EX-FI

Session 1

Smart Cities
Utilities and Environment

Session Chair: Max Lemke
Session Co-Chair: Hugo De Groof (DG ENV)
Session Rapporteur: Andre Bottaro, Orange Labs

Brussells, June, 22nd, 2010

About 60 attendees

Group 1: long presentations

Berre	Arne	SINTEF
Presser	Mirko	Alexandra Institutte
Schade	Sven	EC – JRC
Busher	Volker	Arup
Rantakokko	Mika	CIE, Univ. of Oulu

Group 2: short presentations

?	Eric	TNO
Nucciarelli	Alberto	Eindhoven University
Pampu	Cornel	Huawei Technologies
Provoost	Sjors	Rotterdam Police
Soroka	Vladimir	IBM
Valsameda Tranque	César	CARTIF Foundation
Forest	Fabrice	UPMF
Nucci	Francesco Saverio	Engineering SpA
Van Pol	John	Incas
Stojanovic	Nenad	FZI Karlsruhe

Structure for discussions in parallel sessions

- Describe the group of use cases and scenarios from the application perspective
- Identify the innovative Internet functionalities and technologies needed
- Identify those functionalities expected to be addressed by the core platform
- Identify the needed experimentation environments for large scale trials in phases 2 and 3
- Identify the relevant groups of stakeholders along the value chain and their role?

Use cases and scenarios from the application perspective

- Use case categories:
  - Pure environment use cases: Air quality, noise, inland water, flood, forest fires, marine ecosystem, agricultural elements.
  - Pure utilities: Smart metering (electricity, water, gas), city automation (public lighting, waste management, …).
  - Broader smart city use cases: Health, Transport, Tourism, e-Government, e-Education, m-Commerce, ...

- Key points
  - All PPP FI usage areas (but content?) present cross-cutting use cases for Utilities&Env usage area
  - Smart City: a large topic.
  - Environment and the city are closely related. (focus on Environment lead by Hugo De Groof, DG Env)
  - Several ecosystems are related: River basins, Regions, Marine, Agriculture, …

Innovative Internet functionalities and technologies needed

- Sensor networks.
  - Scalability and interoperability. Interconnection of existing networks is key to innovation in the 3-5 years. Standardization is also key for long-term success.
  - Low power. Most of urban 'things' are not connected to the mains (water meters, waste containers). Slow Internet needed! Low power and low cost advocate low rate networks.
  - Sensors on mobile phones takes part to the data collection (Cornel Pampu, Huaweï Technologies).
- An open an trusted platform for data treatment and action response
  - Near-real time basis. Decrease response time of the overall system is a technical challenge (Nenad Stojanovic, FZI Karlsruhe).
  - Huge volume of data to be treated.
  - Scientific models (Sven Schade, EC – JRC). Sensor data fusion and aggregation
  - Technology triangle: Sensor-based / citizen-based / model-based (simulations). System strength has the strength of the weakest link.
  - Data aggregation and service composition from several networks and to take relevant measures (alerting). Arne Berre (SINTEF) mentioned the use of standards (ISO, OGC, OMG, W3C, OASIS) and open languages (ontologies) to enable a truly open integration.
- Simple and multimodal user interfaces.
  - User-content generation. Some actors mentioned that relevant data must come from the users themselves, Sjors Provoost (Rotterdam Police) called that "community sensors".
  - Service visualisation
  - Alerting
  - Geographical Information Systems showing dynamic maps showing past, present and future measurements.

Experimentation environments for large scale trials in phases 2 and 3

- An environment with several use cases. References. Assen, The Netherlands and Santander. Emphasis on the openness to various applications. Can not focus on a restrained set of applications in order to let new apps emerge.

⇒ Mash-up between applications

- An environment with various actors involved for application pull. Some use cases involve existing sensors that only need interconnection. Interconnection may involve many players.

⇒ Mash-up between actors on a same use case

- An environment adapted to the targeted use cases. For water management (if this is the use case), river basin can be the geographic target.

- An environment with multiple cities. Escalating effects.

- Re-use best practices
  - Living Lab approach to have the user at the center of the project.
  - Tourism: one event to test a system. A concrete use case? Is it worthwhile? Is it already addressed? 20000+ people involved in music festivals, one example. Take the lessons from concrete platforms. A concrete critical mass. Risky to bet on one event. Getting momentum rather on several places with long experiment duration.

- Phase 3: assess component generality with various use cases.
  - The Police case: a general model is applied for crime issues in Rotterdam Police slides. The created environment can be re-used for other use cases (fire, ...).

  => cases may be addressed in phase 3 with systems developed in previous phases.

Relevant groups of stakeholders along the value chain and their role?

Focus on the end-users

- Cities. Information for executive management. Optimize land use, resource management, … reduce risk thanks to better information systems.
- Agencies. Models are offered by distinct actors. Agencies use their favorite ones. Preferably have several ones available. Integration of several providers is a necessity. + Think how to make proper advice to users (+legal point of view). Build confidence on a restrained set?
- Utilities, business actors.
- How to involve the citizens? Example: traffic alerts contributed directly by users without obligation. Creating motivating apps?
  - Fun aspect beside financial aspects. Contributions for fun. The benefit can be news from the system back to the users. A message confirming that the info is relevant. The response is nice.
  - Social networks are successful. How do you create business models involving users? One key issue, make the users adopt and contribute to the system. Focus on already visible best practices.

=> Key issue: involve all the relevant stakeholders in projects while addressing budget constraints and timing issues.

Thanks