DANISH
TECHNOLOGICAL
INSTITUTE

Supporting Digital Literacy
Analysis of Good Practice Initiatives

Topic Report 3

Final Report

Danish Technological Institute
Centre for Policy and Business Analysis
February 2009

Disclaimer
The views expressed in this document are those of the authors and do not necessarily reflect those of the European Commission.

Copyright
© European Commission, 2009. Reproduction is authorised provided the source is acknowledged.

Authors:
Knud Erik Hilding-Hamann
Morten Meyerhoff Nielsen
Jan Overgaard
Kristian Pedersen

Danish Technological Institute
Centre for Policy and Business Analysis

Reader's Guide

In recognition of the increasing importance of digital literacy and in an effort to promote e-inclusion, the European Commission has launched the project "Supporting Digital Literacy: Public Policies and Stakeholders' Initiatives" of which the present document constitutes the third topic report. The study is aimed at improving the quality of life for disadvantaged groups by suggesting what can be done to help them acquire stronger ICT skills and a better understanding of their potential uses for private and professional ends.

The study has produced 4 Topic Reports which contain a detailed analysis of Digital Literacy (DL). The topic reports are:

Topic Report 1
It provides an overview and comparative analysis of past and present digital literacy (DL) initiatives in each of the 27 Member States as well as in Norway and Iceland, USA, Canada, and India. A total of 464 different initiatives were identified, ranging from large-scale public programmes rolled out nationally and targeting the entire population, to very small-scale third sector actions with very specific target groups. The report describes on the one hand how these initiatives are distributed across key dimensions of DL (rationales, sustainability, motivational measures, platforms, content, accessibility, and usability), and on the other hand what tends to characterise initiatives aimed at specific disadvantaged groups (people with low educational attainment, unemployed, disabled, elderly, young people at risk, women, rural populations, inner city residents, ethnic and cultural minorities, and criminals and substance abusers). Moreover, differences in approaches between country groupings are identified.

Topic Report 2
It investigates indicators and measurement tools employed in the EU27 and beyond with a particular focus on the results of the special module on digital literacy contained in the 2007 edition of the Eurostat Community Survey on ICT usage in Households and by Individuals. This overview and analysis provides information on the current level of digital skills in the European countries. It comprises a discussion on the most relevant barriers to a more intensive use, and it includes an analysis on learning environments conducive to the acquisition of digital skills. The report compares the Eurostat results with findings from other recent studies and it comprises an overview of the most interesting alternative monitoring and measurement initiatives identified alongside the 464 initiatives described in Topic Report 1.

Topic Report 3
It is based on the findings of the first two topic reports, describes and analyses in more detail 30 selected good practice cases. It contains a comprehensive presentation of main enablers of digital literacy analysed in terms of setting relevant objectives, providing effective structure, design, and implementation, maintaining the motivation of target groups, addressing potential barriers, planning and measuring impacts, securing sustainability, and focusing on innovation in approaches, methods, and technologies.

Topic Report 4
Topic report 4 summarises briefly the findings of Report 1, 2, and 3. It situates digital literacy in a broader context as a central measure in forward looking inclusion policies and concludes

by drawing up a list of policy recommendations particularly conducive to achieving i2010 goals.

For further information about the structure and content of each topic report please see the respective tables of contents.

Table of Contents

Tables and Boxes

1. Introduction

This topic report describes and analyses good practices in Digital Literacy initiatives. It highlights 30 successful and innovative experiences in promoting digital literacy and identifies strengths and weaknesses according to the parameters included in the review and overview over digital literacy initiatives. As such it builds on the results presented in Topic Report 1, which included a broader and more general analysis of digital literacy initiatives covering more than 460 initiatives.

The methodology and selection criteria used are described below in chapters 1.1 and 1.2. Chapter 2 begins with an overview of the key enablers to achieving successful digital literacy initiatives. It provides a schematic overview (Section 2.1) of the 30 good practices by detailing how the initiatives have achieved effectiveness, innovation, scalability and impact.

Sections 2.2 to 2.8 proceed by analysing each of the key enablers individually, covering:

Section 2.2 – how good practice initiatives have set goals and objectives and how they have managed to match the goals of partners and stakeholders with those of the initiatives.
Section 2.3 – the organisational structures, physical environment, ICT infrastructure and effective methods of learning and teaching in good practice initiatives.
Section 2.4 – the identification of user needs, the motivational factors addressed and the promotional methods used by good practice initiatives.
Section 2.5 – key barriers to address in order to achieve good digital literacy results including inadequate funding, fear of failure, lack of skills and knowledge, inadequate content and resources. Furthermore, this section emphasises that to address future skills needs, initiatives may need to focus on all levels of digital literacy including critical thinking and to be linked to formal education where relevant.
Section 2.6 – how DL initiatives are measured and what could be done to improve measurement and impact assessment.
Section 2.7 – strategies for making DL initiatives sustainable including the up-scaling and expansion of initiatives.
Section 2.8 – different innovations introduced by good practices DL initiatives including new pedagogical approaches, new content development and business models as well as new technologies.

Finally, chapter 3 draws up policy relevant conclusions from the good practice analysis.

In annex 1 all 30 good practice cases are analysed in detail whereas annex 3 provides an overview of the 91 initiatives from which the 30 featured cases were selected.

1.1 Methodology for the analysis of good practice initiatives

Good practice can be broadly defined as ‘practices which may enable learning’, i.e. practices which either achieve their own objectives and/or have a beneficial impact on their environment in the sense that they provide useful learning experiences which are likely to stimulate future reflexive practice. While good practices may include initiatives which made mistakes, or in some areas generated less positive results than expected, they are likely to present an implementation culture geared to fostering and stimulating learning. A central dimension to a good practice initiative is that it may function as an evidence base from which lessons may be

deduced and synthesised so that others get insights into which components worked and which did not, and what type of factors functioned as enablers or the opposite. Scalability, transfer, and transformation of good practices to systemic innovation are highly dependent upon an understanding of:

- The assumptions and context of an initiative
- The evolution of the particular practice over time
- The actors involved
- The relations and processes between enablers of the initiative, and
- Barriers in the wider system.

The implementation of the good practice analysis has involved the following steps and activities:

Revised extended template

A set of preliminary selection criteria for identifying good practice examples were defined in connection with the development of the project's analytical framework. Preliminary guidelines for the reporting of good practice examples have also been included in the development of the analytical framework.

The findings from the first mapping and review phase formed the basis for a revised set of selection criteria and reporting guidelines developed in close consultation with the European Commission and the Digital Literacy Expert Group[1]. The revised framework was commented upon by the regional correspondents and Members of the e-Inclusion i2010 subgroup (formed by Member States representatives) and formed the basis for the in-depth case studies.

Definition of selection criteria for the good practice analysis

The criteria applied to the selection of the 30 good practice cases from the initial 91 short-listed cases gradually evolved in light of the first findings and through an informed dialogue with all the involved stakeholders to ensure that the selection of best practice case studies genuinely reflected the variety in good practice digital literacy initiatives, taking into account all the key dimensions in the reference framework.

Against this background, the 30 good practice cases were selected taking into account that the cases should illustrate ways to: improve motivation of target groups, incorporate usability, support adaptable delivery mode and contents, and improve and promote accessibility, dissemination, and sustainability. The four main selection criteria were:

- *Effectiveness.* Initiatives should be relatively successful in terms of effectiveness in their approach and methodology to digital literacy development among the specific target groups. Effectiveness is also applied to the use and exploitation of capital and non-capital resources.
- *Impact on disadvantaged groups.* Initiatives should demonstrate success in reaching and improving the digital literacy and quality of life for disadvantaged groups.

[1] http://ec.europa.eu/information_society/activities/einclusion/docs/diglitgrpmandate.pdf

- *Innovation.* Initiatives should be innovative in respect to perceived improved relevance, quality and sustainability in methods, partnerships, and outcomes, with special emphasis on emerging social innovation phenomena.
- *Proven scalability.* Initiatives should have managed to expand their activities and/or transferred their experiences to other contexts.

In order to be selected as a good practice case, an initiative should fulfil at least 2 of these 4 criteria.

To maximise the relevance of the cases to different audiences, *some level of diversity in the selected examples has been adopted*, for instance with respect to target groups, approaches and methods, levels of implementation, and geographical location.

Selection of good practice examples

The digital literacy initiatives analysed in this report are the 30 good practice initiatives selected for in-depth analysis. In some cases, examples from the wider group of initially selected practices are used to illuminate a particular topic. The overall aim has been to provide a resource base regarding digital literacy initiatives which have proven innovative, sustainable, effective, scalable, and not least useful for their target audiences in the particular context where they were initially developed. Expectations are that these cases will form a rich resources base which will contribute to practice and policy development.

Analysis and synthesis

The analysis is based on 30 brief good practice reports (approximately 5-12 pages per initiative), following the outline defined in the analytical framework.

The good practice reports form the basis for a cross-cutting analysis. Key questions that have been addressed in the cross-cutting analysis include the following:

- *What are the key elements in good practices? What are the key cross-cutting characteristics of good digital literacy initiatives?*
- *Particular success factors and facilitators. Are there factors which have been particularly relevant to the relative success of the studied examples? What have been the driving forces and processes underlying the success?*
- *What have been the particular preconditions for developing and implementing successful initiatives?*
- *What are the results and impacts? What lessons can be deduced?*

In addition to this cross-cutting analysis, the TR3 report includes the edited version of thirty selected initiatives, based on the good practice reports, as well as a categorisation of each initiative in relation to a reference framework.

1.2 The structure of the analysis

An analytic framework has been developed to illustrate the impact, sustainability, and value of DL activities and initiatives. It documents the case in four dimensions:

- **Motivation:** What factors influence and stimulate digital literacy among different potential user groups?

- **Accessibility:** How have the initiatives dealt with barriers to accessibility for particular user groups, and which accessibility issues still remain unsolved if any?
- **Usability:** Does the initiative focus on making the technology more tailored to user needs and context of use? Does the initiative address usability as a specific requirement and as part of the solution? Is there a formal or informal delivery mode?
- **Sustainability:** Which projects have proven viable and why? What are the critical elements that enable or hinder success and/or sustainability in different contexts?

The data sources that have been included in the analysis:

1) The 464 identified good practice initiatives in the EU27, Norway, Iceland, India, Canada, and the USA, from which 91 initiatives were chosen for further study.
The initiatives reports capture evidence, policies, specific experiences, methods, and approaches of initiatives aimed at disadvantaged groups at the grass-roots, organisational, and industry levels, in addition to what is offered by national public agencies. Although the original list of 464 initiatives was not exhaustive, it is expected that most of the important initiatives in each country for the given time period (2000-2007) have been identified and described. National representatives within the respective countries and the European Commission and the Digital Literacy expert group have assisted in validating the coverage and scope of the identified initiatives.

2) The 91 individual initiatives collected have been documented in Topic Report 1, and a list is annexed to this report (Annex 3).
These initiatives have been analysed by experts within the field of digital literacy as well as the country of origin in which the cases are situated. The experts have used an approved framework guideline and template to describe relevant cases.

3) The 30 good practice cases selected and featured in this report are presented in the annex to the report (Annex 1).

2. Analysis of key DL enablers across initiatives

The good practice analysis is intended to analyse which initiatives have succeeded in improving the quality of life for disadvantaged target groups through effective and innovative measures to improve digital literacy. The analysis focuses on why these initiatives have proven successful and what can be deduced as learning points and as an evidence base for future design, implementation, support, promotion, evaluation and dissemination of initiatives relevant to target groups and context at a regional, national, and European level.

The cross analysis focuses on the following key enablers as dimensions in successful digital literacy initiatives:

- Setting relevant objectives and linking (strategies of) initiatives to policy
- Effective structure and design for initiatives
- Focusing on the motivation of target groups
- Addressing barriers to DL development
- Effective implementation of initiatives
- Achieving and measuring results and impacts

- Making digital literacy initiatives sustainable (and scalable/transferable)
- From pilot initiatives to systemic innovation.

Using the analytical framework and the methodology described, the following analysis is conducted across the 91 initiatives from 32 countries. In the analysis the 30 good practice cases have been highlighted as examples. In addition, Table 1 maps the 30 cases in terms of their contributions to key impact dimensions.

2.1 Mapping of thirty good practice cases across key criteria

This section features a mapping of the thirty good practice cases aligned with the key selection criteria. It furthermore encompasses the main characteristics relating to identified key enablers of successful digital literacy initiatives.

Table 1: Good practice cases mapped against target audiences and key criteria

Title and country	Target group	Effectiveness	Innovation	Scalability	Impact
Look@World (E)	General	Standardised PC courses for Estonians	Public private partnership involving several Estonian companies and public learning centres.	Any country with a similar need could transfer the PPP concept to make real changes.	More than 100,000 Estonians have been trained allowing them to embrace the digital part of society
equalSkills (Romania)	General	Standardised formal courses brought to motivated persons with low skills and manual work backgrounds.	Partnership between ECDL Romania and other companies and institutions.	Linked to larger national programme (KEP). Materials translated from Irish model	Computer skills the difference between having a job and not having one. High degree of certification.
UK Online Centres (UK)	General	Builds on existing centres open to the public; centralised content development	Content developed and tested to lowest denominator. Popular easy-to-use email and search functions.	Big UK scale, but could be expanded and tailored to other countries; can be tailored even further to specific DL needs.	Large user base building up already. High satisfaction levels; real measured impact in terms of behavioural changes
PIC	General Public Internet Centres	Dissemination of good practice in effective PICs	Cross country standards development and support for implementation of anti discriminative PICs and DL	European project with significant potential for influencing developments throughout Europe.	Substantial dissemination activities and wide awareness of results.
e-NC Authority (North Carolina's e-NC Authority) (USA)	General	Combines a top-down and bottom-up governance model. Focus: Build supply, demand and outcomes research	Launched the e-communities actions to mobilise people in remote areas.	Has been transferred to other states or integrated into their policies and actions	The poorest of communities have leapfrogged and achieved very good results. Citizens taking responsibility for their local projects.
Netti-Nysse (SF)	General Community	Effective way of combining different public service offers i.e. ICT training, PIAPs and library services. Brings skills and services to the local community and target group, thus lowering mental and physical barriers.	Informal teaching model. Mobile venue (i.e. bus/truck) which can also be requested/booked by a local area/community. Innovative combination of skills i.e. the ICT instructors can also drive the bus/truck and act as basic librarians.	Is definitely scalable although it requires a different view on the cost/benefit model taking into account wider social benefits in the long run.	Large local impact in the community services. Providing flexible on-the-spot access to skills, PIADs and library services
Web in de Wijk (NL)	General and local Communities (neighbourhoods)	A bottom-up approach to stimulate self-organisation, network creation, and cooperation. Taking advantage of web 2.0 technology and tools.	The approach uses specially educated social professionals (animators) that help communities exploit ICT. Learners become producers of	Has continuously expanded throughout the Netherlands from city to city. Dissemination to other countries	Implementation of social use of ICT in the education programme for social workers. Large number of users in the neighbourhood communities

Title and country	Target group	Effectiveness	Innovation	Scalability	Impact
			digital content		
New Knowledge Centres (ES)	General, but recognising special needs of particular population groups	Individual assessment and placement in group with similar interests and skills. Focus on immediate sense of accomplishment. Taking outset in personal interests participants are goaded to increased ICT use at their own pace while not being allowed to quit.	Utilisation of socio-digital approach as an alternative to traditional digital learning methods. This approach is built on the belief that social understanding and encouragement is pivotal to reaching in particular disadvantaged groups.	Initiative has shown scalability growing progressively from 6 pilot centres in 1999 to 45 fully running centres today providing more than 20,000 training courses each year.	While no direct impact analysis per se, the initiative is evaluated on output biannually in terms of number of visits and number of users according to age, gender, and employment as well as in terms of number of activities such as email accounts and blogs created or digital certificates achieved. Moreover, objectives are evaluated on a yearly basis in relation to new trends in the ICT environment and regional society and adjusted accordingly.
ZeroDivide (USA)	Several Disadvantaged groups	A tailored programme established by a non-profit organisation as a result of a merger of two telecom operators to tackle the digital divide in California.	An interim non-profit organisation working with NGOs to reach and help disadvantaged groups through existing centres financed from public funds as a legal requirement from a merger. Users involved in the design of the organisation and its activities.	ZeroDivide has with relatively moderate funding been able to have a wide and diversified outreach plus internal capacity building in NGOs due to the involvement of several NGOs at several stages in the process. Partners have been identified to extend operations another five years.	500 Grants to nearly 400 community-based organisations in 41 of the California State's 58 Counties. Social enterprising leading to business opportunities for private company sponsors.
Unlimited Potential (Slovenia)	Unemployed	Effective support from Microsoft and a strong not for profit organisation that has organised the roll out.	Standard courses provided to learners that were motivated by the need for jobs and improvement of job effectiveness.	The number of centres has grown and the project is now also seeking European funds. Motivation: increased productivity at work; new skills for personal development and satisfaction.	Growth from 5 centres to 12 centres and all courses are booked for 2008 (doubled the number of courses this year). Growth of number of elderly and disabled users.
Aangename Kennismaking med de Computer (B)	Unemployed	Built on needs analysis and pilot projects to be scaled up to a national project Approach allowed highly individualised attention and tutoring.	Social conditions support the training initiative tailored to unemployed manual workers. Course: 'seeking a job'	The mobile setting allows the offer to come to where the target groups are. It is still ongoing and could be transferred to other countries.	Has trained more than 40,000 persons over 5 years. Has resulted in increased employment.
ICOM' (Handicap International) (F)	Disabled	Individual assessments at the beginning and interim helping disabled children to exploit ICT in schooling.	Very specific tailoring of support for individual learners. A small team of part time employees are backed by a team of 3 to 7 volunteers.	Specialised knowledge and expertise that every county and country should have in order to support disabled persons in using ICT	In 2007, more than 120 received individual support in their use of ICTs. 350 persons trained to facilitate access to ICTs for persons with disabilities: 500 persons took part in events, and 9000

Title and country	Target group	Effectiveness	Innovation	Scalability	Impact
					effective visits on the website per month.
PCs Against Barriers (CZ)	Disabled	A very strong NGO and an effective partnership where the roles are clear. Supported by Microsoft	Provision of hardware and software combined with support for labour market integration and tailored training	The project has been going since 1996 and will continue subject to support. Outdated equipment elsewhere could come to good use in similar projects throughout Europe.	Very successful with participants gaining skills and some also jobs
The Open Door (Latvia)	Disabled	Adaptation of content to the needs of the disabled users. Disabled trainers training other disabled	Innovative public-private partnership and introduction of the mobile class	The project is constantly evolving and expanding	Fully subscribed service for disabled persons. High degree of satisfaction among users.
Senior-Internet-Helpers (D)	Elderly	Bottom-up community based initiatives supported by centralised training and promotional support	Ad hoc as well as planned learning opportunities that build on the social and day-to-day needs of the elderly	Has expanded within the region of BW in Germany. An association has been formed to take it further. Transferable to other states and countries	Positive results for many elderly learners and helpers; greater cohesion for local communities. Platform to expand from.
e-Learning Liguria (Italy)	Elderly	Telecentres building social interaction opportunities for elderly while learning ICT. Use of open source, youth as volunteer trainers.	Introduced the computerised centres of socialisation and starts with basic training courses follow by online learning opportunities using open source tool	The region has already started a second programme as a follow up of the success of the first extending the training programmes for elderly in the region	The first initiative will reach more than 4000 elderly in more than 20 centres in the region of Liguria in Italy by the end of 2008. Also of benefit to young trainers
Grandparents and Grandchildren	Elderly	Several countries using common materials and building on the involvement of relevant institutions	Standard materials delivered by youth to the elderly.	European project collecting experiences across European countries in relation to ICT skills for elderly	Solid knowledge of workable models and guidelines for content, organisations and promotion
Seniors Communicate (CZ)	Elderly	The wife of the president represents the initiative and is the champion which gives profile. Networking has created strong support in each of the municipalities	Local municipalities engage in organising training for elderly arranging local competitions to win hardware. Tailored training in use of mobiles	The programme has been expanded from 63 municipalities in 2007 to 95 in 2008. The number of courses will also grow.	More than 1000 elderly have been training in 63 municipalities in 2007 gaining certificates and improving quality of life.
55pluss (NO)	Elderly	Effective approach to attract the target audience by ensuring that skills development is part of a wider cultural and social offer, thus making it seem more relevant and attractive and less 'alien'.	Innovative combination of ICT competence development and social and cultural aspects and networking. Organic growth of content with a focus on local ownership and adaptation of courses, mode of learning, and physical venue, in particular the	Scalable as proven by the lessons learned methods and concepts being used for the national initiative 'Den Kulturelle Spaserstokken' (The Cultural Walking stick) and the EU FP6-funded eldergames.eu.	Good impact. Good and steady growth in the number of participants (800+ in June 2008). Good feedback from participants. Well known and integrated in the local community.

