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Measuring the Impact of eInclusion Actors

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Work Package 2
Impact Assessment Framework
Task 5: Development of an Impact Assessment framework

Deliverable D2.2 Methodological approach for developing the impact assessment framework

Interim report 2


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For more information about MIREIA see: http://is.jrc.es/pages/EAP/eInclusion/MIREIA.html

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In the social sciences, the progress of knowledge presupposes progress in our knowledge of the conditions of knowledge.

Pierre Bourdieu (1990)
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We also wish to thank Paul Foley, María Garrido, Alberto Savoldelli and Nicky Stevenson, who were acting as 'peer reviewer' with specific regard to the draft document that was a preliminary proposal of Conceptual and methodological framework for building the MIREIA Impact Assessment Framework.

Moreover, the present document integrates part of the methodological approach for testing and operationalising the MIREIA eI2 Impact Assessment Framework which has been proposed by Tech4i2 for conducting the assignment they have been commissioned by the JRC-IPTS as part of the contract 'Methodological Support to the Testing of the MIREIA eI2-IAF'.

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1. Introduction

1.1. Objectives of the report

The MIREIA study has been conceived with the aim to better understand the diversity of e-Inclusion intermediary organisations and actors and to create adequate instruments to facilitate the demonstration of their outcomes and their contribution to the achievement of European e-Inclusion policy goals.

In concrete, the objective of the study is twofold, aiming at the same time to:

1) characterise and map eInclusion intermediary actors in Europe in order to know better: a) What eInclusion actors are, which services they provide, to which targets groups, how they operate and innovate, and how they can be classified (typology); b) What a plausible estimation of the size and distribution of the actors can be.

2) build and test an impact assessment framework that will allow to systematically collect end-users longitudinal micro-data through grassroots organisations and aggregate it at various levels, in order to facilitate the measurement of outcomes and the estimation of the impact of those actors on employment, education and social inclusion.

This report is set out to respond to the second objective of the MIREIA project and, in particular Task 5: Development of an Impact Assessment framework of the Administrative Arrangement (AA) between DG Communications Networks, Content and Technology (DG CONNECT, former DG INFSO) and JRC on MieIA - Measuring the Impact of eInclusion Actors with Reference: INFSO/H3/2011/2 - SMART 2011/007 - Nr. JRC 32611-2011-12

The goal of this document is therefore to provide the conceptual and methodological foundations and the orientations for the development of a comprehensive Impact Assessment Framework to measure the socio-economic outputs, outcome and impact of eInclusion Intermediary actors in Europe, what it has been called the MIREIA eInclusion Intermediary Actors - Impact Assessment Framework (eI2-IAF).

This will include both a theoretical model and operational guidelines for evaluation of practices, as well as an attempt to link these to policy goals and the way these are measured in terms of socio-economic impact.

1.2. Structure of the report

After introducing the background of the MIREIA research project, the objectives and structure of the document (Section 1) the report presents in Section 2 the methodological approach followed and in Section 3 the context of eInclusion policy in Europe, including an overview of the state of play in impact assessment in the field.

In section 4 the report outlines the basic concepts and definitions as well as the theoretical orientations informing the development of the conceptual framework underpinning the MIREIA Framework to Assess the impact of eInclusion Intermediary interventions (in short MIREIA eI2-IAF) and, in Section 5 it presents the approach to be followed for building the impact assessment framework, highlighting the need for a multi-dimensional perspective and a multi-level analysis, as well as the key principles underpinning the MIREIA eI2-IAF.

In Section 6 the MIREIA eI2-IAF is outlined in terms of policy, strategic and operational levels and in Section 7 the key elements underpinning the implementation of the MIREIA eI2-IAF are presented.
Section 8 concludes offering indications about the way forward, including the next steps of the research, namely the Test of the Impact Assessment Framework of the MIREIA project in five selected case Study interventions in Europe.

2. Methodology

According to the terms of reference set out in the Administrative Arrangement (AA) the MIREIA Framework to Assess the impact of eInclusion Intermediary interventions (in short MIREIA eI2-IAF) "should be developed on the basis of previous task to be used by a large set of types and sizes of eInclusion organisations The IA framework will be scientifically rooted and at the same time provide the necessary guidelines for the implementation of the selected method or combination of methods (outcome of Task 4 of AA) in the context of eInclusion organisations. For its development, existing good examples will be examined for inspiration and guidance. The framework will provide methodological recommendations to design ex-ante an impact assessment plan for interventions, to collect data, to elaborate it, to put the data produced by the method in context, to interpret the quantitative evidence and to measure or estimate broader economic and societal impact ".

Therefore, the process followed to build the MIREIA eI2-IAF has taken into account inputs from different sources. The main components of this process are the following:

- Literature Review

The analysis that layout this document is based on previous work conducted as part of MIREIA, including the preparatory studies and the work carried out as part of Task 1 – Literature Review and Task 4 – Literature Review of policy, methodologies and indicators on digital inclusion, employment, education and social inclusion/welfare. As main outcomes of these two tasks two reports have been published:

- Literature Review of how Telecentres operate and have an Impact on eInclusion¹.

This report includes the results of the research project ‘Exploratory study on explanations and theories of how Telecentres and other community-based e-Inclusion actors operate and have an impact on digital and social inclusion policy goals’. The literature review presented in this report was designed to capture the theories and explanations represented in the existing body of research in order to: provide a comprehensive and multidisciplinary landscape on theories and analytical frameworks; analyze the value of these theories and analytical frameworks based on predefined criteria and; Develop recommendations on the most promising theoretical pillars that could inform the future research mentioned above. As a conclusion it has been noted that although a lot of the research on eInclusion is set out to measure impacts, in reality studies often end up with some measures of usage and analysis of why expected impacts were not achieved. In addition, there is a large proportion of available literature on telecenters and other such eInclusion actors which is based more on perceived potential than on demonstrated fact and highly contextualized studies, making it difficult to identify valid or reliable trends.

- Exploratory Study on Methods used to measure the ICT-mediated Social Impact of Grassroots²

This report summarises the results of the research project ‘Exploratory Study on Methods used to measure the ICT-mediated Social Impact of grassroots organisations’. This study was commissioned by JRC-IPTS to map and review evaluation and impact assessment methods that have been developed and used to understand the social and economic impact of eInclusion actors, with a focus on quantitative approaches and production of measures that relate to policy goals. The overall

¹ http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=5479
² http://ipts.jrc.ec.europa.eu/publications/pub.cfm?id=5439
Conclusion of the study is that the main purpose of the MIRIEA framework and indicators should be to support impacts assessment as a ‘process’ – the process of creating the conditions to enable the embedding and implementation of concepts, methods, tools and practices, and their subsequent adaptation and evolution through use. In other words, the main purpose of the framework and tools is to support ‘praxis’.

The findings of both reports have been taken into account in the development of MIREIA eI2-IAF.

- Validation of the draft of the MIREIA eI2-IAF with the community of stakeholders

The preliminary draft document outlining the conceptual and methodological principle underpinning the MIREIA eI2-IAF has been presented for discussion with experts and practitioners in the second MIREIA Experts' and Stakeholders' Workshop on Measuring the impact of e-Inclusion actors held in Seville, on 6th September 2012. The aim of this workshop was to reach consensus on a pragmatic yet scientifically sound methodological framework and a concrete set of indicators to monitor and assess real case examples and policy interventions.

The event gathered around 30 participants, drawn from various stakeholders' community, from research, practice and policy, including those who will test the Framework in the next Task 6 of the project. Participants showed a high level of satisfaction with the proposal presented and experts were very active in the discussion, contributing in a constructive way to the development of the IAF. The participants' reviews and feedback to the draft proposal of IAF have been considered in the present document.

- Online Consultation

An online collaborative platform to enabled consultation of the MIREIA Community\(^3\) was set up in order to share relevant documents and discuss about the implementation of the MIREIA Project during its different phases. In particular in view of the 2\(^{nd}\) MIREIA Experts and Stakeholders' Consultation Workshop that took place at IPTS in Seville on 6th September 2012, the draft of the MIREIA eI2-IAF was shared through the community in order to promote online discussion and collect feedback from participants before and after the workshop.

- Peer Reviewer

Four experts, namely Paul Foley, María Garrido, Alberto Savoldelli and Nicky Stevenson, were acting as 'peer reviewer' with specific regard to the draft document that was a preliminary proposal of Conceptual and methodological framework for building the MIREIA Impact Assessment Framework All of them provided written feedback to the draft of the MIREIA eI2-IAF and (with the exception of Maria Garrido) attended and were very active during the discussion of the second Experts' and Stakeholders' Workshop on Measuring the impact of e-Inclusion actors held in Sevilla 6\(^{th}\) September 2012.

- Test of the Impact Assessment Framework

The framework will be further validated through applying it to five case study interventions in order to 'test' and refine the methodology. This will be done as part of Task 6 – Test of the Impact Assessment Framework of the MIREIA project which will run in the period January – July 2013.

To prepare for the test of the MIREIA eI2-IAF the JRC-IPTS has identified five case study interventions where to implement the IAF and launched a call for tenders to select an organisation to provide methodological support to the test of the IAF.

\(^3\) [http://mireia-project.eu/consultation](http://mireia-project.eu/consultation)
Section 8 of this report presents the methodology for testing the impact assessment framework and in Annex III an overview of the five case study interventions that have been selected is provided. Annex IV also presents the key methodological components outlined by the contractor that has been appointed to conduct the methodological support to the test of the MIREIA eI2-IAF, which will be further discussed during the first phase of the Testing (first quarter of 2013) jointly with the JRC-IPTS. This will be also the basis for the further elaboration of the MIREIA eI2-IAF.
3. The eInclusion landscape in Europe

3.1. The policy context for eInclusion

Research has clearly shown that those who suffer multiple disadvantages such as unemployment, low income and poor educational attainment are also digitally excluded, that is, they lack meaningful engagement with technology. The deeper their social disadvantage, the less likely they are to have access to a computer, the internet and other forms of technology such as mobile phones and digital TV. This form of technological exclusion can exacerbate existing social disadvantages. For example those who are out of work and digitally excluded will have less opportunities to search for and gain employment.

The risks are increased with the drive to move government, commercial and voluntary services online to realise efficiency gains and enable 24/7 access. At best, those in most need risk missing out on the many benefits of electronically delivered information and services. At worst they risk being left behind with second-class services; or in some cases being unable to access the very services that could provide them the essential help and support they need.

Alongside these risks are real opportunities. Technology can deliver support to excluded groups in a way that enhances access to information and services, enables self-help and reduces dependency on the state. Information and communications technology can give people a voice and empower them to raise their concerns. As a result it can also help councils to engage people on important local issues, or motivate residents to access the local services to which they are entitled.

Technology provides new channels and pathways to helping to communicate messages more effectively and interactively on important topics like health, crime and employment. Communications technologies can extend social and support networks for those who are isolated. They can support wellbeing, increase self-esteem and confidence and help people to pursue new hobbies, interests and friendships.

Technology can enable service transformation and help address the problems facing socially excluded people in a more efficient and effective manner. There are many excellent examples of the socially inclusive use of technology, sometimes referred to as digital inclusion, across all policy and service areas such as health, crime, education, employment, housing, community, such as, for instance, the solutions4inclusion portal developed by the UK government to show case inspiring examples of projects that use technology to enhance social inclusion.

There has been much activity to support government, private and third sectors in tackling the risks and making the most of the opportunities around social applications of technology. However some common barriers to action often emerge. These were highlighted in the Digital Inclusion Landscape of England report and include:

- Good projects have low visibility and awareness; few projects are replicated by other areas, leading to missed opportunities and reinvention.

- Comprehensive evaluations are rare; seemingly successful projects, with good anecdotal evidence of success, are often difficult for others to justify investment in.

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- **Low sustainability**: existing projects have difficulty gaining continuation funding, and often fail to develop or exist beyond a pilot phase.

- **Projects are cross-cutting** often benefiting multiple stakeholders; and it is difficult to make the overall case for a project based on the narrower benefit to the stakeholder(s) investing the bulk of the resources.

- Projects often produce **softer, less tangible benefits**; in the short and medium terms that are difficult to justify against short-term implementation costs.

- Projects can **contribute towards much more tangible longer term benefits**; e.g. reducing reoffending, or improving employment – but it is difficult to demonstrate the shorter term contribution of projects towards these longer term impacts, and disentangle them from other complementary initiatives.

At the heart of these barriers is the difficulty in clearly expressing the benefits of projects and understanding their wider impact.

### 3.1.1. eInclusion: A national contextual review

A brief review of eInclusion in a single country helps to provide a useful insight on how eInclusion policies are translated into practice at the local level.

In 2009, Delivering Digital Inclusion: An Action Plan for Consultation was published by the UK government. The document provided a framework for achieving greater digital inclusion and for championing the best use of technology to tackle ongoing social inequalities. It set out both immediate actions and a number of proposals for consultation.

The Action Plan outlined the key issues relating to the use of digital technology and argued why digital exclusion is an increasingly urgent social problem.

In summary the argument put forward for the UK was that:

- Digital technologies pervade every aspect of modern society. However these opportunities are not enjoyed by the whole of the UK population – for example, 17 million people in the UK still do not use computers and the Internet and there is a strong correlation between digital exclusion and social exclusion.

- There are significant and untapped opportunities to use technology better on behalf of citizens and communities. These include improved service planning, design and delivery, particularly to address the needs of disadvantaged groups and individuals.

- The purpose of the Digital Inclusion Action Plan is to ensure that all citizens, particularly those who are disadvantaged, realise both the direct and indirect benefits of digital technologies.

To support the consultation process in 2008 a study of more than 800 projects contained on the Solutions4Inclusion portal was conducted. The development of the online portal - Solutions4inclusion⁷ - provided policymakers and NGOs with inspiring examples of how ICT supported projects have helped disadvantaged groups, or how they have tackled specific issues and challenges. (See **Error! Reference source not found.**).

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⁷ The solutions4inclusion portal was developed and populated with more than 1,000 projects by Tech4i2. The portal was absorbed into the UK government supported toolkit in 2010. In the first two years more than 250,000 unique visitors from all over the world used the portal to search for details of projects and initiatives. Unfortunately, some of the functionality and ease of use of the previous version have regretfully been lost. The remaining version of the portal can be found at [http://projects.esd.org.uk/ProjectList.php?property=Benefitsands4i](http://projects.esd.org.uk/ProjectList.php?property=Benefitsands4i)
Key findings from the study were:

- There is a **much greater emphasis on helping socially excluded groups to directly use technology** rather than supporting others to use technology on their behalf. The synthesis analysis indicated that 83 per cent of projects required an individual or the community to use technology to obtain assistance or access to a service. Only 17 per cent of projects were found to use technology independently of the targeted beneficiary or community to deliver benefit.

- Projects particularly **focused on delivering softer benefits** around inclusion, equality and wellbeing i.e. foundation benefits, rather than priority outcomes against specific service and policy areas – see Figure 2.

- Over two thirds of the projects were **focused on delivering for socially excluded groups, communities and their immediate families and carers**. This reflects the ‘person’, ‘community’ centric nature of social inclusion projects – see Figure 3. The lower prevalence of benefits to frontline workers indicates the greater focus on encouraging excluded groups to gain direct access to technology enabled services rather than intermediated and supported access.
3.2. The European eSkills and Digital Literacy Policies

A review of European e-skills and digital literacy policies provides an overview of the policy context for the primary area of focus for the projects to be investigated as part of MIREIA.

European e-skills polices distinguish between ICT professionals and ICT users, defining a distinctive set of skills for both targets. Those skills encompass the confident and critical use of ICT for work, leisure, learning and communication.
The starting point of the new policy was the e-skills summit in Copenhagen in 2002, followed by the establishment of the European e-Skills Forum in March 2003 and the Experts Group on e-Skills in 2006. An ICT Task Force was launched in 2006 to prepare a number of recommendations to help create a more favourable environment for business in the EU. Those recommendations were taken up by the Thessaloniki Declaration adopted at the European e-Skills Conference of October 2006. In 2007, the Commission issued a communication on "e-Skills for the 21st Century: Fostering Competitiveness Growth and Jobs" (COM(2007) 496). The Council followed the EC example and adopted Conclusions on a long-term e-skills strategy for Member States. Those initiatives were backed up by the ICT industry forming the e-Skills Industry Leadership.

The EC document presented five lines of action at the European level: promoting long-term cooperation and monitoring progress, developing supporting actions and tools, raising awareness, fostering employability and social inclusion, and promoting better and greater use of e-learning. The actions involved among others:

- Supporting the development of a European e-Competence Framework (general and comprehensive e-Competences that can then be adapted and customised into different ICT business contexts)
- Supporting the Europass initiative in cooperation with the European Centre for Development of Vocational Training, a project of European e-Skills and Career portal
- Encouraging women to choose ICT careers (e.g. IT girls shadowing exercise)
- Promoting e-training in the field of agriculture and in rural areas in the context of approved rural development programmes for the period 2007-2013
- Supporting the development of e-competence curriculum guidelines
- Launching an initiative on e-inclusion in 2008
- Networking of training centres and research (Living Labs) that contribute to a better understanding of future e-skills needs

The e-Skills Steering Committee was further set up at the end of 2009 in order to organise the European Skills Week and evaluate the Commission’s activities regarding e-skills (2007-2010). The e-Skills Week campaign was aimed at informing students, young professionals and SMEs on the vast range of opportunities that ICT-related jobs present and at highlight the growing demand for skilled ICT users and professionals. The European e-Skills Week encompassed national and pan-European events taking place between November 2009 and March 2010. The second e-Skills week took place in March 2012 with events, conferences and workshops in more than 30 European countries.

The importance of e-skills for the European Union was reinforced by the Digital Agenda for Europe, one of the seven Europe 2020 flagships that focused one of its pillars on enhancing e-skills – **Pillar VI Digital Literacy, Skills and Inclusion**. A set of 12 actions for the EC and Member States were set up in order to support ICT skills acquisition in Europe.

The DAE actions range from support of accessibility and e-inclusion, through formal tools to assess ICT skills, to development of new indicators of digital literacy and media literacy.

The recent DAE report on 2011 progress (Digital Agenda Scoreboard 2012) stresses that the Member States on average are lagging behind in the implementation of e-skills and digital literacy policies.

More specifically, in Pillar VI, three actions under Commission responsibility were concluded, six are on track and three are delayed, including the most important from this tender’s point of
view, i.e. the Member States’ promotion of long-term e-skills and digital literacy policies (see Figure 4).

The progress of Member States is at various stages, including front-runners such as the UK (with for example the Digital Champion campaign, the success of which prompted the EU Digital Champions appointments), Sweden (Digidel – digital inclusion campaign), the Netherlands (with the Internet keeps you going national campaign) and Denmark (with its Learn more about ICT network) but also interesting approaches in Eastern Europe (the Lithuanian Libraries for Innovation, the Polish Digital Poland of Equal Chances programme and the Romanian Biblionet programme). The Gdansk Roadmap for Digital Inclusion, the result of a wide on-line consultation exercise carried out in conjunction with the Gdansk Innovation for Digital Inclusion Conference on Oct 5-7th 2011, lists several good practice initiatives run by governments, NGOs and private companies. The lowest level of activity in closing both the e-skills gap and increasing digital literacy is shown in Italy, Bulgaria and Greece.

![Figure 4 - DAE Actions on eSkills, Digital Literacy and Inclusion](image)

With a specific regard to framework development, it has to be highlighted the work Digital Competence in Practice: An Analysis of Frameworks8, that defines "being digitally competent" as "the ability to understand media (as most media have been/are being digitalized), to search for information and be critical about what is retrieved (given the wide uptake of the Internet) and to be able to communicate with others using a variety of digital tools and applications (mobile, internet). Additionally, "Digital Competence"9 is defined in this context as "the set of knowledge, skills, attitudes (thus including abilities, strategies, values and awareness) that are required when using..."
ICT and digital media to perform tasks; solve problems; communicate; manage information; collaborate; create and share content; and build knowledge effectively, efficiently, appropriately, critically, creatively, autonomously, flexibly, ethically, reflectively for work, leisure, participation, learning, socialising, consuming, and empowerment”.

3.3. **Wider policies supporting employment growth**

In the COM(2012), *Towards a Job-rich Recovery*, the EC reinforced the DAE message.

As the EC President puts it: "Europe needs a job-creation strategy to tackle its unacceptable level of unemployment. The EU has a large untapped potential to boost job creation. All together, the green economy, the health and new technology sectors will create more than 20 millions of jobs in the years to come. Member States need to seize these opportunities, mobilise existing resources and stimulate their labour market in close cooperation with the social partners. Together we can make it happen."

There is also a stress on the creation of employment perspective for young people together with lifelong learning systems development which supports the employability and productivity of the European workforce. Finally, the EC calls for higher investment in skills to address the skills mismatches in Europe’s labour markets, as well as better anticipation of skills needs. The matching of skills will be for example supported by the revamping of the EURES portal into innovative online self-service application.

The “Employment package” identifies ICT as one of the job generating-areas, so it includes a specific Commission staff working document “Exploiting the employment potential of ICTs (2012)” accompanying the main document: “Communication: Towards a job-rich recovery” which announces:

- Setting up of a multi-stakeholder partnership to address the demand and supply mismatches and build a community around ICT skills training initiatives as well as to support awareness raising campaigns.
- Strengthening the European e-skills framework with the creation of a section on ICT careers, further elaboration of the European e-competences framework, and guidelines for e-learning and promotion of short-cycle qualification in ICT
- Supporting an increase in a highly qualified ICT labour force with quality labels for ICT industry-based training, promotion of synergies between actions in the fields of ICT skills, entrepreneurship and cloud computing and further development of the EU initiative on e-leadership
- Promoting greater use of EU financial instruments for investments in ICT skills

The Annual Growth Survey 2012 foresees that unemployment levels in the EU are likely to remain at around 10% in 2012 and into 2013. There is therefore a major need for specific action supporting employment and employability of young people also by developing digital and entrepreneurial skills (COM(2011) 815 final).

The European Commission already set up a policy initiative concentrated on education and employment of young people called *Youth on the Move in 2010*. It is a comprehensive package of

Learning to learn; Social and civic competences; Entrepreneurship; and Cultural awareness and expression). Digital competence is defined in the Recommendation as involving the confident and critical use of Information Society Technology (IST) for work, leisure and communication.
policy initiatives on education and employment for young people in Europe. It is part of the Europe 2020 strategy for smart, sustainable and inclusive growth. Youth on the Move aims to improve young people’s **education and employability**, to reduce high youth unemployment and to **increase the youth employment rate** – in line with the wider EU target of achieving a 75% employment rate for the working-age population (20-64 years) – by:

- making education and training more relevant to young people's needs
- encouraging more of them to take advantage of EU grants to study or train in another country
- encouraging EU countries to take measures simplifying the transition from education to work.

More specifically, the *Your first EURES job* action helps young Europeans to find work abroad, *Youth@Work* aims at building contacts between young people and small businesses (SMEs) by running an awareness-raising campaign and the *Youth Opportunities Initiative* runs a set of policy actions, including apprenticeship schemes and supporting young entrepreneurs.

