PROPOSAL

Proposal full title:	SEEDs – Domain focused learning model for Small and Medium Enterprises based on context-aware semantic platform
Proposal acronym:	SEEDs
Type of funding scheme:	Collaborative Project (CP) - Large-scale integrating project (IP)
Work programme topics addressed:	c) Advanced solutions for fast and flexible deployment of learning opportunities at the workplace (targeting, in particular, SMEs): enable faster, situated, just-in-time up-/reskilling, and lower the costs/efforts of developing and maintaining quality instructional material to be used in continuing education and training processes. Solutions should aim at creating a networking environment that fosters cross-organizational learning and that will help SMEs to adopt and sustain effective learning attitudes. Proposals must include research on novel business training models, and on how to overcome organizational, inter-organizational and individual barriers to widespread adoption of the developed technologies. This target outcome focuses specifically on the needs of SMEs in sectors without an established tradition in the adoption of learning solutions and facing innovation and competitiveness challenges deriving from efficiency needs or new processes/products development. Proposals should include SMEs and relevant professional associations. SMEs shall also be the final users of the solutions, and be actively involved in clearly justified, representative and sizeable pilots. (IP)
Date of preparation:	17.01.2012

List of participants:

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Project Summary

The primary objective of the SEEDs project is to develop a fully integrated Learning Management and distribution system which will provide SMEs with the opportunity to distribute, exchange and re-use knowledge within the context of an domain-specific ontology-based learning model, and helps SMEs to obtain relevant practical knowledge to their business work and which can be quickly absorbed and put to use.

Traditional TEL models are facing two major issues: the increasing problem of information overload, and the web 2.0 challenges to obsolete TEL tools. Based on their former investigations and experiences in the field of networked learning, eLearning content creation/delivery and semantic web based developments, the members of the consortium strongly believe that increasing the power of the cutting-edge technology in itself – without integrating human-to-human interaction into the model – will not provide SMEs with usable learning opportunities.

The project is a joint venture of five universities, four research establishments, and five SMEs - experts in psychology, andragogy, knowledge management, ontology engineering, semantic-web services and software engineering TEL models and solutions, e-learning design and content creation and supporting experience for large-scale pilots.

The exploitation aims of the novel business trainings based on the SEEDs model correlate with half of the principles enlisted by the ‘Small Business Act’ such as giving wide access information thriving entrepreneurship, boosting digital skills of SMEs, promoting innovation and sustainable solutions, and also increase B2B connections on a growing market.

Three pilots help to test the SEEDs model in real-life situations, using three different iterations for different domains: a pilot with sector-specific knowledge management; an open knowledge platform for adapting IT resources for digital economy, and a B2B platform for eco-innovations.

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1. Scientific and/or technical quality, relevant to the topics addressed by the call

1.1. Concept and objectives

The aim of SEEDs project is to radically improve the processes of condensing knowledge "vapor" (knowledge in the "air") in surrounding contexts within a network of partner SMEs thereby building a large collaborative environment in which experts in the field, professional e-learning providers and SMEs can distribute, exchange, and reuse knowledge items, and in which the codification of experiential knowledge can be promoted.

By automatically recognizing the actual and specific demands for situated learning actions, via context recognition technologies, SEEDs will provide with context-aware, just in time answers for use at the actual workplaces where the need for learning is raised. Moreover, it automatically deploys and pro-actively delivers the ‘semantically best fitting’ learning opportunities for the workers in an extremely cost-effective way.

Based on “long tail distribution” theory the SEEDs model works on large-scale semantic databases of small quanta of learning materials in a continuously, pro-actively expanding context-aware knowledge pool from which the pieces can be pulled exactly when they are needed, without any further time and effort spent on search/selection/purchase/download/etc. of mainstream course materials. As smaller micro-chunks of learning materials are created and placed automatically into a domain context the actual costs are reduced significantly. The cost effectiveness is maximized as the whole collaborative-networked environment promotes transferring experiential knowledge into sharable micro-chunks by establishing a situation-aware optimized business model.

The objectives of SEEDs project are the following:

- To introduce advanced technical solutions that will foster the creation of learning opportunities in SMEs
- To provide cost-efficient processes and tools for SMEs to create, use and reuse quality instructional material
- To foster the creation of a networked working environment that allows inter and intra-organizational learning
- To research and apply novel business training models that will overcome the typical barriers and become widely adopted
- To focus on business sectors where SMEs are not taking full advantage of the benefits of learning systems
- To conduct high-impact pilot events that will allow the aforementioned outcomes to be successfully disseminated

The primary objective of the SEEDs project is to develop a fully integrated Learning Management and distribution system which will provide SMEs with the opportunity to distribute, exchange and re-use knowledge within the context of an domain-specific ontology-based learning model, in addition to guiding users to relevant practical knowledge beneficial to their organization which can be quickly absorbed and put to use.

1.2. Progress beyond the state-of-the-art

Issue1. Increasing problem of information overload

The size of the Digital Universe – the data created, stored in digital form – grew by 62% from 2009 to 2010, and is expected to grow by an order of magnitude in the next ten years (*Gantz, J.; Reinsel, D. 2010*). One of the main challenges generated by the digital explosion is how to turn the „opaque and unstructured" content (estimated as 94% of the digital universe) into usable knowledge, i.e. how to find the precise, or immediately useful, information the SMEs need to keep track of the global market (*IDC, 2011*).

Among the economic actors SMEs are those who are especially at risk to information growth as accessing, storing and managing relevant information are becoming increasingly difficult tasks with their limited resources. SMEs are acknowledged as the drivers of the European economy (*Small Business Act*, 2008), so they should not only overcome these difficulties but they should be enabled to turn the changes into economic growth.

Information overload is one of the key problems of the modern era, also in the context of health and diseases. Processing capacity of the brain has been redundant in the early phases of human evolution but this redundancy has continuously disappeared as more and more information had been presented. Nowadays, in the era of web, the individuals' capacity seems to be not enough to process the vast amount of incoming information therefore protective mechanisms come into play to avoid breakdown, such as psychosomatic or somatising disorders and diseases. The suggested research aims are T1) to investigate how people cope with information overload, to what extent this phenomenon affects their lives and job performance, and what measures should be introduced to optimize individual information processing. In addition, elements of information processing would also be in the focus of the research program, such as T2) determination of actual and perceived various (2 or max 3 forms; i.e. video-recorded, reading only, and interactive) web-based interface learning: percent memory, problem solving ability, self-learning; and T3) intrinsic and extrinsic motivation of the users under different web-based or network based learning applications, factors that increase and/or decrease motivation, including format, ease of use, interdisciplinarity, cross--cultural interaction, flexibility, etc.

Issue2. Promise of Technology Enhanced Learning (TEL)

Particularly large gaps are highlighted between the offerings and the demands in cost-effective e-learning solutions for SMEs due to special characteristics distinguishing them from all other economic actors. In the highly competitive environment where both technology and business lifecycles are incredibly fast-moving, SMEs needs immediate, relevant and up-to-date answers to their working-process oriented problems. This has proven itself to be too difficult a demand for e-learning providers working with "traditional" instructional design, and following a project-based, time-consuming, expensive content creation and delivery methodology. (Hawke, 2002)

These statements sound simple enough, but issues underlying them lead to generic problems surrounding the implementation of the technology-enhanced learning.

It took more than twenty years (1980-2002) to get over the industry's initial enthusiasm (referred often as eLearning hype) and to arrive the current state of the doubt, regarding the belief that the educational multimedia or, some years later, the virtual learning environments (LMS, LCMS) would revolutionize the learning and teaching at all levels of the education from the elementary school trough the adult education.

Meanwhile the tremendous investments into the developments of large online databases of educational contents were going on, but we did not have to wait too long until the question was raised: "Why are these databases so unused, why are the children, the students of the higher education and even the teachers reluctant to enter the multimedia palace we have built just for them?" At that time the "Learning Object" was placed at the center of the content development, but transplantation of the concept from object-oriented software development, with the characteristics like the reusability, interoperability, flexibility, adaptability, self-consistency, interoperability, durability, did not work as well (surprisingly or not surprisingly?) in the pedagogical perspective as in the software development.

Undoubtedly the Web 2.0 phenomenon brought a radically new perspective into the eLearning debate by changing the information provider Web 1.0 into the platform of online collaboration, knowledge sharing. In eLearning 2.0 completely new, cooperative, self-organising form of learning became (at least technically) a reality.

The most frequently asked question nowadays is, that how far the newest TEL models will be able to utilize the potential of the Web 2.0? The synonyms used in the related studies are "Web 2.0 technology, Web 2.0 tools, Web 2.0 applications". Why is this important? The most of the models place the focus again on the technology, which has always been the wrong direction to go throughout eLearning history.

As the best practices in the field on technology-enhanced learning are based mostly on use cases, we take the liberty to mention here our own experience in order to explain the origin of the SEEDs vision.

Relevant here is the eLearning experience of the Leonardo project – *TENEGEN* - in which three partners of the present consortium (*CNR, PROMPT, DEKRA*) collaborated. Within the framework of the project a one-year long pilot course was conducted with the participation of 60 Hungarian teachers. The aim of the fully online course was to demonstrate the pedagogical potential of Web 2.0 for the teachers. The methodology elaborated by the consortium was a combination of the content-centered eLearning 1.0 model with the methods of eLearning 2.0 suggested by the learning theory of "connectivism". Some basic elements of the methodology were:

- Reliable basic learning content– available online but not placed in the center of the methodology,
- Carefully designed platform in which all technical components had a well-defined pedagogical aim,
- Competence based approach, self-assessment, learning-by-doing methodology applied overall the course,
- Continuous presence of the tutors,
- Quick human reflection on the issues raised during the learning process,
- Definite actions to facilitate the collaboration and the knowledge sharing,
- Integrating the user-generated content into the learning process (facilitating the canalization of the tacit knowledge into the flow),
- Rapid, just-in-time content creation (micro-chunks published in different formats) at the needs was arose.

The methodology was clearly confirmed by the validation reports. The most important lessons learned from the preliminary research and the related pilot have been that the way to change to learner-centered, demand-driven, proactive and adaptive models is a quantum movement away from mere technology towards complex systems able to represent a symbiosis of human/machine intelligence.

Based on their former investigations and experiences in the field of networked learning, eLearning content creation/delivery and semantic web based developments the members of the consortium strongly believe that increasing the power of the cutting-edge technology in itself – without integrating human-to-human interaction into the model – will not provide SMEs with usable learning opportunities.

The evidences behind the concept of the SEEDs vision includes the following statements:

- Technology-Enhanced-Learning (TEL) holds real potential for SMEs.
- Mainstream eLearning courses are not suitable for SMEs at present.
- No TEL model will work without digital representation of reliable knowledge, but the metadata-based learning-object model in itself has not proven to be a viable solution.
- The pieces of knowledge delivered via a network are becoming more and more popular (not only among the members of the Net Generation!), and it is now necessary to use them for learning as well.

- eLearning is based on knowledge-capture from the beginning, but it has been amazingly accelerated by the latest technology without spatial constraints. The potential of “network effect” (or positive snowball effect) and resource pooling can be and had to be utilized to reduce the training costs for small enterprises.
- To overcome information overload, SMEs need the capability to condense usable knowledge into learning opportunities for selected contexts. Semantic-Web based technology has now maturated enough to serve as a potential solution to capturing and retrieving contextual knowledge more quickly and accurately.
- User-generated content had established itself as a prevalent source of usable information & learning material which is frequently used by business organisations such as SMEs, as evidenced by the success of the open education resources movement and in mass collaboration projects such as wikipedia.
- In terms of sustainability, a well-organised system which allows users to develop and share their own content is far more sustainable than a system which relies upon material developed by one organization.

Most of the listed requirements/ideas turned up in the new paradigm of technology-enhanced learning, and the latest TEL models (like *Personal Learning Environment - PLE, Learning as a Network – LaaN*) implemented as integrated platforms of Web 2.0 tools and Mash-up technology, offered significantly novel, promising solutions for the formal education. The conceptual model of the Web 2.0 based collaborative platform was developed in the frame of some excellent R&D projects, like *PROLEARN* and *ROLE*, and the theoretical findings of the projects could be transformed directly into effective TEL solutions for the higher education.

As a result of this fact, that the PLE/PLEM models assume that the technically aggregated set of the digital information will be converted into usable knowledge by the learner or the community of learners, the circle of the potential target group is strongly restricted. These systems are not applicable – for example – to serve as effective learning opportunities for SMEs, suffering usually from the lack of time and human resources as well.

The identification of the problem initiated another direction in TEL research, towards semantic-web based solutions. One of the barriers slowing down the process has been the technical complexity of ontology management and semantic-web based services, but the research on semantic-based technology has been going on more than ten years long (e.g. in such project as IBROW closed in 1999), and more and more TEL researchers makes the forecast that semantic-web technology could improve the effectiveness of the networked based learning implementations. “Effective learning models need to take a personal, open, and knowledge-pull approach based on small, loosely joined pieces. The main obstacle of the knowledge-pull model lies in the information overflow on the Web. Therefore, we need overview-creating methods and tools, as well as intelligent search mechanisms for reliable access to information, services, communities, and expertise. Such

mechanisms are provided e.g., by the Semantic Web technology, and an overview-creating conceptual interface to the Semantic Web – called the Human Semantic Web" (*Naeve, A. et al.: Deliverable 5.3 of the Prolearn EU/FP6 Network of Excellence, IST 507310, 2005.*)

Several on-going, or recently finished EU funded/national R&D projects conceptualize new models for utilizing the strongly structured content (condensed knowledge) represented by RDF/OWL technology for learning and organizational knowledge building (e.g. *Neon-Lifecycle Support for Networked Ontologies, Kiwi: Collaborative Knowledge Management, powered by the Semantic Web, TARGET Transformative, Adaptive, Responsive and Engaging Environment, IntelLeo - Intelligent Learning Extended Organisation, ICKE 2.0: Integrated Collaboration and Knowledge Environment for SME based on Web 2.0 Technologies, Mature-Continuous Social Learning in Knowledge Networks*), but a comprehensive system with the ambition to harness the whole potential of semantic web technology in a TEL model for SMEs of has not been delivered yet.

A crucial aspect of our conception is that the elements of the former learning theories and TEL models must not be thrown away – especially which were clearly validated by the recent eLearning practice and/or which seem to be significantly applicable to match the needs of SMEs, like the models based on the learning theories of constructivism and connectivism. The consortium intends to build into its application all the achievements of the former successful R&D projects related to the conceptions.

In general, all the present TEL models can be classified under eLearning 1.0 or eLearning 2.0 paradigms, or represents the combination of the two concepts.

eLearning 1.0	eLearning 2.0
It represents the technologically supported variant of traditional knowledge distribution, the virtual extension of textbooks and classroom teaching. It is the digital version of traditional learning. Even in this environment, learning remained a passive process, managed from above or outside. Online courses, which copied traditional educational patterns, appeared on the World Wide Web in the form of replica modules and lessons. Standardized, time limited, linear courses were created, with tutors and formalized, automatically verifiable tasks.. Essentially, looking at eLearning 1.0, the formalized, centralized, bureaucratic world of education of industrialized societies was extended into a digital environment.	The role of informal information exchange, organised into networks and supported with electronic tools, becomes more and more significant. Learning becomes a continuous, lifelong system of networked activities, embedded into other activities. The motivation for gaining and contextualising information becomes stronger if searching and evaluation becomes a cooperative network activity. Learners can significantly improve the efficiency of their learning if they take part in a network, or virtual community dealing with the given subject. Thus the collective knowledge once again becomes a source of individual knowledge ("cycle of knowledge development"). As the number of cooperative activities increases, personal social networks become the scene of informal exchange of expertise, and

	"communities of practice" develop. Besides the questions of "how" and "what" to learn, we now have the question of "where to learn". Instead of consuming information that has been embedded in connections by institutions, learning may become an active creation of knowledge.

(Resource: Bessenyei, I..: Learning and teaching in the Information Society, in: Information Society, red.: R. Pintér, Gondolat, ÚjMandátum, 2007, Partner 9-PROMPT)

The recent eLearning 2.0 models are new efforts to represent of the complexity of learning, such as the 3P model, in which the personalisation, the participation, and knowledge-pull are placed into the focus. (*Chatti, 2010*)

While the principles of eLearning 2.0 were strongly underlined by the network theory (especially by the concept of scale-independent networks), and it was assumed that the all eLearning 1.0 based models – placing the content into the centre - became obsolete, in the next generation of eLearning, in eLearning 3.0 – addressing issues as digital overload – the importance of reliable learning content should not be questioned any more, and the research focus has been migrated towards the model/technology which would be able to manage semantically rich content in a virtual learning environment.

SEEDs research is part of these first steps, and it intends to be among the first solutions, and aims to give an answer to one of the biggest challenges Europe faces, namely, SEEDs wants to provide SMEs with usable and cost-effective learning opportunity based on an eLearning 3.0 paradigm.

Sprouts of SEEDs

As usual (as from the first occurrence of "hypertext" by Ted Nelson to its becoming reality), the sprout of our concept was described much earlier as the required technology was explored. (The discovery of such a historical prelude of a concept is a reward for the researcher.)

"Cyber **ba** is a place of interaction in a virtual world instead of real space and time, and it represents the combination phase. Here, the combination of new explicit knowledge throughout the organization as Cartesian logic dominates. The combination of explicit knowledge is most efficiently supported in collaborative environments utilizing information technology. The use of on-line networks, group-ware, documentations, and database has been growing rapidly over the last decade, enhancing this conversation process. "…**Ba**: is the platform for the "resource concentration" of the organisation's knowledge assets and the intellectualizing capabilities within the knowledge creation processes. **Ba** collects the applied knowledge of the area and integrates it. Thus **ba** can be thought as being built from a foundation of knowledge. (*Nonaka, I. & Takeuchi, H. (1995). The knowledge-creating company. New York: Oxford University Press*.)

The experts of the SEEDs consortium stated that the vision from 1995 can be established on the basis of present technology, and can be represented in an eLearning 3.0 model as an effective organizational and cross-organizational learning opportunity for SMEs.

SEEDs vision

In SEEDs model, the "learner" i.e. the SME employee/manager can ask a question by dropping it into the pool" (at the problem is raised) of an online platform community working in the same business field.

The "intelligent" agent (say IA1) searches for an answer in the semantic database, through a context-aware environment, built upon a domain specific ontology (DSO), or on the heap of the annotated user generated content (UGC) pushed into the pool by others – who may be an employee of another SME too. The "no answer" will be recognised by IA2, and forwarded to human experts/content providers present at the back-end of the system. The answers are the micro-chunks of knowledge (MCs) represented in standard digital format and connected to the triples of the ontology (DSO) (They may be, for instance, short video-clips presenting a working phase in living form). The access to the answers is speeded up – relative to the average searching time through the browsers – first because we are in a domain specific environment, and second because special semantic-web based services are working at the lower layers of the system. It can then happen that the system sends a quasi-intelligent answer to a problem, as the semantic-web layer is equipped with the ability of the inference.