Title and country	Target group	Effectiveness	Innovation	Scalability	Impact
			café aspect. Use of peers to train lowers barriers to learning by 'decoding' and 'localising' the message, content, and topic.		
Datastuer (Ældremobiliser-ingen) (DK)	Elderly	Efficient combination of part-ners. Excellent organic growth with a medium- to long-term aim of sustainability. A combi-nation of private and public funding	Innovative combination of ICT competence development and social and cultural aspects and networking. Organic growth with a focus on local ownership and adaptation of courses, mode of learning and physical venue. Use of peers as trainers lowers barriers to learning.	Scalable with advice avail-able. Organic growth has proven scalability from start till present. Focus on local economic sustainability and decreased reliance on na-tional funding.	Good impact. Impressive organic growth in the number of venues (99 in June 2008). Good feedback from participants.
Seniorweb.nl (NL)	Elderly	Project relies on the help of volunteers. Learning at one's own pace	Introduction of group of ambas-sadors. Creation of new social networks	Can be transferred to other countries. But it requires recruitment of volunteers in the communities.	10,000s of persons use the website per day. Many have enjoyed the help of volunteers and it has made their lives richer.
Seniornet Sweden (S)	Elderly (more than 20% are above the age of 75.)	The association organises the annual Senior Surf day in 100 libraries throughout Sweden to promote internet use for elderly. Publishing of digital work of members and participants	Social networking combined with ICT training, and problem solving combined with online learning. Networking also via local websites.	The association was inspired by a similar organisation in the USA and similar organi-sations have been established elsewhere in Europe (notably in Norway and Denmark)	Has a membership of more than 7500 people organised in 43 local branches and is still expanding. Some 50000 people have been trained.
Street-Level Youth Media (USA)	Youth/urban Young on pro-bation or short prison sentences	Planning and ambitious goals. Introduces different approaches to reach the young, including offering arts apprenticeships programme	Partnerships and innovative settings for learning incl. com-munity based content develop-ment, project and classroom based workshops	The project has been sustain-able since 1990, but has not yet been transferred to other cities. This would require a similar organisational set-up in other cities/countries.	Reaches 1000 youths in Chicago every year and has become a focus for re-search due to its success.
Multifunctional Youth Centre in Nicosia (Cy)	Youth/unemploy ed	Informal training method with active involvement of partici-pants –efficient awareness rais-ing – monitoring and evaluation	Training of ICT skills in combi-nation with social skills. Integra-tion of the community in the process.	Transferable to other coun-tries and communities; shares similarities with one or two other projects. Project outcomes have been inte-grated in new activities	Improved employability of youth. Improved cohesion in local commu-nity.
Association of Hungarian Net Women (Hungary)	Women	Strong Association of Hungarian Netwomen. Effective planning and criteria for selection of training location and instructors. Planned for 100 participants but achieved more than the double.	Learning programme and courses tailored to the needs of women from different back-grounds – included workshops and discussion groups emphasis-ing social interaction	Although not continued because of lack of funding, experiences and staff have been transferred to the asso-ciation and new initiatives have been organised on a smaller scale.	Basic skills for more than 250 people (mostly women) plus job opportunities for 16 instructors. Social inclusion via ICT skills.

Title and country	Target group	Effectiveness	Innovation	Scalability	Impact
Digital Communities (Ireland)	Urban deprived	Effective use of partner resources Progressing learners from informal to more formal programmes	Strong partnership model. Active community innovation model linking ICT to culture, art, and improvement of self-esteem	Relevant for similar problems in other urban areas. Requires similar partnership set-up and champion.	Real impact on community and prospects for users of the programme – employability and greater sense of belonging.
Dames and Data (NO)	Ethnic women/mothers	Effective use of lessons learned in previous project. Also interesting approach to ensure medium- to long-term financial sustainability by creating a sense of ownership of the initiative in the community and related stakeholder organisations. Developing ICT skills of the participants but also the trainers (other ethnic women) for greater employability and communication and integration skills with public sector organisations etc. mentoring of past participants.	The target group (ethnic women/mothers) is motivated by encouraging ethnic organisations to take the course on as their own (sense of ownership). Also innovative in having a combined focus on ICT, integration, social ability, and communication, with and awareness of public sector and related services.	Lessons learned from previous projects and adapted. Course content is aligned with existing standards in particular the 'national Kompetancetrappe' (Competence ladder). Lessons learned will be of relevance to other Norwegian and European cities and towns with immigrant and ethnic communities lacking ICT skills and which could benefit from better integration.	The project is young and promising therefore Impact still limited but approach seems to be working.
Lernbar (A)	Immigrants/Women	Wide range of courses offered to suit needs of different target groups.	Digital literacy integrated with cultural integration and other qualifications programmes.	This was supported by a European programme as an objective 2 area and could be transferred to other cities.	High participation from women and persons with a wide range of migrant backgrounds. Positive results in terms of achieved qualifications
e-Migra	Migrants	Mapping of DL initiatives aimed at different migrant groups.	Development of guidelines for addressing needs of migrant groups in relation to DL – in terms of organisation, technology and training/learning	European project that has wide implications for DL initiatives aimed at persons with different migrant backgrounds.	Good practice database with more than 130 projects and guidelines for implementation
ESF Pathways in Prisons and Probation (UK)	Criminal Offenders	Extensive work on a secure learning system and platform. A network of tutors and trainers to guide and support users.	Expanding the role of prison personnel to support DL learning	Could be expanded to include criminals in other countries and other prisons in the UK.	A large number of persons have received training and achieved certifications of value for their life after prison.

2.2 Setting relevant objectives for initiatives

This section analyses the goals and objectives of the initiatives, how these have been defined, and whether they are linked to or embedded in other initiatives or policies. In addition, it examines to what extent the different contributing stakeholders have had compatible goals and how those may have affected the achievements of the initiatives.

Goals and objectives of the initiatives

- How are goals and objectives defined in (or for) initiatives?
- Who has defined the goals and how has ownership of goals been ensured?
- How do goals differ in relation to specific target audiences, scope, and focus?
- How do goals change over time and how does that influence the initiatives (for example initiatives that start as pilots and evolve into programmes)?

Enhancing employment opportunities

Enhancing job opportunities for disadvantaged groups has been a key objective for several of the analysed initiatives. The close link of objectives to economic and employment policies and recognition that digital literacy is important for improving employability are reflected in different ways in the analysed initiatives.

A good example of such an initiative is the Flemish initiative 'Aangename Kennismaking met de Computer' which combines ICT skills training with other training activities to improve employability of participants. Similarly the project of the 'Association of Hungarian Net-Women' focuses on improving the confidence of participating women and improving their ICT skills so that they subsequently can perform better in existing jobs or take on new jobs.

'Dames and Data' (NO) and 'Lernbar' (A) teach ICT skills to immigrant women in order to enhance their employability.

The Irish initiative 'Digital Communities Programme' has the same objective, but addresses disadvantaged groups in deprived parts of Dublin which suffered from 80% unemployment rates. Just as the Irish initiative targets young unemployed, the US initiative 'Street-Level Youth Media' seeks to improve employability and educational prospects of urban and disadvantaged youth. Even if both initiatives have worked closely with local schools, the US initiative has focused specifically on media specific ICT training whereas the Irish initiative has been broader in its approach. Nevertheless, both projects have been quite successful in achieving their results. The US 'e-NC Authority' implemented a programme of activities with the dual purpose of addressing high unemployment rates and low ICT infrastructure penetration for citizens in disadvantaged communities.

Similarly, the key objective of the British initiative 'ESF Pathways' is to improve the employability of the participating criminal offenders by helping them to gain relevant qualifications.

The key aim of these initiatives is reintegration into the labour market and the wider society through highly targeted skills measures appropriate to the different contexts. The link to employment agencies and engagement with employers ready to take a social responsibility is a key element to engage the participants in activities which lead to employability, and second to assist participants in transition to ordinary employment. The French centre 'ICOM' has prac-

tised such models for its disabled users. The 'ICOM' centre works with the disabled and their potential employers to optimise the digital workplace and job situation for both parts. The same is the case for the 'PCs against Barriers' which establishes contact between disabled persons and potential employers.

Integration of immigrants
Three of the analysed initiatives aim to integrate different immigrant groups. These projects include the Norwegian 'Dames and Data' project, the Austrian 'Lernbar' project, and the study project 'e-Migra'. For these projects the ICT skills development is one of several means to facilitate societal participation. In the case of 'Lernbar', there are several other courses that the participants can take, whereas the 'Dames and Data' project focuses on developing ICT skills, but at the same time aims to improve the self-esteem of the participants. Both projects target female immigrants, and close collaboration with different immigrant organisations as well as social institutions was central to creating trust as a precondition to recruitment of participants. Knowledgeable trainers with insights into the target groups and their needs were necessary to tailor the programmes in a purposeful manner.

The 'e-Migra' project is a knowledge centre with vast experience gained from several projects aimed at developing ICT skills among immigrants. The e-Migra project has concluded that there is a lack of robust data on the level of digital exclusion and how it impacts different immigrant groups, but has observed that not all immigrant groups are impacted by digital exclusion to the same extent and future priorities should therefore be more focused. 'Lernbar' and 'Dames and Data' focus on one such group, female immigrants who have been identified as often being digitally excluded, and who are often embedded in other forms of societal and gendered exclusions. Digital exclusion is often worsened by other socio-economic barriers; therefore digital exclusion is often situated within broader measures involving the combination of several policy areas to have a sustainable impact.

Societal/democratic objectives
A number of the projects have broader societal and democratic objectives. The 'Dames and Data' project seeks to fight phenomena like discrimination, exclusion, and racism. The 'Association of Hungarian NetWomen' and 'Lernbar' seek to achieve gender equality. The projects 'Grandparents and Grandchildren' (G&G) and 'Unlimited Potential' aim to improve intergenerational understanding and close the generational technology gap. Other projects like 'Nuevos Centros' and 'Open Door' aim to create free and equal access to ICT. Similarly, the 'PIC Project' has developed guidelines for providing non-discriminatory access to ICT.

Social objectives
For several projects the development of ICT skills is primarily a means of achieving another (typically social) objective. This is the case for the 'Web in de Wijk' project where social cohesion and interaction among neighbourhoods is a key objective. The 'Multifunctional Youth Centre' in Nicosia, Cyprus, aims to provide youth with a place to go and to use their leisure time constructively on a variety of activities – including computers.

Many of the good practice examples addressing the needs of the elderly have as a central objective the aim to improve the quality of life of the participants. This is the case for the following projects: '55pluss', 'eLearning Liguria', 'Senior-Internet-Helpers', 'Seniornet Sweden', 'Seniors Communicate', 'Seniorweb.nl', and 'Ældremobiliseringen'. This has implica-

tions for the way the initiatives are implemented. Although ICT training is a central theme in these projects, the main priority is to create an environment with strong social features where participants are comfortable and form bonds with other elderly while learning. What they learn often has a direct impact on their quality of life because they find new ways to communicate or engage in, for instance, genealogy.

The 'Grandparents and Grandchildren' initiative seeks to improve adult digital literacy by promoting and facilitating active citizenship and by introducing a tutor system where grandparents are supported and taught by their grandchildren hence also stimulating a dialogue between generations. The overall goal of the project is to exploit and transfer at European level a low cost methodology of inter-generational involvement parallel to increasing adult digital literacy which can also serve other purposes for the elderly generation. There are several benefits to inter-generational learning in addition to communication between generations. Initiatives have proven successful in terms of affordability and motivation. Children in general are a driver for parents and grandparents to learn about the internet to enable more frequent communication, and children often like the idea of being able to teach something useful to adults.

Qualitative and or quantitative goals
Most digital literacy initiatives have set qualitative goals and very few have set quantitative goals. The key objective of the 'Web in de Wijk' project, for example, is to stimulate social capital formation in and across neighbourhoods. The development of ICT skills is just one of many ways of achieving that. As a consequence, it is primarily social workers that act as animators and instructors rather than ICT experts. Equally, the many programmes on the platform 'Seniorweb.nl' are basically provided in order to support the elderly with a variety of services to improve their quality of life. The primary goal of 'Seniorweb.nl' is to strengthen the autonomy of the elderly users and provide them with better opportunities for taking part in the information society, including maintaining contact with family members and friends.

Very few initiatives have attempted to set measures for the number of people they reach. One initiative that sets quantitative targets is the 'Look@World' foundation in Estonia. From the outset it had a very ambitious target of providing training for 100,000 Estonians, and the project in fact achieved that goal. Similarly the 'ESF Pathways' projects aims to reach 2,820 inmates, and the US project 'Street-Level Youth Media' sets the target of reaching 1,200 youths in 2008 and supporting 150 apprenticeships in the same period. The 'Lernbar' project sets goals for the number of courses to be run, number of participants to be recruited, number of interviews and counselling sessions to be held with participants as well as results to be achieved in terms of achieved employment and educational qualifications. Setting quantitative and tangible goals enables projects to become committed to certain achievements and to measure results against these targets. Setting targets can also have a powerful signalling effect, which is likely to have been the case for the 'Look@World' foundation which managed to get the attention of stakeholders at all levels by announcing its ambitions. Equally, setting quantitative goals can, if appropriately applied, be used to monitor progress and adjust for critical factors, which could otherwise lead to negative press coverage or lack of stakeholder support.

There are examples of some initiatives that attempt to project future developments with regard to scale of users and beneficiaries. This is the case for initiatives like 'Seniors Communicate' and 'e-Learning Liguria', but these projections still do not function as quantitative goals.

A solid approach to quantifying goals and targets is often quite resource-intensive and can be time consuming to monitor. Setting outcome-based targets for the participants (number of participants gaining jobs, with improved life quality, better educational prospects, and stronger social networks) are just some of the possible target dimensions. The 'UK Online' centres have measured some of these aspects following training, but they did not set targets.

Some initiatives like the 'Association of Hungarian NetWomen' have an explorative approach to digital literacy and use feedback from users to redirect the programme. The participants suggested a more practical approach to the programme instead of the standard computer course programmes. As a result, the programme focuses on practical tasks (seeking jobs, writing recipes, communicating with family abroad) and has built its ICT training around these activities instead of around the different functions of software programmes and internet facilities devoid of a practical context of use.
There are also examples of organisations which were operating non-ICT related programmes and programmes aimed at other target groups before starting their current DL initiatives. This is the case for 'e-Learning Liguria'. The region ran a number of other programmes for elderly and decided to introduce the e-learning programme for the same target group, because the need arose. Another example is the 'Seniors Communicate' project, where the foundation previously ran a number of programmes for under-resourced children and young unemployed, and wanted to address a different target audience with this initiative.

'The Open Door' project has not changed its general objective of providing disabled with internet access and training, but every year it sets new specific goals on how to better achieve this objective. Basically, 'The Open Door' revises its design according to what it learned from previous experience, and this is reflected in the annual goals of the project.

Motivating factors for stakeholders

What are the goals of the different stakeholders (public organisations, private organisations, NGOs and voluntary organisations, educational institutions, and of other types of participants) and how do they influence the initiatives? What can be considered good combinations of stakeholder motivations/goals and why? What goals synergies can be observed?

The different stakeholders contribute to digital literacy initiatives for different reasons. Where several stakeholders are involved in the same initiative, goal compatibility among the different stakeholders is an important factor of success. The motivations of the different stakeholders include:

- National public organisations (including ministries) introducing digital literacy initiatives to address goals like removing the digital divide, improving e-inclusion, supporting lifelong learning, reducing unemployment, creating equal opportunities, and supporting an optimal use of online government services.

- Local authorities basically addressing the same goals, but at a local level. The combination of issues to be addressed at the local level may vary somewhat from the set

of national or state problems. Therefore, the local authorities may wish to tailor a national initiative in a certain direction or give the initiative a specific focus at the local level. This has been practiced with success in the 'Cyber-Base-Spaces' DL initiative in France.

- Private companies motivated by the opportunity of improving the market uptake of their products in segments of the population where the market penetration is low. This could be broadband uptake in rural areas, hardware and software purchase and use by the elderly or disabled, mobile telephony and online banking services used by the elderly. Some private companies may also be motivated by the need to attract workforce with basic ICT skills. 'Mobilitarij' in Slovenia is a project where the operator is a mobile telephony operator that tours a mobile exhibition/open laboratory for the general public around the country. Through this campaign, the operator is obviously investing in a future bigger potential market. Another good example is the 'Look@World' foundation where ten companies have set out to make a major impact on the digital divide in Estonia. In the US initiative 'ZeroDivide', the organisers have realised that many demographic markets are saturated for several ICT-related service companies, and they are looking to develop new market opportunities through social enterprising by helping disadvantaged groups to achieve the same opportunities as other more resourceful demographic groups, whilst the companies acquire insights in demands which may lead to new forms of services.

- Many non-government organisations (NGOs) representing the interests of disadvantaged groups. Their main motivation is to improve the quality of life for their members or target audiences. Whether seeking to improve the working and living life of immigrants, disabled, elderly, ex-offenders, women, or any other disadvantaged group, the key *raison d'être* of these organisations is seldom based specifically on improving ICT skills. Instead, these organisations take a holistic approach to inclusion; digital exclusion is seen as just one dimension of a more complex set of socio-economic challenges often associated with exclusion such as long term unemployment, poor health, mental and physical disabilities, and low level of education attainment. Often these obstacles are intertwined so that factors of exclusion have to be addressed through different means. However, the reason for focusing on digital literacy skills in disadvantaged groups is that digital literacy can be the means by which excluded groups 'get a voice' in the public sphere, and through that find ways to reconnect to society in a constructive manner while at the same time improving their self-esteem and broad set of foundation skills which can be the first step in return to education or into employment or micro-enterprising. In many of these organisations, the workforce is made up of volunteers. These volunteers may at times have a similar background as those they now try to target, or they may be motivated by civic engagement. There are several good examples of this strategy including the 'Dames and Data', 'Lernbar', 'Association of Hungarian NetWomen', and 'The Open Door' project. Having several NGOs and interests involved can sometimes create problems. North Carolina's 'e-NC Authority' is a good example of the type of difficulties that can occur when faced with the conflicting interests of three different ethnic groups within one county. In order to

achieve consensus on the priority of local projects the authority had to bring in help from other counties.