Recently, DG CONNECT Commissioner Neelie Kroes during the CIONET event invited the 150 CIO present to work together in a Grand Coalition for ICT Jobs, in order to address the skills shortage in the ICT sector[^10].

There are three components of the Grand Coalition for ICT Jobs:

1. Establishment of online engagement platform to stimulate debate.
2. Contacts and meetings between European Commission and stakeholder representatives to identify good practices, and evidence of activities that have worked in order to look to replicate them on a wider scale
3. Meeting with the EC VP Neelie Kroes and key stakeholders to engage the coalition.

### 3.4. The role of eInclusion Intermediaries

Within this context, digital and social inclusion intermediaries play a crucial role, both providing digital literacy to excluded groups and using ICTs to support social inclusion of groups at risk of exclusion through acquiring new skills for supporting them, for instance in their search for employment.

In spite of their crucial role, there is still incomplete knowledge about who and how many these actors are, their founding sources, their role in providing socio-economic inclusion, the target groups they address, the services they provide, the social needs they fulfill, the impact of their actions from a socio-economic and digital inclusion perspective, and finally their ICT related-need and how policy could support them.

In this section we analyse the key characteristics of eInclusion intermediaries in terms of their role in implementing the eInclusion policies and the way they interact with other actors. A preliminary analysis of their services and target groups they are dealing with, together with the identification of a Causal Loop Diagram describing the role of Intermediaries in achieving eInclusion societal goals has been elaborated as part of the methodological approach to support the testing phase of the MIEIA eI2-IAF and is available in Annex IV.

This provides a preliminary base for the development of a taxonomy that will be revised and enhanced during the testing phase in 2013. In fact, as it has been highlighted above, there are several policy domains at EU level that are relevant to eInclusion, and a large number of related initiatives

and instruments that concern the topic. The picture becomes even more complex and diversified if one considers eInclusion initiatives at national and local levels. This complexity reflects the characteristics of a multiplicity of stakeholders and interests: private sector, third sector, user associations, formal and informal intermediaries, etc. In such context, initiatives and effort often overlap and synergies are not fully exploited by leaving a big potential for improving actions and their impacts (Limassol report, 2009).

Figure 5 provides a broad vision of eInclusion actors in the UK. The figure underlines how a variety of organizations and initiatives undertake eInclusion service delivery. It also demonstrates that the situation is very fragmented and, as the report says: “there is a clear lack of strategic vision or indeed the appropriate alignment of the initiatives to ensure that they are efficiently delivered and they complement each other”.

Furthermore there still isn’t clear evidence of the quality of the services provided by the different actors as well as of the impacts of such services in respect to the societal goals they pursue (Kaplan, 2005; Cullen, Hadjivassiliou and Junge, 2007; EC, 2010; Cullen, Hachè, Hayward and Maes, 2012).

![Figure 5 - Organization acting in UK eInclusion service provisioning](image)

*Source: Digital Britain, 2009*

Different views and actions are evident when examining eInclusion initiatives. Heeley and Damodaran (2009) studied many initiatives around the world and stated “many eInclusion programmes are based on a creative approach without a clear strategy of improvement”. This is probably due in part to the multiplicity of actors involved who all operate around eInclusion matters according to differing agendas:

- **Governments**: carrying out their national/local digital inclusion programmes, although these are more or less developed according to the country concerned. These programmes thus operate
differently dependent on the level of technology already present and the importance placed on eGovernment in a given Public Administration. The differing social issues, and the commitment of the Government to resolving them, also affect the nature of the programme in place;

- **Intermediaries:** carrying out eInclusion projects based on their specific missions and their organizational structure, balancing a trade off between their sustainability and the quality of the service provided. As a matter of fact, Pegna-Lopez, (2012) in a recent workshop organized in IPTS highlighted that Telecenters (White, 2000) and Cybercafees (O’Donnell, McQuillan, and Malina, 2003) intermediaries are now suffering from two problems: “an economic resources shortage, because of the economic crises and because of internet penetration” ... and more in general … “most of the eInclusion intermediaries that are providing eSkills services are now suffering because of the level of services required is extending beyond simple digital literacy activities”. Additional examples of intermediaries of eInclusion are: libraries; training centres; job centres; etc.;

- **Stakeholders/beneficiaries:** that express the eInclusion needs of social groups they represents and emerge in an ad hoc way in response to issues relating to the local situation. Examples of these actors can be informal social networks (Faulkner and Lie, 2007); women’s groups (Rommes, 2002); housing associations (Ferland and Timms, 2006); business associations and private companies.

These problems are particularly evident at local and community level due to the diversity of real needs and the more participative behaviours of local communities in eInclusion policy implementation (Kaplan, 2005; BIS, 2009; Pekka, 2010; Cullen, Hachè, Hayward and Maes, 2012). However the local dimension of analysis and the diversity of the real eInclusion needs to be addressed are also an opportunity for defining a common IAF as recognized by the MIREIA where five case study interventions in different areas and addressing diverse needs have been identified. (A preliminary overview of the five cases is provided in Annex III).

Such diversity in the selected case studies can help in developing an effective MIREIA eI2-IAF tool that will assist public administrations in measuring the impact of their eInclusion policies and, at the same time, providing support to intermediaries in assessing their interventions.

### 3.5. State of play in measuring the impact of eInclusion

This section provides an overview of the context within which eInclusion studies are undertaken and the associated impacts found.

Several studies\(^\text{11}\) have examined the context within which eInclusion studies are undertaken. These consistently paint a very diverse and muddled picture. The i2010 e-Inclusion Subgroup stated (page 11) in 2009 that: “the e-Inclusion field is characterised by a multiplicity of stakeholders and interests: private sector, third sector, users associations, formal and informal intermediaries, etc. In such context, initiatives and efforts often overlap, synergies are not fully exploited; this leaves a big potential for improving actions and their impact . . . . . . It is also very important that the opportunities and benefits from e-Inclusion are effectively demonstrated and communicated”.

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The situation has changed little in the following years. The opportunities from eInclusion are still under researched and those studies that have been undertaken have frequently been methodologically weak.

The MIREIA research therefore offers a major opportunity to greatly improve the current situation.

3.5.1. The Vienna Study on Inclusive Innovation for Growth and Cohesion

One of the most extensive studies of eInclusion has been carried out for the European Commission in 2008-2009: the Vienna Study on Inclusive Innovation for Growth and Cohesion: Modelling and demonstrating the impact of eInclusion (Codagnone, 2009).

It contains evidence based eInclusion policy making and impact measurement and, some conclusions about the impact of ICT on productivity, wages and employment, with implications from an eInclusion perspective. Some of the more relevant conclusions are, for instance, the statement that ICT revolution improves the position of highly skilled and highly educated workers, worsens that of low skill and low education workers, and is making life much harder for older workers as it produces a fast depreciation of their human capital, even for those possessing high level education.

In particular, however, the study found a very disparate and fragmented situation for eInclusion studies and for impact studies that investigated them. Key results included:

- Countries are at different stages of development in their adoption and recognition of a role for digital technologies as channel of inclusion. Countries like the UK have well established policies regimes and are at the forefront in considering digital inclusion issues. Others such as France (where a Minister of State for the Digital Economy was appointed) and Austria were due to announce specific policies in the domain. In most other countries there is no ad hoc digital inclusion policy and the issue find a brief treatment with other broader policies;
- Federal/decentralised countries (Australia, Austria, Belgium, Canada, Germany Italy, Spain and the United States) are "obliged" to adopt bottom-up approaches and there is little central strategic policy making and a lot of fragmentation;
- Regardless of countries peculiarities, policies are fragmented across both sectors (employment policies, educational policies, information society policies, telecommunication regulatory policies) and tiers of governments (national, regional, local), as well as across the public/private dimension. This is true also for EU level policies. In other words eInclusion is not mainstreamed nor coordinated or tackled in systemic ways, relying on the interaction of all possible instruments and all stakeholders.

In terms of specific measures:

- Overall access policies can be considered so far only very moderately successful. Efforts at spreading coverage have been relatively successful but differences in the geographic coverage of broadband clearly point to persisting market failures not yet successfully addressed by policies. Tax relief and other fiscal measures to overcome financial barriers have achieved some success but present some limits. In many cases they have been limited to people already in employment thus missing the unemployed. Public Internet Access Points (PIAPs) and awareness campaign have had little impact because only in a few cases have they been embedded in deeper and broader local level policies and contexts. In general the cases of successful access policies show that they focus on the measures targeting the most deprived communities and complementing other local actions. it can be concluded that access policies have not yet addressed effectively market failures, they are fragmented, not sufficiently targeted to groups at risks and deprived communities, and not mainstreamed into wider social inclusion policies;
- The situation of eAccessibility is clearly unsatisfactory: market failure is evident; at national level accessibility policies have been set but little enacted;
- The situation of usability is unsatisfactory and many potential users drop out due poor level of human/computer interaction;
- The quality in the technical means of access (broadband at home and adequate hardware and software is a main source of digital that has been little addressed by policies);
- Use of eGovernment by socially disadvantaged groups is minimal (eLost 2007 and 2008) and little has been done to produce services better targeted to different groups of users;
- Digital literacy initiatives tend to be generic and are not sufficiently targeted and linked to everyday life needs. While commendable, these efforts fail to tackle the more subtle and sophisticated cognitive skills required increasing quality of use and, consequently, the benefits derived;
- Policies using ICT to improve employability are very scattered and fragmented, as is the provision of other advanced empowering mechanisms provided by actions in field such as e-Democracy, e-Learning and ICT for social capital.

3.5.2. Review of studies on the impact of ICT and eInclusion

A wide range of studies that investigate the impact of ICT and eInclusion exist and have been analysed in a systematic manner as part of the Vienna Study mentioned above. Main results focused on the following:

**ICT and Entitlements.** Social scientists and economists have repeatedly shown that many individuals eligible for public assistance through welfare programs and services (including unemployment benefits) do not actually apply for such assistance (some estimates for the Temporary Aid to Needy Families in the U.S. show that less than 50% of eligible households file an application). Studies of the relationship between eligibility and actual participation have found that welfare participation decisions depend not only on individual risk factors, but also on the social context in which individuals operate (Blank and Ruggles 1996, Blume and Durlauf 2006, Manski 2004, Cohen-Cole and Zanella 2008).

The main impact of the social context on participation in a welfare program operates through two different effects. On the one hand we have the information effect, according to which people can learn from similar individuals about benefits and costs of welfare programs, besides receiving info on practical issues such as: applications, deadlines etc. On the other hand we have stigma effects, according to which people do not like to be associated with welfare programs that certify their poor economic and social conditions (embarrassment of receiving public funds).

ICT supported measures can have an impact on both aspects. On the one hand they make information about the programmes more easily accessible, hence increasing the take-up rate among the eligible individuals and family. Moreover, they reduce the stigma effect, since the whole procedure becomes more anonymous. Increased access to such welfare provisions raise income and reduce poverty, that is they tackle one of the components of capacity deprivations and relatively improve individuals’ functionings (i.e. Arjan de Haan 1997; D’Ambrosio et al. 2002; Tsakloglou and Papadopoulos, 2002a; 2002b; Sen 1999, 2000).

The increased available income and the potentially increased trust in public services can also lead to fruition of health services and improve health conditions, and hence also educational attainment and eventually labour market participation. Eventually the improved coverage of those eligible for welfare programmes and services can reduce the cost of social exclusion (by reducing crimes, alcoholism and other dire social problems) and contribute to social cohesion. Finally, this output and
related outcome can have a feedback on policy formulation and delivery. Increasing the numbers of policy takers/services users amounts to expanding the empirical evidence on the basis of which policies and services can be evaluated and re-designed.

**ICT and health.** During the 1990’s many economists were concerned that the traditional Solow growth model (which stressed the role of capital deepening and technological progress) was too simplified to account for the many factors affecting growth. Hence, the research agenda became one of developing growth models with cumulative factors different from physical capital that could be considered engines of growth. Examples of such effort are Mankiw et al (1992) and –especially– Barro (1996), who developed a growth model including physical capital inputs, level of education, health capital, and the quantity of hours worked. He found that an increase in health indicators raises the incentives to invest in education and a rise in health capital lowers the rate of depreciation of health.

In an empirical analysis, Bloom et al. (2004) found that health capital is a significant variable for economic growth, while Strauss and Thomas (1998) in a review the empirical evidence of the relationship between health and productivity that establish correlations between physical productivity and some health indicators. In brief better health conditions affect human capital and physical productivity (by way of reduced number of days lost due to health problems). Accordingly, if appropriate measures supported by ICT improve health awareness and assistance positively impacting health conditions, this in turn reverberates into productivity directly (less days lost) and indirectly (by increased educational level). Additionally improved health conditions achieved in the more efficient way enabled by ICT can reduce healthcare costs.

**ICT Matching functions and network effects.** Research focused on unemployment determinants has adopted ‘a search approach’ to the labour market (for a review of the various research and findings see Pissarides 2002). The intuition is that labour demand and supply do not meet in a fully competitive labour market. On the contrary, there exist a series of frictions (mainly informative) whose consequences are that labour demand does not meet in a costless fashion with labour supply. The presence of frictions implies that firms and workers, before production can take place, need to invest time and resources to find a good match.

In these models the process by which firms and workers meet is represented by a matching function, whose parameters are determined by the institutional framework and by the factors that can facilitate the match between labour supply and labour demand. ICT has been shown to have an important impact on those factors, and hence reduce the equilibrium unemployment rate (see Ziesemer 2002). Related to the matching function but treated in a separate literature is the topic of individual networks as a conveyor belt to finding a job. The original intuition came in fact from sociology and not from economics and was contained in the ground breaking and seminal article of 1973 by Mark Granovetter showing how the more instrumental and ‘weak ties’ (that is acquaintances rather than relatives and close friends) are the most powerful ways of finding a job.

Subsequently this insight has been explored and empirically tested mostly by economist. Bayer et al (2005), for instance, found that significant social interactions have an impact on a wide range of labour market outcomes, including employment and wages, while Borghans et al (2002) have estimated that in the U.S. between 70% and 80% of jobs are found through networking.

The impact of ICT on improving individuals’ network and in supporting the matching function is straightforward (see for instance Zinnbauer 2007). Various measures supporting disadvantaged social groups and individuals’ better networking increase their chance of finding a job directly through ad hoc platforms and indirectly by widening their networks of acquaintances.

**ICT and Consumer Welfare.** Increased competition and better flowing information should enable consumers to improve their utility function by getting products and services at the best quality/price
ratio. This is, however, hampered by switching costs. Switching costs are considered to play a large and increasing role in competition and strategy. From an economics perspective, they are considered as potential sources of market power and therefore often considered with suspicion. On the contrary, in the marketing literature, they are appraised as tools that firms can use to increase value added and are therefore considered positively. Whatever one’s opinion on the desirability of switching costs, both the economics and the marketing literature agree about their origin (see Chen and Hitt, 2006). Switching costs can arise due to the following reasons:

- Search costs: these are costs that consumers must incur to locate an alternative seller. This affects not only the initial purchase and also subsequent purchases as well, since an uninformed consumer will tend to maintain his initial provider;
- Transaction costs: these are the costs related to starting a new business relationship (or terminate an existing one);
- Learning costs: these are the costs related to the amount of money, effort and time that have to be devoted to learn about a new product or a new provider/seller.
- Compatibility and network effects: Often it is the case that the value of a good or service is enhanced by: i) the degree of compatibility with other goods or services and ii) the number of other users. In these cases the coordination costs of moving from an inferior to a superior technology can be outweighed by the coordinating costs of changing all users and all equipment to the new technology
- Contractual switching costs: these are costs that the consumer has to pay whenever he/she changes provider.

There is clear empirical evidence that these costs are reduced when information is delivered in an easy-to-use format. ICT can have an impact on most of these aspects. First ICT tends to lower search costs (much of the literature on Internet and search costs shows that Internet lowers search costs, induces switching and leads to more competitive markets, see Baye et al., 2006).

Second, ICT tends to lower transaction costs as well, making starting and closing economic relationships much easier and cheaper. ICT can also reduce learning costs and coordination costs related to network effects and compatibility. Finally, ICT can have an indirect impact on coordination costs as well, since –by lowering search costs- they reduce the likelihood of signing contracts that lock-in consumers.

Using ICT to better compare and find products and services could be an important aspect especially for socially excluded individuals usually confined to those available in their place of residence, where sellers are likely to enjoy location rent. If increased use of the Internet enables them to access better products and prices at competitive prices, this in turn contributes to a relative decrease of their capacity deprivation and eventually can impact on social cohesion (increased participation in economy and society).

**ICT industry output effect.** An in-depth review of the economic literature amply documents the important impact that the ICT producing sectors have on productivity and GDP growth, which is pleonastic to discuss here. It is quite reasonable to assume that if the pool of digital included individuals increases, so will the aggregate consumption of ICT products and services. This is bound to increase the ICT producing sectors output and, thus, further contribute to their impact on productivity and growth.

Despite its intrinsic logic, this line of reasoning does not find much support in the literature and cannot be tested empirically for the digital inclusion variable cannot be included in the growth accounting models that estimate the impact of the ICT producing sectors. Finally it is worth noting
that regional broadband support measures can also positively impact the ICT producing sector output.

**ICT supported community building.** Before illustrating how support measures can produce output and outcomes, the explanation of what is meant for social capital is needed. While the concept has acquired policy-making prominence and become popularised in the work of economists for the World Bank first and other international organisations, its understanding is mainly informed by classical sociological works (i.e. Coleman 1998; Granovetter 1973 and 1985; Portes 1998; Putnam 2000).

In this respect there are two approaches to social capital; one macro and one micro. The macro concept is used in the work of Robert Putnam who considers it mostly as a general characteristic of a community or a society, where social capital is a synonymous of systemic trust, social connectivity (diffuse solidarity and support networks), civic spirit and participation. The best operational definition of the micro level concept of social capital is that provided by Portes who define it as ‘the ability of actors to secure benefits by virtue of membership in social networks and other social structures’ (1998: 6).

The micro concept is more relevant for the matching and network effect of ICT, whereas the macro concept applies better to ICT supported measures targeting communities, especially in re-generation efforts. These measures, however, can also produce more instrumental micro level networks that can be harnessed, for instance, to find a job.

The availability of community centres supported by ICT can greatly enhance social capital and to reduce social isolation in deprived communities. Individuals can learn to use ICT to have access to culture, leisure and entertainment, to connect with old and new friends. This also results in acquiring skills that reverberate on all other outputs and outcomes.

It must be added that the reduction of unemployment that can be produced by increased digital literacy and skills can also reduce social isolation and increase social capital. We can appreciate this by considering the negative impacts of unemployment evidenced for instance by Sen (2000):

- Unemployment can be a significant causal influence in heightening ethnic tensions as well as gender divisions. Since immigrants are often seen as people competing for employment (or “taking away” jobs from others), unemployment feeds the politics of intolerance and racism;
- People in continued unemployment can develop cynicism about the fairness of social arrangements, and also a perception of dependence on others;
- Unemployment may generate loss of cognitive abilities as a result of the unemployed person’s loss of confidence and sense of control;
- Unemployment and declining self-confidence can be very disruptive of social relations and of family life. It may also weaken the general harmony and coherence within the family;
- Unemployment has a detrimental impact on social activities, such as participation in the life of the community, which may be quite problematic for jobless people.

**3.5.3. Review of methodologies and frameworks to assess impacts of eInclusion**

From a methodology viewpoint, there are other studies relevant for the development of the MIREIA eI2-IAF that should be highlighted. These include the following:
European Index of Digital Inclusion (EIDI)\textsuperscript{12} conducted by the College of Europe for the European Commission in 2010, aimed at monitoring and capturing the level of advancement of digital inclusion in the EU27 and in all member countries and comparing progress made between 2004 and 2009.

Impact assessment of ICT for Development Projects: A compendium of approaches\textsuperscript{13}. This working paper explains the basis for understanding impact assessment of ICT4D projects, and a summary of the 11 most cited approaches or assessment frameworks that can be used in evaluating ICT for development projects.

Benchlearning study on the economic and social impact of eInclusion policies\textsuperscript{14}. The study provides a indicator framework that facilitates assessing the impact of any number of projects. In addition, the study has delivered a self-assessment tool for project managers to determine their own strengths and weaknesses and supports further improvement to maximize impact. Finally, the study delivers a Method Handbook that includes practical guidelines developed for the European Commission to support measurement of the impact of eInclusion policies and programs.

The Study on Social Impact Assessment as a tool for mainstreaming social inclusion and social protection concerns in public policy in EU Member States\textsuperscript{15} describes, compares and analyses the different ways in which social impact assessment is currently carried out in the EU Member States. On basis of this analysis, it draws recommendations for the implementation of effective social impact assessment systems and for effective social impact analysis.

At a national level, the study on The socio-economic impact of the Networks of Telecentres of the Association Telecentre Network Community) Impacto Socio-Económico de las Redes de Telecentros de la Asociación Comunidad de Redes de Telecentros \textsuperscript{16} presents the caracterisation of the telecentres at national level (in Spain) as well as identifying and assessing relevant initiatives. Furthermore, it evaluates the available indicators of the Telecentre Network and tries to set up a link between them and the socio-economic impacts at national level.

In the UK, the report Champion for Digital Inclusion\textsuperscript{17} include an assessment of the potential scale of the ‘digital dividend’ to the UK of achieving greater digital inclusion as well as the expected economic benefits of reducing digital exclusion in key areas. After that, a new report came out Evaluating the work of the UK Digital Champion and Race Online 2012\textsuperscript{18}, whose objective is to document the work of the UK Digital Champion (previously MLF was the Champion for Digital Inclusion) and evaluate effectiveness, impact and value for money since the appointment.

\textsuperscript{14} Capgemini. (2012). Benchlearning study on the economic and social impact of eInclusion policies.
\textsuperscript{15} European Commission, (2010), Study on Social Impact Assessment.
\textsuperscript{16} Fundación CTIC. (n.d.). Impacto Socio-Económico de las Redes de Telecentros de la Asociación Comunidad de Redes de Telecentros
The study on Economic benefits of digital inclusion: building the evidence\textsuperscript{19} aims to attribute a monetary value for the benefits digital inclusion can bring to five core groups: individual people, private sector organisations, the Government, the wider economy and society as a whole.

*Joining the Dots*\textsuperscript{20}, identified the main motivations that led organisations to undertake a social impact measurement exercise; what approaches and tools are most commonly being used to measure social impact; the costs incurred by organisations measuring impact and undertook an analysis of the methods and tools used.

*A Benefits Framework for Social Inclusion Initiatives*\textsuperscript{21}, documents the results of a project to research the types of benefits that emerge from social inclusion projects, in particular those which make innovative use of technology.

The report *Assessing the economic benefits of digital inclusion*\textsuperscript{22} quantify in $4.1 millions the benefits in employment and education, through additional skills and access to new jobs in two disadvantaged communities in Victoria (Australia).

*Getting Started In Social Impact Measurement*. A guide to choosing how to measure social impact\textsuperscript{23}. This guide is divided into three parts. Each part has been developed to take the organisation a step further toward understanding and making choices about social impact measurement. The final section includes a list of available tools before making choices. This guide is accompanied by a *Social Impact Measurement Toolbox*, aimed at small to medium sized organisation, that shows how to provide the most useful/robust information to those who need it and makes the most of what organisations already do.

