Tavistock Institute

Status of e-Inclusion measurement, analysis and approaches for improvement

e-Inclusion Handbook

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EXECUTIVE SUMMARY: KEY MESSAGES

Policy gaps and recommended policy actions

The e-inclusion study has reviewed and assessed e-inclusion policies and interventions at trans-national level and below within the context of proposals embodied in the Riga Declaration; the Action Plans and i2010. This review has highlighted gaps in a number of areas. However, it is difficult to propose enhancements to existing policy instruments and actions in the light of the findings of the study for the following reasons:

- Current policy instruments lack specificity – they embody a preponderance of general principles rather than concrete actions.
- This in turn reflects the embryonic nature of the domain. e-inclusion lacks a consolidated evidence base of 'what works, for whom and under which circumstances'. Theories and concepts are contested. State of the art – for example theories of exclusion - is rapidly evolving. Practices are fragmented and not integrated.
- Policy development and implementation is therefore constrained by the absence of an underpinning research base. There are fundamental gaps in understandings, inherent in current policy at both trans-national and national level, about the nature and dynamics of e-inclusion. These include:
    - The assumption that e-inclusion is about 'target groups' that are distinctive and heterogenous, for example disabled people, the elderly, ethnic minorities. The evidence strongly suggests that these groups represent widely divergent profiles, characteristics and needs, and so the diversity of these so-called 'target groups' requires a much more fine-tuned approach to policy design.
    - The failure of policies to reflect fundamental structural changes in social structures and social relations, precipitated by the rapidly evolving 'Knowledge Society'. An example is the fragmentation of communities and community identity.
    - The lack of attention devoted to motivational factors in the dynamics that shape e-inclusion. The most obvious expression of this policy gap is the 45% of European citizens who have no interest in engaging with new technologies.
    - The role of localisation. A key feature of policies at trans-national and Member State levels is the lack of attention devoted to cultural and contextual factors within regions and communities.

Our recommendations for future policy actions therefore reflect these constraints. We would argue that it is difficult to focus on the technical details of specific instruments when key structural issues remain unresolved. Policy development therefore needs to focus on:

- Targeted research with a particular emphasis on: structural changes associated with the Knowledge Society; motivational factors that shape engagement with new technologies; scenarios of use and the effects of 'localisation dynamics'.

- Consolidation and integration of existing state of the art, through: meta-analysis of existing research studies and evidence; Commission-sponsored collaborative actions to engage member states in pooling knowledge and resources.

- The development and implementation of an e-inclusion 'co-Laboratory' to: provide an Observatory on policies and practices; monitor developments and progress in the field; compile and valorise an evidence base of what works; disseminate good practices; initiate and maintain a benchmarking system including standardised measurement indicators.

- Capacity-building actions, for example the creation of an e-inclusion Forum and e-inclusion Alliance, involving a multi-stakeholder approach, to review and reflect on the way forward.

- Awareness-raising actions, including the development and implementation of an e-inclusion Index for organisations; awards and incentive schemes to promote good practices.

- Tools development – including an e-inclusion Charter.

The above recommendations need to reflect the 'policy gaps' that have been highlighted by the study. These are summarised as follows.

Older workers and elderly people

- Policies need to fine-tune 'scenarios of use' through which this group engage in the evolving 'knowledge Society'.
- The Commission should promote trans-sectoral collaboration to co-ordinate and integrate current fragmentation in e-inclusion actions.
- Policy instruments need to incorporate specifications of e-skills requirements and measurement systems for older workers.
- The Commission should launch an EU-wide quality label for the public, private and non-governmental sectors to increase the trust of older people in using the Internet.
- The Commission should take advantage of the European Year of Equal Opportunities for All to promote ICTs for the elderly as an instrument of inclusion through targeted and tailored communication and marketing activities.

Reduce geographical divides

- The Riga target of 90% of EU population covered by broadband by 2010 needs to be revised to reflect the large disparities between Member States.
- The potential of satellite communication to supply remote areas with high-speed Internet connections, as confirmed in the 2003 Commission White Paper on Space Policy[1], should be further explored

Enhancing e-accessibility and usability

- Member States should ensure that they comply with the recently revised directive on public procurement
- The Commission should consider developing an EU label for eAccessibility following the examples of similar efforts already undertaken at member state level

Improving digital literacy and competences

- Current digital literacy policies assume that the needs of 'at risk' groups are common and universal. Yet the evidence shows that the e-excluded have complex profiles and diverse needs. Digital literacy initiatives and targets need to be more effectively tailored to this diversity. In particular the evidence shows that the demand for e-skills is highly dependent on local labour market conditions.
- Partnership development to deliver digital literacy and e-skills objectives needs to include a more diverse set of actors than the current emphasis on public-private partnerships (PPPs).
- The Commission should promote and implement a Charter for Digital Rights. This needs to be supplemented by a range of initiatives covering codes of conduct and reporting.

Developing more effective partnerships

Lessons drawn from the Corporate Social Responsibility domain, and from current case studies of e-inclusion initiatives should be used to develop strategies, methods and tools to engage the private sector more actively in promoting e-inclusion policy and practices. These should encompass the following:

- Expanding the current set of CSR policy initiatives and instruments to encompass e-inclusion specifically. Conversely, work should be done at the policy level to find ways of incorporating the Riga Declaration in EU CSR directives.
- Assigning effort and resources to raise awareness of current EU directives on CSR and e-inclusion. The UN Compact provides an illustration of one of the ways in which awareness-raising about the issues around e-inclusion can be

[1] European Commission (2003) Space: a new European frontier for an expanding Union. An action plan for implementing the European Space Policy, http://ec.europa.eu/comm/space/whitepaper/pdf/spwhpap_en.pdf

combined with developing capacity to promote e-inclusion policies and practices. This has provided the basis for the UK Charter on e-inclusion

- e-Inclusion codes of conduct. The evidence suggests that the implementation, and enforcement of CSR codes of conduct, is having a real impact on things like labour and employment conditions, and on social capital. Similar codes of conduct, encouraging companies to state their values on and commitment to e-inclusion would encourage greater engagement by the commercial sector in e-inclusion practices.

- Reporting. In turn, companies should be encouraged to include reporting on their performance in relation to e-inclusion measures, for example through an e-inclusion version of the 'social audit', and through adaptation of benchmarking systems like the UK Corporate Responsibility Index.

- e-inclusion awards. Engaging the private sector more fully in e-inclusion policy and initiatives could be reinforced through the development and implementation of award schemes. Examples include the 'Baltic Challenge' and the World Forum e-inclusion award.

A second area where significant effort is required to engage and retain organisations in promoting e-inclusion policy and practice is developing and managing effective partnerships. Our review of the literature and research results on partnerships concludes that effective partnerships will reflect the following key characteristics:

- The extent and ways in which the interests of stakeholders are represented and addressed

- The extent to which the necessary capacity and infrastructure needed to deliver e-inclusion services is in place

- The degree and nature of gaps and 'overlap' in what is being provided in the e-inclusion initiative

- The extent to which the e-inclusion models and practices chosen are consistent with the strategies and objectives of the initiative itself, and with broader policy agendas on e-inclusion

The Handbook provides a mapping tool to facilitate the effective design and management of partnerships set against these key criteria.

Measurement and benchmarking

Our review of state of the art in approaches to the measurement of e-inclusion suggests the need for the development of an assessment methodology that combines 'hard' indicators – a common set of metrics that can provide a comparative measure of e-inclusion across member states – with 'soft' indicators to capture local conditions and the cultural context of e-inclusion.

'Hard' indicators (common 'core' variables) should include:

- Structural indicators (demographics; gender; socio-economic profiles)
- Technological indicators - e-access (ICT and broadband take-up; digital divide index; internet costs; 'connectivity'); e-usability (application of e-skills?); e-security

'Soft' (contextual) indicators should include:

- Data on social embedding – how ICTs are adapted to user 'life-worlds'
- Data on motivational aspects of use
- Self-reported assessment of impacts of use and non-use.

The existing databases and systems covering 'hard' indicators are already well-developed at the trans-European and national levels. The 'soft indicator' infrastructure is poorly developed. The Handbook therefore contains proposals for supplementing existing data systems and sources through initiatives like:

- Local e-inclusion Observatories
- Longitudinal studies
- Case studies
- Benchlearning

The e-inclusion Repository

The project has developed a prototype e-inclusion Interactive Repository to help promote the conditions for supporting e-Inclusion policies and initiatives in the run up to achieving e-Inclusion targets (proposed via the Riga Declaration, the 2008 initiative and i2010). The Repository lays the foundations for developing a sustainable 'evolving knowledge base'. The site and database can be seen as both the 'baseline', and the catalyst, for further collection, analysis and dissemination of content that can support policy and practice in the e-Inclusion domain. As well as providing a 'repository' for storage of data and material, the evolving knowledge base is intended to promote collaboration between stakeholders – through adding additional data and content; through commenting on and reviewing the contents of the database and through providing opportunities for debate and discourse. Finally, the platform will contribute to an evolving evidence base of 'what works'.

The knowledge base is unlikely to evolve unless a supportive collaborative environment is created that will motivate stakeholders to contribute. In the light of a considerable body of evidence on how difficult it is to engage and sustain the interest and involvement of active participants in a collaborative learning environment, the knowledge base will need to design a structure, process and operational strategy that will provide the incentives and rewards to attract and retain users. The Handbook

therefore provides two sets of Guidelines to support the Commission in developing and sustaining the Repository. These cover:

- A User Manual providing instructions on how to use the platform tools and functionalities
- Guidelines on recruiting and retaining users.

In the final Section of this Handbook, we explore the main potential opportunities and challenges for e-inclusion policies and initiatives in the light of likely developments in ICTs. The ***opportunities*** for promoting an inclusive knowledge society can be summarized as:

- Providing greater access to more consumers for a wider diversity of consumer products, services and choices
- Supporting a more effective role for consumers in the development of new products and services, and greater control over quality, utility and relevance
- Providing opportunities for the harnessing and utilization of the creative potential of people in the innovation process, and creating conditions for wider and more effective entrepreneurship
- Supporting and encouraging individual self-determination, self-expression and more effective social interaction, through social networking
- Contributing to the development of social capital, for example through the expansion of social-networking via Web 3.0 into community-based support networks
- Increasing participation in decision-making, and thereby supporting increased motivation to participate in democratic processes and a more 'participative culture'
- Supporting participative culture through the expansion of e-government infrastructure
- Reinforcing and enhancing democratic structures, for example through providing more open scrutiny and critical review of government agencies and actions
- Contributing to improving the knowledge base, and the skills base, by promoting knowledge creation, knowledge sharing and acquisition of new skills, through both formal and non-formal learning

The main ***challenges*** posed by these developments are likely to focus on:

- Increasing polarization of e-included and e-excluded, linked to factors such as real and opportunity cost

- Cultural and social fragmentation
- Surveillance and control

Against the background of likely future developments, the Handbook ends with a set of proposals for an e-inclusion 'roadmap' in the run up to i2010. The roadmap covers five key 'Action Areas', as follows:

- Preparatory Action: Training initiative for DG INFSO staff on using and developing an e-inclusion 'Co-Laboratory'; Cross-directorate seminar to discuss e-inclusion project findings and way forward; Initial population of Repository;
- Awareness-raising actions: Publication of project results summary; Launch of website; e-inclusion 'Best Practice' Exchange
- Standards development: Formation of e-inclusion Standards Working Group; High Level National Representatives Group to promote co-operation between member states
- Capacity Building: e-inclusion Forum – multi-stakeholder consultation platform focusing on consolidating understandings of user needs; European e-inclusion Alliance – based on the European CSR Alliance, providing institutional space for implementation of actions; European e-inclusion co-laboratory
- Engagement and collaboration: e-Inclusion Charter; e-Inclusion Code of Practice for organisations; e-Inclusion Index – benchmarking system for organisations; European e-inclusion Award

1. INTRODUCTION

This Handbook is a supplementary Deliverable to the project's Interim and Final Reports. It is intended to make a bridge between the results and conclusions of the study and how these results and conclusions might be put into practice. These reports provided an overview of the study results and recommendations, they concluded that e-inclusion policies and actions have made significant progress towards implementing the goals associated with creating an inclusive knowledge-based society. This has been driven forward through a focus on three particular strands of e-inclusion: promoting accessibility to infrastructure; equipping citizens with the skills necessary to engage with infrastructure, tools and services, and improving 'quality of use'.

However, the study also showed that there are gaps in policy and practice, and particular areas where understandings and knowledge about the dynamics of e-exclusion, and the ways to tackle it, are poorly-developed. These gaps are underpinned by the lack of a theoretical framework of e-inclusion– what might be called a 'grand theory' of e-inclusion. To support these key study outputs, and in consultation with Commission Officers, this Handbook provides concrete and practical proposals, Guidelines and tools to take forward the study, and in particular to support actions associated with the 2008 e-inclusion initiative, the Riga Declaration and i2010. Four main areas have been selected for this Handbook, as set out in the Section below:

- Firstly, we focus explicitly on how existing policies can be synergised and valorised, by assessing the 'gaps' in the Riga Declaration in the light of the study results (Section 2)

- Secondly, we look at the role of the commercial sector and how to develop more effective partnerships to take forward e-inclusion initiatives (Section 3)

- Thirdly, we highlight areas where existing work in measurement and benchmarking can be improved (Section 4)

Finally, we provide proposals for utilisation and development of the 'e-inclusion web-based Repository' in the context of a 'Roadmap for 2008 and i2010' (Section 5).

2. FILLING THE POLICY GAPS

In this Section we consider the key aspects of e-inclusion policy in the light of the results of the study. We review the provisions set out in the 'Riga Declaration', which embodies much of the policy thinking on e-inclusion, for example as set out in the 'Action Plans'. We highlight particular aspects of the Declaration where the evidence suggests further work needs to be carried out, and suggest ways of improving these aspects.

2.1. e-Inclusion Policy & Research Gaps

2.1.1. RIGA DECLARATION

Address the needs of older workers and elderly people by

9. Exploiting the full potential of the internal market of ICT services and products for the elderly, amongst others by addressing demand fragmentation by promoting interoperability through standards and common specifications where appropriate. Barriers to innovative ICT solutions for social security and health reimbursement schemes need to be addressed, particularly at the national level.

Evidence suggests that:

- More attention should be paid to the precise barriers that the elderly face as regards ICTs. There is a need to identify barriers to use of ICTs among the elderly, in particular motivational factors
- There is a need to develop more finely tuned user model(s) and scenarios of use adapted to the specific requirements of older people in order to tailor e-Inclusion projects and initiatives to their needs.
- FP7 calls for proposals, as well as the selection of projects, should therefore pay particular consideration to these issues. In particular, applicants should be invited to address issues such as older people's attitudes towards ICTs, the design aspects of technology that are pertinent to the requirements of this demographic group and in general encouraging applicants to adopt a socio-technical approach to ICT applications for the elderly. In addition, projects should explore the effects of the new media, e.g. mobiles or digital TV, and their convergence on the 'online behaviour' of the elderly. All of these themes should also be investigated in prospective studies, for instance by the IPTS or other institutes.
- At the moment a lot of initiatives and projects in this field are designed and implemented at the regional and/or local level. This in turn highlights the need for a co-ordinated effort at national and cross-national levels to collect evidence, share experience, facilitate learning, pool resources as appropriate and avoid duplication. The European Commission should bring together, and facilitate a structured dialogue between, European-level key actors in this field, including representatives from local and regional administrations, NGOs and industries (such as telecities, the European Older People's Platform, the European Public Health Alliance or the Federation Internationale des Associations de Personnes agees). This should also include representatives

from DG INFSO, DG EMPLOY, DG EAC, the Committee of the Regions and relevant high-level working groups.

10. Improving the employability, working conditions and worklife balance of older workers to improve productivity by supporting innovative ICT solutions which can be easily used everywhere including at home, and encouraging the provision of training from the public, private sectors and from civil society, making special efforts on ICT skills for older people.

Key questions are:

- What kind of skills are the ICT skills for older people? Little evidence has been gathered on the particular user needs of 'older people'. This constituency tends to be homogenised, when the evidence suggests considerable variability in the profiles, cultural context, existing digital skills and skills needs of older people.
- How do ICT skills link with quality of life for the elderly? This includes independent living, active aging, access to telecare and other eHealth applications, social networking, access to online learning materials and others.
- These issues could benefit from considering the evidence base and knowledge base of inter-generational learning by drawing on, and expanding, research for policy formulation. Any future research should be context-related and include a 'life world' approach.
- How does one measure the impact of e-skills among the elderly on wider social outcomes, for instance reduced isolation for the elderly. Appropriate metrics should be developed that capture impacts in terms of individual, group (e.g. family) and societal levels.

11. Enhancing active participation in the society and economy and self-expression, through innovative ICT-enabled access to goods and services, and relevant content, to facilitate interactions with public and private entities, entertainment, and social contacts.

The key issues here are the following

- The implicit assumption that active participation is strongly predicated on ICT access and use needs to be further elaborated. Firstly, the elderly is not a homogeneous population with similar needs. Someone in his/her early sixties has different needs and interests from someone in his/her eighties. Secondly, there is a need for a more differentiated view of active participation in e-Inclusion policies at EU, national and regional levels. This is due to the fact that the socialisation patterns of the elderly differ from Member State to Member State, North and South, town and village. For example, in villages in Greece, Cyprus and Italy the elderly tend to socialise in the village's public spaces, e.g. café. In contrast, the elderly in Northern Europe tend to be more isolated. These differences highlight that in different contexts of use ICTs aimed at the elderly acquire different purposes, if they are to be used for

active participation. As a result, there is a need at European and national level to concentrate efforts on those policy areas and ICT functionalities that add most value to the lives of senior citizens. Crucially, any proposed solutions need to be user-friendly.

- The need to see the elderly not only as a diverse group but as a group that has multi-faced and inter-connected needs. Policy-makers at all levels of governance (European, national, regional and local) need to work across departments in order to promote a horizontal and holistic approach to the development and implementation of e-Inclusion initiatives for older people. This means overcoming 'silos' in the way ICT applications are developed and/ or adapted for the elderly. Thus, not only eHealth experts but also social exclusion experts, ICT experts, community workers and others should be collaborating on the development of eHealth solutions. For instance, these would then reflect the complete 'user journey' and illustrate the granularity of the 'scenarios of use'.
- The European Commission should consider developing an EU-wide quality label for the public, private and non-governmental sectors to increase the trust of older people in using the Internet. An example of this can already be found in France with the e-vermeil label which is used to increase older people's confidence in, and facilitate the access to, online services.

12. Realising increased quality of life, autonomy and safety, while respecting privacy and ethical requirements. This can be done through independent living initiatives, the promotion of assistive technologies, and ICT-enabled services for integrated social and healthcare, including personal emergency and location-based services. The ambient assisted living initiative of the 7th Framework Programme is an important initiative in this respect.

This suggests that:

- There is a need for a marketing strategy targeting the various segments of the elderly population in order to first raise awareness of the benefits of the ICTs, second generate interest in using ICTs, and third, dispel scepticism and suspicion about privacy and security by building up trust. This is particularly pertinent to this population who have not been grown up in an environment where ICTs are pervasive as they are at present.
- The European Commission should take advantage of the European Year of Equal Opportunities for All to promote ICTs for the elderly as an instrument of inclusion through targeted and tailored communication and marketing activities using appropriate language and images whilst also addressing existing concerns about trust and security of online transactions. The organisation of a European Year for e-Inclusion following the launch of the Action Plan should be considered.

Reduce geographical digital divides by

13. Facilitating affordable access to ICT networks and terminal equipment, contents and services everywhere and particularly in remote and rural areas and regions lagging behind, including small settlements, for instance by promoting new technologies, cooperation between the public and private sector and by supporting networking, benchmarking and exchange of experiences between countries and regions.

