Towards a future internet public private partnership second usage area workshop
Latvia
Answers to the Questions

R.Balodis-Boluzs, Inara Opmane

01.06.2010

Use case and scenario

(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?

We would consider several use cases and/or scenarios for experimentation of Future Internet platform. First of all, applications and content should be considered for Future Internet to enable.

The first use case example could be as a platform for interactive rich media solutions, for example, interactive TV broadcasts, social networking content on TV, other rich media internet content on TV, social networking entertainment etc. TV solutions could greatly benefit from enormous Internet user base. Future internet could remove barriers to provide full, real time, rich media interaction with TV audience. One of examples could be – launch of education channel where content could be mix of academic staff and online demonstrations.

The second use case could be in the area of cloud computing services for consumers and businesses. Cloud computing provides lot of cost and quality benefits to its users by centralizing application services and enabling great flexibility and mobility for end users. Cloud computing services require much more from internet than ever before since quality of access and performance plays important role for end users. Cloud computing full potential is not yet achieved but it's clear that in rich media internet environment where video streaming, large data uploads and downloads are mandatory requirements for consumer market internet will require smart, flexible, powerful networking platform. These are challenges Future Internet has to face.

The third use case is in eHealth solutions to enable fast, reliable, mobile exchange of health records from hospitals, patients premises, interactive media (video, audio, text) solutions for emergency care, better access to expert (doctor) from anywhere in the world to provide assistance and advice.

The forth use case is in logistics where Future Internet platform could be used to provide fast and reliable information from anywhere to anywhere about movement of goods and resources to make logistics more efficient for business and consumers.

Common Enablers- Cloud federation for using in Latvia and Baltic countries. Now we have 1/2 PTB SAN (Storage Area Network) with IBM DS 4700, 2 * 4 Gb/s FC, 8 IBM X3650 and 2 EGEE certified GRID clusters. It is planned to upgrade of those facilities in the Latvian Research and Education network project this year.

Supporting common enablers – core platform concepts, especially semantics and recommendation systems, based on ontologies and OWL/RDF platform. Research for

governance, state institutions and industry based on developing experimental prototypes under the following activities:
1. Framing of ontology development methodology and data models for representation of conclusions and reasoning in jurisprudence, medicine and bioinformatics.
2. Development and approbation of graphical test tool for detection and analysis of logical contradictions and errors in reasoning.
3. Development of experimental reasoning analysis tools for application in jurisprudence, medicine and bioinformatics; development of methodological materials.

Smart Energy Grid – control of Energy usage through a communication network (Future Internet).
We can count the following examples:
- resource usage map on the urban level. E.g. city map where building are colored by energy usage and environment influence
- ecological city maps and predictions
- live population/traffic spread across the city (e.g. based on the presence sensors and/or active phones)
- the above mentioned maps (snaphots) with the time scale (how the thing are changed over the time)

Innovative Internet functionality and Technologies

(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.)?

Functionality that is important for use cases:

- High upload and download capacities
- Quality of service guarantees
- Reliability
- Security of data transfer
- Intelligent traffic management
- Media streaming support
- Media type tagging
- Billing, rating, charging support
- Localization
- Real time management
- Transparent usage control
- Content copyright protection functionality.
- Identity management
- sensor networks
- semantics and recommendation systems

Functionality supported by Future Internet

(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?

Functionality:

- High upload and download capacities
- Quality of service guarantees
- Reliability
- Security of data transfer
- Intelligent traffic management
- Media streaming support
- Media type tagging
- Billing, rating, charging support
- Localization
- Real time management
- Transparent usage control
- Content copyright protection functionality.
- Identity management
- Mobility
- Marketing support
- Application provider support
- Platform openness

Experimentation environment

(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?

Experimentation environment for Future Internet platform should cover several areas or levels of Future Internet environment, i.e. from physical network level to specific user applications on top of Future Internet platform. Physical network serves as a basis for Future Internet so there is need to create test environments in existing telecommunications network to test Future Internet networking technologies, protocols, standards. Moving to upper layers of Future Internet platform, effective technical, organisational and business environment should be established to enable development of innovative business applications for Future Internet platform. Developers, service providers play vital role in market development for Future Internet services so technological and financial "test bed" should be created for them to succeed.

In our vision the new services /applications will be based around the Internet of things concept. Practically it is a set of sensors / intellectual devices that capable deliver some real time measurements and/or context-related data by user's requests.

Potential role of your organisation

(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?

Institute of Mathematics and Computer Science of the University of Latvia (www.lumii.lv) represents Public sector and cover all competencies in ICT research and education/training field. If necessary it is possible to attract experts from others institutions also. Application services including reasoning will bee tested in governmental institutions, courts, clinics and research organizations.

Lattelecom Ltd (www.lattelecom.lv) represents private organization that is largest telecom, digital TV and Internet operator in Latvia, Lattelecom network covers all regions in Latvia.

There are several roles organization could fulfil concerning application or Future Internet solutions. The first role is enabler of future internet applications by offering infrastructure (network) services ready for Future Internet. The second role is the role of service provider for Future Internet services in local market for consumer and business segments. The third role is the role of cloud computing services provider for European consumers and business users. Growth of interest in cloud computing services will create demand for higher Internet capacities as well as demand for quality of service solution. These two factors contribute to the need of new internet platform. The forth role is the role of test environment for Future Internet services. Existing telecommunications infrastructure can be used to for test purposes as well as for rollout of Future Internet platform and services.
Also we are intended to create proposals for the unified API, implement prototypes and demo cases, create development tools for the programmers.