*Making an Impact: impact measurement among charities and social enterprises in the UK*\textsuperscript{24}. It surveyed 1,000 charities with incomes over £10,000 to understand what has changed in charities’ impact measurement practices, the drivers behind measuring impact, and the benefits and challenges that it brings. It highlights the following barriers to measuring social impact: lack of funding and resources; lack of staff support; lack of Trustee support and difficulty in knowing what to measure.

Regarding methodologies of related fields that could be suitable to measure the impacts of ICT for inclusion, some of the more relevant are those related to the logics of intervention and indicators applied in the framework of the European Social Fund (ESF). In this sense the literature is very vast, but one of the recent publications worth mentioning is: *Developing logics of intervention and related common indicators for the next ESF Operational Programmes*\textsuperscript{25}.

Finally, different publications by the Charities Evaluation Services in UK also are a good example of the kind of framework grassroots organisations need. In this regard examples can be found in the Monitoring and evaluation webpage: [www.ces-vol.org.uk](http://www.ces-vol.org.uk).

\textsuperscript{21} Digital Inclusion Team (City of London) and Tech4i2 Ltd.(2010). *A Benefits Framework for Social Inclusion Initiatives*.
\textsuperscript{22} ATKearny. (n.d.). *Assessing the economic benefits of digital inclusion*.
\textsuperscript{25} EPEC. (2011). *Developing logics of intervention and related common indicators for the next ESF Operational Programmes*. 
4. Conceptual framework

4.1. Basic concepts and definitions

Information and Communication Technologies (ICT) play an essential role in supporting daily life in today's digital society. They are used at work, to stay in touch with family, to deal with public services as well as to take part in culture, entertainment, leisure and political dialogues. Within this context, the EU policy on e-Inclusion aims to achieve that 'no one is left behind' in enjoying the benefits of ICT. **e-Inclusion means both inclusive ICT and the use of ICT to achieve wider inclusion objectives.** It focuses on participation of all individuals and communities in all aspects of the Information Society. **e-Inclusion policy, therefore, aims at reducing gaps in ICT usage and promoting the use of ICT to overcome exclusion, and improve economic performance, employment opportunities, quality of life, social participation and cohesion.**

The eInclusion concept in literature has been mainly defined in relation to what have been discussed in the political arena. In this respect, digital inclusion goals have recently been taken further in the context of the **Digital Agenda for Europe** (2010), which, in **Pillar 6 on Enhancing digital literacy, skills and inclusion**, calls for 'multi-stakeholder partnerships, increased learning, recognition of digital competences in formal education and training systems, as well as awareness raising and effective ICT training and certification outside formal education systems, including the use of online tools and digital media for re-skilling and continuing professional development'.

According to the EU funded 'Vienna Study' (Codagnone et al., 2009) digital exclusion/inclusion can be considered "the quintessential form of social exclusion/inclusion today. As our everyday work lives are increasingly entangled in activities and relations enabled by ICT, being digitally excluded is a new source of inequalities as it can result into exclusion from relevant networks and social relations, jobs and leisure opportunities, and from informed participation to the public debate."

The opportunities offered by ICT require co-ordination and partnership to ensure that potential benefits are enhanced and shared by all. However, these opportunities are not yet fully understood by many stakeholders. One way of tackling this challenge is recognized to be the clear identification of the **economic and non-economic benefits of eInclusion**, since this should act as a catalyst for awareness and action amongst those not yet convinced of the importance of eInclusion policies and related support initiatives. This should in turn persuade policy-makers to place greater emphasis on eInclusion if they believe economic as well as social and equity benefits will arise from increasing the pool of digitally active citizens and enhance their socio-economic integration.

This is of particular importance under today's conditions of financial turmoil and socio-economic crisis where governments are facing increasing budget constraints and are in search of new ways to address the mounting unemployment and limited growth in most European countries.

In this connection, a specific focus of the MIREIA framework is placed on the role ICT can play for enhancing **employability**, which is defined as 'the combination of factors and processes that enable people to progress toward or find employment, to remain employed, and/or to advance in the workplace' (Brown, Hesketh, & Williams, 2003; Fugate, Kinicki, & Ashforth, 2004; Houston, 2005). In this regard, the literature reviewed as part of this research and previous works, shows that the adoption of ICT increases the demand for skilled workers and reduces that for unskilled workers.

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26 See 'Inclusive Innovation for Growth and Cohesion: modelling and demonstrating the impact of eInclusion' also known as 'Vienna Study', as it was launched by Unit ICT for Inclusion of DG Information Society and Media with the aim of providing input to the Ministerial Debate on eInclusion that took place in occasion of the Ministerial Conference on eInclusion held in Vienna (30 November- 2 December 2008).

27 For the theoretical foundations of this claim see for instance the concepts of 'informationalism' or 'informational capitalism' and of 'networked individualism' ad discussed in Castells (1996).
Employment, wage trajectories and labour supply decisions along the life-cycle tend to be affected by the level of digital skills possessed by individuals. Access and ability to use technology affects employability, by shaping the decision to enter the labour market (the labour participation decision) and of investing in training, and the likelihood of obtaining/maintaining a job.

4.2. Theoretical orientations

The review of theories that could be put forward to explain the multi-dimensional construct of eInclusion and the way these theories have been applied to operationalize impact and impact factors at various levels of analysis (i.e. macro, meso, exo and micro) identified that different theories could be used according to the spheres of influence that e-Inclusion actors might seek or have, thus depending on their goals. An additional layer of complexity is derived from the focus of the research on the specific role played by eInclusion Intermediaries as 'catalyst / multiplier or amplifier of impacts' due to their nature and characteristics.

In fact, the inclusion or exclusion of individuals and groups within society is shaped by their relative 'functionings', namely their relative capability to function and achieve desirable outcomes such as for instance finding a job. These relative 'functionings', depending on individuals' possession of resources and on their social relations, at the same time shape and are shaped by the digital means possessed by them. If one is in a condition of poor functionings this will reduce digital means, which in turn will result in missed opportunities compared to others. eInclusion intermediaries can therefore act as a 'networking / bridging' functional element to support, through the means of eInclusion initiatives, disadvantaged groups in their socio-economic integration and in increasing their outreach capabilities. This in turn should enhance the options of excluded or at risk of exclusion individuals to become 'digitally' empowered and ultimately facilitate, for instance, their economic integration through enhancing their capacities to search for a job or be employable.

Despite not definitive in terms of the 'best theory' to apply, the review of literature allowed however to identify some theoretical frameworks that are well positioned to capture the various dimensions underpinning the concept of eInclusion and the role of intermediary actors. More specifically, building on work carried out by recognized scholars and in line with current efforts of the European Union and OECD to design alternative indicators to social and economic wellbeing, the MIREIA research framework is rooted in the epistemological orientations of the Capabilities Approach developed by Amartya Sen in the late '90s, which challenges dominant conceptions of wellbeing that have permeated political as well as academic circles in the last decades placing a unique emphasis on the agential role of the individual – as a critical agency in empowerment, not agency as in economic actor – in the pursuit of social and economic goals.

This epistemological approach is being increasingly praised among policy-decision makers and international organizations as they attempt to find alternative measures of wellbeing that go beyond the common macroeconomic indicators – on which many policies and programs are currently based. The relevance of this approach is not limited to economic or employability related impacts of eInclusion programs and being cross-cutting it is relevant to all the different types of impacts that could be characterised as generated by eInclusion intermediary actors interventions, and at different level (i.e. macro, meso, exo and micro). Through its lens it should be possible to identify nuanced

29 For details on this discussion see the JRC-IPTS Report Literature review of how Telecentres operate and have an impact on eInclusion (Garrido, M., Sey, A., Hart, T., Santana, L.) part of the JRC-IPTS Exploratory study on explanations and theories of how Telecentres and other community-based e-Inclusion actors operate and have an impact on digital and social inclusion policy goals (Edited by Stewart, J., Rissola, G., Misuraca, G., Torrecillas, C.), 2012 forthcoming.
impacts in a more tangible manner. However, its operationalization for the purposes of the MIREIA project will require to integrate other theoretical and practical-oriented approaches.

For instance, having the objective of understanding the role of intermediary organisations, an important theory that could serve this purpose, is the Institutional theory, which is used for examining organizations (in this case, e-Inclusion intermediary actors), and their structures, operations, and efficacy. The analytical elements outlined in this theory allow the researcher to understand the distinct qualities at the organizational or institutional level in terms of how it functions, what role it plays in the community it serves, the resources available for the organization, and how the organization manages change and adaptability to new circumstances. In addition, looking to organizational dynamics of e-Inclusion actors through the lens of institutional theory integrates into the analysis the dynamic nature of the interaction between an institution and its social, political and economic environment, as well as, the active roles of its members in shaping this interaction. It is a useful theory for studying digital inclusion projects because the ways in which institutions operate bear directly on the 'long-term value, sustainability, and scalability of [digital inclusion].' (Madon, Reinhard, Roode, & Walsham, 2009, p. 97).

In order to operationalise the application of this theory in our research however, we recognize also the need to combine institutional theory (and especially neo-institutionalism, e.g. Hay, Colin, 2006) with constructivist approaches to policy and socio-political institutions such as the ones developed by Schmidt, V., (2008) and Berger and Luckmann (1966). This is especially useful in understanding how social phenomena develop in the particular social contexts characterized by ICTs and emerging technologies, assuming that interactions among various stakeholders are done with the understanding that their respective perceptions of reality are related and, as they act upon this understanding, their common knowledge of reality becomes reinforced.

With specific regard to new institutionalism theory, two main perspectives can be distinguished: one is developed into the tradition of research of economics, and the other into the tradition of research of sociology. The New Institutional Economics is a theoretical perspective common to different approaches, among which those more relevant for our research are the transaction cost theory (Williamson, 1975, 1985, 1996) and the institutional theory (North, 1990; Rowlinson, 1997; Rutherford, 1996). Both approaches share the idea that institutions and institutional (legal) assets, through the influence of economic micro-behaviours of single agents and single organisations, also strongly affect economic performance, inter-organisational relationships, and the form and path of innovation diffusion.

The transaction cost theory focuses on the comparative efficiency of different ways to organise economic transactions, and specifically develop the analysis of the choice between hierarchical, network and market solutions, while the institutional economics applies the transaction cost approach to the institutions, stating that their survival or choice depends on the relative comparative efficiency. These theories help in many ways to explore our research themes, because ICTs affects (generally, they reduce) transaction costs, and thus, they change the organisational structures and inter-organisational relationships. For the costs of institutions are mainly transaction costs, ICTs make institutions more efficient: at least some more than others. Moreover the creation of inter-organisational and inter-national (cross-country) networks of institutions is facilitated by the diffusion of ICTs. Positive network externalities can be generated at regional (cross-border) level, allowing for more rapid processes of identification and citizenship formation. Finally, the rate and path of diffusion of ICTs are themselves influenced by the different national institutional assets, and thus their comparative analysis could help to suggest policy interventions in order to remove the obstacles and to steer the forms of technological diffusion.

The impact of ICTs in shaping the inter-organisational relations can be studied also by adopting the sociological perspective (Powell and DiMaggio, 1991). This approach holds that organisations are
deeply affected by the processes of institutionalisation and de-institutionalisation occurring at the society and organisational field level (DiMaggio and Powell, 1983). Technology, as any other social institution, is reproduced by and progressively taken for granted as long as it is widely applied by organisations. In this way, organisations make sense of both the economic and the institutional environment and take the opportune decisions. Using the sociological perspective of the New Institutionalism, it is possible to analyse the economic impact of ICTs from a perspective combining both managerial and social factors. In particular, if we account for the dynamics of constitution of the alliances in the ICT for inclusion field new Institutional theory tenets on organisational legitimacy (Meyer and Rowan, 1977; Deephouse, 1996) will prove useful in address the issues under investigation in this research.

With regard to social constructivism, it is a sociological and psychological theory of knowledge that considers how social phenomena develop in particular social contexts. Within constructionist thought, a social construct is a concept or practice, which may appear to be natural and obvious to those who accept it, but in reality it is an invention or artefact of a particular culture or society. Social constructs are generally understood to be the by-products (often unintended or unconscious) of countless human choices rather than laws resulting from divine will or nature. A major focus of social constructivism is to uncover the ways in which individuals and groups participate in the creation of their perceived social reality. It involves looking at the ways social phenomena are created, institutionalized, and made into tradition by humans. Socially constructed reality is seen as an on-going, dynamic process; reality is reproduced by people acting on their interpretations and their knowledge of it.

At the same time, while the specific analysis of ICT impacts at organizational and policy levels are informed by neo institutionalism and social constructivism, and inspired by the capabilities approach, the analysis and characterization of the various dimensions underpinning the assessment framework are placed within the broader framework of network theory, assuming that ICTs impact on socio-economic inclusion is 'multi-dimensional and thus a multi-level' framework to interpret various dimensions of impact at different levels is required. This can therefore be better explained by looking at the network effects enabled by ICTs. Networks in fact have been widely recognized by both scholars and practitioners as an important form of multi-level coordination (Provan, K., and Kenis, P., 2007). The advantages of network coordination (and especially if ICT-enabled) in both private and public sectors are considerable, including enhanced learning, more efficient use of resources, increased capacity to plan and address complex problems, greater competitiveness and better services for clients and customers (see for instance Alter and Hage 1993; Brass et al. 2004; Huxham and Vangen, 2005).

The operational level of the framework, in addition to general principles of policy evaluation (see Section 6) will also be informed from a theoretical perspective, by the effective use approach proposed by Gurstein (2003). This approach highlights the importance of the dynamics between an organization and its environment but places the emphasis of the analysis on understanding how these dynamics address the need for conditions that enable active and effective use of ICTs. Based on this approach, ensuring effective use of ICTs requires attention to different factors – from quality of ICT infrastructure, content services available, to the intermediaries as social facilitators. The Effective Use approach, as well as the institutional change approach (see section 3.1 on this) both

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30 Social Constructivism became prominent in the U.S. with Peter L. Berger and Thomas Luckmann's 1966 book, 'The Social Construction of Reality'. Berger and Luckmann argue that 'all knowledge, including the most basic, taken-for-granted common sense knowledge of everyday reality, is derived from and maintained by social interactions. ... Since this common sense knowledge is negotiated by people, human typifications, significations and institutions come to be presented as part of an objective reality. It is in this sense that it can be said that reality is socially constructed.'
acknowledge that there are a variety of organizational and environmental contexts that need to be in place in order to translate organizational effectiveness in delivering services into broader impacts.
5. Methodological approach for developing the MIREIA eI2-IAF

5.1. The need for a multi-dimensional perspective and multi-level analysis

As indicated above (see Section 4.1) in this research we consider eInclusion as a multidimensional construct, being the focus of the research on the way specific eInclusion interventions mediated by eInclusion Intermediary actors affect individuals (i.e. disadvantaged groups in society or people at risk of exclusion), but also how these interact with the socio-economic context of reference (e.g. institutions and communities) and the way these interactions have a direct or indirect consequence on related policy and socio-economic impacts.

In particular, the research is based upon the belief that socio-economic perspectives, which stand at the interface between analyses of individual behaviour and wider societal structures, are well placed to elucidate the impacts of ICTs on inclusion and employability, especially if we look at the context of more industrialized countries, such as the EU Member States.

Such an analysis also forms an important link to other levels of explanation employed by providing insight into social identification, the experience of social divisions (e.g. the digital divide) and economic activity. It is important to note in fact that the theoretical frame upon which we will base the development of the proposal for an assessment framework does not presuppose either technological determinism, or social determinism of ICT effects. It is therefore to reject theoretical or methodological approaches that seek to make general determinations of technology's implications irrespective of specific social contextual factors, and which tend to produce utopian or dystopian visions of the real impact of ICT on socio-economic development.

For this purpose, while recalling the meaning and objectives of an Impact assessment (IA) which is 'a process aimed at structuring and supporting the development of policies. It identifies and assesses the problem at stake and the objectives pursued. It identifies the main options for achieving the objective and analyses their likely impacts in the economic, environmental and social fields. It outlines advantages and disadvantages of each option and examines possible synergies and trade-offs'\(^{31}\); it is to be underlined that the Impact Assessment framework we are building as part of the MIREIA project is to be considered as an hybrid mix of methodological approaches and methods aiming at being, a the same time:

- a methodological framework to measure the impacts of eInclusion interventions, especially implemented by eInclusion Intermediary actors;
- a practical tool-kit to provide guidelines and recommendations for the design and operationalization of monitoring and evaluation systems to be implemented by eInclusion Intermediary actors.

In this regard, before proceeding any further, a brief note on the terminology used for what concern the key concepts in measurement and evaluation of policies and public service provision is needed.

- **Inputs** are the support initiatives with their costs.
- **Outputs** are the final product of initiatives, whose production is mostly within the control of those implementing them.
- **Outcomes** are the direct and intermediate changes produced for specific constituencies as a result of the initiatives, whose occurrence depends also on some intervening variables. These can be distinguished in **direct and indirect outcomes** according to their distance from the output in terms of the number of possible intervening variables.

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The term **Impacts** is used to indicate broader and longer term changes for economy and society as a whole, to which inclusion policy initiatives contribute together with several other intervening variables\(^{32,33}\).

Therefore, in building the MIREIA Impact Assessment Framework, while acknowledging that the simple term 'impact' will be used when we refer discussing the issue at hand in a general and generic way, however, in practice, **three different (though intersecting) dimensions of analysis** will be considered.

- The first considers the **perspective of the inclusion intermediary actor and the specific target category of ICT-enabled service or intervention under analysis**, in order to calculate the benefits (or opportunity costs) to the local economy and social context as a whole. At this level only benefits (in terms of outputs-outcome are considered). This level of analysis can be associated to both the **micro and the exo level of impact** of inclusion initiatives and actors at the individual level and group or community level.

- The second level of analysis, instead, looks at **costs and benefits from a policy and broader socio-economic perspective**. At this level of analysis we will make an attempt to define impacts that inclusion interventions may generate on society and economy at large. This can be associated to the **macro-level of impact**, thus the direct or indirect effects on social, economic, political and cultural systems-level.

- An additional layer to be considered is the specific component linked to the **role of intermediary actors from an organisational / institutional perspective**. While it may be difficult to separate direct outputs/outcomes and impacts produced at this level, it would be required to factor in the indirect amplifying / mediated effects linking the micro/exo and the macro impacts through a **meso-level of impact** focusing on how inclusion intermediary work, and thus evaluating them in terms of efficiency, effectiveness and responsiveness to inclusion policy goals\(^{34}\).

In order to structure such a multi-level framework into an analytical one, the **ICT skills and Employability Framework**\(^{35}\) could be of particular relevance as it is based on two conceptual underpinnings that could guide the construction of the MIREIA framework, namely the focus on the **employability** (as it has been defined above) and the concept of 'skills-based organizational and

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\(^{32}\) **Impact Indicators** represent the consequences of a policy intervention/programme beyond the immediate effects on its direct beneficiaries (outputs and outcomes). Two notions of impact can be distinguished, depending on whether these are effects occurring after a certain lapse of time (specific impacts) but are directly linked to the action taken; or longer term effects affecting a larger population (global impacts).

\(^{33}\) To make this more concrete in the educational field, for instance: the input is the overall budget for the educational system; the output could be 'number of students taught'; a possible outcome 'educational attainment level reached'; the specific impacts an 'educated labour force' and the global impact the 'increased system productivity and competitiveness'.

\(^{34}\) In addition to traditional micro and macro economics effects, which focus on measurable ways of describing social behaviour, we refer to intermediate (meso) effects building on the argument that the intermediate (meso) scale creates effects which need to be described using different measurements, mathematical formalisms and ideas. Thus we argue, adapting the thinking of Dopfer (2004, 2006, 2008), that there are important structures which are not reflected in traditional micro and macro indicators (i.e. price signals and supply and demand curves, or the large economic measures of inflation, Gross Domestic Product, the unemployment rate, and other measures of aggregate demand and savings) that need to be taken into consideration when measuring the Information Society at large and ICT-enabled services such as inclusion interventions in particular. [See Dopfer, Kurt. 'The Origins of Meso Economics Schumpeter's Legacy.' In The Papers on Economics and Evolution. Jena, Germany: Evolutionary Economics Group 2006, Dopfer, Kurt; Foster, John and Potts, Jason. 'Micro-Meso-Macro.' Journal of Evolutionary Economics 14 (2004): 263–279; Dopfer, Kurt; Potts, Jason. 'The General Theory of Economic Evolution.' London; New York: Routledge (2008) and for a more recent analysis, Misuraca G., Codagnone, C., and Rossel, P., 2012, forthcoming].

technological change' (de Grip & Zwick, 2005; Green, 2009; Machin, 2001), which implies that the diffusion of ICT across different industrial sectors, in addition to changes in business models, requires today's workers to incorporate ICT into their jobs (Green, 2009).

This framework identifies the main elements to understand how basic ICT skills training provided by e-Inclusion actors can contribute to expand employability outcomes and economic opportunities for different disadvantaged groups. It outlines three levels of analysis for understanding this relationship:

a) e-Inclusion intermediary actors' program design and organizational capacity;

b) characteristics of individual job seekers or trainees; and

c) the environmental dynamics that influence employment outcomes and often are outside the control of e-Inclusion intermediary actors.

In this connection, the implementation of the analytical framework of assessment will also be informed and inspired by the so-called theory of change that is defined as 'a tool for developing solutions to complex social problems, explaining how a group of early and intermediate accomplishments sets the stage for producing long-range results. A more complete theory of change approach articulates the assumptions about the process through which change will occur and specifies the ways in which all of the required early and intermediate outcomes related to achieving the desired long-term change will be brought about and documented as they occur' (Anderson, A., 2005). Theory of Change, in fact as an outcomes-based, participatory method has evolved from its early days into a rigorous tool for planning, evaluation, and organizational capacity-building.

In this regard, while scientific literature provides several examples of metrics which can be utilized for quantifying the impacts of specific interventions and some of them have been trying to focus specifically on ICT-enabled services and eInclusion in particular, however, the majority of them have been developed to benchmark or evaluate initiatives once they are already in place and none of them has the capability to evaluate the impacts of a comprehensive and complex policy domain such as that of eInclusion and at the same time assessing the benefits produced by the underpinning implementation plans and the specific initiatives and projects it includes.

On the other side, field experience of projects' evaluation shows the usefulness and the effectiveness of several evaluation techniques and methodologies that can be applied in each stage of the assessment process at the operational level (see later). However, an assessment methodology that embraces all the evaluation stages in one single framework is not yet available. This is especially true in the domain of eInclusion, and in particular at the local level of action, that on the contrary might benefit immensely from the proximity among policy-makers and community stakeholders.

With specific regard to eInclusion policies, measuring the impacts of eInclusion projects' outputs and outcomes can be addressed under different perspectives. However, in our opinion, eInclusion initiatives' outcomes should be mainly measured in respect to the contribution of their outputs to increase participation by excluded individuals and disadvantaged groups in the social and economic life of the community they belong to.

Thus the impact dimensions of an assessment process in the domain of eInclusion should be oriented to understand which is the capability and effect of a given initiative/project's outcome to contribute preventing exclusion and to promote social and economic inclusion (i.e. integration and active participation and contribution to society through employment and economic activity).

