**Glocal enterprise network
focusing on customer-centric collaboration**

D8.41: Policy Action Plan - year 1

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GloNet WP8
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Deliverable summary

This report is one of the first deliverables of the GloNet focused on the development of the Policy Action Plan targeted at impact creation, which sets the baseline for the two next versions of the plan, D8.42 and D8.43, which will be in line with the technical results to be obtained from the execution of GloNet.

The report identifies the main destinataries, analyzes policy priorities and pillars, and defines the general methodology for GloNet Policy Action plan.

Even though GloNet has not offered yet, in agreement with its schedule, enough results that can give support to the proposal of policies and concrete measures, the report includes some early findings in particular in the areas of cloud computing, standardization and interoperability. Deliverables D8.42 and D8.43 will be more focused on the definition of special actions and recommendations to sustain the deployment of the project results and consequent impact creation.

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PROJECT-RELATED SUMMARY

This deliverable is the first of a series of annual reports focused on the GloNet Policy Action Plan. It is part of task 8.3, which addresses special activities of the project to assess the dimension of expected policy and societal impact, and the viability of the project in view of expected acceptance of such impact. The task aims to identify the policy priorities or pillars that it will support by project activities, notably under the umbrella of the Commission's ICT Programme Challenge 1 priorities or external assemblies such as the Future Internet Assembly. The Commission "Innovation Union" and the "Digital Agenda for Europe" Communications are reference documents to be carefully considered by the project. Specific attention is to be paid to the identification of societal stakeholders, groups and policy makers that will be relevant to the adoption of project results, in order to support the development of special actions to acquire their motivation and to sustain the deployment of the project results. This task addresses as well any standardization initiatives. This will lead to the development of a yearly report on Policy Action Plan containing recommendations for European policy makers.
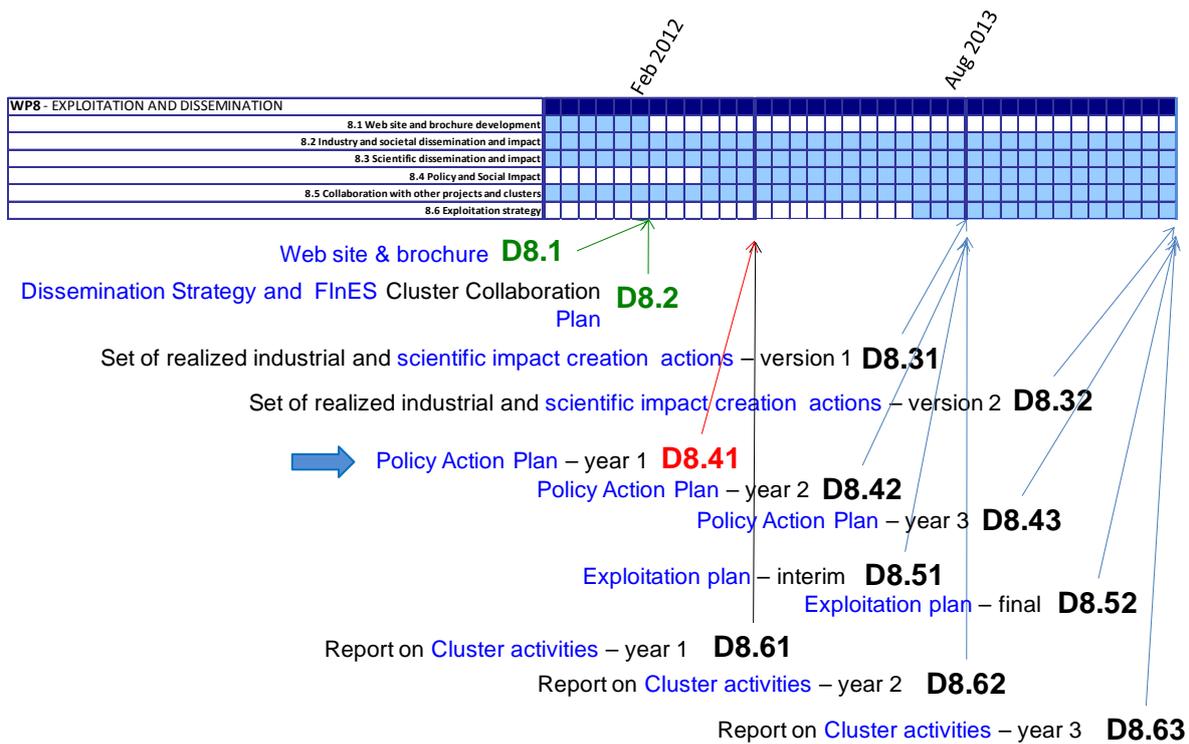
The first report of this series, besides making a preliminary analysis of the context and relevant stakeholders, is mainly focused on defining the approach for the elaboration of the Action Plan. The concrete recommendations / actions will be included in the next reports to be delivered in years 2 and 3.

1. INTRODUCTION

The main purpose of this document is to establish the bases for a Policy Action Plan derived from the results that will be obtained from the execution of GloNet. The development of joint research in the collaborative networks and cloud computing domains is expected to produce an extension of the frame of possibilities for the future development of activities and business models focused on networks, in particular under the scope of the FoF initiative.

Nevertheless, throughout the execution of the project, it is normal to face the existence of a series of barriers and a set of weaknesses which are already evident from the initial moments and that will be necessary to solve in the future. And yet these barriers will come along with the existence of important opportunities.

Therefore, to determinate these opportunities and difficulties, to identify who are the main stakeholders involved in them or affected by them and to determine the possible ways of dissemination, conviction and impact creation, become the main aims of the present plan.

Realizing that some of the solutions and directions will result or be enabled by the actions of the different Public Administration entities, the Policy Action Plan will point a series of recommendations for this particular group of stakeholders with the intention to obtain a higher and more accelerated advance in GloNet focused domains.

GloNet Policy Action Plan will be developed during the hole duration of the project and as such will be presented in three annual deliverables, aligned with the achieved results of the project. This first version is more focused in establishing the baseline of the Policy Action Plan (policy priorities and pillars identification, stakeholders' identification) and planning the needed activities for its development. Concrete actions will be proposed in next deliverables when more advanced project results will be achieved. Therefore, future versions will be more focused on the definition of special action recommendations to sustain the deployment of the project results.

2. SETTING THE CONTEXT

2.1   GloNet Areas

The main technical areas of GloNet are Collaborative Networks and Cloud Computing.

Collaborative networks

As stated in the DoW, "*GloNet aims at designing, developing and deploying and agile virtual enterprise environment for networks of SMEs involved in highly customized and service-enhanced products through end-to-end collaboration with customers and local suppliers".* Developing a collaborative network involving European manufacturers, product customer and some local suppliers and allowing the co-creation of support services is necessary.

