

FIA Stockholm

Breakout Session: What does Future Internet mean for enterprise?

23 November 2009, 16.30 – 18.00 Hour

Session Report

Background and Objective

This breakout session was the first opportunity of an open, dedicated discussion of the topic of “Enterprises” in the FIA setting, focusing on the problem statement: **What will the Future Internet deliver for Enterprises?**

The objective of the session was to elicit opinions from a broad spectrum of stakeholders of FIA, with a view to creating a common baseline for identifying and prioritising issues in research. Building on that, the intention was also to determine, where possible, what needs to be done to ensure that European enterprises including SMEs would benefit from Future Internet research and its outcomes. The session had an emphasis on the application of Future Internet technologies in support of business innovation and enterprise transformation.

The caretakers were Man-Sze Li (FISO, FISE), Sergio Gusmeroli (FISO, RWI), Jean-Dominique Meunier (FCN), Michele Missikoff (FISO) and Sergios Soursos (FISE), with the support of Stefano De Panfilis (Future Internet PPP) and Paul Moore (FCN). The preparation of the session involved the Future Internet Enterprise Systems (FInES) Cluster of DG INFSO¹, which has over 600 registrants to its activities.

The session was divided into two parts. The first included position statements from representatives of initiatives and stakeholders in the field. The second included three parallel knowledge cafes which actively engaged the participants. The knowledge cafes covered: Visions & Policy aspects, Socio-Economic aspects, and Technology aspects.

Key Points from Presentations and Discussions

Visions & Policy aspects (moderated by Man-Sze Li and Jean-Dominique Meunier, with the support of Stefan Schuster)

Question: In Europe, only 13% of enterprises use ICT for inter-enterprise collaboration. The figure for SMEs is still less. What can be done to improve this situation?

Discussion: Compared to large enterprises, SMEs have huge barriers in ICT adoption: awareness problems (SMEs are not aware of what is available in the “technology/application basket”), resource problems (e.g. technology watch), ICT skills problems. Critical mass is key. Targeted measures for SMEs are needed in:

- Education, knowledge dissemination and knowledge exchange
- Greater involvement in research
- Clear value proposition of collaboration with others
- Trust (eg. hosting data in cloud, remote backup of sensitive data); measures need to focus on conveying trust
- Public availability of data (eg. address databases) would benefit SMEs.

¹ http://cordis.europa.eu/fp7/ict/enet/ei_en.html

Question: Commoditisation is a key trend in the ICT landscape. How can ICT providers benefit in providing (low to zero cost) commodities/utilities?

Discussion:

- This question applies to all technologies (eg. mobile phones, etc.); therefore is not specific to FI.
- The question is about motivating infrastructure investments. It is about ROI and rules.
- It will be a trial and error process. Solution will emerge organically.
- Market dynamics will define the solution to this problem. Don't try to anticipate market dynamics, assuming that were possible. Solution is likely to be related to policy (define the regulations and policies that set the playing field, but leave the details to be sorted out by the market dynamics).
- How important is the public ICT infrastructure? Is it in the public interest to be supported/provided by government?
- Low to zero cost utility provision requires policy decisions (deregulation and market dynamics) to enable the development of appropriate business models under market conditions.

Question: People, Things, Services and Content are currently four fairly self-standing research streams. Is it an issue?

Discussion:

- How can people be connected to content? Is content driving technology or vice versa? What is the role of the service platforms relative to the rest? What is the glue between the pillars? Could it be the innovative aspect that is being looked for in research?
- FI discussion goes largely in the direction of how to do it (technology), and not what we can do with it (application).
- Pillars don't seem to mix very well (as such they don't seem to have a business relevance).
- The silo way of research may be the reason for the pillars. Silo thinking is not the right way. The EC is too silo oriented up to now in terms of research policy.
- Collaboration between the pillars needs to be looked for and be motivated. It should not be assumed.
- Innovation life cycle is not generally covered by SMEs (they hardly follow the entire innovation life cycle - Idea, Opportunity, Research, Experimentation, Development, Commercialisation). This needs to change.

Question: "European way to the Future Internet" - what are the specific European issues we are looking for and how can we leverage them to develop a key position?

Discussion:

- Culture, language and Value Systems are key differentiating factors.
- European enterprise landscape is based more on SMEs than, for example, the US economy. This should be turned into an advantage.
- In some countries (e.g. Spain), it is difficult for SMEs to adopt new technologies. Regulation can also be a hindering factor.
- The Internet is a worldwide issue, not a European specific issue.

Question: What are we waiting for? What are enterprises waiting for? Do enterprises really care about FI?

Discussion:

- We need more business from FI!
- We need more concrete description of what the FI is all about
- FI is a continuous thing (there will always be a today and a tomorrow). Therefore the notion of what are we waiting for is meaningless.
- We cannot sell the advantages of FI if it is still not deployed.

