

**TOWARDS A FUTURE INTERNET PUBLIC PRIVATE PARTNERSHIP:
SECOND USAGE AREA WORKSHOP
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Position Paper

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(1) *What use case and scenario in your area would you consider the most appropriate and representative one for large-scale experimentation with the Future Internet platform to be built starting from 2013 (please refer to the documents referred to on the above websites for inspiration)?*

The use case and scenario considered the most appropriate and representative for large-scale experimentation with Future Internet platform is a Cross-domain one.

It refers to the application of the “Content area” developments, within the future internet perspective, applied to the processes arising in communities of citizens at city or region level, in their daily interaction among all the social actors, represented by themselves, the Public Administration, Industrial Players, others. This perspective will allow a new view on services-to-citizens, when referring to the categories of services made up of data, information and knowledge exchange, as the most provided by the public.

As outlined in the previous Usage Area workshop (March 2010) the deep changes happening in the technologies related to the content creation and the more and more pervasive diffusion of user-generated content are straining the existing infrastructure and networks, allowing a shift in the topology of content networks, from centralised to decentralised models.

In this perspective a system of “smart open content, interfaces and services” is the milestone for the renewal of the public and private services to citizens, through the virtualisation and distributed storage solutions in the cloud and the set up of a media-aware service marketplace to dynamically select, orchestrate, deploy, new production chains and new commercial partnerships.

Web 2.0 has changed the interaction way of Citizens who turn from passive observer of "showcase sites" to collaborative content creators and interactive contacts. During this current phase Public Administrations are heading towards providing web pages customized by citizens within which it is possible to aggregate public services according to their needs.

In the aim to identify innovative approaches to the design of services to Citizens, a model has been developed by the Public-Private Laboratory on Service Engineering (Engineering Ingegneria Informatica – University of Salento), thought to provide real empowerment to Citizens through public and private services tailored around their own needs, according to a partnership framework involving private and public stakeholders.

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The challenge of this model is the development of a highly flexible and personalized network made of interactions among citizens, public administration, private and public service providers, able to guarantee inclusion at each level and to overcome the digital divide problem for some part of the society; to foster social innovation, not only by improving living quality by answering to the citizens needs; to ensure equal opportunities for all and active participation in the government activity, achieving the goals of participated democracy, and acting as an open learning system.

The model novelty relies on the central position of Citizens, that can self-compose their services in a variety of ways specifically designed to include people spanning from the so-called digital natives to people minimally experienced with technologies, acting as a lever of “citizen driven” innovation.

(2) *What innovative Internet functionality and technologies would you consider important for your suggested use case and scenario (e.g. context awareness, sensor networks, advanced real time processing capabilities handling huge volume of data, ad hoc service composition and mash-up, managed broadband connectivity and services, embedded media support for interfaces easing the interpretation of processed contextual data, etc.)?*

The development and deployment of advanced citizen-driven services require the building of an environment in which public and private players, the service providers, keep their organizational and technological infrastructure able to satisfy citizen needs through a flexible and dynamic techno-organizational approach.

The model introduced previously, should allow an intuitive and personalized access to services, and is build on five levels:

1. *Identification.* Identification provides a single authentication enabling access to different kinds of services through the use of technologies that ensure simplicity, transparency, safety (e.g. temporary tokens, biometric controls);
2. *Interface.* Through interface people access the system. The way of access and services use must be facilitated by the choice of different devices in common use (e.g. i.esmart-phones, game consoles, notebook);
3. *Setting.* The environment is a virtual place, that can be represented according to the preferences of the Citizen, like a conceptual map, a virtual office, a 3D city, where citizens interact with public and private providers in order to co-create their own service;
4. *Service.* Services are introduced and presented by different providers, each one can be interfaced with a wide variety of data sources and other services, following non pre-determined combinations, and aggregating in complex services the simple ones. To do so it becomes necessary to rethink radically the process of new service development, covering also the area of social, economic and organizational aspects.
5. *Data.* Inspired by the principle that data must be accessible in a flexible and secure way, free from the role of the data manager, data management is reconsidered according to the data self-described capability, released by the location in specific hardware infrastructure; they may be hosted on cloud computing infrastructure type.

The adoption of the Service Oriented Architecture (SOA) allows on one side to structure organizational units as self-consistent components that produce and consume value-added services, and on the other side to define technological components to actually deliver modular services. The main limitations the SOA approach faces in supporting the proposed system for allowing system to self-compose their own services, mainly related to the accessibility and personalization issues, are related to the competencies required by the current service composition programming model and tools, generally designed for professional developers, as well for the supporting infrastructure.

Furthermore, after deployment, the logic by which the service has been composed is difficult to be customized to different emerging needs, considering the length of the timeline spanning from the design to the development and testing phase of the service.

To overcome the presented limitations, the application of the SOA in conjunction to the recently coined concept of mashup enables a web 2.0 approach to service composition, allowing final users to self-create in a simple way ad-hoc services that are tailored on their specific needs.

The “mashup” concept refers to the capability of a system to allow users to deal with content (data, information, services) retrieved from external data sources (web services, data store, web application) to create entirely new and innovative services. It represents an easy “user-centric” service composition technology, that could guarantee a wider accessibility and inclusion to all the citizens, also to those with very low programming skill, reducing the complexity of SOA service composition from elaborated ad hoc models and tools to the simple “drag and drop” action within a web browser. The merging of these technologies can support a fast, simple and continuous customization of services more responsive for citizens needs changes, and an agile recombination and renewal of existing applications accessed through the web.