In this line, research and development in mainly the following areas is addressed:

Collaborative Networks	
Organizational structures (long and short term collaborative organizations)	Consortia formation and management
	Adaptive business processes
	Business services modeling
Governance models	Competence management and gap analysis
	IPR&Business models for co-created products
	VE/VO creation and negotiation principles
	Performance monitoring and risk assessment
	Customer relationship management

Cloud computing

GloNet system is being developed on the top of cloud-based PaaS/SaaS technology. This system will be adapted to the main characteristics and needs of the SMEs in the manufacturing sector involved in the collaborative networks for the co-creation and co-innovation.

In this line, research and development in mainly the following areas is addressed:

Cloud Computing	
Base platform (Paas)	SaaS for SMEs manufacturing sector
	User-customized interfaces
	Interoperability and adoption of open-source technologies
	Scalability (incremental pool of services, knowledge, etc)
	Business models for cloud solutions in enterprise networks

2.2   Strategy for policy impact

It is well-known and recognized that the industry-oriented research and development activities are only relevant when they turn into creation of new business models that have as a result the creation of new companies and new jobs, especially when these research processes are financed by public funds.

Also it is an accepted and known fact that these results, and corresponding impact, essentially take place in the medium and long term. Nevertheless, in order for this final outcome to become possible, it is essential to work on it from practically the initial moments of the development of the research activity.

In this sense, and with the goal to ultimately reach the market, there are a set of phases that must be covered at the same time as the involvement of a wide group of different types of stakeholders, each one with different roles.

In order to properly combine all these elements towards effective impact creation, GloNet aims at developing an adequate Policy Action Plan.

Therefore we understand as a Policy Action Plan the set of activities necessary to remove barriers and difficulties, promoting the detected opportunities, through the definition of possible actions from all involved stakeholders in the different domains on which GloNet acts, with the final goal of making possible the appearance of new products, services, knowledge and business models that allow to translate the GloNet results in new products, services and even new companies that incorporate new jobs in the context of the objective of FoF 2020 PPP proposal.

In this sense, and as it will be described in the following sections of this document, the foreseen Policy Action Plan is composed of the following elements:
  1. Determination of the domains in which GloNet acts. *(Chapter 2.1)*
  2. Identification of the domains and policies of the EC and of the European countries in these domains. *(Chapter 3)*
  3. Identification of the groups of involved stakeholders and definition of the role of each of them. *(Chapter 4)*
  4. Determination of existing clusters and projects at the European level in these domains. *(Chapter 5)*
  5. Definition of the methodology proposed to develop the Policy Action. *(Chapter 6)*
  6. Definition of early findings in particular in the areas of cloud computing, the standardization, the interoperability and the development of the open data fields. *(Chapter 7)*

Finally because of the necessity to realise a suitable pursuit of the plan, the Policy Action Plan will finalize with the proposal of a set of Key Performance Indicators (KPIs) in order to help assessing the impact and progress of the plan.

3. GLONET AND OTHER RELATED TECHNOLOGIES CONTEXT

3.1 European situation context

This section contains a brief analysis of the main related initiatives and actions that are developing in the ICT area at European level, focusing mainly in the domains of GloNet, i.e. Cloud Computing and Collaborative Networks.

The European Commission, conscious of the situation in which the different countries in Europe are and the very important role that ICT plays for the growth improvement in this zone, has defined a set of key measures within its Strategic Plan 2020, to improve innovation and productivity, to favour economic growth and progress. These measures are compiled in the "Digital Agenda 2020" which tries to offer solutions to the following problems:

- Fragmented digital markets
- Lack of interoperability
- Rising cybercrime and risk of low trust in networks
- Lack of investment in networks
- Insufficient research and innovation efforts
- Lack of digital literacy and skills
- Missed opportunities in addressing societal challenges.

In the following section the actions proposed in the Digital Agenda in order to achieve these challenges are analyzed in more detail.

Cloud Computing and Clusters, are also domains to which European Commision is giving special interest because they can have deep impact in the strategies and competitiveness on a global level in European companies of all sectors.

In relation to Cloud Computing, Neelie Kroes, Vice-President of the European Commission responsible for the Digital Agenda stated in the World-wide Economic Forum celebrated in Davos (Switzerland) that the European Union is developing an ***EU-wide strategy on Cloud Computing*** which will impose some common requirements for acquisitions to cloud suppliers and also it will **create standards** that will guarantee safety and competition in the new environment.

In particular an EU-wide strategy on Cloud Computing is focused on three main areas:

1. **Legal framework.** This concerns data protection and privacy, including the international dimension. It also concerns laws and other rules that have a bearing on the deployment of cloud computing in public and private organizations. And it concerns users' rights insofar as they are provided for by law.
2. **Technical and commercial fundamentals.** The aim is to extend EU's research support and focus on critical issues such as security and availability of cloud services. As a mediator, the Commission can also play a stronger role in the technical

standardization of APIs and data formats, as well as in the development of template contracts and service level agreements.

3. **The market.** Pilot projects will be supported aiming at cloud deployment. To really harness the power of public procurement the Commission will engage with the public sector partners on Member States and regional levels to work on common approaches to cloud computing.

In relation to Clusters creation, since some years ago there are some initiatives to promote clusters' creation and new forms of cooperation supported by ICT. The main aim of this kind of initiatives is to improve European SMEs' competitiveness, efficiency and productivity and to give them the possibility of taking the opportunities that market offers through the collaboration. Clusters are in fact primitive forms of Virtual organizations Breeding Environments.

Some of the European initiatives in this area include:

- **European initiative Europa INNOVA,** this initiative financed by the framework of Competitiveness and Innovation Programme (CIP) is devoted to developing a set of new and better approaches for cluster's organizations in order to support innovative SMEs. This initiative is helping to increase the business links between European clusters through activities like organization visits of business associations (clusters) and meetings with the possible suitable partners, as well as the preparation of agreements for business sectorial platforms creation, opened to cluster.
- **European Cluster Observatory,** financed by the European Commission in the framework of its Europe INNOVA initiative, gives an access point to the information about clusters and the policies developed by the EC in these specifics fields of activity. The Observatory is focussed on three main goal groups: policy makers and government officials at the European, national, regional and local levels, existing clusters and academics and researchers.
- **European Cluster Alliance,** which is an open platform designed to maintain a permanent policy dialogue at EU level among national and regional public authorities. This policy dialogue, which aims to raise the level of excellence and efficiency of cluster policies in Europe, has been welcomed by the Competitiveness Council as an important European initiative to foster cluster co-operation.

3.2   European Union vision of Digital Europe 2020

The European Commission with its strategic plan Europe 2020 tries to reinforce our position and competitiveness in a global level to be able to face the situation of world crisis in which we are immersed and to try to make our economy more sustainable and intelligent with higher employment rates, productivity and social cohesion.