This suggests that:

- The Riga target of 90% of EU population covered by broadband by 2010 needs to be revised. In view of the big disparities between Member States, and differential penetration in rural areas a median figure should be used as a short-term target until 2010 instead of an average figure for the EU as a whole, as this is will give a more accurate picture of broadband connectivity in the EU Member States. In addition, we recommend member states adopt a long-term target of 90% of broadband connected population in each Member State by 2015.
- A common understanding needs to develop about the difference between affordable and lower cost Internet access. Although prices for connectivity are falling across the EU (albeit at different speeds), cheaper access does not mean those on lower incomes in remote areas (or elsewhere) can automatically afford it.
- The potential of satellite communication to supply remote areas with high-speed Internet connections, as confirmed in the 2003 Commission White Paper on Space Policy[2], should be further explored.

14. Reducing significantly the disparities in Internet access between all regions, increasing the availability of broadband in under-served locations, aiming for broadband coverage to reach at least 90% of the EU population by 2010. To this effect, Structural Funds and the Rural Development Fund shall be used, and Public Internet Access Points shall be supported where appropriate. National i2010 broadband strategies shall be updated to provide additional guidance and targets regarding coverage and connectivity in public administrations, schools, health centres and other key locations.

- The Commission's current practice of allowing member states to use Structural Funds for broadband development as an exemption to competition law should continue in order to encourage the roll-out of the Internet in under-served regions.

[2] European Commission (2003) Space: a new European frontier for an expanding Union. An action plan for implementing the European Space Policy, http://ec.europa.eu/comm/space/whitepaper/pdf/spwhpap_en.pdf

Enhance eAccessibility and usability by

15. Fully implementing the eAccessibility provisions in EU legislation on electronic communications and terminal equipment and using all other instruments available, from voluntary industry commitments to new legal provisions at EU and national level where appropriate. The effectiveness of these various instruments needs to be regularly assessed

- One should pay attention to endure appropriate user involvement in terms of ensuring that the solutions meet the needs of the "typical" end user as opposed to the most engaged and vocal. In other words, especially in this area power disparities can be apparent with the most assertive and ICT literate user dominating the debate.
- Current good practice in this area, both in the EU and in third countries, should be identified and used. An active exchange between the public and the private sector on this issue needs to be facilitated and encouraged at EU level.
- In line with the recently revised directive on public procurement, which contains specific references to design for all and accessibility as possible criteria for selecting tenders to provide electronic services, public administrations in the Member States should ensure that they comply with these requirements.
- The European Commission should consider developing an EU label for eAccessibility following the examples of similar efforts already undertaken at member state level (e.g. the seeitright label in the UK or the any-surfer label in the Netherlands).

Improve digital literacy and competences

20. Countries will put in place, by 2008, digital literacy and competence actions, in particular through formal or informal education systems, building on existing initiatives. These actions will be tailored to the needs of groups at risk of exclusion, because of their social circumstances or their capacities and special needs, notably the unemployed, immigrants, people with low education levels, people with disabilities, and elderly, as well as marginalised young people, contributing to their employability and working conditions. The current gaps of digital literacy and competence between these groups and the average population should be halved by 2010. Progress on this target should be measured on the basis of available indicators and further work in the context of i2010.

- The current focus on the supply of eSkills through universal and/or targeted digital literacy skills should be accompanied by a proper assessment of the demand side for such skills.
- ICT indicators in the OMC for Education and Training should be expanded to include motivational, societal learning perspectives and developmental and coping perspectives. Examples of such indicators are given in Section 4 on measurement and benchmarking of this Handbook.

21. Digital literacy and competences actions will be undertaken, where appropriate, through partnerships with the private sector and in conjunction with initiatives on basic education and media literacy in the areas of life-long-learning, e-skills, and digital user rights. Regular upgrading and refreshing of ICT competences will be facilitated so that the workforce can efficiently cope with technical and economic developments.

- One should promote of wide range of partnership arrangements (not only PPPs) at local level, characterised by a mix of public and private sector actors and increasingly the voluntary and community (third) sector which is seen as having both long experience in dealing with at-risk groups and as such being in a better position to do outreach activities and engage disadvantaged groups. One example for partnerships involving a diverse range of actors is the Spanish Digital Cities programme ('Programa Ciudades Digitales') which funds several pilot projects in the 17 Autonomous Communities of Spain. These projects aim at improving citizens' digital literacy skills through the collaboration of local city-based institutions with civil society, e.g. third sector organisations and public sector service providers.

22. These actions will be supported by appropriate qualification schemes, building on work by industry and academics, attesting to the levels of digital literacy and competence achieved, promoting their trans-national recognition in conformity with the European Commission orientations on Key Competences for Life Long Learning, building on work done by industry as appropriate

- This policy objective needs to draw on work being carried out under the broad umbrella of the 'Skills Standardisation' movement within the EU and elsewhere, including work on the 'e-portfolio'; work being carried out by the supporting actions under the e-Learning Programme and in SOCRATES (for example SEEQUEL) and in collaboration with the emerging e-skills standards bodies (for example EFQUEL).
- Any actions also need to connect with efforts at European and national level to validate non-formal and informal learning and, in doing so, take into consideration the Common European Principles (9600/04).

23. Fostering pluralism, cultural identity and linguistic diversity in the digital space. Promoting digitisation, the creation of accessible digital content, and wide and cross-national access to digital information and cultural heritage in support of European integration. Fostering multilingual and local content throughout Europe, as well as European values of freedom, tolerance, equality, solidarity and democracy. ICT innovation and good practice exchanges at all levels are important means to achieve this.

More specifically, this entails the following issues:

- Content needs to be accessible through different platforms, e.g. mobile, DITV or computers, as well as tailored to the user-specific needs.

- Member states need to continue promote user-generated content in the public domain as is, for instance, already being done by some local authorities and NGOs in the EU (see for instance the Dutch Digidak project which allows homeless people to generate some of the content).

- Establishing and safeguarding citizens' Digital rights across the EU An example for such a Charter is the Digital Rights Taskforce in Denmark which aims "to protect human rights on Internet by securing that individuals receive the level of protection, which is ensured in the physical world"[3]. See whether we should propose a European Charter on digital rights and responsibilities for all citizens (not just consumers)?

- A major problem in relating e-Inclusion to issues around identity, cultural heritage and values, as this study has shown, relates to the emergence of new forms of social structures and social relationships precipitated by the Knowledge Society. The study suggests that individuals are beginning to adopt 'multiple identities' in virtual space. This reflects the fragmentation of established community and cultural identities associated with traditional economic modes and their replacement by short term, fragmented labour markets. In turn, traditional values are being transformed by new discourses and new forms of popular culture, most importantly creating 'moral ambiguities' especially for young people. Policy makers need to take account of these dramatic transformations.

25. Promoting and ensuring accessibility of all public web sites by 2010, through compliance with the relevant W3C common web accessibility standards and guidelines. Calling upon the private sector to do likewise, to consider accessibility principles from the outset of the web development process, and to develop the appropriate authoring tools and software.

26. Designing and delivering key services and public service policies in a user-centric and inclusive way, using channels, incentives and intermediaries that maximise benefits and convenience for all so that no one is left behind. Promoting user rights and obligations towards public administrations and regarding participation in democratic processes.

Our research has shown that:

- Member States need to develop better understanding of what people want from eGovernment services by involving them in the design of such services, e.g. through citizens' panels.

[3] Digital rights (2007) http://www.digitalrights.dk/DRfile2.htm

- In accessing disadvantaged groups a wide range of platforms is required, e.g. e-mail, telephone, text message to ensure equal access to services among these population groups. Crucially, in this multi-channel delivery system, Member States should consider making use of mediators/brokers ("technology stewards") to help people navigate and access the complex system of online services. For example, information mediators have been introduced as part of the strategy *Republic of Slovenia in the IS*[4].

- Public services, delivered primarily through e-government, will be central to the vision of i2010 and beyond. They will need to be supported by a number of initiatives, including: mainstreaming of rights, codes of conduct and reporting and utilizing further innovations in ICTs to increase public participation in the development and diffusion of ICTs In Section 2 below we present proposals for utilizing state of the art in Corporate Social Responsibility (CSR) to support e-government and in Section 5 we provide recommendations for harnessing new developments in ICTs, particularly in Grid technologies, social networking technologies and emergent consumer adaptive systems to support increased citizen participation.

27. Disseminating user-centric security concepts to increase awareness of digital network and information security. In so doing, harness good practices, including from the private sector and civil society.

We would also recommend that:

- Tools and methodologies such as privacy impact assessments are further explored by Member States in order to investigate privacy issues as regards the citizens' personal data.

- The major policy gap in this area relates to increasing concerns around what has been called 'architectures of control'. Developments in ICTs, including sensor systems and RFIDs, are becoming seen as potential dangers to democracy and citizens rights in the emergent Knowledge Society. These issues are covered below in Section 5.

[4] Government of the republic of Slovenia Ministry of Information Society (2003) Republic of Slovenia in the Information Society http://mid.gov.si/mid/mid.nsf/V/KACF73A1447CF53FEC1256DE50042087A/$file/Strategy%20_RSIS_final_20030213.pdf

30. Ensuring that national e-Inclusion strategies are in place in time to contribute to the 2008 European e-Inclusion Initiative, building upon existing national, regional and local initiatives, and in line with this Declaration.

Our research also indicates that:

- The focus on national e-Inclusion strategies needs to be informed by one of the key conclusions of the study – that member states are at different positions in the ICT diffusion, and corresponding e-Inclusion, 'life cycle'. This means that policies aimed at promoting standard national targets need to be adjusted to reflect these differential positions.

- National e-Inclusion strategies should encourage bottom-up approaches which have proved to be particularly effective in accessing these hard-to-reach groups. Such approaches have been successfully used in countries such as Ireland (Group Community Broadband Initiative).

- Member States should actively encourage the participation in partnerships of the voluntary and community sector, which has historically been very effective in reaching out to disadvantaged groups. For example, in the Netherlands a combination of different players are involved depending on the e-Inclusion related initiative under the KL programme, e.g. state, cities, research organisations, sometimes in combination with private companies or voluntary organisations.

31. Using appropriate mechanisms, in particular EU funds, demonstration and deployment projects, public procurement, research, public-private partnerships, stakeholder involvement, inter-governmental cooperation, benchmarking, and exchange of good practice, for implementation of this Declaration and evaluation of its impact. The positive impact of e-Inclusion actions will require seeking synergies with related policy areas at all levels.

- Funding mechanisms are dominated by EU Structural Funds. Their deployment is highly uneven, and is significantly shaped by regional and local agendas. Work needs to be done on ways of mainstreaming trans-national e-Inclusion agendas, so that they do not clash with agendas at the lower levels. Additional issues focus on the low level of engagement of the commercial sector in initiatives, and the obstacles – particularly power dynamics and 'culture clashes' that problematise partnerships. Recommendations aimed at addressing these issues are provided in Section 2.

34. Reassess the situation of eAccessibility in the EU in 2007, the European Year of Equal Opportunities for All, exploring the need for further exploiting available instruments, including EU legislation in line with better regulation principles, and for progress in areas such as public procurement. In particular, the review of the electronic communications framework should seek to reinforce the rights for users with disabilities. Moreover, in its 2007 consultation on the future of the universal service, the Commission should address the requirements of users with special social needs, due to disability or other reasons, considering users with disabilities as consumers with equal rights.

- The key policy gap here centres on the domination of 'special needs' target groups in e-Inclusion policy. This study has argued strongly that 'special needs' groups tend to be over-represented in terms of attention and resourcing. Little attention has been paid to the very large numbers of citizens – around 45% according to some studies – who do not wish to get involved in the 'Knowledge Society'.[5] Reaching this constituency must be the key priority for policy makers if the Lisbon agenda and i2010 are to be achieved. Far more work needs to be done to understand the motivational and cultural factors underpinning resistance and de-motivation.

[5] This is based on two sets of statistics. First, proportion of EU citizens who do not use the Internet due to lack of access is 42% according to Eurostat 2005 Community Survey on ICT usage in households and by individuals. Second, the proportion of this group who wish to have access to internet has decreased from 40% in 1999 to only 20% in 2003. Source: O'Donell S., Ellen D., Duggan C., Building the information society in Europe: a pathway approach to Employment interventions for disadvantaged groups, ITECH Research, Dublin, May 2003.

3. ENGAGING STAKEHOLDERS

3.1. What this Section is about

In this Section we look at ways of engaging stakeholders in the development and implementation of e-inclusion policy actions and initiatives. In particular we consider how commercial partnerships can be initiated and sustained in the light of the study's findings of the low level of participation by the private secctor in e-inclusion initiatives. Any initiative intended to engage the private sector more fully in implementing e-inclusion policies and initiatives needs to be informed by state of the art in the domain of corporate social responsibility (CSR). It is argued, in this Section of the Handbook, that the CSR domain already offers tools that can be migrated and applied within the e-inclusion domain. In this Section we look at three particular areas:

- CSR policies and standards
- Research results and good practices on engaging corporate stakeholders
- Research results and good practices on managing public-private partnerships

3.2. Policies and standards

Recent years have seen not just a significant increase in the numbers of organizations engaging in social entrepreneurship but a movement towards the formalization and legalization of corporate social responsibility. Firms are no longer simply accountable under local law, but to international norms and standards, such as those promulgated by the International Labour Organization (ILO), the Universal Declaration of Human Rights (UDHR),OECD Guidelines and corporate best practices. At the European level, a number of instruments and guidelines have been introduced to reinforce these trends. These include 'Promoting a European Framework for CSR (COM 2001, 366); the Council Resolution on CSR (3/12/2002), and the European Parliament Report on CSR (13/05/2003). A recent update communication from the Commission – 'Implementing the Partnership for Growth and Jobs: making Europe a pole of excellence on CSR' (COM (2006)136 final) has further elaborated policy on these themes with proposals for awareness-raising actions, international collaboration and research. These are in turn being reinforced by measures introduced by member states. The British government, for example, has adopted a wide range of policy initiatives to promote CSR, including appointing a minister responsible for CSR (Aaronson & Reeves 2002)[6]. This minister is responsible for the implementation of the government aims to raise awareness of CSR, to use public policies to provide guidance, promote consensus on UK and international codes of practice and promote a framework for social and environmental

[6] Aaronson, S. A. & Reeves, J. 2002. The European Response to Public Demands for Corporate Social Responsibility. National Policy Association.

reporting and labelling[7]. In keeping with the EU measures, most member state governments are promoting CSR in the following ways (Curran, 2005)[8]:

- Using a range of tools from triple bottom line reporting to development of a code of conduct
- Support for the OECD guidelines
- Seeking widespread public comment on these initiatives and thereby building a constituency for these efforts
- Using the web and conferences to bring these issues to public attention

Supporting these measures are emergent sets of standards, coupled with accountability and reporting good practices. The Social Accountability standard (SA 8000), first released in 1997, was developed in the USA by a diverse group of organisations, which included labour unions, human rights organisations, academia, retailers, manufacturers, contractors, as well as consulting, accounting, and certification firms. SA 8000 was designed to be the first auditable international standard for companies seeking to guarantee the basic rights of workers. Businesses implement a social management system and receive accreditation. The standard addresses nine essential areas where companies must comply with relevant local legislation and with SA 8000's own provisions. These include child labour, forced labour, health and safety, freedom of association, freedom from discrimination, disciplinary practices, work hours, compensation, and management practices. Similarly, the UN Global Compact was launched in 2000. It is "a value-based platform designed to help build social and environmental pillars required to sustain the new global economy and make globalisation work for all". The Compact encompasses nine principles, drawn from the Universal Declaration of Human Rights, the ILO's Fundamental Principles on Rights at Work and the Rio Principles on Environment and Development. It asks companies to act on these principles in their own corporate domains (Curran, 2005; UN, 2003).

The standards movement has reinforced a significant development in CSR – the movement towards transparency. SA 8000, for example, requires public reporting by businesses, and underpins an increasing commitment by companies to report on their environmental and social activities. Several standards have been developed for reporting, for example, the Global Reporting Initiative (Global Reporting Initiative 2002), and the European Commission's recommendation on the recognition, measurement and disclosure of environmental issues in the annual accounts and annual reports of companies (European Commission 2001)[9]. There are a number of tools that have been developed to assist reporting. One of these is the triple bottom line approach. Another is full cost accounting, a methodology that places a monetary

[7] UK Foreign and Commonwealth Office 2002
[8] Curran, M (2005) Assessing the Rate of Return of the Adoption of Corporate Social Responsibility Initiatives, PhD Dissertation, University of Edinburgh
[9] European Commission 2001, Promoting a European Framework for Corporate Social Responsibility, http://europa.eu.int/comm/employment_social/socdial/csr/greenpaper_en.pdf

value on environmental and social resources in corporate green accounts (Atkinson 2000)[10]. Standards are supported by incentive initiatives intended to reward companies for compliance. Other tools include human rights and environmental risk assessments, monitoring systems, management standards, and the engagement of external stakeholders in dialogue and decision-making processes. The tools that have been most widespread, however, are the adoption by many firms of CSR codes of conduct, as well as the compliance and monitoring schemes used to implement and enforce those codes once they have been established. Codes of conduct stipulate the human rights, environmental, social and ethical requirements for suppliers. The World Bank estimates that there may now be an estimated 1,000 codes in existence today, developed by individual multinational firms on a voluntary basis, depending on firms' business needs. They play a complementary role to national legislation, helping firms implement standards beyond those that are typically enforced locally[11] Moreover, compliance with standards and codes is being encouraged through the implementation of recognition and rewards. The European Union's 'Eco-label', a flower, is awarded to products and services with reduced environmental impacts. The Investors in People (UK) award, is a social label. The award signals to the company's stakeholders that it has achieved a certain level of human resource management (Curran, 2005).

The Box below provides examples of the kinds of tools currently available and used.

CSR tools and practices

Source: Promoting a European Framework for CSR, COM 2001, 366

Code of conduct: a formal statement of the values and business practices of a company and sometimes its suppliers. A code is a statement of minimum standards together with a pledge by the company to observe them and to require its contractors, subcontractors, suppliers and licensees to observe them. It may be a sophisticated document, which requires compliance with articulated standards and have a complicated enforcement mechanism.

Corporate governance: a set of relationships between a company's management, its board, its shareholders and other stakeholders. Corporate governance also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined. (OECD Code, 1999).

Environmental impact assessment: analysis of the impact of a business projector operation on the environment.

Ethical audit: The application of non-financial, ethical criteria to investment decision.
Human rights: Human rights are based on the recognition of the inherent dignity and

[10] Atkinson, G. 2000, "Measuring corporate sustainability", Journal of Environmental Planning and Management. 43(2):235-252
[11] Company Codes of Conduct and International Standards: An Analytical Comparison, World Bank, October 2003

of the equal and inalienable rights of all members of the human family as the foundation of freedom, justice and peace in the world. They are defined in the Universal Declaration of Human Rights

(1948). At the European level, Article 6 of the Treaty on European Union reaffirms that the European Union 'is founded on the principles of liberty, democracy, respect for human rights and fundamental freedoms, and the rule of law, principles which are common to the Member States'. In addition the European Convention of Human Rights adopted by the Council of

Europe is legally binding in all Member States.

Monitoring: the process of regularly collecting information to check performance against certain criteria.

Social audit: the systematic evaluation of an organisation's social impact in relation to standards and expectations.

Social capital: the stock of shared meaning and trust in a given community.

Social impact assessment: systematic analysis of the impact of a business project or operation on the social and cultural situation of affected communities.

Triple bottom line: the idea that the overall performance of a company should be measured based on its combined contribution to economic prosperity. Environmental quality and social capital.

How e-inclusion policy and initiatives can learn and benefit

CSR provides a significant set of resources, practices and tools that can provide the building blocks to support e-inclusion actions at the EU level and in member states. We would therefore recommend the following:

- Expanding the current set of CSR policy initiatives and instruments to encompass e-inclusion specifically. We would argue that e-inclusion is an integral dimension of corporate social responsibility. The kinds of issues raised by CSR, and addressed through policy initiatives like the Council Resolution on CSR, are reflected in e-inclusion, for example issues related to digital literacy and employment, and to social capital. Work should be done at the policy level to find ways of incorporating e-inclusion elements into existing policy.