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36 See also http://www.theoryofchange.org/

37 It is clear that these assumptions and hypotheses need to be tested against real life cases and settings. In doing so we should not forget the need to follow a 'reflexive practice' both from an 'epistemological perspective' (i.e. encouraging
us to reflect upon the assumptions that we have made in the course of the research which helps us to think about the implications of such assumptions for the research and its findings (Willig, 2001); and 'personal reflexivity', which requires an awareness of the researcher's contribution to the construction of meanings throughout the research process, and an acknowledgment of the impossibility of remaining 'outside' of 'one's subject matter while conducting research'. This therefore requires us 'to explore the ways in which a researcher's involvement with a particular study influences, acts upon and informs such research' (Nightingale and Cromby, 1999).
5.2. Principles underpinning the MIREIA eI2-IAF

Although it should be made clear from the outset that many factors (not only ICT of course, and in most cases with a much higher importance) contribute to socio-economic inclusion of disadvantaged groups in society and people at risk of exclusion, and that it would be simply naïve not to consider that such effects and the relationships among the various factors are characterized by a non-linear process, and that a causality link is hard to be demonstrated, the assumption made in developing a specific eInclusion Intermediary Impact Assessment Framework (eI2-IAF) is that, under certain conditions, ICT-mediated interventions can have a potential 'amplifying' effect capable of:

1) enabling empowerment mechanisms (e.g. in terms of improving ICT skills and acquiring other skills than ICT, such as social skills, communication skills or labour market skills through ICT, as well as self-confidence, etc. which in turn can increase social capital formation),

2) enhancing outreach capabilities of individuals and groups either as part of the local community they belong to, but virtually at a global scale (e.g. through networking and participating in dedicated 'spaces' for socializing and community-building, thus in turn improving social capital bonding and bridging, as individuals of various backgrounds are brought together beyond one's immediate social network); and

3) offering new and innovative ways for economic participation in society (e.g. increasing the opportunities for job-related search, training and self-employment or online activities allowing to engage in social and economic interactions).

In order to assess the contribution of eInclusion Intermediary activities on these three main dimensions of impact, that we define as 'eInclusion value drivers' it is required to identify and categorize the various typologies of interventions that can be labelled as eInclusion interventions of Intermediary actors, and the multidimensional characteristics underpinning them as well as the multifacets (network) effects of ICTs in the specific context of reference.

By defining a typology of eI2 interventions and identifying 'value drivers' that will serve as proxies for measuring (in both a qualitative and quantitative manner) the network effects of ICTs on socio-economic inclusion it is expected to provide a comprehensive –yet not exhaustive – picture of potential impacts of eInclusion intermediary actors in Europe.

The development of the MIREIA eI2-IAF thus will proceed as follows.

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38 To clarify this issue and avoid possible misunderstandings, causality (or causation) is referred to as the relationship between an event (the cause) and a second event (the effect), where the second event is understood as a consequence of the first. In common usage, causality is also the relationship between a set of factors (causes) and a phenomenon (the effect). Anything that affects an effect is a factor of that effect. A direct factor is a factor that affects an effect directly, that is, without any intervening factors. (Intervening factors are sometimes called 'intermediate factors'). The connection between a cause(s) and an effect in this way can also be referred to as a causal nexus. Therefore, in our case, it is clear that we cannot refer to causality but possibly to a causal nexus between the eInclusion interventions under analysis (possible cause) and the socio-economic changes in a defined context (effect) where the intermediate factors are –among others- the role played by ICT and the eInclusion Intermediary actors.

39 Scholars have identified two distinct forms of social capital, namely bridging and bonding, as being present in both offline and online. Social links that characterize bridging social capital are weak ties that involve connections outside an individual's closely knit circle; according to Granovetter, 1973, weak, cross-cutting ties facilitate information flow and community organisation. In contrast, bonding social capital exist among family members, close friends, friendly neighbors and supportive co-workers and provides emotional support without significantly enhancing the information flow (Granovetter, 1973 and 1974; contexts (Putnam, 2000; Heliwell & Putnam, 2004; Williams, 2006). On social capital see also Bordieu, 1986; Coleman, 1988; Fukuyama, 2000; Adam & Roncevic, 2003; and Adler & Kwon, 2003.

40 In this we will be supported by the findings of the previous activities of the MIREIA project (Tasks 1, 2 and 3) that as outcome of the Exhaustive Locality Mapping in selected areas; and the Mapping of Telecentres in Europe; should provide a taxonomy of the typologies of eIntermediary Actors and their activities in Europe.
First, to build our case, we formulate a number of hypothesis and propositions about the relationship between the configuration of typologies of eInclusion interventions and the effects they can have in socio-economic terms. We also argue that the role of eInclusion Intermediary is critical and as such our analysis focuses both on the direct changes produced by eInclusion interventions on the target beneficiaries groups (outputs and outcomes); and the indirect effects that these are contributing to, in terms of socio-economic implications at policy level (impacts).

Second, we develop a proposal of conceptual and measurement framework to assess such changes and impacts, outlining the relationships among the key dimensions of impact and value drivers defined above and specific indicators (outputs/outcomes/impact) that are likely to capture the effects generated by each typology of eInclusion intervention identified.

This proposal of conceptual and measurement framework will be further refined through discussion with experts and practitioners, and consultation with key stakeholders, in order to verify the validity of the assumptions underlying it and the relevance/appropriateness of the proposed sequence of concepts put forward to capture the multi-dimensional and multi-facets effects (in terms of specific and global impacts) of eInclusion intermediary interventions, as well as enrich the set of indicators for monitoring and evaluating specific eInclusion interventions (in terms of outputs and outcomes).

Finally, in order to validate the conceptual and methodological framework proposed it will be applied and tested in a real-life setting identifying an eInclusion intervention capable of verifying the appropriateness and usefulness of the framework, while at the same time enriching the system of indicators for monitoring and evaluation (operational level) that will be further designed in collaboration with the identified 'pilot case' manager and 'methodological-tester' (see section 5)\(^{41}\).

It should be underlined in fact that the proposal of MIREIA eI2-IAF outlined in the following section is a draft work-in-progress to be discussed and refined with experts and practitioner in first instance and tested and validated on a real case during the Test phase of MIREIA (Task 6) to be conducted during 2013.

Therefore the first stage of analytical and scientific work that informs the development of the MIREIA eI2-IAF necessarily remains at a high level of abstraction, while further operationalisation and the identification of more appropriate indicators will have to be produced in strict consultation with stakeholders during the test phase of the project.

While the first objective (a proposal of an impact assessment framework model) is elaborated and presented in this report, including the key principles and assumptions, the value drivers and dimension of impact, especially with regard to the policy and strategic levels, the refinement of the operational level and set of indicators for monitoring and evaluation will be further developed and validated applying and testing the framework against a concrete real-case interventions.

This should allow to enrich the set of indicators, refine the assessment framework and validate the conceptual framework underpinning it, and at the same time develop practical recommendations and guidelines for evaluation on eInclusion interventions that should be further tested on a large-scale pilot for instance, or even a social experiment, so to verify the validity and replicability of the framework in different settings, and generalise as much as possible results through comparing findings of analysis in different contexts.

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\(^{41}\) We refer here to the organizations responsible for 'the case study analysis' and 'methodological support to the testing' of the MIREIA eI2-IAF (see section 5).
6. Outlining the MIREIA eI2-IAF

The MIREIA eI2-IAF is proposed to be structured according to three levels that will form altogether a comprehensive framework at: 1) policy; strategic; and 3) operational level.

6.1. The policy level

This layer of the IAF is intended to capture and interpret the impact of aggregate eInclusion interventions at the higher socio-economic level so to inform possible contribution on policy goals in terms of 'global impacts' (which are defined as the ultimate aim of a policy intervention/programme, such as the creation of net jobs for instance). The dimensions of 'global impact' that are potentially included at this stage of the framework are: Economic performance/productivity growth; Employment; Social participation and Cohesion; and Quality of life. These impacts could be measured using 'traditional' indicators (e.g. GDP growth; employment rate, active inclusion; social inclusion of groups at special risk and antidiscrimination; work-life balance, etc.) and they could be drawn from the list of key/overarching indicators defined under the European Strategy for Social Protection and Social Inclusion; the European Strategy for Employment and the Digital Agenda Scoreboard, as well as other statistical sources (such as EUROSTAT survey on ICT use by households and individuals; EU Statistics on Income and Living Conditions (EU-SILC); Eurobarometer Survey on Poverty and Social Exclusion, Progress reports of the Digital Agenda Scoreboard; statistics from the ITU database; etc.) and policy-frameworks agreed at international level (such as OECD Working party on Indicators for the Information Society – WPIIS; World Development Indicators – WDI; Partnership on Measuring ICT for Development; and the joint initiative on Measuring the Information Society, for example).

However, while it would be ideal to find a link (or even a causal nexus) between the eInclusion interventions aggregate for example at country level and such high-level policy indicators for global impact, this does not seem to be realistic, especially at this stage of the research, and this because of at least three concurrent factors: the lack of robust and consolidated evidence on the general impact of ICT, also due to the de-coupling of the conceptual (validity) and technical (reliability) dimensions of the process of measurement of ICT-related activities; the lack of specific baseline data / context indicators44 that can be unequivocally associated to the phenomenon of eInclusion; and finally the problem of endogeneity that can be more acute when attempting to measure and correlate ICT interventions as part of a statistical model45.

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42 The reason for the acronym chose as shorthand of the MIREIA Framework to Assess Impact of eInclusion Intermediary Actors (eI2-IAF) is twofold. From one side because it stresses the fact that the framework is focused on eInclusion Intermediaries (thus the I2) and, in addition to this, to make reference to the I paradigm Inclusive technological Innovation and Innovative Inclusive policies defined in the above mentioned Vienna Study (Codagnone et al., 2009). In the study it is underlined in fact that 'there are probably few fields where Inclusion and Innovation are so entwined and can in principle virtuously feed each other as that of inclusive services supported by ICT. Technology driven innovation in service provision has an impact on economy and society and finds market sustainability only inasmuch as the adoption and appropriation of such services in everyday life activities are wide and expanding among citizens and across all value chains. Yet this potential will not be unlocked until innovative policies and regulatory solutions, as well as investments by industry, expand their adoption. eInclusion means both inclusive ICT and the use of ICT to achieve broader social inclusion objectives and, thus, it is about both inclusive technological innovation and innovative ways to deliver inclusive policies by using ICT'.

43 See before, foot-note n. 8.

44 Baseline data refer to the initial value against which a context or impact indicator is subsequently measured. They should be established in relation to the policy/programme objectives.

45 In a statistical model, a parameter or variable is said to be endogenous when there is a correlation between the parameter or variable and the error term. Endogeneity can arise as a result of measurement error, autoregression with autocorrelated errors, simultaneity, omitted variables, and sample selection errors. Broadly, a loop of causality between the independent and dependent variables of a model leads to endogeneity. For example, in a simple supply
Having said that, the MIREIA eI2-IAF, despite being guided by the ambition to contribute to the global impacts identified above, will more realistically look at outcomes and 'specific impacts' (effects of the policy intervention/programme directly linked to the action taken) (see Section 5.1 and in particular foot-note n. 32).

The association of results from eInclusion interventions with outcomes and specific impacts should be in principle feasible, notwithstanding methodological and practical limitations, especially recognizing that eInclusion interventions can be considered 'high-level, context-sensitive interventions aimed at introducing and facilitating gradual changes' (Cohen & Levinthal, 1990). In this regard, considering also the main typologies of eInclusion interventions and dimensions of impacts identified (see Annexes I and II), and in order to have a more specific focus (of particular relevance in the current situation in Europe) it has been decided to specifically look at the contribution that eInclusion intermediary interventions can generate in terms of 'Employability' (as defined above).

Therefore, and in consistency with the findings from the literature review carried out, the main dimensions of (indirect) outcomes and (specific) impacts of eInclusion intermediary interventions to be considered in the MIREIA-eI2-IAF have been identified as follow:

a) **Skilling:** improvement of ICT skills and capabilities, thus leading to better opportunities to look for and apply for jobs;

b) **Empowerment:** enhancement of confidence and motivation for learning, leading to an increased perception of the possibility to improve (individual/group) social and economic conditions (social capital formation);

c) **Networking:** strengthening network ties and outreach potential (social capital bonding and bridging), leading to increase of the opportunities for socio-economic integration;

d) **Job-placement capabilities:** facilitate the possibility for accessing information on labour market and entrepreneurial opportunities, thus participating actively to the (local) economic development and contributing to socio-economic inclusion.

A preliminary overview of the potential contribution of the identified typologies of eInclusion intermediary interventions in terms of potential employability relevant effects of eInclusion intermediary interventions (in terms of indirect outcomes and specific impacts and potential contribution to global impacts) is presented in the table reported in Annex I.

However this proposed logical framework will be subject to revision following discussion with experts and stakeholders and it will be further developed during the Task 6 Test of The Impact assessment Framework of MIREIA project, so to make sure that the indicators are relevant to eInclusion interventions and that data to inform the indicators defined are available and it is feasible to gather them.

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and demand model, when predicting the quantity demanded in equilibrium, the price is endogenous because producers change their price in response to demand and consumers change their demand in response to price. In this case, the price variable is said to have total endogeneity once the demand and supply curves are known. In contrast, a change in consumer tastes or preferences would be an exogenous change on the demand curve.
6.2. The strategic level

This level of the framework focus on what we define as the **strategic intervention programme**, meaning for that an aggregate set of specific projects or activities that have their own 'life' (objectives, financial and technical resources, internal management, etc.) (see later on the definition of project) but are strategically linked to the goals set out in the programme and associated to it in terms of contributing to achieve collectively common expected outcomes and ultimately generating impacts on the (territorial or sectoral) area of intervention.

Therefore, the focus of the assessment at the strategic level will be the results that the portfolio of projects / activities unfolding the programme are expected to achieve in terms of direct and indirect outcomes.

In this regard, the **outcome indicators** to be associated to the strategic level refer to the direct and immediate effects brought about by the strategic intervention programme (at aggregate level, summing up the outcomes produced by specific projects/activities underpinning it) and they provide information about the changes to, for example, the behaviour or the performance of direct beneficiaries. Such indicators can be of a financial (e.g. leverage of private sector resources) or 'physical' (e.g. % of successful trainees) nature.

A preliminary set of (direct) outcome indicators associated to the typologies of eInclusion intermediary interventions is reported in **Annex II**.

However, a crucial aspect to take into consideration -especially at this level of the assessment framework but applicable also at the operation level- is that as much important as the technical elements of an evaluation is the **process** followed in designing and conducting the evaluation and, in this regard, due to the specific complex nature of the eInclusion phenomenon, we suggest that a **participatory evaluation approach** should be followed.

For a better understanding, we should explain that the evaluation process can be distinguished in: **Internal evaluation**, defined by Love (1991) as 'the process of using staff members who have the responsibility for evaluating programs or problems of direct relevance to an organisation's managers'; **External evaluation**, that is the appraisal process performed by an agency or individuals not directly involved in or responsible for the program or activities evaluated; and **Participatory evaluation**, which consists in considering stakeholders and participants involved in an intervention as evaluators of the same intervention. More specifically, Participatory evaluation is characterized by a particular relationship between stakeholders and managers of the intervention: stakeholders take part to the intervention both as beneficiaries and as evaluators; managers of the intervention need to act as methodological advisors during the evaluation phase. As a consequence, evaluation is usually jointly carried out by stakeholders and managers46.

This aspect will be further elaborated during the implementation of the Test of the MIREIA el2-IAF. For the time being, it is important to underline that the strategic level of the framework is a crucial component of the MIREIA el2-IAF and adopting a multi-dimensional approach is paramount for triggering a virtuous cycle of public policies, where it is envisaged the inclusion of a variety of perspectives in the evaluation process (which will in turn feed back into the decision-making process). In fact, the objective of any evaluation is not only to assess results of a given intervention but rather inform policy decisions and future action.

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46 For an evaluation to be considered participatory Rebien (1996) suggests that stakeholders need to participate in at least three phases of the evaluation: designing terms of reference, interpreting data, and using evaluation information (Rebien 1996: p. 160).
As a matter of fact, the evaluation should be used as a tool for strategic management and policy planning and at the same time it allows to build capacities and raise visibility of the initiatives under evaluation being a powerful communication instrument. Addressing risks and challenges of a given intervention will permit to overcome obstacles in implementation and improve designing interventions. Only an appropriate weighting of the three approaches outlined above (namely internal, external and participatory) can guarantee an evaluation to reach a fairly high degree of reliability, for it provides with the largest inclusion of stakeholders and their values.

It should not be forgotten in fact that the core objective of the policy / programme evaluation process is to assess the public value of a given policy or programme intervention by measuring the degree of achievement of the strategy and implementation plan's outcomes and impacts of services, in the most transparent and participatory way as possible [OECD, (2009), Foley, K., (2006)].

An additional element to consider when setting up a methodological framework for evaluation, especially in such a context as that under analysis, it should be mentioned that literature has been offering evidence that calls for a good balance between the employment of quantitative and qualitative data in models of performance appraisal is required.

Whereas quantitative data are measured or identified on a numerical scale, qualitative data include virtually any information that can be captured that is not numerical in nature and are therefore extremely varied in nature. The two types of data correspond to two types of evaluation approaches, the quantitative approach and qualitative approach respectively. If on one hand scholars and analysts have been fighting over the decades to establish either approach as the most reliable, neither has been able to prevail on the other entirely. The clear presence of gaps in the application of both methods leads us to push for the adoption of a third option: a **pragmatic approach that calls for a mix of the two**. Attempts to choose between quantitative and qualitative information would lead any policy analyst to what is referred to as **paralysis analysis**, that is the over-analysis of a specific issue to the point where the issue can no longer be recognized and thus solved. It is therefore fundamental to stress that an evaluation methodology that aims to be exhaustive and comprehensive requires, by definition, the adoption of a multilevel model that takes into account both quantitative and qualitative information.

For this purpose, while the current proposal of outcome indicators is mainly based on quantitative indicators, the refined set of indicators that will be elaborated during the application of the framework to specific interventions and be tested against real case settings, should allow to elaborate a more comprehensive set of indicators also based on the availability of data and reliability of metrics used at the programme / project level.

It should be made clear in fact that the framework proposed (and the illustrative indicators proposed as examples) intends to show in a concrete and intuitive fashion which effects eInclusion intermediary interventions can potential have. However, as the overall concept of eInclusion and of the goals pursued is very complex, entangled in blurred and interrelated relationships and impacts, any attempt at analytical modelling is bound to produce simplifications and to make analytical choices among a range of alternative indicators, also considering the limitations of data availability and feasibility of gathering information.

The link between the strategic/programme level and the operational/project level is thus key in further outlining a set of indicators that would be able to respond and validate the logical relationships established at the strategic level and the abstraction made in the assessment framework to capture and interpret the effects of each eInclusion intermediary intervention.
6.3. The operational level

The final component of the framework focuses on the **operational level or project level** of analysis, where by project or operation we mean a 'planned set of interrelated tasks to be executed over a fixed period and within certain cost and other limitations'. The focus of the assessment at the operational level will be the **output indicators** that are directly related to each project / activity and they should be measured in physical or monetary units (e.g. number of participants in a training course; cost per participant in a training course, etc.).

In this connection, it is important to stress that it is a strategic choice underpinning the MIREIA eI2-Iaf that of conceiving the evaluation process as a purposeful gathering of information and comparing what can be learned to some standard or expectation, that should be ingrained throughout every step and level of the evaluation process, in a bi-directional bottom-up and top-down fashion: from the business case of single project to the strategic level of evaluation of programmes and vice versa.

This can only be achieved by integrating the strategic and operational level of evaluation and refining the set of indicators in an iterative development. In our view the evaluation cannot be a post-hoc discontinuous activity, but it must be a continuous process starting with the definition of target objectives and of the indicators to measure them, continuing with the process of gathering the relevant information, leading to a comparison between the target and the actual indicators data, which in turn feed again in the definition of target continuing thus the evaluation cycle.

In this respect, the evaluation process should be seen as a complex process combining several evaluation stages, according with the nature and scope of the evaluation and the information to be produced, and it should include the following main steps\(^{47}\):

- **Gap Analysis** that provides information on the effects of previous initiatives in respect to the baselines of given policy strategies and planned interventions;
- **Ex-Ante Assessment** aimed at determining the expected impacts of a given policy or strategy and its implementation plan (programmes and projects);
- **In-Itinere Evaluation** aimed at monitoring and steering projects and programmes;
- **Ex-Post Assessment** aimed at quantifying the achieved outcomes and impacts of the programme of intervention just completed and the contribution to achieve policy goals;
- **Risk analysis** aimed at anticipating possible problems that could affect ongoing or planned projects and programmes, during their lifecycle;
- **Sustainability Assessment** aimed at demonstrating the chances of maintaining services beyond its deployment stage. Project's sustainability is an important aspect, with regard to ICT and eInclusion in particular giving the characteristics of the actors and beneficiaries involved. Unfortunately, evidence shows that such projects in many cases may become short-term and benefits from such initiatives do not overcome the life cycle of the projects themselves.

In developing such a comprehensive assessment approach, linking bottom-up and top-down requirements, one of the key challenges is to be able to measure the contribution of each project to the 'value drivers' and impact dimensions defined above for eInclusion in each step of the policy/programme/project cycle, maintaining the coherence of each indicator and the logical relationships of possible cause-effects (causal nexus) and preserving the characteristics of transparency and reproducibility of the measurement.

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\(^{47}\) Adapted from Savoldelli, Codagnone, Misuraca (2012, forthcoming).
As a matter of fact the evaluation process we are suggesting to adopt in MIREIA is not a static activity rather a dynamic circular and participatory process that runs in parallel with the programme/projects implementation (as described in Figure 1 below).

![Circular evaluation process diagram]

**Figure 6 - Circular nature of the evaluation process and its relationship with the policy cycle**  
*Source: Savoldelli, Codagnone, Misuraca (2012).*

In the figure the central role is assumed by beneficiaries and stakeholders. In fact, the actors involved in the evaluation process should not be limited to funding agencies, policy makers, civil servants or just external independent evaluators, but rather stakeholder and beneficiaries assume a key role, as already stressed above.

Structuring constructive relationships between funders and stakeholders in fact offer the potential to generate savings by managing expectations in the short term, tapping into innovations driven by grassroots' organisations in the medium term, and reducing risks in the long period. The active engagement of stakeholders, especially in the domain of eInclusion characterised by a diversity of actors and initiatives, would facilitate the information gathering and the overall evaluation process will benefit of stakeholders' knowledge and will make it more credible and comprehensive.

In the figure, the inner circle represent the policy/programme/project cycle, while the outer one describes the evaluation process where the ex-Ante evaluation receives as input the results of the ex-Post evaluation of the previous evaluation cycle, and then, it produces as output the objectives of the new planning phase, that will be subject to both an In-Itinere evaluation and a new ex-Post assessment.