In this line, the three main priorities of Europe 2020 are the following:

- *Smart growth*: developing an economy based on knowledge and innovation.
- *Sustainable growth*: promoting a more resource efficient, greener and more competitive economy.
- *Inclusive growth*: fostering a high-employment economy, delivering social and territorial cohesion.

Europe 2020 Strategy defines seven initiatives in which EC proposes concrete actions to be developed at national and European level. To our understanding these actions will help GloNet in achieving its defined objectives. The Digital Agenda for Europe is one of the seven initiatives proposed, which takes as a main objective to define a set of actions that Europe must realize to maximize the economic and social potential of the ICT, and in particular of Internet, as fundamental support of the economic and social activity and to improve in this way the persons' quality of life (better sanitary attention, easier access to public services, new opportunities for mass media, etc).

The following table summarizes the main challenges which the EU faces in the ICT domain and the concrete actions proposed to reach them:

Main challenges	Concrete Actions
To eliminate regulatory obstacles and to facilitate payments and electronic invoicing (Single Euro Payment Area SEPA). - To allow the concession **of cross-border and Pan-European licenses** in digital contents sector. So it is necessary to improve and to adapt to the technological progress, the governance and the transparency of the collective rights' management. - To promote creation, production and distribution (in all platforms) of digital content	**Key Action 1:** Simplify copyright clearance, management and cross-border licensing. **Key Action 2:** Ensure the completion of the Single Euro Payment Area (SEPA). **Key Action 3**: In 2011 propose a revision of the **eSignature Directive** with a view to provide a legal framework for cross-border recognition and interoperability of **secure eAuthentication systems**. **Key Action 4** Review the EU **data protection regulatory framework** with a view to enhancing individuals' confidence and strengthening their rights, by the end of 2010.
To allow different parts and applications to be **interoperable** and based on **open platforms and norms.**	**Key Action 5**: As part of the review of EU standardisation policy, propose legal measures on ICT interoperability by 2010 to reform the **rules on implementation of ICT standards in Europe** to allow use of certain ICT fora and consortia standards.
To improve the **systems for the protection** of the fundamental right of the Europeans to the protection paying special attention on its personal details and its privacy.	**Key Action 6:** Present in 2010 measures aiming at a **reinforced and high level Network and Information Security Policy**. **Key Action 7**: Present measures, including legislative initiatives, to **combat cyber attacks against information systems** by 2010, and related rules on jurisdiction in cyberspace at European and international levels by 2013;
To create the correct incentives to encourage private investment complemented by public investments to implant **open and competitive ultrafast Internet networks.**	**Key Action 8:** Adopt in 2010 a Broadband Communication that lays out a common framework for actions at EU and Member State to meet the Europe 2020 broadband targets.
To promote private investment, better coordinating and putting together resources, allowing a «**more agile and rapid» access of ICT SMEs to investigation funds, joint investigation infrastructures Union innovation groups, and the groups of innovation of the Union**, and developing **norms and platforms opened for new applications and services.**	**Key action 9: Leverage more private investment** through the strategic use of pre-commercial procurement and public-private partnerships.
To improve **professional qualification in ICT** and to increase **level of Digital literacy**	**Key Action 10**: Propose **digital literacy and competences** as a priority for the **European Social Fund regulation** (2014-2020); **Key Action 11**: By 2012, develop tools to **identify and recognise the competences of ICT practitioners and users**
To take advantage of **ICT potential in order to face some of the more important social challenges**: weather change and other environment pressures, aging population, increasing health costs.	**Key Action 12:** Assess by 2011 whether the **ICT sector has complied with the timeline to adopt common measurement methodologies** for the sector's own energy performance and greenhouse gas emissions and propose legal measures if appropriate. **Key Action 13:** Undertake pilot actions to equip **Europeans with secure online access** to their medical health data by 2015 and to achieve by 2020 widespread deployment of telemedicine services. **Key Action 14:** Propose a recommendation defining a **minimum common set of patient data** for interoperability of patient records to be accessed or exchanged electronically across Member States by 2012. **Key action 15**: By 2012 propose a **sustainable model for financing**

	the EU public digital library ***Europeana*** and digitisation of content. **Key Action 16**: Propose by 2012 a **Council and Parliament Decision** to ensure **mutual recognition of e-identification and e-authentication** across the EU based on online 'authentication services' to be offered in all Member States (which may use the most appropriate official citizen documents – issued by the public or the private sector).

3.3 Competitiveness and Innovation Framework Programme (CIP)

The EU's innovation policy under CIP aims to create framework conditions that favour innovation and that allow bringing ideas to market.

The CIP provides support for innovation through a series of initiatives and actions aimed at providing financial support to innovators, innovation support services for SMEs, developing and testing new forms of business support and by facilitating transnational benchmarking and cooperation with a view to mobilising more resources for innovation and to adopting best practices in innovation policy-making.

CIP includes some specific operational programmes. One of these is COSME (Programme for the Competitiveness of enterprises and SMEs) focused on SMEs. The main objectives of this programme are:

- Facilitating access to finance for Small and Medium-sized Enterprises (SMEs)
- Creating an environment favorable to business creation and growth
- Encouraging an entrepreneurial culture in Europe
- Increasing the sustainable competitiveness of EU companies
- Helping small businesses operate outside their home countries and improving their access to markets.

3.4 Existing roadmaps and policy actions related to the GloNet domains

FinEs cluster roadmap is the roadmap with more relevance to the GloNet objectives and in the proposed actions to develop.

Future Internet Enterprise Systems (FInES) Cluster was launched by the European Commission. It brings together constituencies of three major research streams supported by the Commission over a number of years - Enterprise Interoperability, Enterprise Collaboration and Digital Ecosystems. The combined research domain of FInES is now one element of the overall research field of the Future Internet, with a specific research focus on ICT adoption and usage by enterprises.
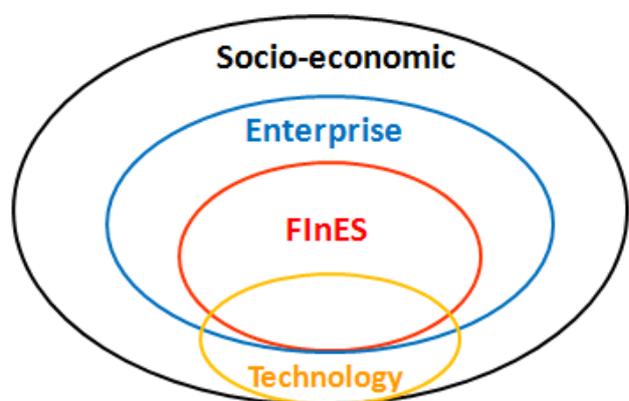
FinES has developed a Research Roadmap with the temporary horizon of 2025 that proposes the future research lines suggested by the FinES cluster to be carried out as a collective endeavour by the projects and the experts who participate in the cluster activities.