- Education institutions having several reasons for entering digital literacy initiatives depending on their role in the project and the level of commitment they will provide. Some of the institutions have a role of basically providing ICT education and training for the participants, whereas others also contribute to the design of the initiative and carry out (action-based) research to gain knowledge about good practices, experiences, and methodologies in certain situations. Others may also play a role in coordinating the activities and applying for funding. The more committed and involved the educational institutions are in the running of the initiative, the more likely they will be to have the successful implementation of the initiative as their main motivation. The ZAWIW at the University of Ulm for example was the main designer of the 'Senior-Internet-Helpers' initiative in Germany and organised most of the events, materials, and learning programmes.

Most of the initiatives profiled in the report are positive examples of goal synergies between stakeholders and across different types of stakeholders; synergies can for example occur between private businesses and non-government organisations, or between a national public organisation that aims to address the digital divide and designs overall programme terms and local authorities that then tailor these to the special digital divide issues at the local level. The operational focus may vary across contexts: in one local area the initiative may target immigrants, whereas in another locality the focus is on the employment effects from the closure of a local manufacturing plant. There are other examples of synergies; private companies aiming to increase sales of software products partner with representative organisations of the disabled or the elderly in order to upskill these target groups to a point where they will become potential consumers of their software products. In some instances conflicts between the purpose of the project and the daily operational procedures have created problems. For example, the 'ESF Pathways Project' for facilitating reintegration of prisoners was hindered by the control and clearance procedures of the penal system. In some instances this led to security clearance for trainers who were to train the inmates being received after the end of the planned training period.

2.3 Effective structure, design and implementation of initiatives

This section analyses how initiatives have introduced effective structures, designed useful learning opportunities and experiences, and ensured an effective implementation of the activities. The section therefore looks at the organisational setup of the initiatives and pedagogical approaches adopted, and at how the initiatives have stimulated digital literacy development as well as led to social innovations.

Organisational structure

As evidenced by the selected cases, the organisational structure and how it is set up is a critical factor. The great majority of promising and/or innovative initiatives build on partnerships between several organisations or stakeholders. Even among public initiatives, very few organisations appear to be successfully promoting DL by themselves. Partnerships may be a means to overcome limitations of size and outreach, but are in many instances also a matter of a constructive match of diverse resources and either special knowledge about or special access

to a particular target group, both of which can be critical to dealing with certain disadvantaged segments in the population.

This structure often pertains to initiatives for disabled such as 'ICOM' run by the French branch of Handicap International, using their expertise to provide assistance and advice on ICT use and technological developments with financial support from several national and local public sources. The 'ICOM' centre provides expertise and advice to a wide range of PIAPs and learning centres not just in the city of Lyon, but throughout the region and in many cases nationally. The 'Dames and Data' project in Norway has introduced a very broad partnership involving a national government body (Ministry of Administration and Public Reform), a local government body (Municipality of Oslo), women's organisations, clubs and organisations representing ethnic and cultural minorities, and private enterprises. In addition, the project uses former students as mentors or instructors (achieving language-based and cultural advantages).

Through cross-border European collaboration projects like 'Grandparents and Grandchildren', a network of 10 national partners has been established and multiplied in each country to allow the diffusion and support required for establishing and running the programmes.

Characteristically, single organisations only run large-scale initiatives with some apparent success when these initiatives have a relatively general scope or target audiences which presumably require limited special knowledge or access (like the unemployed for whom it might even be mandatory to participate). For instance, the Belgian 'Aangename Kennismaking met de Computer' run by the Flemish Employment Service has addressed some 40,000 unemployed and low skill workers, and the British public libraries are running over 6,000 'UK Online Centres', most of them open to the general population. Worthy of note, moreover, is the private-sector led example of the 'Look@World' foundation, a skills-upgrading project involving 100,000 Estonians and linking with a large number of schools to run practical training courses.

However, even in these circumstances organisations are highly dependent on performance and support in local or regional organisations providing services and resources to the project. There are also examples of initiatives that have chosen to delegate the daily management to others, such as the Spanish initiative 'New Technology Centres' in the region of Extremadura, which is also run on a daily basis by an experienced NGO.

Many initiatives use a multi-faceted partnership model to secure the necessary knowledge and access on the one hand and sufficient resources on the other. In addition, the planned choice of staff may affect how initiatives are implemented. Yet looking across the selected initiatives there is less apparent unity among the models employed.

As has been indicated, several initiatives are simply based on hiring new staff with the necessary competences – such as the British initiative 'ESF Pathways in Prisons and Probation', which contracts with local training providers to supply the required tutors to aid convicts in completing the newly offered online courses – or utilising existing structures of paid staff. For instance, the Slovakian 'Digital Stur's Movement in the Schools' employed local ICT teachers after hours to train roughly 70,000 citizens at the schools' computer classrooms. Even more pronounced is the Slovenian initiative 'MOBILATORIJ' run by the Mobitel telecom

company. It periodically circulates its customer-care employees in and out of teaching positions in its mobile computer lab. The advantages of this model are that it does not require any specific prior staff training to get started, and by involving professionals with the relevant mix of qualifications there is some level of guarantee that the initiative will be implemented in a professional manner.

Not all organisations can afford to hire new staff at will, though, and in these situations the use of volunteers presents one way to reduce direct financial funding while introducing some additional new dynamics. But even if central to the vitality and outreach of particularly third sector organisations, the use of volunteers is not entirely without challenges, and there are different types of volunteers and different levels of affiliation.

Volunteers demand transparent administrative measures in terms of who are paid and who are voluntary staff and what their areas of responsibility are, in order to avoid exploitation of staff resources. As voluntary staff is most commonly composed of citizens with reasonable ICT skills and an interest in social work, this potential resource is enormous. It has been tapped with great success by initiatives like the Dutch 'Seniorweb.nl', utilising the time and effort of more than 2,300 'ambassadors' to teach some 50,000 seniors per year in the uses of ICT, and Nordic and German programmes aimed at elderly where the majority of training is conducted by trained or untrained volunteers (for example '55pluss').

Other volunteer initiatives are created and managed by pupils or college students for senior citizens, bringing together the generations with the highest and lowest ICT skills on average. Thus, over 400 high school students have volunteered in the American initiative 'Net Literacy' since 2003, while engineering students manage the 'ICT Initiation Workshops' in the French town of Villejuif. The project 'Grandparents & Grandchildren' teams up grandchildren with their grandparents, providing them with support for training sessions where the youngster is training their older relative in accordance to the interests of the elderly.

Significantly, these initiatives tend to be aware of the learning process being mutual, the elderly gaining a better understanding of ICT and youth developing their social skills and in some instances – especially in the USA - also getting credit towards college admissions or as part of a college programme.

There are great variations in volunteer initiatives, which in some instances build on highly professional voluntary sources. An example is the German 'Sternstrasse' initiative, which aims at helping rehabilitate former intoxicant users in the German city of Hamburg by making them digitally literate as a way to improve their employability in the ICT sector. This initiative (currently in hiatus because of the burst of the IT bubble) relied on volunteers that themselves were ICT specialists, and underscores that not all positions can be immediately filled by any one volunteer, an issue which most volunteer initiatives must deal with in some form or other. Many initiatives with volunteer staff accordingly report that one of their critical points in implementation is either attracting the right volunteers or managing and preparing volunteers for their intended positions, with the costs and delays associated with having the right resources available.

Across the case studies there may be significant differences in the degree of affiliation of volunteers, ranging from very definite almost regular employment to more networked initiatives

such as 'Net Literacy', now mushrooming from school to school and covering three American states, to an initiative such as 'Internet Rangers' run by British Telecom, which has no formally attached volunteers at all. It merely encourages youth to teach the older generations how to go online, providing useful guides and materials that stress the fun part of the experience.

Participants who support peer-to-peer activities form a second alternative to paid staff. Several initiatives have been quite successful in promoting peer counselling to make participants help each other and draw on their collective knowledge base. This approach for instance is pivotal to the work of 'SeniorNet Sweden', which basically is nothing more than an internet portal and a virtual community, but which in time has added over forty real SeniorNet clubs run by senior citizens on a voluntary basis. The same is the case for the Danish 'Datastuer' project aimed at elderly in Denmark, where many centres have almost one volunteer to every two participants. The UK initiative 'ESF Pathways' also promotes peer to peer learning and tutoring among inmates as an important part of its programme. 'The Open Door' project in Latvia has made good use of a 'train-the-trainers' approach to enable disabled trainers to teach other disabled users how to use ICT; this injects the added benefit of the teacher understanding the student's situation from own experience. Several other initiatives have made use of this option, including the 'Dames and Data' project in Norway, where trainers from ethnic groups are used in order to ensure good knowledge of the needs and cultural background of the different ethnic participants.

Methods of learning and teaching

Using knowledge about the intended target audiences and the staff employed to adapt the learning methods and materials to user needs, a number of themes emerge across the identified initiatives – some recurring in relation to most target audiences and a few that are particular to specific groups.

When adapting learning methods and materials, a prevalent theme is linked to the issue of trust. The German 'Senior-Internet-Helpers' initiative for the elderly provides an illustrative example of a point of departure based on the social and daily interests of the participants rather than on the possibilities and limits of the information technologies. Similarly, one British initiative is simply named 'IT for the Terrified'. To a large extent, fear is in most instances linked to fear of failure, fear of destroying IT devices and software if an operation goes wrong, fear of engaging in new vocabulary, and personally doubting the ability to handle the technology. As research in relation to the Swedish 'SeniorNet' initiative shows, it can be a major step – at least for seniors – to accept that it is okay not to grasp the full extent or inner workings of the technology, but to start to use it in a way that avoids a 'not-for-me' reaction.

Methods to overcome personal anxiety involve one or more of the following components:

- Creating a free and open learning atmosphere where there are no 'stupid' questions, possibly by grouping participants by gender, age, or user levels, or by making participants feel comfortable convening in known surroundings and abandoning very formal student-teacher relationships
- Simplifying the content of the course to involve only the necessary features, and then be very specific, presenting fewer alternatives and using more time on exercises

- Being practically-oriented, emphasising immediate outcomes over terminology, technical operations, and concepts
- Providing opportunities for learning at the user's own speed (but with continuous support)
- Taking outset in the particular hobbies and interests of the participants to guide them into increasing use of ICT (for example genealogy and local history for seniors, home decorating and child care for women, job opportunities for the unemployed, and news and entertainment from home for migrants).

Another recurring theme, especially in relation to low skilled groupings, are matters related to context, relevance, and former negative experiences with the formal education system and modes of education delivery. Characteristic for many of the initiatives targeting low-skilled or young urban groupings at risk is the way in which technology is often deployed so that the target groups become producers of digital text in its broadest concept, with relevance in content and modes of channelling so they become producers and users of their own content embedded in their way of living and expressing themselves. The Irish 'Digital Communities' initiative has worked hard to avoid any academic connotations, emphasising that each centre really does belong to the local community by asking members of the centres to participate in decision-making and entrusting them with responsibility. Moreover, the Irish 'Digital Communities' and initiatives such as the 'SWICN Computer Clubhouse' for youth, the Spanish 'See You in the Virtual Square' for migrants, and the UK 'Online Centres', all have tried to develop course material free of academic language and rich in practical examples to engage the participants unused to or with bad memories of conventional forms of learning. 'Online Centres' has developed a suite of very short online modules called Myguide[2] which has proved to be very popular since its launch. The platform also offers a search tool and an email account that is easy to use and especially the very simple search tool provides search results that are manageable for anyone.

'Seniorweb.nl' also runs an internet portal which is easily accessible for persons who are not familiar with using computers. 'Seniorweb.nl' has a social function. It provides the opportunity for elderly to create social networks and meet new people online so that they don't have to suffer from loneliness. Currently there are 82,000 members of 'Seniorweb.nl'. In addition to the 20,000 people visiting the internet portal daily, there are more than 55,000 elderly taking courses in the use of computers every year. The courses given by Seniorweb are especially designed, so that participants can learn everything in their own pace supported by more than 2,300 volunteer online tutors. Besides acquiring knowledge about computers, participants are able to create new social networks and lasting friendships.

The initiative 'Digital Communities' asked the question what would a course developed in a non-academic format look like and then proceeded to carry out the exercise.
The 'socio-digital' approach adopted by the 'New Knowledge Centres', however, is developed by academics but emphasises the relationship between learning technical skills and the importance of social factors for staying motivated and engaged. It is a general finding that if given the option, most participants (especially elderly) prefer not only practical, but also personal face-to-face instruction.

[2] http://www.myguide.gov.uk/myguide/MyguideHome.do

Other findings of a more specific nature relate to, for instance, the German project 'Senior-Internet-Helpers', which highlights the importance for seniors of a paper manual in keeping with an approach that the elderly are most used to and most comfortable with. In the Finnish 'Nettiä Nääs, Tietoa Tuville' initiative, former intoxicant users work with individuals or in small groups because former intoxicant users according to their findings typically become insecure in group situations.

Many of the identified initiatives are open to continual suggestions and revisions from instructors and participants, and several utilise informal/formal evaluations to receive systematic/unsystematic user feedback. Experiences also show, however, that concrete feedback from users is relatively limited and in general expressed positively, since users have limited skills to begin with and often do not know what to expect.

Physical environment

Three features seem to impact user perceptions about the physical environment, other than accessibility. These are proximity, visibility, and the level of perceived comfort among the participants and all three factors seem interrelated.

The role of proximity comes into play in two ways. Whilst some initiatives in principle service rather wide geographical constituencies, actual use is often limited to the geographically closest residents; this explains the very widespread occurrence of mobile solutions. For instance, the Slovenian 'MOBILATORIJ' run by a private telecom company and the Finnish 'Netti-Nysse Internet Bus' are both essentially computer rooms on wheels. They may be placed in particular townships or neighbourhoods for shorter or longer periods at a time. The Belgian initiative 'Aangename Kennismaking met de Computer' employs the concept of mobile laptop units to move courses to potential participants instead of requiring participants to travel. The same is the case for 'The Open Door' project and the 'Street-Level Youth Media' which bring mobile courses to the disabled in the regions and to schools in the city of Chicago. All initiatives indicate the added benefit of easing the introduction of ICT by meeting participants in familiar surroundings.

Another dimension to proximity is placing initiatives in local areas and preferably at highly visible locations. This seems to lessen scepticism from the population and increases the likelihood of dropping by. Examples are the 'Senior-Internet-Helpers' project in Germany, consisting of small internet cafes with volunteer assistance in conjunction with local town halls, and the Irish 'Digital Communities' initiative, setting up training centres almost from street to street in a deprived urban area and thereby inducing residents to take ownership of their particular centre and integrate it into the community. Similarly, the 'Multifunctional Youth Centre' in Nicosia, Cyprus, will be opening several new centres in other towns in Cyprus plus a second in Nicosia. The 'New Knowledge Centres' project also has focused on placing centres in localities where participants will feel at ease.

The initiatives illustrate different dimensions of trust related to participants' life circumstances and localisation, and initiatives' ensuing modes of engaging participants and organising activities. This for example can include the provision of facilities to bring along children, as illustrated by the Austrian initiative 'Lernbar', targeting among others migrant women.

Box 1: Lernbar (AT)

Lernbar (AT)

The success of the 'Lernbar' program is based on open and flexible learning in individually tailored as well as structured course programmes. Furthermore, the success of 'Lernbar' is based on a social dimension – 'Lernbar' is a social meeting point that does not merely facilitate learning. By offering a comfortable environment the staff managed to attract marginalised groups in Vienna.

ICT infrastructure

The cases of the urban community initiatives like the ones mentioned above and 'Lernbar' and the US 'e-NC Authority' are examples of the need to provide citizens with ICT infrastructure before it is possible to start improving their ICT skills. In Austria, 'Lernbar' provides 32 learning spots in 255m^2, and in the US the 'e-NC Authority' has managed to increase broadband coverage and PC ownership rates from a very low level to a level that is above the US average. In most European cities the citizens have access to the internet. However, to exploit ICT, some handicapped groupings will need a tailored ICT infrastructure.
The 'ICOM' project is an example which includes a special emphasis on tailoring and adapting the ICT infrastructure (computers and software) to different types of handicapped. In this way ICT infrastructure can be the first step in integrating digitally excluded handicapped individuals in the society. Similarly, 'The Open Door' works with organisations that donate computers for the disabled persons taking part in the programme.

Scope of implementation

Many of the large-scale national initiatives set up an infrastructure in less developed areas, both rural and urban, and/or provide public internet access points in libraries and city halls for persons who cannot afford their own equipment. Important added features are basic computer courses and available work station assistance for inexperienced users. This characterises the UK 'Online Centres' as well as initiatives such as the German 'Senior-Internet-Helpers', the French 'ICOM' centre which helps other centres introduce better services for handicapped, the Danish 'Ældremobiliseringen', and 'SeniorNet Sweden'. In another approach, the American volunteer initiative 'Net Literacy' refurbishes donated computer equipment and installs it in nursing homes as an auxiliary effort to support the continued use of ICT outside of classrooms.

An entirely different approach, but no less significant, can be observed in many of the smaller initiatives which either view DL as a means to achieve specific social ends, or view social activities as a means to achieve higher levels of DL.

The former can be exemplified by the Irish 'Digital Communities' initiative which has built local community centres where users can learn digital literacy skills; these centres also function as meeting points to stimulate some sense of community awareness and to provide a physical location where youth can meet and hopefully engage in activities to reduce education dropout rates. The Dutch initiative 'Web in de Wijk' also belongs to this category. It builds on the concept of nourishing neighbourhood cohesion through local residents' creation of a multitude of local web pages where they tell about themselves, their interests, and interesting happenings in their areas.

The latter can be exemplified by in particular a number of initiatives aimed at senior citizens. Many of these initiatives find that the elderly just as much appreciate social contact with like-minded as the use of ICT itself. These initiatives attempt to let immersion in ICT flow from the users' shared interests and hobbies. For instance, 'SeniorNet Sweden' and 'Seniorweb.nl' are both active virtual communities with web fora on various topics (not least regarding technical support, but not limited to this topic) and a network of local clubs organizing weekly meetings, lectures, and excursions. In addition, the Danish initiative 'Datastuer' and the Norwegian '55pluss' give high priority to finding spaces with the correct atmosphere to enable both ICT courses and social and cultural activities.

Some of the good practice initiatives targeting youth and/or the unemployed incorporate programme activities targeting participants' efforts to move on to employment or to further education and training. Examples of these initiatives include 'Street-Level Youth Media' which offers apprenticeships, 'ICOM' which introduces handicapped participants to employers, and 'Digital Communities' which counsels learners about job and educational opportunities. For different marginalised groupings with low education levels or long term unemployment, targeted guidance embedded in active labour-market or return-to-education goals are central to real-life improvements.

2.4 Focusing on the motivations of citizens/target groups

The analysis in this section is concentrated on examining the specific methods and approaches used by the initiatives in order to identify needs and motivate the target groups to develop digital literacy skills.

Identification of participants' needs and motivation

In order to identify factors which motivate citizens to participate in DL-developing activities, this section will analyse a number of questions including:

- What is the basis for setting out to help target audiences?
- Do initiatives have any prior experience with specific target audiences?
- How are the needs of the target audiences defined in terms of skills acquirement and learning modes?
- How have initiatives identified the motivation and incentives of their target groups, and what are the key motivations/incentives for different groups?

Basis for assisting the target audiences

The basis for setting out to assist a specific target audience varies from initiative to initiative and equally so between regions and countries. That said, a number of trends are observable when looking at the objectives, structure, and experience of various DL projects. A key objective of DL initiatives is to improve the ICT competence and skills levels of a specific target audience. This objective cuts across the vast majority of initiatives and is applicable to most target groups.

However, the promotion of ICT use and related skills is seldom the primary objective or even the main focus of some projects. This is illustrated by the focus on social networking, cultural offers, and general wellbeing of participants, especially in initiatives aimed at elderly, such as the 'Datastuer' and '55pluss' and the 'Senior-Internet-Helpers' projects. In addition, in initiatives aimed at other target groups like immigrants, ex-offenders, and long-term unemployed,

digital literacy is just one factor out of several which may improve employment opportunities and civic life. ICT nonetheless constitutes a core element of most of the initiatives.