We do not assume, that all the learning needs of SMEs can be formulated as ad-hoc questions. The process described above may develop special skills (e.g. a 21st century skill), it could help just-in-time in an undoubtedly cost-effective way, but it will not develop special professional skills needed for instance to carry out a special working process.

The SEEDs model will provide all the "traditional" eLearning services like competence-based online trainings with core content accompanied by tutors, by facilitators if needed, and all these services will be supported by special semantic-web based services (will not be detailed here). For example: if the core content of a course will be stored as a semantically rich format, it can be used not only for a course but also as a basis to answer questions if somebody needs only a short part of it.

Course design, design context

The studies investigating the training needs of small enterprises claim that there is a big gap between the supply-side and demand-side and significantly more attention has been paid to the development of tools, standards, software and infrastructure than to the existing training needs. On our vision the demand will be continuously captured by the intelligent agents and by the humans (content providers, knowledge brokers, trainers, facilitators) being present in the pool. A rapid and flexible content

creation methodology will be developed for providing the micro-chunks, and a special course design methodology will be applied to elaborate competence-based trainings by taking the special demand captured directly from the target group.

The Flexible Learning Spectrum of study modes

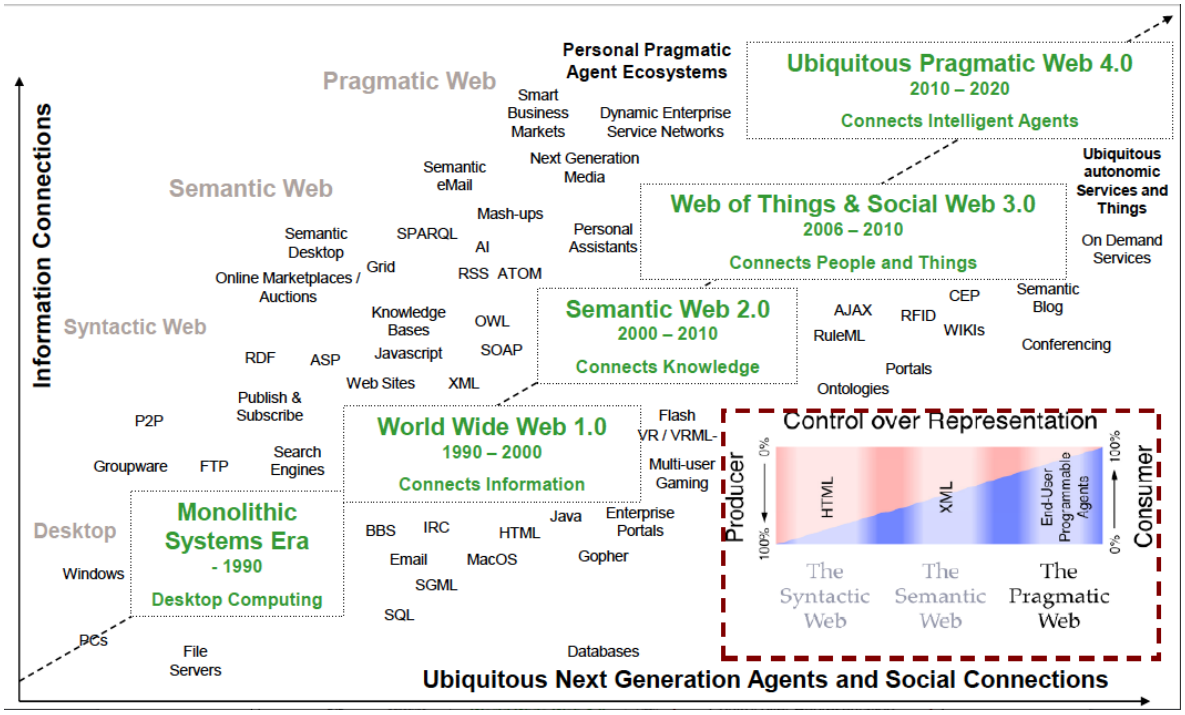
Resource: Smith, M., Currie K.: Designing for eLearning, Tenegen project, 2010 (Partner 5-CAPDM)

1. The diagram illustrates that there is actually a spectrum of learning and delivery options, and that while eLearning technologies can be applied to them all, the careful placement of the design on this spectrum is crucial to successful use. The more to the right on the spectrum we design for, the more effort must be put into designing and authoring course materials that can provide the missing face-to-face component.
2. SEEDs will form a technological flexible system in which several components (plug-ins) can be integrated depending on the special need of the learners. In our course design methodology the background technology has to serve the educational aims, every so called “course components" have to related to the pedagogical aim defined in the course design phase.
3. The consortium will develop a very strong course-design methodology based on selected standards that can support the rapid and flexible content creation at the most advanced level.

The former developed models (in a collaboration of CAPDM and PROMPT) will be expanded upon by the findings of further research, in order to incorporate all the possible aspects of the online learning methodology, namely the psychological, pedagogical, organisational aspects, of the ergonomic points of view, the aspects of the andragogy and knowledge management represented by the partnership.

Technological challenge of SEEDs

An overview of the available technology with a historical approach is presented on the next figure, with the remark, that the eLearning 1.0 model was based mostly on Web 1.0, while eLearning 2.0 is based on Web 2.0 technology. Thus, Web 3.0 will be a platform for eLearning 3.0.



(Resource: A. Paschke: Corporate Semantic Web. Xinnovations Workshop Freie Universität Berlin, 2011, Partner 13-FU)

In the SEEDs vision the ontology organically grows to accommodate the data needed for new business requirements. A crucial point of the technology behind the SEEDs model will be the possibility for “down-top” development of the domain ontology. This user-friendly ontology building is a critical part of the semantic-web research and of SEEDs model too. There are several solutions (open source applications) for collaborative development of the domain ontologies (like *knoodl, protégé, RuleML*, etc.), but to ensure the interoperability/usability between these, a deep comparative study has to be carried out.

Not all components of the SEEDs concept have been presented here, but at last in conclusion it should be noted that in the consortium we have expertise in all of the domains needed to the establish successful R&D activities in this field.

1.3. S/T methodology and associated work plan

The research interest of the SEEDs project is to answer these challenges with a synergic and cross-discipline approach, to combine the latest findings of the related disciplines both from social and technological sciences into a cost-effective sustainable learning model for SMEs.

I. Conceptual level research

- elaborate the **conceptual model of a dynamic, proactive knowledge pool** (**SEEDs Generic Model**) for SMEs based on a semantic database of domain-specific ontology, constructed, managed and expanded via automatic and semi-automatic processes.

- create an **organizational and cross-organizational knowledge flow model** (**SEEDs KFM**) working behind and inside the pool in which the reliability of the offered knowledge can be guaranteed by the synergy of the domain expertise and the work-oriented competences of co-workers. The aim of SEEDs KFM model is to shorten significantly the path from discovery (by researchers) to product delivery (by SMEs).

- **create the learning model of the knowledge pool (SEEDs LM)** based on the latest technology-enhanced learning theories. SEEDs LM will be empowered with the capabilities to utilize the collective intelligence of social networks and to channel the tacit knowledge from UGCs (User Generated Content) into the flow. In this phase of the investigation special emphasis will be placed on social, psychological and pedagogical perspectives, on selecting the very methods to transform the learning content centered delivery into semantic web based perspective, and promoting knowledge pull. Reusability, and three distinct levels of interoperability (semantic, organizational and technological) can be realized through the appropriate layers of the complex system.

- enhance the **SEEDs Kernel** to provide a framework for the complexity of learning processes by integrating contemporary “machine intelligence” realizable within present web technology. The interface between the learning and the domain-specific ontologies will be described in a conceptual model in order to achieve the best performance in individual and collaborative learning as well as knowledge sharing. An important innovation at this point is the integration of the problem-solving model (PSM), and the analysis and use of several qualification-requirement (QR) models. The different existing QR models (DACUM, PLA, EQF), form a sound basis for a knowledge-and-action (K+A) ontology particular to specific lines of business. Additionally they also form a basis for personal and organizational e-portfolios, which can be used to demonstrate existing knowledge and skills. The potential of portfolios can be compared against identified problems and ‘missing knowledge solutions’ called up from the micro-chunks with help of the recognition processes.

- elaborate a novel rapid, flexible content-creation scenario (SEEDs CCS), which makes possible the continuous production of large numbers of high-quality knowledge micro-chunks (“niches in the tail”) attached to the nodes of a domain ontology. In the **SEEDs CSS** the lifecycle of the knowledge pieces have to be described, with a strong focus on avoiding well-known deficiencies of some standards (like the learning-object approach in content creation) which carry a risk of loss of flexibility, while at the same time also focusing on efforts to achieve high levels of reusability.

II. Technological level research

Based on the outcomes of the conceptual-level research the consortium will carry out further investigation in order to define the main technological layers of SEEDs platform.

At the heart of SEEDs model is the continuous enrichment of the domain-specific ontology. At this point the consortium has to overcome the difficulties inherent with the semantic web, specifically it being too slow in moving from a vision to a reality: managing an ontology with the present technology is a very difficult, costly, time consuming process with rigid, inflexible products at the end. To build SEEDs conceptual models the consortium will at this level

- study the existing domain ontology solutions (such as the *Amphibian Anatomical Ontology, Europeana, WordNet*, etc.), collect the existing ontology managing applications and compare their capabilities against the requirements of the SEEDs models.
- elaborate an ontology managing/learning/enrichment process model (SEEDs OM) which promotes the collaborative work of human experts and SMEs and integrates the automatism (like unstructured, text mining, topic-specific spider) through special filtering, and aggregating algorithms.
- design the technological layers of the SEEDs' Kernel to establish the bridge between the online learning, and collaboration model, and the domain-specific ontology.

Validation of SEEDs model

The testing phase covers a comprehensive needs-analysis, the specification, logical and functional system design and the development of the prototypes of the SEEDs model as online networking application.

In this phase the theoretical outcomes gained from the interdisciplinary research will be implemented in three SEEDs prototypes in three selected domains. European-level, representative pilots will be carried out by involving a large numbers of SMEs, clusters of SMEs working in the selected fields, and other actors: experts to manage/expand the initial ontology, and e-learning providers to produce the knowledge micro-chunks being fed into the system when a need is recognized and announced by the agents.

The project is planned to last three years, of which the pilot will take one full year. This will not be a simple e-learning course as it should demonstrate a real collaboration within a learning community sustained by the business interest of the actors.

The three pilot projects help to test the SEEDs model in real-life situations, using three different iterations of the developed model. There is a pilot with sector-specific

knowledge management; an open knowledge platform for adapting IT resources for digital economy, and a B2B platform for eco-innovations.

The first pilot *'Sustainable agriculture'* is sector-specific, focusing on knowledge organisation for agriculture and rural development, mostly for SME interested in organic farming. The consortial members have a knowledge pool on this field, following two successful European projects.

The second pilot *'Digital economy'* aims to help SMEs in adapting more easily IT services, by better understanding of technological trends. Europe's goal is to reduce barriers to digital markets, build trust in online networks, ensure digital services are interoperable, and boost digital literacy. Digital skills enable traditional companies to become more competitive. The e-learning models assist in earlier adoption of cloud-based services, open-source applications, use of social media, outsourcing, crowdsourcing, B2B and marketing strategies. These are all easily accessible, very affordable, web-based tools and techniques which provide rapid ROI, but for most SME's there is a knowledge gap prohibiting their use. Having the right skills is central for SMEs across all sectors. Still there is a mismatch between the supply and demand for digital competencies. Reviewing and selecting appropriate software products, solutions and service providers is a hard task and often is detained by lack of basic e-skills and digital literacy. The SEEDs model help this by introducing niche solutions which derive step by step basic needs to complex solution.

The third pilot tries to promote *eco-innovations* to market participants by building a B2B platform. The expanding domain of the exploitation of eco-innovations has enormous reserves of SMEs both on the supply and demand side, but connecting them is encumbered by a huge knowledge gap. New green and sustainable solutions appear every day in energetics, architecture, waste management and recycling, material assessment, transportation, logistics and others, many of them may help SMEs not only in sustainable and responsible business development abut also in finding new economic ways to reduce expenditures, which is a real need for European SMEs beset by recession.

1.3.1. Overall strategy of the work plan

The work plan will be structured around the main R&D focus of the project represented in WP1. Within the framework of the conceptual-level research the first draft version of the SEEDs Generic Model will be elaborated based on the collaborative work of eight groups of experts.

The outcomes of *WP1 Conceptual Model* provide the fundamentals for the further design and developments of WP2-WP7. According to the SEEDs' vision the success is highly dependent upon how far in the novel model the human and organisational aspects and the complexity of the learning process could be represented, but with particular emphasis on the special character and learning needs of SMEs

For this reason in *WP2 Networking Model* strong focus will be placed on the social, psychological, pedagogical and organizational perspectives, with the aim of integrating all possible recommendation of the theory and practice of networked learning (connectivism) into the SEEDs Learning Model.

WP3 Layers and *WP4 Architecture* are the WPs aimed at the technological research, system specifications and architectural design. The research aims in these working packages are to find and develop the software tools that are able to resolve the complexity of the technological (physical and logical) background both at the learning platform and the semantic web based services, and to offer user-friendly front-end for the individual and collaborative online learning. *WP3* and *WP4* introduce the Exchange Programme, an open doctoral and post-doctoral scholarship programme to increase scientific resources of the programme.

In *WP5 Implementation* the SEEDs model will be implemented as the platforms for the test-beds.

WP6 Pilots is the working package dealing with the verification and the validation by involving a significant numbers of SMEs.

In *WP7 Generic framework* the consortium will agree and publish the final version of the SEEDs Generic Model.

All possible communication tools will be used to *disseminate and exploit SEEDs' results (WP8)* at the European level and at the national level of the participating countries. The aim of *WP8* to continue the research started during the project period, to build innovative business model for utilizing the results and to establish working solutions based on the elaborated SEEDs model.

The *Project Management (WP9)* ensures the smooth collaboration and communication among the partners, creating a stable background to the project work.

1.3.2. The timing of the different WPs and their components

	Year 1												Year 2												Year 3											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
WP 1	System Analysis and Design – creating SEEDs' conceptual model																																			
Deliverables			▲						▲▲																											
Milestones									♦																											
WP 2					SME Networked Learning Model																																
Deliverables														3▲																						
Milestones														♦																						
WP 3									Designing the layers of SEEDs platform																												
Deliverables												▲					▲▲																			
Milestones																	♦																			
WP 4																Architecture design and system specification																				
Deliverables																							3▲													
Milestones																							♦													
WP 5																				Implementation of the model on three selected domains																
Deliverables																						▲			▲▲											
Milestones																									♦											
WP 6																							Piloting the platforms													
Deliverables																																		3▲		
Milestones																									♦											
WP 7																															Finalization of SEEDs Generic Framework					
Deliverables																																				▲▲

WP 8	Dissemination and Exploitation																																			
Deliverables																													▲						▲
WP 9	Project Management																																			
Deliverables			▲																																	▲
Milestones			♦																																	

1.3.3. Detailed work description broken down into work packages

1.3.3.1. Work package list

Work package No.	Work package title	Type of activity[1]	Lead Participant Short name	Lead Participant no.[2]	Person-months[3]	Start month[4]	End month[5]
WP 1	System Analysis and Design – creating SEEDs' conceptual model	RTD	PROMPT	P9	152	M01	M09
WP 2	SME Networked Learning Model	RTD	ELTE	P1	90	M05	M14
WP 3	Designing the layers of SEEDs platform	RTD	CWI	P2	62	M09	M17
WP 4	Architecture design and system specification	RTD	IMM	P6	102	M16	M23
WP 5	Implementation of the model on three selected domains	RTD	FU	P13	111	M20	M25
WP 6	Piloting the platforms	RTD	AK	P12	147	M23	M34
WP 7	Finalization of SEEDs Generic Framework	RTD	FU	P13	48	M32	M36
WP 8	Dissemination and Exploitation	OTHER	ELTE	P1	66	M01	M36
WP 9	Project Management	MGNT	ELTE	P1	72	M01	M36
				Total	**850**		

[1] RTD = Research and technological development (including any activities to prepare for the dissemination and/or exploitation of project results, and coordination activities); DEM = Demonstration; MGT = Management of the consortium; OTHER = Other specific activities, if applicable in this call.

[2] Number of the beneficiary leading the work in this work package.

[3] Total number of person-months allocated to each work package.

[4] Measured in months from the project start date (month 1).

[5] Measured in months from the project start date (month 1).

1.3.3.2. Deliverables List

Del. no.[6]	Deliverable name	WP no.	Lead beneficiary	Est.Person-Months	Nature[7]	Dissemination level[8]	Delivery date[9]
D 1.1	Research plan, agreements on the goals and methods of the working groups	WP 1	ELTE	0	R	PP	M03
D 9.1	Kick-off conference	WP 9	ELTE	0	O	PU	M03
D 1.2	SEEDs Kernel - conceptual model of the TEL-SW interface	WP 1	IMM	0	R	PP	M09
D 1.3	SEEDs Generic Model – Draft version	WP 1	PROMPT	0	R	PP	M09
D 3.1	Comparative study of the existing (automatic and semi-automatic) corporate/collaborative ontology building applications and unstructured text processors	WP 3	FU	0	R	PP	M12
D 2.1	Networked SMEs - conclusions of the needs-analysis	WP 2	AK	0	R	PP	M14
D 2.2	SEEDs CCS Model – Draft version	WP 2	CAPDM	0	R	PP	M14
D 2.3	SEEDs Learning Model – Draft version	WP 2	PROMPT	0	R	PP	M14
D 3.2	Technological concept of SEEDs LM,CCS, Kernel	WP 3	IMM	0	R	PP	M17
D 3.3	Technological concepts of SEEDs Semantic Web Services and Ontology Management	WP 3	CWI	0	R	PP	M17
D 5.1	KM audit and strategy of the three SME sectors	WP 5	PROMPT	0	R	PP	M22
D 4.1	SEEDs Architecture and System Plan with the specifications of SEEDs'	WP 4	IMM	0	R	PP	M23

[6] Deliverable numbers in order of delivery dates. The numbering convention D<WP number>.<number of deliverable within that WP>. For example, deliverable D4.2 would be the second deliverable from work package 4.

[7] The nature of the deliverable indicated by using one of the following codes: R = Report, P = Prototype, D = Demonstrator, O = Other

[8] The dissemination level indicated by using one of the following codes: PU = Public; PP = Restricted to other programme participants (including the Commission Services); RE = Restricted to a group specified by the consortium (including the Commission Services); CO = Confidential, only for members of the consortium (including the Commission Services).

