SEQUOIA PROJECT

"Socio-Economic Impact Assessment for Research Projects"

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WP2: SEQUOIA's Self-Assessment Methodology Development

Deliverable 2.2b – Results from the Focus Group

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EXECUTIVE SUMMARY

This deliverable summarises the results of the focus group sessions organised by the SEQUOIA project in February 2011. SEQUOIA organised five focus groups sessions, involving a total number of 27 projects. The focus group sessions took place in an online environment using the collaborative working tool vyew (www.vyew.com). This was done to minimise travel cost for the projects that participated and to maximise participation.

The focus group sessions have been very important both from the point of view of projects' engagement and SEQUOIA dissemination (see D4.2.1), as well as from the point of view of the research process. In fact, through the focus group sessions we obtained more information about Call 1 and Call 5 projects. The SEQUOIA methodology was presented and discussed with projects' representatives and the long (second) questionnaire was finalized based on their inputs.

As the projects' participation was high, the SEQUOIA team is now more visible to project coordinators and a productive collaboration with the projects seems now more feasible than in the past.

The inputs the projects gave to the questionnaire finalisation touched all the parts of the questionnaire. One of our concerns was to simplify the questionnare in order to reduce the work for the respondents. The feedback we got went in the opposite direction: the participants seemed to prefer a more complete instrument (even if more complex), in order to have a tool able to reflect the complexity of their projects.

In this deliverable we present the focus group methodology, the process used for organizing the five sessions, and the outputs. The focus groups' outputs cover the following subjects:

- Project goals, beneficiaries and use cases;
- Project expectations towards the focus group and SEQUOIA;
- Input to the various parts of the questionnaire.

The final version of the second questionnaire is included in the Appendix.

The lateness of this deliverable has been caused by the initial lack of response and engagement of the projects when we first approached them.

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1. INTRODUCTION

In order to validate and finalise the self-assessment model and methodology developed so far (D2.3), the SEQUOIA project organised various focus group sessions. These meetings involved Call 1 and Call 5 projects representatives at the same time.

This deliverable is complementary to Deliverable D.4.2.1 that reports on the focus group-related activities from the point of view of the SEQUOIA dissemination and engagement strategy. Here we will describe, more specifically, the findings of the Focus Groups sessions from the point of view of the input they gave to the fine-tuning of the SEQUOIA methodology and its main instrument (i.e. the second questionnaire).

The Focus Group had the following objectives:

- Support the HOLA! project in creating a space for communication and information exchange among the projects working in the same field
- Reach a common understanding on the definition of socio-economic impact assessment and what to expect from an assessment exercise
- Present the SEQUOIA methodological approach
- Validate and improve the SEQUOIA variables and indicators
- Discuss some of the questions of the second questionnaire in order to make them more meaningful and relevant to the projects, before the questionnaire is circulated

The focus group sessions represented an opportunity for the SEQUOIA team to learn more about the projects under analysis and their potential beneficiaries, in order to better target the methodology to them. The activity was also very useful in developing a factual and focused channel of interaction between the SEQUOIA team and the projects; future communication and exchange of information will be easier now that such a channel has been created.

It was also an occasion to exchange ideas with the project representatives about the meaning and the approach of socio-economic impact assessment. The familiarity of the projects with SEQUOIA's perspective and approach is an important starting point for developing a methodology that makes sense to everyone.

Finally, and most important, interesting discussions took place with the projects representatives about the indicators and variables used in the second long questionnaire, and the questionnaire was finalised according to the comments and suggestions gathered during the focus groups.

2. METHODOLOGY

In this section we briefly introduce the focus group methodology and describe its application to the SEQUOIA context and the adjustments performed.

The focus group methodology is a qualitative method intended to gather information on a specific, well-defined set of subjects. It can be seen as a sort of group interview but, instead of asking questions to each participant and collect his/her answers, in the focus group session the moderator (or facilitator) is interested in promoting, observe and record the participants' interactions and the way in which they, collaboratively, develop answers to the proposed questions. The central characteristic of the focus group is its interactive nature, which makes it easier for multiple ideas/opinions to emerge, and, often, ensures more detailed in-depth answers than those gathered trough individual interviews. It is indeed an interpersonal cognitive process, which we might call 'sense-making'. Weick[1] uses this term to indicate a process to construct meaning through retrospective processes that help to 'place elements inside frames'; not individual, but socially shared frames. In this case, the high-level objective of the focus group session was to develop a shared understanding of the SEQUOIA project's goals and approach.

This method was first elaborated by Rober Merton[2], during the Second World War, and represents a classic of qualitative sociology. Since its origin this method has been used for collecting opinions, points of view, and emotional descriptions of a phenomenon or an object. For example, the focus group method is extensively used in market research in order to foretell how consumers will react to a new product; the focus group method is increasingly used for evaluating the results of policies on specific social groups, especially vulnerable ones. The method has generally proved to be very flexible, and can be used in conjunction with other methods.

The main hypothesis that underlies this method is that the social interaction that emerges during the focus group session constitutes a rich source of information and that the interaction can produce important information flows and improvements in the reciprocal understanding of the participants and of the moderator.

The focus group methodology needs to be carefully prepared: normally the group is composed of a number of participants that can vary from a minimum of 4-5 participants to a maximum of 12-15, depending on the complexity of the subject under discussion. Each session lasts one to two hours and its conducted by two – complementary – professional figures: the moderator (or facilitator) and the observer.

The moderator – besides organising the focus group, defining the topics under discussion (the focuses), and developing specific guiding questions – has to facilitate the interaction among participants, guiding the discussion towards the topics identified whilst avoiding that participants misunderstand questions, change subject or similar.

The set of questions and topics that the moderator prepares before the focus group session is not a rigid plan, but more a guiding 'script' that needs to be adjusted to the social and psychological dynamics that the group creates[3]. Moreover, the role of the moderator is not to seek agreement among the group participants but rather to ensure that very different opinions can be aired.

The observer (or 'mirror') supports the moderator from a logistics point of view, before and during the focus group session. Additionally, the observer takes notes during the session,

[1] Weick, K., *Senso e significato nell'organizzazione*, Milano, Cortina, 1997
[2] Merton, R.K. (and others), *The focused interview*, London, The Free Press, 1956
[3] Lewin, K., *Resolving Social Conflicts: Selected Papers on Group Dynamics*, New York, Harper & Row, 1948,

observes the group dynamics, and supports the moderator when the discussion strays too far from the original agenda, by asking questions and making comments.

