Press ROOM (2004): Kiosk Information Systems and St. Clair Interactive Collaborate to Develop Next Generation Digital Media Kiosk, (retrieved from <http://www.kis-kiosk.com/pr-snaptrax01.html>, 14<sup>th</sup> April 2004)

<sup>144</sup> Mobile alarm services offer location-independent alarm capabilities (immediate transfer of location coordinates; voice connection) which may rely upon both GPS technology and GSM networks, using a specific standard for immediate and dependable transfer of location data. They enable the customer to initiate an alarm call whenever and wherever he/she needs or wants to do so. Cf. for instance the Mobile Alarm Project funded under the EU's eTEN programme which is about to introduce such a service to the European market place. (information retrieved from <http://www.mobilalarm-eu.org/index.htm> on 13th May 2004)

<sup>145</sup> A powerful way to personalize mobile services is based on location. Geographic Information Systems (GIS) provide the tools to provision and administer base map data such as man made structures (streets, buildings) and terrain (mountains, rivers). GIS is also used to manage point-of-interest data such as location of gas stations, restaurants, nightclubs, etc. Finally, GIS information also includes information about the radio frequency characteristics of the mobile network. This allows the system to determine the serving cell site of the user

<sup>146</sup> SIBIS Benchmarking Highlights (2002), p. 39. ([www.sibis-eu.org](http://www.sibis-eu.org))

<sup>147</sup> Cf. Manuel Castells (1996): The Rise of the Networked Society. Volume 1 of the Information Age: Economy, society and culture. Oxford: Blackwells.

relevance not only with respect to their role as consumers but also in mediating private and public worlds.<sup>148</sup>

The public sector is beginning to face profound impacts of online technologies while – at the same time - it is required to play a strong role in economic and social renewal.<sup>149</sup> Accordingly, the European Union as well as its Member States have given the move towards online provision of public services an important place on the political agenda<sup>150</sup>. For instance, the eEurope action plan "... has always placed great emphasis on the potential for public policy to catalyse progress towards the knowledge-based society through bringing public services on-line and in so doing to make such services more efficient and cost effective."<sup>151</sup>

Through its so called 'Lisbon Strategy' the European Union has furthermore imposed a 'social imperative' to achieve a knowledge based society that is not only economically sustainable – e.g. in terms of more efficient and cost effective provision of public services - but also cohesive in terms of equal opportunities for all.<sup>152</sup> The universal availability of services of public interest - for example in the areas of health care and education – thus remains a bedrock principle under the policy paradigm of the knowledge-based society (which is also reflected in the policy paradigm of the so called 'European social Model'<sup>153</sup>).

If such services are increasingly provided by means of online media it needs to be ensured that inequitable access and/or utilisation of online media does not result in a medical, educational or any other structural divide counteracting the goal of a cohesive society. Against this background, the focus of this co-ordination action is on services that are offered by means of online media in domains that are of central public interest. In this sense health, learning and government services are clearly of public interest, as they touch on core aspects of people's lives. In the context of the digital divide debate, there is some debate whether online purchasing of consumer goods and services should also be regarded as being of public interest in the same sense. This will – inter alia - be discussed in more detail in the following subsection.

In technical regard, we will refer to online services as services that are accessed/delivered via web-type platforms, typically accessed over computer networks that run on the Internet protocol (including

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<sup>148</sup> Cf. Leslie Haddon, Roger Silverstone (2000): Information and Communications Technology in Everyday Life: Individual and Social Dimension. In: Ken Ducatel et. al. (Ed.): The Information Society in Europe. Lanham, Boulder, New York, Oxford, pp 233 ff. and also Kevin Cullen, Norbert Kordey, Lars Schmidt, Elena Gaboardi (2003): Work and Family in the eWork Era, Amsterdam.

<sup>149</sup> Cf. Commission of the European Communities (2003), Communication from the Commission to the Council, the European Parliament, the European and Social Committee and the Committee of the Regions – The Role of eGovernment for Europe's Future, Brussels, 26.09.2003, COM(2003) 567 final

<sup>150</sup> Cf. CEC (2002): eEurope 2005 Action Plan. ([http://europa.eu.int/information\\_society/eeurope/2002/news\\_library/documents/eeurope2005/eeurope2005\\_en.pdf](http://europa.eu.int/information_society/eeurope/2002/news_library/documents/eeurope2005/eeurope2005_en.pdf))

<sup>151</sup> Commission Communication (2004): "eEurope 2005 Action Plan: Update", Structural Overview of Action Plan Targets and Revision, p.3 ([http://europa.eu.int/information\\_society/eeurope/2005/doc/all\\_about/com\\_eeurope\\_en.doc](http://europa.eu.int/information_society/eeurope/2005/doc/all_about/com_eeurope_en.doc))

<sup>152</sup> The so called Lisbon Strategy is a commitment to bring about economic, social and environmental renewal in the EU. In March 2000, the European Council in Lisbon set out a ten-year strategy to make the EU the world's most dynamic and competitive economy. Under the strategy, a stronger economy is supposed to drive job creation alongside social and environmental policies that ensure sustainable development and social inclusion ([http://europa.eu.int/comm/lisbon\\_strategy/index\\_en.html](http://europa.eu.int/comm/lisbon_strategy/index_en.html))

<sup>153</sup> According to its mission "... the Directorate-General for Employment and Social Affairs has the task of contributing to the development of a modern, innovative and sustainable European Social Model with more and better jobs in an inclusive society based on equal opportunities. It plays a key role in promoting positive interaction between economic, social and employment policies, bringing in the main players who can help to achieve the EU strategic objective, viz. to make Europe the world most competitive and dynamic knowledge-based economy, capable of sustainable economic growth, with more and better jobs and greater social cohesion." ([http://europa.eu.int/comm/dgs/employment\\_social/index\\_en.htm](http://europa.eu.int/comm/dgs/employment_social/index_en.htm), 25<sup>th</sup> August 2004)

the Internet as well as corporate intranets and extranets). Computer networks also include networks in which end devices are mobile units, such as PDAs or Internet-enabled mobile phones.

In the following it will be briefly discussed what level of maturity the provision of online services has already gained in the individual domains under discussion. This brief analysis of recent research will point to eInclusion-related issues emerging here.

### eGovernment

During recent years, governments have been increasingly utilising the Internet as a communication channel to the citizen. A recent survey concludes that "... the move towards eGovernment and the need for administrative reform are both increasingly part of the political agenda of most OECD countries, and the rapid diffusion of Internet use is resulting in an increasing supply of electronic services offered by the institutions of the government and administration to citizens and business."<sup>154</sup> The following Table 5-1 gives an indication of the heterogeneity in eGovernment services and in the associated forms of interaction and types of content that are involved.

**Table 5-1: Application areas of electronic government services<sup>155</sup>**

	Information services	Communication services	Transaction services
<b>Administration</b>	Public service directory, guide to administrative procedures, public registers and databases	Email contact with civil servants, politicians, etc.	Electronic submission of forms, tax filings, applications for licences or permits
<b>Political participation</b>	Laws, parliamentary papers, political programmes, consultation documents, background information in decision making processes	Discussion dedicated to political issues, email contact with politicians	Referenda, elections, opinion polls, petitions
<b>Everyday life</b>	Information on work, housing, education, health, culture, transport, environment, etc.	Discussion dedicated to questions of everyday-life, jobs or housing bulletin boards, etc.	Ticket reservation, course registration, etc.

It is important to notice that a particular dimension of government services - as opposed to business services - is that governments cannot choose their 'customers'. On the one hand, the principle of access for all – as it is extensively discussed in chapter two of this report - is therefore of particular relevance in the eGovernment domain. On the other hand, "... we should not forget that despite our best efforts, not everybody will be actually able to jump into the information society. Policies and inclusion strategies should also allow the full development of people that due to economical situation, physical or cognitive disabilities, isolation, and so on are not and will not be able to use ICT at all."<sup>156</sup> A meaningful integration of both online and offline service delivery modes can therefore be regarded as a key requirement on equitable service provision not only in the eGovernment domain.

But even if physical access to online services is given the question arises whether all those who have access are actually capable of using these services in a meaningful manner. Until recently, the debate on the 'digital divide' has been largely driven by the observation that physical access to new technologies tends to be unequally distributed according to the usual fault lines of social stratification such as income, gender and so on.

<sup>154</sup> Jeremy Millard (2003): ePublic services in Europe: past, present and future Research findings and new challenges, FINAL PAPER , September 2003. (<http://beep.jepponet.dk/Search/ShowDocument.asp?FocusAnalysisDocumentID=18>)

<sup>155</sup> Source: Prisma (2002) *Pan-European changes and trends in service delivery*, deliverable D2.2 of Prisma, a research action supported by the Information Society Technologies Programme of the European Union, 2000-2003, contact <http://www.prisma-eu.net>

<sup>156</sup> European Charta towards E-Learning for Social Inclusion, item 10 of the declaration ([http://www.el4ei.net/first/carta\\_en.htm](http://www.el4ei.net/first/carta_en.htm))

Accordingly, policy measures geared towards closing the 'digital divide' have in the first instance concentrated on facilitating equal access to the internet in terms of physical access to the required technological infrastructure - for example through the provision Public Internet Access Points (PIAPs) or subsidised computer equipment to be used at home. However, as the Internet has now widely diffused in some countries concerns are being raised that the digital divide cannot be reduced to physical access but also reflects structural disparities in the distribution of personal capabilities required for successfully utilising the online world for the purpose of one's own personal development.<sup>157</sup>

Such considerations refer to the empirical finding that socially disadvantaged households actually tend to make less use of information that is, in principle, available to them (see the discussion on the 'knowledge gap' hypothesis in chapter 2 of this report). "The message that comes across is that even under conditions of equal access to information, there is a significant difference in who succeeds in translating information access into social development and who does not."<sup>158</sup> eGovernment services that aim at reaching the entire population will therefore have to carefully address the issue of user diversity - not only with respect to accessibility requirements and varying technical skills available on the users' side but also with respect to personal capabilities in a wider sense (cultural, social, etc.).

Another aspect closely linked to this issue relates to the existence of what has been called the 'voice divide' in the virtual space, largely reflecting non-digital patterns of social stratification in terms of educational attainment, household income and so on.<sup>159</sup> As eGovernment enables many services to be delivered around the clock, throughout the year and ubiquitously across space, "... it can put substantial power in the hands of the ICT-literate citizen so that the whole purpose, structure and mode of operation of government can begin to reflect the needs of at least some of those it serves."<sup>160</sup> Thus, inequitable access to and utilisation of eGovernment services may indirectly disadvantage the non-users as their needs and aspirations are likely to remain unconsidered in this process.

Finally, due to their 'public mandate', governments and public institutions play a crucial 'outrider role' in developing online solutions that are accessible and usable for the broadest possible range of users. From a merely business-oriented standpoint, those groups who face particular difficulties in accessing online services, such as people with disabilities, older people or people with low income, are usually considered as being of relatively small economic relevance, and this tends to hinder a solely market-driven development of alternative access channels, technologies, interfaces and service designs tailored to their specific needs.

## eHealth

As in the eGovernment area, there are also a wide variety of eHealth services with an associated variety of content and forms of interactivity. The taxonomy below (Table 5.2) serves to illustrate the breadth and scope of this domain.

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<sup>157</sup> Cf. Lawrence Angus, Ilana Snyder and Wendy Sutherland-Smith (2004): ICT and educational (dis)advantage: families, computers and contemporary social and educational inequalities. In: *British Journal of Sociology of Education*, Vol. 25, No. 1, February 2004 and Jan Steyaert (2002). *Inequity and the digital divide: myth and realities*. In: S. Hick & J. McNutt (Eds.), *Advocacy, activism and the internet* (pp. 199-211), Chicago: Lyceum Press

<sup>158</sup> Jan Steyaert, Nick Gould Steyaert (2004 (in preparation)). *The rise and fall of the digital divide*. In J. Graham & M. Jones & S. Hick (Eds.), *Digital Divide and Back: Social Welfare, Technology and the New Economy*. Toronto: University of Toronto. (cited from the version downloaded from <http://www.steyaert.org/Jan/> on 25<sup>th</sup> August 2004, p.8)

<sup>159</sup> Cf. Hans-Uwe Otto, Nadia Kutscher, Alexandra Klein, Stefan Iske (2004): *Soziale Ungleichheit im virtuellen Raum: Wie nutzen Jugendliche das Internet? Erste Ergebnisse einer empirischen Untersuchung zu Online-Nutzungsdifferenzen und Aneignungsstrukturen von Jugendlichen*. (<http://www.uni-bielefeld.de/paedagogik/agn/ag8/kib.html>)

<sup>160</sup> Jeremy Millard (2003): *ePublic services in Europe: past, present and future Research findings and new challenges*, FINAL PAPER, September 2003., p.33. (<http://beep.jepponet.dk/Search/ShowDocument.asp?FocusAnalysisDocumentID=18>)

**Table 5-2: The eHealth landscape**<sup>161</sup>

Type	Functions and capabilities
Information presentation	Provide general or individualized health information on demand
Information search and assistance	Help locate online content and other resources in response to a specific information request through search engines, directories, personalization technologies, or intelligent systems
Health behaviour change	Promote the adoption and maintenance of positive health behaviours on both an individual and community level. Some applications promote healthy behaviours by providing information, assessing risks, explaining associated benefits and costs, and facilitating peer support. These tools may be based on theories of behaviour change.
Informed decision-making	Facilitate the decision-making process of individuals (e.g. consumers, patients, caregivers, family members) regarding the prevention, diagnosis or management of a health condition or the selection of a provider or service
Administrative transactions	Facilitate online transactions and administrative functions (e.g. appointment scheduling, eligibility and enrolment, financial transactions).
Peer-to-peer and person-person messaging, information exchange, emotional support, and community building	Enable individuals (e.g. consumers, patients, health professionals, caregivers) with specific health conditions, needs, or perspectives to communicate and share information, and provide or receive peer or emotional support. There are online support groups and virtual communities for almost all health conditions.
eCommerce and shopping	Enable online purchase of health-related goods and services, including medications and personal care products, health insurance, books and other products
Electronic health records	Support the storage and retrieval of computer-based personal medical and health data

During recent years, the World Wide Web has become a key source of health information for large parts of the population. In many countries national health authorities or other public bodies have established health portals on the Web to provide health information to the citizens<sup>162</sup>. Also, commercial health and wellness guides have mushroomed.<sup>163</sup> Ensuring universal access and developing quality standards have hence become an ever more important concern for public policy in the health arena, as it is, e.g., reflected by the European Commission's attention to the quality aspects of online health information services.

