SEVENTH FRAMEWORK PROGRAMME

THEME ICT-2009.1.2

"Internet of Services, Software and Virtualization"

D6.7.2
Collaboration Plan

Project acronym: SocIoS

Project full title: *Exploiting Social Networks for Building the Future Internet of Services*

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SOCIOS CONSORTIUM

Beneficiary Number	Beneficiary name	Beneficiary short name	Country	Date enter project	Date exit project
1(coordinator)	Institute of Communication and Computer Systems/National Technical University of Athens	ICCS/NTUA	Greece	Month 1	Month 30
2	IBM Haifa Research Lab	IBM	Istrael	Month 1	Month 30
3	Athens Technology Center	ATC	Greece	Month 1	Month 30
4	Google Ireland Limited	Google	Ireland	Month 1	Month 30
5	Cognium Systems	Cognium	France	Month 1	Month 30
6	Center for the Study of the Information Society, University of Haifa	HU	Israel	Month 1	Month 30
7	Deutsche Welle	DW	Germany	Month 1	Month 30
8	Stefi Productions S.A.	Stefi	Greece	Month 1	Month 30
9	Katholieke Universiteit Leuven (K.U.Leuven) – Interdisciplinary Centre for Law and ICT	KULeuven	Belgium	Month 1	Month 30

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Executive Summary

The collaboration task reported in this deliverable covers the liaison and co-operation activities with other ICT projects under the WP2009/2010 Objective "Internet of Services, Software and Virtualisation". The cooperation aims at exploiting synergies between the projects and increasing the impact of the ICT initiative. The consortium members commit to provide contributions to the following activities:

- Exploitation of synergies / technical concertation: participation to workshops, contribution to some of the Collaboration Working Groups.
- Joint activities for exchange, dissemination and training.
- Production and dissemination of publications aimed for communication with the general public.
- Co-ordination of standardisation efforts.
- Finished open source software code will be contributed to repositories.
- Participation in a working group on best practices for using open source repositories/forges.

This deliverable covers the specific activities for collaboration with related projects. Other SocIoS project workpackages cover the individual project activities in some of these areas (e.g. dissemination, standardisation).

The specific plan for collaboration, including the specific working group that this project will participate, is presented in this deliverable through the next sections (named ***Collaboration activities***), where it has been included all the activities that the SocIoS consortium managed to implement during the reporting period of the first year.

The related consortium collaboration activities and plans per year will be reported at the end of each reporting period with related updated versions of this document. The consortium will report on the activities done and will be updating the plans for the next period.

The research leading to these results has received funding from the European Community's Seventh Framework Programme [FP7/2007-2011] under grant agreement no. 257774

Table of Contents

The research leading to these results has received funding from the European Community's Seventh Framework Programme [FP7/2007-2011] under grant agreement no. 257774

The research leading to these results has received funding from the European Community's Seventh Framework Programme [FP7/2007-2011] under grant agreement no. 257774

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List of Figures

The research leading to these results has received funding from the European Community's Seventh Framework Programme [FP7/2007-2011] under grant agreement no. 257774

1 Introduction

Collaboration is a fundamental concept for developing and driving innovative solutions and facilitating the wide diffusion and effective promotion of ideas and project results to the public. This collaboration plan covers the liaison and cooperation with other ICT projects and is aimed at exploiting the synergies between the projects and increasing the impact of the ICT initiative.

The collaboration plan described in this report covers the liaison and co-operation activities with the other ICT projects WP2009/2010 Objective "Internet of Services, Software and Virtualisation". The cooperation aims at exploiting synergies between the projects and increasing the impact of the ICT initiative. Exploitation of synergies between SocIoS and the other projects will consist of participation in workshops, contributions to working groups, joint dissemination activities and production of joint dissemination materials.

This report presents the SSAI / FP7 projects relevant to SocIoS topics and the collaboration plan and activities between SocIoS and each of them. In a second section, complementary SocIoS actions transversal to all projects are spelled out.

2 SocIoS collaboration plan with other FP7 projects

The fifth call for proposals for the FP7 ICT Programme closed in October 2009. Within Objective 1.2, a total of 195 proposals were received, of which 28 were selected. Together with one project from Objective 9.4 ("Strengthening Cooperation in ICT R&D in an Enlarged Europe"), these 29 projects are depicted and clustered in Figure 1 of the FP7 Internet of Services (http://cordis.europa.eu/fp7/ict/ssai/projects_en.html). The SocIoS project has been placed in the Service Front-ends module along with the SOCIETIES, I2Web, OMELETTE and Serenoa projects.

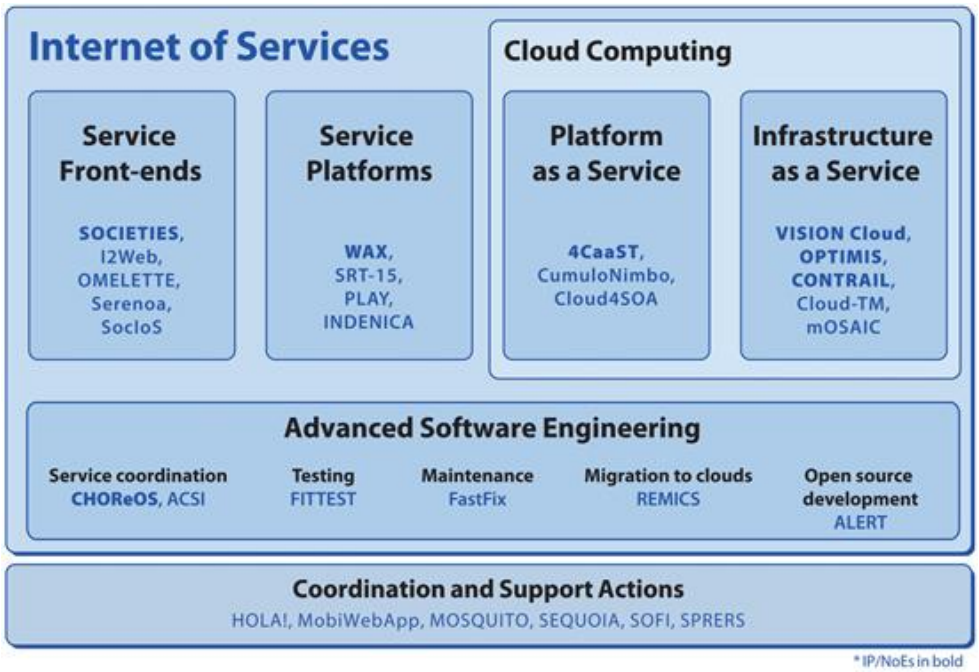


Figure 1 Socios position into the Internet of Services FP7 EU projects

Within Objective 1.2, projects collaborate through working groups. An initial overview of all the collaboration working groups is given in http://www.eu-ecss.eu/contents/collaboration-working-groups. Collaboration working groups can work on a topic of common interest that leads to improved sharing and understanding and ultimately to improved impact of the results of the participating projects.

To promote collaboration with other ICT projects, SocIoS has already participated in one European Commission collaboration event. The Internet of Services event was held on October 19-20, 2010 (http://ec.europa.eu/information_society/events/ssai/ios/index_en.htm). The meeting objectives included the following:

- Consolidate the collaboration activities among the projects to build an even stronger community.
- Include recently started projects in collaboration working groups.
- Give recently started projects the opportunity to understand the key results of existing projects/collaboration working groups to facilitate the reuse of these results.
- Give existing projects/collaboration working groups the opportunity to better exploit their results by finding synergies with recently started projects.
- Achieve a better understanding of the results of the FP6 & FP7 projects in the "Internet of Services" area.

SocIoS has joined the following working groups:

- Semantics - The mission of this working group is to provide a forum for collaboration among projects, primarily within the Software and Service Architectures unit, on the application of semantics to SOA. ACSI partner: Collibra.
- Formal methods for SOA and Future Internet - This group discussion is aimed at determining how formal methods would contribute to the specification, design, development, and deployment of service-oriented architectures, based on potential or real error-risk analysis.

In the next sections, we propose a list of related scientific and research topics projects that could be potential collaborators for SocIoS in order to exchange scientific results and achievements during the project period.

2.1 Project SOCIETIES

Project Title: Self Orchestrating CommunIty ambiEnT IntelligEnce Spaces (IP)

Project type: Information Society and Media

Web site: http://www.ict-SOCIETIES.eu

Start date: March 2009

Duration: October 2010 – March 2014

2.1.1 Objective and scope

The vision of the SOCIETIES project is to develop a complete, integrated Community Smart Space (CSS), which extends pervasive systems beyond the individual to dynamic communities of users. CSSs will embrace on-line community services, such as Social Networking in order to offer new and powerful ways of working, communicating and socialising.
The goal of SOCIETIES will be achieved through four key objectives:

- To facilitate the creation, organisation, management and communication of communities via Community Smart Spaces, where pervasive computing is integrated with social computing communities;
- To provide an enhanced user experience for both individuals and entire user communities, based on proactive smart space behaviour and dynamic sharing of community resources across geographic boundaries;
- To design and prototype a robust open and scalable system for self-orchestrating Community Smart Spaces;
- To evaluate, through strong involvement of end-users, the usefulness and acceptance of the developed CSS software via three user trials with the following groups:
    - Enterprise Users: Enterprise communities play an important role in bringing together people, goods and services within global markets, local ecosystems or large organisations. The CSS concept will bridge the gap between smart IT systems and established enterprise community activities.
    - Students: Students adapt easily to new technology, and since communication and social networking play an integral role in their lives,

they are most likely to adopt CSSs, using them in ways both foreseen and unforeseen.

- Disaster Relief Experts: the ability to rapidly form a disaster management community from all the closely located relief teams can help save lives, property, and the environment

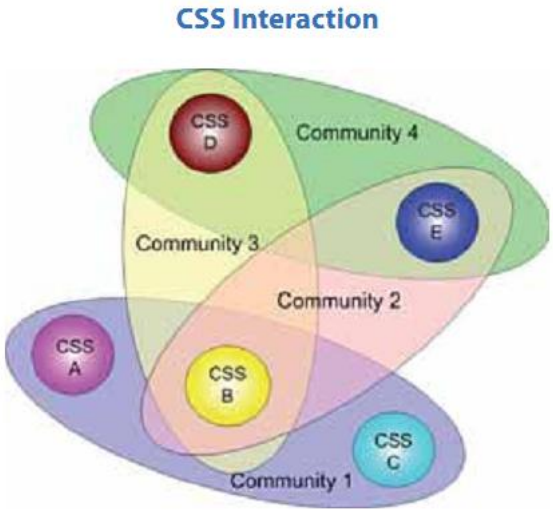


Figure 2 SOCIETIES and CSS interactions with related communities of users

CSSs are the building blocks for enabling pervasive computing in social communities. CSSs constitute the bridge between a user's context (devices, sensors, etc.) and his/her social community. A CSS may represent a user, an organisation or an entity within a set of communities and enable the exchange of services, information and resources.

2.1.1.1 CSS Benefits

Shared resources serve other community members in a seamless unobtrusive manner. CSSs will provide the means by which users of pervasive systems can come together to co-operate, socialise and share their communal resources. The resource sharing facilities will address cases of multiple requests for the same resource at the same time. CSSs will support sharing of resources owned by community members as well as by publicly available resources.