- Use Ethnography (studying people and what they want) and apply the insight to FI development.
- But the opposite is also true - we have this technology, what possible usage patterns can you imagine? This is the essence of serendipitous innovation

Social-Economic aspects (Moderated by Sergios Soursos and Paul Moore)

The approach in this area should be set by the enterprises; specifically, enterprises should set the questions. We need to solve concrete real problems and not a technological proof of concept. The innovation should not only be technological. We need to establish examples of how FI can improve the way the enterprises work, including examples of new emerging business models, concerning both big enterprises and SMEs.

Internal structure vs. External Relationships of enterprises: The former is more important. The latter comes as a second step. The (expected) changes will lead to more “fluid” structures and the boundaries between the “inside” and “outside” of a company will become increasingly blurred. Enterprises may become less structured but need the capability to restructure itself in response to business development. There is a need to focus on collaboration among enterprises and SMEs that will allow them to be more competitive.

Nature of Work: We need to study the new forms/ways of work that (will) emerge, how they evolve and how FI technologies can help towards this direction. Trust & Privacy are very important issues, and not only from the technology perspective.

Internet technology adoption by enterprises is still low. Reasons for non-adoption include:

- Lack of awareness of available technological solutions by particularly smaller companies
- Profit-driven decisions by enterprises impede initial investments, e.g. IPv6 and PKI are not (fully) used
- High costs on operation and maintenance (here, cloud computing can potentially offer solutions)
- Long term goals of FI vs. short-term objectives of enterprises
- Constantly changing technological landscape does not provide any assurance

The main question is whether the adoption of technologies will lead to financial success. We need to come up with examples of new business models that will make FI technologies viable.

Additional issues requiring further discussions: IPR, the role of users in the overall picture, new contracts and governance system to manage relationships, evaluation methods of enterprise adoption of (Future) Internet technologies.

Technology aspects (moderated by Sergio Gusmeroli and Michele Missikoff)

Using Social Network paradigm / tools in the enterprise

- Distinguish the internal vs external (open) use
- Enterprise **constraints**
- We consider employees in a broad sense, but in an open scenario there is a problem of trust & security
- Risk of working for another enterprise
- **Masses of data** generally means cost in the economy, the value of data needs to be understood
- Measuring and **compensating** more productive people in the enterprise

- Problems of **private life** (e.g. working late in the morning)
- The local (national) culture may make the difference (e.g. trust, hierarchy, etc.)

Internet of Content & Knowledge

- Dramatic change in Corporate IPR, not in “personal IPR”
- There will be a gap in the future, how will it be addressed
- There will be a gap also in terms of the technology used by individuals (e.g. at home) and in the enterprise
- **Who holds the Knowledge?** Employees or the employers?
- Proposal: introduce new business patterns that will be an asset of the enterprise
- Divergence between **legal** (enterprise owns) and **factual** (employee owns) situation for IPR
- Enterprise of Experience: it is a form of content / knowledge

Internet of Things and distributed knowledge / decision making

- **Increment of sources for Business Intelligence:** sensors’ networks, processes’ traces, etc.
- Intelligence built into machines, that contribute to decision making
- What about things that start to behave differently from the expected pattern?
- Increasing the number of **intelligent entities** will not increase the global intelligence of the enterprise. Another view is that **smart devices** can reduce the amount of information flowing (preprocessing is performed locally)
- Reducing message traffic to alarms, when something goes wrong

Enterprise in the Cloud

- Under what conditions would enterprises migrate into the Cloud?
- Clouds will come certainly. Company will benefit: savings driven strategy.
- We need to better define “Cloud”: **Corporate?** Yes (e.g. BMW.) **Public?** ...
- Quality and accountability are needed.
- Difference between **SMEs** and Large Enterprises in their needs.
- Migration will be application dependent. Non-critical apps are more promising for clouds

FI universal business infrastructure?

- The current infrastructure is still relevant in 20 years’ time, because it requires big investment that will not be “thrown away”
- Some innovative enterprises, e.g. eBay, will base their full business on FI
- But many enterprises still run **Cobol programs**. Too costly to change
- We have **legacy** that will not disappear
- Role of Government? Divergent views were expressed

Conclusions and Next Steps towards Valencia

Discussions at the three knowledge cafes have elicited a wide range of issues and opinions. Further discussion involving even more stakeholders in an open setting is needed. The session concluded on the following next steps:

- Populating the session wiki with all the materials related to this session (<http://services.future-internet.eu/index.php/Enterprises>).

- Continuing the discussion via the session wiki and engaging all interested stakeholders in the discussion, including **Open Consultation**.
- Investigating the possibility of preparing a Position Paper on the enterprise topic in the FI context.
- Continuing the debate in a dedicated session in FIA Valencia (request has been made to the EC).

Note on Follow-Up

Subsequent to FIA Stockholm, a large set of materials relating to the session have been made available at <http://services.future-internet.eu/index.php/Enterprises>, including detailed description of the problem statement of the session, presentation slides, additional contributions, open consultation and survey of the prioritisation of research topics, and the results so far of the ongoing survey. Please use the above link to access the full set of documentation related to the session, and participate in the open consultation via the session wiki.