Also, it can be expected that more and more patients will interact electronically with their doctor or nurse. A recent representative survey<sup>164</sup> revealed for instance that about 30% of the European 50+ population would be interested in accessing information about the own medical treatment via a home PC or their TV set, and 27% would be interested in receiving their doctor's advice via email.

In addition, the new paradigm of patient-centered, seamless care can be expected to facilitate online-aided home hospitalisation and other home care applications. "Surprisingly unanimously, decision makers from the care sector do expect ICT to play a much more prominent role within home care delivery by the end of this decade than it is currently the case. (...) The Internet is seen as an important force driving this development."<sup>165</sup>

<sup>161</sup> Adapted from Eng, T. (2001) The eHealth Landscape. Robert Wood Johnson Foundation. Only the online services of direct relevance for citizens/patients have been included

<sup>162</sup> Cf. e.g. <http://www.health.gov/> or <http://www.aok.de/>.

<sup>163</sup> Cf. e.g. <http://search.looksmart.com/p/browse/us1/us317837/us317920/us54213/us542638/us1152455/>.

<sup>164</sup> Cf. SeniorWatch (2002): Older people and Information Society Technology - A comparative Analysis of the Current Situation and Future Trends ([www.seniorwatch.de](http://www.seniorwatch.de))

<sup>165</sup> *ibid.* p. 119.

A 'critical mass' of users for the provision of online health care services, including general practitioners, patients and citizens, appears to be emerging at least in some countries. For instance, the 2002 Eurobarometer survey<sup>166</sup> showed that an average of 78% of EU medical general practitioners were online (98% in Sweden and 97% in the United Kingdom). The "... use of networks, including the Internet, to deliver patient care is also growing"<sup>167</sup> - even if online mediated care delivery to the patient's home (e.g. in terms of e-mail consultation) may be still in its infancy.

To be able to benefit from such developments, it will increasingly become important to be connected to the Internet, or at least to possess a telephone connection. A recent study concludes that "...policy measures like infrastructure and training/education/awareness activities will be required to avoid a 'medical divide' between those (...) citizens having access to advanced medical advice and services and those who have not."<sup>168</sup> Also a recent communication of the European Commission highlights the importance of equal access of all groups of society to eHealth services: "There is a risk that certain parts of society - such as lone parents of families, isolated communities, inner city communities, individuals with literacy and numeracy challenges, groups of immigrants, homeless persons, elderly persons and disabled persons - could remain excluded from the possibilities offered by e-Health (including Internet-based health services) if special efforts are not made to counterbalance such trends. On the other hand, e-Health can offer considerable possibilities for the provision of health services to such individuals, groups, and communities."<sup>169</sup>

### eLearning

Knowledge has become an important factor of production for many economic activities.<sup>170</sup> At the same time, knowledge appears to determine more than ever before an individual's ability to achieve personal well being and economic wealth.<sup>171</sup> But not only has knowledge become more valuable, it has also become less durable. In this context, eLearning arrangements have been ascribed a range of advantages when compared with traditional types of learning. For instance, they enable individuals to access learning resources and tools anytime, anywhere, and appear therefore particularly suited for a world of flexible e-work, distributed organisations and the '24-hour-society'. As for the previously discussed domains, there are a number of taxonomic dimensions that are relevant for identifying user issues in the eLearning area. The following Table 5-3 gives an indication of some of the core dimensions.

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<sup>166</sup> Eurobarometer, 2002 ([http://europa.eu.int/comm/public\\_opinion/](http://europa.eu.int/comm/public_opinion/)).

<sup>167</sup> COM (2004) 356: e-Health - making healthcare better for European citizens: An action plan for a European e-Health Area,

<sup>168</sup> Veli N. Stroetmann, Tobias Hüsing, Lutz Kubitschke, Karl A. Stroetmann (2002): Attitudes, expectations and needs of older people for telehealth: results from the European SeniorWatch survey ([www.seniorwatch.de](http://www.seniorwatch.de))

<sup>169</sup> COM (2004) 356: e-Health - making healthcare better for European citizens: An action plan for a European e-Health Area, p. 15.

<sup>170</sup> Cf. Castells, M. (2000) 'The Rise of the Network Society – The Information Age: Economy, Society and Culture', Blackwell.

<sup>171</sup> Fitzgerald, R., Taylor, R. and LaValle, I. (2003) 'National Adult Learning Survey (NALS) 2002', Nottingham: Department for Education and Skills, UK.

**Table 5-3: Some dimensions of eLearning**

Context	Content	Mode	Pedagogy	Delivery platform
Workplace	Learning materials	Self-directed/Tutored	Verbal/Problem-solving	Web/ CD-ROM
Educational Institution	Assessment	Synchronous/Asynchronous	Individualised/Generic	TV
Home	Accreditation	Online/Offline/Blended	Didactic/Interactive	Mobile
On the move Formal eLearning arrangement / informal learning			Text based/multimedia	

According to a recent survey, about one third of the European Union's adult population who have recently engaged in some form of work-related training or self-directed learning have used electronic online materials for this, and almost one in four of these used online materials for this purpose.<sup>172</sup> Not surprisingly, considerably higher levels of eLearning were found amongst those in full-time education. Here, more than two in five students reported using some kind of eLearning during the last four weeks.<sup>173</sup> In view of the obviously growing importance of electronic learning tools and learning arrangements, it is self evident that they should be accessible and usable by the widest possible range of learners including persons with functional restrictions and persons with limited ICT skills.

However, ICT-aided learning arrangements are not only ascribed to offer new opportunities for a more flexible acquisition of skills in a rapidly changing working environment but also for increasing participation in learning among socially disadvantaged population groups. For instance, the European Commission highlighted in a recent paper that "...e-Learning can make a major impact for social inclusion. It provides access to education and training opportunities for all, in particular for those who have access problems for social, economic, geographic or other reasons. ICT offers possibilities of transforming the learning paradigm and bringing knowledge to those who have not earlier been able to participate in education. eLearning can also play a significant role in implementing the concept of flexible and individualised learning, answering individual education needs, and avoiding the limitations of current systems, based mainly on pre-defined options."<sup>174</sup> Accordingly, a core objective of eInclusion-related policies trying to foster eLearning is not merely to substitute for less efficient or more costly types of learning arrangements, but also to increase the overall amount of participation in learning.<sup>175</sup>

Providing socially disadvantaged population groups with ICT access should however not be seen as a panacea to achieve wider participation in learning. Qualitative research suggests for instance that socially disadvantaged families are not automatically advantaged by their access to the Internet, in so far as they do not possess the social and cultural capital required to utilise the Internet for the purposes of their members' personal and educational development.<sup>176</sup> In the same line, research has shown that "... equal access still generates different patterns of usage along the traditional fault lines

<sup>172</sup> SIBIS Benchmarking Highlights (2002), p. 16. ([www.sibis-eu.org](http://www.sibis-eu.org))

<sup>173</sup> Ibid.

<sup>174</sup> CEC (2001) 'e-Inclusion: The Information Society's Potential for Social Inclusion in Europe [with the support of the High Level Group "Employment and Social Dimension of the Information Society" (ESDIS)]', Brussels: European Commission.

<sup>175</sup> Cf. Dohmen, G. (2001) 'Das informelle Lernen. Die internationale Erschließung einer bisher vernachlässigten Grundform menschlichen Lernens für das lebenslange Lernen aller', Bonn: Bundesministerium für Bildung und Forschung (BMBF).

<sup>176</sup> Cf. Lawrence Angus, Ilana Snyder and Wendy Sutherland-Smith (2004): ICT and educational (dis)advantage: families, computers and contemporary social and educational inequalities. In: British Journal of Sociology of Education, Vol. 25, No. 1, February 2004

of gender, education, income and the like.”<sup>177</sup> Hence, equal access to the online world in itself, without attention to other socio-political aspects of advantage and disadvantage, may not do much towards achieving wider participation of disadvantaged individuals and communities in learning.

## eCommerce

In the commercial sphere, online services - particularly business-to-consumer (B2C) electronic commerce – have certainly not developed as fast as most analysts expected at the time of the dotcom boom.<sup>178</sup> Nevertheless, continuously growing online sales figures suggest that the Internet is becoming a common channel for commercial transactions for an ever-increasing share of the European Union’s overall population. For instance, Forrester Research had estimated in November 2002 that European online Christmas shopping in 2002 would total 7.6 billion Euro, an increase of 86% over the year before.<sup>179</sup>

However, “ ...a key of understanding the real impact of the Internet on consumer sales may in fact be to shift the focus from measuring mere transactions to the broader concept of ‘net-influenced’ sales. This approach considers the important role of the Internet during the pre-purchasing stages, for instance for browsing the offer and comparing prices.”<sup>180</sup> Access to online information appears to be becoming increasingly important for consumers in terms of enabling a well-informed choice. Those who lack access to online media may thus sooner or later experience concrete economic disadvantages.

Another issue arising in this context relates to the question what alternatives consumers still may have to purchasing particular products or services online. For instance, in many countries banks are consolidating their internal cost structure by closing down branch offices in less populated areas while at the same time offering price discounts for customers utilising their online services. It is estimated, for example, that in Germany the country-wide network of bank branches currently available will be reduced by 50% during the coming years.<sup>181</sup> Another example concerns travel bookings. According to a recent dossier published by the Federation of German Consumer Organisations (vzbv), customers who order a train ticket from German Bundesbahn via the telephone have to pay 10 € more when compared with those ordering via the Internet, and Hapag Loyd Express – a German airline – charges 7,50 € extra for every ticket not being ordered via the Internet.<sup>182</sup>

All of this suggests that, in particular, disabled people, people with low income, families with many children and those suffering from a chronic disease may increasingly experience disadvantages in their role as consumers. The question is whether these trends have already reached a stage that warrants targeted policy intervention. As it has been formulated by Steyaert: “If and when this development increases and e-products and e-services offer better value, non-connected citizens will indeed be socially excluded and the diversity in internet access will become a divide”<sup>183</sup>. However,

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<sup>177</sup> Jan Steyaert (2002). Inequality and the digital divide: myth and realities. In: S. Hick & J. McNutt (Eds.), *Advocacy, activism and the internet* (pp. 199-211), Cicago: Lyceum Press.

<sup>178</sup> Cf. CEC (2003): *The European e-Business Report 2002/2003* ([www.ebusiness-watch.org](http://www.ebusiness-watch.org)).

<sup>179</sup> Forrester Research, Press release from 13<sup>th</sup> November 2002 (<http://www.forrester.com/ER/Press/Release/0,1769,764,00.html>)

<sup>180</sup> CEC (2003): *The European e-Business Report 2002/2003*, p.19 ([www.ebusiness-watch.org](http://www.ebusiness-watch.org)).

<sup>181</sup> According to Deutsche Bank – a major player in the German financial service market – about 50% of current bank branches in Germany are estimated to be closed down during the coming years. ([http://www.tagesschau.de/aktuell/meldungen/0,1185,OID6564\\_TYP6\\_THE6560\\_NAV6560\\_REF\\_BAB,00.html](http://www.tagesschau.de/aktuell/meldungen/0,1185,OID6564_TYP6_THE6560_NAV6560_REF_BAB,00.html))

<sup>182</sup> Cf. Verbraucherzentrale Bundesverband (vzbv) e.V. (2004): *Verbraucher die aussen vor bleiben ...* ([http://www.vzbv.de/mediapics/dossierverbraucher\\_aussen\\_vor\\_03\\_2004.pdf](http://www.vzbv.de/mediapics/dossierverbraucher_aussen_vor_03_2004.pdf))

<sup>183</sup> Jan Steyaert, Nick Gould Steyaert (2004 (in preparation)). *The rise and fall of the digital divide*. In J. Graham & M. Jones & S. Hick (Eds.), *Digital Divide and Back: Social Welfare, Technology and the New Economy*. Toronto: University of Toronto. (cited from the version downloaded from <http://www.steyaert.org/Jan/> on 25<sup>th</sup> August 2004, p.4)

research has up to now thrown not much light on this issue. To be able to make an informed assessment much more evidence is needed.