The good practices that support disabled target groups deal with content and technical problems related to issues of usability. These initiatives focus less on skills and more on creating access and optimal work situations for persons with disabilities, which requires good knowledge of the needs of the different disabled groups. Most often trainers and technical supporters either have similar disabilities or have strong knowledge about the limitations of the disabled groups they are working with. For an interesting example see the case of 'ICOM' which over many years has built a strong knowledge base on these issues and as a regional centre has attracted interest from stakeholders throughout France. Another example is 'The Open Door' project where teachers of ICT have disabilities similar to the learners'.

Needs and prior experience

Many initiatives emerge either from offices of public administration which have been mandated to assist and/or provide services to a given target group, or from representative NGOs, employers, or peers (at the grass-root level) within the community in question. An example is the 'Dames and Data' project, initiated by the public administration for integration of immigrants and ethnic minorities in the municipality of Oslo, but also developed and promoted by a project manager from within the community.

A broad range of factors are most often taken into account to tailor initiatives to the specific needs of the target groups, dealing with motivational factors, issues of access, and broader civic, social, or employment-related needs. Psychological factors which may motivate or be a barrier to participation are also taken into account. Often the outcomes of previous DL initiatives aimed at the same target group are used as an evidence base for developing new initiatives. Most initiatives make use of some form of ongoing needs assessment either in the form of formal evaluations or continuous input from trainers and mentors.

The 'New Knowledge Centre' from Spain is an example of a project that conducts extensive screenings of participants in order to select and to tailor the programme to the needs of participants. On the basis of a thorough interview and an aptitude test, participants are grouped according to their skills levels and interest areas.

Particularly when public funding comes into play, evaluations form a central component to inform the later full implementation, as in the case of the '55pluss' pre-project 'Høykult'. An interesting feature used by a number of the DL initiatives identified includes a formative approach to evaluation to capture important experiences and lessons learned through the project. These evaluations most often gather experiences from trainers and participants, and the outcomes are used to inform future initiatives about concepts, content, and methods deployed, with a view to improving sustainability and at times also the business model. Although formal participant surveys - other than those performed at the end of a given course - are less common, questionnaires are utilised, for example by the 'Datastuer' project, while other projects make use of informal talks with the participants and/or workshops ('Senior-Internet-Helpers') most often to capture the level of satisfaction about content and processes.

The key to success builds to a large extent on pre-assessment of the motivating factors and needs of particular target groups, given the diversity in participant motivation, to ensure that target groups feel that DL programmes meet their expectations and are worthwhile.

Addressing the specific needs of participants and understanding their full background is also a pre-condition to establishing trust and to ensure that target groups with fear of technology and at times also with low skills overcome psychological and motivational barriers to participation.

Motivational factors and drivers

Many participants join programmes to overcome social isolation, and especially initiatives targeting seniors build on the options ICT can offer to connect to and meet new peers.

The European project 'Grandparents and Grandchildren' is based on a concept of youth training their grandparents. Contact with family and friends is in itself a major motivator for beginning to learn how to use the computer for communication purposes, at times also overcoming issues of distance. 'Seniornet Sweden' and 'Senior-Internet-Helpers' (DE) build on a similar model. The elderly also engage in online networking, and organise online fora and chats.

Many newcomers are motivated to get on-line because the internet and the computer provide flexible access to a range of services in their daily lives. For the disabled/handicapped, digital literacy can offer improved education and employment opportunities. Also in rural communities, on-line access has immense opportunities for improving access to a range of services despite location.

For different users, there can be a range of barriers to participation relating to technical, usability, and psychological factors. However, once the specific initiatives have found ways of forcing these barriers, digital literacy may contribute to the quality of life (examples include 'Senior-Internet-Helpers', 'Seniornet Sweden', and 'Dames and Data').

Options to improve educational prospects or to enhance employment and employability are, not surprisingly, central drivers, but many participants are also motivated by the opportunity to develop their hobbies further, either just by using the computer and the internet to find information or by joining an on-line community with opportunities to meet people who share the same interest. These hobbies could be anything from sharing photos, writing diaries, running a community group or sports or knitting club, to train-spotting and stamp collecting. What is important is that the computer can be used both to share the hobby with peers and as a means to gather new knowledge about a particular topic.

Adaptation of training programmes is a central parameter to ensuring high completion rates and it also motivates individuals to develop their abilities. Mentoring and personal assistance combined with the formation of and support to small groups with similar profiles such as skills levels, gender, or ethnicity, are likely to induce a high level of motivation among participants, as in 'New Knowledge Centres'. Some projects demonstrate that language adaptation of learning materials can also in some instances contributes to motivating learners ('Grandparents and Grandchildren' and 'Unlimited Potential').

A survey carried out within the context of a German project confirms that there are many factors that motivate persons to learn how to use the computer and the Internet, as Box 3 shows.

Box 2: Start und Klick! (DE)

Start und Klick! (DE)

The 'Start und Klick!' evaluation (based on a telephone survey) indicates that the main motive for attending a course was simply the lack of computer knowledge ('Because I have no knowledge' 64%), followed by the statement that computer skills are necessary today (40%), the interest in using Internet and e-mail (38%) and the need for computer skills at work (32%). The low price for courses due to financial support was a motive for 24% of participants.

The programme was initially directed at persons with no or low computer or Internet knowledge. The evaluation shows that indeed 43.2% of participants stated that they had no experience with computers (for Internet: 58%) and 30% stated that they had only little experience (22.9% for Internet). 26.7% stated that they had experience with computers (for Internet 16.1%). Interestingly, 94% of participants had a PC at home and 80% had access to the Internet (at home or at work).

Motives given for participating in the 'Start und Klick!' programme (750 surveyed participants) include vocational demands (241 persons), a lack of competences (478 persons), computer use is necessary (181 persons), the courses are affordable (181 persons), a wish to meet new people (13 persons), a wish to use mail and Internet (286 persons), computer use for leisure time activities (146 persons), because a computer has recently been acquired (79 persons), and other motives (45 persons).

Similar findings are also revealed in a Danish survey. The Danish 'Datastuer' project asked the participants to state why they chose to participate in its activities:

- 71% of users and 25% of instructors want to learn how to use a computer
- 47% of users and 35% of instructors want to learn more
- 23% of users and 23% of instructors want to meet other people in their age group
- 17% of users and 8% of instructors entered the program out of curiosity
- 16% of users and 23% of instructors want to maintain their skills
- 12% of users and 29% of instructors entered the program on advice from others
- 4% of users and 57% of instructors entered the program as they would like to teach others how to use a computer
- 3% of users entered the program because they did not have a computer at home.

As shown in the surveys from Germany and Denmark, and similarly in a survey from the 'UK Online Centres', many persons choose to learn how to use a computer and the Internet in order to avoid being left behind due to technology developments in society and at work, and furthermore, because IT can be a means to acquire new skills or stay in contact with family and friends.

Promotional methods used for motivating the participants

This sections looks at methods to attract participants to DL initiatives, including promotional activities and motivational factors.

How are participants attracted to join the programmes?
Irrespective of the target audience addressed, word of mouth is hugely important in attracting users to digital literacy programmes, especially if the information is provided by a person that the receiver can and will trust.

Potential participants are more likely to attend the programme if the informant convinces them that they:

- Will not lose face by attending and participating in the programme
- Will actually enjoy themselves
- May develop enough skills to achieve some relevant future benefits
- May solve irritating problems more easily using ICT
- Will meet persons with similar problems/challenges and benefit from the exchange.

In order to attract participants, personal message carriers need to know the target audiences very well, almost to the extent that they are part of the same family. The 'Grandparents and Grandchildren' project builds on this marketing approach, which however requires a huge network of young volunteer trainers and recruiters. Projects like 'Lernbar', 'Netti-Nysse', 'Seniornet Sweden', and 'Seniorweb.nl', use peer-to-peer marketing to attract new participants. The network of voluntary trainers in several of these projects plays an important role in word-of-mouth marketing.

Public relations can improve participation rates dramatically. There are examples of projects where good press coverage has meant huge increases in participation. This is the case for the 'Look@World' project, which actually won a PR-award for its effective public relations campaign. Similarly, 'Senior-Internet-Helpers' managed to attract the successful promotion from a dedicated radio programme running over several days, and 'SeniorNet Sweden' organises an annual 'Seniorsurf day' which promotes the ICT opportunities for elderly in several media and results in up to 50,000 participants throughout the country.

Promotional activities aimed at attracting participants to DL initiatives also include traditional advertising, PR, and marketing. The use of press conferences, news coverage in the press, radio and television, general and personalised mailshots, letters, flyers and booklets, plus posters and PR material such as pens and key-rings are just some of the promotional tools used by initiatives such as '55pluss Data' (Norway), 'e-Learning Liguria' (Italy), and 'Equal-skills' (Romania). Other initiatives highlight the use of more targeted approaches utilising their own network of organisations, while many of the initiatives use word of mouth at the local level to ensure the recruitment of participants. Other initiatives such as 'Dames and Data', 'ZeroDivide', and 'Lernbar' encourage stakeholder groups to spread the message while creating a sense of ownership amongst these stakeholders. 'Lernbar' made translations of promotional materials into the languages of the intended ethnic target groups in order to attract participants from the different ethnic communities. This is also the case for the different European projects like 'Grandchildren and Grandparents', 'e-Migra', and the 'PIC' project, which all offer materials in different languages to attract the interest of stakeholders in the different countries in Europe.

A clear 'message' which can be easily communicated and understood is a key to successful promotion. An interesting approach utilised by 'Start und Klick!' (DE) was a competition

organised with local newspapers where participants could win prizes (more than 1,500 persons participated). A second competition for institutions joining the project aimed to promote innovative approaches to PC/ Internet courses, with the ten most innovative initiatives receiving a prize (of maximum €3,000). Apart from establishing links to local schools and colleges, the European project relied on youth promoting the programme within their own families identifying who they thought might benefit from learning how to communicate over the Internet.

A survey carried out by the project 'Start und Klick!' shows that the majority of participants (two-thirds) knew the programme from advertisements and information coming from the various partner organisations offering the courses. By comparison, only 18% knew the programme from conversations with friends or relatives, 14% from newspapers, and only 1.3% from flyers.

The 'Senior-Internet-Helpers' (DE) project indicates that a successful promotional campaign through a channel like radio (radio programmes are normally heard by the elderly) that is tailored to the initiative and reaches a large proportion of the target audience can have an immense impact on the recruitment of participants as learners and as voluntary trainers. A radio programme and campaign organised with several private institutions and a regional German radio programme leapfrogged the initiative to a different level in terms of number of participants and also in numbers of rural internet training centres.

Several initiatives have shown that the promotion in locations where the intended participants come regularly can be of value. In the 'New Knowledge Centres' project the '*dinamizador*' for instance is a person who proactively tries to recruit course participants in social centres, in the streets, and in public places, as a contrast to waiting for persons to come to the learning centre asking for training. This method of recruiting and motivating persons to join and become involved in their telecentres/organisations has been further explored by the 'PIC' project which has itself identified good practices in motivating and organising digital literacy in public internet centres.

Motivation

Motivation is essential to any form of competence development, and not least in relation to digital literacy. The question nonetheless remains as to which are the most significant motivating factors, and which tend to vary depending on the target group, age, socio-economic background, cultural and ethnic background, educational levels, and employment situation.

Table 2: Motivations of two different target groups

Benefits for	Elderly	Disabled
Social networking	Getting easier and faster contact with family members. Meeting new and like-minded persons while learning.	Being able to meet like-minded persons. Active participation in social life.
Removal of barriers	Access to public institutions, online shops, banks, and ordering services. Access to communication channel to family and friends.	Removal of technical barriers that hinder active participation and learning. Access to new and better job opportunities.
Better information and faster information	Provision of relevant alternatives to choose from. Accessing information tailored to them.	Tailored information to their specific needs. Easier decoding of information.
Improved quality of life	Better access to health-related information. Developing their hobbies online. Improved self-esteem. More social interaction.	More social interaction. Realising they can add value through work and teaching others.

Target groups may be motivated when made aware of the potential benefits to be gained, such as better competence levels and employability, civic engagement, sense of value, and the making of new friends. Communication and promotion of initiatives ensures that target groups and stakeholders are made aware of an initiative; a clear message will have an important multiplier effect.

To raise participation, some initiatives have gone a step further by ensuring that multiplier organisations have engaged in the project as co-hosts, co-developers, long-run providers, or in an ownership role. The purpose is also to ensure sustainability as exemplified by the 'Dames and Data' (NO) and 'LERNBAR' (AT) initiatives and the 'ZeroDivide' programme in California, USA, where grant applicants are encouraged to develop social enterprises at the community level.

One method used for ensuring improved ICT competences for most groups includes a 'full integration of ICT skills'. Incentives such as free or subsidised courses, as illustrated by 'Seniorweb.nl', advice on the acquisition of ICT as provided by the portal 'www.it-borger.dk' (DK), and financial benefits are generally more widespread as a driver of participation. Naturally the learning and pedagogical methods utilised as well as access to ICT are also important motivational drivers.

A number of projects motivate individuals to enrol in DL courses by providing these free of charge or at a reduced rate, or with a subscription fee for utilising PCs or internet connection. Examples are respectively training initiatives by the 'Danish Libraries' (DK), 'AOF – Arbejdernes Oplysnings Forbund (Workers Education Foundation)' (DK), and 'Datastuer' (DK).

'Seniornet.nl' (NL), '55pluss' (NO), and 'Datastuer' (DK) show that ICT is not necessarily the most significant driver or key motivational factor for participants. In fact '55pluss' offers

a range of other social and cultural activities at its premises. These activities are well-known in the local community and well visited by the target group (those aged 55 or more). The social aspects and the opportunity to network with peers in fact seem to be the key driver in the medium to long-run for the majority of course participants. This was also the case for projects like the 'Senior-Internet-Helpers' and 'SeniorNet Sweden'. Social aspects are further encouraged through the projects' café-like setting and approach and teaching methodology. The local history and cultural aspects also form an integral part of the learning material and instructors are part of the participants' peer groups, creating a comfortable, cosy, and familiar setting and relaxed learning environment supporting the needs of the participants.

The 'SeniorNet Sweden' online survey indicated that the most important measures to increase motivation and lessen barriers were:

1. Support for acquisition and installation of hardware
2. Someone always available for advice
3. The opportunity to partake in courses together with other seniors.

Together, these answers accounted for 73% of all answers. In other words, social dimensions to participation are by far the most important, while economic incentives accounted for only 10% of the answers.

2.5 Addressing the barriers to DL development

This section focuses on analysing how DL initiatives have addressed the barriers to successful DL development. These may be barriers experienced by the target audiences or barriers that the initiative itself is confronted with and that may have affected its operations.

The barriers to DL development vary from target group to target group. The table below provides an overview of the main barriers experienced by the main target groups:

Table 3: Main barriers relevant to certain target groups

Target groups	Main barriers to DL development
Elderly	No or very little ICT experience; Standard pedagogical models are inadequate; Lack of interest and need; lack of ability to learn; lack of possibilities to practice learned skills.
Immigrants	Cultural barriers; problems of understanding the language; entry skills levels vary to a significant degree; lack of economic resources.
Unemployed	Fear of failing; Lack of ability to learn; Lack motivation and self confidence; Lack of economic resources; lack of possibilities to practice learned skills; Lack of access to network and support.
Disabled	Physical access problems, technical problems; lack of trainers that understand the special needs of different groups of disabled; Inadequate online information services; Lack of workplaces and internet centres that cater for the disabled.
Women	Lack of time and resources; lack of interest and need; lack of time due to child-caring responsibilities; fear of failing in the use of ICT; lack of ability to learn; lack of possibilities to practice learned skills.
Persons with low levels of education	Failing to realise the need; Fear of failing in the use of ICT; lack of ability to learn; lack of possibilities to practice learned skills; Lack of motivation and self-confidence.

Fear of failure and low self-esteem among target groups.

'Fear of failure' constitutes a significant barrier for many. Nevertheless, amongst the DL initiatives identified and analysed there is little direct evidence about a fear of failure. The lack of fear among participants can likely be explained by the fact that most of the initiatives contain elements or methods to address psychological barriers. An interesting factor related to the psychology of failure as illustrated by a number of initiatives is the need for participants to be in physical surroundings in which they feel comfortable and where they can pursue the content and the topic in a safe social environment. A number of initiatives like the 'New Knowledge Centres' and the 'Senior-Internet-Helpers' have been aware of this and designed their programmes accordingly. The need to 'decode' and localise content, topic, is directly associated with the organisers insights into how potential participants who are hesitant to join a course must be encouraged. Learning methodology and instructors' profiles and skills are put to play to encourage the enrolment of immigrants, ethnic and cultural minorities, and the elderly, as illustrated by 'Dames and Data' (NO) and 'Lernbar' (AT).

Addressing issues of inadequate funding

Even the best of ideas and most idealistic project initiatives have to ensure access to adequate resources, in particular financial. This section highlights some of the issues related to:

- How have initiatives managed to supplement limited financial funding?
- What additional funding sources have they identified and exploited?
- What non-financial support has been acquired by initiatives in order to save money?

Situations will arise where resources are not adequate and alternative financial sources have to be identified. The extent to which the DL initiatives identify non-public sources of funding

varies greatly. Public funding plays an important role for a high proportion of the DL initiatives. Whether the public sector is a direct or indirect source of resources, whether these are financial, in-kind, or in the form of guidance, or whether this support has been complete or partial throughout a project or limited to an initial pilot or start-up phase, there are nonetheless a large number of initiatives which have been compelled to identify alternative sources of funding and other contributions.

Projects mainly financed by the private sector are in similar situations. The private sector has provided either funding, equipment, connectivity, in-kind contributions such as courses and learning content, training for instructors, or even the instructors themselves; yet it has been necessary to seek funding from other sources including the public sector in order to remain sustainable. Sustainability through continued funding is a challenge for most of the DL initiatives targeting disadvantaged and marginalised communities.

Some of the funding strategies used by the DL initiatives to enhance sustainability include:

- Introducing subscription (membership) fees or participation fees. This is used in particular for initiatives aimed at the elderly where the target group is seen as being able to afford a small contribution. In some cases like 'Seniorweb.nl' (NL) (which is purely an online service), participant payment is voluntary. Even those who do not pay the membership fee are allowed to use the services. Other projects like 'Ældremobiliseringen's Datastuer' (DK) recommend local venues to charge a low annual user fee of around DKK 200 (circa €27.00).
- Combining European/national/regional funding with local funding. Several of the initiatives are national or large regional initiatives with local training centres. National funding covers the management, coordination, and centralised services, and local funding covers the cost of (or part of) the local training centre. Local funding is mostly in the form of local public municipality premises, either with or without equipment, Internet connection, and staff. This strategy has allowed many of the initiatives to expand their network of training centres throughout the country or a region. This has been the case in the 'Grandparents and Grandchildren' project which combines European funding with local funding, 'Senior-Internet-Helpers' in Baden Württemberg (DE), 'UK Online Centres' (DE) and 'Cibervoluntarios' (ES). This funding strategy is significantly challenged when funding of the centralised national/regional management and coordination disappears. This happened to the network of more than 50 rural centres in the 'Senior-Internet-Helpers' (DE) project, and as a consequence the centres have formed an association in order to maintain centralised services and jointly seek new funding.
- Inviting private companies and foundations to sponsor the initiative, as can be seen in the 'Digital Communities' programme, where Hewlett Packard helped with equipment upgrading.
- Expanding the initiative internationally, seeking public and private funding in these countries or through European programmes. 'Cibervoluntarios' and 'Unlimited Potential' have a strategy for seeking international funding.