CSS support multiple techniques for the discovery of relationships and behaviours within communities. This will involve the extraction of preferences, habits, intentions, context and usage of resources. It will enable learning of relevant information by groups of users who are members of the same community, and from this will automatically derive default sets of preferences, policies and behaviours, which will be particularly valuable to new community members.

The orchestration of multiple communities to which a participant belongs, maintaining a registry of super- and sub- communities in community hierarchies along with policies on information disclosure and service access to members of other related communities.

CSS facilitates proactive exchange of information on the situation, interests and resources of community members. As significant amounts of information may need to be exchanged, the

CSS will also ensure that only relevant information is delivered to each member. To this end proactive context-aware and utility-based information propagation will be supported. Intelligent use of information learnt from monitoring communities and the exchanges between their members. This can be used to support the proactive discovery, configuration, adaptation, control and sharing of services and resources.
Intelligent conflict resolution among the members of a community based on mediation and negotiation.
The support of ad-hoc communication at both intra- and inter- community levels, across heterogeneous networks and device platforms.

2.1.2 Potential result for SocIoS

By providing a more competitive environment, the SOCIETIES architecture will integrate the spheres of pervasive systems, social networking and context-aware service adaptation. By lowering barriers for service providers, SOCIETIES will provide a semantically rich, machine computable Service Model that will allow the developer to focus on service behaviour and high level concepts rather than cumbersome technical details.
SocIoS will investigate the related results on services collaboration and orchestration that could be the main task in SocIoS for WP2. SocIoS will collaborate with SOCIETIES on technical issues such as service creation processes, usability of services, access to services, and integration of services for different platforms and context. SocIoS will in fact create the service-rich environment that could potentially support SOCIETIES's community building research.

2.1.3 Liaison partners

Institute of Communications and Computer Systems (ICCS), (GR)

IBM Haifa Research Lab, (IL)

AMITEC, (GR)

2.1.4 Collaboration activities

ICCS started communicating with the Project coordinator and the Technical Manager of project SOCIETIES early in May 2011, aiming to open a collaboration channel between the two projects.

A first teleconference was achieved on May 19 with participants from ICCS and Technical Manager of SOCIETIES project. In parallel we started collaboration with discussions between Haifa University partner from SocIos and the project coordinator of SOCIETIES project at the Future Internet Assembly conference in Budapest.

Both sides agreed that the following items can provide opportunities for cooperation and merging of research activities in the two projects. In specific the SOCIETIES - SOCIOS potential collaboration areas could be:

- Abstraction of SNS API - both projects seem to be doing this type of work - we should look for any commonality.
- Second stage of SOCIOS - how to identify relevant people to participate in advertisements (e.g. models). SOCIOS will identify groups/individuals.
- SOCIETIES will identify groups of people - maybe we can facilitate allowing SOCIOS to select relevant individuals for a particular task? Deeper discussions are needed in this area.
- Does SOCIOS search for relevant people - or content?
- SOCIETIES project locates groups of people.
- SOCIOS - planning one to many auctions... but could SOCIETIES provide groups with similar commercial concerns and feed those back to SOCIOS (e.g. group purchasing).
- Could be worth looking at the ONE project (Open Negotiation Environment).
- Similarities with Disaster Management scenarios - for example SOCIOS has journalists wanting to get content from disaster situations, we would have rescue workers looking for the same thing.

NTUA technical team evaluated the proposed above items and replied with related comments and suggestions to the SOCIETIES project on 22/6/2011. Then arranged a teleconference on 1 July for investigating more the above collaboration activities and concluded in the following items.

a) **Abstraction of SNS API - both projects seem to be doing this type of work - we should look for any commonality.**

End of August SocIoS will have ready a draft version for the SocIoS API , also in September SOCIETIES project will have defined the requirements about the social networks information retrieval in order to discuss and check if we can collaborate and **use the SocIoS API into SOCIETIES project**. SOCIETIES have to implement a draft version of social networks integration until March 2012. So this is a nice possibility of collaboration between the two projects.

Also on 20/7/2011 teleconference the partners agreed on the following collaboration activities.

SOCIETIES technical team discussed the involvement of social networks information into SOCIETIES and also the output to related social networks (pushing information back to SNs or through visualization tools). For SOCIETIES is interesting to inform for critical events related rescue teams and visualize the event (earthquake, accident in Fukosima, etc.) into social networks for informing/helping and preventing groups of people from these areas.

An open issue for further investigation and collaboration could be the '**Visualization of data from SNs**'.

Also the technical issues for **data search** (centralized architecture of storage and retrieval, distributed architecture, performance issues on search, acceleration of

algorithms, etc.) and the **legal issues of stored data from SNs** could be two more points with collaboration interest.

NTUA suggested that until end of August SocIoS will have definitely clarify the research roads that we will follow in the above tasks, so SOCIETIES technical team could check and collaborate on these issues with SocIoS.

SOCIETIES technical team project discussed the issue of **modelling data**, SOCIETIES are interested on 'activities streams' like newsfeeds. SocIoS is using the OpenSocial modelling. SOCIETIES suggested to NTUA to check the OneSocialWeb.org project about the modelling activities. NTUA will discuss and evaluate this project during the official technical meeting for SocIoS on September 2011, and this task will be clarified in more details during September 2011 by both project teams.

b) Second stage of SOCIOS - how to identify relevant people to participate in advertisements (e.g. models). SOCIOS will be identifying groups/individuals. SOCIETIES - will identify groups of people - maybe we can facilitate allowing SOCIOS to select relevant individuals for a particular task? Deeper discussions are needed.

SOCIETIES will be ready to identify groups of people with similar characteristics, personality trends, goals, etc. They are using three different user groups [student group - from NTUA, enterprise group, Disaster Management group from Cyprus]. Possible the student group from NTUA can participate in related dissemination activities also for SOCIOS project.

SOCIETIES and SocIoS will discuss these issues on September dissemination and collaboration event in European Commission (http://ec.europa.eu/information_society/events/ssai/infoday2011/index_en.htm).

c) Is there a partner from FP6 ONE project that participates also in SOCIETIES or do we have a contact for further details on this project achievements?

Dr. Pierfranco Ferronato that is architecting the SOCIETIES project explained that there is an Open Source framework developed under ONE FP6 project, and an execution environment that can work like 'ebay' for auctions over the web. NTUA proposed to possibly **use ONE as an external service in SocIoS project** for implementing the related negotiation services that the business plan of SocIoS needs or will need. Dr. P. Ferronato explained also that the related configuration for the framework will be difficult to be done from NTUA, as we will start from scratch, so he offered the possibility either to give him the business case, or the requirements of the business cases and try to help NTUA into a single configuration of ONE project into SocIoS project.

On 7/7/2011 Dr. P. Ferronato from ONE project informed the SocIoS consortium with the following links about the ONE project.

- Source code: http://sourceforge.net/projects/one-project/
- Official project site: http://one-project.eu/site/modules/content/?id=1
- Running instance: http://one.coopservice.it:8080/oneportal/portal

Already the SocIoS consortium and especially IBM and HU partners have been informed for these activities and we will continue this discussions and technology investigation for auctions during the next months.

d) SOCIETIES, ONE project and related auctions in SocIoS project into STEFI's business cases

Auctions are a widely used business model on the web. There are many specific types of auctions available. However, they are mostly focused on the traditional business paradigms of business-to-consumer or business-to-business. Social networks are spaces where participants can be both buyers and sellers concurrently. This enhanced focus on consumers calls for rethinking business models such that the consumer, who is also a seller, takes a more central and active part. The requirements described by STEFI partner suggest that a reverse auction consumer-to-business model is the most appropriate method. In a reverse auction the buyer (in this case, STEFI) defines the good or service (extras or location) needed. The social network participants act as sellers, offering descending bids to compete for the deal. The winner is determined based on a combination of the price bid with other buyer requirements. The social graph auction mechanism needed for SocIoS should be such that it combines the reverse auction descending bid mechanism with a computation of the value of intangible user requirements.

SocIoS team will evaluate this information during the technical meeting on September in Haifa, where either the business plans, or the auctions functionality will be discussed and clarified in more details between partners NTUA, IBM, and University of Haifa.

2.2 Project i2Web

Project Title: Inclusive Future-Internet Web Services (STREP)

Project type: Information Society and Media

Web site: http://i2web.eu/

Start date:

Duration: November 2010 – April 2013

2.2.1 Objective and scope

The Future Internet Community that will be more mainstream in people's lives, may further

isolate excluded groups. I2Web will provide tools to develop inclusive Future Internet services that will overcome this widening divide. To enable the Future Internet to be more extensively used by people with disabilities and the elderly, the inclusiveness of its Services Front Ends will be of paramount importance. I2Web particularly responds to immediate challenges of the Future Internet: ubiquitous and mobile Web, media convergence and user-generated content, in combination with cloud computing, Web 2.0 developments, Social Networking, User-Centred Design and Inclusive Design principles.

The I2Web project will prototype these developments, in three application domains: Web 2.0, Ubiquitous and Mobile Web and IPTV/iTV. Our work will be based on the latest accessibility and mobile Web standards. This will provide both industry and the public sector with tools and frameworks that support seamless accessibility integration in distributed development environments.

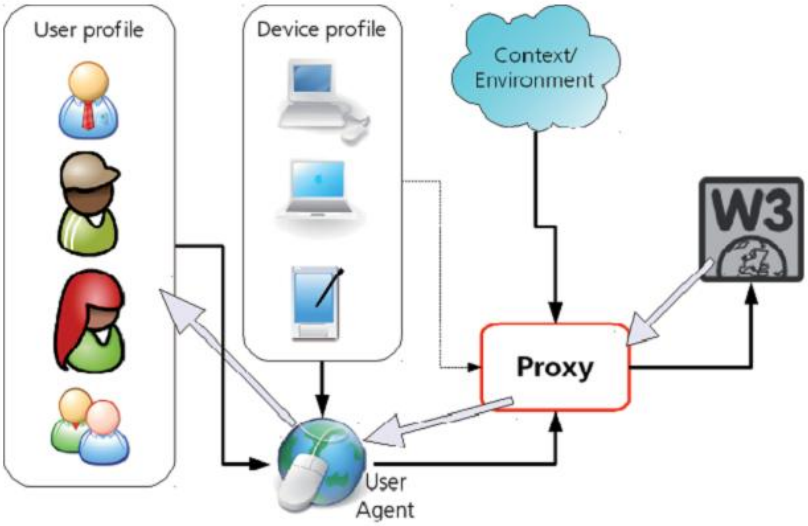


Figure 3 I2Web main architecture and concept

These aims will be achieved by:

- Developing user models based upon existing accessibility standards combined with an analysis of user requirements for people with special needs and older people in relation to ubiquitous Web 2.0 applications, in which multimodality and delivery context are key components.
- Extending existing device models, from the Mobile Web arena, to cope with the needs of other devices, ranging from standard desktops to consumer electronics devices. The models will also include assistive technologies and mechanisms to modify themselves according to different user characteristics.
- Developing open information models and generic application abstractions which can deal with information aggregation, cloud computing applications, Semantic Web and mobile/ubiquitous Web 2.0 systems.
- Implementing feedback mechanisms of compliance results to be integrated into existing development environments, which will provide to users, developers, managers and commissioners information on accessibility and usability issues of their applications. This information will be integrated into their standard

development workflow and will be implemented via Service Oriented Architecture components.

- Testing, validating and demonstrating the developed frameworks and tools in different industrial development environments.
- Ensuring the impact of the developed frameworks, by feeding the project results into relevant standardisation bodies, of which several of the consortium partners are members. This membership will ensure a smooth incorporation of state-of-the-art developments in this area.