Traditionally, focus groups are conducted in the physical presence of the participants. By using new information technologies, however, new ways of conducting focus groups or techniques derived from this method are being tried out. The online focus group differs from the traditional version by virtue of the use of web interfaces; in the case of the SEQUOIA project the researchers used the online collaborative tool vyew (www.vyew) together with skype.

There are two main advantages to the online focus group, which constitute the reasons for its use in the SEQUOIA project: lower costs for the organisers and for the participants (also in terms of time saving) and the possibility of involving people who are physically distant.

By combining two ICT tools (vyew and skype) researchers were able to mimic the dynamics of a face-to-face interaction; this would not be possible with a simple conference call or by using asynchronous tools such as a wiki, which is often used to develop a common understanding of a specific subject. In fact, vyew made possible the visualisation of questions, but also of comments and different evaluations: the moderator took notes during the focus group in the same way in which she would have done with a flipchart in a face-to-face environment, and the participants were able to see and actually modify those notes. Avatars available for each participant (together with the visualisation of their names) made possible a sort of recognition among participants and researchers are confident that the focus group sessions we held served as important occasions for the participants in terms of networking and group-identity formation. Of course the face-to-face environment permits richer interaction, especially because it allows non-verbal communications that are not visible in the online environment.

However, the nature of the SEQUOIA focus groups, and the fact that the participants are all engaged in advanced ICT projects (consequently accustomed to online interactions), made it possible to overcome most of the above-mentioned shortcomings of the online focus group approach.

3. ORGANIZATION OF FOCUS GROUP SESSIONS

Five focus group sessions were held between the 14th and the 23rd of February 2010, involving 27 projects, of which 11 from Call 1 and 16 from Call 5. The table below shows the degree of participation of Call1 and Call 5 projects.

Table 1 – Call 1 and Call 5 participation to the focus group sessions

Call	Total number of projects	Number of participants	% of participation
1	25	11	44%
5	23	16	70%
Total	**48**	**27**	**56%**

A few more projects expressed willingness to participate in the focus group sessions but for technical issues it was not possible for them to take part in the sessions. For this reason one-to-one phone call were organized.

During each focus group session the participants presented their project (main objectives, users/beneficiaries, use cases implemented or to be developed) and their expectations toward the focus group and SEQUOIA project. The SEQUOIA methodology was then presented, and a discussion was opened on specific parts of the second questionnaire.

Each focus group session focused only on one aspect of the Second Questionnaire, in order to keep the time of the online meeting within reasonable limits. In particular, the first focus group addressed Section B “Knowing more about your project”, the second Section C “Base-Case Scenario Identification”, the third Section G “Technological Dimension of the project”, the fourth Section E “Social Impact” and the last one Section D “Economic Impact” (see Annex 1).

As mentioned in the previous section, the focus group session relied on the online collaboration tool vyew (www.vyew.com); in most cases Skype was used for the audio interaction[4]. For more information on the organisation of the focus group sessions, please refer to Deliverable D4.2.1.

[4] In a couple of occasions we tried to use the view over IP service, but the sound quality was not sufficient and we decided to move to skype.

4. RESULTS OF THE FOCUS GROUPS

4.1 Information on the projects

The first part of the focus group aimed at acquiring a better knowledge and understanding of the projects involved, in particular for Call 5 projects that started only a few months ago and still have little material available on their website (see D2.1b). At the beginning of each focus group the projects were asked to present their objectives and their main users/beneficiaries. They presented also the use-cases they have developed or they intend to develop during the project life. This exercise provided more information to the SEQUIOA team but also helped the participating project in presenting their project to a non-technical audience and in starting to think in terms of impact on selected beneficiaries.

The information gathered during the focus group sessions was used by the consortium to finalize Deliverable D2.1b.

Table 2 – Information gathered about the projects during the focus group sessions

Call	Title	Aims	User/Community	Case studies (#)	Focus Groups
1	ADMIRE	Support data Mining: deliver a coherent, extensible and flexible framework to facilitate a much better use of a wide range of heterogeneous distributed data resources	Clinicians, researchers, domain experts, data mining and integration experts (DMI experts), designers and the engineers who build data-aware computing platforms. Citizens, industry, decision-makers.	2: the Flood Forecasting Simulation Cascade, and the Analytical Platform for Customer Relationship Management	FG 5
1	DIVA	Develop run-time adaptive systems and software	Application developers, software designers, end-users		FG 2
1	IRMOS	Develop real-time interactive applications over SOIs - cloud infrastructure	End-users, enterprises and SMEs, software developers	3: Digital Film Postproduction, Virtual and Augmented Reality, and Interactive Real-time e-Learning.	FG 4
1	OPEN	Provide users with migratory interactive services, providing seamless and transparent support to users, and fostering more natural and personalized interaction	Users; service developers	2: business area (support the management of catastrophic events such as floods) and social games (car race)	FG 4
1	Persists	Develop Personal Smart Space providing context-aware	Users; application developers; SMES		FG 4

		pervasiveness to the user at all times and places			
1	Q-impress	Bring service orientation to critical application domains, such as industrial production control, telecommunication and critical enterprise applications where predictable and guaranteed end-to-end quality of service is particularly important	Application developers, industries (internal developers), researchers	2	FG 2
1	RESER-VOIR	Increase the competitiveness of the EU economy by introducing a powerful ICT infrastructure for the reliable and effective delivery of services as utilities	Service providers	4 (internal)	FG 1
1	S-Cube	Develop a network of excellence at European level	Research community		FG 2
1	ServFace	Create a model-driven service engineering methodology for an integrated development process for service-based applications	Service-based application developers, end-users	3: ICT business applications, University (management of classes, etc.) and home scenarios	FG 5
1	SHAPE	Support the development and realization of enterprise systems based on semantically-enabled heterogeneous service architecture (SHA).	Joint users, development communities	2 uses cases implemented with industry partners: real-time planning of steel production and integration of production systems	FG 4
1	STREAM	Produce a highly scalable middleware platform able to process in real time massive data streams such as the IP traffic of an organization, the output of a large sensor network, the e-mail processed by an ISP, the market feeds from stock exchange and financial markets, the calls in a telco operator, credit card payments, etc			FG 4
5	CLOUD-TM	Define a novel programming paradigm to facilitate the development and administration of cloud applications.	Cloud developers, programmers, users		FG 5
5	ACSI	Reduce the effort and lead-time of designing, deploying, maintaining, and joining environments that support service collaborations.	Enterprises and organizations (also services inside a unique organization)	2	FG 1