The proposed action lines are divided into the following four main areas:

- **Socio-economic Space (SOCE),** which represents the larger context in which enterprises operate, interacting with the other players and the environment, aiming at the increasing of wealth while satisfying customers' needs.
- **Enterprise Space (ENTP),** containing key characteristics of future enterprises, the emerging business and production models, new governance and organizational paradigms, and new forms of cooperation, all geared towards a continuous innovation paradigm and a harmonious positioning in the Socio-economic space.
- **Enterprise Systems, Platforms, and Applications Space (ESYS),** which includes socio-technical methodologies, platforms, applications, systems, and, in general, ICT solutions aimed at supporting emerging future enterprises.
- **Enabling Technology Space (TECH),** concerned with the ICT solutions, in particular Future Internet solutions, knowledge representation, cooperation and interoperability, trust and security advanced services, etc.

Some policy recommendations proposed by FInES roadmap are the following:

- Clearly define the Future Internet to stimulate ground-breaking research.
- Trust, safety, security, privacy, IP and regulatory environment.
- A new notion of "enterprise" and "enterprise network" to motive working together in new ways.
- An ICT infrastructure that is fit for tomorrow's enterprises and enterprise networks.
- Defining and developing "Future Internet based Enterprise Systems".
- Further evolution of the (Enterprise) Interoperability concept.
- Adoption of standards should be promoted at multiple levels, in order to enable collaboration and cooperation of multiple systems in the Future Internet.
- Multi-disciplinary research and fusing technology with business and policy research.
- Future enterprises and ICT adoption of simple, affordable, accessible and reliable tools.

Other roadmaps which have links with the domains of GloNet are:

- **FoF (Factories of the Future) 2020 Roadmap.** The Factories of the Future Public-Private Partnership (FoF PPP), launched under the European Economic Recovery Plan, addresses the development of the next generation of production technologies that will be applied from 2015 onwards. The main focus of this initiative is to help EU manufacturing enterprises, in particular SMEs, to adapt to global competitive pressures by improving the technological base of EU manufacturing across a broad range of sectors.

   The roadmap has determinated that the successful development of high added value technology should consider the following strategic sub-domains:

   - Sustainable manufacturing
   - ICT-enabled intelligent manufacturing
   - High performance manufacturing
   - Exploiting new materials through manufacturing.

   The current economic situation, in which the enterprises are struggling to survive in the current turbulent markets, has made necessary to develop new factory models and

structures, "Factories of the Future", to facilitate the transition from the factory system of the past to more competitive and sustainable factories. For this FoF proposes the following main strategies:

- Transformation of enterprises due to the needs of customisation and sustainability, thus increasing the chances of success and global leadership;
- Boosting the level of technologies for products and processes towards global leadership;
- Making Europe a global leader as both the producer and operator of factories and factory equipment (lead markets) with intelligent products, processes and new business models; and
- Activating the potential of novel enabling technologies and developing solutions for emerging markets.

- **Siena project's Roadmap** on Distributed Computing Infrastructure for e-Science and Beyond in Europe is a support Action funded by the European Commission under FP7. SIENA specifically seeks to:

- Drive forward the development and adoption of Interoperability and Standards for e-Infrastructure implementation in relation to the European DCI (Distributed Computing Infrastructure) community & SDOs (Standards Development Organisations);
- Elaborate the future research infrastructure scenario through roadmapping fulfilling requirements from both academia and industry, connecting into relevant SDOs to drive forward production of relevant standards and best practices.

- **EGI-InSPIRE project** co-funded by the European Commission. The main objective of the project is to promote building the standards and software to support clouds formed by federating multiple smaller cloud providers, with possible extension to commercial public clouds.

4. TARGET GROUPS

4.1 Main stakeholders

The main target stakeholders for the Policy Action Plan proposed by GloNet are those public and private entities/organizations both regional, national and international, who have capacity to implement or to influence in the real application of the recommended policies and actions of the plan or who are the main beneficiaries of the project results. As such, although at different levels, the main recipients of Policy Action Plan can be included inside the following groups:

- Decision Makers and main organizations around EC
- FInEs Cluster
- Direction of clusters in public administrations
- Other projects related with GloNet domains
- Energy sector
- Business associations and confederations
- Chambers of Commerce.

4.2 Standarization

Cloud computing standarization is, although neccessary in the fields of cloud computing and collaborative networks, a complicated challenge. Many organizations are involved in cloud standarizations efforts. One of these organizations are the US National Institute of Standards and Technology (NIST), who has created an inventory of standards relevant to cloud computing, and has identified three emerging high level cloud specific standards:

- **Open Cloud Computing Interface (OCCI) –** developed by OGF. OCCI describes application programming interfaces (APIs) that enable cloud providers to expose their services. It focuses on IaaS based clouds and allows the deployment, monitoring and management of virtual workloads (like virtual machines), but is applicable to any interaction with a virtual cloud resource through defined http(s) header fields and extensions. While there are several open-source implementations, OCCI has not yet been widely adopted in commercial platforms.
- **Open Virtualization Format (OVF) –** developed by DMTF. OVF is a packaging standard designed to address the portability and deployment of virtual appliances. This is recognized as a DMTF, ANSI standard categorized under IaaS. There are firms who provide tools for conversion between various application formats, including OVF format to Amazon Machine Image (AMI) format.
- **Cloud Data Management Interface (CDMI) –** developed by SNIA. CDMI defines the functional interface that applications use to create, retrieve, update and delete data elements from the Cloud.

GloNet needs to keep an eye on these and other related standardization activities, namely in what refers to the GloNet base platform.

5. RELATED PROJECTS AND INITIATIVES

5.1 Description and purpose of the main initiatives

FInEs

The main initiatives included in the FInES cluster are the following:

▪ *FInES Cluster FP7 Projects*

  - <u>ACCESS-ICT</u> - Access to ICT Investors.
  - <u>COIN & COIN-EEU</u> - Enterprise Collaboration & Interoperability.
  - <u>COMMIUS</u> – COMMunity-based Interoperability Utility for SMEs.
  - <u>ebbits</u> - Enabling business-based Internet of Things and Services.
  - <u>ENSEMBLE</u> - Envisioning, Supporting and Promoting Future Internet Enterprise Systems Research through Scientific Collaboration.
  - <u>iSURF</u> - An Interoperability Framework for Collaborative Planning.
  - <u>K-NET</u> - Services for Context Sensitive Enhancing of Knowledge in Networked Enterprise.
  - <u>NEFFICS</u> - Networked Enterprise transFormation and resource management in Future internet enabled Innovation CloudS.
  - <u>NisB</u> - The Network is the Business.
  - <u>SPIKE</u> - Secure Process-oriented Integrative Service Infrastructure for Networked Enterprises.
  - <u>SPRINT</u> - Software Platform For Integration Of Engineering And Things
  - <u>SYNERGY</u> - Supporting highly adaptive Network enterprise collaboration through semantically enabled knowledge services.
  - <u>UNITE </u>– UpgradiNg ICT excellence by strengthening cooperation between research Teams in an Enlarged Europe.
  - <u>ICT-VENTUREGATE</u> - Innovative Solutions For Enabling Efficient Interactions Between SMEs In ICT Projects And Innovation Investors.
  - <u>YMIR </u>– Stepping up ICT SME's in accessing finance.