- Incorporating the Riga Declaration in EU CSR directives. In particular, any integration of an e-inclusion dimension into CSR policy should reflect the principles of the Riga Declaration.

- Assigning effort and resources to raise awareness of current EU directives on CSR. Publicity and awareness raising would need to be implemented to draw attention to the CSR stakeholders about the issues raised by e-inclusion, and

how it fits into the broader agendas of social entrepreneurship and corporate responsibility.

- e-inclusion codes of conduct. The evidence suggests that the implementation, and enforcement of CSR codes of conduct, is having a real impact on things like labour and employment conditions, and on social capital. Similar codes of conduct, encouraging companies to state their values on and commitment to e-inclusion would encourage greater engagement by the commercial sector in e-inclusion practices.

- Reporting. In turn, companies should be encouraged to include reporting on their performance in relation to e-inclusion measures, for example through an e-inclusion version of the 'social audit'.

- Standards. Work should be done on developing e-inclusion standards for companies. These should build on the technical state of the art and experiences derived from CSR standards like SA8000 and GRI.

- e-inclusion awards. Engaging the private sector more fully in e-inclusion policy and initiatives could be reinforced through the development and implementation of award schemes like the EC's 'Eco label' and UK 'investors in industry'. This work could be further supported by the experiences and know how of existing 'quality marks' in use in the e-inclusion sector, for example the 'Bobby' system used to assess web sites for their user-friendliness for disabled people.

3.3. Engaging the private sector

3.3.1. Overview of the literature

A review of the research suggests that companies get involved in social entrepreneurship and CSR activities for the following reasons:

- profit
- reinforcing marketing and consumer strategies
- image and reputation
- altruism
- consumer demand
- government policy
- economic climate.

Pressure from external stakeholders, including students; human rights organisations, organised labour, religious institutions, consumer advocates, universities, representatives of local, state, and federal governments around the world, has led

consumers and employees to hold businesses to higher and broader social and environmental standards than in the past. Firms are judged not only by their own behaviour, but also by the behaviour of those with whom they are associated. Firms can face not only reputational damage from their corporate practices, but they can also face protests, boycotts, attacks on corporate property, divestment campaigns, hostile shareholder resolutions, and the enactment of sanctions laws. During the past few years, corporate leaders have recognized that the success of their brands is tied to whether their business is conducted in a manner acceptable to those affected by it. The continuing success of these firms suggests that there have been business benefits from adopting these programs (World Bank, 2005; Curran, 2005; Fowler, 2000; Thompson, 2000)[12].

However, an important dimension of company involvement in CSR relates to, firstly, the company profile and 'style' and, secondly its institutional structure (Cullen et al, 2002)[13]. The business 'style' of the company - for example its decision-making structure; marketing approaches, and so on - tend to be harnessed to how the company operates within the context of CSR. Broadly, companies will bring with them into CSR initiatives an agenda, objectives and set of expectations that incorporate: a particular model of 'inclusion'; a business model (reflecting what they wanted to get out of participating in CSR in business terms) and a participation/ developmental model (reflecting the way in which they manage their participation and the way they relate to other actors). Companies therefore take decisions on getting involved in initiatives as a result of a combination of the factors described above (profit, image and so on) and three main 'situational factors' related to the properties of the initiative itself. These are the rationale of the initiative; type of activity or role anticipated, and sector of company activity.

In relation to rationale***,*** the research suggests the following main reasons for involvement:

- cause-related marketing (companies get concrete benefits)
- wider business interests (companies affected by e-exclusion, for example reduced sales of ICT equipment)
- investment in staff and staff morale
- tax benefits
- creative opportunities

In terms of ***type of activity***, companies can play a number of roles, including: marketing of issue; provider of information; funding to schemes; in kind resources; research funding. In relation to ***sector,*** different industry sectors have different

[12] Fowler, Alan. "NGDOs as a moment in history: beyond aid to social entrepreneurship or civic innovation?" in *Third World Quarterly*, Vol. 21, No. 4, pp. 637-654
Thompson, John, Geoff Alvy and Ann Lees (2000) "Social entrepreneurship - a new look at the people and the potential" in *Management Decision*, Vol. 38, No. 5, pp. 348-338.
[13] Cullen, J, M Foresti (2002)' Evaluation of Commercial Partnerships', Tavistock, London

interests, for example companies with very specific market sectors (e.g. young women) would need to find a niche in an e-inclusion initiative that could exploit this targeting strategy.

How e-inclusion policy and initiatives can learn and benefit

Key conclusions

On the basis of our review of the literature and research results, our conclusions and recommendations are that the success of an initiative will be dependent on factors such as:

- the degree of ownership or integration of the initiative within company business practices
- the organisational situation or location of the initiative
- its degree of embeddedness within a local context, and the ways in which local actions are linked to a national campaign
- the participation/development models adopted
- the role specification. These need to focus on tailoring roles to company characteristics, and on multiple roles in e-inclusion (for example awareness-raising; service support and research).

Getting companies involved should be geared to:

- a 'horses for courses' approach (i.e. tailoring the initiative to the company profile)
- working with all stakeholders in the field
- using different entry points within industries, not just company directors
- interfacing between different industry sectors.

3.3.2. Implications for e-inclusion initiatives

- Companies have different motivations for getting involved in collaborative activities like CSR. These motivations are typically based on commercial returns; to enhance their profile; to reinforce consumer targeting strategies; to develop linkages with the community.
- Similarly, companies have different organisational and operational styles that will shape the ways in which they subsequently participate in CSR initiatives. Broadly speaking, companies either operate in a 'top-down' and highly centralised fashion, with close control being exerted on campaign operations, and with little consultation with other stakeholders, or they are more participative, open and collaborative.

- Understanding the ways in which these different types of motivation and organisational profiles operate can help inform the strategic objectives of an e-inclusion initiative. An important implication for the design and operation of such initiatives is that e-inclusion materials need to be contextualised to the particular motivational 'style' of participating companies, and negotiated between the stakeholders involved.

- However, it should be recognised that this type of 'negotiation' between company and institutional actor, such as the EC, can create tensions that could lead to important public benefit elements of e-inclusion policy being compromised or subsumed within company agendas.

- This type of tension, derived from variations in organisational profiles and behaviours of companies involved in partnerships, suggests that the programme architecture (i.e. decision-making, management and evaluation structures) of e-inclusion initiatives needs to be both flexible enough to accommodate different interests and agendas, but sufficiently robust to maintain the integrity of overarching policy objectives. For example, benchmarking should not be based on 'quantity' (i.e. numbers of companies recruited) but on the quality of partnership produced, and the quality of outputs delivered.

- In practical terms, an important element of an e-inclusion initiative should be the implementation of a preliminary 'stakeholder analysis' or 'mapping', in order to establish a company profile based on its organisational structure and style, and incorporating the health promotion, business and institutional models the company adheres to. In turn, the initiative would need to compare this mapping with other stakeholder profiles (such as government agencies or NGOs) in order to determine the degree of 'alignment' between different stakeholder positions, and to address the operational strategy of the initiative to any potential stakeholder conflicts.

- The 'success' of actions within an e-inclusion initiative, for example the implementation of an 'awareness campaign', in terms of its impact and value, is likely to be enhanced if company employees are actively engaged at a local level. Active engagement of staff across the board will also have a spin-off effect in raising the awareness of company staff about e-inclusion issues.

- It is particularly important that head offices of companies consult with local branches in order to ensure that national or head office actions do not conflict with, and can complement existing or planned initiatives at the local level.

- Similarly, actions are more likely to be effective if they engage collaboratively local stakeholders, particularly NGOs and community groups.

3.3.3. Good Practice Examples

Although the e-inclusion domain is in its infancy, and has yet to assimilate the practices established in the CSR domain, there are a number of good practice examples that can be drawn on to help support Commission initiatives. These are set out below.

i) Raising awareness and developing capacity: e-inclusion charters

The UN Compact, described above, provides an illustration of one of the ways in which awareness-raising about the issues around e-inclusion can be combined with another essential ingredient – developing capacity. Collaborative engagement of stakeholders in the run up to the 2008 e-inclusion initiative and i2010 needs to build on a foundation of interested and involved actors in order to build a critical mass. The example Box below provides a good practice example.

Example: e-Inclusion Charter (UK)

The Alliance for Digital Inclusion (ADI) is a collaboration of businesses, working together to promote digital inclusion. Current members are AOL UK, BT, Cisco Systems UK, IBM UK, Intel UK & Ireland, Microsoft UK and T-Mobile. It is implementing an e-Inclusion Charter, targeted at promoting e-inclusion practices aimed particularly at disabled people and older people. The Charter aims to encourage stakeholders to sing up to and support a set of objectives and actions based on the following: "Disabled and older people should have the same rights to participate in the Information Society as other citizens. Information and communication technology (ICT) such as personal computers, mobile phones and interactive TV should be tools that help overcome barriers they face in education, the workplace and social life."

"Industry will:

Use inclusive design principles to create offerings that will be usable by disabled and older people; be creative in reaching out beyond their traditional customer base so that ICT equipment and services are available and affordable for disabled and older people;

Ensure that customer-facing staff are aware of, and signpost to, ICT solutions that meet the needs of disabled and older people."

"Government will:

Take the lead in using ICT to deliver services to disabled and older people in order to improve their quality of life;

Make available the ICT tools, information and services that disabled and older people need to access education and employment;

Provide an appropriately structured funding framework for delivering digital inclusion to disabled and older people."

"Voluntary sector will:

Identify and prioritise the requirements and challenges of e-Inclusion;

Raise awareness about the barriers that disabled and older people face and identify the potential of technology to overcome these barriers;

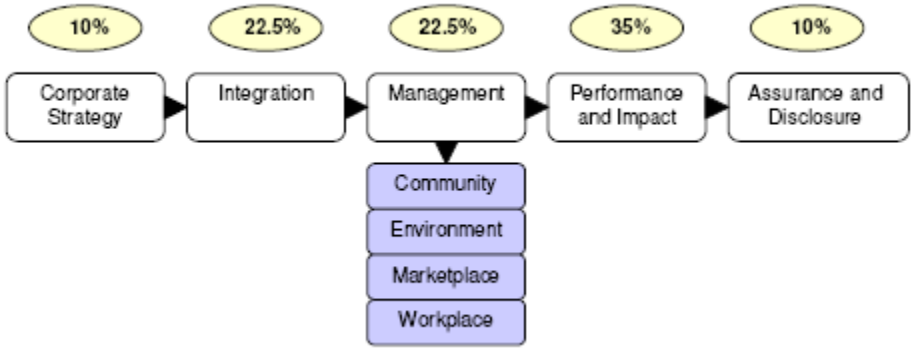
Work together with industry and government to provide insight and training for disabled and older people."

"We call on industry, government and the voluntary sector to recognise their responsibilities and collaborate in achieving these goals."

ii) Indicators and indices

The CSR standards movement, through initiatives like SA800 and the Global Reporting Initiative, is exerting pressure on organisations to develop and implement monitoring and assessment systems that, on the one hand, provide means of collecting an evidence base on the extent to which CSR targets are being delivered, and on the other provides a powerful 'hook for companies to demonstrate in a public space their commitment to, and achievements in, cause-related ethics and standards. One way in which these objectives can be realised is through developing and promoting an index against which performance can be measured. The UK Corporate Responsibility Index, shown below, is one example.

Example: Corporate Responsibility Index
The UK Department of Trade and Industry (DTI) has sponsored the Business in the Community (BiTC) Corporate Responsibility Index since it was established in 2002. The Index helps businesses to improve their impact on society and the environment by assessing how well their CSR policies are embedded in their business operations while also allowing them to benchmark their performance against their peers. The Index is based on calculating a co-efficient of performance in CSR on the basis of scores on five scales, as shown in the diagram below.



iii) Incentives and Awards

A third type of examples of practical incentives used to engage commercial partners in cause-related activities relates to 'reward' incentives. These incentives hardly ever entail financial rewards – although the financial type of reward system is commonly used to support 'social' interventions for example to encourage employers to employ people with disabilities through grants and tax incentives. Rather, 'award' schemes focus on emphasising the 'prestige' of symbols of recognition given to organisations that are selected to receive them. This is typically done by holding dedicated award ceremonies in prestige venues, where the awards are conferred by prestigious donors. A number of these Awards initiatives have already been developed in the e-inclusion domain, as the example shown below illustrates.

Example: Baltic Challenge

BALTIC.CHALLENGE

The initial motivation for launching the Baltic Challenge was to bring out the best ICT based initiatives for social and economic development in the Baltic Sea region, show them to the world and award them. The idea was also to stimulate continuous contacts between the participants in the Challenge both the project teams who compete for the awards, and all who have been contributing to the programme with their ideas and their work. In 2006 the award was presented to the winners during a reception at the House of Blackheads in Riga, as part of the Riga Forum 2006: "The 5th INTERNATIONAL CONFERENCE - Investment in the Baltic Metropolitan Regions".

3.4. Managing partnerships

Our study has shown that the level of active involvement in e-inclusion initiatives by companies acting alone is very low. In the preceding sections we proposed some strategies and good practices to widen the engagement of companies more generally. However, a much larger proportion of e-inclusion initiatives are implemented by partnerships, typically involving a commercial partner. Our research also suggests that these partnerships are often problematic, and creating the conditions necessary to develop and manage them successfully is a key challenge for e-inclusion policy.

In this final section we look at some of the issues involved and present some guidelines for successful e-inclusion partnerships.

3.4.1. The issues

A common implementation issue in e-inclusion partnerships is that of the clash of cultures between for-profit and not-for-profit organizations. As Johnson (2002) points out, this clash can emerge in various ways. In some cases, it will manifest itself in the 'distrust of money-making activities' felt by many in the non-profit sector for example the belief that capitalism and profits are social evils[14]. Cultural differences between the for-profit and non-profit sector emerge in other ways as well. Cannon (2000) notes the lack of non-profit investment in their own organizations (e.g., in training or providing extra benefits to attract the best staff) and the non-use of basic business management tools within non-profits. These cultural differences, while significant in themselves, reflect a much deeper problem for inter-sectoral collaborations - the lack of a common discursive framework among the public, private and non-profit sectors. As such, the challenges of collaboration among these sectors should also not be underestimated, and those advocating inter-sectoral collaboration will be most likely to succeed if these challenges are understood and accounted for early in the planning processes. At the end of the day "...the art of integration is to marry developmental agendas with market priorities and then manage them properly so they are synergistic, not draining" (Fowler, 2000, p. 646).

3.4.2. Models, tools and practices for managing partnerships

The kinds of ***theoretical and conceptual models*** that have influenced thinking on how partnerships work (and how they should operate) includes:

- Tavistock Institute models, in particular Emery and Trist (1965) in *Human Relations*, 'The causal texture of organisational environments';
- Organisational Ecology
- 'Principal Agent' theory – which concentrates on how sub-contracting works
- Markets and value chains starting with the markets, hierarchies and clans distinctions but touching on broader notions of organisational efficiency and transaction costs;
- New Institutional theory following Peters (1998) with his distinction between value institutionalism, rational institutionalism and historical institutionalism;

Trust is a central concept in partnership theory and practice and makes distinctions between the self-interested and the co-operative. A distinction is sometimes made in the literature between the optimists and the pessimists regarding human nature with economists and 'Hobbesians' at one end of the spectrum, game theorists somewhere in the middle and altruists at the other end of the spectrum. Trust also raises issues of hierarchy – both in the negative and in the positive sense of what hierarchy can offer. The recognition of the importance, and difficulties, of collaboration between commercial organisations, service providers and other local statutory and voluntary

[14] Johnson, S (2000) Literature Review on Social Entrepreneurship, Canadian Centre for Social Entrepreneurship

agencies has long been recognised as a reflection of uneven power differentials (Hunter and Wistow, 1987[15]; Sheppard 1992[16]; Auluck and Iles 1991[17]).

Understanding partnership structures, dynamics and driving requires tools that allow policy makers and managers to:

- Profile the characteristics of partnerships that have been set up, or have evolved, to deliver services
- Map and analyse the organisational dynamics that shape how the partnership operates

And on the basis of these exercises

- Assess the 'fitness for purpose' of the partnership as a means of delivery of e-inclusion objectives and values.

Profiling and diagnosis

Profiling the partnership is an essential step in identifying and assessing:

- The extent and ways in which the interests of stakeholders are represented and addressed
- The extent to which the necessary capacity and infrastructure needed to deliver e-inclusion services is in place
- The degree and nature of gaps and 'overlap' in what is being provided in the initiative
- The extent to which the e-inclusion models and practices chosen are consistent with the strategies and objectives of the initiative itself, and with broader policy agendas on e-inclusion

On the basis of the profiling, an assessment (diagnosis) of the issues likely to be raised, and how to solve them, can be determined.

The ***Profile mapping and assessment process*** needs to cover:

- The partnership structure (size; membership composition; sectoral composition)
- Broader social and economic goals

[15] Hunter, D. and Wisto, G. (1987) 'The paradox of policy diversity in a unitary state: community care in Britain'. Public Administration Spring, 65:3-24
[16] Sheppard, M. (1992) Contact and collaboration with general practitioners, a comparison of social workers and community nurses' British Journal of Social Work, 22:419-36
[17] Auluck, R. and Iles).(1991) 'The referral process: a study of working relationships between ante natal clinic nursing staff and hospital social workers and their impact on Asian Women' British Journal of Social Work 21:41-61

- Specific goals in relation to e-inclusion approach, models and targets
- Client base and target beneficiaries
- Intended outputs and outcomes
- Operational features (central location/dispersed location; geographical spread of operations; communications and networking strategies)
- Type of partnership (joint venture; co-operative; network)
- Legal, administrative and management arrangements
- 'Mission' and 'values'
- Power structures and empowerment strategies
- Leadership and governance arrangements
- Mechanisms for learning and reflection
- Strategies for developing and promoting trust

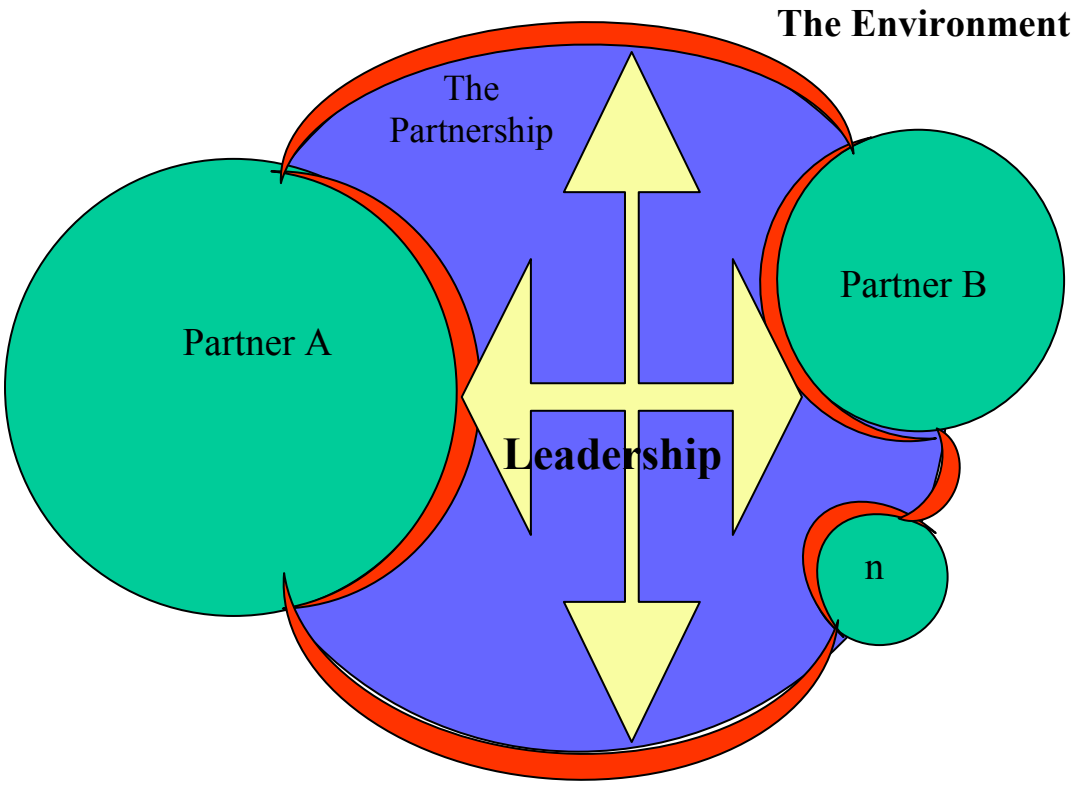
Mapping and managing partnership dynamics

A key interest for policy makers and managers of initiatives are the power structures and power dynamics that operate within the partnership structure. But there is a vast literature in organizational studies and organizational behaviour theory and practice that could usefully be drawn on. This literature is eclectic, and reflects different disciplines, including sociology, psychology, economics and anthropology. For example, the 'Human Relations' school (Mayo, 1949) was an early attempt to focus on partnerships as 'human co-operation systems'. The key concept of the Human Relations school was that social groups are more important than functions within the organisation. The key to understanding partnerships is therefore through examining motivation, power and leadership. In turn, the human relations approach gave way to the socio-technical systems perspective developed by the Tavistock Institute (Emery & Trist 1960), based on an 'Open Systems' framework. Socio-techncial systems borrows heavily from biology and notions of 'social darwinism'. The distinguishing feature of partnerships is interdependency: parts and processes in the organisation are inter-related; change in one leads to changes throughout. Partnerships are also inter-dependent with the external world and the political economy (Katz & Kahn, 1966), which means that typically they operate in a 'turbulent interface' between the partnership and its environment. Survival and success in the partnership means creating new patterns in a continuous interaction with the external environment (Stacey, 1991).