5	I2WEB	Provide tools to develop inclusive Future Internet services that will overcome the risk of a Future Internet Community further isolating excluded groups (in particular users with special needs and older users).	End-users (users with special needs and older users will represent 40% of the population), service developers and service providers	3: social networking, mobile applications (such as e-banking platforms), eGovernment services	FG 3
5	OMELETTE	Develop an open platform for building convergent mashups for the telco domain to be used within several industry-driven use cases.	Telco sector, end-users (persons with low technical background who want to create their services, and persons with a background who want to compose more complicate modules)		FG 2
5	SERENOA	Develop a novel, open platform for enabling the creation of context sensitive service front-ends (SFEs).	Software developers, SFE engineers, end-users (benefit from new services developed)	3: mobile phones with avatars, commercial tools, industrial sector	FG 4
5	OPTIMIS	Consolide Cloud technologies to simplify service construction, support deployment and runtime decisions and enable clouds to be composed from multiple services and resources.	Service providers, infrastructure providers	3	FG 3
5	SOCIETIES	Facilitate the creation, organisation, management and communication of communities via Community Smart Spaces, where pervasive computing is integrated with social computing communities. The project will design and prototype a robust open and scalable system for self-orchestrating Community Smart Spaces;	Service providers, end-users	3: services for students, enterprises (office environment) and government/disaster management (simulation of an earthquake)	FG 4
5	VISION CLOUD	The goal of VISION Cloud is to introduce a powerful ICT infrastructure for reliable and effective delivery of data-intensive storage services, facilitating the convergence of ICT, media and telecommunications. This infrastructure will support the setup and deployment of data and storage services on demand, at competitive costs,	Infrastructure providers, application providers	4: health care, media, telco, business application	FG 1

		across disparate administrative domains, while providing QoS and security guarantees.			
5	CHOREOS	The CHOReOS objective is to sustain decentralized service choreographies in the Future Internet. It revisits the concept of choreography-centric service-oriented systems to introduce a dynamic development process and associated methods, tools, and middleware – referred to as CHOReOS Integrated Development and Runtime Environment (IDRE) – for the software systems that implement and coordinate the services in the Ultra Large Scale Future Internet.	Software developers, software architects, enterprises	4: coordination of taxis in Athens, phones	FG 3
5	PLAY	Develop and validate an elastic and reliable architecture for dynamic and complex, event-driven interaction in large highly distributed and heterogeneous service systems.	Enterprises	2: Crisis management with simulation of a nuclear crisis, applications for smart taxis	FG 5
5	WEBINOS	Deliver an OS platform for web applications across mobile, PC, home media (TV) and in-car devices.	Software engineers, software houses, final users		FG 2
5	CLOUD4SOA	Resolve the semantic interoperability issues that exist in current Clouds infrastructures and on introducing a user-centric approach for applications which are built upon and deployed using Cloud resources	SMEs (service providers) and developers	Web applications for British telecom (not sure)	FG 5
5	FITTEST	Attack the problems of testing the Future Internet with Search Based Testing	Programmers	e.g. input data generation, feasibility, concurrency testing	FG 1
5	REMICS	Develop advanced model driven methodology and tools for REuse and Migration of legacy applications to Interoperable Cloud Services.	Software companies, SMEs	2: tourism and accounting	FG 3
5	SocioS	Build qualitative, functional and usable business applications exploiting the User Created Content (UCC) and the Social Graph of users in Social Networks	Infrastructure providers, persons creating graphs of users, commercial service providers, end-users (internet users)	2: journalists and commercial production companies	FG 1

4.2 Projects' expectations

During the focus group sessions, the projects were asked to voice their expectations towards the SEQUOIA project and the focus group sessions.

The projects generally expect to receive from SEQUOIA tools to help them to develop a long-term assessment process of their projects and to understand how to evaluate socio-economic impact, as it is a methodology most of them are not familiar with.

Call 1 and Call 5 projects presented different expectations in this regard. As the Call 1 projects are almost ending or are already finished, they expressed the need of a framework to support the project's impact assessment after the end of the project. On the other hand, Call 5 projects highlighted the importance to put in place an assessment methodology since the beginning of the project.

The projects also expect from SEQUOIA collaboration for the exploitation process and instruments to assess to what extent their projects could reach a measurable impact. They hope SEQUOIA will help them understand and evaluate the potential benefit of their projects and their potential market penetration.

4.3 Feedback on SEQUOIA variables and indicators for the second questionnaire

As mentioned before, each focus group session dedicated the third part of the meeting to one section of the second questionnaire. The projects' representatives participating in the online meetings were asked to check if the questions and indicators chosen were, in their opinion, understandable, adequate to their project, and useful to evaluate their project's impact. The information gathered was then used to finalize the questionnaire, which is annexed to this deliverable in its final version (Annex 1).

Hereafter we report the questions on which the focus group participants worked, the comments made by the projects representatives and the consequent modifications brought to the second long questionnaire.

4.3.1 Section B "Knowing more of your project".

1. At which stage is your project right now?
   a) Research
   b) Development,
   c) Implementation, test
   d) Dissemination and mainstreaming
   e) Transfer of project's outputs to final users
   f) Other (please specify)

The projects noted that the formulation of Question 5 reflects a waterfall model of software development. The participants highlighted that this is no longer the standard in software design and development and suggested going for an open question about project process.

In order to respect the internal organisation of each project, they will be asked to present how they are organized (in terms of WPs and workflows) and to indicate at which step they are at the moment.

6. Thinking about your project's users, please estimate the relevance of each user category by assigning it a value from 1 to 5, where 1 is not relevant and 5 is very relevant.

USERS' CATEGORIES	Value				
Developers and software engineers	1	2	3	4	5
Researchers and research communities	1	2	3	4	5
Industry and SMEs	1	2	3	4	5
Citizens	1	2	3	4	5
Other (please specify…….)	1	2	3	4	5

Question 6 has been updated on the basis of the information gathered during the first part of each focus group session in which the projects presented their users/beneficiaries. The list of users is now as follows:

- Developers and software engineers
- Service providers
- Infrastructure providers and TELCO operators
- Researchers and research communities
- Industry and SMEs
- Citizens/consumers/end-users
- Project partners are project's main users
- Other (please specify…….)