### 5.1.2 Towards the identification of potential areas for policy intervention

In the political arena, online technologies have frequently been ascribed to hold the potential to improve the quality of life of citizens, the efficiency of social and economic organisation, and even to reinforce societal cohesion.<sup>184</sup> The brief state-of-the-art review presented above suggests that optimal exploitation of these technologies in the domains in question is important not only for economic competitiveness but also for social reasons. Competitiveness benefits can be achieved through efficiency and effectiveness gains, through increased human capital and through achievement of market share in the increasingly global markets in these domains (e.g. eLearning and eHealth). Social gains can be achieved by improving access to and quality of services of public interest and by reducing disadvantages posed by constraints in time and place that may arise in relation to more traditional modes of service delivery. At the same time, however, there is evidence that - as with all major socio-technological changes - they can also introduce new participation barriers, human isolation and alienation for some population groups.<sup>185</sup> Furthermore, there is a risk that the increasing provision of services in online modes may accentuate existing disparities in service access and usage because of enduring digital divides in relation to online access, orientations and usage.

Also, the review presented above clearly underlines that successful eInclusion efforts cannot merely rely upon facilitating physical access to the online world. Further to policy measures directed towards providing disadvantaged individuals and communities with physical access, augmenting approaches may thus be required to enable them to utilise online services for the purpose of personal development. However, it emerges from the literature reviewed that issues and options for developing more concrete counteracting measures concerning eInclusion have not been 'nailed down' to the same extent and at the same level of detail when compared with the eAccessibility domain (cf. chapter 2.2.5). Up to now eInclusion related issues have tended to be raised with a rather generic connotation, e.g. with respect to the question whether ICT creates new divisions between rich and poor or whether it does intensify existing socio-economic divides.<sup>186</sup> The lack of 'tangibility' in the sense of more concrete issues to be tackled through some form of policy intervention may be due to the relatively late emergence of the eInclusion perspective - which is closely related to the recent shift in focus of the digital divide debate from the issue of physical Internet access to the more complex issue of social integration in an online society.<sup>187</sup> The latter is a complex and pervasive phenomenon and diverse policy areas are concerned. "As a result it is often hard to discern a direct relationship between generalised policy-relevant research and concrete policy action. Rather research tends to contribute to an overall milieu in which certain policy approaches become increasingly feasible, and the policy-making process gradually shifts in its direction and orientations to incorporate new thinking."<sup>188</sup> In this sense, the eAccessibility perspective appears to have a head start when comported to the eInclusion perspective.

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<sup>184</sup> Cf. Kubicek H. (2003): Von Technikakzeptanz zur digitalen Integration. Fortschritt in Worten und Taten ? published in Klumpp, D.; Kubicek, H.; Roßnagel, A. (2003): next generation information society ?, Mössingen-Thalheim.

<sup>185</sup> Cf. European Commission (2001) e-Inclusion – The Information Society's potential for social inclusion in Europe. Commission staff working paper with the support of the High Level Group on the Employment and Social Dimension of the Information Society (ESDIS), Brussels 18.09.2001. SEC(2001) 1428

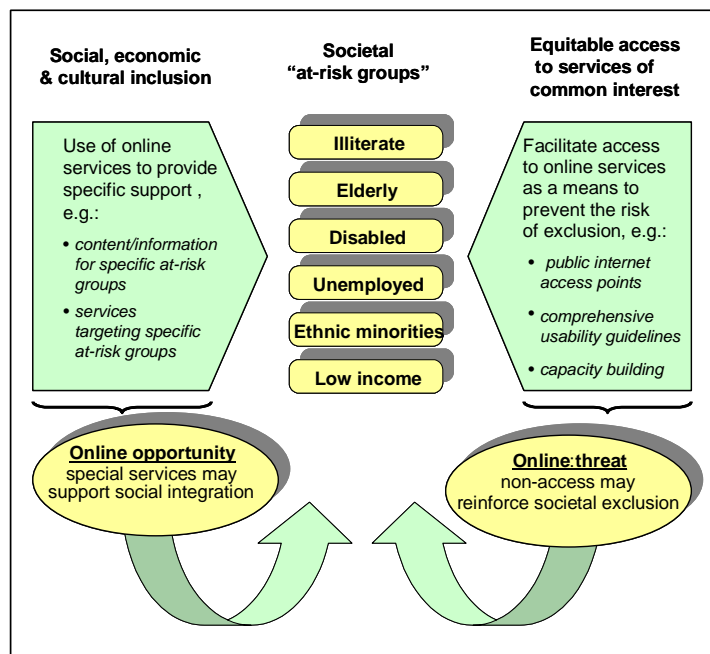
<sup>186</sup> Cf. for example Anita-Kelles-Vitanen: The Role of ICT in Poverty Reduction ([http://www.ced.org/docs/report/report\\_counterpart\\_pov\\_finland.pdf](http://www.ced.org/docs/report/report_counterpart_pov_finland.pdf)).

<sup>187</sup> Cf. for example Jan Steyaert, Nick Gould Steyaert (2004 (in preparation)). The rise and fall of the digital divide. In J. Graham & M. Jones & S. Hick (Eds.), Digital Divide and Back: Social Welfare, Technology and the New Economy). Toronto: University of Toronto.

<sup>188</sup> Ken Ducatel et. al. (2000), The Information Society in Europe – Work and Life in an Age of Globalization, Boston Way, p. 15

As illustrated by the schema below (Figure 5-1), the strategic challenge for eInclusion related policies are a twofold one. On the one hand, it needs to be prevented that particular population groups ‘fall through the net’ in the sense that they are unable to utilise online services of common interest due to unconsidered user requirements they may have. Such requirements may stem from functional restrictions connected with certain disabilities or with the biological ageing process (e.g. restricted visual capacities), or they may stem from economic, social, cultural and/or other structural disadvantages certain societal groups may experience. On the other hand, the challenge is to fully exploit the potentials online services may hold to overcome rather traditional forms of societal exclusion. Here, services specifically targeted towards certain at-risk groups such as people with disabilities or unemployed people may offer opportunities to achieve ‘social integration’ by means of ‘digital integration’. For instance, the ‘eLearning4eInclusion’ project has successfully addressed socially disadvantaged communities through combining the acquisition of ICT skills with other non-digital knowledge equally important to social inclusion.<sup>189</sup>

Figure 5-1: The twofold perspective of eInclusion-related policy intervention



To be able to address the various technical as well as non-technical dimensions of the policy challenges briefly summarised above it is useful to rely upon a holistic understanding of what ‘inclusive’ online service provision might actually mean. Such a holistic view has for instance been put forward in the context of the ‘universal access’ debate in the field of human computer interaction research.<sup>190</sup> Here, a definition has been proposed that understands ‘universal access’ as “... the right of all citizens to obtain equitable access to, and maintain effective interaction with, a community-wide pool of information resources and artefacts”.<sup>191</sup>

In practice, it may be debatable whether this normative definition – particularly in its generality - is of practical use for the purpose of policy formulation. Nevertheless, for the purposes of this co-ordination

<sup>189</sup> Cf. Casacuberta, D. (2003): Digital Inclusion: Best Practices from e-learning. Published in Cunningham, P.; Cunningham, M.; Fateling, P. (2003): Building the Knowledge Economy – Issues, Applications, Case Studies, Part 2, IOS Press

<sup>190</sup> Cf. Stephanidis, C. (Ed.). (2001). User Interfaces for All - Concepts, Methods, and Tools. Mahwah, NJ: Lawrence Erlbaum Associates (ISBN 0-8058-2967-9, 760 pages)

<sup>191</sup> Stephanidis C. (Ed.), Salvendy, G., Akoumianakis, D., Bevan, N., Brewer, J., Emiliani, P.L., Galetsas, A., Haataja, S., Iakovidis, I., Jacko, J., Jenkins, P., Karshmer, A., Korn, P., Marcus, A., Murphy, H., Stary, C., Vanderheiden, G., Weber, G., & Ziegler, J. (1998). Toward an Information Society for All: An International R&D Agenda. International Journal of Human-Computer Interaction, 10 (2), 107-134.

action it is worth noting that the definition highlights the issue of user diversity by valuing and respecting all citizens as (potential) users, irrespective of social status, gender, age or ability, in the sense that all citizens are to be enabled to both technically access and actually utilise community-wide resources provided by means on online media. Another aspect worth noting is that it has a broad connotation considering a variety contextual factors including, for example, the availability and affordability of telecommunications infrastructures, the appropriateness and fit-for-purpose of the provided services or the content and quality of the provided information. This is broadly the perspective that informs the remainder of this section.

As described in the previous section, online service provision in areas of public interest is beginning to gain momentum, and a range of eInclusion-related issues arise in this context. These issues can be structured along the lines of a demand/supply model, as illustrated in Figure 5-2.

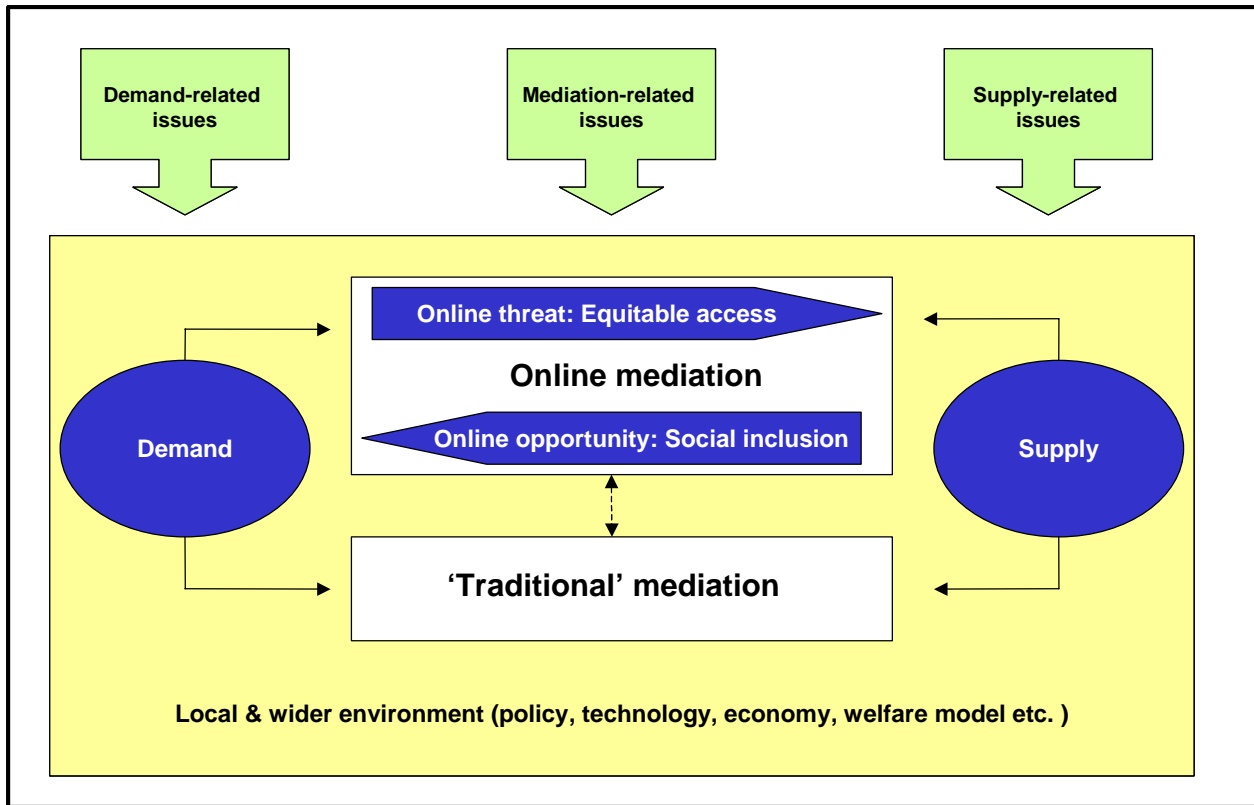
This model recognises that online services are not provided in a vacuum. Rather, a whole universe of variables relating to both the local and the wider environment has an impact on whether (public) online services may be offered at all and, if so, what actual form they may take and whom they may (preferably) address. Such contextual factors may include the level of ICT penetration in the country, region or even community concerned, particular policies pursued in the service domain concerned, the availability of economic resources required for implementing/using the service in question and so on.