Within this context, psychodynamic approaches to organisational behaviour suggest that partnerships operate in two distinctive modes: the 'public' mode – characterised by the 'formal' relations between partners, and the interactions between the partnership and the outside world – and the 'private' mode – characterised by

unconscious relations. The ‘public’ (or ‘work’) mode can be understood in terms of task definitions; organisational system structures; strategies for dealing with complexity; strategies for conflict resolution; change management systems and strategies. The ‘unconscious’ mode is defined, according to classic psychodynamic approaches, in terms of ‘groupishness’ (Bion, 1966) – which includes things like dependency; defences against anxiety; resistance; attitudes to authority and leadership, ‘splitting’. Current group relations theory and practice is based on exploring how these dynamics operate to create dysfunctionality in partnerships and how these ‘negative’ effects can be resolved, primarily through adressing issues around leadership (Figure 1).

Figure 3:1 Psychodynamic model of partnerships



However, psychodynamic and group relations models are not the only framework for understanding the driving forces that create partnerships and how they operate, and should operate, in practice. An alternative approach can be drawn from 'sociological' frameworks – for example focusing on the legal rules that govern behaviours, and on the roles, norms and values that structure conformity with these rules. Other approaches – for example 'ethnomethodological' theories – focus on how individuals within a group setting construct common conceptions of reality, and how they subordinate their own individual values to authority figures and structures (Goffman, 1966; Milgram, 1957). In turn, critical theory approaches focus on how authority is itself structured through power and control, for example through 'dividing practices' (Foucualt, 1978).

The ***Partnership dynamics*** analysis should cover:

- Internal-external relationships and interactions
- Power relationships
- Dependency patterns
- Defences against anxiety
- Hopes and fears

- Values, Beliefs and attitudes
- Codes of conduct
- Patterns of relationships and behaviour
- Ways authority is used
- Conflict resolution mechanisms
- Communication structures and working
- Sensemaking mechanisms
- Knowledge creation and diffusion mechanisms
- Reflection and evaluation of mission, objectives

Carrying out the profiling and mapping and analysing the results

Partnership profiling, mapping and analysing partnership dynamics requires the collection of relevant data. Three main types of data collection should be carried out:

- Individual interviews with key stakeholders
- focus groups with the partnership as a whole
- Observation of how the partnership operates.

Focus groups and Observation involves recording the settings in which partnership activities take place, and the activities observed. This should illustrate how the relationship between the different actors involved in the partnership works. A typical activity would be a ‘Steering Group’ meeting.

The expected result of carrying out partnership profiling and partnership dynamics assessment is to build a picture of the strengths and weaknesses of the partnership and, ultimately, its ‘fitness for purpose’. The grid below provides a template to enable data drawn from the two mapping and analysis exercise to be integrated to provide an overview of fitness for purpose. For both profiling and partnership dynamics, summarise the results of the data gathering and analysis in terms of the ‘indicators’ specified. In addition, provide an overall judgment of the ‘success’ of the partnership in terms of outputs, outcomes and impacts. Provide specific examples illustrating the results.

Partnership profile	Key results	Examples
The partnership structure (size; membership composition; sectoral composition)		
Broad Social and economic goals		
Client base and target beneficiaries		
Specific goals in relation to substance e-inclusion, models and targets		
Intended outputs and outcomes		
Operational features (central location/dispersed location; geographical spread of operations; communications and networking strategies)		
Type of partnership (joint venture; co-operative; network)		
Legal, administrative and management arrangements		
'Mission' and 'values'		
Governance structures and empowerment strategies		
Leadership and governance arrangements		
Mechanisms for learning and reflection		
Strategies for developing and promoting trust		
Funding basis		
Partnership dynamics		
Internal-external relationships and interactions		
Power relationships		
Dependency patterns		
Defences against anxiety		
Hopes and fears		
Values, Beliefs and attitudes		
Codes of conduct		
Patterns of relationships and behaviour		
Ways authority is used		
Conflict resolution mechanisms		
Communication structures and working		
Sensemaking mechanisms		
Knowledge creation and diffusion mechanisms		
Reflection and evaluation of mission, objectives		
Outputs, outcomes, impacts		
Outputs		
Benefits for target groups		
Benefits for partners (funding; knowledge etc)		
Sustainability and transferability		
Contribution to state of the art		
Value added of partnership		
Cost effectiveness		

4. VALORISING MEASUREMENT AND BENCHMARKING: RATIONALE AND CHARACTERISTICS OF THE PROPOSED MEASUREMENT MODEL

The applied classification and analysis framework consists of the following dimensions: i) structural, ii) technological, iii) individual and social dimensions as well as iv) e-Participation or Usage of e-Services and e-Content. The subsequent goodness-of-fit test between existing e-Inclusion indicators and suggested future analysis frameworks identifies strengths and weaknesses of the current e-Inclusion framework and suggests areas of further improvement – related simultaneously to benchmarking and benchlearning approaches – for each e-Inclusion domain and for the periodicity and nature of current data collections:

- Structural variables: a more systematic inclusion of income levels and data on ethnic backgrounds/country of origin/migration status; higher data granularity on general health conditions and special needs; include key competences such as language abilities; strengthening compound indexing on multiple deprivations; higher standardisation in the assessment of structural variables across all methodologies and data collection tools;
- Technological variables: a closer look to the convergence of access technologies and related costs; expanding and systematising the measurement of e-Accessibility, e-Usability and e-Security aspects;
- Individual & social variables: an attempt to go beyond digital literacy by including the elements of user needs, motivations/intentions and perceptions under a contextual approach;
- e-Participation/Usage of e-Services & e-Content variables: enhancing the review under a dedicated demand side centred and subjective user perspective analysing the appropriation of ICTs in the 'life worlds' of European citizens;
- Periodicity and nature of data collection: an increase in periodicity of data collections to allow longitudinal analysis of change over time and for different user segmentations and environments; consistent combination of quantitative baseline data with qualitative assessment of user perceptions (e.g. reasons for non-usage, future intentions, perceived impact of ICTs); case studies to be collected under a standardised case study analysis framework for future data collections and under a meta-analysis framework to valorise the richness of qualitative information already collected in order to validly combine and interpret outcomes of different projects and studies.

In view of the above the inclusion of three additional perspectives to the quantitative and qualitative measurement and subsequent analysis of the e-Inclusion domain is recommended:

- A motivational or intentional perspective: addressing the motivations and needs of European citizens according to their social configurations and concrete 'life worlds';

- A societal learning perspective: observing more closely 'social spheres' of learning and adopting new technologies (i.e. transformative learning, collaborative dialogue, sense-making, communities of values;
- A developmental and coping perspective: focusing on 'Critical Life Events' of citizens necessitating coping or change strategies and their available internal and external resources.

The enhanced e-Inclusion Measurement Framework is therefore aimed at uniting the different dimensions of social inclusion at large and e-Inclusion in particular. In parallel the enhanced e-Inclusion Framework aims at complementing the horizontal and cyclic digital divide model (incl. access, usage and quality of use divides) as suggested by Molnár with a vertical perspective of e-Inclusion dimensions to allow simultaneous observations and measurements of dynamic and transitory e-Inclusion realities within each adoption stage and digital divide compartment.

The following suggestions and recommendations can be made for building and enhancing the observational capacity in the area of e-Inclusion in order to complement the i2010 and Riga e-Inclusion benchmarking targets:

- Common and agreed indicator sets under a coherent benchmarking and measurement framework; compound indexing of e-Inclusion indicators;
- Novel forms of data collection, capture and analysis to better access, assess and analyse the highly 'contextualised' behaviours of users;
- Combination of heterogeneous sets of quantitative data from national and international surveys and studies by applying metadata grids;
- Consequent combination of quantitative ('descriptors' or 'pointers' for benchmarking) and qualitative approaches ('explanators' for benchlearning);
- Analysis of case studies under a common framework in order to reach more depth in the variables and the units of analysis;
- Re-unification of objective data sets with subjective users' interpretations of their reality;
- Impact assessment of e-Inclusion measures along the lifespan of citizens based on their coping resources and strategies;
- Creating a reflective and reflexive space to develop indicators, benchmarking systems and bench-learning activities on the basis of different constructions of e-Inclusion associated with different stakeholder positions and perspectives;
- Implementation of prospective research through foresight and open ended forecast studies.

The above should be incorporated into a dynamic and longitudinal workflow for future assessment processes in the domain of e-Inclusion, with the following elements:

- Lead indicators: to monitor core e-Inclusion variables and their development over time overall and for specific e-Inclusion dimensions in relation to standardised user characteristics and individual perceptions;

- Contextual indicators: to relate e-Inclusion to societal embedding, interventions and 'mega' and 'meta' developments;
- Representative surveys: to estimate and reach higher granularity/depth of e-Inclusion analysis in terms of citizen's experiences, needs, motivations, attitudes and other subjective factors;
- Benchmarking: to compare, relate & identify priority areas of further observation, analysis and intervention;
- Case studies: to assess systematically the contextual life-worlds of users in order to identify underlying e-Inclusion processes and possible interventions ('what works with whom under which conditions');
- Benchlearning & Bench-action: to trigger and maintain societal/ institutional change and improvement processes.

The dynamic and longitudinal workflow cycle suggests that Lead Indicators, related Contextual Indicators and Representative Surveys primarily contribute to Benchmarking processes. The Benchmarking process should to identify priority areas for case study collection and analysis. The analysis of contextual life-worlds of citizens through case studies ('what works with whom under which conditions') contributes the planning of future interventions or Bench-actions. The evaluation of the Bench-action process in terms of individual and societal impact may alter subsequently the initial Benchmarking. In the next step a set of Lead Indicators for e-Inclusion, their periodicity of data collections and their data sources are described:

- Technological variables:
  - *e-Access & e-Affordability*: i) Availability of Internet, ii) Internet access devices, iii) Location of Internet access, iv) Connectivity speed, v) Availability of broadband, vi) Broadband coverage & uptake, vii) Digital Divide Index, viii) Internet Costs (incl. Broadband);
  - *e-Accessibility*: i) Availability of websites meeting specific conformance levels;

- Individual/Social Characteristics:
  - *e-Skills/digital literacy, Internal & External Resources & Support*: i) e-Skills/Digital Literacy Index, ii) ICT Lifelong Learning (LLL) Index, iii) General frequency of use of ICTs, iv) Frequency of use per e-Inclusion domain, vi) Domain indices;
  - *Motivation, Needs & Intentions*: i) General frequency of use of ICTs, ii) Frequency of use per e-Inclusion domain, iii) Domain indices;

- e-Participation/ Usage of e-Services & e-Content: i) General frequency of use of ICTs, ii) Frequency of use per e-Inclusion domain, iii) Domain indices.

In order to contribute effectively to the dynamic and longitudinal workflow and to the triad of benchmarking, benchlearning and bench-action, lead indicators need to be measured across existing user segmentations (i.e. age, gender, ethnicity, education, language abilities, income, geography, special needs) and locations (i.e. households, enterprises, public administration, educational settings, health systems) and need to systematically incorporate subjective user data (i.e. experience, intentions, reasons

for non-use, impact of usage) across all data collection instruments (e.g. population data, representative surveys, case studies etc).

The above discussion is summarised in the Table below.

Table 4.1: Dimensions & Indicators of the Enhanced e-Inclusion Measurement Framework

Dimensions	Available Indicators	Missing Indicators/ Characteristics	Existing Sources	Source Extension
Structural Variables	• Age • Gender • Education • Income • Geography • Special Needs	• Ethnicity • Language abilities • General Health	• EUROSTAT • EUROBAROMETER	• EUROSTAT (partly) • EUROBAROMETER • Other sources
Technological Variables ***e-Access***	• Availability of • Internet • Internet access • devices • Location of • Internet access • Connectivity speed • Availability of broadband • Broadband coverage & uptake • Digital Divide Index • Internet Costs • Reasons for non-use	• Knowledge on access possibilities • Years of user experience with ICT • Intentions to use • Impact of usage	• EUROSTAT • External sources e.g. OCOM, IDATE, EITO,ITU, Terena, Telegen etc.	• EUROSTAT (partly) • EUROBAROMETER • Digital Divide Index' (DIDIX) • Systematic & standardised • structural variables & subjective user data • Specific commissioned ongoing surveys • Continuous standardised case study collections
Technological Variables ***e-Accessibility***		• Availability of websites with specific conformance levels • Knowledge on access possibilities • Years of user experience with ICT • Reasons for non-use • Intentions to use • Impact of usage		• 'Web Accessibility Initiative' (WAI) of the 'World Wide Web Consortium' (W3C), EdeAN, 'SeniorWatch' and MeAc etc. • Specific commissioned ongoing surveys • Continuous standardised case study collections

Dimensions	Available Indicators	Missing Indicators/ Characteristics	Existing Sources	Source Extension
Technological Variables ***e-Usability***		• Perceived usability of online content & services • Years of user experience with ICT Frequency of use of ICT skills • Intentions to use • Reasons for non-use • Impact of usage		○ eUSER, DELOS and HELIOS etc.EUROSTAT (partly) ○ EUROBAROMETER ○ Specific commissioned surveys ○ Continuous standardised case study collections ○ Systematic & standardised structural variables & subjective user data ○ Standardised expansion to other dimensions
Technological Variables ***e-Security***		• Perceived Internet security • Years of user experience with ICT • Frequency of use of ICT skills • General user awareness • Data handling • Usage of protection software		• EUROSTAT (partly) • EUROBAROMETER • Specific commissioned surveys • Continuous standardised case study collections • Systematic & standardised structural variables & subjective user data
Individual/Social Characteristics ***e-Skills/Digital Literacy*** ***Internal & External Resources & Support***	• e-Skills/Digital Literacy Index • Years of user experience with ICT • Frequency of use of ICT skills • Intentions to use • Reasons for non-use • Impact of usage	• ICT Lifelong Learning (LLL) • Years of user experience with LLL • Frequency of use of LLL & its outcomes • Intentions to use • Reasons for non-use • ○ Impact of usage growth/productivity)	• 'Digital Literacy Index' (COQS), 'e-Inclusion, Index' (eIIx) • ○ e-Skills Module EUROSTAT	• Compound data analysis of existing data • Specific commissioned surveys • Continuous standardised case study collections • Systematic & standardised. structural variables & subjective user data
Individual/Social Characteristics ***Motivation, Needs & Intentions*** ***e-Trust/e-Confidence***	• General frequency of use of ICTs • Frequency of use per domain • Domain indices	• Knowledge on available offers • Years of user • experience with ICT	• EUROSTAT • EUROBAROMETER • Dimensional observatories e.g. Capgemini, e-business	• EUROSTAT (partly) • EUROBAROMETER • Continuous standardised case study collections

Dimensions	Available Indicators	Missing Indicators/ Characteristics	Existing Sources	Source Extension
eParticipation/Usage of eServices & eContent ***e-Education/e-Training*** ***e-Working/ e-Employment*** ***e-Health*** ***e-Government*** ***e-Commerce/ e-Business***		• Intentions to use • Reasons for non-use • Usability of content & services • Impact of usage	w@tch, eUSER, L-CHANGE, HELIOS etc.	• Systematic & standardised. structural variables & subjective user data
Individual/Social Characteristics ***e-Skills/Digital Literacy*** ***Internal & External Resources & Support***	• e-Skills/Digital Literacy Index • Years of user experience with ICT • Frequency of use of ICT skills • Intentions to use • Reasons for non-use • Impact of usage	• ICT Lifelong Learning (LLL) • Years of user experience with LLL • Frequency of use of LLL & its outcomes • Intentions to use • Reasons for non-use • Impact of usage growth/productivity)	• 'Digital Literacy Index' (COQS), 'e-Inclusion Index' (eIIx) • e-Skills Module of EUROSTAT	• Compound data analysis of existing data • Specific commissioned surveys • Continuous standardised case study collections • Systematic & standardised.structural variables & subjective user data
Individual/Social Characteristics ***Motivation, Needs & Intentions*** ***e-Trust/e-Confidence***	• General frequency of use of ICTs • Frequency of use per domainDomain indices	• Knowledge on available offers • Years of user experience with ICTIntentions to use • Reasons for non-use • Usability of content & services • Impact of usage	• EUROSTAT • EUROBAROMETER • Dimensional observatories e.g. Capgemini, e-business w@tch, eUSER, L-CHANGE, HELIOS etc.	• EUROSTAT (partly) • EUROBAROMETER • Continuous standardised case study collections • Systematic & standardised structural variables subjective user data
eParticipation/Usage of eServices & eContent ***e-Education/e-Training*** ***e-Working/ e-Employment*** ***e-Health*** ***e-Government*** ***e-Commerce/ e-Business***				

5. MOVING FORWARD TO 2008 AND I2010 – THE 'E-INCLUSION REPOSITORY'

5.1. What this Section is about

This Section is about creating the conditions for supporting e-inclusion policies and initiatives in the run up to achieving e-inclusion targets (proposed via the Riga Declaration, the 2008 initiative and i2010) by developing a sustainable 'evolving knowledge base'. The starting point for this is the prototype website and database established through the work of this study. It contains material on the policies and initiatives identified and analysed in the study, as well as other material – policy documents; other studies; programmes – of relevance to e-inclusion.

The site and database can be seen as both the 'baseline', and the catalyst, for further collection, analysis and dissemination of content that can support policy and practice in the e-inclusion domain. As well as providing a 'repository' for storage of data and material, the evolving knowledge base is intended to promote collaboration between stakeholders – through adding additional data and content; through commenting on and reviewing the contents of the database and through providing opportunities for debate and discourse. Finally, the platform will contribute to an evolving evidence base of 'what works'.

It is recognized that the knowledge base is unlikely to evolve unless a supportive collaborative environment is created that will motivate stakeholders to contribute. In the light of a considerable body of evidence on how difficult it is to engage and sustain the interest and involvement of active participants in a collaborative learning environment, the knowledge base will need to design a structure, process and operational strategy that will provide the incentives and rewards to attract and retain users. The second key element of the platform therefore focuses on the institutional and cultural space that needs to be built.