2.2.2 Potential result for SocIoS

The user interface achievements from the i2Web project will be investigated by the SocIoS consortium and possibly the consortium will try to apply some of them in the related GUI of SocIoS functionalities.

SocIoS aims to provide users – inexperienced as well as technology-savvy – with a novel GUI that supports visual wiring of service creation processes. In other words, a user will be able to drag-n-drop components which represent various processes and then wire them together into a SocIoS service. Potential collaboration will involve understanding user needs, usability, and inheritance, in order to be able to extend existing components as well as integrate new ones.

2.2.3 Liaison partners

Fraunhofer FIT, (DE)
IBM Haifa Research Lab, (IL)

2.2.4 Collaboration activities

ICCS started communicating with the Project coordinator and the Technical Manager of project i2Web early in May 2011, aiming to open a collaboration channel between the two projects.

On 25 May 2011, NTUA team sent an email as a collaboration invitation to the i2Web coordinator. The i2Web project responded end of June (Dr. Carlos A. Velasco the project coordinator from Fraunhofer Institute for Applied Information Technology-FIT), and the two sides agreed for a possible teleconference between the collaboration involved partners. This happened on 5 July where Dr. Emmanuel Sardis and Prof. John O'Flaherty discussed through Skype (see Figure) the possible collaboration channels between the two projects.

They concluded that

- D6.1 for legal aspects in SocIoS project could include and incorporate the accessibility of social networks issues for elderly people or general people without the related knowhow on future internet technologies GUIs and devices.
- The Ethics handbook that the i2Web project will create for accessibility until end of August 2011 could be a point of interest for the SocIoS GUI developers.

- The three case studies that i2Web will investigate and use (Web2.0, Web banking and ipTV), and especially the ipTV could be a reference for the case study of STEFI in SocIoS and the related activities from both projects in this sector or advertisement and of content representation over social networks and ipTV channels. STEFI and SocIoS could benefit through exchanging ideas during the projects lifetime.

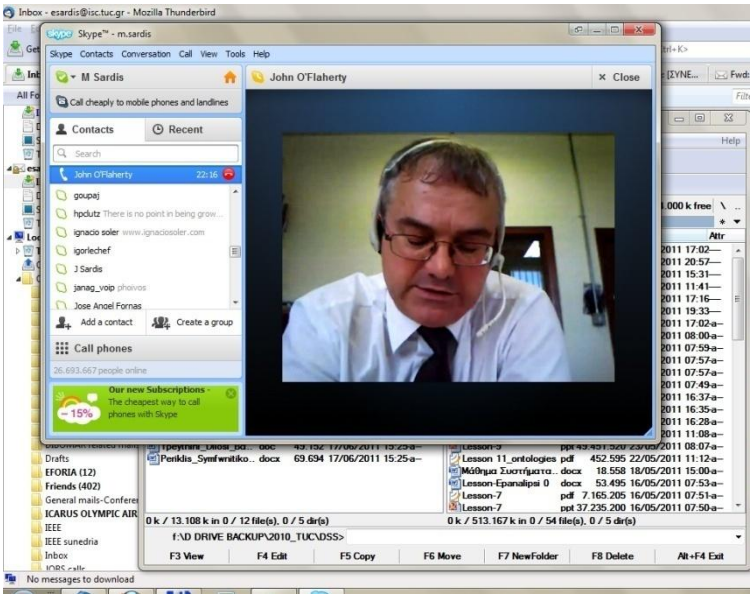


Figure 4 SocIoS collaboration activity through Skype over SocIoS and i2Web project (on 5/7/2011)

NTUA team will organize with i2Web partner a meeting in order to prepare the collaboration plan, until 28-29 of September, where they both have agreed to have a face to face meeting in European Collaboration meeting for Call 8 of FP7 on Brussels on 27 September 2011 (http://ec.europa.eu/information_society/events/ssai/infoday2011/index_en.htm), and the Internet of Services Collaboration meeting, September 28th - 29th in Brussels and is organised by the project Hola! (www.hola-project.eu) and the European Commission (http://ec.europa.eu/information_society/events/ssai/ios2011/index_en.htm). SocIoS has organized to participate in these events and possibly provide a presentation of project results until now.

2.3 Project Omelette

Project Title: Open Mashup Enterprise service platform for LinkEd data in The TElco domain (STREP)

Project type: Information Society and Media

Web site: http://www.ict-omelette.eu

Start date:

Duration: October 2010 – March 2013

2.3.1 Objective and scope

OMELETTE aims to provide new platforms for service composition addressing mass users served by the telco industry. It will provide support for the development of telco services, their flexible usage in mashup environments and their deployment on an open interoperable mashup delivery platform.

2.3.2 Potential result for SocIoS

Project Omelette shares with SocIoS the same scientific area of the IOS FP7 projects. OMELETTE is still in its early stages of defining its goal and deliverables. The concept of using mashups to create services by mashing up several existing services is a point for potential collaboration with OMELETTE. This collaboration will support SocIoS's goal to provide a platform that is flexible enough to be easily extended.

SocIoS partners will maintain further communication with the OMELETTE project to explore further collaborative results for SocIoS.

2.3.3 Liaison partners

Informática Gesfor S.A., (ES)

IBM Haifa Research Lab, (IL)

2.3.4 Collaboration activities

ICCS started communicating with the Project coordinator and the Technical Manager of Omelette project early in May 2011 (25 May 2011), aiming to open a collaboration channel between the two projects.

The project coordinators arranged a teleconference on 1 of June 2011, where they presented the main aims of the projects (http://www.ict-omelette.eu/project-presentation), possible collaboration actions and technology common tasks.

From the first teleconference the two sides discussed and opened collaboration activities for the workflow manager for SocIoS project. In specific the Omelette coordinator Mr. Jose Angel Fornas mentioned the following work that could provide ideas and possible ready to use tools.

- ROMULUS project
- MyCoktail on-line demo
- MyCocktail download page

The NTUA technical team started evaluating the **MyCoktail mashup editor for the workflow manager** and based on that we organized a second teleconference on 11 July between the involved technical partners.

Also Omelette consortium proposed an invitation for participating in Valencia NESSI members' day.

The NTUA team evaluated the proposed technological material and requested more technical details on the related MyCoktail mashup editor like the following one (22 June, email exchange between Omelette and SocIoS projects):

I see that you process the WADL file, in order to get the available resources and methods provided by a service. Even though, the WADL schema allows the definition of parameters for the response object of a method, we were not able to create such a WADL file for our services. Currently we are using the Jersey implementation for REST apps, Netbeans IDE for development and Glassfish v3.1 as an application server.
Have you come up with a solution for this, like creating a REST service which exposes response parameters as well?
Jersey is supposed to implement this via Javadocs but we were not able to make it work.

I have seen the Converter.java file that is located in the com.germinus.mashupbuilder.wadl package. There, from the response object you extract just the response representation type. How do you create mashups from external services, based on WADL if you don't know the exact response object (which could be provided later as input to another REST service for example).

The Omelette team responded with an email on 28 June, so NTUA team arranged another teleconference for 11 July in order to discuss further these technical details.

The teleconference discussion between the related technical teams resulted in a pilot test case with SocIoS services and MyCoctail tool for the workflows.