It is beyond this report to systematically analyse these factors in their entirety or actually map out their interrelationship. The health sector may serve as an illustrative example of the complex nature of environmental issues that come into the play here. A recent comparative study identified, for instance, a variety of factors driving an increased use of online applications in health care in particular national environments. These include the existence of infrastructure initiatives to develop electronic prescriptions, health professional chip cards or patient cards, geographical imperatives (in some countries) encouraging the usage of ICTs to overcome barriers to travel and long distance, particularly for more specialist services, strategies aiming at improved efficiency of the health sector, national policies aiming to increase consumer empowerment and so on.<sup>192</sup>

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<sup>192</sup> Cf. empirica & the Work Research centre (2000): Study on the use of advanced telecommunications services by health care establishments and possible implications for telecommunications regulatory policy of the European Union, commissioned by the Information Society Directorate General of the European Commission, empirica Schriftenreihe, Report 01/2000, Serie Informationsgesellschaft ([http://www.empirica.com/empirica/publikationen/documents/No01-2000\\_SATS.pdf](http://www.empirica.com/empirica/publikationen/documents/No01-2000_SATS.pdf))

**Figure 5-2: Generic model for structuring eInclusion-related issues in inclusive online public service provision**



Another aspect recognised by the model is the fact that public services are usually offered in coexistence with more ‘traditional’ services. This has implications in several regards. On the one hand, it may principally leave the choice to those who are addressed by the service as to whether or not they prefer the online mode for interacting with the service provider instead of using more ‘traditional’ service modes (e.g. on-the-spot consultation of civil servants instead of searching an eGovernment website for required advice or submitting information requests by email). On the other hand, it points at the opportunity to align online service provision with more traditional components of service delivery. There is, for example, evidence that eLearning initiatives addressing socially disadvantaged communities can be more successful when a ‘blended’ approach is taken. Particularly “... when social inclusion is concerned, a blended approach (combining use of computers with live interaction with a professor) becomes a lot more successful than pure e-learning approaches. Personal contact with educators is key when working with a computer gets more complex and unmotivated.”<sup>193</sup>

Similarly, in the eGovernment, domain a recent state-of-the-art review concludes that many “... European government agencies and administrations are re-organising service access to take account of ICT, so that, in addition to face-to-face and other traditional channels (such as paper and post), new service forms are becoming available which can either completely replace traditional channels or, as is more usual and desirable, supplement them.”<sup>194</sup> It is stressed that especially when it comes to

<sup>193</sup> European Charta towards E-Learning for Social Inclusion, item no. 9 of the declaration ([http://www.el4ei.net/first/carta\\_en.htm](http://www.el4ei.net/first/carta_en.htm))

<sup>194</sup> Jeremy Millard (2003): ePublic services in Europe: past, present and future Research findings and new challenges, FINAL PAPER , p. 33 (<http://beep.jepponet.dk/Search/ShowDocument.asp?FocusAnalysisDocumentID=18>)

addressing those who rely most on public services such as disabled, sick, poor and deprived people, electronic services "... need to be added to existing services rather than replacing them."<sup>195</sup>

Finally, the model recognises that individual eInclusion issues in public services provision may relate primarily to the service addressees (demand-related issues), to the institution/organisation providing the service(s) in question (supply-related issues) or to the mediation process between these (mediation-related issues). This is discussed in more detail in the following.

### Demand-related issues

There is evidence that the motivation to engage with online services tends to be low among those population groups which especially need public assistance and could thus strongly benefit from their online delivery.<sup>196</sup> Scientifically, it is currently not well understood how the motivation to engage in eGovernment can be raised particularly among those that are at risk of being left behind as online provision of public services further progresses. However, there is some evidence that poor user orientation of current online services hampers wider uptake at least to some extent.

In the eGovernment field there is for instance evidence that many current online services leave a lot to be desired in terms of customer-orientation and usability - many sites show little evidence of adherence to even basic principles of good web design to support readability and navigation, there is a widespread lack of consistency in terms of "look and feel" that impedes a generalised recognition of sites as being public service and there are still many sites that fare poorly in regard to accessibility for people with disabilities. Disparities can be found both within countries (across fields of public administration and across geographical administrative areas) as well as across Member States. There is also evidence that users of eGovernment services are quite concerned about security and privacy issues and that this is impeding usage for many potential users<sup>197</sup>.

There are also some issues specific to the health field, including the particular challenges that users may face in searching online for health-related information and the possibility of misuse of online health services and resources. Recent evidence suggests that significant numbers of users of eHealth services in Europe experience difficulties in finding the information that they need, either because of difficulties in searching the web and/or web sites for the health-related information required or because of lack of availability of suitable services in their own language<sup>198</sup>. There is evidence also that some groups may have particular difficulties and that design of online health services needs to give much more attention to terminology and vocabulary issues<sup>199</sup>. Finally, there is evidence that many users do not know how to assess the quality of web sites and/or find it difficult to assess quality because of an absence of information on key quality criteria on the site (affiliation, sources of information and so on)<sup>200</sup>.

In the eLearning field there is also evidence that available services are not consistently of a high standard in relation to meeting users needs. For example, a recent survey of users' experiences of eLearning in Europe found that almost half rated the quality as being only "fair" and a further one in six rated it as "poor", with only one third rating it as "good"<sup>201</sup>. In the eLearning context, user issues

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<sup>195</sup> Ibid. p. 8

<sup>196</sup> Cf. European Commission (2001) e-Inclusion – The Information Society's potential for social inclusion in Europe. Commission staff working paper with the support of the High Level Group on the Employment and Social Dimension of the Information Society (ESDIS), Brussels 18.09.2001. SEC(2001) 1428

<sup>197</sup> SIBIS project: Benchmarking report on eGovernment (2002). <http://www.sibis-eu.org>

<sup>198</sup> SIBIS project: Benchmarking report on eHealth (2002).

<sup>199</sup> Results of focus group discussions with US and UK teenage students. Reported by Reuters Health, March 20, 2003

<sup>200</sup> Vital decisions: How Internet users decide what information to trust when they or their loved ones are sick. Pew Internet & American Life project. May 2002.

<sup>201</sup> Cedefop (ETV) online survey of eLearning sector in Europe (July 2002)

include the design and delivery of the pedagogical and "andragogical"<sup>202</sup> aspects as well as the more general usability concerns that are shared with the other online services. Studies of usability of available eLearning products have found problems of counter-intuitive presentation of materials, failure to relate to the real-world experience of the user, poor presentation of key information and lack of even basic accessibility for people with disabilities<sup>203</sup>. There are also specific user issues arising because of the typically longer online sessions that are involved with eLearning, such as the need to enable users to seamlessly jump in and out of a session to deal with interruptions and so on.

More practical experiences<sup>204</sup> with engaging socially disadvantaged communities in online services suggest that awareness of the benefits the online world may offer cannot be created in a vacuum. Rather, it needs to be tied in with local activities in education, community, local development, business and employment. In this context, the benefits of engaging in services need to be demonstrated from a context-oriented perspective rather than from a merely technology-oriented one. Also, involvement of organisations working with the target groups appears to be decisive for developing effective messages.

### Mediation-related issues

Access to the required ICT infrastructures is a pre-requisite for being able to engage in online activities. This refers to both terminal equipment and the online connection required for accessing eServices. Particularly with respect to low-income groups, affordable access is a key challenge for inclusive eService provision, as costs for domestic Internet access remain prohibitive to many of them. Also, many of those who tend to lack the motivation to engage in online services believe that the Internet is not relevant enough to pay for.<sup>205</sup> Policy measures tackling these issues have up to now mainly focused on providing public internet access by means of establishing PIAPs which are in many cases located in libraries. However, many of those who belong to a social at-risk group never visit libraries and other locations at which PIAPS are usually situated, and there is some evidence that home access to the Internet is clearly preferred by them when compared with access at public facilities.<sup>206</sup> Moreover, availability of PIAPs appears to be unevenly distributed in terms of geographic coverage. For instance, it is estimated that in Germany currently 8000 to 9000 PIAPs exist – including both not-for-profit facilities and commercial internet cafés - of which 70% are located in cities with more than 20,000 inhabitants.<sup>207</sup> Promoting both existing and new kinds of public access therefore remains important for involving social at risk groups in online activities.

Despite the relevance of PIAPs for providing low-income groups with access to ICT infrastructures, affordable home access is seen as the ideal and long-term objective of infrastructure-related eInclusion policies in many countries.<sup>208</sup> This is reflected by the ongoing debate on whether or not the so called Universal Service Obligation (USO) – originally imposed in the context of deregulating telecommunications markets - should cover access not only to fixed voice telephony but also to Internet-related services, at least for specific disadvantaged groups. With respect to the digital divide debate it may however not only be relevant whether or not disadvantaged communities have access at all. In view of ever increasing bandwidth requirements of online applications, the type of connection

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<sup>202</sup> Knowles. M. (1970) The modern practice of adult education: andragogy versus pedagogy.

<sup>203</sup> Frontend.com (2001) op cit.

<sup>204</sup> Cf. Susan o'Donnell, Helen McQuillan, Anna Malina (2003): eInclusion: expanding the Information Society in Ireland ([www.itech-research.ie/publications/list](http://www.itech-research.ie/publications/list))

<sup>205</sup> Cf. SeniorWatch (2002). Older people and Information Society Technology - A comparative Analysis of the Current Situation and Future Trends ([www.seniorwatch.de](http://www.seniorwatch.de))

<sup>206</sup> Cf. TNS Emnid and Initiative D21 (2003): N(o)LINER ATLAS 2003- Eine Topographie des digitalen Grabens durch Deutschland (<http://www.nonliner-atlas.de>)

<sup>207</sup> Cf. *ibid.*

<sup>208</sup> Cf. Susan o'Donnell, Helen McQuillan, Anna Malina (2003): eInclusion: expanding the Information Society in Ireland ([www.itech-research.ie/publications/list](http://www.itech-research.ie/publications/list))

available may sooner or later also become relevant. There is for instance evidence that unmetered / broadband access creates substantially richer usage patterns when compared with metered/narrow band access.<sup>209</sup> Concerns have been raised that rural areas in particular will lose out in the provision of advanced services because of their limited broadband market capacity. In this context, it has been argued that broadband networks should be viewed as a support not only for economic regional development but also for educational and social development.<sup>210</sup>

Also, alternative access modes to online content are now becoming available through converging technology platforms, as in the case of digital TV. With a penetration rate of 98%, the TV set is at present the most widespread means of receiving electronic media content, especially, in older European's households.<sup>211</sup> There has been a debate during recent years as to whether the TV and the Internet may converge into one type of system, and some analysts believe that increasingly consumer devices will be linked together with a TV set-top box likely to become a multimedia hub.<sup>212</sup> In particular, some authors have argued that Internet access via the ordinary TV set may be of particular interest for people that cannot afford or do not want to buy a home PC.<sup>213</sup> According to the SeniorWatch study, there are currently some 19 million older Europeans (16 % of the EU 50+ population) who would be interested in accessing the Internet via their TV set, and about two thirds of these do currently not possess an Internet connection at home.<sup>214</sup> Against this background, it may become increasingly relevant to harness alternative access technologies for eInclusion purposes as they emerge from ongoing technology developments.

For people suffering from functional restrictions, such as people with disabilities, access to online services may be restricted by particular functional requirements they have in relation to ICT products and services. Issues arising in this context are extensively dealt with elsewhere in this document and concern a wide range of aspects relating to both mainstreaming accessibility in general ICT/online markets and promoting so called assistive technology solutions, i.e. solutions specifically tailored to the requirements of people with functional restrictions.

As already mentioned, full access to online services cannot be reduced to the ability to physically access the services in question. Recent research revealed that utilisation of online services is currently far from being ubiquitous not only due to lacking access in terms of technological infrastructures but also due to lacking ICT skills and confidence.<sup>215</sup> To be able to properly utilise online services citizens still need to have considerable computer and Internet skills, and endowment with these skills is highly correlated with ICT usage experience. Today, such skills appear to be

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<sup>209</sup> Jan Steyaert, Nick Gould Steyaert (2004 (in preparation)). The rise and fall of the digital divide. In J. Graham & M. Jones & S. Hick (Eds.), *Digital Divide and Back: Social Welfare, Technology and the New Economy*. Toronto: University of Toronto. (cited from the version downloaded from <http://www.steyaert.org/Jan/> on 25<sup>th</sup> August 2004, p.5)

<sup>210</sup> Cf. Walter Berner (2004) „Die Versorgung des ländlichen Raums Baden-Württemberg mit den neuen Medien“, unpublished conference contribution, Tagung in Leutkirch, 29. April 2004 and Susan o'Donnell, Helen McQuillan, Anna Malina (2003): *eInclusion: expanding the Information Society in Ireland* ([www.itech-research.ie/publications/list](http://www.itech-research.ie/publications/list))

<sup>211</sup> Note that "penetration" refers to the individual level, reading 98% of all older Europeans live in households with at least one TV set.