Defining the time frame of the impact

One of the crucial steps of impact assessment is that of defining "when" we have to expect the impact.

9. In your opinion, when will your project realise a substantial impact:
   a) Already during the project life-time
   b) At the end of the project
   c) One year after the project end
   d) Three years after the project end
   e) Five years after the project end

The projects noted that the various typologies of impacts (social, economic, scientific, etc...) are foreseen in different moments. For example, the participants commented that whereas the scientific impact is visible during, and at the end, of the project, commercial impacts could come only one or more years after the end of the project. Moreover some projects pointed out that, considering the technology might become obsolete, it is difficult to foresee an impact five or more years after the project. Question 9 will therefore be separated for the different typologies of impact, so that at the end of each session of the questionnaire the respondent can indicate when they expect that precise impact to take place.

4.3.2 Section C "Base-case scenario identification"

Base-case scenario identification is essential for running a impact assessment. In fact, in order to understand what the project will achieve, it is necessary to have a clear idea of "what was there before the project". We can call this base-case scenario (or ex-ante, baseline scenario). It is not a general, high-level picture of the market/research/social situation before the project starts, but more a picture of what is available in terms of alternative, competitive solutions and to what extent the project under analysis plans to change the situation.

16. To what extent can you agree with the following sentences?

	Strongly disagree	**Disagree**	**Agree**	**Strongly agree**
Your project is developing a new software/virtual infrastructure				
Your project is improving existing software/ virtual infrastructure				
Your project is developing new methodologies/design processes				
Your project is improving existing methodologies/ design processes				
Your project is applying existing software/virtual infrastructure in new sector/fields				
Your project is applying existing methodologies/design process in new sectors/fields				
You project is developing new standards				
Your project is improving existing standards				
You project is merging two or more already existing services/virtual infrastructures/standards/etc.				

The projects' representatives noted that it isn't possible to respond to this question for the project as a whole: the projects should be split in different parts/components and the question should be asked for each one of these. This requirement goes against another requirement: that of keeping the questionnaire of reasonable length and at a tolerable level of complexity. The solution we propose is to ask the projects to select a maximum of three components that are more innovative from their point of view and/or that represent the focus of their project and take in consideration only those components.

Moreover, a new category will be added as suggested: "Development of new languages".

4.3.3 Section D "Economic Impact"

21. Which of the following benefits, if any, will your project produce (more than one answer allowed)?
    a. Improve service/product/system quality
    b. Reach more users
    c. Lower entry barriers in a specific economic sector
    d. Improve the access to large amounts of data
    e. Improve the possibility to exploit large amounts of data (more efficient data analysis)
    f. More efficient data exchange
    g. Improve scalability
    h. Expand the range and the typologies of research activities and service made available to research communities
    i. Cost reductions
    j. Reduce the time needed to delivery a service (reduce the time-to-market period)
    k. Reduce the time needed to deploy a service over the network/the architecture
    l. Keeping peace with competitors/with the research in the field
    m. Ability to better target users/beneficiaries' needs
    n. Increment the optimisation of resources/improve efficiency
    o. Other (please specify ……)

The focus group sessions were used to simulate the process of answering the questionnaire. The researchers wanted to verify that the list proposed was complete and exhaustive and, if not, ask for new items to be added. Generally speaking, the participants had no problem in answering the question above, and judged it to be complete. The more common answers were "Improved service/products/system quality", "More users reached", "Improved possibility to exploit large amount of data (more efficient data analysis)", and "Improved scalability".

One participant pointed out that the item "To improve the access to large amounts of data" does not directly imply a real economic impact, and suggested to modify the item to "To distil business information out of large amounts of data". The researchers thought that this second option, alone, was not clear enough and opted for a double item as "Improve the access to large amounts of data / improve the possibility to exploit large amounts of data".

4.3.4 Section E "Social Impacts"

32. Will your project have an impact on the following sectors? (up to three answers allowed)
    a. eHealth
    b. eGovernment
    c. eLearning
    d. eLiteracy
    e. eInfrastructure
    f. eInclusion
    g. eEnvironment
    h. ICT base diffusion of culture, cultural diversity and cultural heritage
    i. ICT support to efficient transport and better mobility
    j. Other (please specify……)

Some projects representatives highlighted that some projects do not provide direct solutions for end-users or businesses in some specific sectors, but develop a platform that "enables solutions" for these sectors. The effective impact at social level will depend on which services will be created and developed further on thanks to the projects' results. A supplementary option "The project does not directly provide/create a solution for these sectors, but it **enables** the creation of various solutions/services" will be added to Question 32 to take into consideration this aspect together with the more general option "It will have impact on the ICT industry in general", which was also suggested by the participant.

As a point of reference for the social impact, the researchers looked at the Social agenda 2020 that set out precise goals for socio-technical solutions development at European level. Of course we do not expect a single project to solve these general issues, but we are interested in seeing to what extent these European goals are addressed by the projects. Questions number 34 and 35 are looking for this kind of information.

34. Here below you find some of the goals of the European Digital Agenda 2020. Please assign a score from 1 to 5 describing the policy goal more related to your project (1 is no related and 5 is very related). In other words, how will your project work towards the fulfilment of the Agenda goals?

Social agenda 2020	**Value**				
Creation of content and borderless services	1	2	3	4	5
Creation of a united digital market	1	2	3	4	5
Increase ICT related Services demand	1	2	3	4	5
Basic broadband for all	1	2	3	4	5
Fast and ultra-fast broadband for all	1	2	3	4	5
Promote better use of standards	1	2	3	4	5
Make the network more secure/more trustworthy	1	2	3	4	5
Combating cybercrime	1	2	3	4	5
Digitalisation of European cinema	1	2	3	4	5
Increase the interoperability of Smart Grids at European level	1	2	3	4	5
Increase interoperability at a more general level	1	2	3	4	5
Increment eCommerce	1	2	3	4	5

When using the focus group sessions to simulate the answering of this question, most of the participants considered that their projects are related to the goal “Increase interoperability at a more general level” and “Increase the demand for ICT-related Services”.