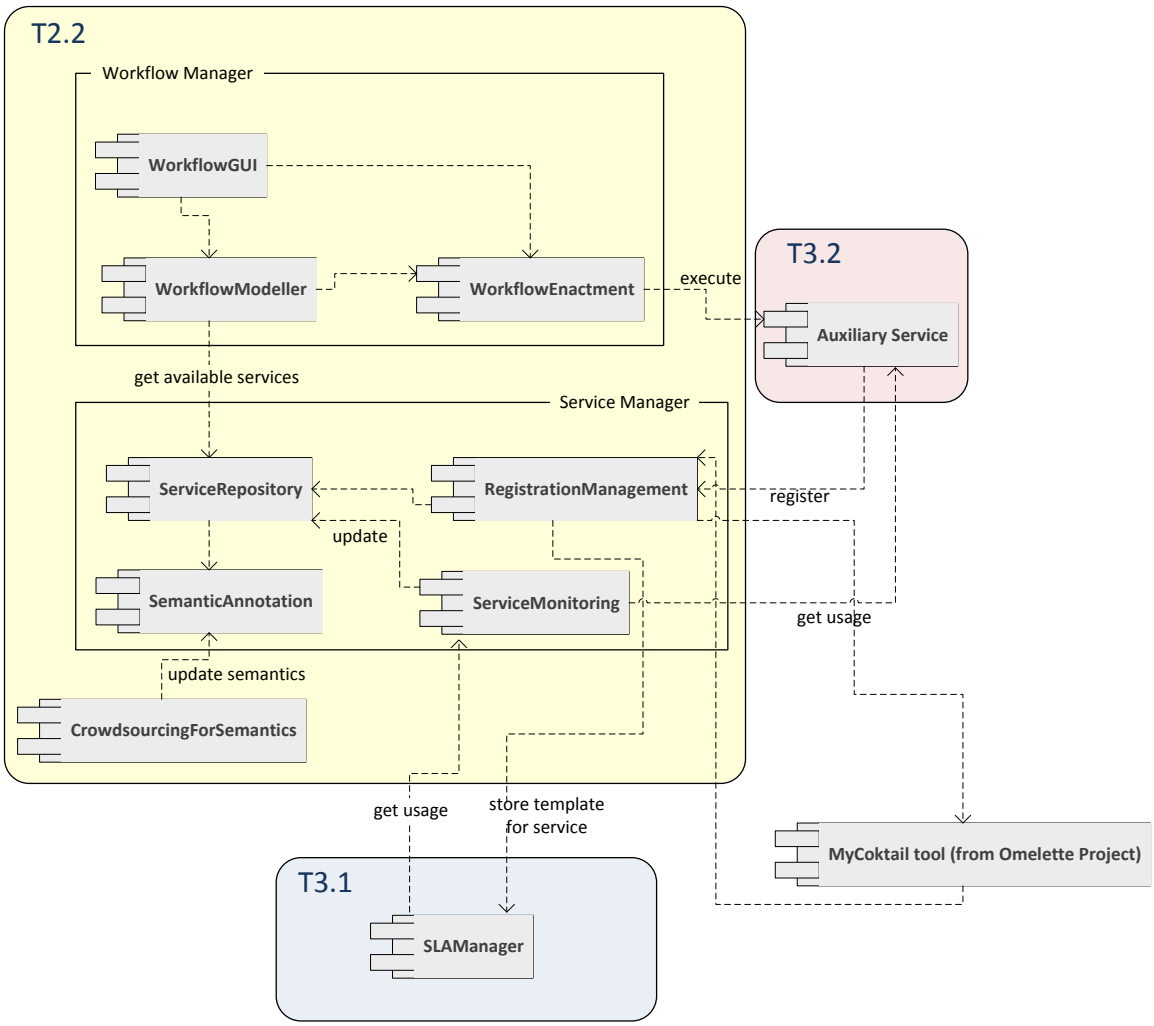


Figure 5 Omelette and SocIoS module integration for the Workflow Manager

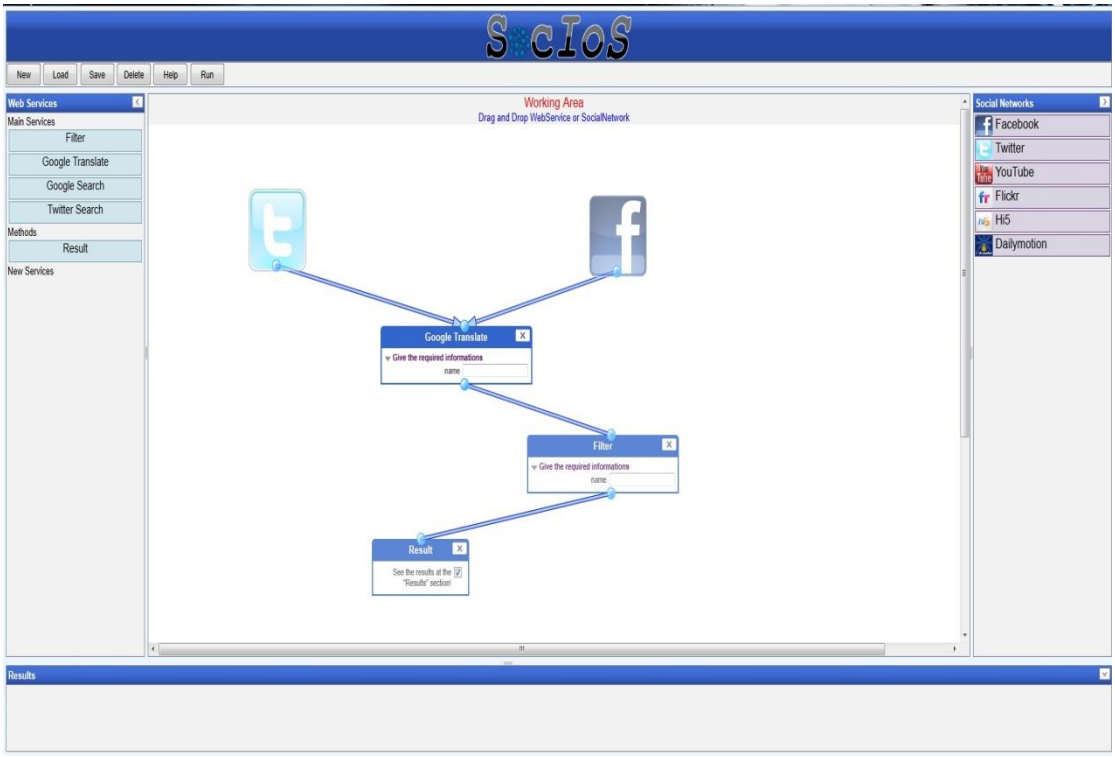


Figure 6 Workflow UI in SocIoS

Based on Figure 6, on the right-hand side, we can see the online social network platforms supported by SocIos platform. On the left-hand side, there is a list of the methods provided by the services (core and auxiliary). In the middle, there is the main workflow panel, where the user creates workflows via drag 'n' drop, by combining the available services. The workflows can be saved and executed via the menu panel.

2.4 Project Serenoa

Project Title: Multidimensional, context-aware adaptation of Service Front-Ends (STREP)

Project type: Information Society and Media

Web site: http://www.serenoa-fp7.eu/

Start date:

Duration: September 2010 – August 2013

2.4.1 Objective and scope

Serenoa is aimed at developing a novel, open platform for enabling the creation of context sensitive service front-ends (SFEs). A context-sensitive SFE provides a user interface (UI) that exhibits some capability to be aware of the environment and to react to changes of this context continuously. As a result such a UI will be adapted to a person's devices, tasks,

preferences, and abilities, thus improving people's satisfaction and performance compared to traditional SFEs based on manually designed UIs.

2.4.2 Potential result for SocIoS

SERENOA belong in the same scientific area of the IOS FP7 projects as SocIoS, however, it is still early to determine collaborations in the research and technical domains. SocIoS plans to implement crowdsourcing services to harness the "Wisdom of the Crowd", specifically through casual games and their corresponding interfaces. These games and interfaces could potentially become a source of collaboration with Serenoa where input from the crowd could be use to enhance the context specification mechanism/switch in Serenoa. SocIoS partners will maintain further communication with the SERENOA project to explore further collaborative results for SocIoS

2.4.3 Liaison partners

Telefónica I+D, (ES)

SAP AG, (DE)

IBM Haifa Research Lab, (IL)

2.4.4 Collaboration activities

ICCS started communicating with the Project coordinator and the Technical Manager of Omelette project early in June 2011 (10 June), aiming to open a collaboration channel between the two projects.

Finally, there was no response from this project until now.

2.5 Project SRT-15

Project Title: Subscription Routing Technology for 2015

Project type: Information Society and Media

Web site: http://www.srt-15.eu

Start date:

Duration: October 2010 – March 2013

2.5.1 Objective and scope

The objective of SRT-15 is to bridge the gap between cloud infrastructures and enterprise services by building a distributed service platform. For that purpose SRT-15 relies on four key enabling technologies: content-based routing, complex event processing, dependability and data privacy. The unique combination of these concepts allows SRT-15 platform to scale

across public and private clouds allowing for reliable and dynamic interaction between various enterprises applications.

The goal of SRT-15 is to leverage rapidly changing business conditions by building a scalable platform for connecting business applications and services. The goal of the SRT-15 platform is to enable the discovery and integration of dynamic enterprise services on the Internet. SRT-15 will allow for dependable and scalable cloud-based processing of data coming to and from a variety of heterogeneous enterprise services spread across multiple distributed locations. In order to be able to embrace the change in the enterprise information processing landscape, SRT-15 relies on technologies that support rapid change: cloud computing, content-based routing and complex event processing. SRT-15 not only embraces change, it also controls it. Privacy and dependability have been identified as main challenges associated with the on-demand model. Therefore, SRT-15 will "by design" support extreme robustness and will preserve the privacy of data which is processed in the public and private clouds SRT-15 is deployed upon. This will allow SRT-15 to maintain control over the dependability and privacy of the enterprise data despite failures and breaches of the underlying infrastructure.

The main contribution of SRT-15 is that it will not only allow for composition of services within one homogeneous infrastructure. Instead, SRT-15 will allow for interconnecting of services located in (and using) different public and private clouds. In SRT-15 clouds can be private (i.e., operated by the company) or public (i.e., operated by a service provider). Instead of talking about private and public clouds, we will use the terms trusted and untrusted clouds because: (i) business units within the same company (i.e., using the same private cloud) might not trust each other, and (ii) there might be a trust relationship to external (public) cloud provider.

The goal of the SRT-15 platform is to avoid tightly coupled dependencies by becoming event-driven. The event-driven approach to the construction of the SRT-15 platform will provide loose coupling of components. SRT-15 will decouple its services using the content-based routing layer. The content-based routing layer will provide an event based abstraction which allows SRT-15 to run on different trusted and untrusted clouds. The content-based routing layer will be based on the observer pattern and will be accessible via the content-based publish/subscribe API. Content-based routing in SRT-15 simplifies not only the communication between but also the choreography of services in large-scale and constantly changing environments. Content-based routing in SRT-15 is an enabling technology for large-scale complex event processing (CEP). SRT-15 will use CEP to connect different services using the cloud infrastructure. CEP will filter and aggregate events between services publishing information (publishers) and services receiving information (subscribers). The goal of SRT-15 is to use the distributed CEP technology in conjunction with content-based routing to achieve real-time service interaction. SRT-15 will use CEP to close the gap between the constantly increasing amount of information produced and stored by different applications and users and the relatively stable cost for the information transmission. SRT-15 will ensure high scalability and flexibility of CEP by parallelizing the information processing across different nodes and processor cores. SRT-15 will use the content-based routing to distribute

the parts of the CEP algorithms across nodes and asynchronous processing of subtasks to distribute the processing among multiple cores. The partitioning and parallelization process will be continuously adaptive as both the data streams and queries might change over time.

The SRT-15 platform will be designed in such a way as to reduce the data privacy risks resulting from the use of the trusted and untrusted clouds. SRT-15 will be designed with focus on the privacy of data from the outset, and will not just bolt on privacy mechanisms at a later stage. Specifically, SRT-15 will allow for content-based routing of encrypted messages without revealing their content to nodes other than source and destination.

2.5.2 Potential result for SocIoS

The SRT-15 project aims have many goals in common with the SocIoS objectives. Their difference is the main platform. SocIoS will try to collaborate with this project in the domain of the event driven services and their almost real time service interaction. Also the services composition and their related research and technologies aspects will be examined. Finally there is a security part that SRT-15 will investigate for data privacy and its secure manipulation, which could also provide a channel of cooperation between the SocIoS partners related with the security concerns of social networks and their data manipulation.

Potential collaboration may also occur in the domain of reputation, which SocIoS plans to research and implement as a SocIoS service. Reputation assessment can potentially feed into SRT-15's security research and implementation where a reputation service can collect information and assess another service's reputation and act as a mediator for that service in all domain transactions.

2.5.3 Liaison partners

SAP AG, (DE)

Yahoo! Iberia, (ES)

IBM Haifa Research Lab, (IL)

2.5.4 Collaboration activities

ICCS started communicating with the Project coordinator and the Technical Manager of SRT-15 project early in May 2011, aiming to open a collaboration channel between the two projects. Both projects arranged a teleconference at 15/6 in order to discuss the possible technical and research activities that they could collaborate and exchange ideas and knowhow.

The main technical points of the discussion were the following:

a) Event driven services
b) Real time services
c) Services composition
d) Data privacy and secure manipulation

The SRT-15 coordinator informed and explained to SocIoS coordinator the above points and found that from the technical part the best collaboration scenario could be to try in the coming months investigate the possibility of **using the SocIoS API in the SRT-15 infrastructure** and check their performance and their computational capacity. Structure data that SocIoS queries can provide through SocIoS API can be used from SRT-15 as a load for system infrastructure measurements and tests.

Also, both sides exchanged ideas for collaboration in related dissemination activities and already opened a communication channel for further collaborative dissemination actions, like participating and organizing workshops and conferences like the **Eurosis Conference on 2012**[1].

3 From other units of FP7 Projects

3.1 Project +Spaces

Project Title: Policy Simulation in Virtual Spaces

Project type: ICT for Governance and Policy Modelling

Web site: http://www.positivespaces.eu/

Start date:

Duration: January 2010 – June 2012

3.1.1 Objective and scope

+Spaces (dubbed Positive Spaces) is an FP7 project (call 4, Objective 7.3) aiming at policy making simulation in virtual spaces. It proposes to use existing virtual worlds (VWs) as the societal sandbox for modelling real world behaviour and plans to develop the required tools and methods for exploiting VWs to that end.
+Spaces regards VWs as places where people interact online, environments that allow users to socialize under a technological frame that implements a specific context. These environments may be classified into two types:

1) 3D Online VWs, and
2) Online Social Networking platforms.

3D Online Virtual Worlds are spaces where scenery and various objects are depicted in 3D on a computer screen. A person can navigate and interact within this space using a virtual image, called avatar. Examples are Second Life and World of Warcraft, to name just two.
Online Social Networking platforms are spaces, where people can socialize online mainly by exchanging messages, pictures and other items. Examples are Facebook, Twitter and Blogspots.