<sup>212</sup> This has, e.g., been predicted by Datamonitor in "Digital Home in Europe: Perspective 2003". see Bates, Peter J.: *Exploiting new opportunities and overcoming barriers for learning in the digital home*, <http://www.pjb.co.uk/upgrade2000.htm>, 13th March 2002.

<sup>213</sup> see *ibid.*

<sup>214</sup> Cf. Lutz Kubitschke; Veli N. Stroetmann; Tobias Hüsing, Karl A. Stroetmann (2002), *Older People and Information Society Technology: Results from the European SeniorWatch Survey*. published in: British Computer Society (2002): *ICAT – International Conference on Assistive Technology*, 24-25 April 2002, Pride Park Stadium, Derby; ISBN 1-902505-47-6

<sup>215</sup> Cf. Danish Technology Institute (2003): *Benchmarking Education in the Information Society in Europe and the US*. Topic Report No. 4: Education. IST project, IST-2000-26276. ([www.sibis-eu.org](http://www.sibis-eu.org))

obtained through learning by doing rather than through dedicated learning arrangements.<sup>216</sup> It is therefore not surprising that those lacking opportunities to gain hands-on experiences with ICTs in an occupational context, at school or through peer groups tend to lag behind as regards utilisation of online services.<sup>217</sup> Also, there is some evidence that the willingness to use the Internet for formal transactions of the kind involved in many online services appears to depend not only on actual skill endowment but also on the degree of confidence persons feel they have in using computer applications. The SIBIS project has developed a compound indicator for digital literacy reflecting such confidence<sup>218</sup>, and it has turned out that such confidence tends to be strongly correlated with household income and social grade.

As already mentioned earlier in this report, digital literacy clearly does not only refer to basic ICT skills but to a range of competencies that are necessary to place information in its context and to utilise it in a meaningful manner. Utilising e-services for one's own purposes requires the ability to both move around in a complex conceptual world and synthesise information collected this way in a context-oriented manner. As already mentioned in chapter two of this report, the competencies required for these purposes can be classified in three categories including instrumental competencies, structural competencies and strategic competencies. It is therefore essential that measures targeted towards capacity building among social at-risk groups address all competence levels required for utilising eServices in a practical useful way. Current approaches that merely concentrate on raising instrumental competencies need to be augmented with more comprehensive ones equally addressing structural and strategic competencies. With respect to people with disabilities, in particular, more practical experiences in ICT-related training measures suggest that a number of generic issues should be taken into account when developing ICT-related training measures for these groups including the following<sup>219</sup>:

- In a group setting, the atmosphere should be positive, challenging and non-judgemental so that fears about using technology and weaknesses in technical skills can be faced. When training occurs in such a kind of setting participants can not only learn the appropriate skills in computing, but also increase their own power to interact with the world, to communicate, and, not least, to be effective through their increasing ability to manage information independently.
- Classes need to be more flexible than classes for the mainstream population.
- Each person's interests, likes and dislikes should be sorted out before classes begin.
- Special adaptive equipment should be set up before the classes commence.
- Often people with intellectual disabilities do not need adaptive equipment. However, the tutor needs to understand what type of disability they have in order to steer the class in a direction so that feelings of inadequacy are avoided.
- It is useful to set up a trial web page that has all the Internet elements and which is geared towards participants' particular interests. Once they build up their confidence with this web page they can move on to the Internet.
- Because participants often become frustrated by the complexity of mainstream software a simpler browser may be recommended.

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<sup>216</sup> Cf. Danish Technology Institute (2003): Benchmarking Education in the Information Society in Europe and the US. Topic Report No. 4: Education. IST project, IST-2000-26276. ([www.sibis-eu.org](http://www.sibis-eu.org))

<sup>217</sup> Cf. SeniorWatch (2002). Older people and Information Society Technology - A comparative Analysis of the Current Situation and Future Trends ([www.seniorwatch.de](http://www.seniorwatch.de))

<sup>218</sup> The SIBIS digital literacy index measures confidence using 8 items related to online usage, including confidence in using a search engine to find information, in identifying the source of information provided on the Internet, in using e-mail and Internet chat-rooms, in creating a personal web page, in downloading and installing software onto a computer, and in understanding the content of websites written in English. Cf. Cullen, K., Milicevic, I., Wynne, R. (2003): Benchmarking Social Inclusion in the Information Society in Europe and the US. SIBIS Topic Report No.6: Social Inclusion

<sup>219</sup> Williamson, K., Stillman, L., Bow, A., & Schauder, D. (1999), Online services for people with disabilities in Australian public libraries'. Refereed conference paper, presented at AccessAbility Conference for Online Services for People with Disabilities. Monash University, 11 June 1999.

- After the programme is finished it can be difficult for those who do not have a computer at home to access the Internet

As already mentioned elsewhere in this report, comprehensive capacity-building may be of particular importance for people whose circumstances impose physical or temporal constraints on when and where they can do things – which may be the case for many people with disabilities or for housebound people (e.g. chronically ill persons) who lack the opportunity to do certain everyday things in ‘traditional’ non-digital modes. With respect to non-disabled communities comprehensive capacity building is of particular importance with respect to the potential role of online services in empowering social at-risk groups in terms of interest group formation and creative expression. For instance, recent research on the engagement of young adults in online activities indicates the existence of a ‘voice divide’ in the virtual space largely reflecting non-digital patterns of social stratification in terms of educational attainment, household income and so on.<sup>220</sup> At the same time, Scandinavian experiences with setting up Internet Cafés and Local Networks in deprived areas show that the use of ICT – and in particular the Internet – can contribute to the (re-) creation of social capital and a sense of local community.<sup>221</sup>

### Supply-related issues

In order to ensure accessibility of online services for social-at risk groups their specific user requirements need to be adequately considered when creating and presenting online services/content for/to them. With regard to people with visual disabilities, detailed guidelines on how to present web content in accessible formats have now become available, and these have started to be applied on a wider scale particularly in the eGovernment domain. However, physical, sensory and cognitive capabilities of disabled people - and also of people who are usually not regarded as disabled in a formal sense such as some older people – vary widely, and the specific requirements of people with functional restrictions not relating to their visual abilities appear even less considered by today’s public online service providers. For instance, people with limited cognitive capacities can be supported in accessing online services through plain language and/or illustrative components being used when presenting web content. Also, as extensively discussed elsewhere in this report, it is a fundamental requirement to ensure accessibility not only for web content but also for mainstream ICTs enabling access to online services for functionally restricted people such as visual displays, computer keyboards, software and so on. The eAccessibility concept and the Design-For-All approach discussed earlier address all these issues with respect to specific user requirements of people with a long-standing disability or other functional or activity limiting restrictions.

The specific user requirements of communities that are disadvantaged in other regards (e.g. socially, economically, culturally) appear to be less well researched. Relying upon research in the field of user satisfaction with online services, some generic requirements for inclusive online service provision can however be identified.<sup>222</sup> These can be summarised as follows:

- Visibility refers to the degree to which the service has been made known to potential users, i.e. the level of awareness about the service in the target population.

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<sup>220</sup> Cf. Hans-Uwe Otto, Nadia Kutscher, Alexandra Klein, Stefan Iske (2004): Soziale Ungleichheit im virtuellen Raum: Wie nutzen Jugendliche das Internet? Erste Ergebnisse einer empirischen Untersuchung zu Online-Nutzungsdifferenzen und Aneignungsstrukturen von Jugendlichen . (<http://www.uni-bielefeld.de/paedagogik/agn/ag8/kib.html>)

<sup>221</sup> Cf. Sara Ferlander (2003): The Internet, Social Capital and Local Community. Doctoral Thesis submitted for the degree of Doctor of Philosophy at the University of Sterling, Department of Psychology, (<http://www.crdlt.stir.ac.uk/Docs/SaraFerlanderPhD.pdf>).

<sup>222</sup> Cf. Anderson, R. (2001) “Social services, quality and the user – a European review of the development of indicators and standards”, paper presented at the conference “Shaping the future of social services”, Barcelona 5-7 June, Cho, V., Cheung, I. (2003) “A study of on-line legal service adoption in Hong Kong”, paper presented at the 9th conference of the Academy Of Business & Administrative Sciences, Vancouver, June 24-26., Davis, F.D. (1989) "Perceived usefulness, perceived ease of use, and user acceptance of information technology," MIS Quarterly (13:3), 319-340.

- Usefulness refers to the practical utility of the service from the viewpoint of the individual service's addressees. In this sense usefulness can comprise a number of attributes such as applicability to personal circumstances, time and/or cost savings, savings in travel, social aspects such as prestige and social desirability, and so on .
- Accessibility refers to the degree at which the mediating technologies employed enable the service's addressees to access the service in question. Further to the concept of eAccessibility described elsewhere in this report, it can be understood as a function of a number of - not necessarily disability related - aspects including , e.g., findability (the ease with which the service can be located), affordability (the degree to which the addressees can afford the cost for accessing/using the services in question), time independence (the extent to which the service is accessible at any time when demand occurs) or platform independence (the extent to which the service is accessible through various alternative hardware/software systems).
- Quality refers to the ability of the service to fulfil the expectations of the user (i.e. lead to satisfaction with the service). Again, this can be understood as a function of a range of attributes including, e.g., usability in terms of "ease of use", reliability in terms of technical functioning and accuracy of information given, responsiveness in terms of quick response and the possibility to get assistance if a problem or question occurs, efficiency in terms of simple to use processes, assurance and trust, customisation in terms of easy tailoring to the addressees' preferences and needs.

As already mentioned, it is important to notice that online public services are not an end in themselves, but need to be viewed in the context of alternatives. After all, it might well be that the Internet is far less efficient/effective in some cases (and from citizen's point of view) than, for example, a telephone-based service or even plain old face-to-face delivery. It is therefore, decisive for inclusive service delivery to properly assess the requirements the service's addressees may have in the light of their actual interest in online delivery. For those who have an interest in/preference for online access it is important to know about their particular eService requirements. For those whose interests/preferences remain with the offline mode of service access it is important to know what their requirements for 'traditional' service delivery are and how online services can - perhaps more effectively - cater for these. As already mentioned before, a meaningful co-existence and integration of both online and offline delivery modes will remain a key requirement for equitable service provision in the domains of public interest discussed in this document, even if some eServices should be ubiquitously available. This will to a large extent require organisational innovation in order to achieve real improvements in efficiency and quality of service.

### 5.1.3 Towards the identification of target groups for inclusive online service provision

Intuitively, it is clear that the issue of eInclusion is more relevant for certain groups in society than for others, particularly for those who have frequently been identified as socially disadvantaged in general by social research. This assumption is supported by available survey data on Internet penetration and usage. A recent literature review revealed for instance that there are " ... no less than seven significant socio-demographic fault lines along which the availability varies. These include income, educational level, gender, age, employment status, ethnicity and type of household (e.g. single-parent). Access to the Internet varies as can be expected: the higher the household income or the younger or the more Western ethnicity or ... , the more they have Internet. One can be surprised by the fact that there is such little surprise that precisely these seven variables influence Internet access. It has been used as a strong argument to state that the digital divide is not that digital, but another façade of social exclusion (De Haan & Rijken, 2002). As such, variety to having access to new media is little different from having access to health care, to education or to employment."<sup>223</sup>

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<sup>223</sup>. Jan Steyaert, Nick Gould Steyaert (2004 (in preparation)). The rise and fall of the digital divide. In J. Graham & M. Jones & S. Hick (Eds.), Digital Divide and Back: Social Welfare, Technology and the New Economy). Toronto: University of Toronto. (cited from the version downloaded from <http://www.steyaert.org/Jan/> on 25<sup>th</sup> August 2004, p.3)

It should however be noted that, of course, none of the groups mentioned above is monolithic in terms of being potentially excluded from the online world. Also, it should be noted that a simple cause and effect path does not apply to phenomena linked to social inclusion. When individuals or social groups are experiencing (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 a higher than 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.<sup>224</sup>

Finally, it should be noted that it is beyond the scope of this section to explore in detail the complex relationship between social inclusion and eInclusion with respect to particular social at-risk groups. For the purposes of this document it may be fair to assume that if in future an increasing number of day-to-day transactions is performed over online media, people who do not have access to these - or who are unable to utilise them for their purposes in a meaningful manner - will at least in the longer run experience fundamental disadvantages for activities of daily living, health, communications and social well-being. The following Table 5.4 provides an indicative assessment of the ways in which specific population groups may face such a risk.