An other possible answer will be, then, added to Question 35 to include social networks and democratisation processes. These two possible social impacts were mentioned by some projects’ representatives during the focus group.

35. To what extend can you agree on the following sentences?

Your project will:	**Strongly disagree**	**Disagree**	**Agree**	**Strongly agree**
Improve the way in which users communicate and collaborate with each other (the quality of the collaboration)				
Improve trust among your target users				
Improve citizens’ trust in the Public administration				
Improve citizens’ trust in technology				
Support the network creation/collaboration of enterprises in the sector				
Support network creation/collaboration among citizens				
Support network creation/collaboration in academia				
Enlarge already-existing networks				
Make information/knowledge available to a larger number of interested users				
Support knowledge transfer between universities/research centres and industry/SMEs				
Improve the quality of the way in which our users work on a daily base				
Reduce the work of the users (more operations will be automated)				
Allow your users to do their every-day work more quickly				
Make highly innovative services available to citizens				
Develop services that will positively impact on citizens’ everyday life				
Make available high-quality knowledge/ information to citizens				

4.3.5 Section G "Technological Dimension of the Project".

SEQUOIA intends to base the technological part of the questionnaire on ISO 9126 and the focus group session was used to check if the projects are familiar with this standard. All the participants confirmed that they know ISO 9126 and some of them already use it as a quality standard. This makes the researchers confident about he use of ISO-related metrics, something that at the time of the focus group sessions was only a possible solution among others for investigating the quality of the ICT solutions of the projects in terms of user benefits.

51. Are you familiar with ISO 9126? Yes No

Once it was decided that the ISO metrics where a feasible solution for the technological part of the questionnaire, we asked the projects to weight each variable (see table below). We were interested to see which variables were more important for the projects in order to assign different weights to future answers without asking each project to evaluate the relevance of the single variables when completing the questionnaire.

In general, *functionality*, and especially *suitability, interoperability* and *functionality compliance*, was considered as more important than r*eliability*. Unfortunately there was not enough time to go through all the variables; for this reason we are planning to rely on the internal competence of the SEQUOIA partnership to assign the weight to the remaining variables.

5. CONCLUSION

The participants were more or less familiar with socio-economic impact assessment, depending on their projects' activities and methodology, but they all demonstrated an interest

52. How would you assess your project's outputs in terms of the following characteristics (please assign a score from 1 to 5, where 1 is the minimum score and 5 is the maximum score):

Characheristic	Sub-characteristic	Rate
External Quality		
Functionality		
	Suitability	4,5,5,5 (19)
	Accuracy	4,3,3,5 (15)
	Interoperability	5,4,4,5 (18)
	Security	5,1,2,5 (13)
	Functionality Compliance	5,5,5,4 (19)
Reliability		
	Maturity	3,3,3,3 (12)
	Fault Tolerance	3,3,2,3 (11)
	Recoverability	3,3,2,4 (12)
	Reliability Compliance	3,3,3,4 (13)
Usability		
	Understandability	5
	Learnability	5
	Operability	5
	Attractiveness	5
	Usability Compliance	5
Efficiency		
	Time Behaviour	
	Resource Utilisation	
	Efficiency Compliance	
Maintainability		
	Analysability	
	Changeability	
	Stability	
	Testability	
	Maintainability Compliance	
Portability		
	Adaptability	
	Installability	
	Co-Existence	
	Replaceability	
	Portability Compliance	
Quality in Use		
Effectiveness		
Productivity		
Satisfaction		
Safety		

in SEQUOIA activities. They expressed their willingness to work with SEQUOIA on the socio-economic impact assessment of their projects. The questions analysed during the five focus group sessions did not trouble them and they seemed able to give an answer to all of them.

During one of the focus group sessions, some projects suggested to use potential users as a source of extra data, sending them a part of the questionnaire to obtain their opinion on the project's impact. This could be a very interesting idea, but it would require time and resources the SEQUOIA project doesn't have, at least, at the present stage. The possibility to engage users' representatives during the forthcoming SEQUOIA public events and workshops, and to ask them for feedback about the projects under analysis will be considered by the SEQUOIA team.

APPENDIX - SEQUOIA'S SECOND QUESTIONNAIRE

SEQUOIA's Second Questionnaire: Towards a Self-Assessment Model for Socio-Economic Impact Analysis

SEQUOIA is a support action co-financed by the European Commission under FP7. The project started in May 2010 and will least two years.

SEQUOIA aims at developing an effective methodology for the socio-economic impact assessment of the Software as a Service and Internet of Services (SaaS and IoS) projects. By fulfilling the present questionnaire you will help SEQUOIA researchers fine-tune the methodology; at the same time you will start working on the self-assessment of your project. The SEQUOIA researchers, in fact, will use the data you will provide for assessing your project and will come back to you with suggestions about how to improve your monitoring process and about ways of maximising your impact.

For more information about the SEQUOIA Project and its action plan, please visit our website: http://www.sequoiaproject.eu/

This questionnaire is organized in the following 8 sections:

Please notice that the information you will provide is going to be treated anonymously, and your contact details are going to be used only by the SEQUOIA researchers in order to keep in touch with you in case more information was needed.

In case you need any support, please contact Dr. Antonella Passani using the following email address a.passani@t-6.it

Thank you very much for your cooperation!!!!

The SEQUOIA Consortium

Section A - Contact information

Name and Surname of the respondent

……

Project name and acronym

……

Role of the respondent in the project

……

E-mail address

……

Phone number (only if you agree to be contacted by phone by SEQUOIA's researchers)

……

Skype contact (only if you agree to be contacted by SEQUOIA's researchers using skype)

……

Section B - Knowing more about your project

1. What is the "problem" your project is expected to solve (or help to solve)?[1]

……
……
……
……

2. Please synthetically present your project process (i.e. the SEQUOIA project can be divided into four steps: background research/methodology development/methodology test/socio-economic impact assessment).