[9] Measured in months from the project start date (month 1).

	layers						
D 4.2	Implementation and system integration plan	WP 4	CAPDM	0	R	PP	M23
D 4.3	Developer documentations	WP 4	PROMPT	0	R	PP	M23
D 5.2	Three SEEDs platforms	WP 5	FU	0	O	PU	M25
D 5.3	Technological evaluation/verification reports	WP 5	PROMPT	0	R	PP	M25
D 8.1	In-process dissemination activities	WP 8	ELTE	0	R	PU	M30
D 6.1	Validation reports of the three pilots	WP 6	PROMPT	0	R	PP	M34
D 6.2	Conclusions, suggestion for the final version of SEEDs Generic Framework	WP 6	AK	0	R	PP	M34
D 6.3	Draft version of the SEEDs Business Training Model	WP 6	DEKRA	0	R	PP	M34
D 7.1	SEEDs Generic Model	WP 7	FU	0	R	PP	M36
D 7.2	SEEDs Business Training Model	WP 7	DEKRA	0	R	PP	M36
D 8.2	Dissemination report	WP 8	ELTE	0	R	PU	M36
D 9.2	PM IT system	WP 9	ELTE	0	O	PP	M36
			Total	**0**			

1.3.3.3. List of milestones

Milestone number	Milestone name	Work package(s) involved	Expected Date[10]	Means of verification
M 1.1	SEEDS generic model draft	WP1	M09	deliverable report
M 2.1	SEEDs Learning Model draft	WP2	M14	deliverable report
M 3.1	Technological concept of SEEDs LM,CCS, Kernel	WP3	M17	deliverable report - board consensus
M 4.1	SEEDs Architecture and System Plan	WP4	M23	deliverable report
M 5.1	Beta SEEDs platforms	WP5	M25	deliverable

[10] See CORDIS web-site, and annex 1 of the work programme.

				report
M 6.1	Pilot interim QM	WP6	M25	Quality management evaluation of the ongoing pilots
M 9.1	Project kick-off	WP1, WP9	M03	conference report

1.3.3.4. Work package description

Work package no.	WP 1	Lead Participant	PROMPT	Starting:	M01	Ending:	M09
Work package title	System Analysis and Design – creating SEEDs' conceptual model						
Activity Type	Research activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	16.00	8.00	10.00	10.00	12.00	14.00	10.00	2.00	18.00	8.00	12.00	12.00	14.00	6.00	152
Person-years	1.3	0.7	0.8	0.8	1.0	1.2	0.8	0.2	1.5	0.7	1.0	1.0	1.2	0.5	12.7

Objectives

The objective of WP1 is to elaborate the first version of a conceptual model of a dynamic, proactive knowledge pool (SEEDs Generic Model) for SMEs based on a semantic database of a domain-specific ontology, constructed, managed and expanded via automatic and semi-automatic processes.

WP1 is the kernel of SEEDs R&D activities with the aim of exploring the state-of-the-art approaches to and tools used in the focused research areas: technology-enhanced learning, ontology management, semantic-web based services, organizational and cross-organizational learning and knowledge management within and among SMEs. The conceptualization of the SEEDs Generic Model will be established with a strong focus on the social, pedagogical, psychological and organizational perspectives needed to represent the complexity of the individual and organizational learning processes and knowledge flow in a technology-based environment.

The new model will result from combining the outcomes of the cross-discipline research carried out in eight working groups with all the efforts made to reach in-depth understanding of the gaps and barriers, identified in currently existing eLearning offers for SMEs. Based on the state-of-the-art reports, in-depth analysis and comparative studies of the best practices, present models and tools, and the results of the needs-analysis, the first draft of the generic SEEDs framework will be elaborated in order to set the foundation for further design and development in WP2-WP7.

Risks and contingencies

The focus of the WP is especially wide, which holds the risk "will much, catches little". We have to be aware of the risk: the failure of WP1 risk all the next WPs. Act: special focus on monitoring and continuous evaluation during the WP along the PDCA cycle in order not to step over the limits defined in the research plan.

Description of work and role of participant

Tasks (AK, M01 - M09):

The leader of WP1 will be the PROMPT, main partners are: ELTE, IMM, FU. All of the partners will be strongly involved in the cross-discipline research - as all aspects have to be taken into consideration for mapping up the first version of the SEEDs Generic Framework. The state-of-the-art studies will be conducted in a collaboration of the members of the expert groups, the responsibility for the related topic will be assigned to that partner, who is the most experienced on the investigated field.

T1.1 Needs analysis – based on a review of individual and organisational-level usage of TEL solutions in SMEs
Comparative study of existing TEL models – identification of the learning perspective relevant to SMEs in a semantic-based TEL model

T1.2 SEEDs Knowledge Management - representing the organisational and cross-organisational knowledge flow in a semantic-based TEL model:

T1.3 Actors and their responsibilities - combining human/machine intelligence in the semantic-based learning pool for SMEs

T1.4 Analysis of the existing domain ontologies – examples and best practices on their non-expert level usage
General overview of the existing Ontology Management Systems
Existing tools and methods for the collaborative building of domain-specific ontologies

Deliverables no.	Deliverables title	Submission date
D 1.1	Research plan, agreements on the goals and methods of the working groups	M03
D 1.2	SEEDs Kernel - conceptual model of the TEL-SW interface	M09
D 1.3	SEEDs Generic Model – Draft version	M09
Milestone no.	**Expected result**	**Expected date**
M 1.1	SEEDS generic model draft	M09

Work package no.	WP 2	Lead Participant	ELTE	Starting:	M05	Ending:	M14
Work package title	SME Networked Learning Model						
Activity Type	Research activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	15.00	6.00	8.00	8.00	6.00	6.00	8.00	2.00	8.00	2.00	6.00	6.00	6.00	3.00	90
Person-years	1.3	0.5	0.7	0.7	0.5	0.5	0.7	0.2	0.7	0.2	0.5	0.5	0.5	0.3	7.5

Objectives

The objective of WP2 is to elaborate the SEEDs Learning Model based on the outcomes of WP1 and on the further investigations to be conducted in WP2. In this WP, the consortium has to take a step from the generic model towards the an actual, usable solution with a strong focus on the potential of networked learning in order to enable intensive knowledge sharing through online collaboration within and among SMEs.

WP2 covers the most important research areas of the project, as it aims to provide answers to the main challenges to the existing technology-enhanced models in relation to SMEs' learning needs and opportunities. Crucial questions to answer in this working phase are: How can we bring together the different worlds of workers/managers/leaders of SMEs, educators, ontology engineers, subject-matter experts, and content providers in a semantic-based pool in order to generate an effective, just-in-time knowledge transfer for SMEs? How do we find the points of common interests, to enable the collaborative engine to function smoothly? How do we transform collective intelligence into context-aware micro-chunks in order to distribute the practical knowledge accumulated in SMEs through the network?

Another specific focus of this WP is the elaboration of an innovative, rapid and flexible content-creation scenario (SEEDs' CCS) in a collaborative environment, forming context-aware infrastructure to provide knowledge pieces, and automatically recognizing the actual and special needs for situated learning actions via context-recognition technologies.

Risks and contingencies

In WP2 the consortium intends to elaborate a new community based, knowledge-pull, problem-solving oriented, adaptive learning model focusing on SMEs special (individual and organisational) learning needs. In case the conclusions of the survey we would get a very weak network-presence of SMEs, the basic concept of the SEEDs LM have to be resolved, as the knowledge-pull model (against the "knowledge-push" model based on traditionally organised, content-centred e-learning course) will not be applicable if the network-presence of SMEs proves to be very low.
Act: The consortium has to elaborate a new strategy, new methodology to facilitate SMEs in the network based collaboration, which may be based on start-up workshops, more media coverage etc.

Description of work and role of participant

Tasks (ELTE, M05 - M14):

WP leader is ELTE, with main responsibilities on CAPDM, PROMPT, DEKRA, CNR.

T2.1 Do "Networked SMEs" exist? State-of-the-art analysis based on a survey in the countries

of the project partners' countries. Mapping the state-of-the-art of adult learning in virtual community – based on the newest findings of network theories. Comprehensive study of cloud-based solutions and social software applications relevant to collaborative content sharing and creation.

T2.2 Establish a model of controlling the business acts between the originators (the source of knowledge units, managers/employees of SMEs, and/or professional third party and/or even the whole environment storing open knowledge items harvested before) and the users of the learning material.

T2.3 Integrate the results of into the SEEDs Learning Model, to enhance performance in individual and collaborative learning and knowledge sharing in the SMEs' communities.

Deliverables no.	Deliverables title	Submission date
D 2.1	Networked SMEs - conclusions of the needs-analysis	M14
D 2.2	SEEDs CCS Model – Draft version	M14
D 2.3	SEEDs Learning Model – Draft version	M14
Milestone no.	**Expected result**	**Expected date**
M 2.1	SEEDs Learning Model draft	M14

Work package no.	WP 3	Lead Participant	CWI	Starting:	M09	Ending:	M17
Work package title	Designing the layers of SEEDs platform						
Activity Type	Research activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	1.00	16.00	4.00	6.00	4.00	7.00	5.00	2.00	7.00	1.00	1.00	1.00	3.00	4.00	62
Person-years	0.1	1.3	0.3	0.5	0.3	0.6	0.4	0.2	0.6	0.1	0.1	0.1	0.3	0.3	5.2

Objectives

Based on the outcomes of the conceptual level research the consortium will carry out further investigation in order to define the main technological layers of SEEDs platform. The objective of WP3 is to design the technological background of SEEDs in five different layers, which will be able to represent all desired functionalities defined in the pedagogical models elaborated in WP1-WP2. At this point we have to emphasize that the focus will be placed on the social aspects rather than on the technology at all stages of the R&D activities.

A crucial part of WP3 is designing the technological background of the SEEDs LM. According to the preliminary conception, the central platform will be based on open-source software engine (LMS, LCMS) at all educational levels. Much more critical is the technological concept of the Content-Creation Scenario, the Kernel and the Ontology-Management layers, as these layers will be based on quite new conceptual models and for them do not exist promising solutions do not exist.

There are two crucial expectations at this level against the outcomes: as far as possible, the layers should be built up from the available open-source solutions, and the technological complexity of the layers should be maximally hidden from the non-technical community.

Risks and contingencies

No appropriate module/solution exist to the SEEDs model, or if do, it is not open source, or do not meet the requirements defined in WP1. As a consequence, the consortium has to conduct much more SW developing work as planned, and a shortage of developer capacity may arise, and may slow down the project process.
Act: the consortium has to try involving more software engineers from the IT partners, and rearrange the budget accordingly.

Description of work and role of participant

Task 3.1 (CWI, M09 - M17):

WP leader is CWI, with main responsibilities on IMM, PROMPT.

T3.1 Carry out comparative analysis of the existing applications needed for the different layers, and select the set of appropriate versions.

T3.2 Design the algorithms for the functionalities (interfaces, intelligent agents) where no existing solutions were found.

T3.3 The First phase of the Exchange programme is carried out to increase consortial resources allocated to WP3.

Deliverables no.	Deliverables title	Submission date
D 3.1	Comparative study of the existing (automatic and semi-automatic) corporate/collaborative ontology building applications and unstructured text processors	M12
D 3.2	Technological concept of SEEDs LM,CCS, Kernel	M17
D 3.3	Technological concepts of SEEDs Semantic Web Services and Ontology Management	M17
Milestone no.	**Expected result**	**Expected date**
M 3.1	Technological concept of SEEDs LM,CCS, Kernel	M17

Work package no.	WP 4	Lead Participant	IMM	Starting:	M16	Ending:	M23
Work package title	Architecture design and system specification						
Activity Type	Research activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	1.00	1.00	4.00	7.00	5.00	28.00	9.00	2.00	13.00	2.00	2.00	10.00	13.00	5.00	102
Person-years	0.1	0.1	0.3	0.6	0.4	2.3	0.8	0.2	1.1	0.2	0.2	0.8	1.1	0.4	8.5

Objectives

The objective of WP4 is to elaborate the complex architecture design of SEEDs platform based on the needs-analysis carried out in WP1 and on the technological models resulting from WP3. The SEEDs learning pool will be built up from the selected open-source applications, from the newly-developed modules and interfaces thereby ensuring the functionalities defined in WP3, and will integrate several physically separate web applications. At the centre of the design, once more, will be SEEDs LM, the highest layer, representing the most important functionalities on the end-user side. The final product of this WP will contain the detailed description of the integrated modules, the specifications of each layer and of the interfaces between the different layers. As different experts might plan the conceptual and technological models of the different layers this WP needs especially intensive collaboration from the partnership to ensure advanced level interoperability.
The final version of system specification contains the all information needed for the next step, for the system integration. The system plan will contain the lists the “intelligent agents” and well elaborated algorithms as the input for the coding.

Risks and contingencies

According to the final agreement, MDE (Model Driven Engineering) methodology (based on UML modeling) and for the collaborative design and development Eclipse will be used. As not all the software engineers taking part in the development are familiar with this technology, there is a risk that the collaboration will not be quite undisturbed. Act: Intensive workshops will be arranged before the WP start. The final decision must be based on full consensus. After the decision the experts who are experienced in using the selected tools will train the others in the frame of webinars.

Description of work and role of participant

Tasks (IMM, M16 - M23):

WP leader is IMM, with main responsibilities on FU, AK.

T4.1 Designing SEEDs Architecture and System Plan with the specifications of SEEDs’ layers.

T4.2 Implementation and system integration plan.

T4.3 Generating developer documentations.

T4.5 The second phase of the Exchange programme is carried out to increase consortial resources allocated to WP4.

Deliverables no.	Deliverables title	Submission date

D 4.1	SEEDs Architecture and System Plan with the specifications of SEEDs' layers	M23
D 4.2	Implementation and system integration plan	M23
D 4.3	Developer documentations	M23
Milestone no.	**Expected result**	**Expected date**
M 4.1	SEEDs Architecture and System Plan	M23

Work package no.	WP 5	Lead Participant	FU	Starting:	M20	Ending:	M25
Work package title	Implementation of the model on three selected domains						
Activity Type	Research activities						

Beneficiary number	4	5	6	7	9	12	13	14	Total
Beneficiary short name	CIT	CAPDM	IMM	CNR	PROMPT	AK	FU	USH	
Person-months	18.00	16.00	12.00	12.00	18.00	2.00	17.00	16.00	111
Person-years	1.5	1.3	1.0	1.0	1.5	0.2	1.4	1.3	9.3

Objectives

The objective of WP5 is to establish three designs as test-beds of the SEEDs model. When selecting the domains we took into consideration the real needs of SMEs frequently referred to both in European initiatives and relevant studies. The implementations will work not only as test-beds, rather they are also envisioned to remain sustainable after the end of the project as well.

The three pilot projects will test the SEEDs model in real-life situations.

- The first pilot 'Sustainable agriculture' is sector-specific, focusing on knowledge organisation for agriculture and rural development, mostly for SME interested in organic farming.
- The second pilot 'Digital Economy' aims at helping SMEs in adapting more easily to IT-based services, through a better understanding of technological trends. The e-learning models can assist in earlier adoption of digital skills, cloud-based services, open-source applications, use of social media, outsourcing, crowdsourcing, B2B and marketing strategies.
- The third pilot tries to promote 'eco-innovations' to market participants by building a B2B platform which connects the supply and demand side, now divided by a huge knowledge gap.

The language of the pilot platforms and the content will be English, as the main goal is to develop and test the model itself. The further development of the language versions can be started as a part of the exploitation based on the final and approved version of the SEEDs Generic Model. As a first step a 'meta' platform (Digital Economy) will be implemented for alpha-test with a few dozen MCs in the SEEDs database.

Risks and contingencies

Delay in implementation – common in most software development projects. The system integration may fails because of compatibility problems.
Acts: the consortium ensures extra developer capacity if needed. All open source modules/applications for web-based system with open architectures should have alternatives by design.

Description of work and role of participant

Tasks (FU, M20 - M25):

WP leader is FU, with main responsibilities on CIT, CNR.

T5.1 KM audit strategy of the three SME domains

T5.2 Implementation of the IT adoption platform, finalization of the system based on the verification reports of alpha-test.

T5.3 Implementation of the Sustainable agriculture platform

T5.4 Implementation of the Green SMEs platform

Deliverables no.	Deliverables title	Submission date
D 5.1	KM audit and strategy of the three SME sectors	M22
D 5.2	Three SEEDs platforms	M25
D 5.3	Technological evaluation/verification reports	M25
Milestone no.	**Expected result**	**Expected date**
M 5.1	Beta SEEDs platforms	M25

Work package no.	WP 6	Lead Participant	AK	Starting:	M23	Ending:	M34
Work package title	Piloting the platforms						
Activity Type	Research activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	2.00	4.00	18.00	2.00	12.00	6.00	16.00	12.00	22.00	14.00	8.00	24.00	4.00	3.00	147
Person-years	0.2	0.3	1.5	0.2	1.0	0.5	1.3	1.0	1.8	1.2	0.7	2.0	0.3	0.3	12.3

Objectives

The objective of WP6 is the validation of the SEEDs model using the test-beds implemented in three domains. The output of the WP will be based on the feedbacks from the pilots. According the primary approach the test-beds will not be organized as typical eLearning courses. The pilots are designed to prove that the platform will be able to work as a knowledge pool in which the number of micro-chunks is gradually increases and that the domain ontology will be gradually expanded. The actors from the provider side (subject experts, content providers, ontology engineers, tutors) defined in the SEEDs model will be delegated by the partnership and invited to participate from outside of the project.
The pilots must be sized to reach a critical number of participants to ensure the appropriate basis to the statistical analysis of the feedbacks. Each test-bed will involve a few dozen SMEs from the participating countries (altogether), represented by 1-6 managers/employees depending on the size of the enterprise.

Risks and contingencies

The collaboration may not be as intensive as expected, because the participants are reluctant to share their issues. Act: These situations could be solved during the pilot by the tutors/knowledge brokers introduced in the process. It might be necessary to return to model-design phase and enhance the functionality of the tools (the effectiveness of the built in agents) aimed to facilitate the collaboration.

Description of work and role of participant

Task 6.1 (AK, M23 - M34):

WP leader is AK, with main responsibilities on PROMPT, AAU.

Pilot	*Subject expert knowledge brokers*	*Ontology engineers*	*Content providers*	*Tutors*
Sustainable agriculture	AGROK	IMM	AGROK	PROMPT
Digital economy	AAU	FU	PROMPT	AAU
Eco-innovations	IDEC	USH	DEKRA	CNR

T6.1 Elaborating the validation strategy, formulating the questions/hypotheses to be answered by the evaluation

T6.2 Elaborating the organisational framework, organizing and coaching the three pilots

T6.3 Analysis of the results based on the feedbacks

Deliverables no.	Deliverables title	Submission date

D 6.1	Validation reports of the three pilots	M34
D 6.2	Conclusions, suggestion for the final version of SEEDs Generic Framework	M34
D 6.3	Draft version of the SEEDs Business Training Model	M34
Milestone no.	**Expected result**	**Expected date**
M 6.1	Pilot interim QM	M25

Work package no.	WP 7	Lead Participant	FU	Starting:	M32	Ending:	M36
Work package title	Finalization of SEEDs Generic Framework						
Activity Type	Research activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	2.00	4.00	2.00	4.00	2.00	6.00	4.00	1.00	2.00	2.00	2.00	6.00	7.00	4.00	48
Person-years	0.2	0.3	0.2	0.3	0.2	0.5	0.3	0.1	0.2	0.2	0.2	0.5	0.6	0.3	4.0

Objectives

The objective of WP7 is to elaborate the final version of the SEEDs Generic Model based on the comprehensive analysis of the whole project work, in particular in relation to the results of its verification (WP5) and the validation (WP6).
Based on the experiences/feedbacks made during the pilots the eight research groups will summarize their conclusions and suggestions for the modifications of the conceptual and technological models. The suggestions will be integrated into the final version of the SEEDs Generic Model, which the consortium has to officially approve before the final version will be published. The SEEDs GM will the basis of the SEEDs Business Model, the draft version of which was elaborated in WP6.