In turn, the platform will need to respond to the accelerating pace and evolution of ICTs themselves. A third element of the strategy for building and sustaining the knowledge base focuses therefore on 'prospective' work – exploring likely developments in technology, and their implications for e-inclusion; harnessing new technologies to support data capture, analysis and assessment of trends.

These issues are covered in the following three sub-sections:

- First, we provide a 'User Manual' that covers the specification and functionalities of the current platform, and provides guidelines on how to use the system.

- The second sub-section focuses on developing a 'collaborative learning environment, and provides guidelines on engaging users and on managing the collaboration process.

- Finally, we discuss current and likely developments in technology; their implications for e-inclusion, and how they can support e-inclusion agendas.

5.1.1. Overview

The platform is designed to support the development and implementation of an 'evolving knowledge base' housed on a dedicated website and supported by a content management system (incorporating data management tools, including searching and content extraction). The main innovative, and interactive, aspect of the Repository is that it enables end users to participate in the design, implementation and evaluation of the system and related services. On-line editing and feedback systems enable data on the utilisation of the system can be analysed and incorporated within the database, thus providing a growing body of content and know-how that is driven by the experiences of users. In principle, the system potentially allows for the generation of an infinite amount of user-produced metadata and content.

The database is built on an 'open source' platform (PLONE) allowing interoperability with standard software systems and ease of transferability. The main advantages of, and the reasons for choosing this kind of platform, for the e-inclusion Repository, are as follows:

- 'Conventional' web-sites, like the 'e-User' site, are typically built using 'ASP', on an SQL server database. This limits the degree of interoperability with other systems that is possible, unlike open source systems

- Sites like e-User are proprietary systems that can typically only be developed by a restricted group of 'privileged' users, with specialist skills, for example in programming. Open source systems significantly expand the user base that can contribute

- Functionality – the open source systems and tools can deliver functionalities equal to and in some cases beyond that provided by proprietary systems

- Sustainability and transferability – the future evolution of the system will mostly need to be outsourced unless open source systems and tools are used. This will be less cost-effective

The database is constructed to contain a range of content, including:

- Existing relevant documents

- Links to other websites

- 'Primary' content (e.g. e-inclusion 'factsheets')

- Visual assets (e.g. video clips illustrating good practices).

All the content in the database can be 'tagged' to enable search and extraction to be done on a range of search criteria and allow easy location and upload of content. The

system develops and supports an ‘evolving’ knowledge base because, firstly, it grows as additional content, derived from the experiences of users, and from evaluation data provided by sources such as studies and benchmarking exercises, is added to it and, secondly, the existing content can be reviewed and edited by stakeholders on a regular basis.

This ‘reflexive’ element of the system can be supported by a number of additional functionalities, including:

- On-line ‘Fora’ to enable discussions, training events, seminars and workshops to be delivered
- ‘Wikis’ enabling articles and discussions on e-inclusion to be developed
- Document download and upload, to provide access to different groups of stakeholders.
- Utilisation monitoring, to enable ‘log analysis’ to be carried out for evaluation purposes
- Multimedia tools, for example an ‘Ask an expert’ facility to address users’ questions and problems

The website supports a range of different stakeholder groups (or ‘communities’), in line with e-inclusion requirements for varying levels of access. Ultimately, the platform would need to incorporate ‘design for all’ functionalities and interfaces, for example supporting users with vision impairment and motor disabilities.

These could include:

- Commission Staff
- National Representatives
- Representatives of e-inclusion target groups (disabled; older people; unemployed)
- ‘Third sector’ representatives
- Commercial organisations

5.1.2. System specification

The platform is based on Zope - an open source web application server primarily written in the Python programming language. It features a transactional object database which can store not only content and custom data, but also dynamic HTML templates, scripts, a search engine, and relational database (RDBMS) connections and code. It features a strong through-the-web development model, allowing users to update the web site from anywhere in the world. To allow for this, Zope also features a tightly integrated security model. Built around the concept of "safe delegation of

control", Zope's security architecture also allows system managers to turn control over parts of a web site to other organizations or individuals.

The transactional model applies not only to Zope's object database, but to many relational database connectors as well, allowing for strong data integrity. This transaction model happens automatically, ensuring that all data is successfully stored in connected data sources by the time a response is returned to a web browser or other client. There are numerous products (plug-in Zope components) available for download to extend the basic set of site building tools.

These products include new content objects; relational database and other external data source connectors; advanced content management tools; and full applications for e-commerce, content and document management, or bug and issue tracking. Zope includes its own HTTP, FTP, WebDAV, and XML-RPC serving capabilities, but can also be used with the Apache or other web servers.

The Zope Components are:

- ZServer - ZServer provides flexible internet connectivity supporting many network protocols including HTTP, FTP, XML-RPC, FastCGI, and PCGI. ZServer can operate in tandem with existing web servers.

- Zope Core - Zope includes a web ORB, search engine, security layer, membership, and dynamic information sharing.

- Object Database (ZODB) - Zope's object database, ZODB, supports transactions, undo, private versions, and scales to gigabytes of data. There is also an optional enterprise option available which provides scalability and failover.

- RDBMS integration - Zope offers connection to industry leading databases including: Oracle, Sybase, MySQL, and PostgreSQL, as well as ODBC drivers.

- Zope Products - Zope Products extend the Zope core by adding new object types and custom facilities written in Python.

- ZClasses - ZClasses extend the Zope core with new objects types which are created through the web. ZClasses do not require any programming and can be easily distributed and installed.

The database utilizes Plone - an object-oriented database, built using Zope Plone is an intranet and extranet server, a document publishing system, a portal server and a groupware tool for collaboration between separately located entities. Plone follows standards for usability and accessibility. Plone pages are compliant with US Section 508, and the W3C's AA rating for accessibility, in addition to using web standards like XHTML and CSS. Plone is Open Source and is licensed under the GNU General Public License, the same license Linux uses. This gives the system managers the right to use Plone without a license fee, and to improve upon the product. It is

extensible, and there are many add-on products for Plone that add new features and content types. In addition, Plone can be scripted using web standard solutions and Open Source languages.

5.1.3. Functionalities

The Plone environment enables a wide range of functions to be performed. The main functions are as follows:

- Document download – enables content housed in the Repository to be accessed by users, saved to their home system environment or printed
- Document upload – enables users to add content to the Repository
- Searching – enables users to locate content on the basis of a number of search criteria. The search functions reflect a 'tagging' system whereby each content item has embedded tags or labels that specify things like the type of content (text; video etc); the type of e-inclusion policy or initiative represented, and so on. Searching can be done by :
- Free text search – locates documents and other content by keyword
- Advanced search – locates documents on basis of specific search parameters
- Category – users can access documents and other content by browsing through the Repository in relation to specific content categories. The items are classified according to a pre-determined ontological structure (see Section 5.3.4 below)
- Editing functions – according to their editing status and 'privilege' level, users can perform a range of content management and editing actions, including: creating tags for content; editing existing content; creating summaries of documents and other content
- Database management – there are a wide range of functions that help system managers control how the Repository operates. These include: adding new categories; adding new users; changing user access levels
- Discussion Forum – content development and management is supported by functions that enable users to create on-line discussion groups; organize seminars and workshops; evaluate existing content

5.1.4. Ontology and category structure

As indicated above, the content in the Repository is organized in a category structure. This is based on the results of the study, and also reflects the 'user needs' determined by DG-INFSO. The 'meta-structure', i.e. the 'first level' category structure is comprised of the following categories:

- Studies on e-inclusion at the trans-national level, including the Tavistock, eInclusion@EU, Empirica's study for DG EMP
- Initiatives/ programmes to promote e-Inclusion in the Member States
- Stakeholders and their initiatives, including commercial organizations; the voluntary sector; international organizations
- i2010 e-Inclusion sub-group section – containing news; announcements; reports; country briefs/factsheets
- What's new - EU activities/ programmes relevant to e-Inclusion
- EU financing and funding opportunities (for example FP7, CIP, structural/ social funds)
- E-inclusion Spotlight – examples of good practices, and not so good practices
- E-inclusion tools – checking websites and other contents for their inclusiveness-usability
- E-inclusion wiki – articles and discussions on e-inclusion

Explanatory Note

The database in its current form is intended to be the starting point for an 'evolving knowledge base'. The initial 'ontology' (category structure) is based on a preliminary assessment of user needs and is a 'first level' basic structure. The idea is that subsequent iterations of database development will develop the model and category structure so that each of the existing categories will have its own sub-levels of categories. This requires the Commission to take ownership of the database; to develop a development plan for it – including management structures; content development and review protocols and so on. The Guidelines for doing this are set out below. The evolving database will also need to incorporate strategies to attract users and contributors. These are discussed in Section 5.3.5 below.

5.1.5. How to use the system

The e-inclusion website url is: www.e-inclusion.co.uk

The e-inclusion library facility can be accessed from the home page by clicking on the icon in the right hand navigation bar. The following illustrations provide a brief overview of how to carry out some basic tasks. This presentation is also available on the website.

e-Inclusion Library Facility

USER GUIDE to uploading content to the e-Inclusion Library Facility (powered by Plone CMS)

European Commission DG Information Society and Media

e-Inclusion Library Facility

Access the e-Inclusion Library facility by navigating from the main site

European Commission DG Information Society and Media

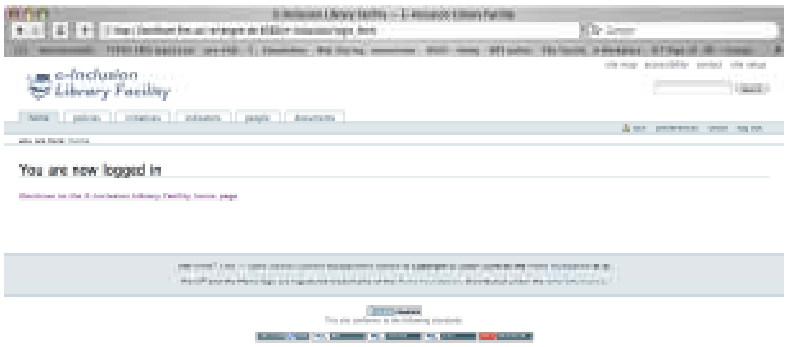
e-Inclusion Library Facility

Login using your username and password

European Commission DG Information Society and Media

e-Inclusion Library Facility

You will be invited to proceed to the library home page or you can proceed directly to the section you want to work on



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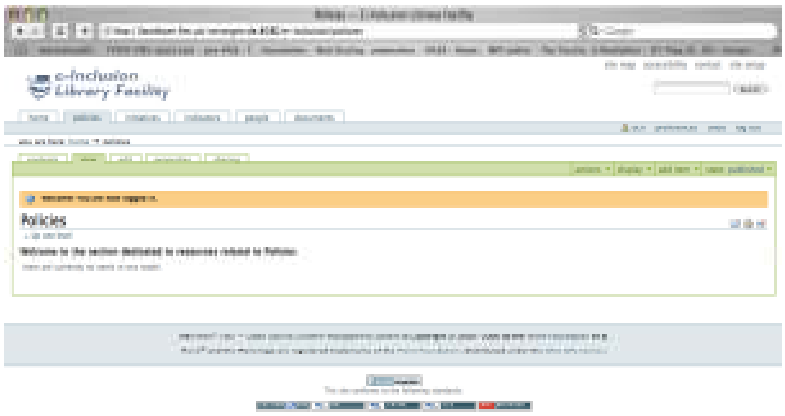
e-Inclusion Library Facility

Browse to the section or folder where you would like to upload your file (or create a new folder or sub-category)



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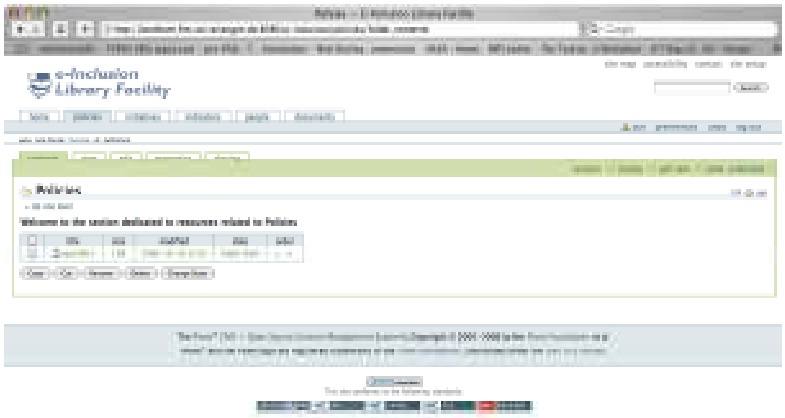
Once you get to the desired directory, click the ***contents*** tab of the central frame menu



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Click on the “add item” drop-down menu in the central frame, then choose the type of item you would like to add

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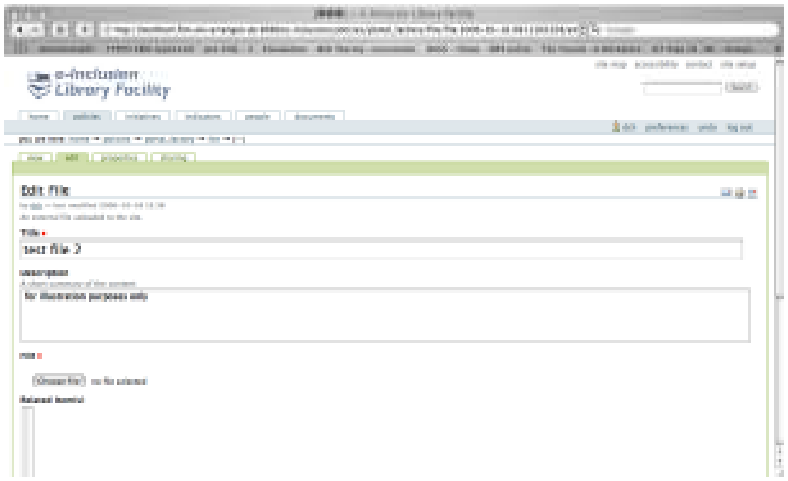
Give the item you are uploading a title using the ***Title*** field which is mandatory (red square), a description (optional) and then browse your computer to upload the desired file (see the next slide)



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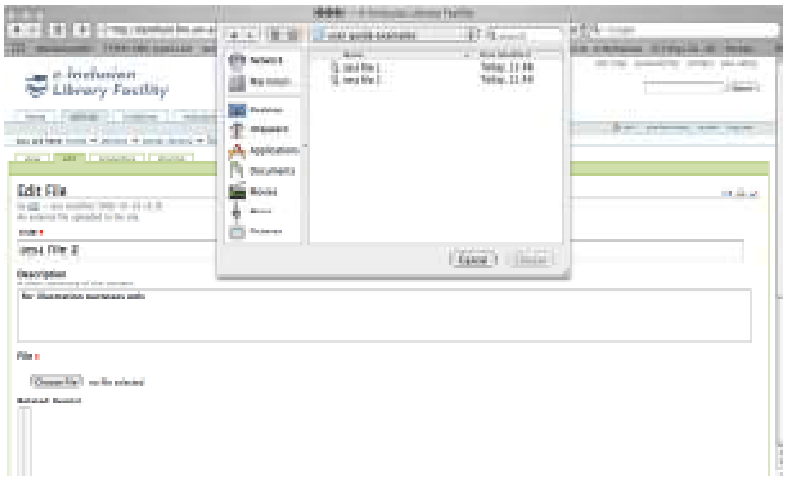
An alternative method to browsing for the file is to enter the name of the file you would like to upload (including the full path) in the ***File*** field



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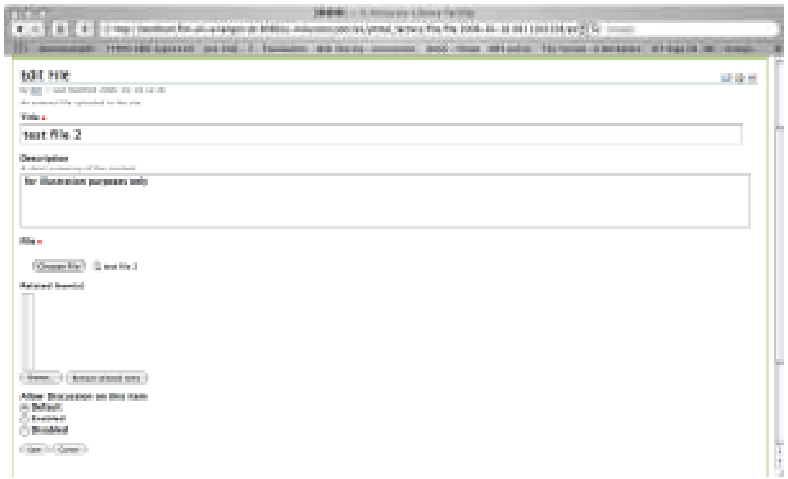
To complete the file upload, click on the ***save*** button at the bottom of the ***Edit File*** page



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The uploaded file is then listed in the viewing window, where it can be downloaded (for verification purposes) by selecting the ***Click here to get the file*** link.

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Another way to confirm that the file has been correctly uploaded is to click on the ***contents*** tab in the folder/section concerned (in this case ***Policies***) and check that the file appears in the list

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For further reference, see the user guide describing how to create a new webpage and how to edit existing webpages with the integrated Plone HTML editor Kupu. Additional User Guides on Editing and Content Management can be downloaded from:.

http://plone.org/documentation

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5.2. Engaging users: how to design and manage the 'collaborative knowledge system'

5.2.1. Building a collaboration and learning environment

It is one thing to design and build a collaboration platform. It is an entirely different matter building an active and engaged community of users who will ensure its sustainability, and contribute to a growing knowledge base. Studies, and our own experience, consistently show that successful collaborative knowledge and learning environments need to:

- Raise initial awareness and generate interest
- Overcome resistance and motivational barriers
- Recruit and retain collaborators
- Create and sustain an effective organizational structure

Useful lessons can be learned from how the current generation of high profile highly-utilised 'social networking' sites attract and retain their audience base. Table 1 shows an analysis of some of the biggest and most successful sites currently operating on the web.

Table 5:1 How Social Networking Works

Site	Service	Key Motivators
Wikipedia	Encyclopedia	No cost; Argument; 'Anorakism'
eBay	Auctions and bartering	Bargains; spread of interests
Bebo	Profiling – diaries; photos; music; surveys	No cost; Youth culture; self-exposure
Blogger	Blog building	No cost; Technical know-how
Craiglist	Classified adverts	No cost; bargains
Digg	Stories	No cost; voting; creative exposure
YouTube	Video repository	No cost; voting; self-exposure
Del.icio.us	Bookmarking repository	No cost; herding; time-saving
Last.fm	Music downloads	No cost; decision support
Flickr	Photo repository	No cost; self exposure

As their name suggests, social networking sites seek to bring together particular 'communities' in on-line 'interest spaces', across a number of different domains – from sales of second-hand goods, through downloading music and video. The level of participation enjoyed by these sites is testimony to their success in attracting users. Flickr hosts 250 million items; Craiglist turns over 15 million clients per month; Bebo has 23 million users. As Table 1 shows, these sites appear to adopt particular 'hooks' to attract interest and to motivate users to use the network. These hooks reflect two key attributes that are common across all sites: sociability and economic gain.

- Sociability – the sites reflect a classic human need for social interaction or, in Habermas' terms 'communicative practices'.