In relation to the various types of funding sources, 'Datastuer' has the initial benefit of public funding from both national and municipal sources. These have been decreasing as the initiative has matured, and concurrently maintenance and replacement requirements have in-

creased. Sustainability is promoted through a number of guiding principles for the individual data rooms including a degree of user payment. In addition, all instructors are volunteers who receive training offered free of charge by Microsoft Denmark. The core software and courses have also been provided by MS Denmark and USA through their community outreach and research programmes. Other in-kind assistance includes Bonnier Group (media house) which provides their magazine 'Komputer for alle' (Computer for all) to all the 140 national data rooms free of charge.

The National IT and Telecom Agency and the Ministry of Science, Technology and Innovation have provided promotional material to the 'Netsikker NU' Campaign (Netsecure NOW), and have provided courses about the 'digital signature' and the Sundhed.dk portal (national health portal). Similarly, the Nordea bank has assisted with training related to eCommerce and the 'Netsikker NU' campaign by providing expertise support at various data rooms.

As mentioned, volunteer trainers constitute an important resource for a number of DL initiatives throughout Europe. The level of formal organisation nonetheless differs. Some initiatives like '55pluss' actively pursue and encourage volunteers for course instructors and it runs its cultural, social, and organisational aspects through formal cooperation with the local Rotary Club (Rotary being a worldwide charity organisation) and national Frivillige Centralen (Volunteer Central organisation).

Partners/stakeholders

The involvement of political representatives, the private sector, stakeholders, and target groups, is important for a number of reasons, as is their understanding of the relative importance of DL and a given initiative. Involvement is important not only to ensure financial support, but also to ensure that the given target groups are reached. Overall support from political decision-makers and representatives of the target audiences' interests is often vital but not always forthcoming and easy to obtain.

There are examples of initiatives where the involvement of partners and stakeholders has varied significantly. 'Lernbar' (AT) has involved local Turkish and Jewish stakeholder organisations in Vienna to ensure that ethnic community interests are taken into account. However, not all stakeholders were equally committed to supporting and facilitating the project, especially at the beginning. By comparison, 'Dames and Data' has involved target group representatives in the initial development of the initiative, giving them a clear role in promoting the initiative and encouraging a sense of community ownership and long-term sustainability by offering clubs and associations the opportunity to be directly involved in providing the courses to their members.

Many initiatives have relied on a network of local and regional authorities and schools hosting its training facilities and events. The hosting of training events may be on a permanent basis as in the 'Senior-Internet-Helpers' (D), 'Datastuer' (DK) and 'Seniornet Sweden' projects, or as mobile services requiring a room for a day or two as in 'The Open Door', 'Aangename Kennismaking met de Computer', and 'Street-Level Youth Media'. Vast networks of contacts are necessary to make these hosts aware of the opportunity and to convince them to host the initiative's activities.

'Street-Level Youth Media' even brings the necessary hardware and software and sets it up on location in order to run media-related programmes for youth in the local schools hosting the events. 'ZeroDivide' involved a committee of representatives from NGOs and other local community organisations in the development of its programme strategy, design, and structure, prior to implementing the programme. This ensured that the goals of the programme were aligned with the priorities of all the stakeholders intending to apply for DL community grants.

Lack of skills and knowledge

- What have initiatives done to develop skills and knowledge of staff?
- Which partners and institutions have supported the initiatives with knowledge and training of staff?
- How have initiatives overcome lack of expertise in communications/Public relations?

A range of skills and knowledge is vital for the successful implementation of DL initiatives. The key skills and knowledge required include:

- Knowledge of the target audience and its needs, priorities, and capabilities
- Skills in designing and implementing a DL offer that is attractive to the target audience
- Teaching, tutoring, and mentoring skills and competences related to digital literacy
- Knowledge of other significant domains to integrate in order to make the DL initiative effective
- Skills in promoting the offer to the target audience and convincing it to participate
- Skills in securing funding and resources for the digital literacy initiative and knowledge of key sources of funding, donations, and sponsorship
- Skills in community development at national, regional, and local levels
- Management and organisational skills, and knowledge of how to run and maintain volunteer organisations.

Several of the studied initiatives include staff development as an essential component..

For some initiatives it is relevant that their trainers and animators have a non-ICT background, because the main focus is not ICT but social community-building or employment-related guidance. The project 'Netti-Nysse' even requires trainers to be able to drive the bus as well as understand the social perspectives of the groups joining the ICT programme in the bus.

Other initiatives (especially those addressing ex-offenders, youth with low educational levels, or the disabled) train and use trainers with backgrounds the same disabilities as the target group. For examples see 'Street-Level Youth Media, where youth are employed as apprentices, and 'The Open Door', which uses trainers with disabilities to train other disabled learners.

Another example is the 'Web in de Wijk' project, which has chosen social workers as the facilitators of its neighbourhood activities because social interaction and enterprise are the priorities and ICT is seen as an enabler. As a consequence, these social workers have had to

learn ICT in order to be able to combine the two skills (unless they were already proficient in the use of the internet and in developing content for the web).

In the 'ESF Pathways' project, the prison guards had to be taught how to support and encourage the inmates in their learning pathways. These mentoring and tutoring skills are completely new to many of the guards, and yet absolutely essential in order to be able to help the learners.

Inadequate content and resources

Inadequate content and resources are linked to the modes of learning chosen by a given DL initiative. Key questions are:

- How have initiatives overcome problems with inadequate content in relation to languages and standard content in need of tailoring?
- How have initiatives overcome the lack of adequate social support, tutorial, and technical resources?
- What levels of digital literacy have the initiatives addressed?
- How has critical thinking and formal education been integrated into the initiatives?

Many of the DL initiatives have had to cope with the following examples of inadequate content and learning materials:

- Content not tailored to the needs of persons with reduced eyesight, hearing, or other physical and mental handicaps
- Content in languages other than the mother tongue spoken at the DL initiative
- Content that was too standardised and lacked contextualisation and linkages to the issues of interest to the target audience
- Content that focused on teaching ICT and not on digital literacy as a social endeavour.

Immense benefits are to be gained from a wider exchange of experiences and learning materials across countries and languages. Even if such an exchange requires tailoring of materials and translation, it will save DL centres time, money, and resources. Today this only occurs when centres are already part of a European network which includes the joint development of learning materials, as is the case in the 'Grandparents and Grandchildren' project.

The 'UK Online Centres' project has addressed the need for easy-to-use small-sized learning modules by developing, testing, and launching custom-made materials, taking advantage of relevant experts and incorporating the requirements of users with no or little ICT experience.

Similarly, the 'Senior-Internet-Helpers' project in Germany has developed custom-made materials for trainers of elderly learners, focusing on the known requirements of the elderly.

'ICOM' has also gathered and developed learning materials specifically relevant for the disabled, much of which is available online.

There are also examples of initiatives that have set up communities of practice, sharing learning materials in order to build volume in materials in the national language. An example of

this is 'Unlimited Potential', which for a long period had to manage without materials in the Slovenian language.

DL initiatives have also been in situations where other resources were inadequate. This covers:

- Inadequate support from other public support domains like social, employment, education, and health guidance and services
- Inadequate technical support or outdated infrastructure (or even lack of infrastructure)
- Inadequate physical locations to host training activities (somewhat related to the above)
- Inadequate learning and didactics or online learning platform support
- Inadequate dissemination, marketing, and promotional support
- Inadequate management and coordination support
- Inadequate evaluation and assessment support.

In order to overcome language barriers, a number of projects have also aimed at using instructors and mentors who either have a similar language background or experience in working with the target groups in their own language. Examples of this are 'Dames and Data' (NO), 'Senioren: Medien – Migration – Integration – Partizipation' (DE) and 'Learn Forever' (AT), or the active involvement of stakeholders and representative organisation for the target audience as in the 'Lernbar' project (AT).

Modes of learning

A number of the DL initiatives identified shows how organisational and pedagogical principles applied such as organisation of small groups, personal support and guidance use of practical daily life experiences are essential to ensuring a positive learning experience and skills development. Although the definition of 'small' groups varies, the point is illustrated by a large number of initiatives across Europe including 'Unlimited potential' (SL), with groups as small as 4-8 participants, or 'FluEqual work iT' (AT), which defines a small group as below 20 participants.

Teachers and role models with backgrounds similar to those of the learners have proven particularly important to avoid alienation of participants in relation to the learning situation, environment, and topic and content itself. Instructors can be any age, skills levels, gender, occupation, and ethnic or cultural background; if they can 'decode' and relate the content and topic to the lives and backgrounds of the participants they will more likely succeed, as decoding of content and terminology furthers the understanding of the topic and the rationale for improving IT skills.

The ability to 'talk the language' of the participants is successfully applied in several initiatives. It is illustrated by the 'Dames and Data' project (NO), but also in terms of appropriate role models as highlighted by 'Lernbar'. The actual teaching language most often used is nonetheless the national language of the country or region in question. That does not, however, imply that courses targeting immigrant, cultural, and ethnic minorities do not incorporate some degree of their language and culture. 'Dames and Data' (NO) utilises Norwegian as the teaching language to ensure that the competence level is wider than merely ICT and that

the objective of integration is promoted. On the other hand, the instructors are themselves members of the target groups and are encouraged to use their knowledge of the target audiences' language and culture as a supplement and alternative way of communication to ensure that content and message of the course are fully understood.

Another project where training is conducted in different languages is 'Look@World'. Since use of the Internet among the Russian-speaking population fell below the average in Estonia, it was important to involve this target group also. In order to avoid the language barrier, it was decided to carry out training in Russian and Estonian. In the area of Ida Viru County where there is a large proportion of Russian speaking inhabitants, 80% of the courses are run in Russian, and in Tallinn some 50% of the courses are held in Russian. Feedback from participants has indicated that the Russian learners were grateful to be able to study in their mother tongue.

In terms of the content used, the majority of the identified DL initiatives can be divided into two groups: those using traditional learning materials such as books and pamphlets, and those using electronic learning material such as CD-ROMs, DVDs, and online modules. These two main approaches may in turn be divided further including teaching material focusing on:

- The functionalities of off-the-shelf software such as MS Office 2003, XP, and Vista, and associated programmes as used by for example the 'Digital Communities Programme'.
- The functionalities of common off-the-shelf software from MS in particular in combination with open source solutions and other alternatives: examples are the 'Knowledge Economy Project (KEP)' (RO) which also uses Linux, 'Cyberpipe – Kiberpipa' (SL), and the three remote, mainly Aboriginal, communities of Northern Saskatchewan, Northern Ontario and Labrador (CA), who all use open source code and shared some of the application development, as is the practice amongst the open source community.
- Teaching material based on different types of certification such as the ECDL or national variations of this e.g. 'Equalskills in Romania' (RO), 'Knowledge Economy Project (KEP)' (RO) and 'Digital Communities Programme' (IE) (see also box below).
- Teaching material tailored to the needs of specific target groups such as specific soft- and hardware required for assisted living for the elderly or the physically impaired. Examples are 'Training in basic ICTs of persons with vision problems' (GR) (although standard software is also used) and 'The Open Door Project' (LV).

While the content utilised often comes from similar sources such as ECDL or MS, this material is in the majority of cases nevertheless adapted in some way. 'Localisation' can be in the form of additional material targeting participant interests, background, or learning and communication modes, or it can be in the form of tailoring of specific modules or tasks. The adaptation of content constitutes a key driver for the motivation and successful transfer of skills from the teacher to student. Accreditation as in the 'Digital Communities Programme' (IE) (see box below) also plays a role in the selection of the content used in a given DL initiative, and also as a potential motivational factor in relation to future employability.

Box 3: Digital Communities Programme (IE)

Digital Communities Programme (IE)

The Digital Community Programme seeks to achieve community cohesion through active involvement of community stakeholders and users by enhancing self-esteem and motivation, for example through low level accreditation through FETAC, Microsoft and the Dublin Institute of Technology (DIT).

To achieve its objectives, two training strands have been introduced – for each strand an assessment of user needs has been conducted as a basis for the design:

- The first strand is informal, with participants attending entertaining, casual classes aimed at engaging them on their own terms. Tools include activities such as comic/cartoon creation, learning how to book a flight, and setting up an email account. The first strand emphasises basic digital literacy and utilises the Microsoft Digital Literacy programme with Microsoft accreditation as an option.
- This informal method was chosen to motivate students to progress to the second strand as a more formally structured training programme with DIT third level certification. The programme used here is the Certiport IC^3, which teaches the fundamentals of computing including key applications, online living, Internet, and email use.

Addressing different levels of digital literacy

Digital literacy comprises several levels. For the purposes of the report three levels have been identified:

- The basic first level – learning how to use basic functions in a computer and in digital media applied to everyday simple tasks.
- The second level – using the basic functionality of the key applications to be operated via the digital media – word-processing, spreadsheets, presentational tools, e-mail communication, web searching, touch screen interfaces, text messaging through different devices (computer, mobile telephone), etc.
- The third level – in order to with confidence use the appropriate digital tools and facilities to identify, access, manage, integrate, evaluate, analyse, and synthesise digital resources, construct new knowledge, create media expressions, and communicate in specific contexts. It furthermore involves transactions over the net, and awareness of security issues.

Basic first level

Most of the initiatives cover this level. In fact only the 'Street-Level Youth Media' starts at a higher level and develops the skills of its participants at second and third level. All the other initiatives offer basic level digital literacy where persons learn how to use the computer, the mobile telephone, or other media, as well as the basic functionality of the most common application.

The second level

There are a number of initiatives that in addition provide and upgrade digital literacy at a second level. Examples include '55pluss' in Norway, 'UK Online Centres', 'ESF Pathways', 'Unlimited Potential', and 'Equalskills'. The Flemish initiative 'Aangename Kennismaking met de Computer' and the 'Multifunctional Youth Centre' in Nicosia offer the opportunity to

learn how to develop web-pages. A number of initiatives like 'SeniorWeb.nl' and 'Seniornet Sweden' provide online learning services where participants are able to independently pursue more advanced level skills.

The third level
A few of the initiatives have also addressed the third level of digital literacy, where the initiative actively supports the transformation of skills into value-adding activities for a range of different purposes critical to employment, and social and civic participation.

The 'Web in de Wijk' initiative facilitates the development of neighbourhood networks and joint online collaborations and projects such as the design, development, and maintenance of a neighbourhood blog or news portal. This type of activity allows the participants to apply what they learn on meaningful and value-adding services for the community. This is also the case for the 'ZeroDivide' programme, where applicant organisations have to demonstrate that the developed skills will lead to sustainable social enterprises and stronger cohesion in the community.

Another example is the 'Street-Level Youth Media' initiative, where the participating students produce their own media project which is then presented on the web as well as at special events. Similarly, 'SeniorNet Sweden' provides opportunities for participants to upload the results of their efforts in the form of travel descriptions, video productions, etc.

The 'ICOM' centre in France also addresses the third level of digital literacy development. This may include working with an educational institution and the learner in order to introduce specific applications into the learning process. It could also include specific skills required to carry out certain complex tasks at the workplace of the handicapped individual.

Internet security
The 'New Knowledge Centres' project in Spain teaches participants the use of online public services and the careful use of electronic ID certificates for logging on to services.

The 'Senior-Internet-Helpers' project teaches helpers operating in the local centres about good and safe internet practices and how to avoid virus infection and misuse of personal information and data. In Denmark, The National IT- and Telecom Agency and the Ministry of Science, Technology and Innovation have provided promotional and learning material and also courses about the 'digital signature' and the Sundhed.dk portal (national health portal) in relation to the 'Netsikker NU' Campaign (Netsecure NOW).

Critical thinking
Very few of the initiatives have specifically addressed the need for critical thinking – media literacy in relation to the use and production of digital media. There are, however, two initiatives that have addressed critical thinking.

'Seniorweb.nl' offers an internet course on how to use the different possibilities of the World Wide Web, and especially, how to be critical of the information found on the internet.

In the 'Street-Level Youth Media' programmes, youth participants may create media content individually, as part of collaboration with their peers, or in collaboration with adult mentors.

Lessons focus on the building of critical thinking and analyses of mainstream media and production processes.

In other words, these programs build critical and creative thinking skills for youth who have been historically, socially and economically excluded in public policy and by mass media.

Link between digital literacy and formal education

Several of the digital literacy initiatives not only provide facilities for developing basic digital literacy skills, but also provide a link to formal education where different target groups get support to return to formal educational. A number of the good practices cases exemplify how this can be articulated.

In the 'Digital Communities' initiative in Dublin, the community centres established at the local level are a new and more 'safe' route into formal education and employment. Here, persons with low educational levels can gain a new appetite for learning, and support staff will help them choose a formal education that matches their needs and capabilities.

'ESF Pathways' is organised in collaboration with the University for Industry (UFI)[3]. UFI operates the 'LearnDirect' offer and aims to improve the employability of the UK workforce by offering learning and skills development via e-learning. A large number of participants in the ESF pathways project not only developed basic ICT skills, but also have been integrated into the formal education system and acquired formal qualifications via the online learning programmes.

The 'ICOM' centre assists handicapped in exploiting ICT in their daily activities. This includes helping those children and adults already involved in formal education or just commencing a formal education to optimise their use of ICT, and may also involve working with the formal educational institution on how best to support the handicapped learner's use of ICT in the educational process.

In Austria, the 'Lernbar' initiative is part of a larger programme called 'Education Platform' which focuses not only on digital literacy, German language training, and other courses, but also on providing educational counselling and guidance. The aim is to help immigrants move into formal education or employment. The 'Lernbar' initiative has been successful in guiding several participants into relevant formal educational programmes.

The US the 'Street-Level Youth Media' initiative focuses on media training and sets formal targets of providing funding for salaries and grants for 150 apprenticeships per year. In addition, it develops opportunities for teacher internships and provides extensive counselling of youths preparing them for further education in the media sector. The Street-Level initiative is a model example of how informal, formal, and non-formal[4] learning can be integrated in a smooth and flexible manner suited to each individual participant.

[3] http://www.ufi.com/home/default.asp

[4] Learning which occurs "outside school". Non-formal learning is intentional, voluntary, participative and centred on the learner. Moreover, due to the variety of its structures and methods of delivery, it offers additional possibilities for providing diversified responses to new and emerging educational and training needs.
http://vanad.noored.ee/konverents/docs/Non-formal_learning-COE_reccommendation.doc

Lack of access to ICT and training sessions

Genuine access has many dimensions, some of which are related to factors such as:

- Access to childcare for women
- Access to location – proximity of the training centre
- Costs of access
- Access to follow-up opportunities to apply digital literacy skills.

The lack of access to ICT by potentially marginalised and disadvantaged communities has been addressed in varying degrees by different DL initiatives. For some initiatives, access has been of minor concern while for others it has been of greater importance. In relation to the latter, the 'e-NC Authority' in North Carolina, USA, has prioritised access to and use of broadband connections and PCs as a policy instrument for narrowing the digital divide. As a consequence, the programme has integrated relevant training with access to reduced-cost computers and broadband connections for families and communities.

For a number of northern European initiatives ('Seniornet Sweden', '55pluss' in Norway), access to ICT has been less of a barrier, since access to technology is the foundation for local centres. In addition, the availability of ICT resources has acted as a gathering point for participants, allowing them to take part in social and cultural activities. The majority of users of initiatives such as '55pluss' (NO) and 'Datastuer' (DK) have access at home or elsewhere, and social activities constitute an important reason for utilising the centre rather than a lack of access.