In this phase, the experts and the groups of the experts will produce several publications i.e. studies, scientific articles, and technical papers related to the results of the R&D work carried out during the project. The minimal number of the articles estimated to 10, which is the number of the expert groups plus two.

Description of work and role of participant

Tasks (FU, M32 - M36):

WP leader is FU, with main responsibilities on IMM, CAPDM.

T7.1 Framework analysis

T7.2 Technical and functional improvement of the SEEDs platform at all layer level.

T7.3 Suggestions for further development and for the research needs in the related areas

T7.4 Elaborate the final version of the SEEDs Business Training Model

Deliverables no.	Deliverables title	Submission date
D 7.1	SEEDs Generic Model	M36
D 7.2	SEEDs Business Training Model	M36

Work package no.	WP 8	Lead Participant	ELTE	Starting:	M01	Ending:	M36
Work package title	Dissemination and Exploitation						
Activity Type	Other activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	15.00	6.00	6.00	3.00	3.00	3.00	3.00	3.00	6.00	3.00	3.00	6.00	3.00	3.00	66
Person-years	1.3	0.5	0.5	0.3	0.3	0.3	0.3	0.3	0.5	0.3	0.3	0.5	0.3	0.3	5.5

Objectives

To have feedback on the orientation of the research from early stage dissemination.
To prepare and publishing final dissemination.
To establishing and make itself available as a resource.
To promote pilots and prepare them to be as a sustainable resource after the end of the project.

In-process dissemination:

- Preparation of dissemination plan.
- Participation with panels on other conferences.
- Organisation of workshops.
- Invitation of EU experts, decision-makers for an onsite round-trip for personal feedback.
- Preparation of press releases and media communications.
- Constant feedback through website and scientific blog.
- Promotion and preparation of pilots to reach the critical mass of participants.

Final dissemination:

- Preparation and publication of conference studies.
- Preparation of special dissemination packages for different goals.
- Setup of trainings.
- Setup of transfer and consultant groups.
- Dissemination of pilot websites in social media and press to enhance their sustainability as a resource after the end of the project.
- Multilingual information on websites.
- Final conference and study.

Description of work and role of participant

Tasks (ELTE, M01 - M36):

WP leader is ELTE, with the responsibilities all partners

T8.1 In-process dissemination

T8.2 Final dissemination

Deliverables no.	Deliverables title	Submission date

D 8.1	In-process dissemination activities	M30
D 8.2	Dissemination report	M36

Work package no.	WP 9	Lead Participant	ELTE	Starting:	M01	Ending:	M36
Work package title	Project Management						
Activity Type	Management activities						

Beneficiary number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Total
Beneficiary short name	ELTE	CWI	DEKRA	CIT	CAPDM	IMM	CNR	AAU	PROMPT	IDEC	HAFE	AK	FU	USH	
Person-months	36.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	24.00	1.00	1.00	1.00	1.00	1.00	72
Person-years	3.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	2.0	0.1	0.1	0.1	0.1	0.1	6.0

Objectives

To manage the project during the full period of research by the Management Team. To ensure permanent open, efficient, flexible management.
To initiate the network, to discuss the research plan, the competencies, property rights, the sharing the knowledge of each member for the consortium.
Governing Board and Executive Committee meetings. Quality management of the full duration of the project. Tracking of costs related to budget. Decision making. Coordinating responsibly the representation of the whole project. Reporting to the Commission: Reporting within the Consortium will be done on the basis of semi-annual Quality management plan and quality control report forms, allowing a closer monitoring of the project progress. Semi-annual reports also facilitate the preparation of annual reports sent to the Commission.
The project management IT systems include a common, server-based information system, which serves as the main communication, documentation, project management platform during the whole project. The multilingual website is also an important media for dissemination.

Kick off meeting spreads over two days with an opportunity for an informal evening get together in between. The meeting includes the following topics:

- Brief presentation by each partner on its organisation
- Review of management structure and decision making mechanism
- Review of project administrative and financial procedures
- Agreement on Project Handbook
- Further discussions on Consortium Agreement and potential amendment
- Formal procedure review with Project Officer if present
- Review of overall project and technical objectives
- Review of work plan, assignments and activities for first year
- Detailed discussion on Task and Work package tasks and timetable by WP leaders.

Description of work and role of participant

Task 9.1 (ELTE, M01 - M36):

WP leader is ELTE (scientific coordinator), with main responsibilities on PROMPT (SME project manager).

Task 9.1 Project management activities

Task 9.2 Quality Management Handbook

Task 9.3 Kick-off conference

Task 9.4 Setting up IT systems

Deliverables no.	Deliverables title	Submission date
D 9.1	Kick-off conference	M03
D 9.2	PM IT system	M36
Milestone no.	**Expected result**	**Expected date**
M 9.1	Project kick-off	M03

1.3.3.5. Efforts for the full duration of the project

Participant no.	Participant short name	WP 01	WP 02	WP 03	WP 04	WP 05	WP 06	WP 07	WP 08	WP 09	Total person months
1 (CO)	ELTE	16	15	1	1	0	2	2	15	36	**88**
2	CWI	8	6	16	1	0	4	4	6	1	**46**
3	DEKRA	10	8	4	4	0	18	2	6	1	**53**
4	CIT	10	8	6	7	18	2	4	3	1	**59**
5	CAPDM	12	6	4	5	16	12	2	3	1	**61**
6	IMM	14	6	7	28	12	6	6	3	1	**83**
7	CNR	10	8	5	9	12	16	4	3	1	**68**
8	AAU	2	2	2	2	0	12	1	3	1	**25**
9	PROMPT	18	8	7	13	18	22	2	6	24	**118**
10	IDEC	8	2	1	2	0	14	2	3	1	**33**
11	HAFE	12	6	1	2	0	8	2	3	1	**35**
12	AK	12	6	1	10	2	24	6	6	1	**68**
13	FU	14	6	3	13	17	4	7	3	1	**68**
14	USH	6	3	4	5	16	3	4	3	1	**45**
Total		**152**	**90**	**62**	**102**	**111**	**147**	**48**	**66**	**72**	**850**

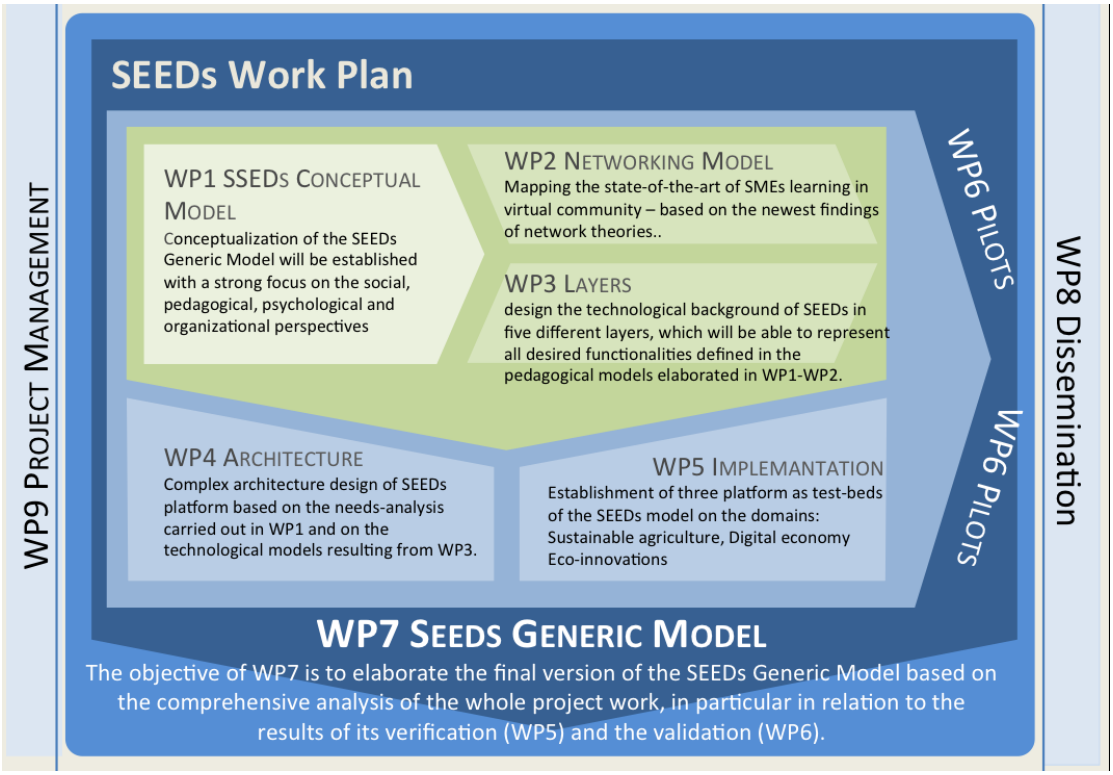
Table 1 - Project Effort - estimated Efforts per Work package and per Beneficiary for the full project period (in person-month)

Activity Type	P1 ELTE	P2 CWI	P3 DEKRA	P4 CIT	P5 CAPDM	P6 IMM	P7 CNR	P8 AAU	P9 PROMPT	P10 IDEC	P11 HAFE	P12 AK	P13 FU	P14 USH	Total activities	% of total person month
Research activities																
WP 1	16	8	10	10	12	14	10	2	18	8	12	12	14	6	**152**	17.88%
WP 2	15	6	8	8	6	6	8	2	8	2	6	6	6	3	**90**	10.59%

WP 3	1	16	4	6	4	7	5	2	7	1	1	1	3	4	**62**	7.29%
WP 4	1	1	4	7	5	28	9	2	13	2	2	10	13	5	**102**	12%
WP 5	0	0	0	18	16	12	12	0	18	0	0	2	17	16	**111**	13.06%
WP 6	2	4	18	2	12	6	16	12	22	14	8	24	4	3	**147**	17.29%
WP 7	2	4	2	4	2	6	4	1	2	2	2	6	7	4	**48**	5.65%
Total	37	39	46	55	57	79	64	21	88	29	31	61	64	41	**712**	83.76%
Management activities																
WP 9	36	1	1	1	1	1	1	1	24	1	1	1	1	1	**72**	8.47%
Total	36	1	1	1	1	1	1	1	24	1	1	1	1	1	**72**	8.47%
Other activities																
WP 8	15	6	6	3	3	3	3	3	6	3	3	6	3	3	**66**	7.76%
Total	15	6	6	3	3	3	3	3	6	3	3	6	3	3	**66**	7.76%
Total Beneficiaries	88	46	53	59	61	83	68	25	118	33	35	68	68	45	850	100%

Table 2 - Project Effort 2 - estimated Efforts per Activity Type and per Beneficiary for the full project period (in person-month)

1.3.4. Graphical presentation of the components showing their interdependencies



1.3.5. Significant risks, and associated contingency plans

Many of the organisations in the consortium have cooperated informally at researcher level before so the risk of unmanageable conflict arising is low. The greater risks may emerge in connection with the attempts to place new infrastructure at particular institutions, or if it is decided that particular members are due to hand over, relocate, or cease to perform certain activities in the consortium.

Should such contingencies occur, it is crucial that the executive management of the individual research entities demonstrate commitment and leadership to bring about the needed actions. Ideally such decision will be reached by consensus, and with the interest of all involved parties in mind be clearly communicated with regard to the advantages and opportunities for the collective consortium. Major risks and contingencies will be addressed in the Consortium Agreement, which is agreed upon and signed by all SEEDs partners.

The specific risks in the RTD process are stated in each WP in details.

For the partners coming from countries outside the euro-zone, there is significant risk of the depreciation due to changing conversion rates. An accounting based on daily exchange rate conversions from euro and especially careful planning and auditing

may help resolve this issue. The partners undertake that loss due to conversion rate is a not eligible cost.

2. Implementation

2.1. Management structure and procedures

Organisation, management and decision making structures

SEEDs is managed through a threefold, democratic structure, consisting of a Governing Board, an Executive Committee and a Management Team. Below the three parts are described in detail. The Consortium Agreement will expand the topic and formalise it.

Governing Board

The SEEDs Governing Board forms the highest level of authority of the consortium and comprises institutional leaders with executive authority from all involved institutions. Their hosting institutions will appoint the members. All members of the Governing Board have one vote each.

The Governing Board meets every 6 months and makes decisions on strategic and organisational questions related to SEEDs. The Governing Board elects in its first meeting its chairperson. The election takes place every year. The chairperson may be re-elected. The Governing Board will have authority and executive responsibility in accordance with normal rules for comparable organisational structures and be responsible to the European Commission through the SEEDs Coordinator. The SEEDs coordinator and project manager are ex-officio members of the Governing Board.

Particular tasks of the Governing Board that are direct results of the nature and structure of SEEDs and thus needs mentioning are:

- Deliberation and decision on any question related to the ideological, scientific or structural nature of SEEDs.
- Approves participation, oversees and implements integration of incoming consortium members wishing to be members of SEEDs.
- Approves implements any changes in the SEEDs Consortium Agreement.
- Approves the formulation and deliberation of the Integrated Projects of the SEEDs.

Executive Committee

The SEEDs Executive Committee forms the day-to-day executive authority of the consortium and comprises the Governing Board chairperson, who is also the chairperson of the Executive Committee, and two members elected from their midst

by the Governing Board. The Executive Committee meets when necessary. The Committee takes decisions on significant day-to-day strategic and managerial questions related to SEEDs according to the framework set by the Governing Board.

The Executive Committee will have authority and executive responsibility in accordance with normal rules for comparable organisational structures and is responsible to the Governing Board. The SEEDs coordinator and manager participate in the Executive meetings as ex officio members.

Particular tasks of the Executive Committee that are direct results of the nature and structure of SEEDs and thus needs mentioning are:

- Supervises the SEEDs coordinator and manager.
- Oversees and evaluates the day-to-day appropriateness of the SEEDs management structures, academic set-up and the suitability of the Consortium agreement.
- Prepares and proposes changes in SEEDs management structures, academic set-up and the overall suitability of the Consortium Agreement to the Management Board.
- The Executive Committee is responsible to the Governing Board and shall report to the Board on a regular basis.
- Approval of SEEDs budgets and accounts submitted by the Management Team.

Management Team

The management team will be situated at coordinator's seat, which will host the secretariat of SEEDs. Apart from local support staff the management team consists of Mária Hartyányi (academic coordinator) and an organisational manager and a project manager of PROMPT (SME cluster leader). The ELTE has been the initiating and coordinating institution behind the current application. Thus the ELTE feels well equipped to take on further and more demanding administrative tasks relating to both Consortium negotiations as well as organisation of SEEDs and the IP Consortium.

The Management Team with manager, coordinator and support staff (financial, legal and similar) takes care of the day-to-day management of the SEEDs within the organisational and research framework set by the Governing Board and the Executive Committee. The Management Team is responsible for the supervision of the support staff and the overall research coherence of SEEDs.

The Management Team prepares in collaboration with the Executive Committee budget proposals for the consortium. The Management Team will have authority and executive responsibility in accordance with normal rules for comparable organisational structures and is responsible to the Governing Board.

Particular tasks of the Management Team that are direct results of the nature and structure of SEEDs and thus needs mentioning are:

- Responsible for the communication with the European Commission (through the coordinator).
- Collects data needed for internal and external evaluations and coordinates the agreed reporting to the Commission.
- Coordinates the knowledge management in collaboration with the Information Resource Group.
- Overrules conflicts between SEEDs partners according to the procedures stated in the Consortium Agreement and brings the unresolved to the notice of the Executive Committee.
- Coordinates activities for gender awareness and equality within the consortium.

The Manager and the Coordinator will work according to an elaborated work description devised by the Executive Committee and approved by the Governing Board. The consortium coordinator will direct the Management Team and the day-to-day business of the consortium. The main tasks of the Coordinator and Manager are stipulated below.

Role of Coordinator: The Coordinator is responsible for day-to-day issues that relate to academic coordination and management of the consortium. The Coordinator is responsible for the communication between SEEDs and the European Commission.

Role of Manager: The project manager is responsible for day-to-day issues that relate to organisational coordination and management of the consortium. The Manager is furthermore responsible for the communication between the SEEDs members as well as between the organisational entities.

Quality Management and Evaluation

During the whole project, WP9 Project management includes a Quality Management and Evaluation Process to ensure the guaranty for the consistency among the objectives and the results of the project. The QM methodology will be based on the rules of the ISO 9001 QMS used by several partner organisation (for example PROMPT, IDEC). The Consortium will control the project's processes based on the PDCA cycle, to verify and validate all of the projects results. The procedures will be carried out at all the crucial points of the R&D, and at the project milestones. In this work we involve all the partners and the representatives of the target groups, the representative of SMEs from outside of the consortium. The rules and methods of the evaluation, and all responsibilities to ensure all criteria of the evaluations' rules and the documentation, will be clearly described in SEEDs Quality Management Handbook. In the SEEDs QMH the consortium will define a digital library of templates

to ensure the unified logical structure and form of the restricted and public documentations too.

2.2. Individual participants

Participants No.	1	Organisation name	Eötvös Loránd Tudományegyetem

The predecessor of Eötvös Loránd University (ELTE) was founded in 1635. Over the last hundred years, ELTE has had many world famous scientists and four Nobel Prize laureates among its teachers and alumni. The current number of students enrolled yearly has reached 32 000, and there is an academic staff of more than 1600 highly-qualified teachers and researchers. The University has formal agreements for cooperation and exchange with 120 universities in Europe, Asia, Africa, North and South America at an institutional or a faculty level. ELTE is one of the members of EUA (European University Association), UNICA (Universities from Capitals of Europe), the Coimbra Group, the Utrecht Network and the Danube Rectors Conference. ELTE is one of the five Hungarian universities that have been awarded the prestigious 'research university' title by the Ministry of Education. With the accompanying HUF 3,5 billion (EUR 13 million) subsidy ELTE can start its new 'research university' programme. The Knowledge and Technology Transfer Office of the Centre working within the framework of ELTE, has a wide experience of academic research and commercial product development, along with knowledge of contractual, licensing and intellectual property issues. Its main goal is to bridge the gap between academic research and commercialisation.