The middle circle defines the links between the two other circles. More specifically, the evaluation process is structured alongside the policy/programme/project cycle and defines the key objects to be measured in each step of the policy process: during the strategy formulation and the implementation plan design and approval stages ex-Post impacts from previous interventions need to be assessed.
They determine the baselines for the incoming planning cycle. At the same stages an ex-Ante estimation of the expected outcomes that might be produced by the new interventions, need to be quantified and a gap analysis between these expected outcomes and the existing baselines need to be conducted\textsuperscript{48}.

For this purpose, a set of output indicators have been identified for each typology of eInclusion intermediary intervention defined (see Annex II) and discussed and refined with experts and practitioners during both the 2\textsuperscript{nd} MIREIA Workshop (Seville, 6\textsuperscript{th} September 2012) and a specific workshop during the 2012 Telecentre Europe Summit (Warsaw, 17\textsuperscript{th} October 2012). However, they will be complemented by effectively grounding on reality the availability of data and the relevance of the selected indicators for assessing the overall outcomes at programme level and verifying their usefulness for capturing their contribution to the specific and global impacts identified. This will be a specific goal of the Test of the MIREIA eI2-IAF (see Section 7).

In this regard, and following the statement already made in section 5.1, the MIREIA eI2-IAF will be an hybrid mix of methodological approaches and methods and therefore the fundamental distinction between scientific evaluation and practical assessment should be carefully borne in mind\textsuperscript{49}.

\textsuperscript{48} While, in the stages related to 'policy implementation through projects' it is important to periodically monitor the project achievements in terms of both outputs and outcomes, it is also important to assess the contribution of these projects' results to the overall achievement of the policy implementation plan in terms of specific and general impacts. Thus a continuous monitoring of the distance between the expected results of the plan and the current achievement has to be assessed.

\textsuperscript{49} Borrowing from the above mentioned Vienna Study (Codagnone et al, 2009), associating the input/output and impacts require control for intervening variables, which is possible only using scientific approaches establishing robust causal relation through experimental (when one can compare the effect on a 'treated group' and on a 'non treated control group') or quasi-experimental (longitudinal analysis of a dataset of observations) design and data. These approaches must be distinguished by the practical oriented measurement that can be performed by practitioners at the level of single initiatives up to direct outcomes. Moreover, as the distance between the eInclusion interventions and the object of measurement increase, so does the number of intervening factors, which is especially the case when the focus is on intermediate outcomes and impacts.
7. Implementing the MIREIA eI2-IAF

This section provides an overview of the implementation principles that need to form the foundation for impact studies and that will be adopted as part of the Testing of the MIREIA eI2-IAF. First an introduction to the Logic Framework for Evaluation is provided. Then, an element commonly omitted in evaluation, the consideration of the counterfactual position is addressed.

7.1. Linking the different levels: the logic framework for impact assessment

The approach for implementing the MIREIA eI2-IAF is founded on the Logic Framework for Impact Assessment and in particular it is based on the one developed as part of the Vienna Study investigating digital inclusion impacts for the European Commission. The approach breaks down the evaluation and monitoring process into constituent elements of inputs, outputs, outcomes and impacts which are in line with the one suggested in the conceptual framework of MIREIA (see Section 4). It also highlights the differences between efficiency (having a high ratio of output to inputs – getting the job done) and effectiveness (focuses on the economic utilisation of a resource – getting the job done economically).

The overall approach can be seen in Figure 7 which presents a preliminary overview of the MIREIA eI2IAF Conceptual framework linking the various dimensions identified in this report. It shows that most elements of the impact assessment process are underpinned by the need for data and measurement. This will certainly be the case in the implementation and testing phase of MIREIA. Thus it will be necessary to work very closely with case study organisations to collect sufficient information to undertake robust impact assessments.
As already mentioned above (see Section 6) it is of paramount importance to highlight the distinction between Operational Evaluation and Scientific Evaluation. In general Operational Evaluation concerns the left half (input and output) and possibly also very short term and direct outcomes, whereas outcomes and impacts are the realm of Scientific Evaluation.

Operational Evaluation aims to assess the extent to which the implementation of an initiative or programme develops as planned. The aim is to compare what was planned with what was actually delivered, including verifying whether there is a gap between planned and actual output (i.e. number of premises with access to high speed internet) and calculating input/output efficiency in the implementation (how well money is spent).

Scientific Evaluation involves a systematic and objective assessment of the results achieved by an intervention (initiative or programme). Scientific evaluation seeks to unequivocally attribute to the intervention the observed outcomes, or to put it differently to prove that the programme caused the change observed in the outcomes for the beneficiaries.

As already noted above, figure 7 provides a preliminary description of the approach to impact assessment that will underpin our approach to the proposed study. It is best described by considering the constituent elements and the data requirements for each element.

**Inputs** will be the resources and actions undertaken by the case study organisations. A more intensive and comprehensive view of inputs would include the higher-level antecedents leading to the decision to invest in the project (at incentive and programme levels) and the desired outputs, strategic objectives and policy guidelines. We suggest that these elements are omitted from the proposed study, due to resource constraints. But they might be useful in future studies for understanding the processes that different Member States, Regions or Programmes are utilising to enable eInclusion.

Input data requirements will be details of funding provided for each intervention or programme. This will include details of the lead organisation, funding or support directly required, additional resources leveraged and other support or services in-kind provided. Data about the organisation and the area for the intervention will also be useful for scientific evaluation to investigate effectiveness between interventions. Organisational details might include the nature of the organisation, employees directly involved in the project, the level of sub-contracting. Section 3.1.1 provides an overview of how this information will be collected.

**Outputs** refer to the direct product resulting from the activities and processes put in place to transform the input. It can reasonably be assumed that the production of an output is to a large extent under the direct control of those in charge of implementing a programme or a single project/initiative. Outputs will include the number of people leaving the project and the skills, qualifications or other ‘advantages’ they received during their time on the project.

**Outcomes** refer to the direct short and mid term changes (improvements) for well delimited constituencies (beneficiaries/stakeholders) that can be attributed to an output. One also needs to distinguish between direct and intermediate outcomes. For example a person leaving a project might have undertaken a considerable amount of training and acquired qualifications to make them more employable. An outcome of this process would be that they were able to obtain employment.

**Impacts** relate to the broader and aggregate longer term changes for an economy and/or society as a whole (generally resulting from the accumulation of outcomes as defined above). The link between

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an output and an impact is evidently mediated by the outcomes and very difficult to prove empirically, particularly as the number of external factors and intervening variables increase substantially. An example of an impact can be understood by continuing the previous analogy of someone who leaves a project and secures a job. The impact of the person obtaining a job (on the wider economy) would be a positive contribution to the Exchequer (government) through the payment of taxes by the individual (and the social contribution of their employer). Additional impact benefits would arise if the person was previously unemployed. Ceasing unemployment should mean that the person no longer receives benefits. In this case there is a saving to the Exchequer though not having to pay benefits.

Many of the data requirements and evaluation criteria to assess impact and effectiveness are founded on quantitative analysis. It is also suggested that alongside quantitative analysis (of data already collected by EC organisations or reporting requirements imposed on programmes) that qualitative information is also collected to obtain an insight on operational factors that enhance success or avoid failure. This information will be collected from those who have undertaken or are undertaking the courses or support provided by a case study project. As well as questions about outputs and outcomes from the project we will also seek their views about the effectiveness and efficiency of the project and areas that might be improved. This will help to identify best practices (from a user/customer viewpoint) more easily.

Finally, and most importantly, in respect of the MIREIA research, evaluation of individual programmes will collect information about the prevailing socio-economic circumstances in the case study areas. These provide an important method of standardizing the impact of projects and highlights that local conditions will affect the ‘success’ of projects. For example one could run exactly the same excellent project to provide high level ICT skills to participants in two different areas. In an area with ICT skills shortages it is likely that every participant might obtain a job. If the same project was run, at the same cost, in a depressed area with high unemployment where companies were not recruiting or ICT jobs were very scarce it is possible that none of the participants would be able to obtain job.

The above activities contribute to a comprehensive approach to impact assessment that will provide the foundation for the implementation of the MIREIA eI2-IAF. However, as the following section highlights, the simple application of this approach is flawed unless one considers the counterfactual situation. This requires an examination of what might have happened in the absence of the case study organisation project.

7.2. The counterfactual evaluation: a rarely considered problem

Evaluating the impact of eInclusion policies on employment and other outputs, outcomes and impacts is a complex task because one would like to know what would have happened in the absence of the project. This is a value that, by definition, cannot be observed for people not involved in the project. In other words, evaluators cannot know what would have been the behaviour (and subsequent circumstances) of a treated person in the absence of treatment. Similarly, we have no counterfactuals for the non-treated person (those not involved in the program).

This is a well-known problem in policy evaluation analysis (see for instance Neyman, 1923 and Rubin, 1974, 1978, 1980, 1986), which has been overcome using several methods. What is common to all these ‘alternative’ approaches is that they attempt to identify or create the most appropriate control group in order to overcome the two main obstacles in the estimation of counterfactual

51 For an introduction to policy evaluation see Khandker, Koolwal and Samad (2010)
The 'selection bias', which consists of the fact that target population differs from counterfactual population due to pre-intervention features. A solution is the introduction of an identification hypothesis stating that pre-intervention variables are sufficient to 'reconstruct' the control group of non-beneficiaries (counterfactual);

The presence of spontaneous dynamics, due to the fact that target population differs from control population for the trend of the result variable. A solution is the introduction of an identification hypothesis to take in consideration the spontaneous dynamics of the result variable trend.

There are basically six main counterfactual impact assessment methodologies:

1) Randomised controlled trials - A solution can be found in case of randomized processes (this happens when the possibility to take part to a project is made available to people on the basis of a random process). In this situation we do not expect structural differences between those who are treated (and receive support) and those who are not, so that we can use the non-supported subjects as a control group for comparison with the former group.

2) Difference-in-Difference (DID) - The impact of a policy on an outcome can be estimated by computing a double difference, one over time (before and after the treatment) and one across subjects (between treated and non treated). This simple method requires only aggregate data on the outcome variable, and at least 3 observations in time: two observations before and 1 observation after. Unfortunately the difference in difference method implies that the trend in treatments and comparisons are the same. With only four points of observation on means we do not know if this assumption is correct. However, with two additional pre-intervention data points the parallelism assumption becomes testable.

3) Regression Discontinuity Design (RDD) - One solution that has been proposed in the literature is the use of so called “regression discontinuity design”. This method can be applied to situations in which it is possible to identify a clear cut-off level for treatment access and in which treatment status is based on observable characteristics. In this case the cut-off is defined by the eligibility rules of the project so that the treatment group is made up by people that just satisfy these criteria (and hence have access to the project), whereas the control group is composed of people that are just below the cut-off level and do not have access to the project. In such a circumstance it is reasonable to assume that the control group and the treated groups are very similar against most criteria, and that the small difference in the variables guaranteeing access to treatment are not sufficient to justify a different value of the outcome variable, so that a difference in the latter can be entirely attributed to treatment.

4) Instrumental variables and natural experiments - This category is relevant when the exposure to the policy is to a certain degree determined by an external force which does not affect the outcome of the policy directly, but only indirectly, through its influence on the exposure. Angrist and Krueger (2001) define this situation as natural experiment, i.e. “where the forces of nature or government policy have conspired to produce an environment somewhat akin to a randomized experiment.” There are two main approaches:

- Wald estimator, in which the treatment effect is identified by the ratio of the difference in average outcome between units eligible and not eligible for treatment, weighted by the probability of treatment induced by the instrument. This method is used in case of randomization with partial compliance and randomized encouragement;

- Two stage least squares, consisting of a first stage in which is estimated a model predicting the probability of treatment as function of the instrument and other variables, and a second stage in which the outcome equation is estimated using the predicted probability of treatment. This is the case of non randomized natural experiments.
Unfortunately this method is not often feasible as it does not work when treatment exposure is not mandatory and depends upon some selection process that needs to be controlled for. This is the case at hand, in which the participation in the training projects has been voluntary. Another major weakness of the approach is that it can be difficult to find an instrument that is both relevant and exogenous.

5) Matching - The most common matching method is the propensity score matching. This approach is based on the premise that, for each firm that has been treated, it is possible to find at least one non-treated firm that is “close” enough to the treated counterpart. In this context “close” means that it exhibits a value for the propensity score very similar (if not identical) to the one observed for the treated firm. The propensity score is defined as the conditional probability of receiving the treatment and is usually estimated using logit or probit regressions. After having computed the propensity scores for all the firms in the dataset, it is possible to use this value to match firms in the treated group with at least one firm in the control group. There are various techniques for undertaking this matching process. Some use replacement while others do not, and some use more complex definitions of distance, but the logic in all these approaches is very similar - find a close match for the treated organisation within the group of untreated, using the values for the propensity scores. This approach works well if the evaluator has access to a representative sample of the underlying population and can control for all the variables determining the treatment status (the so called “selection on observables” assumption); otherwise the process can be bedevilled with the selection bias issue.

There are three main types of propensity score matching:

- Nearest available matching, according to which each treated unit is matched with the one untreated unit having the most similar initial characteristics
- Radius matching, according to which each treated unit is matched with all the untreated units having a propensity score within a certain degree of tolerance with respect to the one of the treated unit;
- Kernel Matching, in which the outcome of each treated unit is compared with a weighted average of the outcomes of all non-treated units.

There is a very important difference between propensity score matching and multiple regression analysis. In propensity score matching pre-intervention characteristics are different between treated and non-treated units, affecting differently the final outcome of the treated and non-treated independently from the effect of the programme, thereby creating a selection bias. On the other hand multiple regression analysis makes use of the data from all the treated and non-treated units separating the impact on the final outcome due to the different initial characteristic (included in the model as control variables) from the impact of the programme. So the trick is to find as control variables all the initial characteristics that are similar between the treated and non-treated units in order to compare the final outcome and interpret the difference as the impact of the programme. In this view the multiple regression approach suffers from a technical limitation due to the fact that the results are sensitive to the form with which control variables are inserted in the model. Matching is mostly inspired by outcome additionality and to some extent overlooks behavioural additionality. Findings from matching should always be combined with real-time case study evidence to allow some insight into the causality mechanisms. The matched sample approach, in fact, always raises questions of just how similar the subjects are. The difficulties of achieving true matching are substantial and the results should be interpreted with the appropriate caveats.

6) Self-reported counterfactuals - This approach, employed especially for assessing the issue of behavioural additionality (Aslesen, Broch, Koch, and Solum, 2001; Davenport, Grimes, and Davies, 1998), consists of questioning assisted subjects directly and posing them counterfactual
questions. This involves asking the recipients of public support how their employment-related behaviour changed, asking formerly supported people how the withdrawal of assistance affected their innovation related behaviour, and asking non-supported people how they think their innovation related behaviour would have changed had they received support. Moreover, as one of the objectives of our investigation is to improve the intervention process, the questioning would also involve the intermediary actors. Surveys are a good solution, provided, of course, the respondents do not answer strategically and are able to reflect on behavioural changes in a counter-factual situation. The analysis of direct questions on additionality assumes that the respondents are indeed able to reflect on their behaviour in hypothetical, counterfactual situations and that they are telling the truth to the best of their knowledge. However, as respondents have an interest in the continuation of public support, they might be tempted to over-emphasize the merits thereof (Sakakibara, 1997). From an opposite perspective, one could argue that some people might be reluctant to admit their dependence on public support. Either way, the differences between hypothetical and real situations should be controlled for through a mixture of matching and self-reported counterfactuals.

In implementing the MIREIA eI2-IAF we have to take into account the fact that it is difficult to estimate a counterfactual situation. The Test will concern five interventions which themselves might have attracted a certain type of applicant.

For example the Irish FIT project focuses on graduates. A randomized approach to considering the counterfactual situation would have to find or estimate the situation for a similar group of people to those that applied to join FIT.

At the same time, we are not facing a natural experimental situation, as the treatment exposure (i.e. joining the program) is not mandatory and depends upon some selection process that needs to be controlled for. However, conditional to the availability of data, it might be possible to apply methodologies such as regression-discontinuity design, difference in difference, matching or self reported counterfactuals. Another issue to be considered is that the counterfactual impact assessment could be applied to two levels (project and organisation).

Thus, the most promising methods to be used for implementing the MIREIA eI2-IAF seem to be matching and self reported counterfactuals. In fact, as described in annex IV, the counterfactual will be obtained by follow-up surveys of people who did not join the program. In this approach it will be made use of matching techniques in order to find the ‘best-match’ for groups of those who enrolled and did not enroll on the case study programs (see Annex IV for details).

This approach will be however further discussed during the first phase of implementation of the Task 6 of MIREIA, the Test of the Impact Assessment Framework, in collaboration with the contractor providing specialist services of methodological support and the local researchers and organisations involved in the data gathering of the five case study interventions selected.
8. The way forward

8.1. Rationale for the Test of MIREIA eI2-IAF

According to the research design of the MIREIA project, based on preparatory studies and the work carried out as part of Task 1 – Literature Review of theories and explanations on the value and impact of eInclusion interventions and their dynamics with local communities; and Task 4 – Literature Review of policy, methodologies and indicators on digital inclusion, employment, education and social inclusion/welfare (see on this the MIREIA Deliverable D.1 Literature Review: Charactering eInclusion Intermediary Actors - Draft Interim Report, JRC-IPTS, September 2012), and following the development (as part of Task 5 of the project) the conceptual and methodological foundations and the orientations for building a comprehensive Assessment Framework to measure the socio-economic impact of eInclusion Intermediary actors in Europe, as presented in this report, the following phase of the MIREIA project includes the further development of a methodological framework of measurement and guidelines for evaluation to be validated through applying it to a number of case study interventions in order to ‘test’ and refine the methodology.

To achieve this objective, the MIREIA eI2-IAF will be further applied to a set of specific interventions in order to refine the methodology and test its validity. This will be done as part of Task 6 – Test of the Impact Assessment Framework of the MIREIA project which will run in the period January – December 2013. For this purpose, five interventions have been identified as suitable cases for testing the methodology. The interventions selected as ‘case studies’ are the following (More details about the case studies are provided in Annex III):

1) Community Hubs, Online Centres Foundation, United Kingdom - https://www.ukonlinecentres.com/
3) ICT-Skills training and accompanying interventions to address sustained long term unemployment, Fast Track to IT (FIT), Ireland - http://www.fit.ie/
4) 'Pane & Internet' activities with focus on ICT training and Internet for job searching, in collaboration with Local Employment Services, Regione Emilia-Romagna, Italy - http://www.paneeinternet.it
5) Social Innovation for employability and entrepreneurship, Guadalinfo, Consorcio Fernando de los Rios / Junta de Andalusia, Spain - http://www.guadalinfo.es/

In this perspective, within the framework of MIREIA, Methodological support to the "testing" of the MIREIA eInclusion Intermediary Actors - Impact Assessment Framework (eI2-IAF) means conducting analysis to test the conceptual and methodological framework underpinning the MIREIA eI2-IAF while supporting the implementation of case studies, allowing to make corrective changes with regard to the procedures for data gathering, suggesting adjustments to the overall MIREIA eI2-IAF and developing more specific and appropriate tools, instruments and guidelines that could help generalise the application of the MIREIA eI2-IAF in other contexts and thus support eInclusion intermediary actors across Europe to set up and conduct their own impacts assessment.

In this regard, it must be underlined that this Methodological support to the testing will be conducted in collaboration with the organisations managing the above mentioned interventions identified as case study interventions, as well as the local researchers that will be appointed to support the managing organisations in gathering and analysing data which will be instrumental to test and validate the MIREIA eI2-IAF. Therefore, despite being separate contracts (Methodological support to the testing and Case Study Analysis), the activities carried out as part of this will have to
be conducted jointly with the activities of local support to the case studies identified above as they are interdependent and mutually reinforcing.

8.2. Objectives of the Test of MIREIA eI2-IAF

The general objective of this activity is to apply the MIREIA eI2-IAF to five real-life cases so to test the validity of the methodology while further enriching the operational level of evaluation. This will include contribute to the development of the set of indicators to be used, the questionnaire(s) to be used for survey and the practical guidelines for evaluation that should be used by grassroots organisations for self-assessing their own activities.

In particular, the objectives of the two complementary activities are the following:

- **'Methodological support to the testing'**: to providing methodological support to the "testing" of the MIREIA eInclusion Intermediary Actors - Impact Assessment Framework (eI2-IAF).
- **'Case Study Analysis'**: to provide specialist services in gathering and analyse data in support to the "testing" of the MIREIA eInclusion Intermediary Actors - Impact Assessment Framework (eI2-IAF) in five selected 'case study interventions.

Each activity is expected to contribute achieving the following specific objectives:

The specific objectives of the 'Methodological support to the testing' are the following:

- To provide methodological support to the five case studies identified to implement the MIREIA eI2-IAF, paying particular attention to the assistance for developing and "contextualizing" the instruments for data gathering and monitoring, as well as providing training and capacity building for their methodological and practical execution in relation to evaluation of interventions and impact assessment.

- To conduct an assessment of the case studies interventions under analysis providing an evaluation of the socio-economic context and policy framework of reference in relation to the case studies and its implementation activities and results using the conceptual and methodological framework underpinning the MIREIA eI2-IAF.

- To test the validity of the MIREIA eI2-IAF and improve the operational elements of the framework, providing an analysis of the results of the implementation of the MIREIA eI2-IAF in the case studies and a cross-case assessment of interventions, as well as developing a complete set of monitoring and evaluation indicators (complementing the initial ones as a result of the tests of the different case studies), guidelines and practical tools and instruments for monitoring and evaluation, and specific recommendations for possibly generalising the MIREIA eI2-IAF at European level, through, for example, a 'large-scale' pilot and/or other policy and research actions.

The specific objectives of the 'Case Study Analysis' are the following:

- To collect contextual information and gather relevant data and indicators according to the existing monitoring systems and evaluation procedures available at the level of the organisation(s) involved in the case study intervention and put them at disposal of the organisation that will be awarded the complementary contract for testing the MIREIA eI2-IAF for conducting the evaluation of the case study;

- To facilitate the activities conducted as part of the methodological support to test the MIREIA eI2-IAF in order to assess the case study intervention, while at the same time contributing to "contextualizing" the instruments for data gathering and monitoring defined, adapting as much as possible to the local context of the case study intervention so to be possibly compliant with the MIREIA eI2-IAF;
To provide an analysis of the case study experience addressing methodological considerations (including limitations encountered and possible way to overcome them) with specific regard to the approach followed, the data collection and the appropriateness of the methodological framework of the MIREIA-eI2-IAF.

8.3. Activities of Test of MIREIA eI2-IAF

As mentioned above the activities object of the Methodological support to the testing and Case Study Analysis of MIREIA require a strict collaboration with the JRC-IPTS and among the contractors that will be awarded the two complementary activities. However, in order to guarantee on one side the access to data and on the other the possibility to guarantee access to expert and independent knowledge, so to increase the feasibility and quality of the Test of the Impact Assessment Framework of the MIREIA, the activities are proposed to be separated among different organisations, one in charge of Methodological support to the testing and other five in charge of Case Study Analysis.