For initiatives like 'Aangename Kennismaking met de Computer', it has been an advantage for especially the female participants to have access to child care provision. The same initiative addresses the issue of proximity to training institutions by organising its training sessions in the local communities where the need is greatest and by providing reimbursement of transport costs. Similarly, the 'Digital Communities' programme in Ireland places its activities in the communities to allow participants easy access. All initiatives targeting elderly have a wide network of local learning centres so that elderly users do not need to travel far for their training. There are also examples of initiatives that organise training events in retirement complexes and nursing homes for the elderly.

In several initiatives, the cost of hardware and software has been an issue. There are several ways that the initiatives address this barrier, including:

Acquiring used/new computer equipment from sponsors – A project like 'The Open Door' has connected with sponsors who provide used and specialised ICT equipment, which is tailored and provide to the disabled participants. A project like 'Aangename Kennismaking met de Computer' has experimented with the short term lending of computers to allow persons to practice at home, but this was abandoned because of logistics problems. 'SeniorNet Sweden' offers advice on optimising users' purchases of ICT equipment.

Training persons in the use of open source software – The project 'New Knowledge Centres' addresses the issue of cost by training persons in open source desktop tools to ensure that participants can operate free software and save the expense of acquiring proprietary programs.

Providing training free of charge – This option is used by the majority of the initiatives. However, the impact of free training on removing the cost barrier is limited, as the practice of digital literacy skills at home is dependent on the relatively high expense of owning a computer and internet connection.

Box 4: User fees for certification

User fees for certification

The 'Equalskills' programme does not provide any formal education or award any official ICT certification. The participants receive an unofficial certificate upon completion of the course stating their skill level in different areas. The programme acts as an entry programme for the formal ECDL certification courses and prepares the students for these tests.

In The Equalskills project, participants usually pay a small amount of between €15-25 to participate in the courses, but it is up to the individual training facility to set the participation fee. In some cases the participation fee is paid for by donors – this is particularly the case for participants belonging to low-income groups.

According to the 'Equalskills' organisation, the fee does not constitute a real barrier for participation. Although the fee is often used as an excuse for not participating, the real reason is usually found among other well-known barriers. Generally, if people see the potential in developing their ICT skills they are more than happy to invest the rather limited amount.

Training facilities under the 'PCs Against Barriers' programme award both official and unofficial certifications to their students. The unofficial diplomas are included in the participation fee and therefore not associated with any further cost for the individual participant. According to project management, the approximately €20 course participation fee charged by some training facilities was not considered a major barrier for the participants.

To obtain an official certification such as the ECDL, on the other hand, there is an additional cost. Often the programme will cover this expense if the trainers sense a real commitment and potential from the participant or the participant requires the certification for further education and training or for employment.

The amount required for an official certification course or exam would be impossible to pay for many of the participants, and therefore they rely heavily on the programme to cover this expense.

Generally, participants obtaining ECDL-type certifications are those who require them to improve their employability and educational prospects in the short and medium term. ECDL training activities organised by companies for their employees are also more likely to lead to certifications, partly because they are funded by the employer and partly because employers will encourage employees to pass the tests. However, for the majority of participants who basically joined the digital literacy programmes to improve their understanding and use of various digital media, the certifications play a minor role.

The ability to use ICT in a practical and meaningful context can be the means to address socio economic barriers often relating to digital exclusion. Depending on the target group and the aims of the participants, the initiatives have addressed these barriers in different ways.

Examples include:

- *Helping participants to become involved in social enterprises in the community* – this is practised by the 'Web in de Wijk' project, where much of the training activities are centred on the development of web services within and for the community. 'ZeroDivide' in California targets its funding to social enterprise initiatives in the local communities to ensure that participants not only develop digital literacy skills but also develop the opportunity to apply these in value-adding activities.
- *Helping participants to connect with potential employers* – a project like 'ICOM' works towards removing ICT barriers both at home and in potential workplaces to create better conditions in employment situations for the disabled. Another project like 'Unlimited Potential' connects with employment centres and employers in order to secure employment for participants and the chance to practice the skills learned.
- *Helping participants to practice at home and create their own content* – projects like the '55pluss' create opportunities for participants to produce and exhibit their own work, for example in the form of travel documentaries, poems, and short stories. Similarly, apart from running training sessions, 'Seniorweb.nl' has created an electronic forum where the elderly can meet and communicate.
- *Recruiting participants as facilitators in the initiative following training* – several of the initiatives addressing the needs of the elderly recruit participants as volunteer facilitators to teach other elderly the digital literacy skills that they themselves developed through the same programme. This is the case of the Swedish, Dutch and Danish initiatives as well as the initiatives aimed at immigrants in Austria and Norway.

The appropriateness of the physical environment

The ability of participants to take part is also dependent on the physical environment and layout in which a course takes place. While it is obvious for target groups with special needs such as the physical impaired, the same is true for other groups including seniors, low skilled persons, ethnic minorities, etc. This is illustrated by 'Unlimited Potential' (SL), whose participants include the elderly (44% of all participants), youth (17%), the unemployed (10%) and the disabled (7%). Being able to participate in a course close to work or home or in familiar surroundings helps lower the barriers for these participants. This is a central element in 'Netti-Nysse' (FI), whose mobile library and ICT laboratory (bus) serves neighbourhoods and communities in Tampere, and in the 'Datastuer' (DK) initiative.

Box 5: Ældremobiliseringen - Datastuer (DK)

Datastuer – Ældremobiliseringen (DK)

Ældremobiliseringen (The Danish Association of Senior Citizens) provides guidance on how to set up a data room including recommendation on proper ventilation, light, screen sizes, and accessibility (including easy access for the physically impaired). That said, there are no formal guidelines enforced since the actual need for access varies from venue to venue. Guidance for setting up new or renovating existing facilities is also available in the guidelines 'Ældre og Teknologi - At Bringe Ældregenerationen ind i det 21. Århundrede' (Elders and Technology – Bringing the Elderly Generation into the 21st Century), as well as at the regional coordination/administrative centres and/or 'Ældremobiliseringen'.

Box 6: Netti-Nysse Bus (FI)

Netti-Nysse Bus (FI)

Instead of persons travelling to ICT training sessions, the Netti-Nysse bus comes to them in their own neighbourhoods. The bus is tailor made and includes two separate spaces: an auditorium to demonstrate the services to customers, and a study room with 10 computer terminals. The bus is equipped with 12 PCs and a server. Groups of neighbours, clubs, or associations can reserve the bus to come to their neighbourhood and hold a private session for them, and individuals can book time slots on the bus. In other words, Netti-Nysse will go anywhere it is needed and where there is room for a 15 meter long bus.

Familiar surroundings and social and cultural aspects also play a role in lowering the learning barriers, as illustrated by the introduction of café and cultural activities in Trondheim's '55pluss' (NO) initiative (see table below). For the elderly' the social aspects often become the primary facilitator of long-term use and participation, thus contributing to the sustainability of a given initiative. Although some degree of interest in ICT and competence development is a prerequisite, the physical location and the atmosphere of a given DL initiative play an important role in attracting potential users and ensuring the success of the initiative.

Box 7: 55pluss – Internet Café (NO)

55pluss – Internet Café (NO)

'55pluss' aims to provide internet-based offers of culture, entertainment, and ICT courses to seniors (above the age of 55). The project provides comprehensive interactive online ICT courses for self-study or as supplements to the internet café and classroom courses offered in Trondheim. The internet café is physically located at Gulhuset at Voll gård in Moholt, Trondheim, and provides familiar surroundings where participants can have social interaction with peers as well as access cultural activities on offer. The café thus provides a meeting and social network point whose key functionality is not related to ICT.

Gulhuset at Voll gård is a 'city farm', the physical home of a number of clubs and initiatives for youth/juniors, an international women's club, and others. The venue also organises and/or hosts various summer activities and markets where all clubs and initiatives are represented and able to interact, thus creating a sense of community and belonging.

The internet café is open Tuesdays and Thursdays from 10-14. It has 11 PCs that are all connected to the internet and are equipped with speakers, webcams, printers, scanners, etc. The café is staffed by a 'café host' together with a group of instructors who register users, reply to questions, and assist in solving ICT-related problems during opening hours. In addition, the café host is responsible for the logistics, maintenance, and day-to-day running of the 'normal/traditional' café aspects.

2.6 Achieving and measuring impacts of DL initiatives

This section analyses the outcomes and impacts of the DL initiatives. It examines the benefits of taking part in digital literacy initiatives for the target audiences[5]. It assesses the actual outcomes and impacts of the initiatives, focusing on quantitative results and qualitative impacts.

[5] See Annex 2 for more examples of benefits.

The qualitative impacts are presented in terms of real benefits and through statements and quotes from the participants. Finally, this section focuses on how the actual outcomes and impacts of the initiatives are measured.

The different types of results achieved and measured by the initiatives are listed in table 4 below:

Table 4: Measuring results

Types of results	Details
Interest in the initiative	Number of people showing an interest in the initiative; the level of interest shown; membership enrolment and media interest and coverage.
Participation	Number of people who participate in the different activities of the initiative and the level of participation
Completion of programme	Number of people who complete the programmes run by the initiatives and the level of completion. Completion with or without certification. Completion of one element or several elements, etc.
Impact on participants	Satisfaction levels of participants. The improvement of real opportunities and the removal of barriers for the individual participants; the change in behaviour as a result of the participation in the initiatives; the change in employment status or educational prospects as a result of the participation; changes in level of 'connectedness', etc.
Impacts on society	Changes in ICT coverage and use in whole populations as a direct or indirect result of initiatives; changes in economic performance of country, region or local community.

Measured interest in initiatives

Many of the initiatives measure the interest shown in the projects as an indicator of achievement. An example is the 'ICOM' project which runs a website providing information about how best to support the disabled in their use of information technologies. The project measures in detail the number of visits made to the website on an annual basis in order to monitor whether interest is growing or diminishing and in order to see whether visitors in fact access the information provided on the website.

Another example is the 'Seniorweb.nl' initiative, which also consists of a website. 'Seniorweb.nl' has about 20,000 visits daily, indicating a high degree of interest in the project. Measured over the years, the project has experienced a significant growth in interest. Similarly, the '55pluss' project has measured the number of unique visitors to the website over the period of the project to assess the level of interest.

This kind of measurement does not provide much evidence on the impact of the initiatives. However, when measured regularly and when combined with other data or itemised on specific digital literacy aspects, it may give an indication of the level and type of interest and whether it is increasing or decreasing.

Measured participation in initiatives

The measurements and impact assessments most used by initiatives concern the measurement of participation. Measurement of participation covers:

- Number of local centres activated by the initiative
- Membership of the initiative
- Participation in events
- Participation in courses.

There are a substantial number of initiatives that measure their level of penetration by the number of local centres that they have established throughout the country, region, or urban area. This is the case for the 'New Knowledge Centres' which grew from 6 pilot centres in 1999 to 45 centres in 2006. Another example is 'ZeroDivide', which measures the number of counties that the programme covers throughout California; the programme has been active in 41 of 58 counties, indicating a good level of coverage. 'Unlimited Potential' has increased the number of its centres from five to twelve during its project lifetime.

A project like the 'Dames and Data' initiative in Norway encourages ethnic organisations to set up their own digital literacy programme and supports them in doing so. As a consequence, 'Dames and Data' counts the organisations that are considering or planning to run digital literacy programmes as its members or communities. So far, twenty organisations are planning to run their own programme.

'Senior-Internet-Helpers' is another project that measures the number of centres established during the course of the project. European projects like 'Grandparents and Grandchildren' and 'PIC' measure the number of countries and centres covered by the project during the course of the project, in order to demonstrate the dissemination capacity and diversity in coverage.

Two initiatives addressing the needs of elderly - 'SeniorNet Sweden' and 'Seniorweb.nl' - are also membership organisations apart from running specific DL events for the elderly. The members pay a small annual fee; 'Seniornet Sweden' has approximately 7,500 members, and 'SeniorWeb.nl' has over 82,000.

'SeniorNet Sweden' exemplifies another way of measuring participation. It runs an annual national event in libraries and other public institutions around the country. This event – Internet Surf Day - attracts more than 50,000 visitors who show an interest in digital literacy. Although this is a large number of participants, it does not tell us much about how this national event actually impacts them.
Because visitors can benefit from simply gaining access to the internet and other services at centres, there are also examples of initiatives that measure the number of visitors to centres as well as participants at courses. An example is 'Unlimited Potential' that in addition to 1,300 participants at training courses also had 3,000 visitors to the local Computer Training and Learning Centres (CTLCs).

The last and most used monitoring measurement is that of the number of course participants. Some initiatives simply provide the total number of participants for the whole project period ('55pluss' data records 800 participants). Other initiatives break down the participant statistics

by regions, target groups, subprojects, and types of courses. For example, 'e-Learning Liguria' measures participants per locality, 'Aangename Kennismaking met de Computer' distributes its 40,949 participants by level of education, and 'Lernbar' notes participants' ethnic backgrounds. There are also examples of initiatives for which it is important to recruit a high number of volunteer trainers; these initiatives also accumulate this data as evidence of their results. This is practiced by 'Grandparents and Grandchildren', which records a total of over 330 youth training the elderly, and 'Seniorweb.nl' with its 2,300 volunteers. The project 'Senior-Internet-Helpers' has also measured the number of volunteers taking part in training activities. Other initiatives running over several years have measured annual or monthly participation, and can show evolution from year to year. Examples of this are 'e-Learning Liguria', 'ICOM', 'Lernbar', 'Netti-Nysse', 'PCs against barriers', 'Street-Level Youth Media', and 'The Open Door'.

Measured participant completion

Another measure of achievement deployed is the proportion of participants that complete the courses, and in some cases the proportion of participants that gain certifications (usually ECDL or similar).

Table 5 below provides examples of completion data from different initiatives:

Table 5: Completion data

Name of initiative	Completion data
Unlimited Potential (SI)	1,300 trainees passed a course between September 2005 and august 2007.
Seniors Communicate (CZ)	More than 1,000 seniors have completed courses.
ESF Pathways in Prisons and Probation (UK)	2,820 participants completed over 10,700 courses (a dropout rate of less than 2%).
Multifunctional Youth Centre in Nicosia (CY)	Although the participants do not have any formal obligation to attend the courses, less than 10% of them abandoned the programme before the end.
Equalskills (RO)	1,400 out 2,000 participants received an unofficial certificate stating their skill level in different areas. The programme acts as an entry programme for the formal ECDL certification.

This type of measurement may in part help the initiatives to assess their ability to maintain participant interest and motivation during the course of the programme, or assess the motivation of the participants to complete the training programmes. However, the assessment still does not provide information on the socio-economic impact of the programme following participation. In other words, this type of measurement does not assess how and whether the participants benefit from the skills learned following their participation in the programme.

Some initiatives that focus on establishing social enterprises in the communities use as a positive benchmark the fact that many of these activities are sustainable and ongoing following the initial funding period. This is the case of the 'ZeroDivide' programme in California; many of the social enterprise projects which it has funded are still running through other types of funding. Initiatives like 'Seniorweb.nl' and 'Seniornet Sweden' that experience membership

growth assume that persons joining or renewing their membership do so because they benefit or expect to benefit from taking part.

Impact and benefits for target audiences

As shown in sections 2.3 and 2.5, the motivating factors and the setup vary across the initiatives. Similarly, the initiatives have different impacts on different target groups. However, it is striking how little evidence initiatives have gathered on the impact of the activities on the participants. Nevertheless, whether anecdotal or through real impact assessments, there are examples of initiatives that provide some level of evidence of impact on the participants.

The impact on and benefits for the individual participant ultimately depends on *how motivated the person is, how resourceful and capable that person is, and what resources and support the initiative can provide that person including the provision of immediate opportunities to exploit the developed skills.*

The impacts identified in the good practice initiatives include:

- Measured satisfaction with the DL programme
- Improved employability and employment
- Improved educational prospects and enrolment in formal educational programmes
- Increased ICT activity resulting in real-life benefits
- Improvement of personal/social networks
- Impacts on society in terms of broadband access and ICT use.

Measured satisfaction with DL programmes

Participant satisfaction measurement can be a valuable method for continuous improvement. A number of initiatives have used this method in their impact assessment. An example is the 'e-Learning Liguria' programme, which deploys three evaluation questionnaires in order to carry out a qualitative evaluation of the initiative:

1. A questionnaire submitted to the participants before the training;
2. A questionnaire submitted to teachers at the end of the courses; and
3. A satisfaction questionnaire submitted to the participants at the end of their participation in the training (including the e-learning stage).

The evaluation results in 2005 showed that between 83-90% of the different groups were very satisfied with the DL programme. The main criticisms were about the quality of the computers at the learning centres and the length of the course. Feedback has been positive on all dimensions of the programme and support. There was also very good user feedback on the facilities, the learning platform, the chat, the FAQ facility, and the forum. However, 20% of users were sceptical as to the nature of training in a virtual environment. This is not to be considered high, given that the target group is elderly persons not used to this way of studying.

The 'Lernbar' project has also measured participant satisfaction levels, and feedback from participants on the courses is very positive. In 2004, about 94% stated they were satisfied or very satisfied with the courses. Similar proportions of users have been satisfied or very satisfied with learning contents, learning aims, the practical usability of exercises, and group work.

The Danish 'Datastuer' project has been evaluated several times, most recently in 2008. The evaluation indicates that 76% of users are satisfied with the assistance they receive in the data rooms, 16% are relatively happy with the assistance they receive, and only 0.5% are not satisfied. Interestingly, only 13% of users agree that it is important that the instructors are above 60 years of age, while 43% disagree.

Apart from the above, very few of the initiatives analysed have applied formal assessments of satisfaction levels like those deployed above by 'Lernbar' and 'e-Learning Liguria'.

Improved employability and enrolment in educational programmes

Several initiatives such as 'Aangename Kennismaking met de Computer' and 'Equalskills' target the unemployed. This target group does not primarily benefit by gaining a better understanding of how to use the computer, but rather by acquiring a sense of achievement and value through improved employability. According to project organisers in projects like the 'Association of Hungarian NetWomen', 'Equal-Skills', and 'Aangename Kennismaking met de Computer', unemployed participants with low self-esteem and low awareness of their abilities have through digital literacy initiatives often coupled with other social- and employment-related initiatives, developed self-confidence and new life and work skills, and for some leading to employment.

As highlighted in section 2.3, many of the most successful initiatives recognise the socio-economic aspects of digital literacy and thus combine social support and activities with digital literacy development. In this way, especially urban initiatives for disadvantaged groups like the 'Digital Communities Programme' (IRL), 'Lernbar' (AT), 'Unlimited Potential' (SL), 'Aangename Kennismaking met de Computer' (BE), and the 'Association of Hungarian NetWomen', have had significant impacts on the participants' educational prospects. There are reports of significant proportions of participants subsequently joining formal educational programmes or gaining employment.

The 'Digital Communities' programme has provided significant results for many of its participants in the form of qualifications, increased employability, and a greater sense of belonging to the local community.

'Osiris' (US) is another example of a social community-based instrument that results in the reintegration of juveniles on probation. Between 70-80% of the 130 participants in 'Osiris' have been reintegrated through work and/or education. Several of the participants have worked for the initiative after completing the programme, and others have gained employment elsewhere or entered education and training pathways to realise higher qualifications levels.

Nevertheless, most evaluations tend to focus on immediate user satisfaction and reorientation and on participation numbers. To sum up, many impact and outcome analyses suffer from poor data quality, and participants are not followed over a certain time period after the particular initiative. Therefore, the evidence base on long term impact and relevance in comparison with other types of support measures remains limited.