▪ *FInES Cluster FP7-FoF Projects*

  - <u>ADVENTURE </u>- ADaptive Virtual ENTerprise ManufacTURing Environment.
  - <u>BIVEE</u> - Business Innovation and Virtual Enterprise Environment.
  - <u>COMVANTAGE</u> - Collaborative Manufacturing Network for Competitive Advantage.
  - <u>EPES</u> - Eco-process engineering system for composition of services to optimize product life-cycle.
  - <u>EXTREMEFACTORIES</u> - Internet-based platform implementing agile management methods for enabling the set-up, monitoring and follow-up of business innovation processes in industrial SMEs.
  - **<u>GloNet </u>**- Glocal enterprise network focusing on customer-centric collaboration.
  - <u>IMAGINE</u> - Innovative End-to-end Management of Dynamic Manufacturing Networks.

- MSEE - Manufacturing SErvice Ecosystem.
- PREMANUS - Product Remanufacturing Service System.
- VENIS - Virtual Enterprises by Networked Interoperability Services.

- *FInES Cluster FP6 Projects*

  - ABILITIES - Application Bus for InteroperabiLITy In enlarged Europe SMEs.
  - ATHENA - Advanced technologies for interoperability of heterogeneous enterprise networks and their applications.
  - CONTRACT - Contract based Systems Engineering Methods for Verifiable Cross-Organisational Networked Business Applications.
  - CoVES - Collaborative Virtual Engineering for SMEs.
  - e-NVISION - A new vision for the participation of European SMEs in the future e-Business scenario.
  - FUSION - Business process FUSION based on Semantically-enabled Service-Oriented Business Applications.
  - GENESIS - Enterprise Application Interoperability via Internet-Integration for SMEs, Govenrmental Organisations and Intermediaries in the New European Union.
  - IMPORTNET - Intelligent modular open source Platform for intercultural and cross-domain SME networks.
  - INTEROP-NoE - Interoperability research for networked enterprises applications and software (INTEROP-NoE).
  - LEKTOR - Legal Knowledge Transfer Accelerator for SME cluster and Digital Business Ecosystems.
  - NO-REST - Networked Organisations - Research into Standards.
  - ONE – Open Negotiation Environment.
  - OPAALS - Open Philosophies for Associative Autopoietic Digital Ecosystems.
  - SUDDEN - SMEs Undertaking Design of Dynamic Ecosystem Networks.
  - TrustCoM - Trust and contract management framework enabling secure collaborative business processing in on-demand created, self-managed, scalable, and highly dynamic virtual organisations.

- *FInES Cluster FP5 Projects*

  - IDEAS **-** Interoperability Developments for Enterprise Application and Software - roadmaps.

- *CIP Projects*

  - DEN4DEK - Digital Ecosystems Network of regions for (4) DissEmination and Knowledge Deployment.

Cloud computing

At the moment several initiatives exist funded within the VII Framework Program of EC that have as main objective to research and develop new technologies, models and services within the field of the Cloud Computing. Through a search on CORDIS we selected the most relevant and those that are more identified with GloNet's action domains, as follows.

Project	Description
VENUS-C (Virtual multidisciplinary EnviroNments USing Cloud infrastructures)	VENUS-C will develop and deploy an industrial-quality service-oriented platform based on virtualization technologies to serve research and industrial user communities, leveraging previous experiences and competences of grids & supercomputing, while investigating new sustainable business models.
PASSIVE (Policy-Assessed system-level Security of Sensitive Information processing in Virtualised Environments)	Virtualized service platforms and cloud computing hold great promise. However, to date, the fundamental shared-resource nature of virtualization technologies has raised legitimate security concerns for Government and other organizations with duties to protect confidential data. The PASSIVE project proposes an improved model of security for virtualized systems for delivery of large applications in e-Government to ensure that: * adequate separation of concerns (e.g. policing, judiciary) can be achieved even in large scale deployments * threats from co-hosted operating systems are detected and dealt with; * public trust in application providers is maintained even in a hosting environment where the underlying infrastructre is highly dynamic.
DICODE (Mastering Data-Intensive Collaboration and Decision Making)	The goal of the Dicode project is to facilitate and augment collaboration and decision making in data-intensive and cognitively-complex settings. Services to be developed are: (i) scalable data mining services (including services for text mining and opinion mining), (ii) collaboration support services, and (iii) decision making support services.
OPTIMIS (Optimized Infrastructure Services)	The OPTIMIS innovations can be summarized as a combination of technologies to create a dependable ecosystem of providers and consumers that will be the foundation of an efficacious operation of services and infrastructures. This includes innovations for optimizing the whole service lifecycle, starting from service construction. Trust, risk, eco-efficiency and cost are all crucial for optimizing deployment and execution, capturing the essence of the optimized cloud ecosystem produced by the trust on consumers and providers and the risk of not accomplishing specific ecological or economical goals. Adaptive self-preservation is key to meet predicted and unforeseen changes in resource requirements. Identification of new market roles and value activities calls for new business models and investigations of legal and regulatory aspects for governing cloud operation.
PLANETDATA	PlanetData will push forward the state-of-the-art in large-scale data management and its application to the creation of useful, open data sets. This is motivated by the increasing reliance of business on large public data; the uptake of open data principles in many vertical sectors; and the need of research communities to make sense out of petabytes of scientific data, to describe and expose this data in ways that encourage and enable collaboration.

ROBUST (Risk and Opportunity management of huge-scale BUSiness communiTy cooperation)	ROBUST is targeted at developing methods to understand and manage the business, social and economic objectives of the users, providers and hosts and to meet the challenges of scale and growth in large communities. The outcome of ROBUST finds its application in online communities in internet, extranet and intranet settings addressing customer support, knowledge sharing, and hosting services.
ADVENTURE (ADaptive Virtual ENterprise ManufacTURing Environment)	ADVENTURE will deliver a cloud platform and the accompanying tools by providing a holistic environment for plug-and-play virtual factories based on cross-organizational manufacturing processes.