The Faculty of Education and Psychology is the melting pot of personality-building sciences (Psychology, Education, Andragogy), and the interdisciplinary centre for teacher training. The current proposal was prepared jointly by the Institute of Health Promotion and Sport Sciences together with the Institute of Education and Institute of Psychology.

WP	Roles/Major Contribution	Experience
WP 2,WP 8,WP 9	Social, pedagogical and psychological aspect, Knowledge Management, organizational aspects Coordinator, Leading WP2 and WP9. ELTE presents all the pedagogical, psychological and knowledge management aspects needed to the SEEDs' succes providing high level academic expertise on interdisciplinar scientific research-	ELTE researchers won altogether 39 FP6 projects and more than 30 of the university's FP7 projects have been granted up to now. ELTE is unique with regard to the ERC Starting Grants, because this institution is the only in East Central Europe, which could be the host institution of 2 granted researchers. Currently coordinates FP7-SPACE-2010-1 and FP7-PEOPLE-2011-ITN projects.
No.	**Collaborator Profile**	
C 1	**Mária Hartyányi** Obtained her MSc degree in Mathematics and Geography at Kossuth Lajos University, Debrecen. Since 1978 she has been giving lectures and seminars on Information Technology at the Department of Informatics in English and Hungarian in distance learning and the regular division on SZIE and other universities. Other authorities: curriculum, lecture notes development, research, thesis development, consultation and review. She is working as an expert for Adult Education Accreditation Body of NIVE (National Institute of Vocational and Adult Education), she has a mandate (as a chairwoman) to be in charge of committees of VET state exams- for certifications recognised in National Register of Qualifications (NRQ) in the IT sector, and she is working as an	

	author and reader in the national programme of “Renewal of Hungarian Vocational Education”, and evaluator in the Leonardo da Vinci (Ldv) programme entrusted by the National Hungarian Agency of LdV projects. She is experienced in coordinating Hungarian and European projects; she is working as the coordinator of the TENEGENLLP-LDV-TOI-2008-HU-016 project, a joint project of many members of the SEEDs consortium.
C 2	**Prof. László Mérő** Research psychologist and mathematician, PhD on artificial intelligence. He is a lecturer at the Institutional Centre of Economic and Decision Psychology of Eötvös Loránd. Expert on Psychology of Economics, Human Thinking and Decision Making, Game Theory, Memetics and Methodology. He is also a founder and developer of a software company developing computer games with Ernő Rubik. His popular science books were published in altogether eight languages, Everybody Is the Same in Another Way was awarded the “Scientific Book of the Year in Germany” title in 1998.
C 3	**Prof. György Bárdos** He obtained his MSc degree as a biologist specialised in Physiology, and started to work in this field immediately. His PhD work had focused on Psychopysiology especially with pscho-viscereal relationships and visceral perception in mind. Results of the studies on psycho-visceral relationships were summarized in two monographic textbooks. Recently his research activity has been centered around the so called „non-specific health problems”, those which affect our everyday life without detectable or frequently even acceptable biological factors; such as weather-front sensitivity, electromagnetic field sensitivity, „idiopathic environmental influences”, etc. Rooting from this work his research group also works on the placebo- and nocebo-phenomenon, modern-era health worries, somatic signal detection and information overload. His research activities have been published in many scientific periodicals, such as Physiology and Behavior, Trends in Neurosciences, Neuroreport, Brain Research, Brain Research Bulletin, Behavioral Brain Research, Bioelectromagnetics, Scandinavian Journal of Psychology.

Participants No.	2	Organisation name	Stichting Centrum voor Wiskunde en Informatica

Founded in 1946, CWI is the national research center for mathematics and computer science in the Netherlands. More than 170 full professors have come from CWI, of whom 120 still are active. CWI's strength is the discovery and development of new ideas, and the transfer of knowledge to academia and to Dutch and European industry. This results in importance for our economy, from payment systems and cryptography to telecommunication and the stock market, from public transport and internet to water management and meteorology.
With its 55 permanent research staff, 40 postdocs and 65 PhD students, CWI lies at the heart of European research in mathematics and computer science. Researchers at CWI are able to fully concentrate their efforts on their scientific work, and to build an international network of peers..
CWI was a birthplace of the world-wide internet. Cwi.nl was one of the first national domain names ever issued. CWI helped to develop the wing of the Fokker Friendship, which was chosen as the most beautiful Dutch design of the 20th century. The popular language Python was invented at CWI, which is used by Google. XML databases were built to the needs of the Netherlands Forensic Institute and 3D visualization techniques to better detect cancer tumors.

WP	Roles/Major Contribution	Experience
WP 3	TEL models, solutions, Semantic Web Services CWI will be the leader of WP3, and provides his comprehensive expertise on semantic-web based eLearning solutions to the conceptual level research and design in WP1.	CWI is the partner in SEEDs which has wide experiences in both in the technological level design/development of eLearning system (semantic-web technology, developments of multimedia databases (like FishKnowledge) with semantic approach) and in coordinating scientific research programmes. That is while it will undertake a crucial role in WP1, and will lead WP3, utilizing its professional overview needed in conceptualizing the layers of SEEDs in WP3.

No.	Collaborator Profile
C 1	**Prof. Lynda Hardman** Hardman heads the Information Systems department at CWI. Current research interests include creating linked-data driven, user-centric applications for exploring media content and investigating user-centric interaction design in the context of developing technologies. Her current main research projects are Fish4Knowledge, investigating user interfaces for exploring repositories of fish videos for biologists and LinkedTV, providing novel interfaces for ink enhanced broadcast TV. Previous projects includeEventMedia within the PetaMedia network of excellence, K-Space NoE and MultimediaN/E-Culture. She is part-time professor of multimedia interaction at the University of Amsterdam, in the Informatics Institute.
C 2	**Dr. Jacco van Ossenbruggen** Ossenbruggen is a senior researcher at CWI and a part time assistant professor at the Vrije Universiteit of Amsterdam. He obtained his PhD from the Vrije Universiteit Amsterdam in 2001. He was a member of the W3C working group that developed the SMIL recommendation. He was deputy project manager of the Dutch MultimediaN E-culture Project, which won the first prize at the Semantic Web Challenge at ISWC'06. He participated in the EU FP6 K-Space NoE and several other EU research projects in the past. He is currently working on the EU FP7 PrestoPrime and EuropeanaConnect. His current research interests include multimedia on the Semantic Web and the exploration of heterogeneous media repositories.

Participants No.	3	Organisation name	DEKRA Akademie GmbH

The DEKRA Akademie GmbH is one of Germany's largest, private vocational and professional training providers. Founded in 1976, the Akademie is organised into over 50 permanent and as many as 30 temporary learning centres nationwide. DEKRA provides training and further qualification to as many as 80,000 participants each year. Its customers range from government agencies to larger enterprises but also to a wide spectrum of small and mid-sized enterprises (SMEs) in a variety of sectors, including automotive technologies, transport and warehouse logistics, and IT and new media. In addition, a wholly-owned subsidiary, DIB (the *Deutsches Institut für Betriebswirtschaft*), offers upper-level management training and seminars and professional doctorate programmes in business administration and engineering in cooperation with the University of Gloustershire. At the DEKRA University of Applied Sciences in Berlin, it is also possible to study in one of its current bachelor programmes in television and film production, media journalism or media management.

WP	Roles/Major Contribution	Experience
WP1,WP2, WP6	Knowledge Management, organizational aspects, test-beds Based on the competences listed above DEKRA's main contribution is related to WP1 and WP6. DEKRA Akademie particularly well positioned to make substantive contributions to the creation of an organizational and cross-organizational knowledge flow model (SEEDs KFM) and the learning model for the knowledge pool (SEEDs LM) (WP1, WP3). Given our contacts to SMEs in a variety of sectors, DEKRA Akademie will have crucial role in the SEEDs pilots (WP6).	Embedding Standards (LdV D/04/B/F/PP-146 192) EASCMF (2006-4584/001-001) Building Bridges (147635-LLP-2008-RO-KA1EQF) Be-TWIN (LLP-LdV-2008-3995/001-001) EQF-Predict (147881-LLP-2008-FE-KA1EQF) NQF-SQF (167196-LLP-1-2009-DE-KA1EQF) TeNeGEN (LLP-LdV-TOI-2008-HU-016) ProInterNet (504025-LLP-1-ES-LEONARDO-LNW) EQF-iServe (2010-1-FR1-LEO05-14477) CompALL (518218-LLP-1-2011-DE-LEONARDO-LMP) Create (2011-1-BG-LEO05-05036) ECCE (504345-LLP-1-2009-1-IT-ERASMUS-ECUE)
No.	**Collaborator Profile**	
C 1	**Dr. Peter Littig** Obtained his Diploma in **mathematics and learning theory** before going on to study education and social sciences and psychology, culminating in his doctorate in 2003. At DEKRA he serves as Pedagogical Director and Director of Educational Policy and Strategy carrying responsibility for all national and international research and innovation projects, sponsored by the German Federal Ministry for Education and Research and the European Commission (EC), among others. **In addition to a scholarship from the European Parliament in Strasbourg and Luxembourg for conducting a research study on education in Europe, he has also led an international research team monitoring elearning Europe-wide.**	
C 2	**Dr. ED Mahood** Holds a doctorate in human behaviour, and master's degrees in technology-enhanced education, applied linguistics and business administration, obtained from universities in the USA, UK and Germany. Further, he holds a teaching certificate in California/USA for the subjects English, German, and psychology. More recently the focus of his responsibilities has shifted toward Lifelong-Learning and Erasmus projects in the areas of vocational-education policy, permeability between vocational and higher education, information technology (IT), qualification-profile development, and competence-acquisition and	

	development. His specialized interests are on learning theory, technology-enhanced and auto-didactic learning, and learning-delivery design.

Participants No.	4	Organisation name	Cork Institute Of Technology

The Cork Institute of Technology is an institute of Higher Education based in the South-West of Ireland with a total enrolment of 6,500 full-time students and a similar number of part-time students. The DEIS Department of Education Development within CIT currently engages in researching, developing, piloting, and evaluating innovative interventions in education and learning and in the subsequent integration of these interventions into the main stream. The main individuals to be involved are: Gearoid O Suilleabhain, Shane Cronin, Darragh Coakley, Roisin Garvey. The primary research activities of the DEIS Dept include: research into distance education, in particular E-learning and Technology-Enhanced Learning (TEL), course design/development as a process of educational partnership, recognition of Prior Learning (RPL) assessment and recognition and the provision of support for this, human computer Interaction in particular user/learner experience evaluation, augmented and mediated reality applications for learning. Current ongoing research activities include: the use of web 2.0 services for learning, mobile learning (M-learning) and work-based learning (WBL).

WP	Roles/Major Contribution	Experience
WP1, WP2, WP5	Knowledge Management, organizational aspects, TEL models, solution CIT's main contribution in SEEDs project will be allocated to WP1 and WP5. Based on its'expertise in designing and implementing TEL solutions, and focusing in research on the pedagogical perspective of TEL models CIT will actively participate in the elaboration of the SEEDs conceptual model, and in the implementation of the SEEDs platform.	CIT's prior experience in the provision of context and organization specific solutions/ interventions for small and medium enterprises. ONTOHR: The ONTOHR project aimed to facilitate and build an ontology supported selection and training system in line with relevant HRM and Knowledge http://www.ontohr.eu/ SME-Learning: aimed to improve training performance in industrial SMEs http://www.smelearning.eu/ SME2: The SME2 project aims to develop and provide online training to help SMEs in IT adoption. http://sme2.prompt.hu/en.

No.	Collaborator Profile
C 1	**Gearóid Ó Súilleabháin** Gearóid Ó Súilleabháin is the Research Manager for the DEIS Department. He also works as a lecturer in modules relating to the fields of education, multimedia, educational psychology and e-learning. He had been working in the educational technology space for over 12 years and has over this time published and presented widely on a range of topics as well as personally managing over 20 national and European research and development projects. Gearoid is currently undertaking his PHD on the topic of Learning Transfer and Computer Game Environments.
C 2	**Shane Cronin** Shane Cronin is Senior Multimedia Developer in the DEIS Department since 2004, with years of commercial experience in the field of interactive design, and multimedia applications development. In addition, Shane has lectured on the subjects of Graphic Design and Multimedia through the Media Communications Department in Cork Institute of Technology. He holds a BA Honors Degree in Multimedia along with a Higher Certificate and Diploma in Multimedia Applications.

Participants No.	5	Organisation name	CAPDM Limited

CAPDM spun out of Heriot-Watt University in 1996, but were the internal development team who designed, built and project managed the highly successful on-line MBA – work we continued into 2011. CAPDM absolutely adheres to information standards, employing ISO/W3C standards (SGML & XML) for developing formal information architectures. Our areas of strength are in semantic mark-up, XML and web technologies, but also in contemporary e-learning designs, technologies and methodologies. CAPDM has extensive experience of VLE development having worked through three generations of VLE for various clients, each building on the previous. This experience has shown us the strengths of a delivery environment (e.g. tight integration, high degree of linking, single content domains) and the weaknesses (e.g. discrete components, separation of framework from content).

WP	Roles/Major Contribution	Experience
WP1, WP5	E-learning design, content creation, Software Engineering CAPDM will provide its experiences in reseach and development activities in area of eLearning standards, on large-scale, sustainable e-learning developments and suitable business and pedagogical model designs. Based on the competences listed above the main contribution of CAPDM in SEEDs project will be related to the research, design and implementation of the rapid and flexible content creation scenario (SEEDs CCS) in WP1 and WP5	EU Funded Projects: (i) LLP-LdV-TOI-2008-HU-016 - TENEGEN – Connect The Teachers To Reach And Teach The Net Generation. Research and guidance on constructing coherent e-learning systems and services, putting standards into the focus in creating e-learning materials and constructing the environment. (ii) LP-LdV-TOI-2008-IS-164001 - TIES - Improving quality and cost effectiveness of Scandinavian swimming teacher education using advanced on-line and audio-visual technologies. (iii) Proactive Networking in Business Management of European SMEs (LLP-LDV-TOI-2011-HU-012)

No.	Collaborator Profile
C 1	**Ken Currie** Ken Currie MBA was one of the founding directors of Heriot-Watt University's Edinburgh Business School and the key designer of highly successful on-line MBA programme, and undergraduate distance learning Management Programme. Ken's career background is in commercial research in AI planning and scheduling systems -- working for clients such as European Space Agency, the US Air Force and Japanese industry -- and in software engineering. He has published extensively including articles in the AI Journal and Computational Intelligence. Recently he was Associate Dean (eLearning) at Edinburgh University, and continues to work closely on distance and e-learning projects with a number of groups in the University. His interests remain in information architectures, semantic mark-up technologies, and the semantic web.
C 2	**Smith Martin** Martin Smith MSc is a founding director of CAPDM Limited. His business background is in software product development, and his technical interest is in

	the organisation and development of re-usable learning materials, products and services based on applying international electronic information standards. Martin graduated from Heriot-Watt University in 1983 with an MSc in Software Development and Analysis. In 1989, he was appointed Group Manager for OWL's Research and Product Development Group and managed the group during OWL's sale to Matsushita Electric Industries in 1990. From From 1993 to 1999 he worked as an electronic publishing consultant, and helped Edinburgh Business School to create their eMBA information architecture.

Participants No.	6	Organisation name	Instytut Maszyn Matematycznych

Institute of Mathematical Machines is a state-owned research and development institution conducting basic and applied research as well as implementation in the field of e-learning systems and services, semantic web technology, modelling and simulation, biometric devices, security systems and others. The Institute has its own infrastructure and technological devices which i.e. in the field of semantic web technology match the world standards. IMM has great experience in the field of e-learning supported by participation in many e-learning projects, both national and international. The Institute develops its own e-learning platform and authoring tools, and also conducts research in the field of e-learning standards and applications. Among projects that IMM provided e-learning services and research for are "Electronic Work Simulators (EWS) […]", a pilot project in the Leonardo daVinci programme, "RENOWATOR Centre for Small and Medium Enterprises" within EQUAL Initiative, Advanced eLearning Service (AdeLe) in the e-TEN programme and many national-level projects. IMM takes also part in the research on semantics and ontologies, especially with applications in e-learning. Currently IMM is one of the centres of Laboratory of Semantic Technology (LTS), which is national-level project funded from European Regional Development Fund.

WP	Roles/Major Contribution	Experience
WP 1,WP 4,WP 5	Semantic Web Services, Software Engineering Leading WP4 On the conceptual level research state, IMM will take part in elaborating the conceptual model of SEEDs framework, it will lead WP4 (SEEDs' architecture design) and WP5 (Implementation) based on its expertise in IT solutions as well as in web programming techniques.	• Electronic Work Simulators (EWS) - Software for Training and Testing the Physically Disabled for Telework in Customer Relationship Management (CRM) - pilot project in the Leonardo daVinci programme (2002 - 2003) • Advanced eLearning Service (AdeLe) - e-TEN programme (2005 - 2006) • RENOWATOR Centre for Small and Medium Enterprises - EQUAL Initiative (2004-2008)
No.	**Collaborator Profile**	
C 1	**Grzegorz Mazurkiewicz** Manager of Information Systems Department, he has participated in many projects as a project manager conducting research on the effectiveness, development and quality of distance learning. In his dissertation, he deals with the implementation model of e-learning system based on web 2.0 and web 3.0. Currently (inter alia) conducting project supervised by the Polish Ministry of National Education examining the effectiveness and quality of education supported by e-learning in secondary schools in Eastern Poland.	
C 2	**Monika Biskupska** Software architect and lead developer of TeleEduT 2.0 e-learning technology. Participated in numerous projects with key responsibilities involving web application designing and programming. Currently involved in semantic research conducted within the Laboratory of Semantic Technology.	

Participants No.	7	Organisation name	Consiglio Nazionale delle Ricerche

The institute is devoted to the study of educational innovation brought about through the use of Information and Communication Technologies (ICT). The research undertaken focuses on:

- the integration of ICT in various educational settings (school, university, business);
- issues related to different disciplines and themes (humanities, sciences, environmental education, etc.)
- learning issues of particular social significance (disability, learning difficulties, social disadvantage, intercultural issues, etc.)
- the study of technological innovation as a learning resource.
- Research and implementation of TEL models/solutions
- Software development mainly related to online eLearning applications (LMS, LCMS, CMS, online OER databases

The main areas of reference for the Institute's research work are the cognitive sciences, computer science and the pedagogy of the various disciplines.