Increased ICT use and improved social networks

In general, the unexpected outcomes for the participants comprise *social inclusion and social innovation* outcomes – especially in programmes with *intercultural and intergenerational*

approaches. Participants establish new social networks, gain new ways of communicating, and gain access to services that has made life easier. Two projects with such positive results are 'Lernbar' (AT) and 'Dames and Data' (NO). The flexibility of the learning methods and the personal contact in these initiatives help the participants not just to use ICT, but more importantly to create *social networks* through the use of ICT and through attending the activities of the initiatives. In this way, social networking at the e-service centres becomes an important enabler and strategy for achieving social integration and inclusion at community level. This is also demonstrated through social inclusion via ICT skills in the project 'Association of Hungarian NetWomen'.

The intergenerational learning approach of the 'Grandparents and Grandchildren' initiative[6] - a European project implemented in 10 European countries – has led to increased dialogue between generations as well as new networks for the elderly.

The aim of 'Latvia@World' is to help socio-economically vulnerable individuals to overcome digital exclusion. Around 20,000 people have taken part in the courses, and 20% of the unemployed participants have found jobs after the course. Furthermore, after completing the course each participant receives an e-mail address; 25% report that they are currently using it 'often' and another 25% use it 'very often'.

Another large project is the 'Look@World' Foundation initiative, which has involved more than 100,000 learners. This project has also conducted surveys to assess the impact of its activities. A telephone survey on the impact of the programme was conducted some time after the training sessions. It generally showed very positive tendencies; 58% of the participants, who previously had very little or no knowledge of ICT, had used the internet after the 8-hour course. The tendency is particularly clear among higher-ranking employees and for the unemployed, whereas senior citizens do not start using the internet to the same degree following the course. Over half the participants who had used the internet after the course had even started using it several times a week. The telephone survey also revealed that participants primarily use it for information search, accessing news, sending and receiving emails, and conducting internet banking. Online shopping was on the other hand not very common. Among those who had not used the internet afterwards, the dominating barrier was lack of access to ICT facilities (2 out of 5). Only 1 out of 12 feels no need for using the internet at all.

The UK 'Online Centres' initiative has conducted an evaluation asking participants 3 months after becoming new internet users how participation at IT courses has changed their ICT behaviour:

- 96% are now regular internet users, and 50% of these use the internet on a daily basis
- 86% are now confident internet users
- 66% stated that using the internet saves them time over the past month
- 52% stated that they had saved money by using the internet the past month
- 67% had visited the Directgov website for Government information
- 48% had accessed NHS advice online.

[6] http://www.geengee.eu/geengee/index.jsp

Below are further statements from participants when asked 3 months after visiting an UK online centre how they benefited from using the internet:

- 'Given me more confidence, something to look forward to, easier to find information and fun'
- 'Cheaper things can be bought online; you can gain a lot of knowledge from the internet'
- 'It keeps you more in touch and communication with friends, and been able to find information, and accessing information'
- 'Quick access and saves time. Allows comparing products easier. A lot of information is available. You have access to almost everything'
- 'Saved me a lot of time paying bills over the internet'
- 'Finding health information'
- 'Shopping saves time'
- 'I have saved money. I have got bargains from EBay. I can access a world of information. I have used email for my own personal communication. Its helped me pass exams'
- 'Saves a lot of time and money, and is very convenient. Allows you to shop in America. Talk to friends cheaper and better. Pleasure of talking on chat rooms about your interests. Research and finding recipes and solutions to certain problems'.

The above summarised statements show that nearly all the participants become regular internet users (86% are confident in using the internet after having participated in the programme). The statements from the participants also show that the programme has improved their ICT skills to the extent that they have saved time and money. Furthermore, UK online centres also give the participants more confidence and lead to inclusion in social networks.

Impacts on societies

There are not many initiatives that attempt to measure the impact of the initiative on the whole society. However, the 'e-NC Authority' from North Carolina in the US has measured some indicators to get a better understanding of whether its activities have achieved their intended goals. The research conducted found that between 1999 and 2004, the gap in household computer ownership between whites and African Americans had narrowed. At the same time, Internet use at home increased dramatically in North Carolina, with the biggest growth in rural (non- metropolitan) counties. The rural counties were prioritised targets for the e-NC Authority. The research data show that on a number of indicators like broadband penetration and use and growth in value-added, North Carolina and especially the rural counties have improved significantly compared to US overall averages.

Where an initiative like the 'e-NC Authority' addresses a specific geographical region, it is possible to measure whether a project is likely to have had an impact. While the e-NC Authority cannot take the full credit for regional improvements, it is evident that significant improvements were achieved in areas that were directly addressed by the project.

This kind of impact assessment could play a role in the future by contributing to prioritising the funding of digital literacy initiatives. This, however, would require digital literacy initia-

tives to build impact assessment into their project design and objectives. Furthermore, it is essential for relevant indicator data to be available both before and after programme activities.

Impact assessment and evaluation methods

The above sections have profiled examples of formal evaluations and impact assessments that have been built into programmes.

Initiatives of the magnitude of the UK 'Online Centres', with its over 6,000 centres and three million annual visitors, have the size and organisational resources needed to conduct relevant evaluations.

However, many of the DL initiatives are composed of small, innovative centres which are highly dependent on volunteers. As a consequence, these initiatives seldom have the competences and/or resources to conduct formal evaluations and impact analyses. These local small scale initiatives often work with participants on a one-to-one basis, and evaluation takes place by constantly listening to the participants and trying out new teaching and learning strategies. Many of the initiatives therefore do not have measurable results, but have instead collected statements from participants on the impact of the programme on their lives.

Of the smaller good practice examples, some do assess their impact on the participants through interviews or questionnaires. Some of this information is subsequently used for marketing and PR purposes. Some initiatives produce annual reports providing quantitative data, but in general very few evaluation activities have been carried out by the good practice cases.

Some of the initiatives have used evaluations to improve their activities and offer. 'SeniorNet Sweden' organised an online survey completed by 900 users. 'Start und Klick!' (DE) used telephone surveys to investigate participants' motivation for attending the programme[7]. It also evaluated immediate participant outcomes from taking part in the initiative. 'Senior-Internet-Helpers' in Germany held two seminars with trainers to assess its train-the-trainer programme and to develop requirements for its continuation.

The ZeroDivide programme in California has formal requirements for projects funded through the programme. Grantees must submit progress and final report and organisational narratives including:

- Achievements and outcomes related to the original grant objectives, and related indicators
- Significant objectives the grantee was not able to complete by the end of the grant period and explanations of the circumstances
- Lessons learned
- Successes experienced, and whether these are replicable in other situations or by other organisations
- Mistakes, and what has been learned from them and how others can avoid similar situations
- Unanticipated events and their significance

[7] From the 750 surveyed participants 478 persons attended 'because I have no competences' and 241 'due to vocational demands'.

- Future plans beyond the grant period, and how these will be funded
- How the technology used is seen as a means rather than a goal
- Organisational governance and management practices
- Financial summary.

2.7 Making DL initiatives sustainable

This section analyses the required conditions and subsequent activities for achieving sustainable initiatives. What have been the key factors that have led to the national or regional expansion of some initiatives and transfer of others to new projects? There are also examples of initiatives that have expanded to also address other social, educational, and employment related challenges. How has that affected the sustainability and the impact of the initiative?

Funding of the initiatives

- What have the initiatives done to influence relevant decision-makers?
- How have the initiatives secured funding and from what sources?
- How has further funding been secured for the continuation of initiatives beyond initial project durations?
- What different funding models exist and how do they impact the initiatives?

Most initiatives rely heavily on public funding and/or sponsorship support from large companies.
Initiatives building on substantial sponsorship from large firms include the 'Digital Community' programme in Ireland (Hewlett Packard and others), the 'Look@World' Foundation (established by ten different companies), 'Equalskills', 'Unlimited Potential', 'The Open Door', 'PCs against Barriers', 'Data Rooms' and 'SeniorNet Sweden' (all supported by Microsoft), 'Seniorweb.nl' (Rabobank), and 'ZeroDivide' (which was originally established with capital from a California state-mandated fund that was the result of the merger of two telecom companies). The influence of these companies on the success of the projects has been extremely important.

Similarly, regional, national, and European public funding has made it possible to establish the central organisations of initiatives, and perhaps even more importantly has made it possible for initiatives to build networks of learning centres in rural regions and urban areas. The distributive approach has been extremely important so as to address the target audience in their own local communities where they are most at ease. For every regional or local learning centre opened by initiatives, the public authorities in the locality have provided the premises and often also equipment and staff free of charge.

When looking at initiatives that have provided both funding details and total number of participants it is possible to compare the funding per participant:

Table 6: Funding statistics

Name of initiative	Funding in €	Participants	Funding per participant in €
Aangename Kennismaking med de Computer (BE)	3.4 million[8]	40,949	83
Association of Hungarian NetWomen (HU)	0.1 million[9]	251	398
e-Learning Liguria (IT)	3.4 million[10]	5,500	609
ESF Pathways in Prisons and Probation (UK)	1.9 million	2,810	661
Look@World Foundation (EE)	6.5 million	100,000	65
Senior-Internet-Helpers (DE)	0.3 million[11]	450	568
New Knowledge Centres (ES)	20.3 million	130,178	155
Unlimited Potential (SI)	0.1 million	1,200	100
Seniors Communicate (CZ)	0.1 million	1,000	120
Netti-Nysse (FI)	0.2 million	574	383

From the above table, not taking into account the actual course duration and nature of activities, it is evident that large scale projects require less funding per participant than smaller scale projects, unless the initiative is based in new Member States. This, however, does not indicate the level of value-for-money, as it is not possible to assess the added value of each completed course and for each participant. Although it cannot be expected that all participants obtain the same level of benefits, the total cost per participant of the above initiatives of between 83 and 661 EURO seems a reasonable cost for society to incur. The costs of care for the elderly, social services, and unemployment benefits per participant are likely to be much higher than that, especially in the longer term.

As a point of comparison, the cost of certification for 'Equalskills' in Ireland (figures are also available for other countries) is €40 per person including training and certification. This covers four modules including Computer Basics, Introduction to the Desktop, The World Wide Web, and Electronic Mail. Benefits include enabling participation in today's 'e-society', increased efficiency of individuals and organisations, and a sound basis for further PC-based learning like the e-citizen programme. The 'e-citizen' certification, which costs approximately €50, covers three parts including foundations skills, searching, and e-participation. Certification is primarily chosen by participants who need it for increased employability or for entry to higher level certification.

Several of the initiatives and especially those addressing the elderly supplement their initial funding with membership fees or annual subscriptions for using the facilities. This has been the case with 'Seniorweb.nl', 'Seniornet Sweden', and 'Datastuer' in Denmark. Other initia-

[8] Initial public funding (people who were employed had to pay €275 for the 5-day course).
[9] The local authorities sponsored the initiative by providing premises free of charge – in addition 15 women became trained as trainers.
[10] Funding received in two portions over 5 years; the period has not ended yet.
[11] This funding covered training of trainers and establishment of local centres over 2 years and three months. It has been discontinued, and as an association the 53 centres will seek new funding.

tives distinguish between unemployed target groups and employed target groups, charging the latter a fee for participating. This is true of 'Aangename Kennismaking med de Computer'.

Continuation or expansion of initiatives can be financed in different ways. The most common funding source is the one that was used for the initial project period; based on the results of the initial project period, funding is secured from the same public institutions for continuation or expansion. Often this funding is combined with support from local authorities providing premises and infrastructure for the initiative. This has been the case with 'Datastuer' and 'SeniorNet Sweden'. The willingness of local authorities to provide premises and infrastructure is extremely vital to these initiatives' continued expansion.

Stakeholder involvement

- Which types of stakeholders have been crucial for the sustainability of the initiatives and why?
- What types of support from stakeholders are important for achieving sustainability apart from financial support?
- What has been the role of different stakeholders in the expansion or transfer of the initiatives?

The stakeholders involved in digital literacy initiatives and playing a vital role include:

- Funding agency support, as with the 'e-NC Authority' in North Carolina and 'ZeroDivide' in California, and with ESF provision of more than €20 million to the 'New Knowledge Centre' programme over a five year period. Important contributions are:
  - Funding
  - Capacity building for applicants
  - Evaluation framework
- Public institutions providing the physical spaces, hardware, and staff for digital literacy initiatives. This is the case with 'SeniorNet Sweden', 'Datastuer' in Denmark, 'Senior-Internet-Helpers' in Germany, 'Seniors Communicate', and other initiatives targeting the elderly. Important contributions are:
  - Premises
  - Infrastructure
  - Additional funding
  - Staffing
  - Promotion
- Private companies providing software, hardware, marketing resources' and/or capital funds (see above). Important contributions are:
  - Hardware and software
  - Training materials and expertise
  - Capital funds
- NGO and community organisations providing the linkage to the target audiences and often also to volunteers (immigrants, elderly, disabled, etc.). Examples include the immigrant organisations involved in the 'Lernbar', 'Dames and Data', and 'e-Migra' projects. Important contributions are:
  - Knowledge of target audiences
  - Expertise in solving the problems of target audiences

    - Recruitment of volunteers and staff
    - Recruitment of participants
- Education institutions providing research and teaching capacity as well as facilities. Examples are the ZAWiW at the University of Ulm, which provides training and advice to local trainers, and the University of Barcelona which provides expertise to the 'PIC' project on online learning. Important contributions are:
    - Pedagogical and technological expertise
    - Learning and promotional models
    - Recruitment of teaching staff
    - Evaluation methodology and process
- Other organisations like the worldwide ECDL organisation (including 'Equalskills' and 'e-citizen') and other intermediaries providing the standardised approach and/or the network that allows economy of scale across borders and transfer of good experiences. Important contributions are:
    - Network of training and certification centres
    - Standardised approaches
    - Links to key corporate referrers.

Influence of Bottom-up and Top-Down strategies/approaches

- How do different strategic approaches impact the sustainability of initiatives? In what ways can combinations of bottom-up and top-down approaches have positive influence on the sustainability of initiatives?

Bottom-up approaches

Bottom-up approaches in digital literacy include initiatives that are started at a grassroots level in the community. This could be the local branch of a senior association ('Senior-Internet-Helpers'), the staff at the local library or community centre, or the local young mothers group.

Many of the analysed initiatives benefit from bottom-up approaches and would not be possible if the grassroots willingness and enthusiasm had not materialised. Bottom-up digital literacy initiatives can be characterised as:

- Being tailored to the local community
- Using the physical facilities available and provided by local authorities
- Often run by and/or involving volunteers
- Often having small numbers of users
- Often part of a larger network of bottom-up centres
- Often dealing with other issues than digital literacy skills
- Often reliant on one or two local 'champions' that drive the initiative.

Several of the initiatives analysed have managed to organise the endeavours of many community based bottom-up digital literacy projects. One example of this is the 'Web in de Wijk' project from the Netherlands, where the success of the individual community groups is built on the local neighbourhoods taking ownership of the process. 'Senior-Internet-Helpers' in Germany is another example, where the 53 local community DL centres have recently formed their own association made up of volunteers. This association provides the centres with ser-

vices and support. The role of the joint association is to represent the interest of the centres in seeking funding, organising events and training, creating promotional materials, etc.

The 'ZeroDivide' programme involved NGOs representing a variety of potential end users in its design process, through extensive interviews and group discussions. Furthermore, the 'ZeroDivide' initiative invests in internal capacity-building in the NGOs in order for them to become fully engaged in the programme. As a result, the bottom-up applications for funding have been of high quality and with strong local support. Most importantly, the applications have built in social enterprise commitments to ensure long-term project sustainability.

Top-Down approaches
The typical top-down approach constitutes a public authority or private foundation that initiates or supports a digital literacy activity on the basis of a specific policy or strategy. The public authority involves the relevant stakeholders, provides them with funding, resources, and guidelines, in order to implement the policy. The following initiative is a good example of such a top-down approach.

The 'Aangename Kennismaking met de Computer' project was initiated by the Government Department of Employment and the Flemish Public Employment Services as part of the Lifelong Learning ICT plan and based on a wide deployment strategy. Nevertheless this top-down project only worked because of the willingness of local learning centres to host the training events.

There are also examples of top-down approaches that are launched by other stakeholders such as private companies or national senior associations. Among the analysed initiatives there are examples of a single company or groups of large private companies that aim to improve the digital literacy of certain groups in the population, and generate initiatives based on a top-down strategy.

An example of such an initiative is the 'Look@World' Foundation, which has a strong top-down approach. The ten companies setting up the foundation were instrumental in setting the parameters of the nationwide initiative. This foundation succeeded in convincing many other actors that this was an endeavour worth supporting. As a result, local implementation worked well with strong support from schools, local authorities, and representative organisations.

The advantages of the top-down approach is that if the design of the initiative is well developed and tailored to the needs of the target audience, then the initiative will benefit from economy of scale, centralised and standardised resources, and better opportunities for knowledge sharing between key internal operators, trainers, managers and mentors. In addition, top-down approaches may permit a better coordination and alignment of activities and resources with employment, social welfare, health, and other education and training initiatives. The challenge is to transfer the benefits of the centralised approach to the local branches of the initiative without spoiling the entrepreneurship and dynamic initiative showed by the local facilitators.

Combinations of Top-Down and Bottom-Up approaches
Even the best planned and operationalised top-down digital literacy initiatives will often require bottom-up approaches to ensure successful implementation and vice versa. The table below indicates how both approaches can supplement each other.

Table 7: Benefits of top-down and bottom-up approaches

How top-down approaches can supplement bottom-up approaches	• Attracting funding from large scale programmes • Creating economy of scale in relation to resources and activities that are relevant for all local initiatives • Offering standardised services including certifications, online and paper-based learning materials, and e-learning platforms, • Assessing new opportunities and launching these in collaboration with local centres and representative organisations • Offering centralised promotional and marketing resources
How bottom-up approaches can supplement top-down approaches	• Ensuring that initiatives are tailored to local needs and rooted in the community (promoting social enterprise) • Relaying feedback from the local level to the national or regional level, initiating relevant changes • Influencing local decision-makers to support the initiative • Ensuring that initiatives can recruit the necessary human resources and beneficiaries • Attracting funding from small-scale local programmes • Creating local networks for the dissemination of the initiative

Attracting and developing the necessary human resources

- How have the initiatives attracted and developed the people (trainers, tutors, mentors, technicians, and ambassadors) who make the initiatives sustainable?
- What different roles are important in making the initiatives sustainable?
- What roles do users/participants play in making the initiative sustainable?

Sometimes the key human resources in a digital literacy initiative are those who established the initiative in the first place. In many instances they become the embodiment of the initiative. This is the case for several initiatives including the 'Digital Communities' programme in Ireland, the 'Datastuer' project in Denmark, and the 'Senior-Internet-Helpers' project in Germany, where each centre will easily have 2-30 volunteers running activities providing help to between 6 and 100 participants.

For many initiatives the process of supporting the development of digital literacy is very human-resource intensive. Many of the disadvantaged target groups require close tuition, and sometimes initially one-to-one support. This is the case for the elderly, for groups that have never used a computer before, or those with significant technical barriers like the disabled. Furthermore, support staff, trainers, and mentors with the ability to develop technical skills

are not enough. Staff is often needed that can talk to participants about social, employment, and health issues, and understand participants' specific backgrounds (migration, ex-offender, motherhood, low education levels). By recruiting and qualifying representatives from target groups to be trainers and mentors some initiatives seek to meet the complex demands to the project staff. Examples of this approach can be found in 'The Open Door' project and the 'Association of Hungarian NetWomen', in initiatives addressing the elderly, and in the 'Dames and Data' and 'Lernbar' projects aimed at immigrants.

More recently, digital literacy initiatives have discovered the importance of applying ICT to community development and facilitation of local as well as topic-specific interest groups. This demands staff in digital literacy initiatives that can advise participants on the introduction of community-related ICT use. The 'Web in de Wijk' initiative has trained social workers in ICT so that they can take on this role. This is also applicable to a number of specific roles relating to managing stakeholder relations, writing applications for further funding, promotion and marketing the initiative, development and production of learning materials, and maintenance of online learning platforms.

