

Research and development of advanced e-Tourism services: A perspective from Petrozavodsk State University

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Smart e-Tourism seminar

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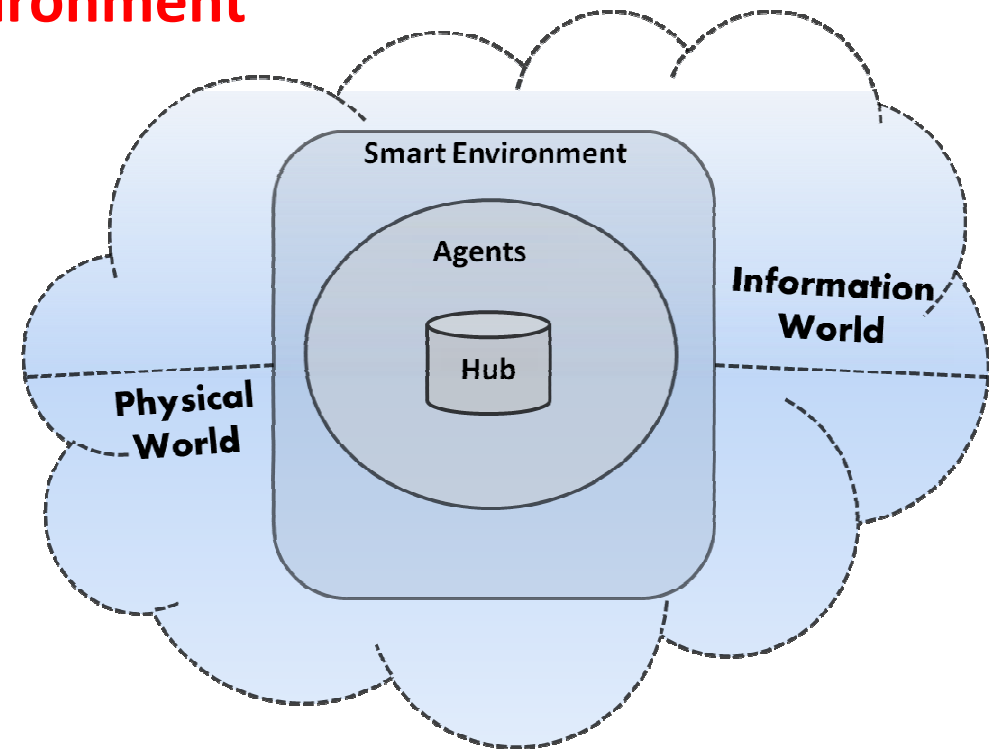
27-31 October 2014, Oulu , Finland

Smart Spaces and IoT: Project Structure 2014 - 2016

- Fundamental Research
 1. *Methods of creating, maintenance and control for information content of smart spaces.* Russian Fund for Basic Research
 2. *Programming methods of service-oriented intelligent systems based on ontological models for interaction in heterogeneous IoT computing environments.* Basic part of state research assignment of Ministry of Education and Science (Russia)
- Applied Research
 3. *Ontology-driven development and intelligent Internet technologies for semantic services of historical tourism .* Project part of state research assignment of Ministry of Education and Science (Russia)
 4. *Development of technology for making intelligence in localized IoT computing environments with personalized service construction and proactive delivery .* Federal Target Program “Research and development on priority directions of scientific-technological complex of Russia for 2014-2020”:
 - (1) e-Tourism, (2) Collaboration work, (3) m-Health, (4) Industrial Internet

Smart Spaces in e-Tourism

- **Spatial-limited physical environment (localized IoT environment)**
- Hub organizes shared information content
- **E-Tourism**
 - Mobile users
 - Smart space accompanies the user
 - Open services and resources from the Internet
 - IoT devices for tourism
 - Service = personalized (context-based) composition of external services
 - Proactive service delivery