[1] http://eurosys2012.unibe.ch/

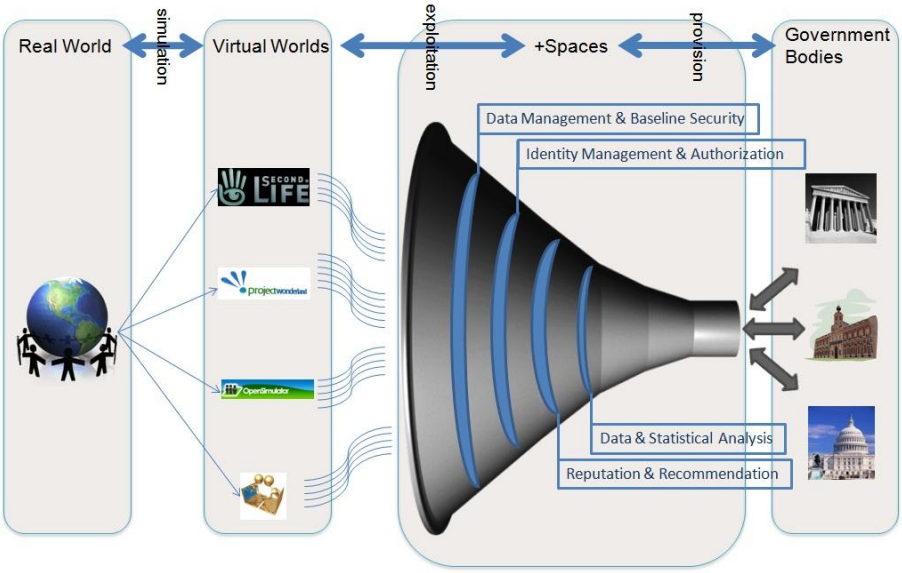


Figure 7 +Spaces API and middleware

3.1.2 Technical objectives

+Spaces project is aggregating developments from various research areas and application domains. The scientific and technical objectives of the project can be summarized to the following:

- **+Spaces API and middleware,** where it will create an API and the underlying infrastructure (middleware) that will allow applications for policy making to be deployed across a broad and diverse make-up of VW environments depending on the demands for sample size, relevance, demographics, theme, VW "openness", or functional capability, based on Service Oriented Architecture (SOA).
- **Common Infrastructure Services,** on top of this middleware, a set of common infrastructure services will be deployed.
- **Data Mining,** text mining and information retrieval mechanisms will be developed in order to collect data from VWs. The +Spaces project will gather structured data from polls and petitions, unstructured data from VW blogs and debate logs, and relational information like social networks from user tracing.
- **Recommender and Reputation Systems,** algorithms will be developed for using aggregated social network information for recommendations and reputation. A social network based reputation system will support decisions on whether users' opinions can bring true value to policy making process. This will be based on the idea of the wisdom of the crowd (e.g., acceptance, popularity, or explicit ranking) and on sentiment analysis.
- **Statistical Analysis Tools,** the aggregated data from VWs will need to be analyzed, interpreted and presented in an appropriate fashion (graphs, charts) that will enable experts to draw conclusions from them. For that purpose a set of statistical analysis tools will be developed and deployed inside the +Spaces platform.
- **Policy making applications,** covering the necessary services facilitating the participation of end users (i.e. people / citizens) and ultimately enabling the

incorporation of the input of relevant stakeholders in decision making. +Spaces will employ social technologies for collecting and aggregating social information from multiple VWs through structured and unstructured fora in support of debates for public, blogs, e-polls, e-petitions and provision of additional relevant information accompanying the aforementioned.

- **Business Modeling,** will consider the needs of the VW citizens as a market, model the incentives behind each stakeholder involved and use these models to derive conclusions and form a series of recommendations.
- **Legal analysis,** will utilise VWs to enable mass participation under various contexts that will simulate specifics aspects of human society. Significant effort will be dedicated to legal analysis. The aim of this analysis will be to draw up a list of requirements for how +Spaces would be able to legally realise its technology aim without infringing relevant EU laws on intellectual property, privacy/data protection and consumer protection.

3.1.3 Potential result for SocIoS

SocIoS will collaborate with + Spaces project under the following technical objectives:

- API and middleware infrastructure and related state of art technologies,
- policy making applications, and
- information retrival methodologies.

Also, the recommender and reputation systems and mechanisms will be could be another channel of collaboration between the two projects.

3.1.4 Liaison partners

Institute of Communications and Computer Systems (ICCS), (GR)

Athens Technology Center, (GR)

K.U. Leuven, (BG)

3.1.5 Collaboration activities

ICCS SocIoS team first communicated with the Technical Manager and ICCS team of +Spaces project in June 2011 (1 June), aiming to open a collaboration channel between the two projects, asking for support on the Middleware design, as well as SOA components re-use. Thus, it was decided to adapt a part of the Middleware concept of +Spaces and also to adapt and re-use some of the SOA components developed in +Spaces.

The components that were finally decided to be adapted for SocIoS, with support from +Spaces people, are the **SLA Manager** and the **Service Manager** components. The source code of those was provided to SocIoS technical team in the beginning of July 2011. The following diagrams provide an overview of the +SPACES components into SocIoS overall architecture.

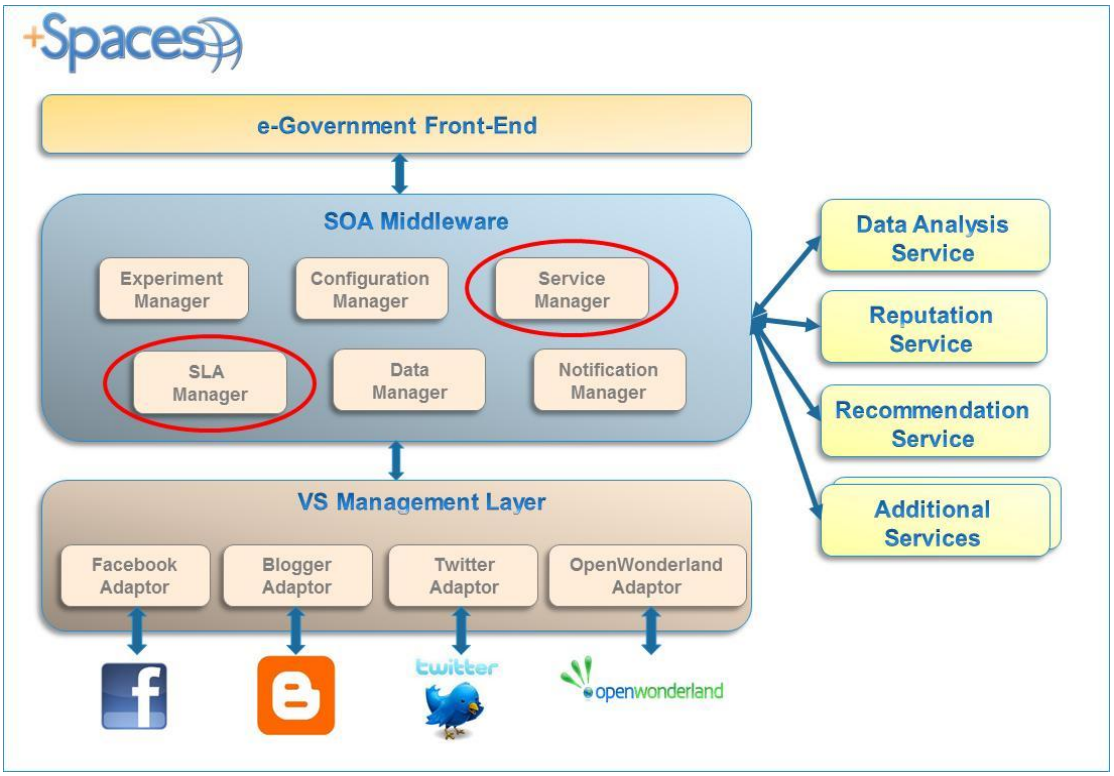


Figure 8 SLA Manager and Service Manager in +Spaces

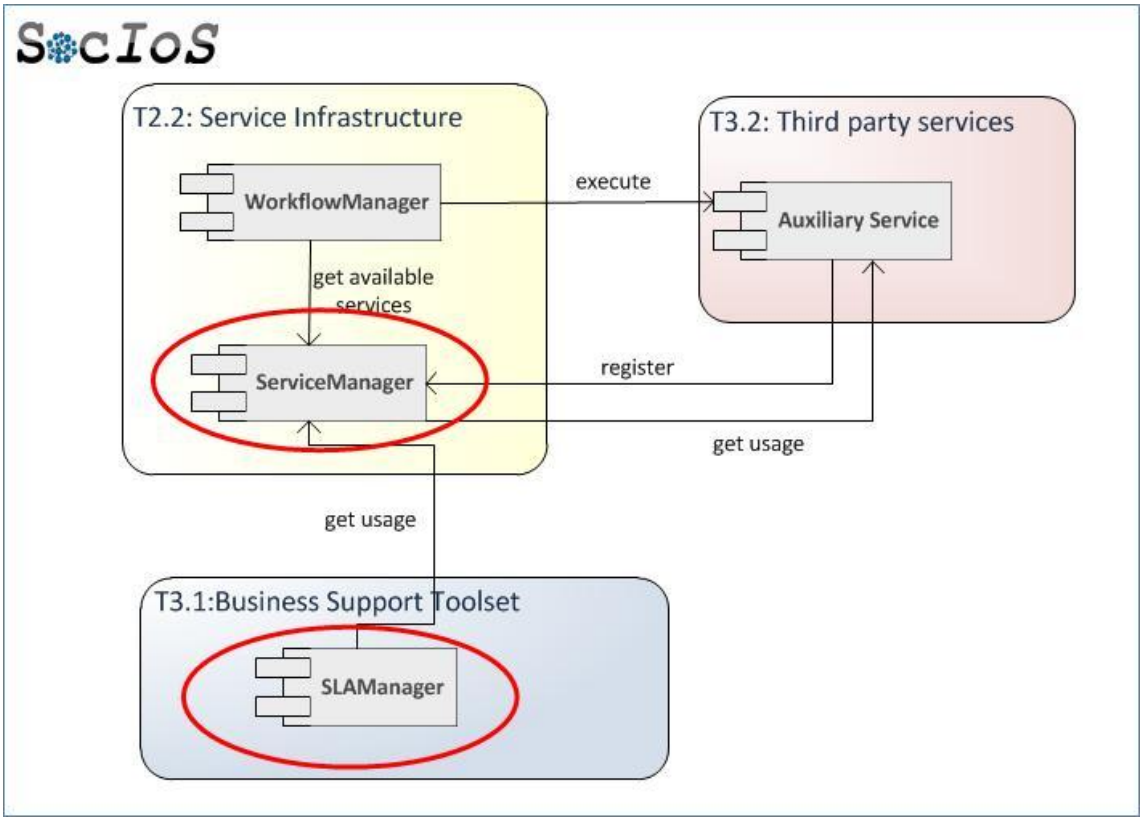


Figure 9 SLA Manager and Service Manager in SocIoS

The technical team of SocIoS project will continue this collaboration with the +SPACES team during the project duration in order to produce a valuable technology exchange and related scientific results and publications.

3.2 Project SYNC3

Project Title: Synergetic Content Creation and Communication

Project type: Technologies for Information Management

Web site: http://www.sync3.eu

Start date: 1st April, 2009

Duration: 36 months (April 2009 – March 2012)

3.2.1 Objective and scope

The SYNC3 project aims to deliver a platform for aggregating news from both traditional news media (i.e. news portals, etc.) and the blogosphere, and to provide the end users with sophisticated capabilities with respect to content structuring, management, and delivery. By doing so, SYNC3 applies the news domain structure derived from well-organised news portals to the unstructured domain of the blogosphere.