The tasks to be carried out by the organisation in charge of the 'Methodological support to the testing' are the following:

Task 1: Inception analysis

Given the diversity of eInclusion intermediaries and their interventions and in order to guarantee a certain degree of 'flexibility' in the approach to be followed for the methodological support activities, the objective of this task is to define the methodological approach that will be followed to conduct the activities object of the contract, with specific regard to the support for the selected case study interventions under analysis and for the 'testing' of the MIREIA eI2-IAF. This task therefore includes the preparation of a report that should outline the activities and work plan for supporting the case studies in their activities of data gathering and analysis, as well as for the 'contextualization' of the monitoring and evaluation instruments and the analysis of the results against the MIREIA eI2-IAF. The report should also provide indications on how to further advance the conceptual and methodological framework underpinning the MIREIA eI2-IAF and develop the operational framework to be further proposed for possible generalisation at European level. The methodological approach should result in an Inception Report clearly indicating the activities, resources and timeframe for the execution of the contract. This should be discussed and agreed upon with the JRC-IPTS within the first month from the start of the contract.

This task should be undertaken through an in-depth desk research and analysis of information gathered and/or made available by the case study interventions as well as interviews to complement the analysis.

Task 2: Methodological support to the case studies interventions

Based upon the indications emerged and agreed during the inception phase, this task will provide specific methodological support to the data gathering and monitoring activities of the case study interventions. This should include the assistance for developing and "contextualizing" the instruments for data gathering and monitoring, as well as providing training and capacity building for their methodological and practical execution, in relation to evaluation of interventions and impact assessment. In doing so, workshops or training sessions both online and offline (with at least 1 onsite session per each case study intervention), should be organised with relevant stakeholders, including managers of the interventions, beneficiaries and eInclusion intermediaries involved. More specifically, the support should result in providing indications on the kind of data and indicators that the case study interventions are expected to gather and report, improving the quality of the instruments and tools for data gathering and of the indicators collected, as well as making sure that these can 'fit' the MIREIA eI2-IAF at both operational and strategic level. Additionally, specific methodological support may be required along the life cycle of the case studies.
This task should be undertaken in the local language where the case study interventions under analysis are taking place.

**Task 3: Assessment of the case studies interventions**

This task will conduct an assessment of the case studies intervention under analysis providing an evaluation of the socio-economic context and policy framework of reference in relation to the interventions and its implementation activities and results. This evaluation should be based in part on the data and analysis provided by the contractors conducting the case studies but also based on other secondary sources of reference and complemented with qualitative analysis and desk research as it may be required. The ultimate objective of the activity is to observe throughout the short life-cycle of the implementation on real cases of the progresses and results of the case studies and test them against the proposed MIREIA eI2-IAF to verify its validity and prepare the ground for the following task in order to suggest corrective measures for its improvement and operationalisation. A specific focus on some sub-components of the case studies interventions (i.e. projects or activities that have a specific focus on employability) should be conducted as part of the evaluation, also considering the short timeframe of the contract and the broad scope of the eInclusion concept.

This task will be undertaken taking into account the short lifecycle of the implementation on real cases and therefore will be based on the data available or gathered through the analysis of case studies.

**Task 4: Test of the validity and improvement of the MIREIA eI2-IAF**

The aim of this task is, in first instance, to provide an in-depth analysis of the results of the implementation of the MIREIA eI2-IAF in the case studies and a cross-case assessment of interventions. For this purpose, the activity will build on analysis of data and indicators gathered from the case studies interventions and other primary and secondary data gathered and analysed throughout Tasks 2 and 3 (e.g. surveys, interviews, focus groups, workshops, analysis of datasets, etc.). In this perspective, this task should consider the results of the assessment of individual case studies and in particular the appropriateness of the MIREIA eI2-IAF to their individual cases and suggestions for improvement. Therefore, the contractor should aggregate the individual assessments of the case studies and provide and integrated assessment aiming at validating and improving the MIREIA eI2-IAF.

In fact, being the ultimate goal of the contract to validate and further 'substantiate' the proposed MIREIA eI2-IAF through its testing to real-life interventions, the contractors should provide an improved version of the eI2-IAF and practical recommendations for its usability across a diverse set of types of eInclusion interventions and considering different contexts, (according to size and level of interventions, including local, regional, national or EU funded programmes), services provided, target groups addressed, etc. This should include, on one side, the strengthening of the hypotheses and assumptions underpinning the conceptual and methodological architecture proposed in the MIREIA eI2-IAF, as well as the logical relationships and high-level indicators at policy and strategic level, building on the evidence drawn from the evaluation of the analysis of the case studies interventions; and, on the other side, further develop a 'fully-fledged' operational framework which should include a complete set of monitoring and evaluation indicators as well as guidelines, methods and practical tools for monitoring and evaluation that could help the application of the MIREIA eI2-IAF in other contexts and thus support eInclusion intermediary actors across Europe to set up and conduct their own impacts assessment. Finally, this task should also provide practical research recommendations on how possibly generalising the MIREIA eI2-IAF at European level, outlining the potential for usability of the different components and tools, through, for example, a 'large-scale' pilot and/or other policy and research actions.

This task should produce a draft final report that will be reviewed by relevant Commission staff (JRC-IPTS- Information Society Unit and DG-CONNECT). The contractor should address comments made and deliver the final version of the report.
The tasks to be carried out by the organisation in charge of the 'Case Study Analysis' are the following:

Task 1: Inception phase
This task aims at defining the 'scope' of the case study intervention to be object of the analysis. The objective of this task is to present an overview of the case study intervention 'as it is at the start of the contract', also presenting results of progresses achieved by related activities prior to the contract. In particular, the definition of the case study intervention should include a detailed analysis of the state of activities and current progresses and developments with specific regard to the case study intervention under investigation, the objectives, inputs allocated (financial and other resources), the modalities of management and evaluation with a specific focus on the role of eInclusion Intermediary actors involved, the size and nature of the target population and effective beneficiaries and the activities implemented and under implementation, as well as a description of the monitoring and evaluation systems in use (and related indicators and data already gathered) and the expected results and socio-economic impacts foreseen. In doing so reference should be made to the concepts, definitions and characterizations of eInclusion intermediary actors proposed by the JRC-IPTS as part of the MIREIA project and other relevant material that will be made available at the beginning of the contract by JRC-IPTS.

Task 2: Methodological application of the MIREIA eI2-IAF to the case study
In collaboration with the contractor that will be awarded the complementary contract for methodological support to test the MIREIA eI2-IAF, this task aims at facilitating the testing of the MIREIA eI2-IAF through supporting the application of the methodological approach for data gathering and monitoring of progresses and results to the case study intervention, that will be however based on existing monitoring and evaluation procedures to assess the case study intervention, but adapted in order to be compliant with the MIREIA eI2-IAF. In other words, the adapted system of data gathering and monitoring should be based on the conceptual and methodological framework proposed as part of the MIREIA eI2-IAF (in particular the typologies of eInclusion intermediary interventions defined) and integrate the preliminary set of output/outcome indicators identified in order to verify their appropriateness and feasibility in the context of the case study intervention. At the same time this task aims at "contextualizing" the instruments for data gathering and monitoring defined, adapting to the local context of the case study intervention, including if required translating questionnaires and other data gathering instruments in the local language of the case study intervention. In doing so, the local researcher will be instrumental to facilitate the organisation of a stakeholders' workshop and possibly some online or offline training sessions that will be organised by the contractor (jointly with the IPTS staff) in charge of the methodological support that will be running in parallel to the present contract.

Task 3: Gathering of relevant data and indicators
This task will include gathering relevant data and indicators according to existing monitoring systems and evaluation procedures available at the level of the organisation(s) involved in the case study intervention, if possible adapted in order to be compliant with the MIREIA eI2-IAF and if possible at more than one interval of time during the course of the contract. These data and indicators should be put at disposal of the organisation that will be awarded the complementary contract for testing the MIREIA eI2-IAF for conducting the evaluation of the case study. This should allow providing relevant information for assessment of progresses of activities in terms on outputs and outcomes so to test the validity of the MIREIA eI2-IAF and/or the feasibility of its adaptation/contextualisation to the case study intervention. The data and indicators should be transmitted through preparing short monitoring reports synthesising the main results achieved and providing relevant data and indicators. However, upon request by JRC-IPTS an extraction from (or access to) the complete datasets of monitoring indicators collected over time should also be made available if required. Once again, reference should be made to the methodological framework and set
of indicators defined as part of the MIREIA project (see task 2 above) which will be refined and enriched during the course of the testing phase in collaboration with the supplier of the complementary contract and further discussion with experts and stakeholder to verify their relevance and appropriateness for measuring progresses of eInclusion intermediary interventions.

**Task 4: Drafting a final report of analysis**

This task aims at drafting a final report of analysis of the case study experience. This report should provide a summary of the activities conducted and address, in particular, methodological considerations (including limitations encountered and possible way to overcome them) with specific regard to the approach followed, the data collection and the appropriateness of the methodological framework of the MIREIA-eI2-IAF. It will also serve to provide indications on the feasibility and relevance of the proposed methodology and how to revise and improve the MIREIA eI2-IAF. Finally as part of the lessons learned, the contractor should contribute ideas to JRC-IPTS and the organisation in charge of the methodological support on how to possibly improve upon the small-scale case study results in order to design a full-large-scale case study experiment in similar intervention contexts.

The drafting of this report should take into consideration inputs from stakeholders' consultation possibly organised alongside the case study (see task 2).

This report will serve as an input for the Final Report of the methodological support for testing the MIREIA-eI2-IAF conducted in parallel by the contractor of the complementary case study analysis and under the direct supervision and active participation of the JRC-IPTS.

**8.4. Expected results and methodological issues**

The activities carried out as part of the Task 6 – Test of the Impact Assessment Framework of the MIREIA project are expected to produce several results.

First of all, the 'case study analysis' activity should result in making available data and quantified indicators of progresses of the activities of the intervention on a periodic basis (through producing two brief analytical reports), which should focus on providing considerations on the appropriateness of the methodological framework of the MIREIA-eI2-IAF as well as the main lessons learned during the test experience.

This should allow for developing practical recommendations on how to improve upon the small-scale case study analysis results in order to design a full-large-scale pilot experiment in similar intervention contexts.

On the other side, the 'methodological support to the test' activity should result in a two-fold set of outcomes.

From one side increase the quality of the data gathering and analysis object of the complementary activity of 'case study analysis', through enhancing the capacity for monitoring and evaluation of relevant actors.

On the other side, to provide an assessment of the intervention through three comprehensive analytical reports: the Ex-Ante Assessment Report which should provide an overview of the baseline indicators and an analysis of the situation of the intervention interpreted through the lens of the MIREIA-eI2-IAF; the Mid-Term Evaluation report which should include a detailed analysis of the progresses of the intervention against the methodological framework set out in the MIREIA eI2-IAF; and the Final Report which should explain the methodological approach followed and discuss in depth the main findings and results, and propose a 'full-fledged' operational framework which should be integrated in the overall MIREIA eI2-IAF, including a complete set of monitoring and evaluation indicators as well as guidelines, practical tools and instruments for monitoring and evaluation (e.g. set of indicators, logical frameworks per typology of intervention, questionnaires for surveys, etc.). This should allow developing specific recommendations for possibly generalising the MIREIA eI2-
IAF at European level, through, for example, a 'large-scale' pilot and/or other policy and research actions.

With regard to the **methodological approach**, it will principally rely for the 'case study analysis' activity on data gathering and analysis (e.g. query from internal monitoring systems and databases, collecting data from local statistical sources and collecting progress indicators from projects' databases and internal administrative records by the means of a survey, etc.); complemented by qualitative analysis (e.g. interviews to projects' responsible, policy-makers and practitioners), as well as desk research for analysis of findings and reporting.

For the 'methodological support' activities the approach will be based on conceptual work and analysis of data and indicators (e.g. making use of statistical sources and the periodic monitoring reports provided by the case study analysis activity, as well as possible data directly accessible from internal monitoring systems and databases and internal administrative records by the means of a survey, etc.); complemented by qualitative analysis (e.g. interviews to projects' responsible, policy-makers, practitioners and other relevant stakeholders), as well as desk research for analysis of findings and reporting and capacity-building activities (e.g. workshops and training activities).
### Annex I – Typologies of eInclusion intermediary interventions and related effects

<table>
<thead>
<tr>
<th>Typology of activity</th>
<th>Employability effects of eI2 interventions</th>
<th>Expected outcome dimensions: direct effect on employability</th>
<th>Expected specific impact dimensions (indirect effect on employability)</th>
<th>Potential contribution to global impacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Measures providing ICT access (e.g. Public Internet Access Points, Telecentres, etc.)</td>
<td>Networking capacities</td>
<td>facilitate the possibility for accessing information on labour market and entrepreneurial opportunities</td>
<td>active engagement in the (local) economic development and contribution to socio-economic inclusion</td>
<td>Contribution to local/regional Economic performance/productivity growth</td>
</tr>
<tr>
<td>2. Basic Digital literacy training courses ('medium-related' skills including operational and formal internet skills)</td>
<td>Skilling</td>
<td>improvement of ICT skills and capabilities</td>
<td>better opportunities to look for and apply for jobs</td>
<td></td>
</tr>
<tr>
<td>3. Learning through ICT (eLearning / informal ICT learning support)</td>
<td>Skilling / Empowerment</td>
<td>enhancement of confidence and motivation for learning</td>
<td>increased perception of the possibility to improve (individual/group) social and economic conditions (social capital formation)</td>
<td></td>
</tr>
<tr>
<td>4. Advanced ICT skills development (both 'medium-related' and 'content-related' skills including information and strategic internet skills)</td>
<td>Skilling Empowerment / Networking capacities</td>
<td>strengthening network ties and outreach potential (social capital bonding and bridging)</td>
<td>increase of the opportunities for socio-economic integration</td>
<td>Employment generated in the process, created or transformed as a direct or indirect consequence of the interventions</td>
</tr>
<tr>
<td>5. Specific/purposeful ICT-enabled skills building for employability</td>
<td>Empowerment / Job-placement capabilities</td>
<td>improvement of ICT skills and capabilities</td>
<td>better opportunities to look for and apply for jobs</td>
<td></td>
</tr>
<tr>
<td>6. ICT networking and support to increase outreach capabilities (including self-employment /entrepreneurship)</td>
<td>Networking capacities</td>
<td>facilitate the possibility for accessing information on labour market and entrepreneurial opportunities</td>
<td>active engagement in the (local) economic development and contribution to socio-economic inclusion</td>
<td></td>
</tr>
<tr>
<td>7. Specific/purposeful ICT supported job-seeking and matching measures</td>
<td>Job-placement capabilities</td>
<td>improvement of ICT skills and capabilities</td>
<td>better opportunities to look for and apply for jobs</td>
<td></td>
</tr>
<tr>
<td>8. eAccessibility measures</td>
<td>Empowerment</td>
<td>All categories</td>
<td>All categories</td>
<td>Contribution to higher social participation of disadvantaged groups and territorial cohesion</td>
</tr>
<tr>
<td>9. ICT supported community building (including assistance to SMMEs)</td>
<td>Empowerment and Networking capacities</td>
<td>facilitate the possibility for accessing information on labour market and entrepreneurial opportunities</td>
<td>active engagement in the (local) economic development and contribution to socio-economic inclusion</td>
<td></td>
</tr>
<tr>
<td>10. eIntermediation - ICT supported measures to access welfare entitlement, health and independent living and other public services</td>
<td>Empowerment and Networking capacities</td>
<td>facilitate the possibility for accessing information on labour market and entrepreneurial opportunities</td>
<td>Active engagement in the (local) economic development and contribution to socio-economic inclusion</td>
<td>Improvement of quality of life (target group specific: e.g. unemployed, elderly; youth at risk, migrants, etc.)</td>
</tr>
</tbody>
</table>
## Annex II – Typologies of eInclusion intermediary interventions and related indicators

<table>
<thead>
<tr>
<th>Typology of activity</th>
<th>Possible Output indicators</th>
<th>Possible Direct Outcome indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Measures providing ICT access (e.g. Public Internet Access Points, Telecentres, etc.)</td>
<td># of regular users&lt;br&gt;Average length of use of facilities per user&lt;br&gt;% coverage of deprived communities</td>
<td>% of users progressing to take up ICT courses&lt;br&gt;% of users progressing to regular Internet users&lt;br&gt;% increase in Internet usage in the area</td>
</tr>
<tr>
<td>2. Basic Digital literacy training courses ('medium-related’ skills including operational and formal internet skills)</td>
<td># of participants in training course&lt;br&gt;% participants who completed the courses</td>
<td>% graduates progressing on advanced courses&lt;br&gt;% of participants trained / potential target&lt;br&gt;% of participants achieving an increase in their confidence of use of ICT</td>
</tr>
<tr>
<td>3. Learning through ICT (eLearning / informal ICT learning support)</td>
<td># of users of eLearning or beneficiaries of informal learning support&lt;br&gt;% of users/beneficiaries who became regular users</td>
<td>% of users achieving an increase in their confidence of use of ICT&lt;br&gt;% of users achieving evidence of skills progression&lt;br&gt;% of users that have been 'placed' on the job market</td>
</tr>
<tr>
<td>4. Advanced ICT skills development (both 'medium-related’ and 'content-related’ skills including information and strategic internet skills)</td>
<td># of participants in training course&lt;br&gt;% participants who completed the courses</td>
<td>% of participants achieving evidence of skills progression&lt;br&gt;% of graduates that have been 'placed' on the job market</td>
</tr>
<tr>
<td>5. Specific/purposeful ICT-enabled skills building for employability</td>
<td># of beneficiaries&lt;br&gt;% of beneficiaries / local unemployment rate</td>
<td>% of beneficiaries that have been placed on the job market&lt;br&gt;% of beneficiaries that have actually found a job (ICT-related)</td>
</tr>
<tr>
<td>6. ICT networking and support to increase outreach capabilities (including self-employment / entrepreneurship)</td>
<td># of beneficiaries counseled and mediated&lt;br&gt;# of beneficiaries assisted on self-employment / entrepreneurship</td>
<td>% of beneficiaries successful counseled and mediated&lt;br&gt;% of beneficiaries assisted on self-employment / entrepreneurship successful counseled and mediated</td>
</tr>
<tr>
<td>7. Specific/purposeful ICT supported job-seeking and matching measures</td>
<td># of beneficiaries counseled and mediated&lt;br&gt;# of job-suppliers served (or # of job-offers made available)&lt;br&gt;# of beneficiaries referred to non-employment activities (e.g. further training)</td>
<td>% of beneficiaries successful counseled and mediated&lt;br&gt;% of successful 'job-matching' activities / total of activities</td>
</tr>
<tr>
<td>8. eAccessibility measures</td>
<td># of beneficiaries&lt;br&gt;&lt;br&gt;All other indicators can apply depending on specific cases</td>
<td>% of beneficiaries / total potential target (local)&lt;br&gt;All other indicators can apply depending on specific cases</td>
</tr>
<tr>
<td>9. ICT supported community building (including assistance to SMMEs)</td>
<td># of SMMEs assisted&lt;br&gt;% SMMEs assisted / potential target&lt;br&gt;# of new SMMEs created / established</td>
<td>% of SMMEs achieving evidence of improvement&lt;br&gt;% increase in local economic</td>
</tr>
</tbody>
</table>

*All other indicators can apply depending on specific cases.*
<table>
<thead>
<tr>
<th>10. Intermediation - ICT supported measures to access welfare entitlement, health and independent living and other public services</th>
<th>on the local area of reference</th>
<th>development</th>
</tr>
</thead>
<tbody>
<tr>
<td># of beneficiaries (per target group)</td>
<td># of services (e.g. online eligibility checks, forms or information) delivered to beneficiaries</td>
<td></td>
</tr>
<tr>
<td>% of beneficiaries / potential target (per target group)</td>
<td>% of reached beneficiaries achieving evidence of improvement in their situation (e.g. obtained an entitlement or successful transaction on any other public service).</td>
<td></td>
</tr>
</tbody>
</table>
Annex III – An overview of the five selected case studies

In this Annex A brief overviews of the case study interventions selected is presented:

1) The Community Hubs Project is undertaken by the Online Centres Foundation, a UK-based organisation which helps communities tackle social and digital exclusion funded through the Department for Business, Innovation and Skills (BIS) via the Skills Funding Agency (SFA).

The UK online centres network is made up of 3,800 Centre partners and 500 Access Points, which all exist to help people get online in their communities. The network is a diverse one, with centres in libraries and communities centres, as well as more unusual locations like pubs and cafes.

UK online centres provides a number of benefits to its Centre partners, including:

- Fantastic learning resources
- Marketing materials and support, to help centres spread the word about the work they’re doing in their local communities
- Daily Management Information, to allow centres to measure their performance
- Access to free online training courses to support their delivery
- Discounts on webinars and training programmes in our Professional Development Programme

31 Community Hubs have been funded to undertake local community development using digital technology to bring about social change. These centres help to develop the skills, knowledge and capacity of local people and local organisations to engage and support their communities, identifying and responding to local needs.

Community Hubs will also seek to create sustainable models which can survive and thrive beyond their UK online centres grant without additional support, continuing to deliver valuable community activities and impact. Community Hubs will operate across a wide area such as several rural villages/market towns, a town or several parts of a city within the top 10% of deprived wards, as measured using the Index of Multiple Deprivation (IMD).

2) The Polish eSkills and your future profession, Library Development Programme, is managed by the Information Society Development Foundation, a non-governmental organization established in 2008 by the Polish-American Freedom Foundation.

The Library Development Program focuses on public libraries in all rural and rural-municipal communes and municipal communes with up to 20,000 residents. The motivation for the project is twofold. On the one hand branch libraries are often the only public institutions in their local townships, and almost half of branch libraries have no computer equipment available to library users. On the other hand libraries are places with potential. Villages and small towns have a stable network of 6600 libraries employing 9600 well-educated librarians (41% with full tertiary and 21% with post-secondary education) who enjoy high levels of social trust.

The project web site states that they know that residents of small towns need a quiet and safe place were they could spend their free time in an interesting way, meet other people, pursue their interests and fulfill their aspirations. The library can be such a place.

Upon completion of the Library Development Program:

- Libraries in small towns will better serve the needs of local inhabitants
- Librarians and library users will use modern ICT
- Libraries will fulfill an important role in the development of local residents, communities and the country as a whole

The Library Development Program prepares librarians to run their libraries in a modern way, to organize interesting events that fulfill local resident expectations, secure additional non-budget funds and promote themselves and communes. One of the Program's strengths is active and very practical forms of training.

The multimedia and ICT equipment delivered as part of the Program - desktop and laptop computers (with software provided free of charge by Microsoft Corporation) as well as projectors and peripherals enhance the attractiveness of libraries and help them pursue interesting projects. The Program contributes to strengthening the entire library system, integrating the community, and implementing more advanced and effective forms of communication between libraries and librarians. Our information campaign puts the library issue up for public debate, and our promotional and advocacy efforts contribute to building the prestige of the librarian profession.