WP	Roles/Major Contribution	Experience
WP1, WP2, WP4	TEL models, solution, Ontology Engineering According to the current proposal, the Institute will mainly contribute to WP1 in the creation of the learning model of the knowledge pool (SEEDs LM, OM) and the technological level plan of the SEEDs layers, and gives its SW-developer capacity in WP5 (implementation), and in WP6 (pilots), with minor contribution to the other WPs.	2010-2012 - I can, I can't…I go! (Leonardo da Vinci – TOI- LLP-LDV-TOI-11-IT-721). • 2009-2011 - Sloop2desc - Sharing Learning Objects in an Open Perspective to Develop European Skills and Competences (LLP-LDV- TOI- 09-IT-0461). 2010-2014 - GaLA, Game and Learning Alliance (7FP-ICT, Network of Excellence, Grant agr. n. 258169). http://www.galanoe.eu/ 2008-2010 - TENEGEN - Connect the TEachers to reach and teach the NET GENeration (LLP-LDV-TOI-2008-HU-016). http://www.tenegen.eu/ 2008-2009 - MOTILL Mobile Technologies in Lifelong Learning: Best Practices (LLP - National Lifelong Learning Strategies). Lead partner. www.motill.eu/ 2008-2011 - SHARETEC - SHAring digital REsources in the Teaching Education Community (eContentplus, 2008, ECP-2007-EDU-427015). 2005-2009 - ReMath, Representing Mathematics with Digital Media. (FP6- IST-4-
No.	**Collaborator Profile**	
C 1	**Giovanni Fulantelli** Researcher since 1994. Member of the Scientific Committee of the Institute. Coordinator of the CNR unit in the SLOOP project. Contract professor at the University of Palermo. Authors and co-authors of more than 80 scientific publications. His research interests lie in the fields of e-learning and Social networking-based learning, and cover both technological and methodological aspects.	
C 2	**Mario Allegra** Senior researcher. He has participated in promoting and carrying out research projects concerning Information and Communication Technologies and their application in education and training contexts. Former responsible of the Palermo Department of the Institute for Educational Technologies. He is in charge of several research projects and he is author/co-author of more than 80 scientific papers. Contract professor at the University of Palermo.	

Participants No.	8	Organisation name	Aalborg Universitet

Aalborg University (AAU) conducts teaching and research to the highest level in the fields of humanities, engineering, natural sciences, health, and social sciences. AAU has more than 13,000 matriculated students, and the annual budget is in excess of DKK 1.4 billion. Nationally as well as internationally AAU has developed a number of strong research environments through a combination of basic and applied research and is a front-runner within the area of information and communication technology. A trademark of AAU is research based education and the unique pedagogical model of teaching based on problem-based learning. ICT is systematically used to support teaching, learning and research.
Through many years of research and project work within the area of computer supported collaborative learning, 'e-Learning Lab - Center for User-driven Innovation, Learning and Design' (eLL) holds expertise in the field of designing, implementing and evaluating use of online learning environments. eLL has built a strong research based environment around use, evaluation and design of social media and innovative practices in relation to new and emerging media (such as web 2.0 and virtual worlds). Furthermore, eLL are the coordinators of the regional/national 'Network on E-Learning' (NoEL).

WP	Roles/Major Contribution	Experience
WP 6	TEL models, solution, test-beds, E-learning design, content creation The specific tasks and research activities of AAU will be piloting SEEDs prototypes and to take part in analysing the results and formulating the consequences. To involve e-learning providers SMEs and promoting the e-learning community developed as part of the project.	010104 - FP6 - IST - Integrating and Strengthening the European Research Area (2002-2006) NoE – 507838, FIST SA - France Innovation Scientifique et transfert, KALEIDOSCOPE - Concepts and Methods for exploring the future of learning with digital tecknologies https://www.noe-kaleidoscope.org/pub/ 011003-300906 EuropeAid – @LIS: Alliance for the Information Society ALA/2002/148-740/2142 ELAC - European and Latin American Consortium for IST Enhanced Continued Education in Environmental Management and Planning http://www.elac.dk/
No.	**Collaborator Profile**	
C 1	**Prof. Marianne Lykke** She holds expert knowledge within the areas of design methodologies for information architecture, studies of user practice and behavior, and knowledge sharing tools. Her research activities concentrate on methodologies for design of information architecture and KOS in web sites, portals, intranets and CMS, based on knowledge about information practice and user behaviour. She consults for several Danish companies and organizations concerning design and evaluation of information architecture, and is in the editorial board for New Review of Hypermedia and Multimedia, Knowledge organisation, and Journal of Information Architecture	
C 2	**Dr. Thomas Ryberg** His primary research interests are within the field of Computer Supported Collaborative Learning (CSCL), Networked Learning and research on how new media and technologies (e.g. social media, semantic technologies) transform our ways of thinking about and designing for learning. Has authored and co-authored several articles on ICT and Learning and Learning and New media.	

Participants No.	9	Organisation name	PROMPT-H Kft.

Prompt Ltd. was established in 1989 by highly qualified IT experts with strong innovative energy and intensive R&D activities, based on their academic background. The developing team of the company has wide professional relationship with the national and European higher educational and research institutes and has been collaborating with them in the field of technology-enhanced learning (TEL). Prompt is a IT training and eLearning provider and delivers courses for employees/managers of small enterprises in face-to-face, blended and online form.

PROMPT-H works for Intel Corporation, as a vendor of learning content for Intel® Teach Elements international platform. The Hungarian version of the module "Project-Based Approaches" were delivered by PROMPT. On the basis of the wide professional partnership Prompt Ltd. initiated in 2008 the foundation an IT cluster under the name of "**Innolearn – the Cluster of Knowledge Network**" in order to engage intensive collaboration among the industrial and the educational sector, and utilize the newest theoretical findings into the business management of the small- and medium enterprises.

WP	Roles/Major Contribution	Experience
WP1, WP5, WP6, WP9	TEL models, solution, software engineering, test-beds based on TENEGEN project and cluster activities, eLearning content creation Leader of WP1 and WP6 Project manager of SME domain. The researchers and software engineers of the company are among the initiators of SEEDs concept. It will provide the consortium with its expertise gained in investigating and developing eLearning 2.0 based TEL models and solutions during the last 15 years. Prompt will contribute to SEEDs' project aims specifically with its wide practice in national and European level R&D projects. As the management organization of the Hungarian Innolearn Cluster Prompt will help to generate a large-scale pilot involving SMEs not only from Hungary but also from other European countries.	Running national projects of Prompt : E-learning development in the University of West Hungary, Faculty of Science and in the Faculty of Science of the Eötvös Loránd University (HU (2011-2013) Prompt worked as the coordinator institute in the European LLL project: "Connect the teachers to teach and reach the Net generation", TENEGENLLP-LDV-TOI-2008-HU-016 (2008-2010) and the just running SME 2.0 – Proactive Networking in Business Management of European SMEs (LLP-LDV-TOI-2011-HU-012) Leonardo projects.
No.	**Collaborator Profile**	
C 1	**Dr. József Lengyel** IT engineer, mathematician, obtained his MSc degree and doctorate at Szent István University, Technical Faculty, Gödöllő. Since 1980 he has been working as leader of the IT developer team of Prompt. He obtained his doctoral degree from related to his research on special algorithms for testing and evaluating the technical parameters of ceramic engines. His research focuses are: technology-enhanced learning (TEL), models and solutions (design and implementation), online databases and distributed systems, He has several know-how mainly in the field of web-based controlling, recognising and alarming systems.	
C 2	**Dr. István Bessenyei** Ph.D.Phil. is the leader of the TEL research at the Prompt Ltd. He obtained his first MsC degree at Faculty of Humanities. He wrote his doctoral thesis on the Social Structure and Educational System in Hungary. He is a well-known scientist in the field of learning theories and technology-enhanced learning, with more than 80 publications: books, handbooks, articles in scientific journals,	

	conference proceedings, published research reports (in Hungarian, German, English and Slovak). He was the first, who introduce the connectivism (the learning theory of the information society) for the Hungarian educational community.

Participants No.	10	Organisation name	IDEC (Aintek Symvouloi Epicheiriseon Efarmoges Ypsilis Technologias Ekpaidefsi Anonymi Etaireia)

IDEC is a hi-tech and consultancy company based in Piraeus, Greece. It was founded in 1994 by SME consultants with a huge experience in training and industry and it aims at providing its clients with a wide range of support services. IDEC is certified with ISO 9001 standard. IDEC's main activities include Project Management and Project Evaluation, Research and Studies, Management Consulting, Telecommunications, Computer Networks, EDI, INTERNET applications and Software and multimedia development. Clients of IDEC are both SMEs and the bigger Greek companies, Entrepreneurs' Associations, Co-operatives, Universities, Chambers of Commerce / Industry, Trade Unions, Public organisations. Our personnel consist mainly of engineers with post-graduated studies and long term industrial experience.

WP	Roles/Major Contribution	Experience
WP1 WP6	Knowledge Management, organizational aspects, test-beds IDEC will participate in the development of the SEEDs Generic Model (WP1) mainly focusing in the organisational learning processes, and in piloting the results with Green SMEs (WP6). It will also contribute to other workpackages and will promote the project to SMEs in Greece. During the project IDEC will focus to bring on organizational and cross-organisational level approaches into the SEEDs models.	IDEC has extensive experience in EU research and technological projects, some of which are: FP5-IST 2005: WEBSET- Web-based Standard Education Tools | FP5-IST 2005: e-Living - Life in a Digital Europe | FP5-IST 2005: EDUCAT - Education Content Assembly Tool | FP5-EESD 2005: SUNTOOL - Sustainable Urban Neighbourhood Modelling Tool | DG of Employment 2005:ESF-SSS Evaluation of the ESF contribution to employment, inclusion and education & training policies through the support to systems and structures | IEE 2008 - RES COMPASS - online platform for occupational guidance in the Renewable Energies | Leonardo da Vinci TOI 2008:VITA - Virtual Learning for the management of successful SMEs | Leonardo da Vinci DOI 2008: BONy - Babylon & ONtology: Multilingual and cognitive e-Learning Management System via PDA phone | Leonardo da Vinci DOI 2010: SAIL AHEAD - online occupational guidance tool for sea captains

No.	Collaborator Profile
C 1	**Sofia Spiliotopoulou** Graduate of the National Technical University of Athens with a Degree in Chemical engineering and from University of Athens with a degree in Economics. She also has a MSc degree in Regional development. She started her career in 1983 as SMEs consultant in EOMMEX (Hellenic Organisation for the promotion of SMEs) and she has been the Director of Education Department from 1984 to 1990 and Director of EU projects from 1990 to 1995. Since 1991 she is the cofounder of IDEC SA.
C 2	**Panos Katsambanis** He is a Mechanical and Electrical Engineer, graduate of the National Technical University of Athens and holds a M.Sc. in Regional Development. He has more than 25 years experience as a consultant and trainer at seminars organised for businessmen and supervisors in the topics: management, economics, production planning and control, cost control, logistics, quality management systems, multimedia and software development. He is the cofounder of IDEC SA.

Participants No.	11	Organisation name	Hafelekar Unternehmensberatung Schober GmbH

Hafelekar has been founded in 2001. Hafelekar combines expertise in managerial, social and educational sciences. Customers are entrepreneurs, business companies, non-profit organisations as well as clients in the public sector. Hafelekar is mainly engaged in the following lines of business: Consulting, Research, studies, surveys, evaluation, education, training, labour market (Validation of informal and non formal learning, Development of (ICT-) training models, curricula, contents, Analysis of training needs, Vocational orientation, career guidance, life long learning, EU-funded projects). A close cooperation exists with the University of Innsbruck (Department for Knowledge Organisation) in the area of qualitative social research. Hafelekar also cooperates with the Management Centre Innsbruck, a college of applied sciences. Furthermore Hafelekar is integrated in a dense network of VET and related institution and bodies. Selected publications: Margit Raich, Paul Schober, Josef Zelger (eds.): GABEK IV Sprachliche Strukturen, Theorie und Anwendung. Linguistic Structures, Theory and Practice. Innsbruck, Wien, Bozen: Studienverlag 2010 Josef Zelger, Margit Raich, Paul Schober (eds.): GABEK III. Organisationen und ihre Wissensnetze. Innsbruck, Wien, Bozen: Studienverlag 2008, GABEK III. Organisations and their Knowledge Nets Martina Bechter, Paul Schober (eds.): Join in a Job! Practitioner´s manual. A career guidance method for migrants. Innsbruck, Wien, Bozen: Studienverlag 2010

WP	Roles/Major Contribution	Experience
WP1, WP6	Knowledge Management, organizational aspects, test-beds, Social, pedagogical and psychological aspect Hafelekar will support the project within the following work packages: WP1 – System Analysis and Design – creating SEED's conceptual models (RTD)10 WP2 SME Networked Learning Model WP 6 Piloting the platforms WP8 – Dissemination activities (OTHER) WP9 – Project Management (Hafelekar internal) (MGT)	Experiences related to SEEDs aims: LLP-LDV-TOI-11-AT-0013: INSEMOT – Information Security Modular Training for SME (e-learning) – coordinated by Hafelekar LLP-LDV-TOI-10-AT-0027: E2P - Electronic Entrepreneur Portfolio (working with e-portfolios) – coordinated by Hafelekar LLP-LDV-TOI-2010/IRL-504: Motives - Measuring Organisational Training: Illustrating Value, Economic & Social LLP-LDV-TOI-08-AT-0024: Join In a Job! New means of cross cultural clearing and counselling instruments for VET in order to grant access to qualification and training for juvenile migrants – coordinated by Hafelekar
No.	**Collaborator Profile**	
C 1	**Dr. Paul Schober** Dr. Paul Schober (Managing Director of Hafelekar), PHD in economics, post graduated academic education management, marketing and business administration for an SME in the trading sector, public relations and accounting for a non profit organisation in health and handicapped sector, vocation, development of workshops trainings, coaching; trainer, coach; development of an e-learning centre; actual: managing director of Hafelekar, development and management of EU-projects, lecturer at university Innsbruck and Management Center, publications in the field of education, apprenticeship, entrepreneurship, knowledge management. Regarding the SEEDs project Paul Schober will bring in his expert knowledge in the fields of e-learning, TEL, web 2.0, semantic web, knowledge management, entrepreneurship and business enterprise development (with strong focus on SMEs).	
C 2	**Karin Lackner**	

	Mag.a Karin Lackner (Business line manager EU projects), Master degree in cultural studies; freelance at the publishing company News GmbH; head of department “Organisation” in business area “IT & Organisation” at VA TECH / Vienna; EU project management, human resource development and quality management for the National Agency for Lifelong Learning / Vienna; official expert on EU projects working for the European Commission and the National Agency Austria; since 2011: business line manager EU projects at Hafelekar responsible for management and coordination of EU projects, project management and consulting in public and private sector. Regarding the SEEDs project Karin Lackner will bring in her expertise in the fields of e-learning, web 2.0, web based SW developments, knowledge (flow) management, entrepreneurship and business enterprise development for SMEs.
C 3	**Dr. Martin Maier** Dr. Martin Maier (Joint owner of Hafelekar), PHD in philosophy, assistant at the department of knowledge organization, University Innsbruck; development of workshops trainings, coaching; trainer, coach; development of an e-learning centre, train the train activities, lecturer at the University of Innsbruck; actual: lecturer at a post secondary college for vocational teacher training, joint owner of Hafelekar Unternehmensberatung, development and management of EU-projects. Regarding the SEEDs project Martin Maier will bring in his expert knowledge in the fields of e-learning, TEL, web 2.0, semantic web, knowledge management, entrepreneurship and business enterprise development.

Participants No.	12	Organisation name	Agro-Know Technologies (Psochios Ioannis & Sia O.E.)

Agro-Know Technologies is a young start-up company that has a clear research focus on knowledge-intensive technology innovation for agriculture and rural development. AK develops systems and services for agricultural knowledge organization and delivery, using Semantic Web technologies and Web 2.0 tools. It also explores their deployment and testing in sectors such as agricultural research, education & training, commerce, and public administration. AK is following European and international standardization initiatives in relation to the agricultural data representation and storage, with involvement in fora such as the Agricultural Information Management Standards (AIMS) initiative of the Food & Agriculture Organization (FAO) of the United Nations, and the European Committee for Standardization (CEN). AK members are active contributors in such initiatives, working on agricultural information standards and specifications, agricultural metadata and ontologies, as well as agricultural taxonomies and thesauri.

WP	Roles/Major Contribution	Experience
WP 1,WP 6	Software Engineering, test-beds, managing pilots The specific tasks and research activities of AK will be piloting SEEDs prototypes and to take part in analysing the results and formulating the consequences. To involve e-learning providers and promoting the community developed as part of the project.	agINFRA: A data infrastructure to support agricultural scientific communities. Promoting data sharing and development of trust in agricultural sciences (2011 - 2014). Funded by the FP7 programme under the objective INFRA 2011 1.2.2: Data infrastructures for e- Science – - Project partner Organic.Lingua: Demonstrating the potential of a multilingual Web portal for Sustainable Agricultural & Environmental Education (2011 - 2014). Funded by the Competitiveness and Innovation Framework Programme (CIP), Policy Support Programme (PSP). – Project partner AGRICOM: Transfer of the Water Competences Model to AGRIcultural COMpetences (2011 - 2013). Funded by the Lifelong Learning Programme, Leonardo da Vinci (LdV), Transfer of Innovation. – Project partner POLITICS: Collaborative Online Learning in "citizenship studies" utilising Web2 tools (2010 - 2011). Funded by the Lifelong Learning Programme (LLP), Key Activity 3 (ICT). – Project partner I.S.L.E.: Innovation in the Teaching of Sustainable Development in Life Sciences in Europe (2010 - 2012). Funded by the Lifelong Learning Programme (LLP), Erasmus Multilateral Networks. – Project partner CerOrganic: Quality-Certified Training of Farmers on Organic Agriculture (2009 - 2011). Funded by the Lifelong Learning Programme (LLP), Leonardo da Vinci (LdV), Development of Innovation. . – Project partner LaProf: Learning for Professionals in ICT and Agriculture (2009 - 2011). Funded by the Lifelong Learning Programme, Key Activity 2 (Languages). – Project partner VOA3R: Virtual Open Access Agriculture & Aquaculture Repository - Sharing Scientific and Scholarly Research related to

		Agriculture, Food, and Environment (2010 - 2013). Funded by the ICT Policy Support Programme (ICT PSP). – Agro-Know members involved Organic Edunet: A Multilingual Federation of Learning Repositories with Quality Content for the Awareness and Education of European Youth about Organic Agriculture and Agroecology (2007 - 2010). Funded by the eContentplus Programme..
No.	**Collaborator Profile**	
C 1	**Dr. Vassilis Protonotarios** Dr. Vassilis Protonotarios has a 5-year bachelor, a 2-year M.Sc. and a 4-year PhD in Agricultural Biotechnology, all from the Department of Agricultural Biotechnology of the Agricultural University of Athens (Greece). He has professional experience in the field of Organic Agriculture, both as an officer in the Directorate of Organic Agriculture of the Greek Ministry of Food and Rural Development as well from his participation in various EU projects concerning Organic Agriculture, working as an external scientific associate for Agricultural University of Athens, Greek Research & Technology Network (GRNET) and Agro-Know Technologies. He is a Scientific Associate of Agro-Know Technologies since January 2011. He is also the Greek National Editor of Organic Eprints. He is working on topics covering educational/training resources & educational metadata, digital collections/repositories, blended learning, learning/training scenarios, integration of Web 2.0 tools in the agricultural training context etc. He is currently actively involved in a number of EU projects, including VOA3R (Leader of the content population WP), CerOrganic (development of training curriculum, coordination of the content population process), Organic.Balkanet (development of training curriculum, coordination of the content population process, dissemination), Organic.Lingua (content & collections management), I.S.L.E. and in addition he participated in the Organic.Edunet project (annotation of resources with metadata, content management).	
C 2	**Mr. Kostas Kastrantas** Kostas Kastrantas holds a diploma in Electrical & Computer Engineering from the Polytechnic School of Aristotle University of Thessaloniki, Greece (2002). He also holds a MSc. on eLearning from the University of Piraeus, Greece (2007). Mr. Kastrantas has a long working record in research and academic settings with teams specializing in Learning Technologies. During his graduate and post-graduate studies, he worked as a research assistant and associate for institutions like the Informatics & Telematics Institute (ITI) of the Center of Research & Technology Hellas (CERTH) and the University of Pireus, Greece. Mr. Kastrantas has strong experience in developing Web-based applications and his main interests focus on online ontology-based and metadata applications. In Agro-Know he is serving as the Technical Director, responsible for coordinating the development, adaptation and deployment of tools and services for the targeted communities.	
C 3	**Mr. Nikos Palavitsinis** Nikos Palavitsinis has a BSc in Management Information Systems. He also holds a MSc in Geographical Information Systems. He is currently a PhD candidate in the Informatics department. Nikos' main field of research includes metadata, and more specifically looking into topics of metadata quality in digital repositories. Some publications can be found on Mendeley and his personal	

	website, whereas some presentations of these publications in conferences, can be found on Slideshare. He has also been involved in the organization committee of the Metadata & Semantics Research Conference for the three years running (MTSR 2009, MTSR 2010, MTSR 2011). Nikos has served as an assistant project manager in the eContentplus initiative Organic.Edunet, for 2 years and has also worked in Leonardo da Vinci, Transfer of Innovation, Organic.Balkanet project. He is currently serving as a member of the expert team consulting the coordination of the CIP PSP Natural Europe. In addition, Nikos has served as a local organizer in the 7th Joint European Summer School on Technology Enhanced Learning (JESS 2011) that was organized in Chania, Crete, Greece, on May-June 2011. He also served as a program chair and local organizer for the POLITICS Spring School that took place in Chania, Crete, Greece, on April 2011. In October 2010, Nikos organized an e-Conference on topics related to Learning Repositories in Agriculture, Food & Environment.