To this end, novel approaches have been specified and relevant research work has been conducted, which advances the state-of-the-art in the areas of linguistic processing, textual analysis and data/opinion mining. The outcomes of this research have been released as draft prototype versions of software modules, which are integrated into a common platform. The resulting system operates both as a news aggregation tool and an authoring tool that facilitates the creation of user generated content; the latter pertains not only to authoring new material, but also to re-organising the links structured by SYNC3 into user generated storylines.

SYNC3 selects the “news event” concept as the primary information point for the effective classification of news articles and their excerpts derived from news portals, as well as for the clustering of blog posts, based on the classification models of the news articles. This concept provides a totally new approach for the semantic characterisation of media content and constitutes the correlation point between these two media-related worlds. On the whole, SYNC3 acts as an additional layer for grouping news items, supplementary to the standard news thematology, defining topics and themes for the news items categorisation.

3.2.2 Technical objectives

SYNC3 aims to apply the news domain structure derived from well-organised news portals to the unstructured domain of the blogosphere. To that end, novel approaches are proposed in each of the research areas of the project, advancing the state-of-the-art and producing a number of software modules that will be integrated into a common platform that operates as a news aggregation tool. This tool will organize content coming from news portals and

blogs. It will also allow the creation of more user-generated content, either by authoring new material, or by re-organising the links structured by SYNC3 into user-generated storylines.
The objectives of the SYNC3 project are the following:

- Identify correlated text excerpts among news articles to provide the news thematology, by grouping news items into events, topics, and themes.
- Adapt the news event models and use them to find blog excerpts that comment on the corresponding news events, while performing sentiment analysis on them.
- Use existing tagging and annotation information to extract labels, as well as geographical, temporal, and causal relations between news events.
- Visualise a graph and its rich information in a straightforward and easy to navigate way, providing users with the functionality needed to, individually or collaboratively, augment this graph with content and viewpoints.

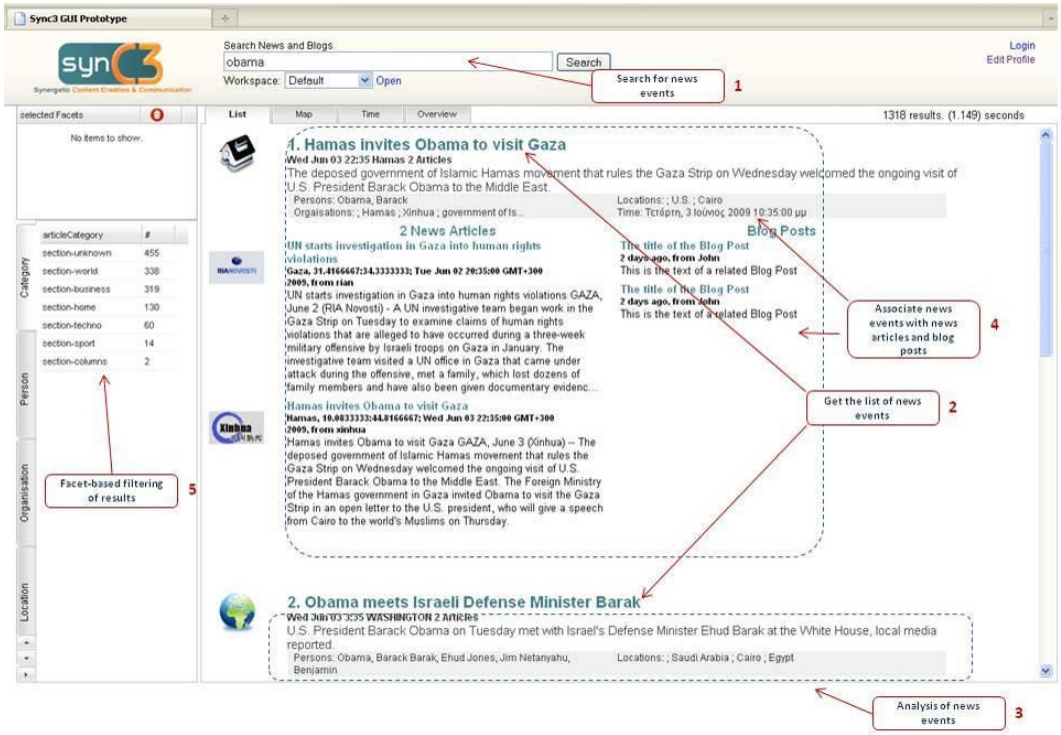


Figure 10 Screenshot of the SYNC3 prototype

3.2.3 Potential result for SocIoS

SYNC3 has three main goals and target groups:

1. It helps journalists to efficiently exploit the unstructured blogosphere for their everyday work.
2. It gives bloggers a new platform to share news and opinions with other content creators.
3. It helps communication professionals and policy makers to better follow the public debate.

SYNC3 will deliver a user-friendly news analysis tool for searching blogs and traditional media news, allowing users to create, comment and 'sync' their news in a virtually limitless network. This tool will integrate functionalities laid on three areas, namely news clustering, blog processing and news events labelling and relation extraction, and will be customisable to the needs of the professional and citizen journalists.
More specifically, the project is expected to deliver the following results:

- The SYNC3 System, which is going to be released as a news analysis tool customised to the needs of professional and citizen journalists.
- The News Clustering Components, providing modules for news article clustering and their classification into events, as well as algorithms for soft and hard dynamic and hierarchical clustering.
- The Blog Processing Components, delivering modules for blog post classification, models for sentiment analysis, and methods for knowledge transfer from the news to the blogosphere domain and sentiment analysis.
- The News Event Labelling and Relation Extraction Components, which include modules for cluster labelling and relation extraction and methods for news relations and attributes extraction.
- The User Interface (UI) Components, providing the appropriate visualisation techniques and support for user interaction and personalization.

3.2.4 Liaison partners

Athens Technology Center (GR),

NCSR Demokritos (GR)

3.2.5 Collaboration activities

ICCS started communicating with the Project coordinator and the Technical Manager of SYNC3 project end of May 2011, aiming to open a collaboration channel between the two projects.

Given that both projects entail news agencies as end users, the common interest lies in the field of **Event Detection**. Journalists seek to exploit the high potential of the user-generated content that is continuously posted on-line. The reason that it allows for significantly faster detection of events and that it offers information extracted directly from eye-witnesses. The extreme volumes of user-generated content, however, pose a serious challenge: Web 2.0 technologies and Social Networks do not facilitate the navigation through the content of specific events.
A solution to this problem is to group into clusters those pieces of information that pertain to a common event and to assign a descriptive label to each cluster. Both projects explore these techniques independently in the blogs and the social networks, but the goal would be to provide a unified access to both domains. This will provide end-users with a more comprehensive tool that offers a holistic overview of events.
In short, therefore, the goal of this collaboration is twofold:

- To explore the differences in the content of two different domains: blogs and SNs. The outcomes of this study form the basis for developing unified classification and clustering techniques for event detection in both domains.
- To provide users with a unified access to both domains through a common interface. This can be done by introducing in SocIoS a new module that operates as a wrapper for SYNC3 and its functionalities. Thus, SocIoS will be enriched with valuable content from the blogosphere.

For the time being, we have focused on the first goal: the development of common Event Detection mechanisms. The first step in this effort is to examine the differences in the content of the two domains (i.e., blogosphere and Social Media) with respect to the parameters that are critical for the performance of text clustering and text classification techniques. For the time being, we have identified the following factors that result in different settings for each project:

1. **Text Length**. Micro-blogging messages are typically subject to size limitations. For example, Twitter allows only posts that contain a maximum of 140 characters. Blog posts, on the other hand are significantly longer, possibly comprising few paragraphs. They contain, therefore, more context that facilitates the extraction of useful information (e.g., entity recognition, location names etc). Social Media can compensate for their sparseness through the indirect contextual information they entail. This comes in the form of URLS that point to web pages or multimedia items of any kind that have been posted online. This rich set of indirect contextual information can be exploited as a source of reliable classification evidence. Blog posts contain such information, as well, though at a significantly lesser extent.
2. **Noise**. Social Media users are more prolific than bloggers; they post messages with a higher frequency, as they typically engage in conversations with each other. Thus, they are more prone to spelling mistakes than bloggers, who typically review their text before posting it on-line. In addition, social media users have developed a jargon that involves neologisms and abbreviations in order to deal with the space limitation. As a result, social media content is entails higher levels of noise than blog posts.
3. **Spam**. The majority of Social Media platforms entails high levels of spam, as malicious users disguise their messages so that it bears strong similarity to popular content. For instance, in the case of Twitter spammers take advantage of the common practice of annotating messages with hash tags to denote their topic; they do so by associating their messages with several popular hash tags. Thus, users searching for a particular, popular topic inevitably encounter numerous spam messages, as the lack of context makes it difficult even for humans to identify them. On the other hand, blogs are less popular among spammers, as they need larger volumes of context for deceiving common users.

On the whole, social media content is sparser and more noisy, while involving more spam and indirect contextual information. The goal is, therefore, to investigate the impact of these characteristics on the performance of text classification techniques that lie at the core of event detection algorithms. To this end, we already conducted a large-scale study on real-

world data sets in cooperation with the team of NCSR Demokritos. Our aim was to discover the most appropriate document representation model for blog and Social Media posts. We examined the traditional vector models (i.e., the term vector and the n-grams one) and compared them with the *n-gram graphs technique* in the context of Topic Classification. The outcomes of our study have been submitted as a full paper to the 5th ACM International Conference on Web Search and Data Mining (WSDM 2012).

We intend to exploit our findings in the context of the common Event Detection Service. In general, the SocIoS Event Detection Service is crafted to the special settings of the Social Media content, consisting of the following three layers (note that they are executed sequentially, in the order they appear):

1. **Bursty terms identification**. This step filters out the terms that appear in Social Media but convey no information (i.e., stop words and terms from spam messages). To this end, it examines the frequency of tokens in the current time period and compares it to their frequency during the previous one. In case there is a significant increase in the latest time interval, the corresponding term is considered bursty, i.e., a term that signals the beginning of a new event. This procedure is executed in linear time with the help of streaming methods.
2. **Bursty terms clustering**. This layer identifies groups of keywords that frequently o-occur in individual messages. The rationale behind this clustering is that co-occurring terms probably correspond to the same event.
3. **Event description construction**. Each event is defined as a set of co-occurring, bursty terms. However, not all the terms pertaining to an event are equally representative of it. Instead, a subset of the relevant terms is usually sufficient for providing a comprehensive description of the event. Distinguishing the set of descriptive terms from the less informative ones is the goal of this step of the algorithm.

The challenge, therefore, is to check the performance of the individual layers on blog data. That is, whether they are equally suitable for larger texts that contain lower levels of noise and spam.

Another goal is to **map the event detection algorithms of SYNC3 to the three-layered architecture of SocIoS even detection service**; i.e., to examine whether their individual stages perform a functionality similar to one or more of the above three layers. Apparently, this procedure will facilitate the integration of the approaches developed in both projects.

3.3 Project SERVFACE

Project Title: Service Annotations for User Interface Composition

Project type: ICT-2007.1.2 - Service and Software Architectures, Infrastructures and

Engineering

Web site: http://www.servface.eu/

Start date: 01-02- 2008

Duration: 33 months

3.3.1 Objective and scope

The ServFace project aims at creating a model-driven service engineering methodology for an integrated development process for service-based applications. ServFace looks at this process from two different perspectives: First, the annotation of services with corresponding user interface annotations that are developed in the ServFace project, and, second, the composition of annotated services to build interactive service-based applications from annotated services.