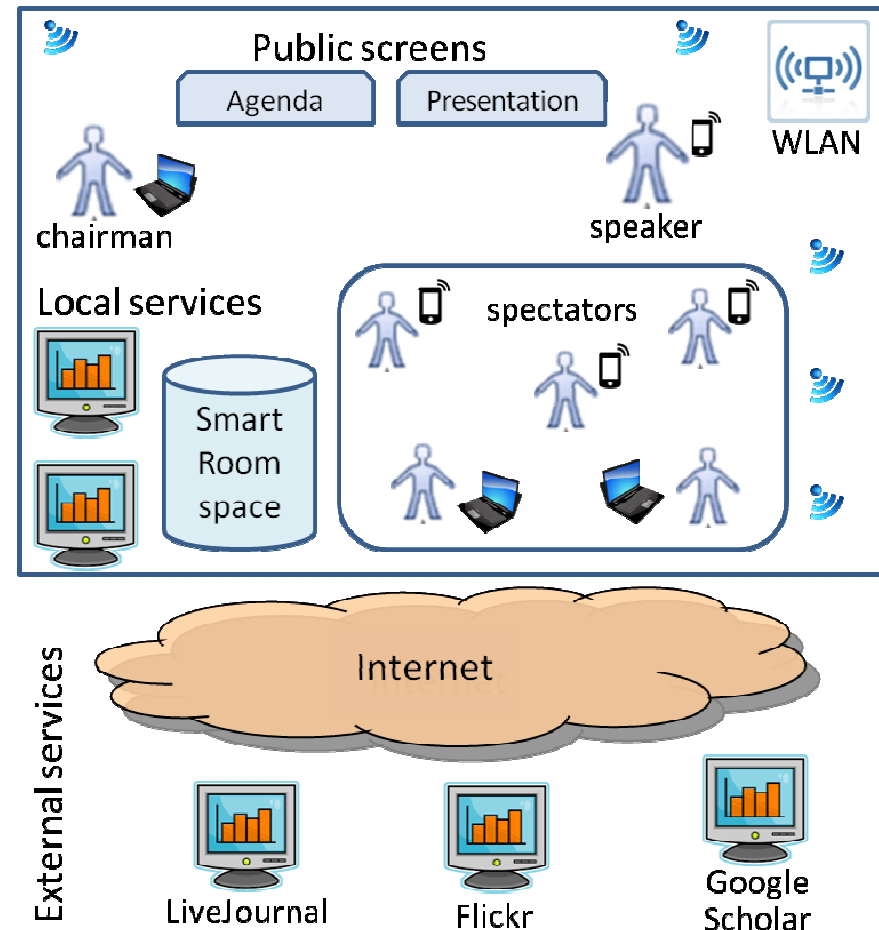


Personalized Mobile Assistance

- More or less “traditional” approach (thereby such services are very marketable)
- Make a look to TAIS from SPIIRAS
- Kulakov and Shabaev. *An Approach for Creation **Smart Space-Based** Trip Planning Service.*
FRUCT16. Welcome to look (30.10.2014)
 - Selection of attractions to visit
 - Selection of the route
 - Definition of the timetable
 - Selection of stops and places of accommodation
 - Selection of optional attractions

Collaborative Work Environment

- SmartRoom System:
 - Early work by FRUCT (Nokia, SPIIRAS, PetrSU, YarSU) and then support from ENPI KA179, KA322)
- Adding a Tourism-related service
- Vdovenko and Korzun. *Planning Social Activity in SmartRoom: Ontology-based Service Design*. The 15th FRUCT Conference, Apr. 2014
- For tourist agencies ...



Personal Mobile Assistance for Historical Tourism

- Assistance and recommendation
- Subarea in cultural or cultural heritage tourism
- Historical POI: Points Of Interest (e.g., Dbpedia)
- A lot of historical semantic relations between POIs and other historical entities
- Idea:
 - Given POI_{start} and already visited POIs
 - Recommend a small subset of most interesting POIs to user
 - Some POIs can be geographically far from the POI_{start}
- Ranking problem

Discussion

- Benefits of Smart Spaces
- Advanced services with semantic methods
- Use of IoT devices
- Use of augmenting information sources (non-touristic)
- Open source solutions in software development