Participants No.	13	Organisation name	Freie Universität Berlin

Freie Universität Berlin is one of the leading research universities in Germany and distinguishes itself through its modern and international character. FU is the highest ranked university of all universities in Germany in the top 4000 University World Ranking and it is one of the German Excellence Universities that met with success in all three funding lines in the federal and state Excellence Initiative. It was one of nine German top-universities to win in the German Universities Excellence Initiative. Winning a distinction for five doctoral programs, three interdisciplinary research clusters (some of them in cooperation with other universities) and its overall institutional strategy, Freie Universität Berlin was the single most successful university in the initiative. In university rankings, Freie Universität Berlin ranks among the best universities.
The Corporate Semantic Web (AG CSW) group at the department of computer science and mathematics is chaired by Prof. Dr. Adrian Paschke and has a research focus on semantic technologies. The group is both nationally and internationally profiled with research on Semantic Web (rules and ontologies) applied in the corporate context. The CSW group participates directly in the international standardization of the Semantic Web, with Prof. Paschke being a member and editor of key Semantic Web standards at W3C, OMG and OASIS, such as the W3C Rule Interchange Format. With DBPedia Germany and the W3C Healthcare and Life Sciences (HCLS) Knowledge Base it operates two central data services of the Semantic Web Linked Open Data cloud. Prof. Paschke is chair of the Berlin Semantic Web Meetup Group, the Semantic Technology Institute (STI) in Berlin, the Semantic Web PhD Network Berlin-Brandenburg, the Pragmatic Web group, the RuleML group, and he has organized several Semantic Web conference and workshop, such as i-Semantics, Int. Pragmatic Web conference, RuleML, and SWAT4LS.

WP	Roles/Major Contribution	Experience
WP 1,WP 5,WP 7	Semantic Web Services, Ontology Engineering Leader of WP5 and WP7 The Corporate Semantic Web group brings its expertise and international profile into the proposed EU project as a leading research group on Semantic Web with a focus on enterprise applications.	Our researchers have experience in semantic collaboration, semantic engineering and semantic search technologies including linked data, ontologies and rule technologies. Prof. Paschke was involved in multiple industrial software development und business engineering projects and has led several knowledge and business/service engineering projects. He was a research member of the EU Network of Excelence “Reasoning on the Web with Rules and Semantics” (Rewerse) and member of the EU Strep “Sealife”. Currently, he is project leader of national projects such as the BMBF funded project “Corporate Semantic Web”, and project leader of international projects such as the Transatlantic BPM Education Network (BPM EduNet).
No.	**Collaborator Profile**	
C 1	**Prof. Adrian Paschke** Prof. Dr. rer. nat. Adrian Paschke is head of the Corporate Semantic Web group (AG-CSW) at the institute of computer science at the Freie Universität Berlin (FUB). He is also director of RuleML Inc., vice director of the Semantics Technologies Institute Berlin (STI Berlin) and leads the Berlin Semantic Web Meetup Group. He received his Ph. D. (Dr. rer. nat.) from the Technical University Munich (TUM, German Elite University) with a thesis on Rule-based IT Service Management and Service Level Agreements. His academic carrier has let him to the Ludwig Maximilian University Munich (LMU, German Elite University), the Friedrich Alexander University Erlangen/Nuernberg (FAU), the	

	Technical University Munich (TUM, Germany Elite University), the Technical University Dresden (TUD), and the Freie Universitaet Berlin (FUB, German Elite University). He was also working as a research staff member at the National Research Council (NRC) in Canada, and the Biotec Innovation Centre Dresden in Germany.
C 2	**Dr. Naouel Karam** Mrs. Dr. Naouel Karam received her PhD in Computer Science in 2006 in the field of semantic information retrieval. Since then, she was involved several research projects about semantic annotations and search of lectures in an e-learning environment, semantic content classification in web information systems, and semantic matchmaking in e-commerce applications. She will contribute her expertise in knowledge representation, description logics inference and Semantic Web reasoning in the Seeds project. As an experienced researcher she will take over some of the tasks as working package leader.

Participants No.	14	Organisation name	Universitatea Spiru Haret

Spiru Haret University established in 1991 comprises 25 accredited faculties with 50 B.Sc. or B.A programmes, over 30,000 students enrolled and over 1700 employees, among 1200 teachers. *Spiru Haret University* counts 36,500 alumni.Beyond its infrastructure (campus, research centres, IT laboratories, libraries, sports and culture facilities) however, what makes *Spiru Haret* a modern university is the quality of the educational system and its orientation towards the future. Thus, besides traditional forms of teaching, *Spiru Haret* has also introduced *distance learning,* supported by the Blackboard with a network of about 6000 computers and the services of its own National TV channel that provides courses, consulting, tutoring, advises, scientific and cultural programs. The academic culture is focused on the research. The current projects in progress count on over 20 million euros.
The Spiru Haret Centre of Professional Training provides professional instruction, authorized by the National Council of Adults Training (CNFPA), in compliance with the stipulations of OG 129/2000 regarding the professional training for adults. Our experts have relevant experience in supporting the development of a domain-oriented ontology-based approach to problem solving that integrates the process of computer education with domain-ontology engineering.

WP	Roles/Major Contribution	Experience
WP 1,WP 5	Semantic Web Services, Ontology Engineering Involve technological aspects into the SEEDs pool, software-engineering, semantic-web based research and development capacity related to the TEL solutions.	Develop the methodology for application-domain structuring using ontology engineering tools and design software architecture description languages (ADL-s) that can capture problemsolving process as ADL expressions using domain ontology; Implement ADL interpreters that integrate computing abstractions (used in ADL expressions) and generate computing processes (performing the algorithms expressed by ADL expressions); Use this methodology to conduct problem solving experiments in such diverse problem domains as Internet Agents, Geography, and Hydrology; integrate this problem solving methodology within the computing education by developing and teaching hands-on-experience courses.
No.	**Collaborator Profile**	
C 1	**Dr. Emil Popa M.** Professor at University Spiru Haret Bucharest and Dean at Faculty of Economics in Blaj. During his carrier he was head of department, head of doctoral thesis in domain of Cybernetics and Economical Statistics. He made several courses of specialization in USA at University of Missouri, University of Iowa. His scientific and professional experience includes visiting professor at IOWA University - USA, exchange of experience with University of Missouri-USA, head of doctoral thesis and expert at The National Board of Scientific Research in High Education in Romania.	
C 2	**Maria Andronie** Researcher at Faculty of Financial and Accounting Management, Spiru Haret University of Bucharest and deputy manager at Economic Department, Romania de Maine Foundation, Bucharest. She received her B.S. in automation and computer science from University of Craiova,– Romania and PhD. In Economic Informatics from The Bucharest Academy of Economic Studies, Romania. Of academic and research experience is in areas of quality management, programming languages, system engineer and management	

	systems of databases. She is the unique author or co-author of more than 16 scientific publications printed in journals and presented on international conferences and and also she published books and courses for students.. She took part at a number of 7 research contracts, on IT area.

2.3. Consortium as a whole

The project is a joint venture of five universities, four research establishments, ad five SMEs. They represent markedly different regions of TEL spread and SME business exploitation. In most institutions the collaboration of scholars of different disciplines is ordinary owing to the broad experience in international multidisciplinary research projects, even on the frontiers of IT and social science.

While forming the consortium, partners were seeking for tasks, and not the opposite. The responsibilities were distributed according to the partner's expertise and special strength in any of the wanted competences. A harmonic distribution and complementarity was achieved in this way. The main tasks allocated to each partner and the conformable expertise was presented in the following tables.

Beneficiary no.	Beneficiary organisation name	Organisation type	Role
1	Eötvös Loránd Tudományegyetem	Higher, secondary education establishment	CO
2	Stichting Centrum voor Wiskunde en Informatica	Research Org.	CR
3	DEKRA Akademie GmbH	Research Org.	CR
4	Cork Institute Of Technology	Higher, secondary education establishment	CR
5	CAPDM Limited	SME	CR
6	Instytut Maszyn Matematycznych	Research Org.	CR
7	Consiglio Nazionale delle Ricerche	Research Org.	CR
8	Aalborg Universitet	Higher, secondary education establishment	CR
9	PROMPT-H Kft.	SME	CR
10	IDEC (Aintek Symvouloi Epicheiriseon Efarmoges Ypsilis Technologias Ekpaidefsi Anonymi Etaireia)	SME	CR
11	Hafelekar Unternehmensberatung Schober GmbH	SME	CR
12	Agro-Know Technologies (Psochios Ioannis & Sia O.E.)	SME	CR
13	Freie Universität Berlin	Higher, secondary education establishment	CR
14	Universitatea Spiru Haret	Higher, secondary education establishment	CR

Table 3 - Partnership Table

The partners represent a wide range of multidisciplinarity, their research resources include experts of various ITC fields and other domains, such as social psychology, andragogy, life sciences, knowledge management, business studies, agronomy, environmental studies. To carry out the RTD activities, they formed eight Research Groups.

RG	Focus	Partners
PP	Social, pedagogical and psychological aspect	PROMPT, DEKRA, CIT, **ELTE**, HAFE, CNR
KM	Knowledge management, organizational aspects	DEKRA, CIT, IDEC, HAFE, **ELTE**, FU
TELM	TEL models	**PROMPT**, CIT, FU, DEKRA, CAPDM, AK, ELTE, CNR
TELS	TEL solutions	CAPDM, PROMPT, FU, AAU, CWI
CC	E-learning design, content creation	**CAPDM**, AAU, PROMPT, AK, CIT, CNR, IDEC
OE	Ontology engineering	**USH**, IMM, CNR, CWI, FU
SBS	Semantic-web services	CWI, IMM, CNR, **FU**, USH
SWD	Software engineering	**IMM**, USH, FU, PROMPT, CNR

Table 4 - Research Groups

In the first months of the project period the consortium will establish a SEEDs Steering Committee (SSC), charged with defining the responsibilities and the tasks of the research groups.

The academic partners of the consortium will be encouraged to involve doctoral students into the project work offering them research topics on the related areas, an open Exchange programme will be introduced in WP3 and WP4 for this reason.

2.3.1. Sub-contracting

The single major task to be subcontracted is the development cost related to the pilots (third party services), to which 54.000 euro was allocated to partners PROMPT,

IMM, CNR, AK, FU. Apart from this, only minor management expenses were stated in budget, like audit costs, to which a 1% price of total audited budget is reserved.

2.3.2. Other countries

Only EU Member states are forming the consortium.

2.3.3. Additional partners

No other partners are involved in the project.

2.4. Resources to be committed

All institutions have long experience in managing project budgets and resources. Verified requirements were connected to the tasks and a careful plan was made, keeping in mind FP7 financial rules.

The financial plan was generated through a bottom-up strategy, by:

- defining the person-months necessary for the tasks
- distributing the tasks between partners
- defining person-month measures of partners
- applying the appropriate cost model using PIC information
- multiplying them with the number of respective person-months.

Personnel costs were calculated according to the rule above. WP leaders received an extra 3 PM budget. The coordinator received 15.000 euro for specific costs.

For the open Exchange programme an extra 2 pm was allocated to each partner in WP3 and WP4.

Travel expenditures were calculated according to geographic location and involvement average to 2500 euro direct cost p.a. for each partner.

RTD, management and other additional costs, like dissemination activities were differentiates on WP level.

The subcontracted budget includes audit costs for everyone and third party services related to the pilots for PROMPT, IMM, CNR, AK, FU.

The project management costs are allocated mostly to scientific coordinator ELTE and SME coordinator PROMPT for a smaller degree, all other partners have one pm, reaching thus a total of 10% of the budget.

2.4.1. Resources to be committed (table)

Activity Type	P1 ELTE	P2 CWI	P3 DEKRA	P4 CIT	P5 CAPDM	P6 IMM	P7 CNR	P8 AAU	P9 PROMPT	P10 IDEC	P11 HAFE	P12 AK	P13 FU	P14 USH	Total
Research activities															
Staff Effort	37	39	46	55	57	79	64	21	88	29	31	61	64	41	**712**
Personnel Costs (€)	129,500.00	220,155.00	287,500.00	203,885.00	305,007.00	276,500.00	238,080.00	148,554.00	308,000.00	101,500.00	148,800.00	213,500.00	336,000.00	164,000.00	**3,080,981.00**
Subcontracting	0.00	0.00	0.00	0.00	0.00	12,000.00	12,000.00	0.00	6,000.00	0.00	0.00	12,000.00	12,000.00	0.00	**54,000.00**
Access Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Other Costs (€)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Indirect Costs (€) (Real indirect)	77,700.00	174,297.50	86,250.00	122,331.00	91,499.25	165,900.00	71,424.00	89,132.40	92,400.00	60,900.00	89,280.00	128,100.00	201,600.00	32,800.00	**1,483,614.15**
Total Costs (€)	**207,200.00**	**394,452.50**	**373,750.00**	**326,216.00**	**396,506.25**	**454,400.00**	**321,504.00**	**237,686.40**	**406,400.00**	**162,400.00**	**238,080.00**	**353,600.00**	**549,600.00**	**196,800.00**	**4,618,595.15**
Reimbursement Rate	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	75%	
EC Contribution (€)	**155,400.00**	**295,839.00**	**280,312.00**	**244,662.00**	**297,379.00**	**340,800.00**	**241,128.00**	**178,264.00**	**304,800.00**	**121,800.00**	**178,560.00**	**265,200.00**	**412,200.00**	**147,600.00**	**3,463,944.00**
Demonstration activities															
Staff Effort															
Personnel Costs (€)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Subcontracting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Access Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Other Costs (€)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Indirect Costs (€) (Real indirect)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Total Costs (€)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Reimbursement Rate	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	50%	
EC Contribution (€)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Management activities															
Staff Effort	36	1	1	1	1	1	1	1	24	1	1	1	1	1	**72**
Personnel Costs (€)	126,000.00	5,645.00	6,250.00	3,707.00	5,351.00	3,500.00	3,720.00	7,074.00	84,000.00	3,500.00	4,800.00	3,500.00	5,250.00	4,000.00	**266,297.00**
Subcontracting	4,810.00	3,789.00	3,491.00	2,803.00	3,327.00	3,662.00	2,589.00	2,355.00	4,443.00	1,562.00	2,212.00	3,074.00	4,488.00	1,758.00	**44,363.00**
Access Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Other Costs (€)	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	7,500.00	**105,000.00**
Indirect Costs (€) (Real indirect)	80,100.00	4,469.17	1,875.00	6,724.20	1,605.25	6,600.00	1,116.00	8,744.40	25,200.00	6,600.00	7,380.00	6,600.00	7,650.00	2,300.00	**166,964.02**
Total Costs (€)	**218,410.00**	**21,403.17**	**19,116.00**	**20,734.20**	**17,783.25**	**21,262.00**	**14,925.00**	**25,673.40**	**121,143.00**	**19,162.00**	**21,892.00**	**20,674.00**	**24,888.00**	**15,558.00**	**582,624.02**
Reimbursement Rate	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
EC Contribution (€)	**218,410.00**	**21,403.00**	**19,116.00**	**20,734.00**	**17,783.00**	**21,262.00**	**14,925.00**	**25,673.00**	**121,143.00**	**19,162.00**	**21,892.00**	**20,674.00**	**24,888.00**	**15,558.00**	**582,623.00**
Other activities															
Staff Effort	15	6	6	3	3	3	3	3	6	3	3	6	3	3	**66**
Personnel Costs (€)	52,500.00	33,870.00	37,500.00	11,121.00	16,053.00	10,500.00	11,160.00	21,222.00	21,000.00	10,500.00	14,400.00	21,000.00	15,750.00	12,000.00	**288,576.00**
Subcontracting	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Access Costs	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**0.00**
Other Costs (€)	15,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	**15,000.00**
Indirect Costs (€) (Real indirect)	40,500.00	26,815.00	11,250.00	6,672.60	4,815.75	6,300.00	3,348.00	12,733.20	6,300.00	6,300.00	8,640.00	12,600.00	9,450.00	2,400.00	**158,124.55**
Total Costs (€)	**108,000.00**	**60,685.00**	**48,750.00**	**17,793.60**	**20,868.75**	**16,800.00**	**14,508.00**	**33,955.20**	**27,300.00**	**16,800.00**	**23,040.00**	**33,600.00**	**25,200.00**	**14,400.00**	**461,700.55**
Reimbursement Rate	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	
EC Contribution (€)	**108,000.00**	**60,685.00**	**48,750.00**	**17,793.00**	**20,868.00**	**16,800.00**	**14,508.00**	**33,955.00**	**27,300.00**	**16,800.00**	**23,040.00**	**33,600.00**	**25,200.00**	**14,400.00**	**461,699.00**
Project Total Costs (€)	**533,610.00**	**476,540.67**	**441,616.00**	**364,743.80**	**435,158.25**	**492,462.00**	**350,937.00**	**297,315.00**	**554,843.00**	**198,362.00**	**283,012.00**	**407,874.00**	**599,688.00**	**226,758.00**	**5,662,919.72**
Project EC Contribution (€)	**481,810.00**	**377,927.00**	**348,178.00**	**283,189.00**	**336,030.00**	**378,862.00**	**270,561.00**	**237,892.00**	**453,243.00**	**157,762.00**	**223,492.00**	**319,474.00**	**462,288.00**	**177,558.00**	**4,508,266.00**