The set of Service Annotations identified in the ServFace project are captured in the ServFace Annotation Model. Together with technical service descriptions like WSDL, it provides the necessary input for an automated user interface inference mechanism that generates high quality user interfaces for the interaction between human users and annotated web services. The Annotation Tool that is being developed in ServFace will provide tool support for defining service annotations. Service annotations will be published in an annotation repository, from where they are globally available.

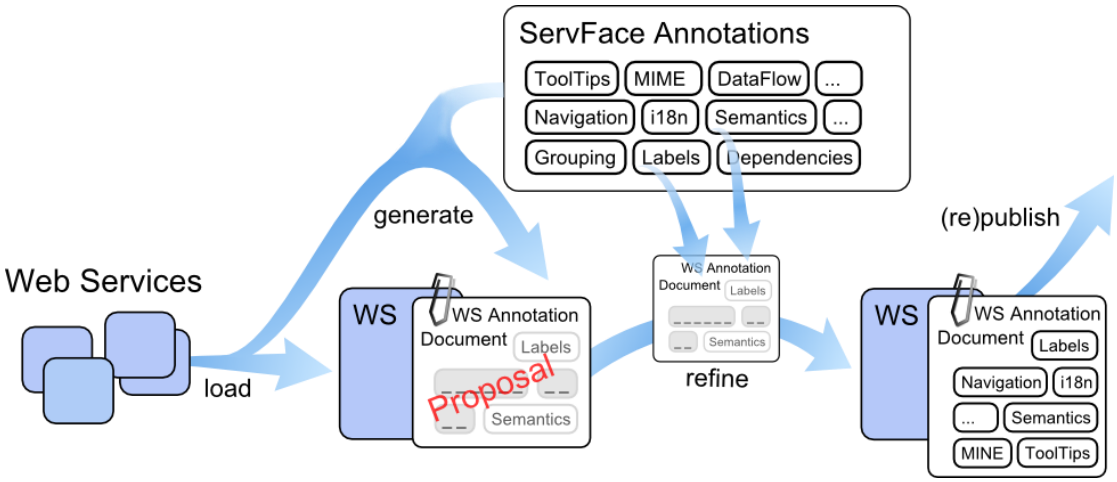


Figure 11 ServFace Architecture overview

3.3.2 Technical objectives

For the composition of annotated services to complex applications, two alternative modelling approaches are investigated in ServFace. The first approach, presentation-oriented service composition, uses a novel mashup-oriented integration of annotated services. In presentation-oriented service composition, the application is modelled visually by composing the application's UI from parts which are generated using the service annotations. The composition is supported by the ServFace Builder, an online tool that is being developed in the project. The ServFace Builder integrates an inference engine to generate user interfaces from annotated services. The presentation-oriented composition approach and the ServFace builder will be designed to support end-user development, enabling non-programmers to build service-based applications.

The second approach is supported by the MARIAE tool and provides a novel solution able to exploit task models (represented in the ConcurTaskTrees notation) and user interface models (in the MARIA language) for the design and development of interactive applications based on Web services for various types of platforms (desktop, smartphones, vocal, multimodal, etc.). In this process the tool is able to automatically import service and annotation descriptions and support interactive association of basic system tasks with Web services operations. Then, a number of semi-automatic transformations are able to exploit the information in such service and annotation descriptions to derive usable multi-device service front ends.

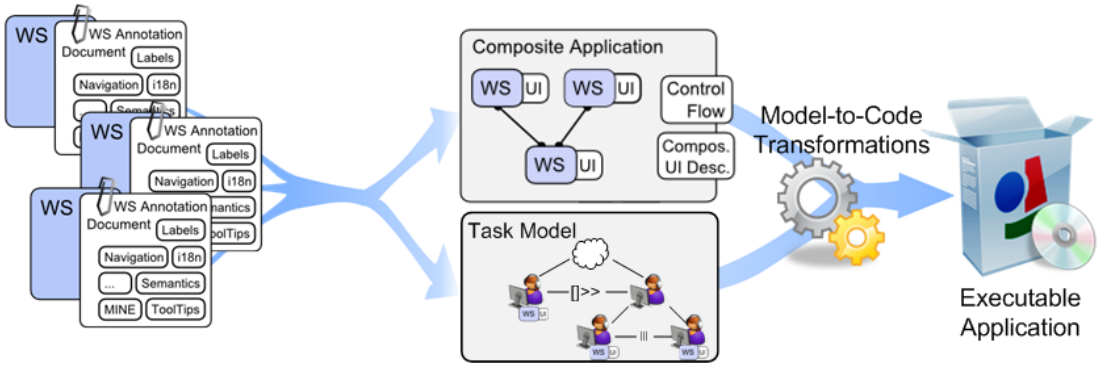


Figure 12 Implementation[2]

Four primary objectives have been identified for ServFace:

- **Service Engineering Methodology.** The objective of ServFace is to design a methodology enabling the development of interactive applications involving the annotation of web services, the presentation-oriented (or, alternatively, task-oriented) composition of annotated services to complex applications, and the generation of executables from these composites.

- **Model-driven development approach.** Platform-independent models are foreseen to describe service annotations and composition models. Using appropriate inference rules and model-to-code transformations, these models are mapped to various technological platforms like Google Android and Microsoft® Silverlight™.

- **Service composition.** From the perspective of user interfaces, ServFace directly adopts concepts and technologies developed in the areas of user interfaces design, task-driven software development and end-user development for the composition of annotated services to complex applications.

- **Integrated development environment**. An integrated tool environment is being created to support all development phases of interactive applications that build upon annotated services. This comprises the annotation tool and authoring tools supporting presentation-oriented and task-based composition approaches for annotated services. Model-to-code transformations map these technology-independent models to executables for concrete runtime environments.

[2] http://www.servface.eu/

3.3.3 Potential result for SocIoS

As both SocIoS and ServFace projects are working on Services engineering and composition functionalities, they have many common tasks that could collaborate and exchange ideas and technology knowhow.

3.3.4 Liaison partners

-

3.3.5 Collaboration activities

End of June 2011, NTUA started evaluating the SERVFACE BUILDER Tool from the SERVFACE project in order to use it into the workflow manager module in SocIoS project.

Also end of July the SocIoS administrator tried to contact the project consortium leader (SAP AG) in order to start a collaboration channel for further information exchanges.

The ServFace consortium replied that as they have finished the project in October 2010, they do not have additional resources for collaboration activities. So the SocIoS team will remain and evaluate only the published documents and information of the ServFace web site and we will take into account their achievements as another FP7 related project.

Although the involved SERVFACE partners could not continue our collaboration invitations, NTUA technical team evaluated the project outcomes and especially the research work described through the online project deliverables (http://www.servface.eu/index.php?option=com_docman&Itemid=61). Through this work **SocIoS team has taken into account the state of art on user interfaces UI developments for web services workflows through automated procedures**[3][4][5][6].
Also technologies and related achievements on workflows and UI adaptation have been considered for SocIoS taking into account SERVFACE related work[7][8].

[3] http://www.servface.eu/index.php?option=com_docman&task=doc_download&gid=3&Itemid=61

[4] http://www.servface.eu/index.php?option=com_docman&task=doc_download&gid=47&Itemid=61

[5] http://www.servface.eu/index.php?option=com_docman&task=doc_download&gid=5&Itemid=61

[6] http://www.servface.eu/index.php?option=com_docman&task=doc_download&gid=52&Itemid=61

[7] http://www.servface.eu/index.php?option=com_docman&task=doc_download&gid=7&Itemid=61

[8] http://www.servface.eu/index.php?option=com_docman&task=doc_download&gid=53&Itemid=61

4 Other collaboration actions

This section describes the main aims of our collaboration plan. In general, the consortium will first try to communicate with the above presented scientific projects and open related collaboration channels with the project's coordinators or the related partners. The consortium will build on that point from their contacts that some of the partners already have from previous experience or collaborations. Specifically, the project consortium will be based on the following strategic activities.

4.1 Participation in meetings

SocIoS collaboration team will attend the IOS EU collaboration meetings for identifying new collaboration and dissemination strategies and refining the SocIoS collaboration plan during the whole life of the project.

IBM will schedule brainstorming meetings with corresponding IBM representative for SOCIETIES and will possibly participate as an invited guest in conference calls and/or meetings.

4.2 Participation in Facebook

SocIoS consortium has created a common Facebook account for the SocIoS members in order to be able to communicate and discuss with other scientific community users of social networks and be informed for facts and events that could provide more collaboration channels for the project. More details are given in the *D6.2.1 Dissemination Report* deliverable submitted on M12.

4.3 Workgroup participation

SocIoS plans to contribute to Collaboration Working Groups (CWG), such as Service Architectures, Service Front Ends and QoS and SLAs.

Also, SocIoS will contribute to IT-tude, not only with the provision of open source software and documentation, but also with articles describing potential progress beyond of the state of the art in the field of IoS.

Please find attached the link to the SEQUOIA online collaborative space in which our focus group will take place http://vyew.com/Sequoia/SEQUIA_focus group N1.

4.4 Workshops

SocIoS consortium aims to organize related workshops in famous international events about the social networks and their technologies, in order to investigate and extend its research activities and knowhow. The organization of this events will be either standalone (SocIoS partners organizers), or together with other scientific communities or projects. The aim of such activities is twofold, first to communicate and exchange scientific ideas and technologies, and secondly to disseminate as much as possible the project activities, achievements and results, and increasing the project impact.

IBM and HU have organized a workshop on crowdsourcing and human computation as part of the annual WIKIMANIA conference taking place in Haifa, Israel this year. The workshop included an invited talk by Professor Luis von Ahn, a leader in crowdsourcing research.

During the first year the organized workshops from the SocIoS consortium (based on *D6.2 Dissemination Report* deliverable) are the following (please see Table 1):

Table 1 Workshops organization from SocIoS consortium

November 12th 2011	**National Technical University of Athens- NTUA**, Anastasios Doulamis	**ARTEMIS 2011** workshop in 2nd IEEE Workshop on Analysis and Retrieval of Tracked Events and Motion in Imagery Streams	Workshop organization	Scientific Workshop	**Barcelona, Spain**
November 28th– December 1st, 2011	**National Technical University of Athens- NTUA**, Konstantinos Tserpes	The Third ACM SIGMM Workshop on Social Media (**WSM2011**) in conjunction with ACM Multimedia 2011	Workshop organization	Scientific Workshop	**Scottsdale, Arizona, USA**

More details can be found in *D6.2 Dissemination Report* deliverable submitted on M12.

4.5 SocIoS and Standards

The SocIoS consortium has a strong commitment with open standards so that technologies used to build the project will be mainly based on mature and emerging standards.