Several initiatives show how users may direct and expand the initiative once a certain size of community has been reached. Participants can:

- Recommend the initiative to others
- Develop content for the initiative
- Inspire others by telling/publishing their success stories
- Be a community builder for collaborative content and skills development
- Train or mentor new participants
- Influence the initiative's direction and priority through discussions and evaluations.

Expansion to address other challenges related to digital literacy

What other important challenges have the initiatives addressed and how has that impacted the sustainability of the initiative?

The interest in ICT and the drive to learn digital literacy skills are nearly always rooted in other needs such as for social interaction, employment, improvement of health and security, improvement in the day-to-day life, or simply the satisfaction of curiosity. These needs depend in turn on the individual's personal context and values.

Examples of initiatives that address wider needs include the 'Association of Hungarian NetWomen', and 'PCs Against Barriers' whose remit has been expanded to include services to help seek and gain employment. Other projects have combined forces with social services in order to be able to refer persons to social and/or educational advisory services while following the digital literacy initiatives. This has been the case with the 'Lernbar' project and the 'Dames and Data' initiative.

Other initiatives such as the 'New Knowledge Centres' have linked their e-service training offers to support efforts and campaigns for online e-government services in order to help learners apply what they have learned about e-services to online public access while also helping governments attract more e-service users.

Up-scaling the initiative

- What models of up-scaling DL initiatives can be observed?
- What seems to be the key to successful up-scaling/expansion?
- How can international transfer of initiatives be achieved?

Several models of up-scaling have been observed in the analysed initiatives. These include:

- *Increasing number of participants (and/or facilitators)* – this has been experienced by several initiatives including the initiatives aimed at helping the elderly – 'Datastuer', 'SeniorNet Sweden', 'Seniorweb.nl', and the 'New Knowledge Centre'.
- *Increasing the volume of up-skilling activities* – this has been achieved especially by combining off-line activities with on-line activities, as introduced in the 'Equal-skills' programme, to provide further training for learners. Similarly, 'Datastuer' has also launched online learning and chat functions.
- *Increasing the number of sites* – The number of local 'Senior-Internet-Helpers' centres has gradually increased to 53 at the end of 2008. 'Datastuer' started with fewer than 10 locations, and now has almost 100.
- *Extending the areas and issues addressed to non-digital literacy related areas* – the 'ZeroDivide' programme has expanded so that communities can introduce different local subjects in the activities as long as the activity has a chance of becoming sustainable in the community. Similarly, several initiatives (for example 'Web in de Wijk') allow participants to explore the new technologies by introducing other subjects and themes in collaboration with their peers.

Many of the profiled initiatives have up-scaled and/or expanded their activities during their lifespan. One explanation for the successful expansion of many initiatives is that they have been able to meet and respond to a genuine need among their target audiences. Another could be that the expansion was planned and the initial start was simply a pilot before the roll-out (as with the cases of the initial 1999-2001 pilot period for 'Datastuer', during which time the number of locations increased from 2 to 53, and a pilot project testing the feasibility of the '55pluss' initiative). There are also other factors explaining expansion/extension and up-scaling. These include:

- *Excessive demand* – a number of Eastern European initiatives like 'The Open Door' have experienced demands from potential participants that were greater than they could meet. As a result, additional funding has been secured and activities have been extended and expanded.
- *Access to additional funding* – the 'New Knowledge Centres' received new ESF funding from year to year and have expanded activities accordingly, while local funding was also secured to run existing centres.
- *Clever marketing and promotion* - the 'Senior-Internet-Helpers' project joined forces with private companies and a radio station to run a series of radio programmes that was supplemented by the DL initiative.
- *Access to willing and capable human and physical resources* – some projects like the 'New Knowledge Centres', the 'Senior-Internet-Helpers', 'Seniorweb.nl', and 'Datastuer' have attracted interest from local communities where they were not yet

active. These stakeholders have offered their help in expanding the services to include facilities in their community.

There are also examples of initiatives that have been transferred from one country to another. The best example of this is the European-wide and worldwide ECDL standard that has been transferred to all countries in Europe and has local hosts that manage the day-to-day administration and certification of skills. Several of the profiled cases have based their programmes on parts of the ECDL standard, including 'e-Learning Liguria', 'Equalskills' in Romania, and 'ESF Pathways'.

There are a number of European projects that are active in the digital literacy area and whose aim it is to generate tools, experiences and methods that can benefit digital literacy initiatives throughout Europe. These projects include those that are testing different approaches to digital literacy development, those that are addressing specific target audiences across Europe, and those whose key objective is to analyse good practices in certain areas and disseminate these to relevant initiatives throughout Europe. Some of these initiatives have been highlighted in this report and include 'E-Migra', 'PIC,' and 'Grandchildren & Grandparents'.

There are also other initiatives where part of or the whole concept has been transferred and continued in another country (sometimes tailored to the specific needs in that country). This is the case with the 'Web in de Wijk' project, which claims to have influenced developments in other countries. The 'PIC' project has developed guidelines that have been integrated into the policies and strategies deployed by the five national organisations running public internet centres. Similarly, the 'E-Migra' project has influenced other projects addressing digital literacy developments aimed at immigrants.

2.8 Introducing innovation in approaches, methods and technologies

This section analyses the innovations introduced in terms of new content, new pedagogical approaches, new platforms and technologies, and new business and organisational models.

Innovative pedagogical approaches

- What innovative pedagogical approaches have initiatives successfully introduced and what has been their impact on participants?

For many of the initiatives described, practical and personal instruction has been one of the keys to achieving positive learning outcomes. The Spanish 'New Knowledge Centre' has introduced a 'socio-digital approach' to the teaching of ICT skills. Learners are provided very relaxing social surroundings where the focus is on social interaction and networking between participants, and the development of ICT skills is introduced to support this social interaction and exchange. The purpose is to position ICT as an enabler for social interaction and the solving of tasks together in small groups. In addition, the facilitators conduct interviews and tests with the participants to match them with peers that are at the same level and have similar interests.

The ‘Grandparents and Grandchildren’ initiative is based on a one-to-one tuition approach between grandchildren and their grandparents, utilising existing family relationships and the concepts of scaffolding and empowerment.

In the ‘Association of Hungarian NetWomen’ project, real-life tasks and problems are introduced by the participating women and integrated on an ongoing basis in the learning process. One teacher indicated that she herself was unemployed, just as the participants, and she wanted to learn how to search for and use online recruitment services. One participant needed advice on construction, and was looking for someone who had been involved in building her home. Another wanted to learn how to use computers and the internet to be better equipped for carrying on with her studies. These practical realities were introduced as the focal point of their learning activities, and the formal learning programme and materials were tailored to support them.

The ‘55pluss’ and ‘e-Learning Liguria initiatives combine different learning objects (including written materials) with online and offline self study and classroom-based teaching, as well as informal support at internet cafés.

In Ireland, the ‘SWICN Computer Club House’ project has introduced learning by doing, making games rather than playing games, composing music rather than listening to music, designing a magazine rather than reading a magazine, and making films rather than watching movies.

New content development models

- How is community-based content development introduced in DL initiatives?
- What new methods have been introduced involving participants in the production of content?

Several projects have produced tailor-made paper-based manuals and learning materials and online platform tools. This is the case for the ‘Kindergarten for Seniors’ project in the Czech Republic and for the ‘Senior-Internet-Helpers in Germany’. Many of these materials have been so well received by both learners and instructors that they have been transferred from regional programmes to inclusion in bigger national programmes.

The ‘Association of Hungarian NetWomen’ involved its target audience in co-developing the programme. The organisers trained participants in combining internet and gender issues and allowed them to contribute to the specification of teaching materials based on their knowledge of the needs of women.

Not all projects have access to relevant content in native languages, and as a consequence the ‘Unlimited Potential’ project has introduced an online facility to support the exchange of materials in Slovenian. As a result, teachers and learners can exchange content in their native language to replace the standard materials in English.

‘Web in de Wijk’ illustrates learning through collaborative content development in the community. At the beginning the initiative focuses on teaching the participants how to use the tools for creating websites and blogs, and it provides participants with an Internet tool box. Animators and facilitators are there to help the participants with the use of the internet tool

box. On request, animators will provide a community with extra courses on Internet use. After that, the participants in the individual communities learn through the creation of their own content and by exchanging content with other communities. In each neighbourhood there are 'Digirooms', places where participants can work together on website projects. Here participants meet and inspire each other.

Similarly, the 'SeniorNet' initiative in Sweden provides an opportunity for participants to publish and exhibit their artwork, homepages, short stories, etc. In the 'Kiberpipa' project in Slovenia, all users of the PIAP are given the opportunity to create new Internet content or develop new software. Traditional lectures are given, which are also available in video format online. The 'SWICN Computer Club House' offers learning-by-doing through multi-media production.

The 'ZeroDivide' programme works with community-based organisations to help them understand how to use digital storytelling to tell local stories, for example to advocate for policy or for language or cultural preservation.

The 'UK Online Centres' initiative has introduced a completely new suite of online learning modules that have been specially designed, tested, and trialled to fit new IT users. So far the response by the users has been very good. The development process of the 'UK Online Centres' project for the 'MYguide Suite' has involved extensive research into user needs and usability of different online approaches in order to ensure user acceptance of the modules.

New technologies/platforms and software

- What alternatives to PC hardware have been introduced by DL initiatives and for what purposes?
- What software developments have been introduced by DL initiatives and for what purposes?

There are several examples of initiatives that have introduced open source software and tools to save money, especially in cases without a software sponsor. Open sourceware brings with it an additional advantage, in that it allows greater personalisation and hence leads to greater consideration for the user's needs. One such example is the 'e-Learning Liguria' project, where the e-learning platform at first was based on the proprietary system of Docent, which for costs reasons was replaced by an open source platform called A-tutor.

The 'Ældremobiliseringen' project in Denmark has chosen the free Picasa photo editing and managing software instead of Adobe Photoshop, since the elderly were not considered a consumer group that would invest in Photoshop, and Picasa would be more than adequate for their needs. Similarly, the 'Senior-Internet-Helpers' project uses Irfanview photo editing freeware. The 'New Knowledge Centre' initiative teaches learners how to use open source applications to make them more independent from having to purchase software for their home computers.

'Ældremobiliseringen' and '55pluss' also use NET TV as a medium for entertaining and teaching elderly about the possible uses of the computer. Unfortunately, there is still no data on the results and the experiences with the use of Internet-based TV. '55pluss' also uses a medium called the 'Media Machine'. This is a basic entertainment machine for use in centres

for the elderly and in nursing homes. It is operated through a simple touch screen menu and contains files, music, karaoke, and slide shows which are streamed over the internet from a central server. Part of the content on the media machine is also available on the project website.

A couple of projects address the need among the elderly to learn how to operate their mobile telephones and which mobile telephones to choose. We are likely to see more of this type of training in the future as mobile telephones and other handheld devices including GPS-based route finders become more widely used, but not necessarily well understood, by citizens in Europe. An example of such a project is 'Seniors Communicate' in the Czech Republic.

The 'Seniors Communicate' project addresses the problem of poor vision, one of the main problems the elderly have with cell phones. The project teaches the seniors how to choose a mobile phone with big buttons and a big display or a model with extra features such as larger fonts that compensate for seniors' reduced vision. The basic techniques of making a call or writing of text messages are introduced together with recommendations of the most relevant subscription plans. Other phone features are presented, such as how to switch voicemail on and off and use of a built-in camera.

A number of projects teach participants how to use digital media tools. In 'New Knowledge Centres' facilitators introduce participants to different open source audio and video production and editing tools. Similarly, the 'Street-Level Youth Media' project introduces youths to the tools required to produce online and off-line digital media, and the Danish 'Datastuer' teaches the elderly how to use the 'digital signature' – an electronic ID certificate - when visiting the national health portal and other public services.

The LearnDirect platform used by 'ESF Pathways' is the first large-scale effort to use computer-based learning resources in a custodial environment. 'e-Learning Liguria' in Italy teaches the elderly the use of like health services, home banking operations, and on-line shopping and payments. Other projects like 'Netti-Nysse' help users learn how to use online banking.

The 'ZeroDivide' programme has innovatively evolved on a need among large companies (Nokia, Intel, etc.) to build new markets to replace existing ones that are becoming saturated, and thus look to untraditional users such as disadvantaged groupings. The firms for example provide free high-spec mobile phones to large groups for the purpose of social enterprise projects. The Zero Divide programme also introduced mobile phones for teacher communication with parents, replacing the traditional 'letter to the parents' and integrating mobile devices into schools instead of banning them.

New organisational (business) models

What new organisational models and partnerships have been introduced by DL initiatives and how have these impacted results?

Some DL initiatives develop interesting organisational structures and business models for achieving their goals. An example is 'Cibervoluntarios', which was founded in 2001 and in 2005 became a not-for-profit foundation. The organisation and foundation was formed by a group of social entrepreneurs who all shared the goal of wanting to solve substantial social

problems by helping disadvantaged persons take advantage of new technologies. Since then the group of social entrepreneurs (volunteers) has grown to more than 600. Through the centralisation of knowledge and resources, it has been possible to better support and improve the local and regional (national and international) fundraising activities, enabling a significant growth in local and regional digital literacy activities, and also preparing the initiative for international expansion. Similarly, the 'Street-Level Youth Media' initiative stimulates social entrepreneurship through digital media and skills development.

Several initiatives have introduced mobile elements in their offer, using a bus or having a mobile training suite with PCs and other relevant equipment and software ready to be taken to places where digital literacy skills are needed. Examples are 'Netti-Nysse' with its specially designed ICT bus with a lecture room and 12 PC work stations, 'Aangename Kennismaking met de Computer', and 'The Open Door', all of which take training opportunities out into the communities.

The 'Net Literacy' initiative in the USA has evolved from a local group of young volunteers to a large virtual organisation. It describes itself as a 'youth empowered' non-profit corporation. Its activities are primarily local to regional within the State of Indiana. But since the initiative is structured as a viral organisation based on pre-existing social networks, activities network and grow to a national level. Adult board members manage the governance and the treasury functions, and middle school, high school, and college students provide all of the volunteer work and set mission and execution priorities. The programme is primarily grounded in the school systems, and faculty members help provide students guidance upon request (although in some communities, the programme is grounded and managed by non-profits such as the Urban League). It is an all-volunteer programme created by students, using a grassroots, informal, and Wiki-type model that requires no paid employees. The only overhead expenses are CPA review fees, directors and liability insurance, and property and casualty insurance. 'Net Literacy' receives its funding mainly from foundations and businesses that believe in the mission of digital inclusion and/or in an organisation that is youth empowered and youth managed led in helping to provide digital inclusion service to the underserved. Several of the largest funders/grantors have joined the Net Literacy board (e.g., Intel, the Techpoint Foundation, and Bright House Networks).

Similarly, the European initiative 'Grandparents and Grandchildren' funded by the Grundtvig programme is also introducing a new organisational model for developing digital literacy. The consortium involves national partners that organise the networks of grandchildren who recruit and train their own grandparents. It is still uncertain whether this initiative will become sustainable beyond its initial funding period, but the approach has promises of reaching large numbers of elderly and youth. At the end of 2008, funding for continuation had been secured in Slovenia, one of the countries with partners taking part in the initial project phase.

'New Knowledge Centres' has trained facilitators (*dinamizadors*) to be proactive in recruiting participants through informal talks about their needs and requirements.

'SeniorNet Sweden' runs an annual 'Senior Surf Day' to promote the need for digital literacy among the elderly in order to attract their interest and the support of companies and public organisations. This is a very successful model that receives a lot of media attention.

The 'Look@World' Foundation recruits all of its teachers through a well-planned 'pyramid scheme' where the first teachers from different regions were trained and could then train others.

In recruiting participants, most initiatives addressing disadvantaged groups are very dependent on NGOs with well-developed networks and in-depth knowledge of the target groups. Projects like 'Lernbar' in Austria and 'Dames and Data' in Norway collaborate with immigrant group organisations to motivate and recruit participants. 'Dames and Data' is in addition aiming to get immigrant organisations run their own programmes based on the tested and trialled approach being piloted at present.

Similarly the 'Digital Communities' programme in Ireland has structured its programme in close cooperation with the local communities and target groups, promoting distributed ownership of the programme.

The 'e-NC Authority' has central innovative features in its model including competitive seed funding to ensure transparency in the financing regime and to engage a wider community. Furthermore, the 'e-NC Authority' invests in capacity-building among key constituencies to have sufficient competences and insights to scaffold the initiative in areas where there is value-added to be gained.

3. Conclusions

The previous sections have presented an analysis of a range of successful digital literacy initiatives and suggested a range of elements critical to the success of the initiatives. This section concludes by briefly discussing some challenges that are still to be addressed particularly in the light of emerging advanced applications penetrating the society. A broader discussion on these challenges and their policy implications is presented in the Topic Report 4.

Situating digital literacy in broader policy measures

Though the topic of digital literacy is not new, appropriate responses to further digital literacy remain a challenge to policy making. One reason is the developments in technologies. As the case studies illustrate, ICT comprises a diverse range of technologies, and not just computers and the internet. Second, a growing number of activities have become increasingly ICT intensive – covering areas such as education, employment, leisure, and public services. Due to these patterns of development, appropriate policy responses are likely to become more complex and demand a higher level of coordination between different policy realms to be efficient and successful.

Sustainability

Apart from sufficient funding, the commitment of stakeholders and partners is vital for the sustainability of DL initiatives. Most of the initiatives combine top-down with bottom-up strategies because grassroots involvement is crucial to engage disadvantaged groups.

The engagement of local communities or NGOs is critical to successfully motivating and engaging disadvantaged groups. Local volunteers and NGOs will often have insights into the particular circumstances of exclusion in which lack of digital literacy is often just one compo-

nent. Allocation of enabling resources for community networks, ICT facilities, and learning centres can be a very cost–efficient way of raising the digital skills levels in a community.

Setting relevant objectives for initiatives

The good practice cases are characterised by a good match between the objectives of relevant stakeholders and the operational objectives of the initiative. This leads to a stronger stakeholder commitment in the actual implementation. It is furthermore characteristic that many of the initiatives involve strong partnerships- in many instances also with involvement of the private sector. Some cases illustrate how the private sector may benefit from these forms of partnerships.

Focus on the third level of digital literacy

Measures to improve digital literacy are still mainly concerned with an operational and basic use of the computer and the internet. Though developments in technologies and transactions via the net will require more advanced skills levels than previously, only a limited number of initiatives seem to address a stage three level of digital literacy at this point in time. The third level of digital literacy includes the ability to critically assess digital sources and transform the skills into value-adding activities for a range of different purposes critical to employment, and social and civic participation. To avoid a second wave of digital exclusion, policies should in the future ensure that also more advanced use is addressed through new measures where appropriate- for example through education and lifelong learning policies in the Member States.

User-centred design

Successful initiatives take their points of departure in the needs of the actual users. The cases show that the groups of excluded comprise quite different population segments with very diversified needs. To ensure efficiency and relevance in digital literacy measures, more efforts could be taken to distribute and share formalised methodologies for assessing user needs both from a content and a platform perspective. If methods were more widely available they could also be of value to the many volunteers that engage in efforts to raise digital literacy levels in our communities.

Achieving and measuring impacts of DL initiatives

Most initiatives measure results in some way. However most efforts primarily measure outputs such as number of persons who have participated, levels of user satisfaction, programme completion, etc.

Widely available and sound methodologies to measure impact could not only contribute to improving practice, by demonstrating *what works* and in which contexts. Impact methodologies could also guide public funding likely leading to more efficiency in future public expenditure on digital literacy initiatives.