……
……
……

3. Considering the process you just described, at which stage is your project right now?

……

4. Thinking about your project's users[2], please estimate the relevance of each user category by assigning to it a value from 1 to 5, where 1 is not relevant and 5 is very relevant:

USERS' CATEGORIES	Value				
Developers and software engineers	1	2	3	4	5
Service providers	1	2	3	4	5
Infrastructure providers and TELCO operators	1	2	3	4	5
Researchers and research communities	1	2	3	4	5
Industry and SMEs	1	2	3	4	5
Citizens/consumers/end-users	1	2	3	4	5
Project partners are project's main users	1	2	3	4	5
Other (please specify……)	1	2	3	4	5

5. For the categories of users you just selected, are they internal or external to the project partnership?

USERS' CATEGORIES	**Internal** to the project partnership	**External** to the project partnership	**Both internal and external** to the project partnership
Developers and software engineers			
Service providers			
Infrastructure providers and			

[1] Here, we are not asking about your project's objectives; we are looking for your project's "**reason why**", to the social, economic, technological issues that it wants to address and overcome.

[2] With the expression "**project users**" we refer to the concrete users of the service/product at the end of your project and not to the users you may engage for project's use cases or pilots.

TELCO operators			
Researchers and research communities			
Industry and SMEs			
Citizens/consumers/end-users			
Other (please specify……)			

6. Please describe, for each user category that scored more than 3 in question n. 4, the main activities it will be possible for them to perform by using your project's outputs. Additionally, please indicate the expected impact of your project on the selected categories. (For example: SEQUOIA users are: SaaS and IoS projects. They will be able to self-assess their socio-economic impact. The impact of SEQUOIA on those projects is that of improving their socio-economic impact).

USER CATEGORIES	Main activities	Expected impact
Developers and software engineers		
Service providers		
Infrastructure providers and TELCO operators		
Researchers and research communities		
Industry and SMEs		
Citizens/consumers/end-users		
Other (please specify……)		

7. Does your project have a territorial dimension?

Yes	
No	

a. If you answered "yes" to the previous question, at which territorial level will your project have an impact? (More than one answer is allowed)

Regional level (one or more regions will benefit from the project)	
National level (one or more nations will benefit from the project)	
European (the project has a specific European dimension)	
International (beyond EU boundaries)	

8. How many persons worked/are working on your project?

Less than 20	
21 to 40	
41 to 60	
61 to 100	
More than 100	

9. Do you use self–assessment methodologies in order to evaluate the socio-economic impact of your project?

Yes	
No	

10. If yes, can you please share with the SEQUOIA researchers your methods and/or possible evaluation outputs ?

Yes	
No	

Section C - Base-case scenario identification

The **base-case** is the scenario before the project starts. It is not just the state-of-the-art, but rather the good(s) -- i.e. software -- or service(s), similar or alternative, on the basis of which improvements brought by the results of the project' output(s) can be demonstrated. Of course, each project is the sum of several parts/components. Please, in answering this section's questions, consider only the three components that you think most innovative and/or promising in term of socio-economic impact.

11. Please provide a definition or a brief description of the three components you will consider in the table below.

Name of the component	Short description of the component

12. To what extent can you agree with the following sentences?

	Strongly disagree	Disagree	Agree	Strongly agree	Component
Your project is developing a new software/virtual infrastructure					
Your project is improving existing software/ virtual infrastructure					
Your project is developing new methodologies/design processes					
Your project is improving existing methodologies/ design processes					
Your project is applying existing software/virtual infrastructure in new sectors/fields					
Your project is applying existing methodologies/design process in new sectors/fields					
You project is developing new standards					
Your project is improving existing standards					
You project is merging two or more already existing services/virtual infrastructures/standards/etc.					
You project is developing new language/s					
You project is improving					

existing language/s					
Other (please specify….)					

13. Do you know any other projects/commercial initiatives whose objectives are similar to yours?

Yes	
No	

a) If yes, please provide a brief description of such initiatives

……
……
……..

14. Do you know any other projects/commercial initiatives whose technical solutions are similar to yours?

Yes	
No	

a) If yes, please provide a brief description of such initiatives

……
……

15. To the best of your knowledge, what are the main improvements (advantages) of your project with respect to the projects/initiatives you listed in the previous questions? Please describe how your project will make a difference in the current scenario.

……
……

16. Based on the previous answer, please describe a scenario usable as baseline?

……

17. Did/will your project perform any use cases/pilots?

None	
1 to 3	
4 to 6	
7 to 10	

18. If you performed or plan to perform any use cases/pilots, which sector will it engage with?

Environment/natural hazard forecasting/natural risk	

management	
Mathematics and natural science	
Transportation and logistics	
Telecommunications/interoperability and mobile services	
eHealth	
eGovernement	
eLearning	
eLiteracy	
eInfrastructure	
Other 1 (please specify)……	
Other 2 (please specify)……	

19. Are you able to identify at least one use case[3] in which substantial (operational) differences are likely to emerge between your project and the base-case scenario?

……

[3] **Activities**: a set of operations organized and finalized. In organizational language, operations are the most atomic item, the first level of synthesis is the activities, the set of activities is a process. The activities are carried out for the competition between individuals, working methods and technologies.
Process: is a set of activities. In computer science, for example, the process is the entity used by the operating system to represent a specific execution of a program. It is therefore a dynamic entity, which depends on the data that are processed, and the operations performed on them. The process is thus characterized not only by the executable code but includes all the information that define the state as the memory, threads, file descriptors and peripherals in use.
Production: is the set of operations through which goods, services and all the wealth being created, processed or modified by the use of resources, tangible or intangible (eg, human energy), so as to make them useful or more useful that is appropriate to meet the needs. Can consist of one or more processes.
A **use-case** can be an activity, a process or complete production
(references: http://it.wikipedia.org/wiki/Processo_(informatica) and http://it.wikipedia.org/wiki/Processo_aziendale)

Section D - Economic Impact

20. Which of the following benefits, if any, will your project produce (more than one answer allowed)?

Improve service/product/system quality	
Reach more users	
Lower entry barriers in a specific economic sector	
Improve the access to large amounts of data. Improve the possibility to exploit large amounts of data (more efficient data analysis)	
More efficient data exchange	
Improve scalability	
Expand the range and the typologies of research activities and services made available to research communities	
Cost reductions	
Reduce the time needed to deliver a service (reduce the time-to-market period)	
Reduce the time needed to deploy a service over the network/the architecture	
Keeping pace with competitors/with the research in the field	
Ability to better target users/beneficiaries' needs	
Increment the optimisation of resources/improve efficiency	
Other (please specify……)	

21. If you selected "cost reduction" in the previous question, please specify what kind of cost reduction you expect and the percentage of cost saving you expect to achieve (please calculate the average cost reduction by comparing a user utilising your project's outputs and a user utilising already existing solutions)