Various standards and specifications issued or in progress by working groups of the following standardisation bodies have been used within the SocIoS project. Any progress related to these standards, which is achieved throughout the project's effort and with the agreement of all the relevant consortium members, will be contributed to the respective standardization bodies. An indicative list of relevant standards and specifications that SocIoS is working with:

- **OAuth** open protocol allows secure API authorization in a simple and standard method from desktop and web applications. OAuth provides a method for clients to access server resources on behalf of a resource owner (such as a different client or an end-user). It also provides a process for end-users to authorize third-party access to their server resources without sharing their credentials (typically, a username and password pair), using user-agent redirections. SocIoS (the consumer) uses OAuth to authenticate users in order to access resources that belong to SNSs (the service providers). There are currently 3 versions of OAuth used throughout the web. These are OAuth 1.0, 1.0a and 2.0. The SNSs SocIoS supports and the respective versions of

  OAuth they support are the following:

o YouTube (OAuth 1.0)

o Twitter (OAuth 1.0a)

o Facebook (OAuth 2.0)

o Dailymotion (OAuth 2.0)

o FlickR (OAuth 1.0a)

o MySpace (OAuth 2.0)

Each Socios-SNS authentication procedure implementation is different due to the differences in the OAuth versions used by each SNS. SocIos uses the OAuth standard and based on the implementation and integration project plan, we will investigate if related contributions could be achieved during the project lifetime.

- **OpenSocial Standard**: OpenSocial (http://www.opensocial.org/) is a standard for building applications in various SN tools using a common API. OpenSocial is an open, formal data specification that attempts to capture the concepts that govern generic purpose SNS APIs into a single object model.

  Already during the last months of the project's first year, we are working with OpenSocial API and we are aiming to produce and create some contributions in related fields during the coming SocIoS API implementations. The coordinator ICCS has been registered with the OpenSocial developer community in order to have feedback and information on OpenSocial group discussions and activities.

- **FOAF project**: Friend of a Friend (http://www.foaf-project.org/) describes people and relationships in a way that computers can parse, providing a schema to represent not only the personal profile's meta-data, but the SN as well.

  SocIoS analyzed the FOAF project and borrowed concepts and terminology from it, however, as an ontology SocIoS cannot adopt it nor to contribute to it in a planned manner.

- **WS-Agreement**, by proposing a new structure to enable the representation and negotiation QoS notions derived from SNs. SocIoS is already using components that are based on this standard.

- **OASIS**: Of particular interest to SocIoS is the specification for Web Services Dynamic Discovery (WS-Discovery)[i].

SocIoS project during its period will investigate and decide in which scientific areas it can contribute with its research on the related social networks technologies.

4.6 Dissemination and training

We plan to actively contribute by presentations, publications and other forms of content to joint events and to the ICT Web Portal. Many of our partners in SocIoS consortium already participate in ICT events around Europe, something that will be continued until the end of the project.

The aim of these activities is the production of dissemination material that can be used for communication towards the general public, the organization of joint summer schools.

IBM has published a paper on crowdsourcing games in CHI 2011:

- Guy, I., Perer, A., Daniel, T., Greenshpan, O., and Turbahn. Guess Who? Enriching the Social Graph through a Crowdsourcing Game. Proc. CHI '11.

HU has presented SocIoS in the social networks session at Info 2011 in Tel Aviv, Israel.

ATC has produced leaflets for the project presentation, and finally the consortium has started related collaboration plans through this dissemination material and activities (presented in *D6.2.1 Dissemination Report* deliverable) with related groups and teams in the field of social networks.

5 Conclusions

The SocIoS consortium believes that the collaboration between several projects can generate more relevant impact and better performance than individual projects. This document summarises the collaboration activities for SocIoS as foreseen and managed to developed until month 12 of the project. All projects and initiatives considered by SocIoS as sources for contributions and collaboration have been selected based on the degree of compatibility as perceived at this stage.

Our aim is to keep the flow of information open to other European projects/initiatives to facilitate the identification of new synergies to exploit.

Finally, it should be mentioned that the collaboration plan will be updated by the consortium and the related involved partners in WP6, per project period. The document will be revised with information about activities carried out and updated plans for the next period.

6 References

[1] http://cordis.europa.eu/fp7/ict/ssai/docs/

[2] SocIoS Deliverables, D0.1b, D2.3, D2.6.1, D2.5.3, D3.2.1, D6.2.1

7 Appendix

7.1 Omelette project related material for services mashups

THE OMELETTER

NEWSLETTER OF THE Omelette PROJECT

OMELETTE - The next Generation of Mashups

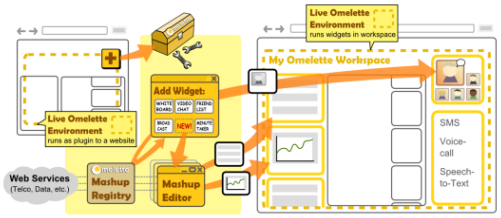
What is OMELETTE?

Today, it is common that people work in distributed teams and environments. Collaboration platforms facilitate discussions and accelerate decision making by providing dedicated functionality; some of these platforms also support the concept of mashups. Mashups allow the construction of goal-oriented applications by combining data, logic and UI from different sources. SMEs and large enterprises are able to create their own, customized mashups to support their collaboration processes. Within the last few years, a large number of novel telephony and messaging services have become accessible to the Web development community. These "telco services" provide unique capabilities regarding voice, video and data transfer. The use of these services in mashups enables the implementation of innovative and novel applications and collaboration platforms. In this landscape, OMELETTE is researching the development, management, governance, execution and conception of converged services with a specific focus on the telco domain.

OMELETTE is a European Union FP7 project that started in October 2010, will have a duration of 30 months and involves 9 partners developing and designing the next generation of mashups. This first 6 months of the project have been dedicated to gathering requirements and specifying use cases. Furthermore, a state of the art analysis in the field of mashups, service description and composition has been the focus of project activities. Currently, the partners are developing a mashup description language and designing a reference architecture for telco mashups.

Powerful Toolkit

OMELETTE will provide a set of tools and components to support the development and execution of telco mashups. A powerful editor facilitates the creation of individual mashups that allow collaborative processes. The editor is supported by a repository of ready-to-use widgets, services and mashups. The reuse of existing components facilitates the implementation of a cost-efficient development process.



In addition, algorithms for service discovery and automatic composition of mashups from user goals help to accelerate the creation of mashups. OMELETTE is developing a platform that enables the execution of telco mashups and includes all necessary components embedded in a dedicated infrastructure.

For more information about the OMELETTE project, please visit our homepage: http://www.ict-omelette.eu

The OMELETTE Project

We at UNITN believe mashups will be the next step in end user development. And telco is the right domain to start with, in that communication is increasingly permeating our lives and actively involving each of us.
Florian Daniel, University of Trento, Trento, Italy

As one of the leading companies on mashups in Spain, GESFOR is specially interested in service interoperability, usability and convergence in the telco domain. By leading and managing the OMELETTE project we expect to strengthen our position in the field of mashup development. José Angel Fornas, Informática GESFOR, Madrid, Spain

At IEC we see a big future for flexible mashups that are able to take advantage of emerging mobile technologies. OMELETTE is building a foundation which will enable us to explore the new areas of application which they open up, including in education.
Scott Wilson, University of Bolton, Bolton, United Kingdom

We at HUAWEI want to make OMELETTE project the real platform to accelerate the development of telecom applications and enrich the end user's experience. HUAWEI hopes OMELETTE project can help telecom operators to deal with the challenge of Internet.
Heng Chang, HUAWEI TECHNOLOGIES CO. LTD., Shenzhen, China

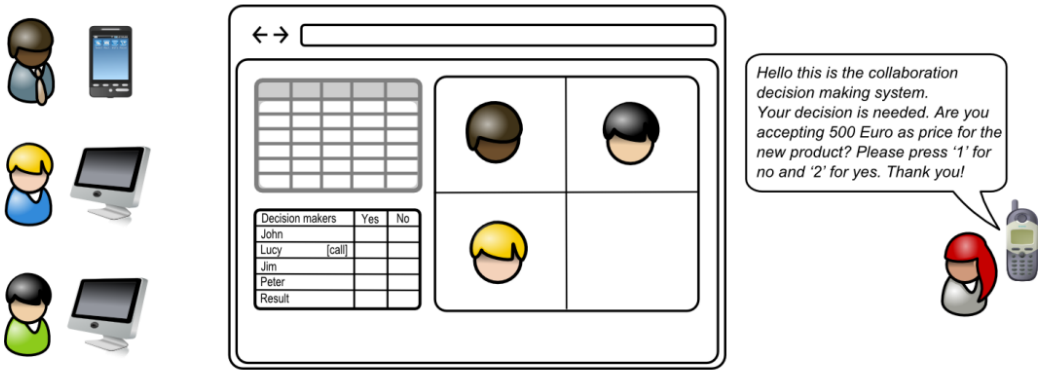
Focus of SAP Research within OMELETTE constitutes the ad-hoc extension of running web applications with new and innovative collaborative features or widgets. We consider the convergence of emerging telco services and classic data services as one major groundwork in this regard.
Tobias Nestler, SAP Research, Dresden, Germany

TIE Holding has been investing in a global service ecosystem via its TIE Kinetix platform, which provides Software-as-a-service, and a number of European projects such as SOA4ALL, NESSI2010. OMELETTE is the next step towards high usability and accessibility of software services that we deliver to our clients worldwide. Vadim Chepegin, TIE Holding R&D, Hoofddorp, The Netherlands

What are Telco Mashups?

In order to better understand how a telco mashup would look like, let's consider the following application scenario about collaborative decision-making. Product manager Paul wants to discuss the cost data of a recently launched product. Therefore, he needs to talk to Lucy, who is the head of sales, as well as Jim and Peter who are two colleagues from the marketing department. The aim of the meeting is to decide which pricing model the company should take in an upcoming marketing campaign for this new product.

Lucy is currently at a conference in Bulgaria where she cannot participate in discussions but interact non-verbally on her phone. Paul is out of his office but has a smart phone to go online; Jim and Peter are at the marketing department, which is based in the company's headquarters in London. The three men are logged into a dedicated telco mashup application represented as a collaboration portal. The mashup contains various widgets: one for visualizing data of actual costs of products, available by requesting a Web service; one to perform votes and another widget provides the functionality to make video conference calls. They are close to coming to a conclusion and decide to make a final rating of the proposed pricing model in a poll. All online participants can vote directly in the voting widget. Unfortunately, Lucy can't join the verbal discussion but her decision is needed. Paul triggers the mashup to call Lucy and allows her to vote directly via phone. The voting widget is automatically updated and displays the result of the voting.



At UPM, we believe that combining telco applications with web mashups will foster a plethora of novel, cutting-edge services created by users on their own. As soon as the industry is provided with a standard platform, we will see a boost in the number of services that take advantage of it. High usability, lightweight integration or automation are features that UPM wants to enforce to make this vision real.
Juan Carlos Yelmo, Universidad Politécnica de Madrid, Madrid, Spain

As Germany's top Internet agency and as a Deutsche Telekom AG subsidiary, the mash-up of web and telecommunication technology is one of our core-beliefs. We want collaboration in the future to be just as easy as web mash-ups are today. Therefore, we are proud to participate in the OMELETTE project, contributing our vast technological know-how in order to deliver sustainable value for our customers.
Christoph Kögler, T-Systems Multimedia Solutions GmbH, Dresden, Germany

At TUC, we focus on our mission to bring collaboration to the next level. We see great potential in the mashup approach, because end users can easily configure their solutions by composing widgets and services instead of programming them. In OMELETTE we extend this idea with the fusion of traditional telco services and web-based ones. We are proud to be a partner in this great project, which contributes to the goal of unleashing the full potential of today's collaboration possibilities. Martin Gaedke, Chemnitz University of Technology, Chemnitz, Germany

[i] OASIS, Web Service Dynamic Discovery (WS-DD) Specification, available from: http://docs.oasis-open.org/ws-dd/discovery/1.1/os/wsdd-discovery-1.1-spec-os.pdf