Collaborative networks

In relation to Collaborative Networks domain the following table identifies, in addition to the FInES projects, other initiatives funded by the European Commission that are developing at the moment or have finalized recently:

Project	Description
CHAIN (Co-ordination and Harmonisation of Advanced E-INfrastructures)	The CHAIN project aims to coordinate and leverage the efforts EC has made to extend the European eInfrastructure technology and European eInfrastructure (and particularly Grid) operational and organizational principles to a number of regions in the world, and to reinforce the close collaboration and exchange of know-how with similar technologies in other areas with a vision of a harmonized and optimized interaction model for eInfrastructure and specifically Grid interfaces between Europe and the rest of the world.
Africa Build (Building a Research and Education Infrastructure for Africa)	Africa Build aims to promote health research, education and practice in Africa through the creation of centers of excellence, by using IT, know-how, e-learning and knowledge sharing through Web-enabled Collaborative Networks. Initial EU-Africa transfer aims to create sustainable South-South communities of African researchers.
Open Garments (Consumer open innovation and open manufacturing interaction for individual garments)	The overall objective of Open Garments is the Manufacturing Service Provider (MSP) Business Model enabling individual garments. This model will enable a new way of design, production and sales of consumer designed and configured garments, based on the provision of individualized services and products to customers and partners. This will lead to new product designs, to a much more customer satisfaction, and to an improvement of the stability and competitiveness of SMEs.

Besides these initiatives, inside the DG Enterprise and Industry the European Commission has developed an initiative called **Europe Innova.** The aim of this initiative is to create new tools and instruments to support and to improve European SMEs' innovation, which include the creation of clusters of companies.

- The **European Cluster Policy Group** of high-level experts is looking into future challenges for cluster policies, which should be addressed at national and European level. The Group is chaired by Tea Petrin, former Minister of Economy in Slovenia and professor at the University of Ljubljana. And the Secretary is Emily Wise (Emily.Wise@fpi.lu.se).

- The **European Cluster Alliance** under PRO INNO Europe® fosters cluster cooperation at policy level by bringing together national and regional authorities and innovation agencies active in the field of clusters. It aims to jointly design better cluster policies and to raise the excellence of cluster programmes.
  Key members of the secretariat management team are:
    - Michel Ganoote (michel.ganoote@oseo.fr)
    - Isabelle Lebo (isabelle.lebo@oseo.fr)
    - Marc Pattinson (m.pattinson@inno-group.com)
    - Guillaume Roux (g.roux@inno-group.com).

- The **European Cluster Observatory** under Europe INNOVA provides statistical analysis and mapping of clusters across Europe and it facilitates the partnering of cluster organisations and cluster firms by acting as a fully-fledged information service. The European Cluster Observatory is managed by the Center for Strategy and Competitiveness (CSC) at the Stockholm School of Economics. The European Cluster Observatory's Advisory Board includes:
    - Staffan Bjurulf. Regional Advisor, Region Värmland, Sweden (Chairman)
    - Pavla Břusková. President, National Cluster Association – CZ, Czech Republic
    - Juan M. Esteban. Basque Government, Basque Country, Spain
    - Dr Gerd Meier zu Köcker. CEO, Agency Competence Network, Germany
    - Øyvind Michelsen. CEO, Oslo Renewable and Environment Cluster, Norway
    - Dr Jorge-Andres Sanchez-Papaspiliou. Corallia Clusters Initiative, Greece
    - Madeline Smith. Head of Innovation, EKOS, UK
    - Ifor Ffowcs-Williams. CEO, Cluster Navigators Ltd, New Zealand.

- The **European Innovation Platform for Clusters** (Cluster-IP) under Europe INNOVA facilitates transnational cooperation between cluster organizations at a practical level in view of developing and testing new or better innovation support tools for cluster firms. The European Innovation Platform's coordinator is Mara Tumiati (tumiati.mara@mi.camcom.it) from the Milan Chamber of Commerce.

  The **European Cluster Excellence Initiative** under PRO INNO Europe® develops Europe-wide quality standards for cluster management that may also facilitate the channelling of more innovation support through cluster organizations. The Director project of Cluster Excellence is Emiliano Duch (Educh@iese.edu) from the IESE Business School, University of Navarra (Spain).

- The **Cluster Collaboration Platform** provides online quality information and networking support for clusters organizations and member companies aiming to improve their performance and increase their competitiveness through the stimulation

of trans-national and international cooperation. The project manager of the Cluster Collaboration Platform is: Juan-J. Carmona-Schneider (jc@zenit.de)

http://www.europe-innova.eu/web/guest/home

http://ec.europa.eu/enterprise/index_en.htm

http://www.clusterobservatory.eu/index.html#!view=mainMenu

http://www.cluster-excellence.eu

http://www.clustercollaboration.eu/

Various initiative exist also at regional level. for instance, in Andalusia (Spain), the "**Agencia de Innovación y Desarrollo de Andalucía (IDEA)"** is the public entity responsible of the development of a set of action programs and initiatives addressed to promote SMEs' innovation through the creation of clusters. These programs are part of the industrial policy and innovation policy objectives designed by "Consejería de Economía, Innovación, Ciencia y Empleo."

6. THE PLAN OF ACTIONS

For the elaboration of a Plan of actions (to appear in the reports of the 2nd and 3rd years) a methodology has been developed that will allow to guarantee that the plan will be really effective.

This methodology is based mainly on 5 actions:

- Analysis of baseline situation. Through the accomplishment of a SWOT analysis it will be possible to be identified which is the present situation (political existing actions or actions that are being developed at the moment, etc.) and the tendencies that are appearing.
- Define the future vision of GloNet for sustainable impact creation.
- Identify Weaknesses, Threats, Strengths and Oportunidades that can be defined using the SWOT matrix methodology.
- Analizy the existing gap between the present situation and the vision of GloNet impact.
- Define the set of recommended actions that are needed to reach the future impact vision.

In the following sections the methodology that is going to be followed for the development of the Plan of Actions of GloNet is explained in details.

6.1 Objectives and methodology

The main objective of GloNet's Policy Action Plan is to assess the dimension of expected policy and societal impact, and promote the viability of the project in view of expected acceptance of such impact *(Goal described in the DoW).*

Methodology

The following figure shows the set of actions that will be developed for making the first Policy Action Plan of GloNet.
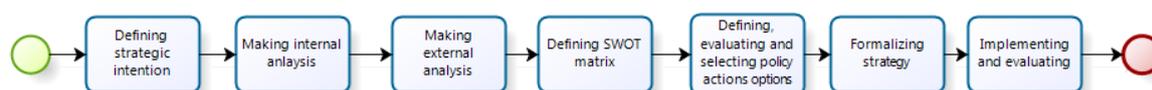
1. **Defining strategic intention.** A clear definition of which it is the vision that GloNet wishes for the future it is necessary in order to develop a policy action plan that can really be effective and can help to the development of new technologies in the fields of cloud computing and mainly in the cooperation between the SMEs through collaborative networks (e-factory).