This potentially can drop the costs of service development and opens new scenarios in which communities of citizens can create and share their services in a collaborative and citizen-centric way, by publishing mashups to blogs, wikis, portlets, spreadsheets, and even mobile phones through ad-hoc applications and leveraging in a transparent way SOA-friendly formats such as REST, SOAP, Atom and RSS. SOA can thus provide the “service cloud” that feeds a community of mashup users with raw information and contents, while mashups can become the vehicle through which services become part of the everyday life of citizen.

(3) *Which of the identified functionalities would you expect the Future Internet core technology platform to deliver to support your and other usage area scenarios?*

The Future Internet core Technology Platform is expected to enable the functionalities allowing an enhanced model of interaction, that is intended to be based on the following guiding principles:

- *inclusion*, the social and technological barriers decrease in order to enable all citizen to interact with Public Administration regardless of culture, age, sex, religion, political opinion;,
- *participation*, the citizens is allowed to interpret an active-role in the co-creation of services, but also in expressing opinions and feedbacks, and in supporting or criticizing social instances and positions, in this way being directly involved in government;
- *personalization*, that is service customization in order to meet citizens’ needs.

These principles should enable, thanks to new technologies, new dynamics in democracy, policy and active citizenship. They identify also the boundaries, or the perspectives, of a new service-to-citizens model, that focuses on network as the main link between people, organizations, Public Administrations, on which it is possible to build a service ecosystem, which integrates public and private supply and demand.

The Citizen, active node of that network, can benefit of a new interaction and communication way that can capture his interest and facilitate his creativity: the game. Along the transition of the interaction, simulation and virtualization technologies in entertainment field, the game, less and less connected to the playful dimension, becomes increasingly a social innovation catalyst.

(4) *What kind of experimentation environment would you consider necessary for broad large scale testing of the platform to be developed in your use area? What would be needed to experiment new services and applications cutting across use areas (services and application mash-up) and building a new services and application ecosystem around the prototype implementations of the platform?*

The suitable experimentation environment is represented by a community geographically identified, a Town, a Municipality, or a Region, showing the attitude to apply open systemic approaches and organizational innovation to improve the quality of life of its citizens.

The experimentation should focus on assessing the capability of a new way of interaction and information exchange within a community to drive the transition toward the development of a “Smart Community” (City or Region) following the definition of the European Commission.

The term is used for various aspects which range from the education (or smartness) of its inhabitants; the presence of “smart” industry, especially in the fields of information and communication technologies (ICT); the relation between the government, public administration and its citizen, relying on the usage of new channels of communication (e.g. e-governance, e-democracy); the use of modern technology in everyday life, to improve security, urban order and management, low environmental impact of energy consumption.

It would guarantee on one hand the involvement and active participation of sensitive Governments and open Public Administrations, that is required to have an adequate setting to test the effectiveness of new services-to-citizens enabled by the interaction among all the social, political and economic actors of the community.

On the other hand it is necessary to cover a critical mass of users to gain reliable feedbacks on the real user needs in the application of technological solutions, to provide a balance between the technology push and application pull approaches to the design of the Future Internet functionalities.

Within the development of a pilot, the experimentation requires the formal involvement of private and public actors, and a long period of test and observation: it is necessary to activate and evaluate the new business models emerging within the Public-Private partnership framework.

Under a technological point of view, the platform should count on the diffusion of the broadband, that is typical of the smart communities; and on the adoption of open standards in order to foster interoperability among different service providers.

(5) *How do you see the potential role of your organisation in the FI-PPP, in the context of Usage areas taking a prominent role in the Initiative, to ensure an appropriate application driven approach?*

Engineering Ingegneria Informatica S.p.A. is one of the founder of the European Future Internet Initiative (EFII) among other 16 leading ICT companies in Europe. Their main ambition is that a new approach is taken to addressing the challenges of the Future Internet in Europe.

Engineering Ingegneria Informatica S.p.A. could play an active role in the Initiative, to ensure an appropriate application driven approach.

Engineering is a group of 11 companies specialised according to market segment or line of business. It's core activity is about the creation, management and evolution of information systems and integration of its proprietary solutions. Its 5 business units (Finance, Public Administration and Health, Utilities, Industry and Telecom) count on the activity of

- a Research & Innovation Division that constantly transfers the results of innovation, experimented and applied in the field and to the production cycle;
- a SAP ERP centre of competence with 420 specialists crosscutting all segments of the market and a network of vertical centres of competence internal to the business units on strategic areas;
- a European Data Center of managed operations at Pont Saint Martin, which today manages 100 customers;
- a portfolio of products and unique and exclusive proprietary solutions, created and implemented in house and exportable into different business contexts (banks and insurance companies, healthcare, collaborative CRM and field contacts, integrated platform for utilities, local fiscal requirements, solutions for automotive sector and Telco).

The company is fully involved in the initiatives related to developing a common strategy for Europe's IT industry. It is promoter of Nessi Italia, which has similar characteristics to the EU consortium: aggregation of Italian ICT operators and scientific organisations, a five-year software research and innovation calendar.

As for the research activity, the company created a Public-Private Laboratory in partnership with the University of Salento and Avio Group focused on:

- the innovation in service design;
- the human-machine interaction in collaborative environments;
- the user-needs assessment in the experimentation of new technologies.

These characteristics position Engineering SPA in the middle between the technology push and application pull approaches. It makes it suitable to play an active role in balancing the two.