However, the kinds of practices that can commonly be identified in social networking platforms are mediated through the particular properties of ICTs. In essence, social interaction takes place in a highly individuated way. The current generation of 'social networks' has been designated the 'Me Media', reflecting a particularly post-modern need for self-exposure. Social networking sites all kinds of engagement in social spaces that are free from the kinds of constraints that are commonly in place in traditional group and community spaces. There are few leaders and hierarchies to set cultural norms and taboos. The kinds of social dynamics that in conventional spaces act to deter and constrain self-exposure – for example shame and ridicule – are much less powerful in virtual social networks. Although 'exposure' can risk sanctions, for example when a cheesy photo is given the thumbs down by the on-line community, the perpetrator is protected by virtual anonymity. Hence the kinds of motivational 'hooks' that can be associated with the 'sociability' of these kinds of collaborative systems include narcissism and exhibitionism. These in turn can be linked to prevailing discourses in popular culture – the cult of celebrity; the dominance of reality TV.

- Economic gain – virtually all of the main social network sites are free of charge, or provide opportunities to gain financial advantage.

Getting something for nothing is a powerful inducement for engagement – although little is known about the 'opportunity costs' associated with participation. Other manifestations of the economic driver include 'bargains' – e-bay being perhaps the best-known and most successful example.

Other important hooks include the following:

- Self-assertiveness. Social networking allows for two important ways for individuals to assert their self-determination - 'posting' and 'voting'. 'Posting' allows individuals to leave their mark or, more specifically, to deposit signs and markers in a virtual territorial space of their presence, and, perhaps more importantly, their adherence to a particular 'reference group' As with 'sociability' itself, social networking allows individuals to adopt multiple personas and multiple reference groups beyond the more restrictive territories available to them in the physical world. 'Voting' allows participants to make group judgements on issues of common interest.

- Creative expression – social networking provides opportunities – which would be difficult in conventional social spaces – for individuals to showcase their talent. An example is 'Digg' which is a essentially a story-exchange community. Collaborators can critically review existing material; work together to create narratives and features; vote on the best stories.

- Knowledge and skills acquisition - in turn users can acquire new knowledge through participation and sharing – for example how to build their own weblogs.

- Positioning and affirmation – knowing where you stand and receiving endorsement from peers are key elements in establishing social roles and positions in groups. For example sites like Last.fm provide barometers and benchmarks for music genres. Bebo allows young people to surf the current zeitgeist and, in particular, to check out where they are expected to stand in relation to prevailing youth culture norms in fashion, music, friendships

- Followership – social networking sites have been described, somewhat pejoratively, as pandering to the 'herd instinct' (see Section 5.1). To some extent, this is like criticizing humans for being human, since herding is unassailability an important dynamic in the process through which social structures and social behaviours are stabilized. In this context, many sites support people in the increasingly difficult task of making choices against a background of continually expanding social and consumer alternatives, assisted through decision support devices like on-line surveys; voting and rating scales.

Further clues on how to raise awareness, attract users, overcome resistance and retain and sustain engagement can be found from studies on collaborative knowledge systems. One such study carried out an 'audit' of these types of systems, analyzing their functionalities, and looked in detail at case studies in a particular domain – e-health[18].

A key conclusion of the study was as follows:

"The effectiveness of collaborative knowledge systems is dependent more on social, cultural, institutional and economic factors than on the 'technical' properties of the platforms and tools themselves, or on detailed design features, such as graphical user interfaces".

The study findings suggested that the main barriers to participation in collaborative knowledge systems (both as a 'user' and as a 'collaborator') were:

- Cultural constraints – the low representation of 'excluded groups', such as black and ethnic minority groups; young people, sometimes gives the impression for certain types of potential user and collaborator that these systems and services are 'owned' by someone else

[18] Cullen, J, C Sandamas, S Hardadottir, S Russell, P Solvik (2004) 'The role and effectiveness of collaborative knowledge systems in healthcare and health support', Tavistock Institute, London

- Interest group isolation – systems and services are typically 'colonised' by particular interest groups (professionals; specific disability groups). This generates a 'cycle of exclusivity and exclusion' and the perception of an absence of 'sharing culture' for public and community groups
- Technical complexity – the technical features of the tools and services are perceived as unfriendly and difficult to use
- Resource pressure – there are real costs involved in collaboration. These costs are more 'direct' within the context of 'professional' day to day life, but there are costs associated with collaborating for citizens and patients
- Organisational issues – these issues vary considerably, and include: difficulties in accessing the services; inadequate technical support; lack of human 'mediation' or 'moderation' of services.

Drawing together our assessment of 'social networking' sites, together with the results of research into collaborative knowledge systems, presented below are a set of design principles and guidelines on engaging and retaining users, and promoting the ongoing development and sustainability of the e-inclusion Repository.

Design principles and guidelines

Design principle

Collaborative knowledge systems need to simulate and interface with communicative practices that reflect real 'life-world' experiences of participants.

Our 'audit of collaborative knowledge systems and services' showed that user engagement strategies work best when supported by 'holding techniques' that precipitate and retain interest. These techniques are essentially 'hooks' to attract users, but act as devices to promote user engagement and interaction. They include elements like games, quizzes, surveys and voting. The evidence shows that these techniques work best when they can be applied in the users' day to day life. For example, assembling a 'living library' of 'true stories' about e-inclusion.

Design principle

Effective collaboration is contingent on getting collaborators to 'step into each others shoes' and exchange life experiences and life histories ('life swapping'), rather than simple dissemination of information.

The most effective forms of collaborative knowledge production occur when new knowledge emerges as a result of synthesis between different (and frequently opposing) constructions of reality. These constructions occupy different mediations: they can be mediated through different life experiences (and different life worlds); different professional constituencies; different 'communities of practice', and different ontological and theoretical positions. An example would be the use of an e-inclusion 'wikipedia' to promote critical reflection on the different theoretical and practice perspectives in the e-inclusion domain.

Design principle

Collaborative knowledge systems have to be integrated within an underlying pedagogic model. This pedagogic model needs to be consistent with the configuration of user profiles, user needs, scenario of use and organisational arrangements of the system and service being delivered.

For example, the 'HERO' e-inclusion project successfully applied a 'blended e-learning' approach, based on constructivist and 'scaffolded' learning models. This was consistent with the need to create a flexible learning environment for young people whose experiences of health management, personal development and education had been negative. Conversely, other case studies showed that the most effective pedagogic approaches associated with promoting collaboration between professionals were based on more formalised models (action learning; instructionism) intended to foster 'communities of practice'.

Design principle

The adoption of a specific pedagogic approach implies the active involvement of 'users' both in the design of the system (across the full range of functionalities – content; interfacing; delivery; organisational arrangements) and in the co-production of content.

As social networking sites demonstrate, the 'sociability' aspect of collaborative systems is key to their success. The e-inclusion Repository would therefore need to promote 'buy in' and 'ownership' of the site across a range of stakeholders, including:

- European Commission agencies across different Directorates
- National Representatives
- Social partners
- User groups (for example disability rights groups; older people)
- Commercial partners (for example technology providers)

Promoting collaboration between these different constituencies entails embedding a range of relevant motivational 'hooks' in the system design, for example:

- Creating a clear identity for the Repository, which can act as a 'reference groups' for e-inclusion communities
- Knowledge and skills development – regular updates on state of the art
- Positioning – benchmarking tools for users to assess where they stand in relation to policy and practice developments

Design principle

Collaborative knowledge systems need to be designed to reflect: the heterogeneity of users; the multiplicity of their identities and the evolutionary nature of their needs – including 'transformed needs' that emerge through engagement with the technologies themselves. Design flexibility needs to be focused on two key areas: the ontological models deployed to categorise and structure content and the user interfaces that shape the 'look and feel' of the technologies.

Users make up a diverse and heterogenous universe, ranging from individuals whose identity and group membership is continually being re-constituted, through members of culturally defined "life worlds" through various specialised "communities of practice" to formally trained expert communities. Moreover, their identity, lifestyles and needs are continually changing. In other words, target groups are 'moving targets'. The categorisation of e-inclusion content needs to reflect the multi-dimensionality of identity, lifestyle and life cycle. For example, our own study on e-inclusion showed that Member States are positioned in relation to a particular 'life cycle' (reflecting transitions from access, through usability through quality of use) – although these phases overlap. The evolving knowledge base needs to reflect these kinds of evolving processes.

5.2.2. Implementing the design principles: good practice examples

In Sections 3.2 we outlined some of the ways in which strategies and techniques drawn for the Corporate Social Responsibility (CSR) domain could be deployed to promote the engagement of commercial actors in developing and promoting e-inclusion initiatives. In many ways, the lessons that apply in the CSR domain for corporate entities apply equally in the more generic sense of engaging users in collaborative learning environments – since the motivational 'hooks' are based on understandings of general human behaviour (albeit located within an organisational space). In addition, as Section 5.1 above argues, analysis of how social networking and collaborative knowledge systems operate suggests a number of other key motivational hooks that need to be deployed. Against this background, we would propose the following checklist of 'design ingredients' that need to be adopted in developing the e-inclusion collaborative system:

- Cultural contextualisation
- Awareness-raising; rewards and incentives
- Group identity; voting and rating
- Support

i) Cultural contextualisation

A substantial body of research evidence and practice examples, for example drawn from the 'Design for All' movement, clearly supports the argument that user recruitment, engagement and retention is strongly associated with the extent to which system design adopts the relevant 'voice' that will speak to its target audiences. This 'voice' is mediated through design features (such as graphical user interfaces); ontology (the category model used to allow users to access information) and content (which obviously needs to be relevant to user needs). A key issue here is whether the system incorporates features that allow for language translation management. This is still a major problem in website design. Although most database systems (including the PLONE system used to develop the current e-inclusion platform) support automatic language translation for user interfacing (for example recognising the language used by assessing the type of browser in operation), translating content itself is a different matter. The translation of content has been addressed by a number of translation systems, like Babelfish and Systran. These systems are by no means perfect, and most work in this field adopts a hybrid approach of machine translation combined with subsequent human translation to correct machine translation errors. There is a small, but growing, area of research and development in this area that is specifically part of efforts in the e-inclusion domain. For example, the World Forum – which sponsors an annual e-inclusion award – recently gave this award to a language translation system that was specifically intended to address these kinds of e-inclusion issues, as shown in the example Box below.

Example: WSA e-inclusion award for Sakhr translation software

The World Summit Award (WSA) organized a big Award Gala for the distribution of its awards for 2005-2007. The Gala, held in the Tunisian capital to coincide with WSIS events convened under the umbrella of the United Nations, was attended by Kofi Annan, Secretary-General of the United Nations, Zien El-Abdeen Bin Ali, Tunisian President, as well as many other presidents and world leaders.
Thabo Mbeki, President of South Africa, presented the E-Inclusion award to Mohammed Abdul Rahman Al-Sharekh, Founder & Chairman of Sakhr Software Co. This is the first award of its kind worldwide to be presented in the area of translation engines.

ii) Awareness-raising; rewards and incentives

As discussed in Section 2.3.2 above, the evidence from the CSR domain suggests that awareness-raising coupled with incentives and rewards, via awards systems, can be used to cultivate 'retention' amongst site users. A particularly effective strategy is to combine an awareness-raising approach with a strategy that encourages participants to actively incorporate users to adopt e-inclusion principles in their practices. When reinforced with a reward system this has a 'double loop learning' effect because the awareness-raising effort is embedded in 'active learning'. The example shown in the Box below highlights how a professional association is encouraging the adoption of e-inclusion professional practices through its own reward system.

Example: IPROA – Internet Professional Association: e-Inclusion Campaign 20006 Award

IPROA is implementing a campaign to encourage professionals to incorporate e-inclusion practices into developing websites. Part of this initiative features an Award system. In 2006 Web Care Awards were presented to over 200 websites from 120 private and public organizations for their effort in creating accessible website for persons with different needs. Awards were presented to 59 web sites for achieving the Gold Award and 148 for the Silver Award of "No Barrier Web Sites". The current initiative includes two new awards - the Excellence Award and the Referral Award. The Excellence Award requires a website to pass the two W3C's validators, which is a very high international standard; while the Referral Award rewards the organization that refers the most organizations to join this event.

iii) Group identity; voting and rating

As discussed above, analysis of the motivations for users of social networking sites suggest that a key attractor is 'groupishness' – the capacity for specific interest groups to identify with and engage with people who fit their own interests and profiles. An accompanying factor in the massive expansion of this type of sites is the incorporation of functionalities to enable users to make their presence felt in relation to the group by contributing and validating content. An example shown below is the UK Usability Exchange. This replicates to some extent the principles adopted in the 'Bobby' system (which provides a tool to evaluate websites for their 'disability-friendliness'). The added value of the Usability Exchange is that it actively engages disabled people as co-collaborators in the production of e-inclusive content.

Example: Usability Exchange

Disabled people are being drafted in to help ensure websites are usable by all.

The pool of disabled surfers has been brought together by the Usability Exchange, which aims to give instant feedback on website navigation. Website managers can use remote viewing software to watch how easily the surfers are able to move through a site as it is tested. The service launches as new guidance is issued calling on websites to involve disabled people in the user-testing. Through the Usability Exchange, website operators will be able to create a variety of user tests and submit them to a range of users with different disabilities. Once tests have been submitted, website managers get feedback about how people fared on the tests and how easy the site was to use.

They can also use remote-viewing software to watch how users get on as they navigate around a site. Already the Royal Mail, Orange, Fortune-Cookie, Adult Dyslexia Organisation, Scottish Parliament, Wandsworth Council and Leicestershire Council have submitted their sites to the exchange for testing.

iv) Support.

User retention is also reinforced by improving the usability and active engagement potential of systems and platforms through support services. These at the basic level need to incorporate standard functionalities such as on-line help facilities. Variations on this type of support functions include 'ask-an-expert'; Chat Rooms and toolkits. The example below features 'SustainIt', a UK programme supporting the implementation of e-inclusion and sustainable practices. Current programme partners include the EU Commission, East of England Development Agency, East Midlands Regional Assembly, BT, Brother, Vodafone, Sony, Hewlett Packard. It sponsors the annual ***eWell-Being Awards*** - the UK's only national awards to showcase the social, economic and environmental benefits of Information and Communication Technologies (ICT). The aim is to identify and promote the most innovative uses of ICT by local authorities, businesses, third sector organisations and academic institutions. One of the award categories is for **Digital Inclusion** - Supported by BT, this category seeks voluntary sector projects that use ICT to enhance access to services and opportunities for individuals and groups. Part of the programme is to develop Sustainability toolkits that enable users to apply e-inclusion principles in practice.

Example: Online Sustainability Toolkits

SustainIT, in conjunction with UK CEED, is currently developing interactive online sustainability assessment toolkits. The aim of the toolkits is to assist policy makers and project planners to highlight the economic, environmental and social impacts of new policies and development proposals, by assessing them against certain sustainability criteria. As well as providing an assessment of the current situation, the toolkits also provide guidance materials and information on how the proposals can be improved.

5.2.3. Applying design principles and good practices to the e-inclusion Repository

Drawing together the principles and good practices outlined above, the Table Below presents a set of proposals to help DG INFSO to target, engage and retain a set of user communities to enable the e-inclusion Repository to evolve.

Table 5:1 User Groups and Drivers

User Group	Hooks/drivers
Commission Staff	Training programme – including e-inclusion accreditation Knowledge exchange Forum – sharing good practices and news across DG's
National Representatives	National Factsheets – synopsis of state of play of e-inclusion in Member States Good Practice Library Indicators service
Special needs groups (disabled; young people etc.)	Language translator Rogue's Gallery – nominations (and votes) for 'bad practice' examples Showcase – nominations (and votes) for 'best practice' examples of e-inclusion systems and services Usability Forum – engaging users in active systems design
Commercial companies	Awards – e-inclusion 'company of the month' e-inclusion Index : League Table of top e-inclusion companies Showcase of examples of implementation of e-inclusion practices Funding opportunities update
System developers	e-inclusion toolkit – on-line service to support system developers in assessing the inclusiveness of systems

User Group	Hooks/drivers
Experts and researchers	On-line workshops and seminars e-inclusion on-line Journal e-inclusion Wiki
The Public	e-inclusion charter – awareness-raising; sign – up to supporting Riga Declaration Showcase – examples of good practices Rogue's Gallery - nominations (and votes) for 'bad practice' examples

5.2.4. Managing the Repository

As discussed above, the e-inclusion Repository is an evolving 'corpus' of knowledge that includes the contributions of users. The main innovative aspect of the Repository is that it enables end users sites to participate in the design, implementation and evaluation of the toolkit and related services. On-line editing and feedback systems enable data on the utilisation of the toolkit can be analysed and incorporated within the database, thus providing a growing body of content and know-how that is driven by the experiences of users. User contributions could encompass:

- 'Third Party' content derived from 'official' documents (for example policy documents)
- 'Grey literature' – informal and unofficial content (for example a note from a National Representative on benchmarking)
- 'True stories' (for example a video interview with a disabled user)
- Evaluation, review and critical comment on the existing content
- Suggestions for content not included in the repository
- Links to relevant websites

In principle, the system potentially allows for the generation of an infinite amount of user-produced metadata and content. In order to manage this material effectively and appropriately, the following procedures and Guidelines need to be developed and implemented.

i) Authorisation

Although the system is predicated on 'openness' and 'transparency' for users of the system (i.e. in principle all users are encouraged to comment on, add to and evaluate resources), in practice the e-inclusion Repository will need to be developed to allow for a balance between such 'democratisation' and the practicalities of handling and managing data. This requires rules for authorising who can generate and review content. The system allows for several levels of authorisation. Table 2 shows one possible authorisation scheme.

Table 5:2: Illustrative Authorisation Scheme

Level	Authorisation group	Type of authorisation
1	General	Read only. No editing authorisation
2	Repository stakeholders	Provide suggestions for new content
3	Local editors e.g. National Representatives	Review suggestions and can make new content available to locale users. Can provide suggestions for Repository editors.
4	Repository editors e.g Commission Staff	Can make new content available to any system user.

As the Table shows, the four levels constitute a 'hierarchy' of authorisation. At the lowest level, aimed at general users of the e-inclusion Repository, who may not be registered on the site, users can only browse the databases. At the other extreme, Repository Editors have the capacity to review, add, edit and make available new content to any level of user.

Within this framework, stakeholders, in conjunction with a Steering Committee, need to make decisions on who should be authorised within each level. These decisions will need to be operationalised within an administrative framework which specifies registration, logging on and access rules.

ii) Selection criteria

Authorised editors will need to make decisions on which material to make available to users. They will need to apply criteria to material to help them make decisions. Such criteria should encompass elements like:

- User relevance
- Authority and credibility.
- Timeliness
- Appropriateness

Attention should be given to issues around ethics and suitability. A policy on ethics and suitability should be agreed by the Steering Committee. Two sets of criteria – objective and subjective – need to be applied to decisions on making new content available for users. For both “Objective” and “Subjective” criteria, material should be excluded on the following basis:

1. Anything offensive and/or libellous

2. Anything that contains personal attacks on named individuals

3. Anything that subscribes to any political group

4. Anything that discriminates against users or potential users

5. Any information with personal data that would break confidentiality about individuals

6. Any promotional material for a specific commercial product or service.

iii) Updating the Central Corpus

The materials developed by users will provide the raw material for reviewing and updating the evolving knowledge base (Repository). This process requires an evaluation of the material in order to identify that which is suitable for wider circulation beyond the e-inclusion Repository. The suggested procedure is as follows:

1) Set up an assessment panel (max. 5 people). This assessment panel ‘shortlists’ appropriate material for transfer to the database, on the basis of an ‘item analysis’ procedure.

2) Carry out an item analysis of the new material, using the assessment criteria described below, to arrive at an initial shortlist of material.

3) The Steering Committee further evaluates the shortlist, to provide a final list of material

Item analysis:

Assessment of the material should combine a quantitative (Level 1) and qualitative (Level 2) analysis. Level 1 provides a user-determined ‘rating’ of candidate items on the basis of common ‘baseline’ measures. This should be used as an initial ‘filtering’ mechanism, which is then supported by a qualitative assessment.