**Table 5-4: Indicative assessment in relation to the digital divide**

Population group	Indicative risks assessment
Women	<p>Recent surveys still show sharp differences in most Member States to the disadvantage of women in ICT training and online access. Women are therefore a specific target group of many information society initiatives with mainly two interrelated objectives:</p> <p>(a) Equal opportunities; It is a designated objective of the European Community to promote equality between men and women and to ensure that all its activities aim to eliminate inequalities.</p> <p>(b) Counteracting the risk of social exclusion: Social statistics show that women tend to be at a higher risk of social exclusion, mainly because of economic reasons. This is particularly true for single mothers. Also, women are traditionally, and still often are, in charge of unpaid care for dependants. If this situation changes unexpectedly, they are often facing severe difficulties when trying to re-enter employment</p>
People with disabilities	<p>As described elsewhere in this document, people with disabilities are at particular risk of being excluded from ongoing online developments. In this context, the Lisbon Council (23-24 March 2000) of the EU directed that exclusion from the information society should be prevented and that it was necessary to pay special attention to the needs of people with disabilities. One of the objectives in this context is "to exploit fully the potential of the knowledge-base society and of new information and communication technologies and ensure that no-one is excluded, taking particular account of the needs of people with disabilities".</p> <p>An extensive literature review conducted in the context of the Australian AccessAbility project revealed that frequently cited barriers to ICT use among people with disabilities including financial, technical, impairment and personal.<sup>225</sup> Further barriers identified include the lack of appropriate and accessible training, attitudinal barriers, language as well as the design and rapid pace of change on the web. Particularly for children with disabilities, the lack of knowledge of those who work with them appears to be a major barrier for getting involved in ICT-related activities.<sup>226</sup></p>

<sup>224</sup> Cf. Cullen, K., Milicevic, I., Wynne, R. (2003): Benchmarking Social Inclusion in the Information Society in Europe and the US. SIBIS Topic Report No.6: Social Inclusion

<sup>225</sup> Cf. Williamson, K., Stillman, L., Bow, A., & Schauder, D. (1999), 'Online services for people with disabilities in Australian public libraries'. Refereed conference paper, presented at AccessAbility Conference for Online Services for People with Disabilities. Monash University, 11 June 1999.

<sup>226</sup> Cf. also Chris Abbott, Routledge/Falmer, (2002), Special educational needs and the internet – issues for the inclusive classroom,. London, ISBN 0-415-26801-8

Population group	Indicative risks assessment
Older people	<p>Concerning older people there is evidence that the current European 50+ population covers the whole range of involvement in IST applications, of relevant skills, attitudes, and usage patterns like in any other age group. As revealed by the SeniorWatch study<sup>227</sup>, a quite considerable part of the older population is involved in IST-related activities. IST users - even at an experienced and advanced level - are not as rare among them as public discussion sometimes suggests. And also among many non-users, there is eminent interest in learning more about and acquiring various products, services and applications.</p> <p>However, at the same time about one thirds of the European older population are at risk of exclusion from the rapidly developing online world. They neither possess any ICT skills nor do they have access to the required equipment, and – perhaps even more decisive – they are not at all interested in getting involved in any online activities. This does not only concern the older age cohorts. In general, engagement in online activities appears to be not just a matter of age but rather a matter of traditional patterns of social stratification. According to representative survey data<sup>228</sup> the better educated “older old” are for instance much more likely utilise online technologies for their purposes than the less educated “younger old”. A more detailed analysis of the SeniorWatch data revealed that several socio-economic variables have a significant influence on whether or not older European’s utilise the internet for their purposes. Besides age, these include in the first instance gender, income and educational attainment. The country in which a person lives is another highly influential variable in this regard. Here, a clear north/south gradient can be observed. A person’s life style (active versus non-active life) is another factors that has to be taken into account.</p> <p>Also, functional restrictions impede uptake of online services among older people. According to SeniorWatch data, some 26 million older Europeans are considerably restricted in using IST applications as regards their ability to see, to hear, or to use their fingers for manipulating a key board or touch screen. When it comes to computer usage in particular, older persons who are functionally restricted (visually, hearing, dexterity) are significantly less likely to frequently use a computer, and this is does not appear to be the case because they were less interested in computer technology. In fact, they tend to be even keener on learning about new technologies or to improve their computer skills than those who do not suffer from any functional restriction.<sup>229</sup></p>
Illiterate people	<p>In addition to computer skills and ability, the notion of competence related to the use of online services also includes competence in handling any kind of service, irrespective of the channel through which they are received. A factor in this is literacy in the wider sense of term, meaning the ability to grasp and process informational content. Data on literacy has been systematically collected by the OECD under the leadership of Statistics Canada through the International Adult Literacy Survey (IALS, see OECD 1997, 1998). The authors conclude from their analysis that “low literacy is a much larger problem than previously assumed in every [OECD] country surveyed: from one-quarter to over one-half of the adult population fail to reach the threshold level of performance considered as a suitable minimum skill level for coping with the demands of modern life and work”. It must, therefore, be assumed that low literacy levels will also act as a barrier to the utilisation of eServices as long as these require more advanced literacy skills than traditional methods of provision, such as face-to-face interaction.</p>

<sup>227</sup> SeniorWatch (2002). Older people and Information Society Technology - A comparative Analysis of the Current Situation and Future Trends (www.seniorwatch.de)

<sup>228</sup> Cf. *ibid.*

<sup>229</sup> Cf. Lutz Kubitschke; Veli N. Stroetmann; Tobias Hüsing, Karl A. Stroetmann (2002), Older People and Information Society Technology: Results from the European SeniorWatch Survey. published in: British Computer Society (2002): ICAT – International Conference on Assitive Technology, 24-25 April 2002, Pride Park Stadium, Derby; ISBN 1-902505-47-6

Population group	Indicative risks assessment
Unemployed people	<p>It is obvious that employment is an important safeguard against social exclusion. Information and communication technologies play an important role in this context for two reasons:</p> <p>(a) Creation of new jobs in the ICT sector: The creation of new opportunities for employment is ranking high on the political agenda of the European Union. In search for growth areas that promise a significant number of new jobs in the years to come, the markets of the information and communication industries give rise to great hopes, although there is some debate about the net impact of the new technologies on employment. i.e. there is some evidence that new technologies rather cause a structural transformation of employment requirements rather than the creation of additional jobs. However, the skills gap in the labour market for IT professionals will not be closed any time soon, and it stands to reason trying to qualify unemployed people for these jobs since this means – if successfully done – addressing two problems at the same time and in one go.</p> <p>(b) Support for unemployed people: On a different level, basic ICT skills are a requirement for nearly any job in the information society. Special ICT training measures for unemployed people have therefore become an integral part of employment strategies and a focus of activities e.g. by the public employment services in Member States. Other activities to help unemployed people finding employment include for instance online information services about vacancies and free-of-charge internet access at employment offices.</p>
Ethnic minorities and non-nationals	<p>There is no general conclusion whether ethnic minorities are disadvantaged in terms of technical access to ICT infrastructure. Data provide different results for different groups and countries, probably depending – in the first place – on the economic prosperity of the ethnicity. eInclusion initiatives for ethnic minorities include two main types of activities:</p> <p>A specific issue for ethnic minorities will be the availability of useful content. There is some debate whether the concept of the digital divide should be generally extended from mere "access" and "usage" to the uneven distribution of content and services for different cultural and lingual communities. The argument is that – apart from gaining access (defined either in terms of infrastructure or in terms of ability to use ICTs) – it is important for individuals and groups at risk from falling behind in the information society to have access to useful content on the internet. This argument is also used in the context of social integration of ethnic minorities, but is not uncontested.</p> <p>The other important aspect is to offer target group specific training and motivation programmes. These are mainly provided by community centres (e.g. youth centres, cultural and social centres). The objective is to create an environment that reduces barriers that otherwise keep members of minorities to take advantage of such offers. In some cases, minorities are at the same time socio-economically disadvantaged groups. This may cause a severe problem in terms of access to ICTs. For instance, empirical evidence shows that children of foreign workers are less likely to have access to a PC in their homes than their peers. This may reinforce that they continue to experience social disadvantages in the long run.</p>
People with low income	<p>For citizens who live in households with a low disposable income access to ICT can be a financial problem in the first place. Both the purchase of required hardware as well as the costs for online connectivity can be insuperable barriers to eInclusion and thus reinforce social exclusion. This is particularly a problem for youths living in low-income households since they are likely to not having the same opportunities to become digitally literate as their peers in more affluent families.</p> <p>Different types of programmes and initiatives have been launched to tackle this problem. In some cases, the purchase of hardware is subsidised, another approach is to improve the infrastructure of (low cost or free of charge) public internet access points in order to partly compensate the access disadvantage of people from low income households.</p>

#### 5.1.4 Towards quantifying the digital divides

A population survey recently conducted in the context of the SIBIS project provides evidence that "...most of the socio-economically related social exclusion determinants are also relevant in relation to the Information Society and that, furthermore, the digital divides identified in the existing body of research, especially in earlier surveys still persist. (...) Thus higher income levels and higher educational achievements are positively correlated with higher levels of access to and usage of Information Society products and services – as visible from analysing PC usage, Internet usage, Internet access at home and mobile phone ownership. Also, older people and those who are unemployed are less likely to have access to, or use these products and services, with the age divide being much more pronounced in the EU whereas the unemployment divide tends to be greater in the

US. Finally, the male: female gender digital divide still persists, although decreasing and of lower magnitude in the US than in Europe.”<sup>230</sup>

The SIBIS project has also developed a compound statistical indicator reflecting an ‘average’ digital divide over a time span of five years (Figure 5.3). “As a result It can be seen that for the EU overall the digital divide as measured by this index has stayed more or less the same since 1997. However, this overall picture based on compounded values aggregating values for individual indices based on gender, age, income and educational differences conceals a lot of variation and dynamics, both at the country level, and in terms of indices composing it. In some countries the divide has increased since 1997, in others it has decreased and in others has remained more or less the same.

Underlying factors are likely to include a mix of differences in basic structural (in)equalities, and in changes in these over time, as well as different stages on the Information Society adoption curve. Being on a different stage on the Information Society adoption curve is the most logical explanation for the apparently increasing digital gap over time (...). Here too the gaps differ according to subgroups’ main characteristics, and the biggest gap is discernible in relation to education. Thus In 1997, the percentage of computer and internet usage among the low education segment was 14 percentage-points below the population average, and in the year 2000 this distance had increased to 22 percentage points, while it reached 37 points in 2002 (...). This in turn suggests that the time lag between ICT adoption among presumably disadvantaged groups of society and the population average is still high at the EU level.”<sup>231</sup>

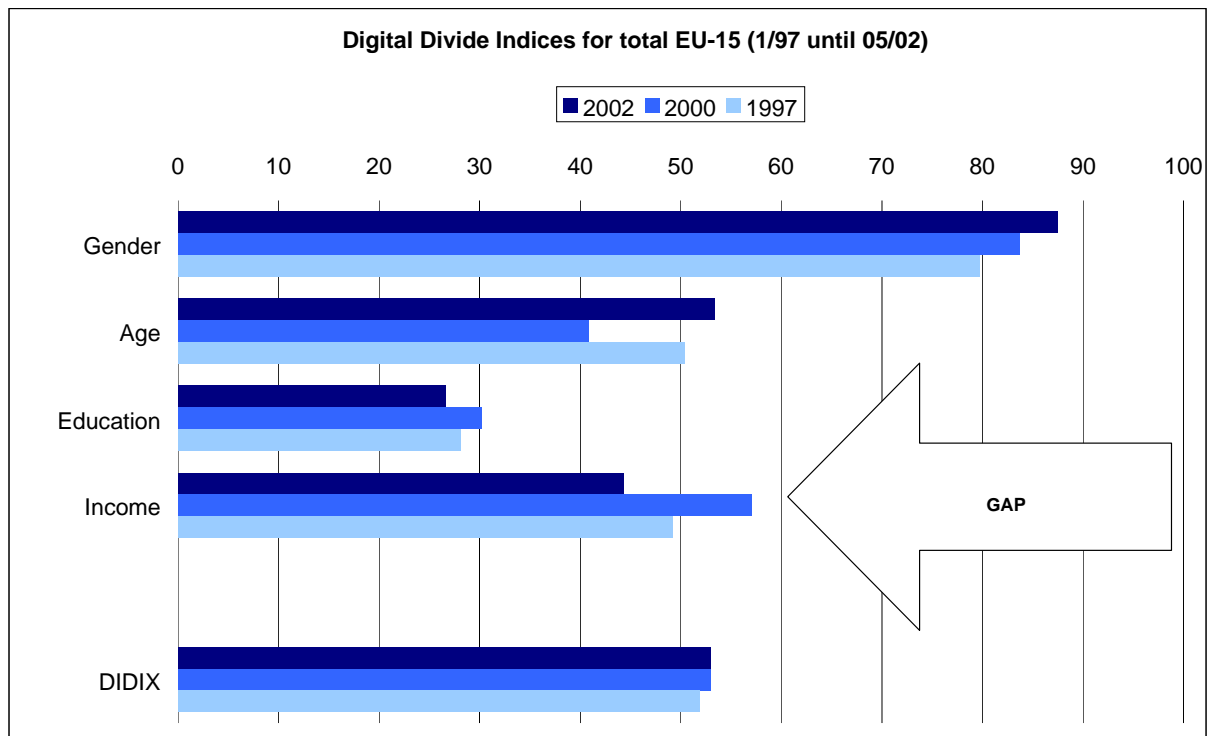
A specific aspect concerning the exclusion of people with particular accessibility needs from online service provision concerns the accessibility of both public and commercial web sites. In this regard results of the SIBIS survey suggest that accessibility of web-based offerings is obviously not a top priority for European companies, corporations and public sector organisations. As revealed by a decision-maker survey conducted in the context of the project, “... the majority of companies in the EU 7 (on average) still tend to assign a rather low priority to their online accessibility. Thus 59% had low priority attached to making their website accessible for people with visual difficulties. The corresponding figures for people with limited dexterity was 56%, while for nearly 58% reaching people with limited literacy appeared also to be of low priority. (...)