3) The Irish Fast Track to IT (FIT) project seeks develops ICT-Skills training to address sustained long term unemployment.
FIT is an industry-led initiative which works in close collaboration with government departments and national education and training agencies, local development organisations and a host of community based organisations. Their primary partners in education and training include FAS, VECs, Third Level Institutions, Leargas, Leader Companies, Rapid Coordinators, Local Authorities and Employment Pacts.
FIT’s mission is to promote an inclusive Smart Economy by creating a fast track to marketable technical skills for those at risk of unemployment long term. It is the primary industry skills development initiative facilitating collaboration with government, education and training providers and disadvantaged communities to enable greater access to employment for marginalised job seekers.
FIT Ltd, a registered charity and not for profit organisation, was established in 1999. The Initiative develops and promotes technology-based programmes and career development opportunities for job seekers who have become detached from the labour market in an increasingly knowledge-based economy.
Since it started in Dublin in 1999, FIT has expanded substantially and now operates across the Republic of Ireland. More recently FIT has commenced programmes in Northern Ireland under the banner FIT-NI.
To date, over 8,000 job seekers have completed FIT skills development programmes of which over 5,000 progressed into employment. 2,500 job seekers are currently participating in FIT programmes. Recently the EU Commission cited FIT as one of the most effective employability initiatives in Europe.
FIT programmes are carefully tailored to give job seekers new marketable skills to compete for sustainable jobs in the emerging knowledge economy. FIT courses are accessible and results are achievable even for people who may not have taken part in formal education for many years. The course structure allows for support and career guidance with a target of employment after the course. FIT focuses on the future potential rather than the past history of participants. FIT supports graduates for three years after they complete a course to establish if they are working, in further education or are in need of supports to look for work or education.

4) 'Pane and Internet' (P and I) is an Italian large scale, digital literacy
programme with specific focus on ICT training and Internet for job searching, and it is currently the main e-inclusion project of PITER, the Telematics Plan of the Emilia-Romagna region. First developed four years ago, it ran a pilot phase in 2009-2010 to test the training courses (3,000 people were trained) and the organisational and promotional approach for subsequent steps. In 2011-13, P and I is being deployed on a larger scale with a budget of €1.6M and the aim of training about 11,000 people. These are mostly elderly people, but also unemployed people, housewives, immigrants and other groups at risk of digital and social exclusion. Beyond training, the current project is exploring and trialing sustainable solutions to provide these people with continuous assistance on ICT usage through public libraries and other venues and to involve local stakeholders in digital literacy and other eInclusion actions.

P and I developed from the need to fight the knowledge divide and to enhance the awareness and use of e-government solutions by the citizens in Emilia-Romagna. Greater digital literacy and better information about online services are the two key pillars of the e-inclusion model in the region. The goals of the project are therefore:

- To spread the use of information and communication technologies (ICT) among digitally excluded citizens (estimated to be about 1 million) through awareness and training activities focused on basic digital competence;
- To first test a “promotion-information-training” approach for enhanced ICT use and later to replicate and extend this approach throughout the region;
- To promote the use of online services delivered by the Public Administration, by making those services more familiar to the citizens and supporting their access and usage especially by disadvantaged people.

Since the pilot phase, the project envisaged a close collaboration with local administrations both in the organisation of training courses and in the promotion of their e-government services. In the current large-scale deployment, collaboration in the promotion and possibly also in the delivery of P and I activities as been extended to third sector organisations, especially unions of retired/elderly people.

5) Social Innovation for employability and entrepreneurship (Guadalinfo), is a Spanish social innovation network consisting of 756 centres (692 in municipalities with less than 20,000 inhabitants and 64 in urban zones at high risk of social exclusion), as well as 25 Andalucian communities located in foreign countries. The project is led by Junta de Andalucía (Spain) and managed by the Consorcio Fernando de los Ríos.

Guadalinfo started in 2003 as a pilot project, within the scope of the Regional Program of Innovation Activities in Andalucía, leading to the set up of 26 Guadalinfo Centres in 26 Andalucian Municipalities. The success of this project led to the diffusion of the centres across all the territory of the Community (Guadalinfo 2004-2009): today there are 637 Centres in 637 Andalucian municipalities with less than 10,000 inhabitants.

The pilot experience has shown how around those centres, which act as a pivotal axis, training and revitalizing activities develop. For instance, the centres foster complementary innovation activities, electronic services, cooperation practices on the net, or even entrepreneurial initiatives ensuring the effective and continuous use of the opportunities offered by the Information Society.

A GUADALINFO Centre offers Andalucian citizens the opportunity to know and use ICT in its broadest sense. The project is addressed to all the citizens. However, the first beneficiaries of the project are those people, organizations or localities with the highest difficulties in the accessing the ICTs. Some examples include: retired people living in rural zones; housewives and other people attending crucial family necessities; youngsters who study or have just started working, and thereby
lack the necessary means; cultural minorities, unemployed or handicapped people who normally lie at the margin of progress and other people threatened with being excluded for several reasons.
Annex IV – Key methodological elements to support the testing of eI2-IAF

In this Annex is provided an overview of the key elements of the approach proposed by Tech4I2 to undertake the methodological support to the "testing" of the MIREIA eInclusion Intermediary Actors - Impact Assessment Framework (eI2-IAF) in order to address the three specific objectives of the study, namely:

1. Provide methodological support to the case studies identified to implement the MIREIA eI2-IAF
2. Conduct an assessment of the case studies interventions under analysis
3. Test the validity of the MIREIA eI2-IAF and improve the operational elements of the framework

To achieve the objectives for the project it is proposed a methodology that will comprise four main tasks (see Figure).

![Figure IV.1 - Key components of the methodology proposed by Tech4i2](image)

**Task 1 - Inception analysis: Developing the tool and support for cases**

The Terms of Reference for task 1 state that the objective of this task is to define the methodological approach that will be followed to undertake the activities described in the contract. The Terms of Reference correctly highlight the need to support the selected case study partners involved in the project and to test the MIREIA eI2-IAF tool. The activities described in this section focus on the development and refinement of a tool and initial liaison with partners that will be undertaken prior to visiting the case studies.

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52 Tech4I2 has been awarded the "Methodological support to the "testing" of the MIREIA eInclusion Intermediary Actors - Impact Assessment Framework (eI2-IAF)".
For clarity, the next section (task 2) describes the activities that will be undertaken with partners (using the tool) after one of our team meets them for the first time. This task focuses on the activities and communication that will be undertaken prior to the first visit. This task is divided into two sections. Firstly, activities related to developing the MIREIA eI2-IAF tool. Secondly, communication and liaison with case study partners. These are reviewed separately in the remainder of this section.

**MIREIA eI2-IAF tool development**

It was above provided an overview of previous studies examining the impact of technology on eInclusion. Importantly, it provided a brief introduction to impact assessment and business case tools that Tech4i2 have developed for UK government and the Regional Authority in Emilia Romagna, Italy.

Further desk research will be undertaken to ensure a robust foundation for the study. The results of desk research will then be incorporated in developments to enhance the tool. These refinements are described below.

The tool will have to be applicable to a wide range of projects and initiatives that will have differing goals and objectives. However, across all projects there will be a common core set of information to be collected about the project, costs and delivery of the initiative. A common core set of benefits is also likely to be evident. Nonetheless, the tool to be developed will have to be flexible and allow case study partners to enter additional relevant information. It is also important that the approach is scalable and can be utilised in a more extensive roll-out phase if the proposed study is successful.

At the heart of our approach is therefore the development of a scalable flexible tool that will have common core components. Partners will be able to add additional information about their project and/or the outputs they believe are pertinent to their case.

The UK impact assessment tool will provide the basis for the MIREIA eI2-IAF tool. It is covered by a Creative Commons agreement that enables others to use and develop the tool. Tech4i2 will develop the MIREIA eI2-IAF tool under the same Creative Commons terms. The project will also draw upon Tech4i2’s experience of developing a similar tool in Emilia Romagna.

The tool is currently available as a series of xlsx worksheets. Each worksheet relates to a particular topic where information is input. Topics include:-

- Project definition
- Stakeholder identification (stakeholders impacted positively or negatively by the project)
- Benefits and burdens analysis
- Project costs and resources
- Project risks
- Project context and counterfactuals

Importantly, in the context of the proposed study, the tool is designed to be introduced by a facilitator working with key stakeholders. The facilitator can then complete all the core information elements with stakeholders at an introductory meeting. This then only requires case study partners to provide up to date information about outputs from the project after the facilitator departs.

Guidance notes for facilitators and stakeholders about how to use the tool have already been developed and these will be further refined for the MIREIA eI2-IAF tool at the start of the proposed project. Importantly, this clear set of instructions and guidance will support case study personnel in completing the tool. It will also ensure easy utilisation of the tool by others at the end of the project.

The bullet points above provide a list of the main components of the tool. In the remainder of this section we provide an overview, with the assistance of
screenshots to provide a flavour of the content of the tool.

Figure IV.2 provides an example of some of the core information that is collected about the project and its goals and objectives. Project definition is divided into two parts: problem definition and project definition. When complete, this is a concise summing up of the project and has enduring value in communications about the initiative.

The facilitation challenge is to get every aspect recorded in short, simple, plain language sentences, and the whole to be completely internally consistent. Experience has shown that this is the most exhausting but valuable stage, as it is constantly surprising how frequently an apparently well developed project contains inconsistencies or vague elements.

For example in previous studies it has been interesting to see how sometimes stakeholders have perceived subtly different goals for projects. They have usually welcomed the opportunity that the facilitator provides to re-evaluate activities, goals and achievements.

Whilst the case studies have ‘volunteered’ to take part they are bound to be apprehensive about ‘being evaluated’. We will therefore introduce the study as a chance to take stock, consolidate, examine what they are achieving and consider how they might be able to enhance the effectiveness of their project. We will do all we can to ensure ‘buy-in’ and support for case studies. We regard this as a project that will be undertaken in tandem jointly with the case study organisations. The use of native speakers will be very important in these activities.

**Project Definition**

![Project Definition Interface](image)

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**Figure IV.2 - Screenshot of some of the information collected about projects and their objectives**

**Stakeholder Identification** - The process of driving out benefits and burdens, particularly in relation to projects with social outcomes, is undertaken by taking the perspective of each stakeholder, one by one, and analysing the impact on them of the problem and the solutions provided by the project. This approach is derived from the work done on methods for measuring *Social Return on Investment*.

Stakeholder Analysis enables the production of a simple summary of whether benefits or burdens have been identified for each stakeholder and the distribution of these between stakeholders. It uses this information to highlight the potential attitudes towards the project among the stakeholders.
identified.
Those for whom no benefits or burdens have been identified are categorised as potentially ‘disinterested' in the project. Those for whom benefits but no burdens have been identified are potential champions and ‘enthusiasts' for the project — although it is always worth re-checking that they are not burdened in some way by the project. Those stakeholders for whom only burdens have been identified are potential 'resistors' to the project and are highlighted in red.
This table provides a simple, early analysis for debate, and permits highlighting of any potential stakeholder problems at a very early stage. Importantly, it also highlights the benefits received by stakeholders and potential ‘free-riders’ (who contribute little or nothing and receive benefits). This analysis provides an ‘internal’ impact assessment of who receives what benefits at what cost. Later sections focus on ‘external’ impact assessment of benefits for participants, the wider community and the economy.

**Benefits and Burdens Analysis** - There are three components in this Step: a benefit prompter, a stakeholder checklist and the table of benefits and burdens to be created. The progress indicator (in the top right hand corner of Figure IV.3) expects at least 3 each of benefits and burdens.
The benefits prompter, in the centre left of IV.3, does what it says, providing drop down lists (see later examples) derived from a standard framework of benefits. This can be used liberally to inspire the group and to draw their attention to benefits that might not otherwise have been recognised.

The stakeholder checklist shows the users when they have recorded at least one benefit or burden for a stakeholder. This gives the group a visual prompt to make sure everything is considered — especially burdens as these are easy to omit. Experience has shown that groups find it harder to identify burdens than benefits. To stimulate thought, facilitators try to explore the situation of each stakeholder using phrases incorporating wording such as “surely there are things that are an effort to”, “cost of”, “time taken to”, “inconvenience of”, “difficulty of” etc.
The table of benefits is completed using a drop down menu of stakeholders and a drop down menu of benefits. More than 120 core benefits in ten categories (education and skills, health and care, housing, better services, crime and safety, environment, community, social well being, finance, equality; empowerment and inclusion, employment and economy) have been identified. Many stakeholders (such as NEETs or the unemployed) will appear more than once in the stakeholder column as they will have more than one benefit (or burden, or both benefits and burdens). For example projects assisting the hardest-to-reach groups will be trying to achieve a number of the benefits provided in Figure IV.4, before trying to assist their participants into training or employment. Projects focusing on increasing skills and employment are more likely to try to achieve benefits presented in Figure IV.5.

Importantly, in the context of the flexibility required by the project, users are able to input their own benefits if they are not included in the drop down menus. With this in mind the notes column is designed to record any explanation that may be necessary for future readers or editors. Examples of equality, inclusion and empowerment benefits provided (one of the ten categories of benefits) in the drop down menu are provided in Figure IV.4. These will be particularly important for the case study projects that have a focus on reaching the hardest to reach and enhancing social inclusion.

![Figure IV.4 - An example of equality, inclusion and empowerment benefits provided in the tool's drop down menu](image)

Figure IV.5 provides an example of employment and economy related benefits. Clearly in the context of the proposed study this group of benefits are particularly important. They represent the key benefits or outputs that will assist project participants into employment and/or career progression.
Because the primary focus of the project is impact assessment we will further develop this list through desk research at an early stage in the project. When the benefits list has been revised we will distribute it to all case study representatives prior to the facilitator visiting. It is important that this list is fully developed at an early stage. This should ensure that all categories of benefits are available and/or utilised by all five case studies at the facilitator meetings. This will ensure consistency and enable comparison between the five case studies.

Nonetheless, as noted previously the tool enables users to insert their own benefits if they are not in drop-down menus. It is also notable that the tool has already been used for many different types of projects and the core benefits listed in dropdown menus have been more than adequate in meeting all benefits in previous studies.

**Project costs** - The aim of this stage is to obtain the full costs of undertaking the project, both one-off development costs and those continuing into the future. Project costs are less amenable to being completed in a creative group. Access to this information relies on more specialist knowledge and probably some prior research for data on costs and benefits. Some numbers need to be researched or to be validated with people outside the stakeholders. So this part of the tool will be completed separately with the project manager or Chief Executive.

Like other elements of the tool there is a taxonomy of prompts, provided in a drop down menu, to help achieve a comprehensive and a consistent method of obtaining costs. In this case it comprises cost categories, each of which is subdivided into cost types. The primary categorisation is between “cash” and “non-cash”. These terms are shorthand for “cash-consuming” and “non-cash-consuming”. The first means that there is a specific payment made (e.g. buy a widget), the second that a resource is consumed that has a monetary cost (e.g. existing staff or partner staff input) but no money changes hands in respect to its consumption by the project. Finally for each cost, there is a column set up to receive an actual figure for the cost in each financial year being evaluated by the project. The costs need to be entered in €1,000s.

**Project context and counterfactuals** - Section above identified a major failing that has arisen in many previous projects. Most previous studies and evaluations do not consider the economic and environmental context within which the study is operating. Nor do they consider counterfactuals (what would have happened in the absence of the project). We believe that a major innovation in
our approach will be a consideration of both these factors. Firstly, the tool will be enhanced to include contextual information such as the size of the local population and the number of local businesses (within a certain travel time or distance of the project) this will provide an insight to the potential target population for or requiring ‘treatment’ and the prevailing job opportunities for those leaving the project. Details of local employment and unemployment levels, average levels of remuneration and basic rates of unemployment benefits will be obtained from National Statistical agencies. Data concerning skills shortages and particularly ICT skills shortages will be sought. If reliable statistical information cannot be found locally, job adverts in a local newspaper will be monitored for one week to identify the relative proportion of vacancies that require ICT skills or the skills being developed by a particular project. This contextual information will be vital in the assessment of case study interventions (see task 3). To our knowledge the proposed study will be the first of this type to include a consideration of counterfactuals and thus provide a more realistic and robust understanding of what the real impact of a project is.

The approach will also be made more robust by seeking information about the circumstances and subsequent career development of case study participants from earlier cohorts (previous years). Many case studies simply record how many participants obtain a qualification or obtain a job when they leave a project. These are the outputs often presented by a project about their ‘success’. It is possible that the skills obtained by participants have enabled them to maintain a job or enhance their careers. Conversely it is possible that some of those who got a job did not manage to stay in employment and they became unemployed again.

In addition to information collected about earlier cohorts, counterfactual information will also be sought. This will be obtained by requesting case study organisations to contact people who applied for enrolment on the project but did not join. The individuals who did not attend the project will be asked to complete a short (ten question) telephone or online questionnaire. Sampling for this group will be problematical. Random sampling with replacement methods will be adopted. A key problem is going to concern sample sizes. Ideally, for a project with 500 participants each year, approximately 200 people should be contacted to obtain a statistically representative sample (at the 95 per cent confidence level) with a confidence interval (margin of error) of 5 per cent. We envisage that most case studies would flinch at the thought of contacting 200 people that did not join their project. We believe that a sample size of about 50 people might be more realistic. However, against similar parameters this would provide a margin of error of +/- 13 per cent. We would welcome discussion about this matter with IPTS if appointed.

Communication and liaison with case study partners

It was noted earlier that despite the fact that case studies have ‘volunteered’ to take part they are bound to be apprehensive about ‘being evaluated’. Maintaining and ensuring their ‘buy-in’ for joint working will be vital. The most important method of liaison to ensure ‘buy-in’ will be contact through telephone conversations and face-to-face meetings (two are envisaged) with case study representatives in their native language. As section above highlighted we will also develop an online portal to facilitate open and instant communication between case study managers, other case study staff and project personnel.

We will use experienced researchers and facilitators to liaise with projects. Importantly, Tech4i2 will not delegate this task to disinterested third parties. Instead we will utilise our own staff who are native speakers of the five case study countries.

53 Using sampling with replacement sample values are independent. Practically, this means that what we get on the first one does not affect what we get on the second. Mathematically, this means that the covariance between the two is zero.
For this purpose, designated liaison personnel will make contact with ‘their’ case study immediately after the kick off meeting has finalized and agreed project parameters. This initial contact will enable the liaison person to describe the project, our approach and activities that will be undertaken prior to their first visit to the case study. Contact details will be exchanged and case study managers will be invited to contact their liaison person at any time during the project. A mutually convenient date for the first meeting and the range of stakeholders to be invited will be discussed with the contact person. It is envisage the first facilitated half day session, see the next section, will take place approximately 4 to 6 weeks after the kick off meeting. A mutually convenient date will also be agreed for month six of the project to provide bespoke feedback to the contact person and other stakeholders.

In addition to telephone contact and two face-to-face meetings we will also establish an online discussion tool, to enable open and visible communication between all those involved in the project. An online discussion portal will be created for the project to assist communication with case study organisation partners. It will comprise two components. The first will be structured online log to record problems encountered with the MIREIA eI2-IAF tool and a list of solutions to problems. The second component will be created for general (unstructured) discussion about the project and the use of the MIREIA eI2-IAF tool.

In addition to an online chat facility we will also create a document feedback facility. This will enable all project partners to read and comment on draft and final documents created for the study. The proposed study requires the preparation of a number of documents and reports. A primary area for feedback will be the development and enhancement by case study organisations of our list of more than 120 core benefits and outcomes, discussed earlier. A final report will also be produced for the study.

In addition to a document feedback tool we will also develop two short (less than ten question) online questionnaires. The first of these will seek the views of project participants about their time spent on the case study and the benefits they received. This will provide a way of cross-checking benefits perceived by participants. The second online questionnaire will provide those that did not attend the case study with the opportunity to provide details of their progress and activities. The online tool will replicate the short questionnaire that case studies will be asked to use when contacting the (counterfactual) cases that did not attend the project.

### Task 1

**Objectives**

- Initial liaison with case study managers to ensure ‘buy in’.
- Development of the MIREIA eI2-IAF tool under Creative Commons terms.
- Preparation of training materials for liaison personnel and guidance materials for case study personnel.
- Development of a study portal for open transparent communication, document feedback and online questionnaires.

**Timespan**

Month 0 to month 2

<table>
<thead>
<tr>
<th>Activity</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desk and online research. Consultation with cases studies and liaison personnel</td>
<td>Contributes to all later tasks</td>
</tr>
</tbody>
</table>

| Deliverables | Inception report (D1) and the preparation of a report outlining the activities and work plan for supporting the case studies and for 'contextualising’ the cases. The report will include issues associated with scalability and broader ‘roll-out’ |
|Meetings | A kick off meeting (M1) will be held in month 1. Native speaking liaison personnel will make initial contact with case study representatives and agree a date for a half day session with case study stakeholders during weeks 4 to 6. |

**Task Leader**

Prof Alberto Salvodelli
Task 2: Methodological support to the case studies: Utilising the tool

This task describes the liaison activities and completion of the MIREIA eI2-IAF tool during and after the initial facilitated stakeholder workshop. Task 1 covered liaison activities up until the Tech4i2 native speaker ‘walked through the door’ for the half day stakeholder workshop at the case study location.

The first workshop

To briefly recap; prior to the workshop, immediately after the kick-off meeting, designated Tech4i2 case study liaison personnel will contact case study managers to ensure ‘buy in’. Case study managers will be provided with guidance notes about the tool and have a copy of the tool. Communication will also be facilitated through a portal created for open transparent communication. The primary purposes of the half day workshop are to obtain wider stakeholder ‘buy-in’ and commitment to joint working on the project, to collect information and to provide case study managers with a short training session about how to complete the tool with the additional information required after the workshop.

One of the workshops (in either Dublin or the UK) will be scheduled ahead of the remaining case studies. Prof Foley, who undertook development of the UK impact assessment tool that forms the basis for the MIREIA eI2-IAF tool, will lead this workshop. This ‘early’ workshop will enable early reaction to the MIREIA eI2-IAF tool, the structure and process associated with the workshop, and the reaction of the case study organisation to the level of input (in the form of data collection) that is required from joint working on the project.

Experience has shown that a great deal of data can be collected during a half day workshop. This is a far more effective way of obtaining data; simple questionnaires left for completion frequently remain unanswered. We therefore regard the first workshop as a major opportunity to collect a great deal of information (described in the previous section) about the context for the project, goals and objectives, operational data (costs and outputs). As noted earlier the proposed MIREIA eI2-IAF tool is not restrictive in constraining answers, it has a central core of information that must be collected for robust evaluation, but it also provides flexibility to include details of other features or additional benefits that the stakeholders believe are important.

One of the primary outcomes from the workshop will be the collection of core information about project costs (development and operational) and outputs (against a list of benefits) that have been achieved by the project since it commenced. These core data sets will be vital to undertaking impact assessment analysis. Early receipt of this data will enable this activity to commence quickly.

After the first workshop

The workshop will highlight the primary benefits that participants (and other stakeholders) obtain from the project (see, for example, Figure and Figure IV.5 for 23 examples of these benefits). This list of primary benefits perceived by stakeholders will be important in providing a list of key benefits to be included in developing three bespoke online questionnaires after the workshop for each case study. The three online questionnaires will be developed for:-

- Current project participants
- Past project participants
- People who did not join the project (counterfactuals)
The terms of agreement with the case study organisations envisage their input to the study. We believe that this additional data collection task is within the scope of this agreement and should not be too onerous or time consuming (relative to the resources provided for this activity).