Level 1: Quantitative criteria

There are two types of evaluation data that provide quantitative assessments of items. These data are primarily derived from ‘seals of approval’ (SOAP) ratings that users are encouraged to provide as part of their utilisation of the toolkit, and which provide numeric scores based on:

i) Utilisation rate: relative use of the item by users, according to category of user

ii) Average rating of item:

The SOAP tools embody a range of evaluation criteria adopted by users to rate a particular item of information selected(on a five point self anchoring rating scale). These are:

- Relevance of item to user needs
- Intelligibility – how easy it is to understand and digest the material
- Informativeness – the quality of information provided and its usefulness in terms of opening up other avenues of information
- Timeliness - how up to date the item is
- Credibility – the authoritativeness and trustworthiness of the information
- Overall rating: degree of satisfaction with the item overall.

Analysis of these data will provide average (aggregated) scores for the items, and a basis for selection and editing.

Level 2: Qualitative criteria

Supplementary to the quantitative data derived from SOAPS, annotations (i.e. comments on items in the database) will provide a rich source of user-generated evaluation of the toolkit material. Within the 'authorisation' framework described above, the assessment panel can evaluate items for inclusion on the basis of annotations made by users. Peer validation of the information provided in the knowledge base is an important component of service provision. In this context, the system provides a method to give a 'quality mark' or seal of approval to the materials in the knowledge database. Users will be able to immediately identify how useful, up to date and appropriate a particular item is. In addition, users can 'add value' to the services by themselves participating as collaborative 'content developers' in an evolving knowledge base.

Peer validation is implemented in two ways: firstly as a result of users adding 'annotations' to existing content; and secondly, through the use of seals of approval - 'SOAPS'. Annotations can include: personal notes (which only the user who wrote them is able to access); responses to other documents - rather like margin notes, allowing for amplification and contradiction of a document; reviews, including numerical ratings for documents the users wishes to draw attention to; translation and local language summaries. All annotations are stored in annotation sets which can only be accessed by members of certain user groups.

In tandem, users could also deploy SOAPS to enable reviewing and rating of content to be carried out. SOAPS typically take the form of numerical information (a rating for quality from 1 to 5) or text (an article describing the reviewed document). Reviews are collated to produce some measure of quality of the reviewed data. The aggregated results of these activities are used to provide seals of approval (SOAPs) which can be attached to particular pieces of information to enable a user to quickly

judge the value, credibility and origin of the information, on the basis of the criteria specified above.

iv) Content selection and Validation

The process of content selection and review involves the following:

1. The study team, working with DG INFSO staff, have identified a number of relevant resources, presenting baseline information on the issues addressed (and described above in terms of the 'category structure' of the Repository). These resources will be uploaded onto the platform under the relevant category. The e-inclusion Repository has been thus fed with an "original baseline".

2. An initial first Content Review will be carried out, resulting in a complete and coherent list of the identified contents, and reflecting the comments and evaluation of the content by users (on the basis of SOAPS and annotations). At this stage, users have accessed the materials, used them, and afterwards have provided their feedback with reference to their consistency and relevance vis-à-vis their needs and interests. Content which proves not to be useful or which does not address user needs will be dropped. Content which turns out to be more suitable for a different category than the one initially classified will be re-categorised.

3. A further series of Content Reviews – generally on a six-monthly basis - will further refine and add to the evolving knowledge base.

4. The results of successive iterations of review ensure an up-to-date Repository with validated contents, responding to the consolidated as well as newly emerged users' needs and expectations.

Figure 1 provides a representation of the "Logical scheme" underlying the above process:

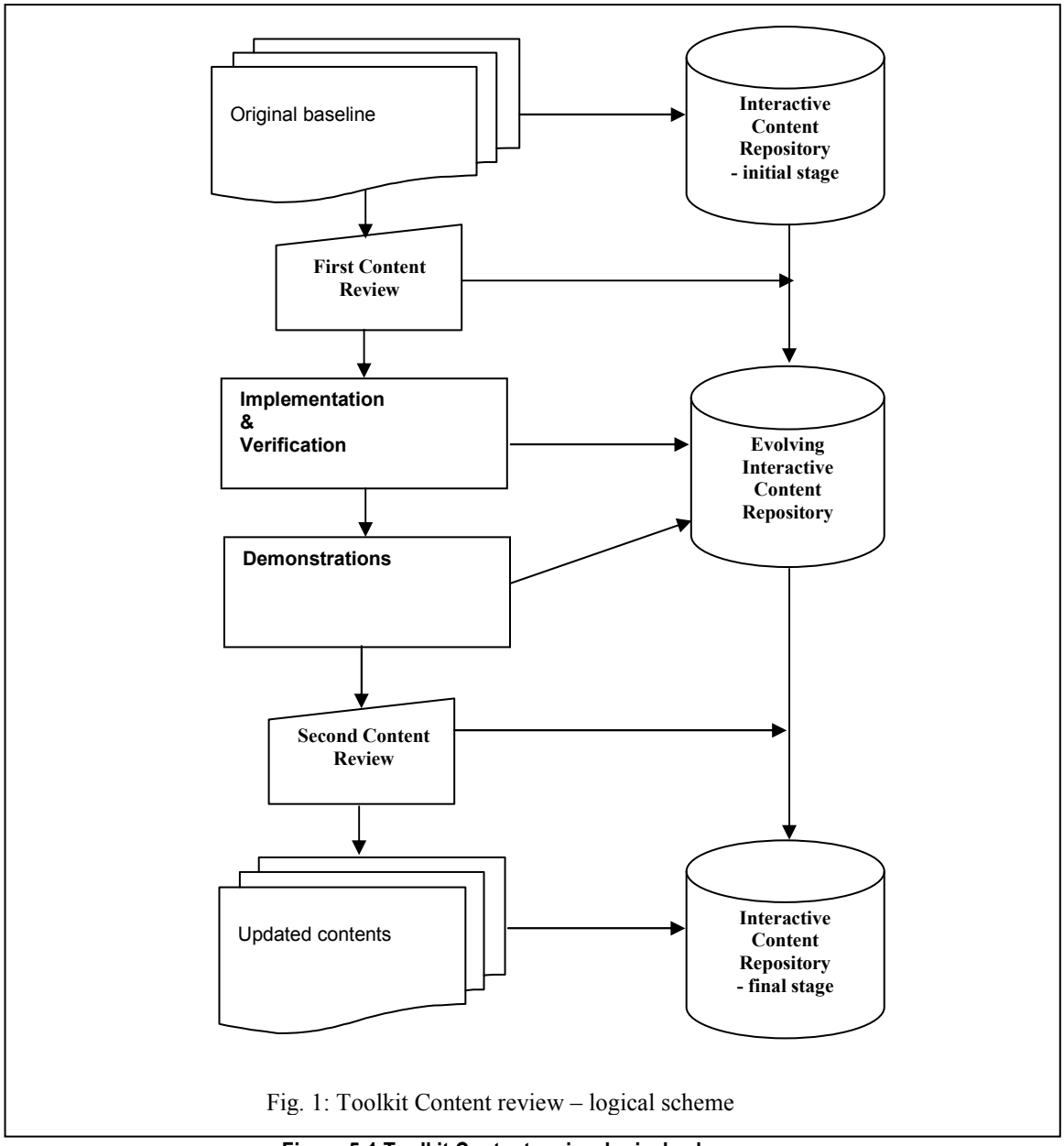

Fig. 1: Toolkit Content review – logical scheme

Figure 5:1 Toolkit Content review-logical scheme

5.3. e-inclusion: Possible Futures

In this final section, we look at some of the likely forthcoming developments in technology over the coming years leading up to i2010; the issues they raise for policy and practice, and how they might be harnassed to support more effective policies and initiatives in the domain.

5.3.1. Emerging trends

We have argued elsewhere in this study (see for example Deliverable 4: 'Synthesis and Recommendations; 'Interim Report'; 'Final Report) that technological change does not happen in a vacuum. The developing Knowledge Society both shapes and is shaped by profound changes in social structures, interactions and behaviours. For

example, the old order of stable and homogenous communities, tied to a distinctive industrial base, with strong community identity and shared values, is increasingly giving way to short-term job markets with uncertain futures, the fragmentation of communities and community values and the emergence of 'multiple identities'. This mirrors the movement from first generation web-based applications to the so called Web 2.0, allowing, on the one hand, opportunities for the re-invention of the self through weblogs – currently 2 new blogs created every second – and the rapid rise of 'social networking' sites (described above) allowing opportunities to join different, and multiple, virtual communities.

Against this background, major technological change drivers over the next few years will exert additional influence on social transformation, creating new opportunities – and challenges – for e-inclusion. Some of these drivers are of potentially sufficient magnitude to promote far-reaching economic and social change, and are associated with major 'civilisational choices' (see this study's 'Final Report' for a discussion on this issue). These might include:

- Nanotechnology - thus far marketplace applications have concentrated on utilising the properties of colloidal nanoparticles in everyday commodities like cosmetics, protective coatings, and stain resistant clothing. Future developments are likely to focus on nanocomputing; colloid science; nanomedicine; DNA nanotechnology and molecular nanotechnology. [19]

- Sustainable technologies and biocatalysis – for example work on replacing petrochemicals with organic chemicals [20]

- Robotics

- Medical technologies – for example cloning

- Biocomputing and bioware – for example very low power batteries powered by the human body and medical sensing devices

- Sensor Technologies and remote imagery – for example sensors embedded in infrastructure and devices (instrumented bridges, roads and dams; environmental sensors – landslides; avalanches, earthquakes or tsunamis)

Whilst these will all have implications for e-inclusion, the more immediate effects for e-inclusion are likely to be associated with developments in ICTs. These are likely to involve the following:

- Grid computing – a model that takes advantage of many networked computers to distribute process execution across a network (usually the Internet) to solve large-scale computation problems. This will have implications for large scale mass-user services such as e-government, and for 'distributed intelligence'.

[19] David M. Berube 2006. *Nano-hype: The Truth Behind the Nanotechnology Buzz*. Prometheus Books
[20] Welles, G, 2005, 'Future Trends' University of Minnesota

- Web 2.0 and 3.0. Web 2.0 is already having a major impact, with the increasing use on a mass scale of 'social networking'. Predictions are that the next major change will reflect a movement towards the 'intelligent web' (Web 3.0) or 'worldwide database', supported by grid computing. In relation to content, the evolution of the semantic web will also be important as this will facilitate the 'usability' of the internet.

- Radio Frequency Identification (RFID), an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. An RFID tag is an object that can be attached to or incorporated into a product, animal, or person for the purpose of identification using radio waves.[21]

- 'Everything to Everything' Wireless Connectivity. Communication is likely to be defined by the user or device rather than location. For example WiFi may replace cellular in urban areas. WiMax may provide inexpensive broadband networks. The future of personal communication centers around intelligent, wireless connectivity. Highly mobile individuals will use flexible, powerful, networked devices to maintain access to a wide range of applications and services, regardless of location, device or network – for example Intel's 'Universal Communicator'.

- More 'Device to Device' communications. The convergence of currently autonomous platforms, devices and systems is becoming more commonplace. For example, the French "Smart Wallet" Personal Server links all carried devices including PDAs, phones, displays and web access, using a Personal Area Network (PAN).

- Smaller and cheaper personal computers, with enhanced functionalities, such as display features. An example is MIT's '$100 Laptop Prototype', using Linux open source software, with a 12" Inch Electronic Ink Screen or built-in digital projector. The emerging importance of China as a major consumer of ICTs ensures that demand for low cost basic models will persist. Innovation is likely to concentrate on improving performance – e.g. Intel's Centrino will have several gigabytes of NAND flash memory to speed up booting and applications loading.

These developments are likely to have implications for e-inclusion policy, practices and initiatives in three main areas, in the run up to i2010:

- Opportunities and challenges to the goal of creating an inclusive Knowledge Society for all

- The use of technologies to reduce specific aspects of social exclusion

- e-inclusion assessment, measurement and benchmarking

[21] Dargan, Gaurav; Johnson,Brian; Panchalingam, Mukunthan; Stratis, Chris (2004). The Use of Radio Frequency Identification as a Replacement for Traditional Barcoding

These are discussed below.

5.3.2. Towards an inclusive knowledge society

The use of new technologies such as blogs (web logs), vlogs (video logs), wikis (user managed and controlled content management systems) and podcasting (user produced audio files for Apple's iPod) – although not mainstreamed yet – open new bottom-up and direct possibilities for e-Participation in the knowledge society and the society at large. As stated in many publications learners – especially younger ones – are becoming knowledge creators, managers, owners and distributors of learning. Wim Veen for example postulates increasing non-linear or 'swapping' learning behaviours in the younger generation with mature technological knowledge and the motivation to use technology for their inclusive activities. He calls this generation 'Homo Zappiens'. The new cohort of users possess the necessary meta-cognitive and technological skills for ICT usage (e.g. web navigation through information, electronic communication, building virtual networks of people with similar interests), they operate on 'twitch speed', they are multi tasking and mobile, are using non-linear approaches, games and simulations for knowledge acquisition, are able to process discontinued information, are connected, collaborative and active. Those new users who were growing up digital (the so called 'digital natives', the 'n-generation') are able to swap between reality (as citizens) and virtual realities (as 'netizens') organising themselves in 'Distributed Electronic Virtual Knowledge Centres' (or 'Learning Malls') and in 'Self-managed Virtual Communities' around themes of shared interest and value. These trends can be set against a wider background of 'social networking'.

A number of commentators argue that these developments are making a significant contribution to opening up spaces and opportunities for participation for more people within the Knowledge Society. Reflecting Giddens' ideas around 'dialogic reflexivity' (Giddens, 2000), it is argued that social networking and ubiquitous connectivity are promoting a new democratization movement driven by opportunities for grass roots involvement in knowledge creation, knowledge sharing, participation and decision-making. Some commentators liken the emergent social networking trend to the 'punk movement' of the 1970's and 80's.

A prevailing argument is that developments like Web 2.0 make culture less monolithic and more diverse. Social discourses, cultural norms and value-shaping have up to now been centred around the 'broadcast model' and, the 'dumbing down' of popular culture by the media to appeal to the masses in an inoffensive way. In contrast, the web is less concerned and is less pressurized to create a widely acceptable product. It is argued that the web represents a return to 'folk culture'. For example, the success of the 'Blair Witch' project reflects an increase in demand for homegrown content. Daniel Myrick, one of the directors of 'Blair Witch', has since produced 'The Strand', another project exclusively for web distribution, focussing on lives of residents of Venice Beach. His latest project - 'the Objective' – is a thriller based on a Special Forces mission in Afghanistan but which uses live footage from war combat zones. Myrick argues that the internet both democratises and elevates the entertainment business because there is no 'star system' and content can be

uncensored, allowing audiences to obtain an unbiased picture of what is going on in situations that raise fundamental political issues. [22]

There is no doubt that the expansion of Web 2.0, coupled with convergence in platforms and devices, has significantly increased the capacity for individuals to engage in opinion-formation, knowledge creation and decision-making. As discussed in the preceding section, users have participated in 1.5 millions articles in Wikipedia - a recent 'Nature' magazine study concluded that Wikipedia is equal to 'Encyclopedia Britannica' in terms of accuracy of content. 13 million Yahoo Answer user questions have been answered. Digg and Meneame have received huge levels of rating for articles posted on the internet. A key milestone in this process occurred in September 2004, when legendary CBS news presenter Dan Rather was forced to resign after a sustained campaign by American bloggers. CBS News conducted an internal investigation on how "60 Minutes Wednesday" came to broadcast a story about President Bush's National Guard service that was based on forged documents from an anonymous source. This investigation was made necessary because within minutes of the original CBS broadcast, bloggers - for example PowerlineBlog.com, RatherBiased.com, and WizBangBlog.com. - were examining the documents and pointing out clear evidence that they were forged.[23] In the wake of this, the established media corporations have not only been forced to acknowledge the power of the new knowledge-makers, they have been quick to realize that it can be turned to their advantage. For example, the BBC regularly points the viewer to its website and flags new podcasts as they are released, both promoting the faster adoption of new technologies as well as engaging users in the production of content.

These developments highlight the fact that that emergent network-focused ICTs allow an unprecedented role for the 'consumer voice'. In social networking sites, users feel emotionally involved and spread the word about innovations. They willingly participate in Research and Development and test beta trials of products. The users are the guinea pigs, they test the service, produce the content, and promote the product amongst their friends. This is what 'Business Week' described as "the power of us". [24] Howard Rheingold, author of *Smart Mobs: The Next Social Revolution*, sees a common thread in apparently divergent innovations like the Internet, mobile devices, and feedback systems on sites like eBay, where buyers and sellers rate each other on each transaction. Rheingold argues that they represent the underpinnings of a new economic order. "These are like the stock companies and liability insurance that made capitalism possible. They may make some new economic system possible." [25]

More recently, creation of content by users is becoming more formalised and financial rewards for creating high quality material online, whether high quality photographic images or reviews of restaurants (accompanied by a geotag to allow for easier location finding) are becoming more commonplace. Yelp (reviews by users) , Squidoo (which pays its contributors) and Zebo, which gives advice on shopping, are

[22] Movienews, August 2006
[23] 'How the blogs torpedoed Dan Rather', Newsmax, January 31st 2005
[24] 'The Power of Us'. Business Week, June 2005
[25] Rheingold, H 'Smart Mobs: The Next Social Revolution' (2002)

sites that rely on contributors to provide information about specific topic areas that would be impossible or impractical to do in a way that did not involve the engagement of a huge army of willing volunteers. It is suggested that the emergence of Web 3.0 will continue these trends. As Spivak argues:

'The web will move from a bunch of silos and separate applications to something that starts to feel much more like one seamless medium. Your user identity, your account, your search history, your personalisation and preferences will travel with you wherever you go. 'All your information will be connected, searchable, organised and manageable wherever you are. In many ways it will bring the web to you instead of you having to go to the web. Web 3.0 means the third generation web, and I think that's what the next 10 years will be about. The ultimate vision of Web 3.0 is of a collective 'global mind' which increasingly resembles the human brain. Every person on the internet will function as its consciousness, from whose chaos will emerge cohesive patterns of thought and decision, perhaps even a sense of 'self'." [26]

The ***opportunities*** for promoting an inclusive knowledge society can therefore be summarized as:

- Providing greater access to more consumers for a wider diversity of consumer products, services and choices
- Supporting a more effective role for consumers in the development of new products and services, and greater control over quality, utility and relevance
- Providing opportunities for the harnessing and utilization of the creative potential of people in the innovation process, and creating conditions for wider and more effective entrepreneurship
- Supporting and encouraging individual self-determination, self-expression and more effective social interaction, through social networking
- Contributing to the development of social capital, for example through the expansion of social-networking via Web 3.0 into community-based support networks
- Increasing participation in decision-making, and thereby supporting increased motivation to participate in democratic processes and a more 'participative culture'
- Supporting participative culture through the expansion of e-government infrastructure
- Reinforcing and enhancing democratic structures, for example through providing more open scrutiny and critical review of government agencies and actions

[26] "What is the Semantic Web, Actually?" Nova Spivak, www.deitel.com

- Contributing to improving the knowledge base, and the skills base, by promoting knowledge creation, knowledge sharing and acquisition of new skills, through both formal and non-formal learning

5.3.3. Technologies to promote inclusion

Continuing developments in robotics, sensor systems and bioware, as discussed above, are likely to contribute further to policies and initiatives aimed at specific groups, improving the effective of assistive technologies for the disabled and older people in particular, and promoting the drive towards 'independent living'. The major development, however, is likely to be a movement away from targeting 'special needs' groups and scenarios, and developing customized services, to a more generic focus on 'customisation and flexibility'. Microsoft, for example, highlights four key trends and expectations that support a vision of flexibility, within the context of the new 'Microsoft.NET' platform[27].