Table 5 - Resources to be committed

2.4.2. Estimated budget table

Beneficiary no.	Beneficiary short name	Method of calc. indirect costs	Estimated eligible costs (whole duration of the project)								Total		
			RTD (A)		DEM (B)		MGNT (C)		OTHER (D)				
			Costs	Req. EC funding	Costs	Req. EC funding	Costs	Req. EC funding	Costs	Req. EC funding	Eligible Costs	Receipts	Req. EC funding
1 (CO)	ELTE	Transi. Flat (60%)	207,200.00	155,400.00	0.00	0.00	218,410.00	218,410.00	108,000.00	108,000.00	**533,610.00**	**0.00**	**481,810.00**
2	CWI	Actual indirect Cost	394,452.50	295,839.00	0.00	0.00	21,403.17	21,403.00	60,685.00	60,685.00	**476,540.67**	**0.00**	**377,927.00**
3	DEKRA	Simplified Method	373,750.00	280,312.00	0.00	0.00	19,116.00	19,116.00	48,750.00	48,750.00	**441,616.00**	**0.00**	**348,178.00**
4	CIT	Transi. Flat (60%)	326,216.00	244,662.00	0.00	0.00	20,734.20	20,734.00	17,793.60	17,793.00	**364,743.80**	**0.00**	**283,189.00**
5	CAPDM	Actual indirect Cost	396,506.25	297,379.00	0.00	0.00	17,783.25	17,783.00	20,868.75	20,868.00	**435,158.25**	**0.00**	**336,030.00**
6	IMM	Transi. Flat (60%)	454,400.00	340,800.00	0.00	0.00	21,262.00	21,262.00	16,800.00	16,800.00	**492,462.00**	**0.00**	**378,862.00**
7	CNR	Simplified Method	321,504.00	241,128.00	0.00	0.00	14,925.00	14,925.00	14,508.00	14,508.00	**350,937.00**	**0.00**	**270,561.00**
8	AAU	Transi. Flat (60%)	237,686.40	178,264.00	0.00	0.00	25,673.40	25,673.00	33,955.20	33,955.00	**297,315.00**	**0.00**	**237,892.00**
9	PROMPT	Simplified Method	406,400.00	304,800.00	0.00	0.00	121,143.00	121,143.00	27,300.00	27,300.00	**554,843.00**	**0.00**	**453,243.00**
10	IDEC	Transi. Flat (60%)	162,400.00	121,800.00	0.00	0.00	19,162.00	19,162.00	16,800.00	16,800.00	**198,362.00**	**0.00**	**157,762.00**
11	HAFE	Transi. Flat (60%)	238,080.00	178,560.00	0.00	0.00	21,892.00	21,892.00	23,040.00	23,040.00	**283,012.00**	**0.00**	**223,492.00**
12	AK	Transi. Flat (60%)	353,600.00	265,200.00	0.00	0.00	20,674.00	20,674.00	33,600.00	33,600.00	**407,874.00**	**0.00**	**319,474.00**
13	FU	Transi. Flat (60%)	549,600.00	412,200.00	0.00	0.00	24,888.00	24,888.00	25,200.00	25,200.00	**599,688.00**	**0.00**	**462,288.00**
14	USH	Stand. Flat (20%)	196,800.00	147,600.00	0.00	0.00	15,558.00	15,558.00	14,400.00	14,400.00	**226,758.00**	**0.00**	**177,558.00**
Total			**4,618,595.15**	**3,463,944.00**	**0.00**	**0.00**	**582,624.02**	**582,623.00**	**461,700.55**	**461,699.00**	**5,662,919.72**	**0.00**	**4,508,266.00**

Table 6 - Estimated budget table

3. Impact

3.1. Expected impacts listed in the work programme

Novel business training models

The primary objective of the SEEDs project is to develop a fully integrated Learning Management and distribution system which will provide SMEs with the opportunity to distribute, exchange and re-use knowledge within the context of an domain-specific ontology-based learning model, in addition to guiding users to relevant practical knowledge beneficial to their organization which can be quickly absorbed and put to use. Traditional TEL models are facing two major issues: the increasing problem of information overload, and the web 2.0 challenge to obsolete TEL tools. Based on their former investigations and experiences in the field of networked learning, eLearning content creation/delivery and semantic web based developments the members of the consortium strongly believe that increasing the power of the cutting-edge technology in itself – without integrating human-to-human interaction into the model – will not provide SMEs with usable learning opportunities.

While the principles of eLearning 2.0 were strongly underlined by the network theory (especially by the concept of scale-independent networks), and it was assumed that the all eLearning 1.0 based models – placing the content into the centre - became obsolete, in the next generation of eLearning, in eLearning 3.0 – addressing issues as digital overload – the importance of reliable learning content should not be questioned any more, and the research focus has been migrated towards the model/technology which would be able to manage semantically rich content in a virtual learning environment.

SEEDs research is part of these first steps, and it intends to be among the first solutions, and aims to give an answer to one of the biggest challenges Europe faces, namely, SEEDs wants to provide SMEs with usable and cost-effective learning opportunity based on an eLearning 3.0 paradigm.

We do not assume, that all the learning needs of SMEs can be formulated as ad-hoc questions. The process described above may develop special skills (e.g. a 21st century skill), it could help just-in-time in an undoubtedly cost-effective way, but it will not develop special professional skills needed for instance to carry out a special working process.

The SEEDs model will provide all the “traditional” eLearning services like competence-based online trainings with core content accompanied by tutors, by facilitators if needed, and all these services will be supported by special semantic-web based services. For example: if the core content of a course will be stored as a

semantically rich format, it can be used not only for a course but also as a basis to answer questions if somebody needs only a short part of it.

Supporting policies

The exploitation aims of the novel business trainings based on the SEEDs model correlate with the policy agendas of the European Commission. Five of the 10 principles enlisted by the *'Small business act (SBA) for Europe'* could be addressed:

> *I Create an environment in which entrepreneurs and family businesses can thrive and entrepreneurship is rewarded*

The web-based tools may help entrepreneurs from solving day-to-day issues to enhance life-long learning, by giving easy access to training materials for everyone, even for micro-enterprises, family businesses, or the ones living with disabilities.

The educational use of the model meet the aim of the *'Oslo Agenda for Entrepreneurship Education'* and the more recent *'Budapest Agenda'* of stepping up progress in promoting entrepreneurial mindsets in society, systematically and with effective actions, by providing a catalogue of measures to be drawn upon by stakeholders at all levels within the worlds of education, business and the wider community in order to take forward the development of teacher education in entrepreneurship. The SEEDs tools help accomplishment topics of these agenda, such as:

- to develop tool boxes of entrepreneurial teaching methods,
- establish resource centres and quality assured centres of expertise at European, national and local levels to gather together and make available good practice,
- implement active learning opportunities,
- develop self-sustaining communities of 'entrepreneurship educators'.

Europe's goal is to reduce barriers to digital markets, build trust in online networks, ensure digital services are interoperable, and boost digital literacy. Digital skills enable traditional companies to become more competitive. EC launched large-scale pan-European pilot actions as the *'Global Digital Supply Chains'* or the *European eBusiness Support Network (eBSN);* the *'New Skills for New Jobs'* initiative and awareness-raising campaigns, like the *'European E-skills Week'.*

Having the right skills is central for SMEs across all sectors. Still there is a mismatch between the supply and demand for digital competencies.

Reviewing and selecting appropriate software products, solutions and service providers is a hard task and often is detained by lack of basic e-skills and digital literacy. The SEEDs model help this by introducing niche solutions which derive step by step basic needs to complex solution.

The ‘Digital economy’ pilot will offer efficient tools to reach this aim.

VIII Promote the upgrading of skills in SMEs and all forms of innovation

The sector-specific knowledge what accumulates in certain implementations of the model are extremely useful in improving needed skills. The constantly growing community and knowledge pool makes access easy and quick to innovation ideas. The EU’s *‘Innovation Union’* plan, unveiled in October 2010, aims to focus research and innovation policies on the key challenges facing our society, such as climate change, energy efficiency and demographic evolution, where there is also strong economic potential. SMEs also need to know more about the often too complex European standards and how they might impact on their business.

The SEEDs ‘Sustainable agriculture’ pilot will offer adequate and measurable experiences.

IX Enable SMEs to turn environmental challenges into opportunities

Sustainable solutions through green technologies to daily problems offer great business opportunities. Eco-innovation – any new product, service or process that benefits the environment – is fundamental to the EU’s goal of creating sustainable growth and jobs. The EU’s 'eco- industry' already employed around 3.4 million people in 2008, and had a turnover of more than 300 billion euro, with a growth rate at 5.9. SMEs not directly involved in coming up with green products may increase competitiveness thanks to cost savings. The expanding domain of the exploitation of eco-innovations has enormous reserves of SMEs both on the supply and demand side, but connecting them is encumbered by a huge knowledge gap. The semantic web-based B2B platform of the SEEDs model will recommend new possibilities to span this gap.

The ‘Eco-innovation’ pilot is dedicated to this very issue.

VII Help SMEs to benefit more from the opportunities offered by the Single Market

X Encourage and support SMEs to benefit from the growth of markets

The web-based business-to-business tools increase chances of SMEs to meet European business partners and taking advantage of the EU’s internal market represents 500 million consumers. The success of initiatives like the *‘Enterprise Europe Network’* could be expanded with use of appropriate semantic web-based TEL tools.

The ‘Eco-Innovation’ pilot, as an international B2B tool will serve considerable practice on this aspect.

3.2. Dissemination and/or exploitation of project results, and management of intellectual property

Dissemination

The dissemination concerns the developed models and applications, the distribution of methods, the results of the analyses and all other results created inside the project. The main objectives are to secure that all direct as well as indirect results generated from the complete set of project activities are made available in an appropriate form for all relevant organisations, companies and persons. Additionally, all project results which can be regarded as marketable products or parts of products shall be prepared for the marketing process.

The dissemination will target SMEs with no restriction as end-users and SME involved in the TEL sector for platform building and content delivery. In the scientific world the target will be researchers focusing on technologies that are complementary or comparable to the project.

By the major dissemination angles; articles, website, workshops/conferences and involvement in education the project will have a formal structure for spreading of throughputs. Dissemination through events: workshops, conferences, seminars, demonstrations and other activities leading to the involvement of different spectra of audiences from different domains. Objectives of the dissemination are:

- To have feedback on the orientation of the research from early stage dissemination.
- To prepare and publishing final dissemination.
- To establishing and make itself available as a resource.
- To promote pilots and prepare them to be as a sustainable resource after the end of the project.

During the development of the project, we keep in mind these objectives, and deliver them as in-process dissemination tasks:

- Preparation of dissemination plan.
- Participation with panels on other conferences.
- Organisation of workshops.
- Invitation of EU experts, decision-makers for an onsite round-trip for personal feedback.
- Preparation of press releases and media communications.
- Constant feedback through website and scientific blog.
- Promotion and preparation of pilots to reach the critical mass of participants.

At the end of the project, final dissemination will cover:

- Preparation and publication of conference studies.
- Preparation of special dissemination packages for different goals.

- Setup of trainings.
- Setup of transfer and consultant groups.
- Dissemination of pilot websites in social media and press to enhance their sustainability as a resource after the end of the project.
- Multilingual information on websites.
- Final conference and study.

Dissemination and Feedback Group

SEEDs is of the opinion that the strong component of dissemination and exploitation of knowledge that is inherent in FP7 should be reflected also in the organisational set-up of this project. For this reason, a special Dissemination and Feedback Group will have a prominent and permanent place in the organisation of SEEDs. Through the Dissemination and Feedback Group, SEEDs proposes a socio-politically oriented and thus application-oriented knowledge management scheme with a view to dissemination of gained knowledge within the consortium. The Group will be a special task force group within SEEDs, composed by five consortium researchers with a good record of experience in application of academic studies unto a business exploitation

As the Dissemination and Feedback Group is seen as the link between the consortium and the broader society, the Group is requested to bring in people from outside the consortium in order to understand, analyse and work constructively with the issues related to the subject matter of SEEDs. The Group will form from its midst and with up to five external consultants from different academic and business spheres, who will benefit from the knowledge gained through SEEDs research.

The Dissemination and Feedback Group is responsible to the SEEDs Governing Board. Particular tasks assigned to the Dissemination and Feedback Group are:

- Proactively research, identify and elaborate on the business needs for a novel TEL training model
- Map existing research capacities within the research field that SEEDs represents and make such capacities more widely known to the public.
- To be at disposal as a resource via the entire SEEDs for European policy-makers, interest groups and citizens who wish to make informed decision.

SEEDs is concerned with the exploitation of the internet and it-technology in the process of internal and externals communication of the consortium research results as well as in the spreading of knowledge and dissemination.

The editorial work will demand close contact in-between meetings, mainly by means of electronic communication. The Group is responsible for the website and their main tasks will be:

- Developing website structure and web design
- Collecting data (materials, documents) for initial version of the website
- Collection and description of external links for additional information

- Editorial responsibility for the website contents
- Evaluation of user feedback
- Constantly create and develop plans for enhanced and innovative use of the SEEDs website as a platform for dissemination of knowledge.

Exploitation strategy

The results of the project are expected to be exploited through the partners in the consortium and according to the decision of the consortium. Other commercial channels can be employed as well. A draft exploitation plan will be produced already in the early phase of the project. The information obtained during the realisation of the project will be used in the synthesis of the final plan. The exploitation plan will precise the possible scenarios for further evolution and exploitation of the project results, during or after the end of the project. It will also describe activities promoting the exploitation of the results, including whenever appropriate development of a plan for the use and dissemination of the knowledge produced, feasibility studies for the creation of spin-offs companies. The exploitation plan will also include take-up activities like the assessment, trial and validation of promising, but not fully established technologies and solutions not solved by the project. Moreover it will provide information about best practices as far as the early use and exploitation of technologies is concerned. The Consortium Agreement also refers to the exploitations rights within the consortium.

As a consortium of all participating SMEs and research institutions and universities, the partners will commercially exploit the outcomes of the SEEDs project according to the exploitation plan. A specific workpackage has been established to coordinate the dissemination and exploitation activities of the project. The objective of this WP is to provide an analytical and comprehensive approach and concrete basis of the strategy of visibility, implementation, dissemination and exploitation of the research result. The partners participating in the project get the benefit of reaching the newest technology, therefore they can count with a significant growth in the market share. Participants also meet the requirements of sustainability through the outcome of the SEEDs project. Each participant has an excellent track record in research and implementation as well as strong managerial capacities making the exploitation and dissemination of the project feasible.

Management of knowledge and intellectual property

(a) Foreground-related Background. Access rights. Transfer of Foreground

Academic, SMEs and other partners will have royalty-free access rights to the partners Background as far as needed for carrying out own project work; access to Background needed for use of Foreground will be granted upon fair and reasonable

conditions. Conditions of access to Background shall be specified by the consortium agreement or further specific grant agreements.

All academic, SMEs and other partners shall obtain use and exploitation rights of the Foreground. Partners do not retain ownership rights after transfer.

(b) Foreground. Distribution of IPR of Foreground-based products. Exploitation process

Implementation rights, general IPR of Foreground arising from work carried out under the project shall eventually be jointly owned by the consortial partners. Partners are entitled to further research.

Exploitation rights (development and use rights of prospected products) are planned to be distributed by future specific agreements on fair and reasonable conditions as follows:

Phase 1: Consortium submits EPO application of the primary Foreground, if patentable. Coordinator retains IPR concerning patent registration towards third parties. A large part of foreground will be released to the public domain upon the agreement of the consortium.

Phase 2: The consortium retains patent rights of the primary Foreground, production rights of prospected products and rights of further development of Foreground-based products. Further product development by the SME partners is allowed upon the consortium's consent. Eventual distribution rights of the products might be restrained upon future agreements of the parties.

Partners are entitled to distribute the products for a royalty agreed a later point. Distribution rights are granted on a horizontal (geographical) basis, to be specified by future agreement(s).

Future agreements might define use rights of partners by percentage. Registration rights as patentee of the prospected products or any patentable inventions occurring in the course of the development process of prospected products, shall be granted and properly regulated by future agreements.

4. Ethical Issues

The present SEEDs research project will conform to the ethical legislations and regulations in the countries where the research will be carried out, and to EU legislation and the international conventions and declarations. Participants take into account with the following declaration the obligation to seek the approval of the relevant ethics committees before the start of the RTD activities if ethical issues raise.

There are no effects of the proposed studies on the research subjects.

The participants of the SEEDs project declare to respect and be conform to the normatives in relation to the protection of individuals with regard to the processing personal data and the free movement of such data (Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995);

In the research plan where questionnaires and interviews will be used related to individuals data (such as socio-demographic variables, opinions, attitudes, values etc.), the subjects will be informed concerning the aim of the research, the treatment and movement of their personal data, their collaboration will be asked, and anonymity will be guaranteed.

4.1. ETHICAL ISSUES TABLE

	YES	PAGE	COMMENT
Informed Consent	NO		
Does the proposal involve children?	NO		
Does the proposal involve patients or persons not able to give consent?	NO		
Does the proposal involve adult healthy volunteers?	NO		
Does the proposal involve Human Genetic Material?	NO		
Does the proposal involve Human biological samples?	NO		
Does the proposal involve Human data collection?	NO		
Research on Human embryo/foetus	NO		
Does the proposal involve Human Embryos?	NO		
Does the proposal involve Human Foetal Tissue / Cells?	NO		
Does the proposal involve Human Embryonic Stem Cells?	NO		
Privacy	NO		

Does the proposal involve processing of genetic information or personal data (eg. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)	NO		
Does the proposal involve tracking the location or observation of people?	NO		
Research on Animals	NO		
Does the proposal involve research on animals?	NO		
Are those animals transgenic small laboratory animals?	NO		
Are those animals transgenic farm animals?	NO		
Are those animals cloning farm animals?	NO		
Are those animals non-human primates?	NO		
Research Involving Developing Countries	NO		
Use of local resources (genetic, animal, plant etc)	NO		
Benefit to local community (capacity building ie access to healthcare, education etc)	NO		
Dual Use	NO		
Research having potential military / terrorist application	NO		
I CONFIRM THAT NONE OF THE ABOVE ISSUES APPLY TO MY PROPOSAL	YES		

Table 7 - Ethical Issue Table