Whilst the remaining text discusses an ‘online questionnaire’ we envisage that the case study organisations will collect the required information using the questionnaire during a telephone conversation if sufficient online respondents are not forthcoming. Contact with current project participants should be relatively easy. It may be more difficult to obtain input from past project participants. The most difficult group is likely to be people who did not join the project (counterfactuals), since they will have no affinity with the project.

The first questionnaire will be developed for completion by participants in the project. It will collect brief details about their background, key benefits from the project, views about how well the project helps them into employment and their views about how the project could be improved. This information will be important in providing added granularity and details about the project. These will get below the (probably) high level information that case study managers will provide about outputs (e.g. \( x \) participants obtained a skills qualification and \( y \) went on to obtain a job). Ideally, to maintain statistical rigour, we would require responses from 60 per cent of participants. A project with a cohort of 200 responses from 120 participants would provide data with an error margin of just over +/- 5 per cent at the 95 per cent confidence level.

The second questionnaire will be developed for completion by previous participants of the project. It will collect brief details about their background, key benefits from the project, views about how well the project helps them into employment and their views about how the project could be improved. Importantly, it will also collect information about subsequent employment (did they keep their job? If so for how long?) and career progression. Ideally, we would require a suitably large number of responses from each (year) cohort that had undertaken the project. Like the study of ‘current participants’ to maintain statistical rigour, we would ideally require responses from 60 per cent of participants from each cohort.

The final questionnaire will be developed for completion by those who did not join the project (counterfactuals). It will collect brief details about their background, views about how the case study might have helped them and details of any other projects they have attended or qualifications or skills they obtained. The questionnaire will also collect information about subsequent employment (did they keep their job? If so for how long?) and career progression. Ideally, we would require a suitably large number of responses from each (year) cohort that did not undertake the project. Like the study of ‘current participants’ to maintain statistical rigour, we would ideally require responses from 60 per cent of non-participants from each cohort.

We believe that the project manager will have a good perception of how much input from case study organisations might be expected. We realise that the above, ‘ideal case’ statistically robust, requirements are probably too onerous. If selected we would welcome discussion about the possible level of involvement that could be expected from case study organisations. This information will be important. At the commencement of the project we will need to obtain ‘buy-in’ from case study organisations and manage their expectations about input to the project. It will be far easier to do this by pitching our requirements at a level that meets their perceived requirements, rather than at a level that is too high.

**Final workshop**

We will undertake a second workshop with case study organisation stakeholders during month 5 of the project to provide bespoke feedback. The second workshops will discuss the specific feedback on the performance of their project and the comparative performance of their project with others. It will also seek feedback about validity and improvements that can be made to the MIREIA e2-IAF tool. In addition we will seek feedback about recommendations proposed for the final report.
Task 2: Objectives

This task will continue the development of ‘buy-in’ through two ‘on-site’ workshops with native speaking Tech4i2 staff. The workshop and accompanying activities will provide specific methodological support to the data gathering and monitoring activities to be undertaken by case study organisations. After the first workshop three bespoke questionnaires (for each case) will be developed to obtain feedback from case study participants and non-participants (counterfactuals).

<table>
<thead>
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<th>Timespan</th>
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</tr>
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<table>
<thead>
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<th>Activity</th>
<th>Contribution</th>
</tr>
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<td>Two on-site workshops. Telephone and online support. Development of online questionnaires for participants and non-participants</td>
<td>Contributes to tasks 3 and 4 and recommendations at the completion of the project</td>
</tr>
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</table>

<table>
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<th>Data to contribute to task 3 and verbal and online feedback to contribute to the interim report D3 and final report D4</th>
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</thead>
<tbody>
<tr>
<td>Meetings</td>
<td>Two on site workshops with case study organisations. The first in weeks 4 to 6 of the project. The second in month 5.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Task Leader</th>
<th>Prof Alberto Salvodelli</th>
</tr>
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</table>

| Resources                                        | 15 days have been allocated to this task |

**Task 3: Assessment of the case study interventions**

This task will conduct an assessment of the case studies intervention under analysis providing an evaluation of the socio-economic context and policy framework of reference in relation to the interventions and its implementation activities and results.

At the most basic level the MIREIA eI2-IAF tool will enable the collection of information related to the basic conceptualisation diagram presented in Figure 7. This examines the outputs, outcomes and wider impact of the case studies. All data provided by case study organisations will be checked for completeness and accuracy. Data from national statistical organisations will be assumed to be correct. Nonetheless, it is possible that missing values may arise.

![Projects incur costs (monetary and non-monetary) Projects lead to change Outputs (motivation, skills, qualifications, jobs) Outcomes (jobs, no benefits, paying tax) Impact (Positive exchequer balance, GDP growth)](image)

Figure IV.6 - Conceptualisation of the basic analysis facilitated by the MIREIA eI2-IAF tool

However, our proposed approach, as this section describes, is far more robust than this standard impact assessment method. The information collected by the MIREIA eI2-IAF tool and the additional information collected from previous cohorts and counterfactual (non-participants) will enable a far more robust consideration of the real impact of projects.
The remainder of this section considers the assessment of case study interventions in two different ways. The first considers the basic approach presented above. The second section includes counterfactual analysis to provide a more robust and thorough approach to impact assessment.

The basic approach to impact assessment

Through a standard approach to impact assessment the type of information that would be collected about benefits or outputs and the cash and non-cash resources that would be investigated to analyse development costs and operational/running costs will be gathered and analysed. This information would be sufficient in a basic impact approach to record outputs. From this information it is possible to estimate savings obtained (to the Exchequer) by removing participants from the unemployment register and thus receiving unemployment (and some other) benefits. By obtaining the average pay rate for each participant who became employed it is possible to estimate the tax contribution of an average participant (in personal taxes and company employee contributions). Figure IV.7 provides a representation of how, in a fictional project with a cohort of 25 participants one can estimate the financial impact of the fiction project. Wider non-financial impacts will also be analysed.

If, in a simplified example shown in Figure IV.7, each fictional project participant that went back onto benefits received €1,000 per annum and each participant that obtained a job contributed €600 per annum in taxes the net impact of the project would be zero (to the Exchequer).

This approach using the MIREIA eI2-IAF tool therefore captures enough information to analyse direct case study outputs. It can also capture information about outcomes. And outcome information can be validated or enhanced by analysing the subsequent ‘performance’ of participants by reviewing their career (or unemployment) patterns through interviewing earlier cohorts of case study participants.

All this information can be further analysed using traditional financial methods to estimate returns on investment, net present value or payback periods.

This is the extent or limit of analysis for all of the previous studies in this area that we have reviewed. It is, however, flawed.

Enhanced impact assessment: Considering context and counterfactuals

One of the key problems of the preceding approach is that it is static. It does not consider what might have happened to the 25 people if they had not joined the case study project. For example, it is possible that they might all have obtained a job and none were on benefits. If this was the case one could regard the case study project as a failure and impediment to market efficiency. Without knowing ‘what might have happened’ if the case study project did not exist it is
inappropriate to make assertions about the outcomes and the impact of projects. It is therefore vitally important that the methodology and the MIREIA el2-IAF tool collects information about the counterfactual situation – what happened to those that did not join the project? The previous section highlighted that our method will contact those who did not join case study projects (counterfactuals). It will collect brief details about their background, qualifications or skills they obtained and their subsequent employment or unemployment history. Counterfactual information will provide a robust basis from which to assess the ‘real’ impact of a case study project. Figure IV.8 demonstrates that the real impact of the project can be estimated by subtracting the outcome of the counterfactual situation (the untreated case; found by interviewing those that did not attend the project) from the impact of the case study project (treated case).

![Figure IV.8 - Representation of impact assessment incorporating counterfactual analysis](image)

Interestingly, if one uses the same values for benefits and taxes as used in the previous example (those on benefits receive €1,000 per annum and those in a job contributed €600 per annum in taxes) a very interesting picture of the real situation emerges. Examining the case study in isolation there was zero impact on the Exchequer; the amount paid out on benefits was equal to the amount received in taxes.

In the untreated or counterfactual example there is net cost (to the Exchequer) for the 25 people who did not participate in the project of €19,800. In essence the project prevented the counterfactual situation, with a loss of €19,800 to the Exchequer, from arising. It is realistic to consider this saving in further expenditure by the Exchequer as a benefit that has arisen from the project. Hence the need to subtract what happened in the untreated case from the treated case. This then shows that the net advantage of the project is 14 people who did not claim benefits (saving €14,000) and 8 people who obtained a job and contributed taxes of €600 per annum (€4,800). Thus the net impact of the project, using an innovative new counterfactual approach, has a positive value of 18,800 and not ‘zero’ as predicted by traditional methods.

An important additional element in our methodology that will be collected by the MIREIA el2-IAF tool is a consideration of the social and economic context within which the case studies are being undertaken. This is important because one could run exactly the same excellent project to provide
high level ICT skills to participants in two different areas. In an area with ICT skills shortages it is likely that every participant might obtain a job. If the same project was run in a depressed area with high unemployment where companies were not recruiting or ICT jobs were very scarce it is possible that none of the participants that received excellent high level ICT skills would be able to obtain job. One of the interesting elements of the proposed project will be to undertake multiple regression analysis to examine the impact that prevailing local economic circumstances have on the outcomes of projects. With only five case studies the analysis will be easy to perform, but it might be difficult to extract significant results. We will therefore develop this approach so that it can be enhanced and re-run with a larger number of cases (if the wider roll-out) is achieved in the future development of the project. We intuitively believe that there should be some form of correlation between prevailing circumstances and the success (in terms of job creation or moving people off benefits) that projects will be able to achieve.

<table>
<thead>
<tr>
<th>Task 3 Objectives</th>
<th>Assessment of case studies intervention under analysis providing an evaluation of the socio-economic context and policy framework of reference in relation to the interventions and its implementation activities and results.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timespan</td>
<td>Month 4 to month 5</td>
</tr>
<tr>
<td>Activity</td>
<td>Desk and online research.</td>
</tr>
<tr>
<td>Contribution</td>
<td>Contributes to tasks 4 and 5</td>
</tr>
<tr>
<td>Deliverables</td>
<td>Data and statistics will be analysed using ‘traditional’ and counterfactual supported impact analysis. Impacts for each case using both methods will be calculated and presented in D3 and D4.</td>
</tr>
<tr>
<td>Meetings</td>
<td>Results will also be presented to case study organisations at feedback workshops D2ii in month 5. They will also be presented at the Final meeting M6</td>
</tr>
<tr>
<td>Task Leader</td>
<td>Dr Francesco Mureddu</td>
</tr>
<tr>
<td>Resources</td>
<td>18 days are allocated to this task</td>
</tr>
</tbody>
</table>

**Task 4: Validity and improvement**

The aim of this task is, in the first instance, to provide an in-depth analysis of the results of the implementation of the MIREIA eI2-IAF in the case studies and a cross-case assessment of interventions.

Our approach will use external validation to seek feedback from the case study organisations and participants (who will complete online questionnaires). We will also use internal validation to assess the use and usability of the MIREIA eI2-IAF tool in obtaining the data required from case study organisations and participants. We will aggregate assessment from both these approaches and undertake comparisons between case studies and provide an integrated assessment aiming at validating and improving the MIREIA eI2-IAF tool.

This section considers evaluation and validity in three areas (external, internal and data validation) these are considered separately in the remainder of this section.

**External validation**

External validation methods will seek feedback from the case study organisations and project participants (and non-participants; who will complete online questionnaires).
We will ask *case study organisation representatives* to keep a log of problems and difficulties they encounter during the project, this log will also seek information about solutions that might address the problem.

Ideally we would like this log to be completed online so that comments were open and transparent and others could view and also provide their views about comments. This approach will help to emphasise the joint nature of the project. It is also possible that other contributors might be able to come up with better solutions to problems. It is equally possible that some may not see an issue as a problem.

It is possible that not all case study organisation representatives will want to complete an online log. In these cases a paper version will be acceptable.

Use and usability of online questionnaires that will be completed by *project participants, non-participants* and individuals from previously enrolled cohorts will be investigated using SUS and AWARE methodologies that have been used by Tech4i2 for several previous studies. These use well established methods to examine usability and user satisfaction for online submission of data and for the submission of data and information using software. An example of a simple one page feedback questionnaire, which can also be hosted online, is provided in Figure IV.9. This questionnaire would obviously be adapted for use in MIREIA.

**Internal validation**

Internal validation methods will seek feedback from Tech4i2 team members using the tool in the field and those using it to obtain and analyse data.
Figure IV.9  Example of a SUS an AWARE questionnaire to measure online portal usability and user satisfaction

Exemplar SUS AWARE questionnaire

You have just used a website or portal. We are interested to find out how useful you found the site and how easy it was to use. Please complete this questionnaire when you have finished using the web site.

Investigator Surname ................................ [W1]

Portal or website investigated: .......................... [W2]

Overview of how the service was provided (circle) [W3]

Information only  One-way interaction  Two-way interaction  Full case handling


How many error messages or crashes did you receive? [W7] ...................

Did you successfully obtain the service? (circle) [W8]  Yes No

<table>
<thead>
<tr>
<th>Content and Organisation</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>I could easily access the website to obtain the service</td>
<td>AWARE 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I was satisfied with the quality of content [W12]</td>
<td>AWARE 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I could access easily the content required to obtain the service [W13]</td>
<td>AWARE 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It was easy to find my way through the website to obtain this service [W14]</td>
<td>AWARE 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Use and Usability | | | |
|--------------------|-----------|----------|---------|----------|-------------------|
| Using the website it was easy to obtain the service | SUS 3     |       |         |          |                   |
| The website was unnecessarily complex [W22] | SUS 2     |       |         |          |                   |
| I would need the support of a technical person to use the website to obtain the service [W23] | SUS 4     |       |         |          |                   |
| The website layout and graphics are appropriate | SUS 5     |       |         |          |                   |
| The various functions for obtaining the service were well integrated [W24] | SUS 5     |       |         |          |                   |
| There was too much inconsistency in the website | SUS 6     |       |         |          |                   |
| The website was very cumbersome to use [W27] | SUS 8     |       |         |          |                   |
| I felt very confident using the website to obtain the service [W28] | SUS 9     |       |         |          |                   |

| Satisfaction and re-use | | | |
|--------------------------|-----------|----------|---------|----------|-------------------|
| I found the website engaging [W31] | AWARE 6   |       |         |          |                   |
| Overall it was a pleasure to use the website to obtain the service [W32] | AWARE 7   |       |         |          |                   |
| I would need to learn a lot of things before I could get going with the website [W33] | AWARE 10  |       |         |          |                   |
| I imagine that most people would learn to use the website very quickly [W34] | SUS 7     |       |         |          |                   |
| I would be happy to use this website again to obtain the service [W35] | SUS 1     |       |         |          |                   |

What two things would you do to improve the service provided by the website?

1. ........................................ [W41]
2. ........................................ [W42]

Like the external validation log it will be completed online so that comments are open and transparent and others can view them and also provide their views about comments. It is also possible that other contributors might be able to come up with better solutions to problems.

Data and statistics validation

The accuracy and validity of data provided by case study organisations will be carefully assessed in task 3. It will be pointless to further develop a tool at the end of the study if the validity of data
received from ‘volunteering’ case study organisations is not good enough for analysis. If the fault lies with the MIREIA eI2-IAF tool it will be enhanced to enable valid data to be more easily entered. If the fault lies with the facilitator, the usage guidelines or the other methods of support recommendations about how these can be improved in the future will be provided. If the fault lies with case study organisations, this matter will be investigated in the on-site workshop in month 5 and methods to resolve these problems will be identified with the case study organisations.

**Consolidating validation viewpoints and making improvements**

The ultimate goal of the contract is to validate and further 'substantiate' the proposed MIREIA eI2-IAF tool through testing to real-life interventions. Validation methods will be investigated and an aggregate log created to list all the problems, potential improvements and solutions found by the three validation methods.

At the end of the project we have allocated three days to implement appropriate changes to enhance the MIREIA eI2-IAF tool. Changes will include enhancements to extend its scope across a diverse set of types of eInclusion interventions and contexts, (according to size and level of interventions, including local, regional, national or EU funded programmes), services provided, target groups addressed, etc. These activities will provide a 'fully-fledged' operational framework which will include a complete set of monitoring and evaluation indicators as well as guidelines, methods and practical tools for monitoring and evaluation.

These activities will enhance the scalability of the tool and assist the application of the MIREIA eI2-IAF tool in other contexts and thus support eInclusion intermediary actors across Europe to set up and conduct their own impacts assessment.

As well as changes to the front customer facing end of the MIREIA eI2-IAF tool we will also undertake back-office improvements to strengthen the hypotheses and assumptions underpinning the conceptual and methodological architecture of the tool. These refinements will also include a consideration of logical relationships and high-level indicators at policy and strategic level, building on the evidence drawn from the evaluation of the analysis of the case studies interventions. Two days will be devoted to this activity.

As noted earlier we will share results of impact assessments with case study organisations at workshops in month five. We will also take the opportunity in this workshop to seek the views of workshop attendees about the refinements and improvements to the tool we propose to undertake at the ‘end’ of the project.

We are certain that the highly innovative approach we will adopt will produce a very valuable MIREIA eI2-IAF tool. With the consent of IPTS we would also propose to present the results of the study with a broader group of stakeholders at events such as the Telecentre.org Forum that is due to take place in Granada in May 2013. This will enable feedback on the tool from Telecentre-Europe stakeholders.

<table>
<thead>
<tr>
<th>Task 4 Objectives</th>
<th>The aim of this task is to provide an in-depth analysis of utilisation of the MIREIA eI2-IAF tool. Feedback will be assessed and acted upon to implement appropriate changes to enhance the MIREIA eI2-IAF tool. Enhancements will also be made to strengthen the hypotheses and assumptions underpinning the conceptual and methodological architecture of the tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Timespan</td>
<td>Month 5 to month 6</td>
</tr>
<tr>
<td>Activity</td>
<td>Assessing online and written feedback, together with discussion about proposed changes to be undertaken at on site workshops</td>
</tr>
<tr>
<td>Deliverables</td>
<td>The primary deliverable will be an enhanced tool. Analysis will also contribute to the Final Report D4</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Meetings</td>
<td>Discussion about proposed changes will be undertaken on site case study organisation workshops D2ii. Enhancement and improvements will also be discussed at the final meeting M6</td>
</tr>
<tr>
<td>Task Leader</td>
<td>Prof Paul Foley</td>
</tr>
<tr>
<td>Resources</td>
<td>8 days are allocated to this task</td>
</tr>
</tbody>
</table>
Annex V - List of Workshops participants in alphabetical order

First Experts’ Workshop on Measuring the impact of e-Inclusion actors, Seville, 3-4 May 2012

Invited experts
- Ian Clifford, Telecentre Europe, UK
- Cristiano Codagnone, Tech4i2/University of Milan, Spain
- Peter Day, University of Brighton/Community Informatics Research Network (CIRN), UK
- Juan Francisco Delgado, Consorcio F. de los Ríos, Spain
- Kath Edgar, Substance Coop., UK
- Paul Foley, Tech4i2, UK
- Anne Green, Warwick Institute for Employment Research, Warwick University, UK
- Ellen Helsper, Dept. of Media and Communications, London School of Economics, UK
- Maria Jakobsone, LIKTA/Telecentres Europe, Latvia
- Maciej Kochanowicz, Information Society Development Foundation, (FRSI), Poland
- Lee Komito, University College Dublin, Ireland
- Sonia Liff, Appleby Ltd, Copenhagen, Denmark
- Alfonso Molina, Fondazione Mondo Digitale, University of Edinburgh, Rome, Italy
- Jeremy Paley, Gates Foundation, USA
- Ismael Peña, Universitat Internacional de Catalunya UIC-IN3, Barcelona, Spain
- Eva Piñar, Junta de Andalucía, Spain
- Paco Prieto, CTIC, Gijón, Spain
- Renata Sadunisvili, National Lithuanian Library, Lithuania
- Nicky Stevenson, The Guild, UK
- Victoria Stirling, Online Centres Foundation, London, UK
- Ronald Van Bekkum, UWV (Dutch PES), The Netherlands
- Dinesh Venkateswaran, TechSoup, London, UK

Study Contractors
- Joe Cullen, Arcola Research, UK
- Veronique Maes, Arcola Research, UK
- Maria Garrido, TASCHA, Univ. of Washington, USA
- Araba Sey, TASCHA, Univ. of Washington, USA

European Commission, JRC-IPTS
- Clara Centeno, JRC, IPTS, Information Society Unit, Spain
- Alexandra Haché, JRC, IPTS, Information Society Unit, Spain
- Francisco Lupianez, JRC, IPTS, Information Society Unit, Spain
- Gianluca Misuraca, JRC, IPTS, Information Society Unit, Spain
- Yves Punie, JRC, IPTS, Information Society Unit, Spain
- Gabriel Rissola, JRC, IPTS, Information Society Unit, Spain
- James Stewart, JRC, IPTS, Information Society Unit, Spain
- Cristina Torrecillas, JRC, IPTS, Information Society Unit, Spain
Second Experts’ Workshop on Measuring the impact of e-Inclusion actors, Seville, 06 September 2012

Invited experts
- Lucia Aguilar, Junta de Andalucia, Guadalinfo, Spain
- Nick Batey, UK Government, Wales, UK
- Agostina Betta, Regione Emilia Romagna, Bologna, Italy
- John Clayton, University of Sunderland, UK
- Graham Colclough, Cap Gemini, London, UK
- Mark Deakin, Napier University, Edinburgh, UK
- Juan Francisco Delgado, Consorcio F. de los Ríos, Spain
- Kath Edgar, Substance Coop., UK
- Ricard Faura, Generalitat de Catalunya, Barcelona, Spain
- Paul Foley, Tech4I2 Ltd., UK
- Anne Green, Warwick University, UK
- Manus Hanratty, Fast Track to IT (FIT), Ireland
- Mara Jakobsone, LIKTA/ Telecentres Europe, Latvia
- Stefano Kluzer, Independent Expert, Italy
- Angel Ortiz, Junta de Andalucia, Spain
- Ismael Peña, Universitat Oberta de Catalunya UIC-IN3, Spain
- Miguel Raimilla, Telecentre.org
- Gabriel Rissola, Telecentre Europe
- Renata Sadunisvili, National Lithuanian Library, Lithuania
- Alberto Savoldelli, Independent Expert, Italy
- Nicky Stevenson, The Guild, UK
- Ronald Van Bekkum, UWV (Dutch PES), Netherlands
- Niels Vander Linden, Cap Gemini, Brussels, Belgium
- Dinesh Venkateswaran, TechSoup, London, UK
- Diana Voicu, Knowledge Economy Project (KEP), Romania

European Commission, DG-CNECT
- Juan Pelegrin, DG-CNECT, Luxembourg

European Commission, JRC-IPTS
- David Broster, JRC, IPTS, Information Society Unit
- Clara Centeno, JRC, IPTS, Information Society Unit, Spain
- Gianluca Misuraca, JRC, IPTS, Information Society Unit, Spain
- James Stewart, JRC, IPTS, Information Society Unit, Spain
- Cristina Torrecillas, JRC, IPTS, Information Society Unit, Spain
- Anusca Ferrari, JRC, IPTS, Information Society Unit, Spain
- Francisco Lupianez, JRC, IPTS, Information Society Unit, Spain
Annex VI - Bibliography


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