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<sup>230</sup> Kevin Cullen, Ivica Milicevic, Richard Wynne (2003): Benchmarking Social Inclusion in the Information Society in Europe and the US. SIBIS Topic Report No.6, p.2. ([http://www.empirica.biz/sibis/files/WP5\\_No6\\_Social\\_Inclusion\\_2.pdf](http://www.empirica.biz/sibis/files/WP5_No6_Social_Inclusion_2.pdf)).

<sup>231</sup> Ibid., p. 35.

Figure 5-3 The SIBIS Digital Divide Index (DIDIX)



Source: SIBIS , 2003

While the above suggests that there is a plenty of scope for improvements, there are some encouraging signs. Thus a significant proportion of the EU [7] companies which did not initially assign a high level of priority to their online accessibility (46%) reported that their websites could be adapted relatively easily with a view to accommodating the potential online users with special accessibility needs (this figure corresponds to just above one-third of the total onliners in the sample). This finding could also be viewed as confirmation that quite a few companies are becoming aware of possibilities to expand the accessibility of their website to a wider audience. Equally encouraging was the finding that 22.5% of the EU [7] companies that assigned high and / or medium level of priority to their online accessibility (this figure corresponds to just under one in ten of the total onliners in the sample) have incorporated the accessibility issue into their online strategy to a considerable extent, i.e. they reportedly adhered to formal accessibility guidelines (...). Finally, the prevalence of those online companies who might be considered as least accessible at the moment and, more importantly, likely to remain so, at least in the medium term, appears to be rather low. Thus less than one-quarter (23%) of the online companies have reported both low priority being assigned in terms of online accessibility regarding all of the groups specified, as well as considered their websites to be difficult and / or impossible to adapt in terms of accommodating these people."

## 5.2 The Policy Domain

This section focuses on outlining the various policy lines at the EU level that are concerned with aspects relating to inclusive online service provision. These may on the one hand concern the prevention of digital exclusion in the sense that disadvantaged individuals/groups may be left behind as the knowledge society further develops. On the other hand, they may include issues concerning opportunities emerging from the online world for a better inclusion of socially disadvantaged people or communities in general. In the following, this is briefly discussed according to the various policy lines concerned at the European level.

## Social policy

The fight against social exclusion is included in the provisions relating to the European Union's social policy through Articles 136 and 137 of the Amsterdam Treaty. At the European Councils in Lisbon (23-24 March 2000) and Feira (19-20 June 2000), the EU Member States took an initiative toward making the fight against poverty and social exclusion one of the central elements in future European policies. The Heads of State and Government agreed that policies combating social exclusion should be based on an open method of co-ordination combining National Action Plans on Social Inclusion (NAPs) and a programme presented by the Commission to encourage co-operation in this field, similar to the annual circle of the European employment guidelines and the subsequent NAPs for employment. With the Joint Report on Social Inclusion (2001), the European Commission adopted – for the first time ever – a report analysing governments' social inclusion policies. In the context of the so called "Lisbon strategy", it was also recognised that Europe's education and training systems need to adapt both to the demands of the knowledge society and to the need for an improved level and quality of employment.

Further to this, the recent Joint Report on Social Inclusion, based on an analysis of the 2003/2005 National Action Plans on poverty and social exclusion, identified the impact of the rapid growth of the knowledge-based society and Information and Communication Technologies as one of the important structural changes that is impacting on poverty and social exclusion. The importance of the issue is also recognised in many of the acceding countries in their Joint Memoranda on Social Inclusion.

## Employment policy

The issue of social inclusion, and particularly the e-inclusion aspect, is also addressed by the EU's employment policies. The Communication of the European Commission on "Strategies for jobs in the information society" [COM(2000) 048] addressed the need to combat a growing "digital divide" between those who do and do not have access to the knowledge based society. A report drawn up on the basis of this Communication stresses the "job potential of the information society" due to opportunities created by the new information and communication technologies, but also points out that the "European information society is still largely exclusive", and raises the issue of "information society skills gaps". The report asks for an integral, co-ordinated strategy for information society challenges in four domains: learning, working, public services and the enterprise. Several of the objectives and actions proposed directly relate to social inclusion, for instance the goal to "promote employment of people with disabilities in the information society". In this context, the report quotes the EDF (European Disabilities Forum) and the IsdAC (Information Society disAbilities Challenge) who believe that information technology has a high potential for inclusion of people with disabilities. The annual EU Employment Guidelines have been adapted to integrate specific social inclusion targets for Member States and Social Partners in the area of learning (schools, teachers), the labour force (skills, teleworking, work organisation) and equality (women in technology).

In the context of the European Employment Strategy, the Council has called on the Member States to continue to provide e-learning to all citizens and social partners to set the conditions for digital literacy for workers. In its resolution of 18 October 2001 on e-Inclusion the Council encouraged Member States to take e-learning related measures towards full participation of disadvantaged people in the knowledge-based society. Progress is being monitored with the support of ESDIS (High level Group on the Employment and Social Dimension of the Information Society). The European Employment Strategy pays special attention to the job opportunities in the knowledge-based society and to the potential of ICT. The guidelines for Member States' employment policies for the year 2002 set objectives and targets for building conditions for full employment in a knowledge-based society, like e-learning for all citizens, digital literacy for all workers or modernisation of public employment services. Member States have presented their strategy in their National Action Plans 2002.

To promote the objective of European labour markets being made open to all and accessible to all by 2005, the Commission's Action Plan on Skills and Mobility addresses a series of challenges. These include that of inadequate occupational mobility, showing up the need to adapt education and training

systems more effectively to the labour market, to boost lifelong learning and skills acquisition (particularly ICT skills) and to improve systems to recognise qualifications and competencies.

### Structural policy

Through its Social Fund (ESF) the European Union aims to reduce the differences in living standards between the people and the regions of the EU by supporting and complementing the activities of Member States in developing both human resources and labour market policies. It is the financial mechanism that supports the European Employment Strategy. In general the European Union's Structural Funds, such as the European Social Fund, aim not only to develop physical infrastructure but also to boost 'human investment', human and social capital. In this context it has been recognised that the knowledge-based economy demands that more Community resources than ever should be dedicated to job creation and particularly to lifelong learning. Policies in the fields of electronic communications, education and training are of fundamental importance in preparing the way for the knowledge society.

Funded by the European Social Fund, EQUAL, the Community initiative for Human Resources, tests new ways of tackling discrimination and inequality experienced by those in work and those looking for a job. One out of the 9 EQUAL thematic fields is "supporting the adaptability of firms and employees to structural economic change and the use of information technology and other new technologies". In this very field 133 Development partnerships have been validated by the National Authorities and transmitted at European level up to now.

### Educational policy

In May 2000 the European Commission adopted the "eLearning – Designing tomorrow's education" - initiative. The introduction to the initiative stresses the importance of "the stepping up of the education and training drive in the European Union – in order to successfully assimilate the digital technologies and use of them to best effect" as a precondition to the success of the Lisbon European Council's goals, including greater social cohesion. The eLearning document states that "the emergence of the knowledge based society implies that every citizen must be 'digitally literate' and [possess] basic skills in order to be on a better footing in terms of equal opportunities (...). This is high on the list of priorities if we are to enhance cohesion (...) in our society as opposed to creating fresh divisions."

In March 2001, the Commission issued the eLearning Action Plan in order to present ways and means of implementing the eLearning initiative. The eLearning initiative as part of the eEurope 2002 action plan seeks to mobilise the educational and cultural communities, as well as the economic and social players in Europe, in order to speed up changes in the education and training systems for Europe's move to a knowledge-based society. Four Action lines were chosen including "equipment", "training at all levels", "quality multimedia content and services" and "development and networking of centres of excellence". The subsequent eLearning action plan 2001-2004, put forward by Commissioner Reding with the support of Commissioner Diamantopoulou and Commissioner Liikanen, focuses on lifelong learning for a cohesive and inclusive society and aims to address the shortage of skills associated with new technologies.

Following the adoption by the Commission on 21 November 2001 of the Communication on Making a European Area of Lifelong Learning a Reality, lifelong learning has become the guiding principle for the development of education and training policy. The Communication sets out concrete proposals that aim to make lifelong learning a reality for all. Lifelong learning implies raising investment in people and knowledge; promoting the acquisition of basic skills, including digital literacy; and broadening opportunities for innovative, more flexible forms of learning.

The eLearning Industry Group, eLIG, an open consortium of leading ICT companies and eLearning content providers, co-operates with the Commission in seeking to promote elearning throughout Europe, in schools, universities, the workplace and homes. Among others, eLIG provides its views on eLearning and proposes recommendations for action to the EU institutions as well as national and regional governments.

## Dedicated Information Society policy

The objective eInclusion is an integral part of the eEurope Initiative, which was launched by the European Commission in December 1999. The ambitious objective of eEurope, which is a key element in the strategy to modernise the European economy, is "to bring the benefits of the Information Society within reach of all Europeans". Following the eEurope 2002 Action Plan, the eEurope 2005 Action Plan was launched at the Seville European Council in June 2002 and endorsed by the Council of Ministers in the eEurope Resolution of January 2003. It aims to develop modern public online services and a dynamic environment for e-business through widespread availability of broadband access at competitive prices and a secure information infrastructure. It carries the ambitious objective of achieving "an Information Society for All". This means overcoming social and geographical differences, ensuring an inclusive digital society that provides opportunities for all, and thus minimising the risk of 'digital divide'.

The action plan recognises that achievement of a truly inclusive Information Society requires a demand-oriented approach where the needs and specificities of all social groups and areas of the EU are taken into account. With regard to ICT access, particular attention is paid for those women and men that are most at risk of being excluded, such as disabled and older people. The EU is active in this area, commonly referred to as "e-accessibility" or simply "accessibility", thus contributing to the EU Disability Strategy.

Also, accessibility has been included for more than a decade in the Commission RT&D activities, first in the TIDE initiative ("Technology Initiative for Disabled and Elderly", 1991-1997), then in the 4th Framework Programme ("Disabled & Elderly Sector" of the Telematics Application Programme - TAP) and in the 5th Framework Programme ("Applications for Persons with Special Needs, including the Disabled and the Elderly" of the Information Society Technology Programme - IST). It is now part of the 6th Framework Programme, under the Strategic Objective "e-Inclusion" of the IST Priority, participating therefore in the integration and the strengthening of the European Research Area (ERA) in this sector. The e-Accessibility target of the Action Plan for 2002 in the eEurope Initiative also deals with this general topic and gave some impulse to many actions in this field. The Action Plan for 2005 transformed this target in a wider e-Inclusion horizontal action, to interact with all priorities of the action plan.

## Health policy

Every EU Member State should develop national or regional roadmaps for e-Health by 2005, according to the recommendations set out in an action plan on e-Health adopted by the European Commission on 3 May 2004. The action plan 'e-Health - making healthcare better for European citizens' specifies around 20 practical steps for making better use of information and communication technologies (ICT) within the health care sector, with the goal of establishing a European e-Health Area.<sup>232</sup> Responsibility for achieving these steps is shared between the Commission and Member States. As well as developing their roadmaps, between 2004 and 2008 European governments are also expected to support the deployment of health information networks. By 2005, EU countries are also expected to agree a common approach to benchmarking the quantitative and qualitative impacts of e-Health. The actions that the Commission has set itself begin with the creation of a high level e-Health forum before the end of 2004, made up of stakeholders from national, regional and local hospital authority levels. The forum will be responsible for following up the various roadmaps developed across Europe, and identifying further areas for action. In addition, the Commission pledges to develop a summary of European best practice in e-Health by mid 2005 to help guide Member States and, by the end of the same year, create an EU public health portal giving access to European level health information.

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<sup>232</sup> COM (2004) 356 final, COMMUNICATION FROM THE COMMISSION TO THE COUNCIL, THE EUROPEAN PARLIAMENT, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS: e-Health - making healthcare better for European citizens: An action plan for a European e-Health Area. Brussels 2004

The issue of access for all to e-Health is explicitly addressed within the action plan. Equal access for all groups in society to health services is highlighted as an important goal in the public health policy field. It is recognised that there is a risk that certain parts of society - such as lone parents of families, isolated communities, inner city communities, individuals with literacy and numeracy challenges, groups of immigrants, homeless persons, elderly persons and disabled persons – could remain excluded from the possibilities offered by e-Health (including Internet-based health services) if special efforts are not made to counterbalance such trends. On the other hand, e-Health is considered to have the potential to offer considerable possibilities for the provision of health services to such individuals, groups, and communities.