Cost reduction typologies	**Percentage of saving**
Reduce hardware costs	
Reduce connectivity costs	
Reduce maintenance cost	
Lower software development costs	
Cost reduction due to increment in software re-usability	
Cost reduction due to improvement of test-deploy-rework cycle management	
Cost reduction due to less process break/system failure/etc	
Reduction of cost related to compliance with regulatory/legal-business legislation/policies constraints	
Other1 (Please specify……)	
Other2 (Please specify……)	

22. Will your project lead to the commercial exploitation of its outputs?

Yes	
No	

23. Have you drafted a Business Plan (or are you going to write it)?

Yes	
No	

24. If you answered “yes” to the previous two questions, please describe the current trends in the market(s) of your project output(s) in terms of:

Your global market value	
The potential market share achievable	
Main competitors	
The number of potential users	

25. If you answered “yes” to question n.23, please select the actual number of users and the envisaged number of users for each typology of users three years after the and of the project.

USERS’ CATEGORIES	Users today	Users in 3 years time
Developers and software engineers	Up to 100/ 100 – 500 /500-2000/more than 2000	Up to 100/ 100 – 500 /500-2000/more than 2000
Service providers	Up to 100/ 100 – 500 /500-2000/more than 2000	Up to 100/ 100 – 500 /500-2000/more than 2000
Infrastructure providers and TELCO operators	Up to 100/ 100 – 500 /500-2000/more than 2000	Up to 100/ 100 – 500 /500-2000/more than 2000
Researchers and research communities	Up to 100/ 100 – 500 /500-2000/more than 2000	Up to 100/ 100 – 500 /500-2000/more than 2000
Industry and SMEs	Up to 100/ 100 – 500 /500-2000/more than 2000	Up to 100/ 100 – 500 /500-2000/more than 2000
Citizens/consumers/end-users	Up to 100/ 100 – 500 /500-2000/more than 2000	Up to 100/ 100 – 500 /500-2000/more than 2000
Other (please specify……)	Up to 100/ 100 – 500 /500-2000/more than 2000	Up to 100/ 100 – 500 /500-2000/more than 2000

26. If you are aiming for commercial exploitation, what will be the number of persons working on the commercial exploitation of your project’s outputs? (you can consider both employees working on a new commercial reality such as a spin-off or paid persons responsible for the software/platform updating, maintenance and running) ?

Up to 50	

From 51 to 100	
From 101 to 500	
More than 500	
More than 1 million	

27. Which copyright/license approach is your project based on?

Proprietary Software	
Free Software (e.g. Freeware)	
Open Software:	
○ Apache License	
○ BSD License	
○ GNU License	
○ MIT License	
○ Mozilla Public License 1.1 (MPL)	
○ Common Development And Distribution License	
○ Common Public License	
○ EUPL (European Union Public Licence)	
○ Other (please specifiy: ……)	

28. With reference to sustainability, please indicate:

Private investment attracted by the project (in Euros) (besides the starting funding)	
Public investment attracted by the project (in Euros) (besides the starting funding)	
N. of new commercial collaborations arising from the project	
N. of new partnership agreements with other universities, research centres, enterprises or public bodies	
N. of new projects proposals submitted thanks to the participation in the project	
N. of patents, IPRs, Trademarks,...	

29. What will be your (potential) financial revenues?

Revenue	Euro
Incoming from solution sale	
Fees (and pay per use approach)	
Royalties	
Other monetary returns (please specify: …….)	

30. In your project, how much did/will you spent for:

Categories of costs	Cost
Personnel (not counting personnel costs related to management and to dissemination)	
Training	
Use case running	
Subcontracting	
Travel	
Dissemination costs (personnel, plus other costs)	

31. Thinking about economic impact, when do you think your project will realise a substantial impact?

Already during the project life-time	
At the end of the project	
1 year after the project end	
3 years after the project end	
5 years after the project end	
More than 5 years after the project end	

Section E - Scientific impact

32. Please fill the table below indicating the topics you targeted in your scientific production and, for each topic, the number of scientific publications produced by your project up to now (peer-reviewed articles, deliverables, books) Please add as many rows as necessary.

Topic	Journal articles	Articles presented at conferences or published in proceedings	Books	Chapters of books	Scientific [5]Deliverables

33. Have you performed any of the following activities? (If you did not perform those activities insert "zero" in the appropriate cell)

N. of knowledge exchange initiatives	
N. of new collaboration links established thanks to the participation in the project (in terms of exchange of information, exchange of resources, joint teaching courses, etc)	
N. of scientific conferences and seminars in which your project has been presented	

34. In relation to tertiary education and potential collaboration between universities and industry, please fill the following table:

N. of PhD scholarships sponsored by your project	
N. of post-doctoral scholarships sponsored by your project	
N. of new contracts and work-collaboration generated by agreement with enterprises and third parties	
N. of spin-offs	
Other…….	

35. How many new training modules, online courses and seminars did/will your project develop, if any?

0 to 10	
11 to 20	
21 to 30	
31 to 50	
More than 50	

[5] With the term "scientifi deliverables" we indicate deliverable that adrees that main topic of your project from a scientific/academic point of view. Consequently, please do not conside management, dissemination, exploitation deliverables and similar

a. Please provide a list of most relevant training modules, online courses, seminar titles

……..
……..

36. Thinking about scientific impact, when do you think your project will realise a substantial impact?

Already during the project life-time	
At the end of the project	
1 year after the project end	
3 years after the project end	
5 years after the project end	
More than 5 years after the project end	

Section F - Social impact

37. Will your project have an impact on the following sectors? (up to three answers allowed)

eHealth	
eGovernment	
eLearning	
eLiteracy	
eInfrastructure	
eInclusion	
eEnvironment	
ICT based diffusion of culture, cultural diversity and cultural heritage	
ICT support to efficient transport and better mobility	
ICT industry in general	
The project does not directly provide/create a solution for these sectors, but it **enables** the creation of various solutions.	
Other (please specify……)	

38. For the three sectors you selected, can you please provide brief examples of impacts?

Sector	Impact

39. Here below you find some of the goals of the European Digital Agenda 2020. Please assign a score from 1 to 5 describing the policy goal more related to your project (1 is no related and 5 is very related). In other words, how will your project work towards the fulfilment of the Agenda goals?