2. **Internal analysis.** Understanding the present situation at European level (the existing policies and objectives, actions that are being undertaken, etc.) regarding the domains in which GloNet is working on.

3. **External analysis.** Understanding the present practices as well as the state-of-the-art in research domains related to the problem area. Identification of the role that the main stakeholders of this area play, as well as the opportunities and threats that can be identified. The analysis will be developed from several perspectives: policy, social, technological and legislative.

4. **SWOT analysis.** To analyze the existing gaps between the internal and external analysis realized in previous stages and GloNet impact creation vision, through the development of a SWOT matrix.

5. **Defining, evaluating and selecting policy actions options.** The main activities that will be carried out in this phase are:

   - To use the results obtained in the previous phases in order to produce and design a first action plan using an intuitive approach.
   - To verify the proposed actions taking into account the following elements: the existence of concrete pre-requirements that will allow to develop the actions, and the viability and difficulty level of each action in relation with the results of the SWOT analysis.
   - As a result of this evaluation the final proposed actions will be obtained.

6. **Formalizing strategy.** After defining the proposed actions, the main objective of this phase is to characterize (necessary resources, hours, etc.) and timing the actions.
   Also Policy Action Matrix will be used as a tool, in which the main characteristics of the proposed actions will be gathered (policy action type, policy measure, objectives, etc.).

7. **Implementing and evaluating Policy Action Plan.** In this last phase a serie of recommendations of how the Policy Action Plan proposed by GloNet will be implemented and evaluated will be realized.

A Policy Action Plan is not a static document; it will be updated every year while the project GloNet is in execution taking into account the new results obtained and the evolution both in technology and in other relevant domains.

6.2 SWOT Analysis

SWOT Analysis is a tool that allows obtaining a global image of the context and the environment in which the Policy Action Plan of GloNet will be developed. Furthermore it allows to indentify its opportunities and threats, that is, to take into account those aspects that are relevant in order to achieve an effective and successful Policy Action Plan.

SWOT analysis and the results obtained will facilitate the development of a set of concrete actions that allow to take advantage of the detected opportunities and to overcome the possible identified threats.

To develop the SWOT analysis the following resources will be used:

- Secondary information analysis, among documentation, the Digital Agenda 2020 of the European Commission and documentation from Innovation Union will be analyzed in depth.
- Results from the interviews and questionnaires that will be realized involving different national and international stakeholders. These interviews will be developed in the last four-month period of this year in accordance with a model of questionnaire in order to be sure the same kind of information is really achieved in each one of the interviews.

The methodology that will be followed to develop the SWOT matrix, as it has been explained in section 6.1, will consist mainly in two phases:

1. **Internal analysis.** Understanding the present situation at European level (the existing policies and objectives, actions that are being undertaken, etc.) of the domains in which GloNet is working on, detecting the main existing *Strengths and Weaknesses* at the European level.

2. **External analysis.** Understanding the present practices as well as the state-of-the-art in research domains related to the problem area. Identification of the role that the main stakeholders of this area play, as well as of the opportunities and threats that can arise. The analysis will be developed from several perspectives: policy, social, technological and legislative. In short it is the identification of the main **Opportunities and Threats** to those GloNet must to face.

As a result of these analyses, a SWOT matrix will be obtained. This matrix will be the main base for the definition of the proposed actions of GloNet Policy Action Plan.

6.3 Policy option generation

The definition and description of the policy recommendations which will be included in GloNet Policy Action Plan will be developed once SWOT analysis has finished. SWOT analysis results will be the main baseline for actions formulation.

For action formulation the following example of Policy Action Matrix will be used as a tool:

Policy Action Type	Measure	Objective	Type of innovation	Key stakeholders	Main role of public authorities
Citizen/user empowerment	Communities	Create user communities	Public sector innovation	Service suppliers	Decision maker/enabler/su pporter/quality controller
Regulation	Standardisation	Promoting standardization internally and in public procurement	All types depending on existing industry base	Public Authorities at all levels (regional, national, international) Standardization institutions	Regulatory competences. Standardization know how

- Policy Action Type - the typology of the proposed actions could be the following:
    - Citizen / user empowerment
    - Knowledge and competence development
    - Regulation
    - Infrastructure
    - Incentives
    - Orchestration (Promoting co-operation and networking to create or support initiatives)
- Measures - define the way through which the proposed actions should be implemented in the near future. Some of these measures are: empowerment, training, communication, dialogue, networking, etc.
- Objective - describes the main objectives to be achieved by each action.
- Type of innovation
- Key stakeholders, the main stakeholders to which the action is addressed.
- Main role of public authorities - defines the role that public administrations need to play to allow the implantation of the proposed actions.

Action recommendation generation is planned for beginnings of year 2013.

6.4 Implementation and Evaluation

To evaluate and verify the effectiveness of the proposed Policy Action Plan, a matrix of indicators will be developed. This matrix will include three types of indicators:

- **Execution**: this type of indicators will allow verifying if the proposed actions have been developed in the predicted period of time.
- **Results:** this type of indicators will measure if the proposed actions have reached the defined objectives in quantitative and qualitative terms.
- **Impact:** will determine if the actions have offered support in obtaining the high level results.

Also for the implantation and evaluation of the actions the methodology of logical order will be used. This methodology follows the following scheme:

1. **Involved stakeholders analysis:** To indentify the main stakeholders groups and organizations related with the problem from the beginning of the process.
2. **Problems analysis:** To identify the problem in other to be able to propose different solution alternatives.
3. **Objectives analysis:** To obtain the objectives through the transformation of causes and effects in means and aims.
4. **Selection of the optimum strategy**: to formulate actions to solve the defined problems using the Objectives Tree as a tool.
5. **Analytic structure of the project:** to build the Analytical Structure of the project, this consists of drawing an Objectives Tree fitting to the selected alternatives but with 4 hierarchical levels: aim, intention, components, and activities.
6. **Matrix of Logical Frame:** Build the column of narrative summary of the Matrix of Logical Frame, which summarise the actions of the plan, and the results at short, half and long term.

7. **Indicators:** To define the minimum amount of indicators to verify if the evaluated objective has been achieved or not.

8. **Means of verification:** To define methods and sources of information that allow to evaluate and monitor the indicators in order to observe the achievement of the intervention objectives.