### Enterprise policy

The European Union pursues a policy towards integrating social and environmental concerns in European companies' business operations and in their interaction with their stakeholders on a voluntary basis. In this context it has been recognised that the main function of an enterprise is to create value through producing goods and services that society demands, thereby generating profit for its owners and shareholders as well as welfare for society, particularly through an ongoing process of job creation. Contributing to societal welfare may also include ensuring accessibility of products and services produced by a company.

## 5.3 Evidence-base needed for policy formulation and evaluation

From the analysis presented in the previous chapters a number of issues arise that need to be further explored as a basis for evidence-based policy formulation. These are described in more detail in the following.

### Understanding the challenge

Development of effective strategies for policy interventions requires an understanding both of the extent and genesis of the challenges ahead. Benchmarks for inclusive online provision need to be established and suitable indicators developed that can be applied in the context of regular monitoring activities. This refers to both the use of online services by the various population groups at risk of being digitally excluded and the supply of appropriate online services to them. Such indicators should reflect the extent to which online services meet the needs and preferences of both actual as well as potential users, and they should be capable of reflecting risks of social exclusion associated with increasing penetration of online services in core areas of the civil society, e.g., by means of eGovernment, eHealth and eLearning applications.

In this sense, the SIBIS project has clearly demonstrated the value of a more sophisticated monitoring of eInclusion aspects in relation to ongoing online developments, i.e. of going beyond merely measuring who is online and who is not. In particular, it has developed some promising new indicators that warrant further attention in future research and monitoring, e.g. indicators on the demand side that address potential attitudinal, skills and accessibility barriers in take up of online services. Also, the project performed some new – if necessarily still preliminary - work on developing compound indicators for application in benchmarking eInclusion. Targeted policy interventions would need to rely upon similarly differentiated monitoring data.

### Motivating at risk groups to engage in online activities

Based on a sound monitoring of eInclusion aspects as sketched above, it will then be necessary to identify target groups for more differentiated policy intervention. When considering exclusion from ongoing Information Society developments as an unequal process of appropriation of online delivery modes of public and/or commercial services ("online challenge") it is clear that particular attention has to be paid to the "ceiling horizon" in the diffusion curve, i.e. to the "laggards" in the adoption process and the "ultimate non-adopters" respectively (c.f. Figure 2.2). When considering eInclusion as a

component of general social inclusion policies (“online opportunity”) it may be necessary to target not only those who lag behind on the adoption curve but also those who – despite that they are already online – are socially disadvantaged in a general sense.

In any case, it will be important to consider that the population segments usually regarded as “vulnerable groups” are not at all homogenous groups as regards their ICT-related aspirations and requirements. Thus, it will be necessary to apply concepts of user-related segmentation of target groups for policy intervention not only with respect to the society as a whole but also internal to particular at-risk groups. Within each of these groups sub-groups need to be identified that share particular characteristics in relation to online services and consequently present indications for specific types of targeted actions (e.g. encouragement of interest, technical access or skills development).

For some population segments empirical information required for these purposes may be available from existing research. For instance, the SeniorWatch study<sup>233</sup> has developed a generic typology of ICT involvement for the European Union’s population aged 50 years and over based upon survey data on ICT usage patterns, possessed ICT skills as well as interest in computer technology and more general attitudes towards ICTs. It encompasses four generic user/non-user types, namely the ‘experienced frontrunners’, the ‘old age beginners’, the ‘technologically open minded’ and the ‘digitally challenged’. For other subgroups, e.g. disabled people, similarly differentiated information is hard to find, particularly not from a reliable single source of information. Such data would however be required to identify target groups for differentiated policy intervention, and as a baseline for priority setting.

### Technical access infrastructure

With respect to the eAccessibility component in eInclusion – as defined for the purposes of this co-ordination action - the various types of evidence-based support that can help policy formulation and evaluation have been extensively discussed in chapter 3 of this document. In the sense of a “horizontal feature” (see Figure 2.5), they also apply with respect to accessibility of online services for people with functional restrictions such as people with disabilities and large parts of the older population.

As regards non-functional restrictions in the utilisation of online services among societal at-risk groups, affordable Internet access appears to remain a key challenge. During recent times the establishment of PIAPs has been pursued by policy as a core means of addressing this challenge in many European countries. However, it is not clear as to whether these really reach those population segments that are most at risk of being excluded from online delivery of services potentially relevant for them. For instance, in Ireland most PIAPs are located in libraries, but less than one third of the unemployed are library users.<sup>234</sup> Other forms of public access may thus be required, e.g., through public kiosks in jobcentres, health institutions, community centres or town halls. Also, the basic conditions under which public access is being provided by means of PIAPs may considerably differ from country to country due to the structure of the social system or due to dedicated eInclusion policies pursued by national and/or regional authorities concerned (e.g. regarding funding mechanisms applied).

Against this background, a systematic investigation of the state of the art in public access delivery would be useful as a baseline for developing targeted strategies to provide widest possible access to online services of common interest. This should also include a compilation and evaluation of best practices in public access provision. Based on such an evidence-base an exchange of experiences could be stimulated among stakeholders in public access provision such as public authorities, NGOs, social partners, commercial actors and so on.

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<sup>233</sup> Cf. SeniorWatch (2002). Older people and Information Society Technology - A comparative Analysis of the Current Situation and Future Trends ([www.seniorwatch.de](http://www.seniorwatch.de))

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## Capacity building

Public access needs to be linked with targeted training opportunities and informal learning opportunities. It will be decisive that the latter do not, however, only address instrumental competencies but also structural as well as strategic ones, as described earlier in this document. This may require the linking of the acquisition of ICT-related skills with other knowledge that is not directly related to ICT usage but may be equally important to general social inclusion.

Up to now, ICT-related capacity-building measures directed towards societal at risk groups have mainly focused on teaching ICT skills in a merely technology-driven manner. There are, however, examples showing that approaches relying more upon cognitive, situational and/or other needs and requirements of the target groups in question have proved very effective in engaging 'off-liners' in online activities. For instance in Germany, the so-called Senior-Info-Mobil campaign has successfully applied a non-technology driven didactic concept for raising awareness among German senior citizens on how the internet could provide new opportunities for extending their interests.

As in the case of public access provision, a systematic investigation of the state of the art in ICT-related capacity building directed towards societal at-risk groups would provide a useful baseline for targeted policy intervention, and it could serve as an evidence-base around which exchange of experiences among relevant stakeholders could be organised in a systematic manner.

## Content creation and presentation

As already mentioned before, it is clear that motivation to utilise online services among societal at-risk groups cannot be created in a vacuum, and awareness about the benefits online services may generally hold for these groups needs to be tied in with activities in education, local development and so on. In this sense, demand for online services needs to be stimulated "organically" by involving networks of people with similar interests. Also, more practical experiences suggest that such activities very much need to rely upon the local context in which online information and services are being offered and utilised. There is some evidence that the availability of content with local relevance such as local housing listings and community information could provide a strong incentive for social at-risk groups to engage in online services.<sup>235</sup> In general, it may be fair to state that the services and content that people actually want must be offered and these must be designed and delivered in ways that meet the needs of the service addressees in all their diversity. Otherwise, there is the danger that many groups will miss out on the new opportunities, that existing divides may be reinforced and that new (digital) divides may emerge.

However, there are currently large gaps in available knowledge on user needs and requirements related to online services directed towards societal at risk groups. A repository of evidence-based knowledge about both user-related requirements these population groups may have and methods to adequately cater for these would provide practical supports to policy making, so that user issues could be better taken into account in the design and delivery of online services. Such a repository could consolidate both existing knowledge and approaches, and novel data that may have to be gathered. It would constitute a useful source of information not only for policy making purposes but also for other stakeholders in content development for societal at risk groups such as commercial parties, governments, employment agencies, health care providers and voluntary organisations.

## Holistic policy approach

Various policy domains are concerned with aspects relating to inclusive online service provision. As already discussed with respect to the eAccessibility component in eInclusion (Cf. chapter 3), one of the challenges for eInclusion policy-making with respect to the online service domain derives from the complexity and multi-dimensionality of the domain. Against this background, a detailed policy analysis

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<sup>235</sup> Cf. Children's Partnership (2000), *Online Content for Low-Income and Underserved Americans: The digital Divides* New Frontier. Santa Monica, California: Children's Partnership

– as outlined in chapter 3 - covering the various policy fields concerned would be of considerable value for policy formulation.

## 5.4 Initial listing of priority issues in eAccessibility and eInclusion in relation to public services

This section provides an initial listing of some priority topics that have been selected for attention so far:

- Monitoring of eInclusion aspects relating to online service provision
- User requirements relating to inclusive online provision of public services
- Public access provision
- eInclusion-related capacity building among societal at risk groups

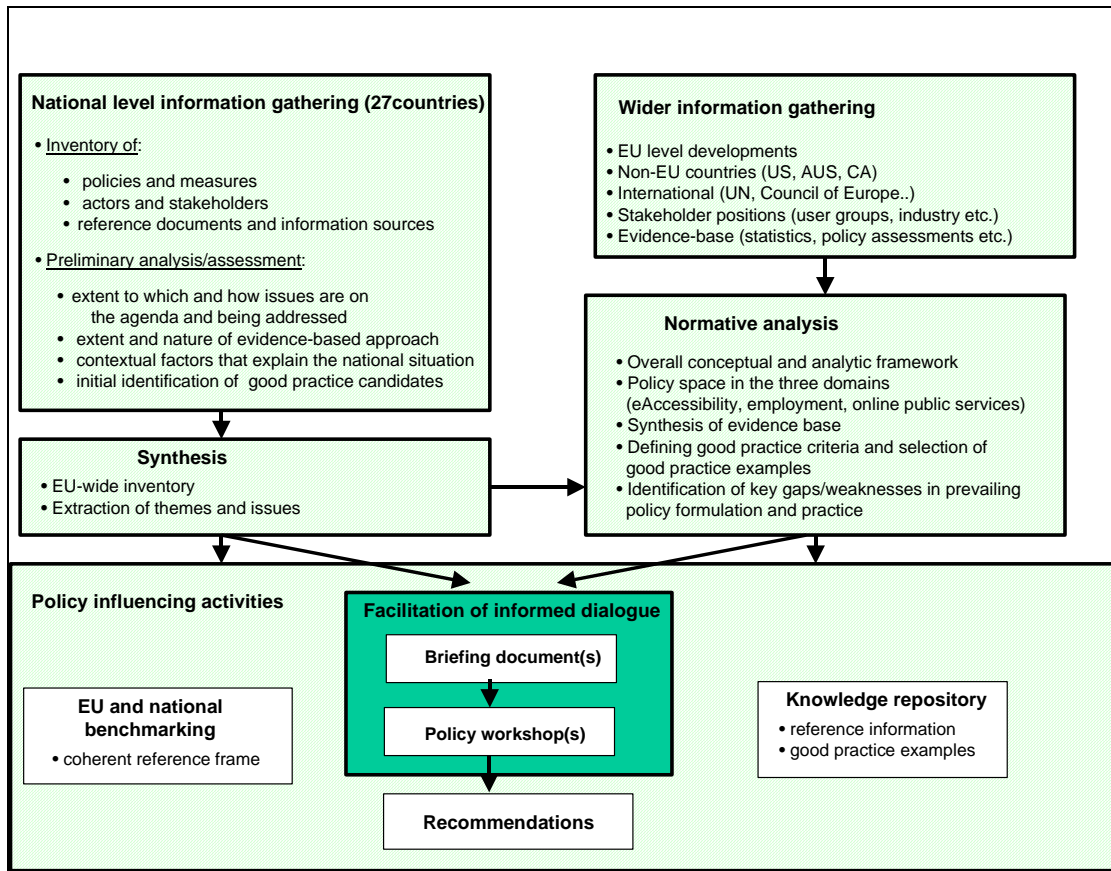
As already mentioned with respect to the eAccessibility component in eInclusion, decisions in regard to the depth of coverage that will be given to these topics will be made in consultation with the Commission's services and under consideration of pragmatic issues of time scales and budget.

## 6 Next steps

The conceptual framework that has been developed and presented in this deliverable serves a number of purposes in the project. To begin with it provides an overall analysis of the domains of interest that provides a basis for priority setting to ensure that available resources are put to best use in the rest of the project. In addition to this, it provides the basis and start-up inputs to the three topic-based workpackages that will now commence data gathering, facilitation of informed dialogue and eventual preparation of policy roadmaps for the selected themes.

Figure 6.1 below presents, as a reminder, the schematic view of the overall approach being adopted by the project, as already presented in Chapter 2.

**Figure 6-1: Overall approach being adopted by the project**



The work in developing the conceptual framework that has been elaborated in this deliverable comprises an important first step in the “normative analysis” part of the work and has also compiled and synthesised a wide range of policy-relevant information. This has a key role to play in the future activities of the project, through informing the data gathering and providing a coherent perspective within which to present the data on current policy developments and issues around Europe.

The next stage of the project will move on to a more intensive phase of data gathering in 27 European countries. This will provide the basis for the preparation of synthesised briefing reports for a series of policy workshops. Following the workshops, the final results will be consolidated in the form of policy roadmap reports.