Social agenda 2020	Value				
Creation of content and borderless services	1	2	3	4	5
Allow SMEs to enter new markets by lowering entry barriers for SMEs /lowering resource costs					
Creation of a united digital market	1	2	3	4	5
Increase ICT related Services demand	1	2	3	4	5
Basic broadband for all	1	2	3	4	5
Fast and ultra-fast broadband for all	1	2	3	4	5
Promote better use of standards	1	2	3	4	5
Make the network more secure/more trustworthy	1	2	3	4	5
Combating cybercrime	1	2	3	4	5
Digitalisation of European cinema	1	2	3	4	5
Increase the interoperability of Smart Grids at European level	1	2	3	4	5
Increase interoperability at a more general level	1	2	3	4	5
Increment eCommerce	1	2	3	4	5

40. To what extent can you agree on the following sentences?

Your project will:	**Strongly disagree**	**Disagree**	**Agree**	**Strongly agree**
Improve the way in which users communicate and collaborate with each other (the quality of the collaboration)/ facilitate social interaction				
Improve trust among your target users				
Improve citizens' trust in Public administration				
Improve citizens' trust in ICT and the Internet				
Support network creation/ collaboration of enterprises in the sector				
Support network creation/collaboration among citizens				
Support network creation/collaboration in academia				
Enlarge already-existing networks				
Make information/knowledge available to a larger number of interested users				
Support knowledge transfer between universities/research centres and industry/SMEs				
Provide solutions for working efficiently and conveniently for all sizes of firms				
Reduce the work of the users (more operations will be automated)				
Allow your users to do their every-day work more quickly				
Make highly innovative services available to citizens				
Develop services that will positively impact on citizens' everyday life				
Make available high-quality knowledge/information to citizens				
Reduce the digital divide				
Support democratic processes/democratisation				
Positively impact education				
Enable diversity and individual expression				
Flexibility for personalisation on a large scale/high interface adaptability				

41. Will your project have an impact on employment rate of your territory?

Yes	
No	
I don't know	

42. If yes, to what extent?

The project will create new professionals	
The project will make SMEs/enterprises more competitive enabling them to look for more employees	
The project will foster the creation of new enterprises	
Other (please specify) ……..	

43. Can you quantify the new work positions generated by your project?

None	
1-20	
21-50	
51-100	
101-200	
More that 200	

44. Thinking about social impact, when do you think your project will realise a substantial impact?

Already during the project life-time	
At the end of the project	
1 year after the project end	
3 years after the project end	
5 years after the project end	
More than 5 years after the project end	

Section G - Technological dimension of the project

45. Which is the most innovative aspect of your project from a technical point of view?

……..

46. Is your project based or related to (multiple answers allowed):

Cloud	
Virtualization	
Mash-up	
SOA	
Semantics	
Web 2.0	
Mobile	
Content-Based services	
Grid	
Context-aware services	

47. Are your project's outputs based on (or strictly related with) specific external products (With the term "products" we intend any relevant software, used but not developed in the project, such as programming frameworks, application/web servers, security suites, workflow engines etc) ?

Yes	
No	

a. If you answered "yes" to the previous question, please indicate for 5 of them the level of maturity of the product and type of licence:

Product Name	**Software company**	**Release** (unstable, stable, General availability, not supported any more)	***Software licence:*** *(Proprietary, free/open)*

48. Please select the 3 software languages your project is using the most

Java	
C	
C++	
Python	
PHP	
C#	
(Visual) Basic	
Objective-C	
JavaScript	
Perl	
Ruby	
Other (please specify: ……)	

49. Which standards are you conforming with (e.g. security standards, accessibility, communication, etc.) ?

……..

50. How would you assess your project's outputs in terms of the following characteristics? Probably your project will produce more than one technological output, in completing the table below please consider the most innovative outputs. (please assign a score from 1 to 10, where 1 is the minimum score and 10 is the maximum score):

Characteristic	Sub-characteristic	Score (from 1 to 10)
External Quality		
Functionality		
	Suitability	
	Accuracy	
	Interoperability	
	Security	
	Functionality Compliance	
Reliability		
	Maturity	
	Fault Tolerance	
	Recoverability	
	Reliability Compliance	
Usability		
	Understandability	
	Learnability	
	Operability	
	Attractiveness	
	Usability Compliance	
Efficiency		
	Time Behaviour	
	Resource Utilisation	
	Efficiency Compliance	
Maintainability		
	Analysability	
	Changeability	
	Stability	
	Testability	
	Maintainability Compliance	
Portability		

	Adaptability	
	Installability	
	Co-Existence	
	Replaceability	
	Portability Compliance	
Quality in Use		
	Effectiveness	
	Productivity	
	Satisfaction	
	Safety	

51. From a technological point of view which of the following factors, if any, could limit or encumber your project (or did in the past)? (please assign a score from 1 to 5, where 1 is the minimum risk score and 5 is the maximum score)

CATEGORIES	Value				
Technologies could be immature and instable	1	2	3	4	5
Project outcomes could be not so innovative at the end of the project	1	2	3	4	5
Difficult to interoperate with other systems	1	2	3	4	5
Dependence with other products that may not be supported in the future any more	1	2	3	4	5
Presence of strong concurrent technologies	1	2	3	4	5
Security aspects	1	2	3	4	5
Privacy aspects	1	2	3	4	5
Incompatibility with customers' or suppliers' information systems	1	2	3	4	5
Insufficient level of customer demand	1	2	3	4	5
Uncertainty concerning legal/regulatory framework	1	2	3	4	5
Development cost higher than expected	1	2	3	4	5
High cost of maintenance activities	1	2	3	4	5
Lack of skills regarding the technologies to be employed	1	2	3	4	5
Others (please specify)……	1	2	3	4	5

Section H – Environmental impact

52. Will your project have a positive impact on the environment?

Yes	
No	

53. If you answered yes to the previous question, please indicate:

Categories of costs	**Saving/reduction in percentage**
Savings in kWh (kilowatt-hour)	
Savings in consuming and selling off paper	
Savings in consuming and selling off films/CD/DVD/etc...	
Savings in storage-related costs	
Reduction of travels	
Reduction of technological waste	

54. Thinking about environmental impact, when do you think your project will realise a substantial impact?

Already during the project life-time	
At the end of the project	
1 year after the project end	
3 years after the project end	
5 years after the project end	
More than 5 years after the project end	