9. **Intermediate evaluation:** it allows the manager of the project to know how the project is progressing and to identify the main areas where corrective measures are necessary to improve the probability to reach the purpose of the Policy Action Plan.
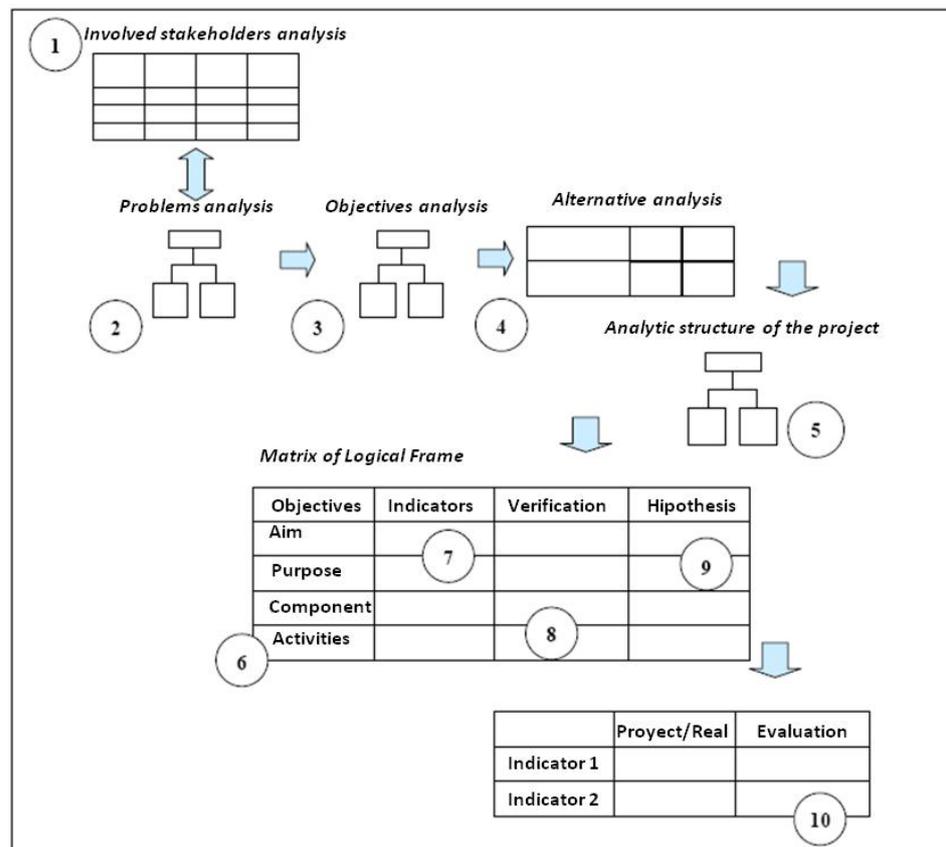
6.5 Impact indicators

In accordance to the evaluation theory, the set of indicators must be designed considering that they are a suitable answer to the set of the project goals defined and to the different types of involved stakeholders, as well as the duration in time considered for the development and its main component phases.

According to this approach, the set of indicators related to the Policy Action Plan will only be able to be designed once the previous stages have been covered, which will take place at the beginning of next year (2013).

Nevertheless, there exists the possibility of developing an initial set of areas in which there will have to be established indicators related to Policy Action Plan that are involved with the following activity areas:

- Final content of the impacts, making differences in this respect between:
  - *Innovation in the enterprise scope*, that is to say, the effect that GloNet is going to have on the incorporation of new processes in the companies, mainly the SMEs. In this section an initial indicator will be the number of involved companies.
  - *People education, training and information*, understanding it as the set of promotion and training activities realized and the number of people who has participated. In this section initial indicators will be the number of activities and the number of involved people.
  - *Social impact*. Related with the result will be obtained in the medium and long term and centered in the improvement of the general conditions for workers who develop their activity in GloNet domains.
  - *Added value and jobs*, in medium and long terms. In this section, the number of R&D proposals presented to the EC and the number of calls supplied by the EC in the GloNet domains could be evaluated in the future as possible indicators.
  - *Geographical scope*. The set of European regions in which GloNet actions will be developed in a direct way. In this section an initial indicator will be the number of European regions in which actions have been developed.

- Period in obtaining the impact, divided into:
  - *Short period*, understanding as such the duration of the project and the two / three years after its ending;
  - *Medium and long period*, constituted by horizon 2020 and both/the three later years to its ending.

7. EARLY FINDINGS AND CONCLUSIONS

Even though GloNet has not offered at the moment, in agreement with its schedule, enough results that can give support to the proposal of policies and concrete measures, which will be possible throughout next two years of the project, there are some early findings in particular in the areas of cloud computing, the standardization, the interoperability and the development of the open data fields.

Cloud Computing and Collaborative Networks. The development of conceptualization and management systems of collaborative networks and virtual communities should use advances in cloud computing technology, due to the characteristics of this technology, mainly the ones related with availability, independence of the geographic locations and relatively small needed levels of investment for its use in terms of users.

Collaborative networks and FoF concept require a high availability of technology, a fast and safe access to shared data bases and highly distributed and open data and co-creation spaces and shared use of resources systems that the cloud technology potentially allows. It is, therefore, a need, to harness the interrelation between both components, cloud computing and collaborative networks and FoF as a formula to promote the growth and use of the different systems from FoF.

Standardization. At the present moments of development of cloud technology, even though most of the great industrial actors in this domains cry out about the possibilities of migration between diverse cloud platforms like one of the contributions that their solutions offer, in real terms clear difficulties exist to allow to a certain, suitable and simple migration between platforms and solutions.

The creation and maintenance of enterprise networks and virtual communities take place, nevertheless, in environments of varied conditions and characteristics, existing at the moment various developed and developing solutions.

Only a suitable standardization in the area of cloud technologies, that could be the support of some suitable possibilities of easy migration between platforms and of shared use, will allow to take advantage of the real possibilities that cloud technology can offer to the development of collaborative networks and the FoF and the Internet of the future.

Interoperability. Even though a clear trend towards the use of cloud technology is taking place, it is to hope that the next years will be characterized by the necessity of sharing cloud based solutions with solutions that are not cloud based, essentially in practical support of collaborative networks and communities.

Due to this fact, the establishment of interoperability conditions between the developments that are cloud based with other technologies, architectures, data bases, and systems that are not cloud applications. The development of this interoperability should be promoted by the public administrations.

Open Data. Policy makers, at the various levels, from the EC to the local authorities, are promoting the use of open data as a way to help European people to make decisions about some specific items related to the interests of the establishment of prioritizations in the use of the resources.

The availability of the needed data, the capacity of structuring its breeding environment, the Human Resources management, virtual organizations creation, co-creation of solutions, etc. will be qualified and consolidated through the intensive use of collaborative networks management supported by cloud technologies. In this line it would be of high interest the promotion of platforms that aim promoting the use of the open data systems that will integrate research, development and solutions based on collaborative networks supported in cloud technology.

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