- Infrastructure and tools that promote flexible computer interactions
- Natural language and speech recognition
- Built-in seamless customization that follows a computer user wherever he or she goes
- The possibilities for an improved user experience for assistive technology

Microsoft .NET is predicated on flexible computer interactions that will allow computer users to choose their preferred way to provide, or input**,** information to their computer and to receive, or output**,** information from their computer. These techniques include speech, handwriting, specialized input devices such as a single button switch, and a traditional keyboard or mouse. Current development of the platform includes work to allow computer users to type instructions into the computer by using phrases or sentences that are natural to them, in the language of their choice, rather than in predetermined computer instructions. This technique uses natural language to direct the computer. The second area of focus is improved speech recognition. These are linked to developing seamless customization functionalities - as Microsoft .NET provides users with more flexibility for how they interact with their computers, computers will automatically adjust to changes in environment and circumstances, providing seamless customization. Finally, Microsoft .NET will use the new interfaces in the .NET infrastructure to gain access to countless applications without additional work. Assistive technology manufacturers will be able to focus more on improving the user experience for their customers by spending their saved development dollars to provide enhanced features.

In principle, the shift towards flexibility and personalization could address some of the criticism that has been levelled at 'mainstream' e-inclusion policies (discussed in the study 'Final Report') that have concentrated on particular groups like people with

[27] Microsoft The future of Accessible technology (2007)
http://www.microsoft.com/enable/business/future.aspx#trends

disabilities and older people, whilst paying much less attention to 'hard to reach' groups like immigrants and the less articulate and computer literate. The incorporation of natural language functions into applications systems could potentially alleviate some of the problems associated with 'cognitive exclusion' – like the different cultural codes and language structures adopted by particular social groups. In turn, the widespread use of seamless customization in hardware and software suggests possibilities for adaptive learning by systems themselves, rather than users having to adapt to technologies. Developments in grid technologies and Web 3.0 networking could further promote cultural contextualization and localization of ICTs, for example to support 'hard to reach' communities like black and ethnic minority groups and communities in areas prone to high levels of economic and social deprivation.

5.3.4. Measurement and benchmarking

The likely developments in ICTs, as outlined above, present a number of opportunities to support European initiatives in e-inclusion measurement and benchmarking, at both trans-national level and below. For example, some commentators have compared the growth of the Web 2.0 based social networking movement to the kinds of mass observation records that began to develop from the 1920's, using film to document social ethnographies and social change, and which were continued in the 1950's and onwards through, for example, large scale cohort studies like the UK 'Seven Up' study. Flickr, for instance, currently hosts 250 million visual images that not only provide a catalogue of holiday snaps, but represent a huge visual narrative of different cultural ethnographies. These cultural snapshots could fill a significant gap that this study has identified – the lack of 'granularity' in current e-inclusion indicators and benchmarking approaches, and the need for such systems to consider the 'cultural context' of e-inclusion. In turn, the increasing ubiquity of convergence technologies – for example cell phones with cameras – is already being capitalized on by broadcasters, for example, to broadcast images that would normally not be available. This kind of technology also offers opportunities for assembling and analyzing an evolving visual evidence base for e-inclusion.

Moreover, the increasing specialization and differentiation of social networking potentially provides a platform for conducting the kinds of large scale surveys that currently cannot be done other than in 'broad brush' terms because the costs are prohibitive[28]. As discussed above, sites like Yelp, Squidoo and Zebo rely on contributors to provide information about specific topic areas that would be impossible (or impractical - like geotagging every bus stop, or speed camera or sandwich bar) to do in a way that did not involve the engagement of a huge army of willing volunteers.

Similarly, the expanding use of sensory devices, remote monitoring and similar emerging technologies in areas like e-health will facilitate more widespread and more detailed tracking of trends in two key e-inclusion policy areas: disability and older people. This could be supported by the movement towards 'seamless customisation',

[28] Though this does bear the risk that only views of those people are captured who are the more advanced online users.

as discussed above. Logging and analysis of the system behaviours of disabled and other 'special needs' users can facilitate much more accurate and more rapid response modes of e-inclusion assessment than is currently possible. In turn, the increasing deployment of e-government applications, both through wireless connectivity and public access internet points, potentially allows government agencies and their social partners potentially much greater scope for 'fine-tuning' monitoring and analysis of social and economic deprivation and needs.

5.3.5. Key challenges

The main ***challenges*** posed by these developments are likely to focus on:

- Increasing polarization of e-included and e-excluded, linked to factors such as real and opportunity cost
- Cultural and social fragmentation
- Surveillance and control

Although the predictions are that hardware and software are likely to get cheaper over the next five years, there is strong evidence that 'e-accessibility' does not take a high priority in the economic decision-making of marginalized and 'hard to reach' groups, particularly those with negative or marginal disposable income. As an example, the 'Connexions Card' recently rolled out via the Department for Education and Skills in the UK offers a hybrid client/server and smartcard technology platform to provide rewards in the form of consumer goods (videos; trainers; CDs and cinema tickets) and transport discounts for 'hard to reach' young people in return for regular attendance at formal education institutions or more informal learning environments. The idea is to use technologies to 'incentivise' education for young people who have dropped out of the education system and those at risk of dropping out through economic disadvantage. Yet evaluations of the service suggest that it is of most benefit to those who need it the least. As one informant from a 'high-deprivation community' community put it: getting 10% off your trainers is not much use if you can't afford the trainers.

In relation to social and cultural fragmentation, the main challenges focus on those at the extreme ends of the user spectrum: those who are resistant to and de-motivated from engaging in the knowledge society, and those whose immersion in digital life creates its own forms of isolation.

There is some evidence that new technologies appear to be largely supporting 'substitution processes' that sustain existing patterns of information-seeking, communications and consumer behaviours – with e-mail enhancing the kinds of social interactions previously promoted through the telephone, and internet supporting consumption of retail goods and services, financial transactions and providing additional entertainment options (through downloading music, movies and videos). Instead of changing existing social behaviours – for example by getting people into e-learning – ICTs appear to be reinforcing the kinds of power structures that maintain structural inequalities.

In turn, the development of new seamless ‘everything to everything’ systems and platforms will not necessarily address problems of resistance and de-motivation. The proportion of people not regularly using the internet varies from less than 10% in Sweden to over 50% in countries in Eastern Europe, for example. It is this substantial body of the ‘non-engaged’ that has received least attention in e-inclusion policy. Moreover, studies suggest that the proportion is growing. A recent survey carried out by Itech suggested that of those who had no access to the Internet in 1996, 40% expressed a wish to get connected. By 2004, this proportion had diminished to only 20%. More importantly, resistance and de-motivational factors are linked to cultural and contextual dynamics – not just at the national, or even community levels, but in micro-spaces like the home and the family. In many domestic situations, gender stereotyping creates roles that create ‘ICT taboos’ for certain family members – typically ‘housewives’.

At the other end of the spectrum, although developments in distributed networks and converging connectivity have the potential to create greater social participation, concerns are being raised about what might be called ‘fragmentary participation’. At the extreme, the new ‘netizens’ are occupying their own isolated and individuated ‘hyperbubbles’. In other more collaborative spaces, the highly digital literate are gravitating towards shared communities of interest that effectively create their own e-exclusion zones. This scenario runs counter to the prevailing e-inclusion policy vision of e-participation and e-citizenship, which assumes a common set of universal and democratic values associated with European ideals like solidarity, European identity and tolerance. The proliferation of communication channels available, it is argued, will create pressures for self-determination and self-exposure. The rise to prominence of reality TV is mirrored by the proliferation of mass user social networking on the internet. Everyone wants to re-invent themselves as authors, musicians, entertainers. Some commentators have described this movement towards ever-increasing exposure as "technological intoxication” (Cerezo, 2006). Others point to the tendency for social networking sites to promote not a democratization of the internet but a meritocracy where only the best tools and bloggers become the most popular. The tendency for social networking to reinforce the ‘herding’ instinct has been criticized as a new form of crypto totalitarianism, where individuals run the risk of being shamed and pilloried by ‘mob stupidity’.

A key challenge that will be faced by e-inclusion policy-makers is to balance the security, social responsibility and social support needs of the governance agencies of EU and member states against the democratic rights of citizens, against a background of evidence of increasing concerns about surveillance and control. These concerns are not just expressed by ‘scare-mongers’. A survey of 742 technical experts conducted by the Pew Internet and American Life Project, 42% of respondents were pessimistic about the increasing intrusion of technologies into life. Comments included "Dangers and dependencies will grow beyond our ability to stay in charge of technology," and "We are constructing architectures of surveillance over which we will lose control".

One important element in this debate is the notion of ‘architectures of control’. As one commentator observes:

"While the use of architectures of control in computing is well-known, and a current issue of much debate (in terms of digital rights management, 'trusted' computing and network infrastructures themselves), it is apparent that technology—and a mindset that favours controlling users—is also offering increased opportunities for such architectures to be designed into a wide range of consumer products; yet, this trend has not been commonly recognised."

An example of one particular area of 'architectures of control' is Digital Rights Management (DRM) which, broadly, means that "in essence, every use that is not specifically permitted by the content [or indeed hardware] provider is in fact prohibited" (Bovens, 2006). DRM can be used to prevent behaviours which are not illegal, but which the DRM controller desires to prevent for its own strategic reasons. For example, in most legislatures, it is accepted that a backup copy may be made of software, audio or video purchased by the consumer; yet DRM can prevent this 'fair use' copying

Another example is 'captology' or "computers as persuasive technology. This uses features inherent to computer-based systems to persuade users to modify their behaviour (for example, giving up smoking, or increasing motivation to exercise)—is a growing area in itself, and whilst captology always intends to persuade rather than coerce or force, the thinking has much in common with strategic design and architectures of control. [29]

In turn, the use of RFID technology has engendered considerable controversy, including 'product boycotts consumer privacy advocates like Katherine Albrecht and Liz McIntyre of CASPIAN, who refer to RFID tags as 'spychips'. A key concern is that RFID tags affixed to products work after the products have been purchased and taken home, and thus can be used for surveillance and other purposes unrelated to their supply chain inventory functions.

Finally, as discussed in the 'Final Report' to this study, another set of issues that has recently attracted debate in relation to 'control' and 'surveillance' relates to the idea that technologies reflect 'civilisation choices, and 'technical codes'. As argued in the Final Report, concerns are increasingly being voiced about the lack of public debate and public engagement in the 'science and society' domain. Major recent examples include genetically modified crops and human cloning. These concerns are equally applicable to future developments in technologies like the widespread use of RFID tags and sensory systems, and a major challenge for government will be to promote the inclusion of citizens in shaping debate and engagement in these areas. In turn, it has been argued that the innovation design, development and diffusion process itself excludes the vast majority of people, and relies far too much on the engagement of small expert elites. Another key challenge for e-inclusion policy is therefore to find ways of engaging more people in more productive ways in the innovation process.

[29] See www.architectures.danlockton.co.uk

5.4. Towards an e-inclusion 'Co-Laboratory'

Our review of the likely developments in ICTs in the run up to i2010 and beyond, together with the potential opportunities and challenges posed for e-inclusion policy, initiatives and benchmarking, highlights the need for an element that has hitherto been relatively under-developed in key EU policy actions that are currently evolving to support Riga, the 2008 initiative and i2010 – that is, a 'prospective' element to e-inclusion work.

On way of developing this prospective element would be to evolve the e-inclusion Repository to a 'Co-Laboratory'. This would mean incorporating a more pro-active, rather than re-active, approach to monitoring, assessment and benchmarking – promoting a movement from benchmarking to benchlearning that incorporates the active engagement of citizens. Figure 2 shows how this might look. As Figure 2 shows, the Co-Laboratory envisages adding an additional five modules to the existing e-learning Repository:

- An Expert Panel – the main task of the Expert Panel would be to implement a 'Technology Watch', focusing on developments in ICTs and carrying out regular reflective 'Delphi' exercises to assess the likely implications for emerging innovations and trends on e-inclusion policy and practice. A second task of the Panel would be to develop 'roadmapping' actions to provide inputs towards designing and implementing policy in the field.

Citizens Panels – approaches intended to engage a broader spectrum of citizens in participating in policy making have long been established. The main tasks of these panels would be twofold: firstly, to promote a 'user perspective' on issues related to 'control and surveillance' aspects of evolving technologies; secondly to explore the issues around 'civilisational choices' associated with new innovations, and the implementation of e-inclusion policies, particularly in relation to 'e-government'.

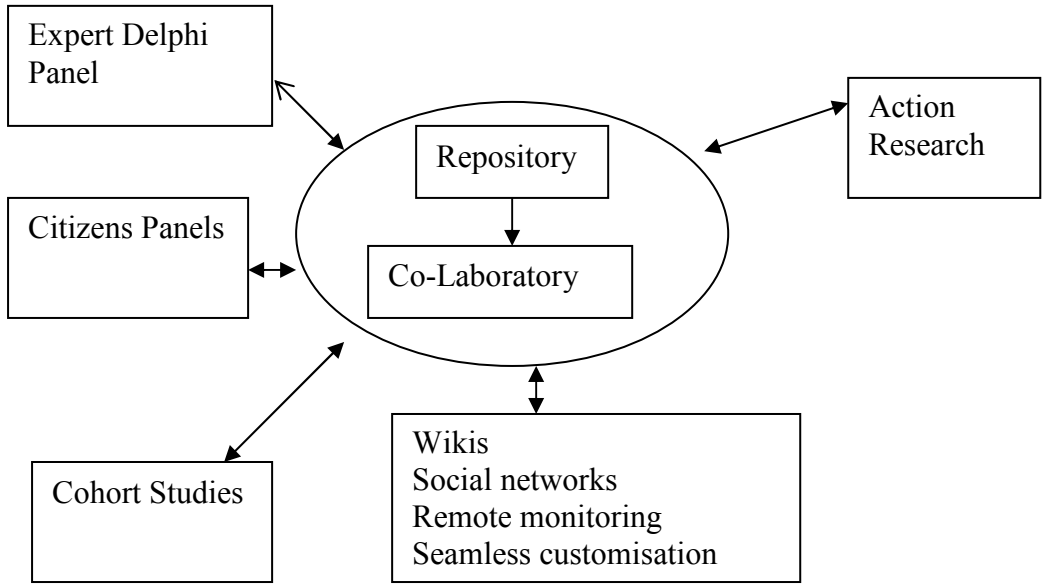

Figure 5:2 Schema for e-Inclusion 'Co Laboratory'

- Cohort studies – the study has suggested that a key element missing from current e-inclusion measurement and benchmarking approaches is a longitudinal action, designed to explore the impacts of developments in ICTs – and in e-inclusion policy – on the evolving 'Knowledge Society'. Such cohort studies would firstly need to reflect key e-inclusion target groups and, secondly would need to be specifically experimental in nature , i.e. they would test particular policy and conceptual models (see below).

- New data gathering actions – as argued above, new developments in ICTs offer real opportunities fo support e-inclusion assessment and benchmarking. This element of the Co-Laboratory incorporates a range of digitally-supported data gathering tools, ranging from Wikis through social networking sites, and integrating new monitoring systems and 'seamless customisation' developments as described above). In tandem with the cohort studies, they would need to be specifically targeted at particular e-inclusion scenarios and groups.

- Action research – the final component would entail action research experiments. These would draw on the data gathering activities described above, and would enable the more active engagement of citizens and other stakeholders in promoting and implementing e-inclusion policies.

The 'experimental' element of the prospective strategy involves longitudinal studies – encompassing different types of cohort (special needs groups; resistant groups and so on) - aimed at analysing the effects over time of particular policy and initiative models of e-inclusion. This approach emphasizes the 'theory-based' nature of experimental prospective research:

"A research strategy in which people are followed forward in time to examine the relationship between one set of variables and later occurrences. For example, prospective research can enable researchers to identify risk factors for diseases that develop at a later point in time"[30].

Most experimental prospective research has been carried out within the health and medical domains, frequently involving randomised controlled trials (RCTs) of drugs and other therapies[31] [32] but increasingly they are used to explore policy actions with significant 'social impact' for example smoking[33], studies of sexual behaviours[34] and research into the causes and effects of child abuse[35].

This would allow researchers and policy-makers to implement real-time studies of specific e-inclusion strategies – for example a strategy based on improving 'quality of use' – whilst incorporating results into evolving policy actions. The main benefit for e-inclusion policy and practice is that a longitudinal component would incorporate an ***action-oriented*** focus. It involves evidence-based research that aims to establish the causal relationships and the effects of e-inclusion. This in turn requires the development of an initial ***process model*** and its subsequent refinement on the basis of evidence collected from ongoing studies over time.

The cohort studies would be supported by two interpretive prospective research actions: Delphi Panels and roadmapping. Unlike experimental approaches, where conclusions are drawn on the basis of evidence collected in real time over the duration of the study, interpretative prospective research involves projections of the future, based on interpretative analysis of data carried out at a particular point in time. The Delphi Method is based on a structured process for collecting and synthesising knowledge from a group of experts by means of a series of questionnaire surveys accompanied by controlled opinion feedback (Adler and Ziglio, 1996. Roadmapping is not an additional or alternative research method to Delphi – indeed Delphi surveys are often used to provide inputs to developing roadmaps. This reinforces the widely accepted view that roadmapping moves forward from an analytical and interpretative perspective to provide both a prescriptive and operational framework. It not only provides scenarios for e-inclusion policy, for example based on realizing i2010, but also an implementation process for achieving those scenarios.

"Technology roadmapping is a flexible technique that is widely used within industry to support strategic and long-range planning. The approach provides a structured (and

[30] Taylor , S (2003) 'Health Psychology', Los Angeles, McGraw Hill
[31] For example: Illing HM, Morris DO, Lee RT. (1998) A prospective evaluation of Bass, Bionator and Twin Block appliances. Part I—the hard tissues. *Eur J Orthod* 1998; **20**: 501–516.[
[32] Reynolds JV, McLaughlin R, Moore J, Rowley S, Ravi N, Byrne PJ (2006). Prospective evaluation of quality of life in patients with localized oesophageal cancer treated by multimodality therapy or surgery alone. Br J Surg. 2006
[33] Pedersen, W, Lavik NJ. (1991), Role modelling and cigarette smoking: vulnerable working class girls? A longitudinal study. Scand J Soc Med. 1991 Jun;19(2):110-5.
[34] Predictors of inconsistent contraceptive use among adolescent girls: findings from a prospective study. J Adolesc Health. 2006 Jul;39(1):43-9.
[35] Beutler, L.E., and Hill, C.E. (1992) Process and outcome research in the treatment of adult victims of childhood sexual abuse: Methodological issues. *Journal of Consulting and Clinical Psychology* (1992) 60:204–12

often graphical) means for exploring and communicating the relationships between evolving and developing markets, products and technologies over time" [36]

5.5. Towards a Roadmap for 2008 and i2010

In this final section, we draw together the work presented in the previous sections to sketch out a possible scenario for the Commission to operationalise e-inclusion agendas and priorities in practical actions. This embryonic 'roadmap' incorporates the research findings, good practice examples and the specification for an e-inclusion 'Co-Laboratory' in the form of a number of thematic 'Action Areas', each of which specifies a number of possible actions that could be developed and implemented.

[36] Phaal R.;Farrukh C.J.P.; Probert D.R.. **Technology roadmapping-A planning framework for evolution and revolution.** Technological Forecasting and Social Change, Volume 71, Number 1, January 2004, pp. 5-26(22)

Action Area	Possible Actions
Preparatory	Training initiative for DG INFSO staff on using and developing the e-inclusion Co-Laboratory
	Cross-directorate seminar to discuss e-inclusion project findings and way forward
	Initial population of Repository
Awareness-raising	Publication of project results summary
	Launch of website
	e-inclusion 'Best Practice' Exchange
Standards development	Formation of e-inclusion Standards Working Group
	High Level National Representatives Group to promote co-operation between member states
Capacity Building	e-inclusion Forum – multi-stakeholder consultation platform focusing on consolidating understandings of user needs
	European e-inclusion Alliance – based on the European CSR Alliance, providing institutional space for implementation of actions
	European e-inclusion co-laboratory – based on the specification outlined in Section 5.
Engagement and collaboration	e-Inclusion Charter
	e-Inclusion Code of Practice for organisations
	e-Inclusion Index – benchmarking system for organisations
	European e-inclusion Award