Delivery of SmartRoom Services Using Mobile Clients

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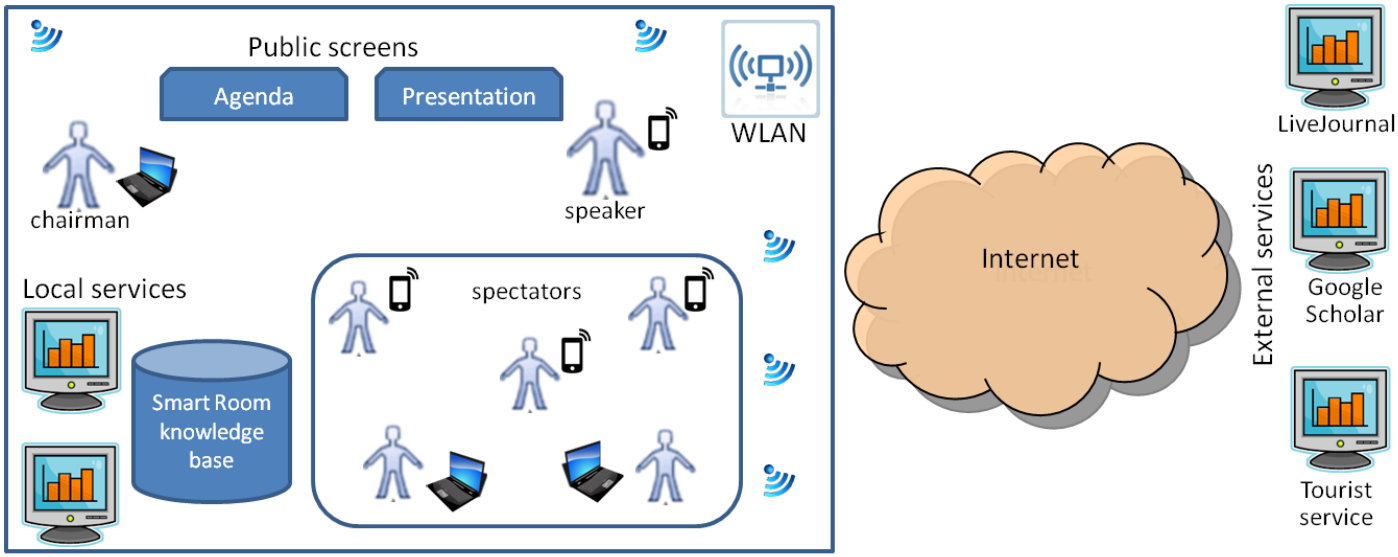
SmartRoom system



- Many services (composition, personalization)
  - ⇝ informational, control, collaborative work, . . .
- Participation of many users
  - ⇝ Many (mobile) clients running and accessing services
- Users come with own devices
  - ⇝ Many mobile platforms, IoT-like device diversity

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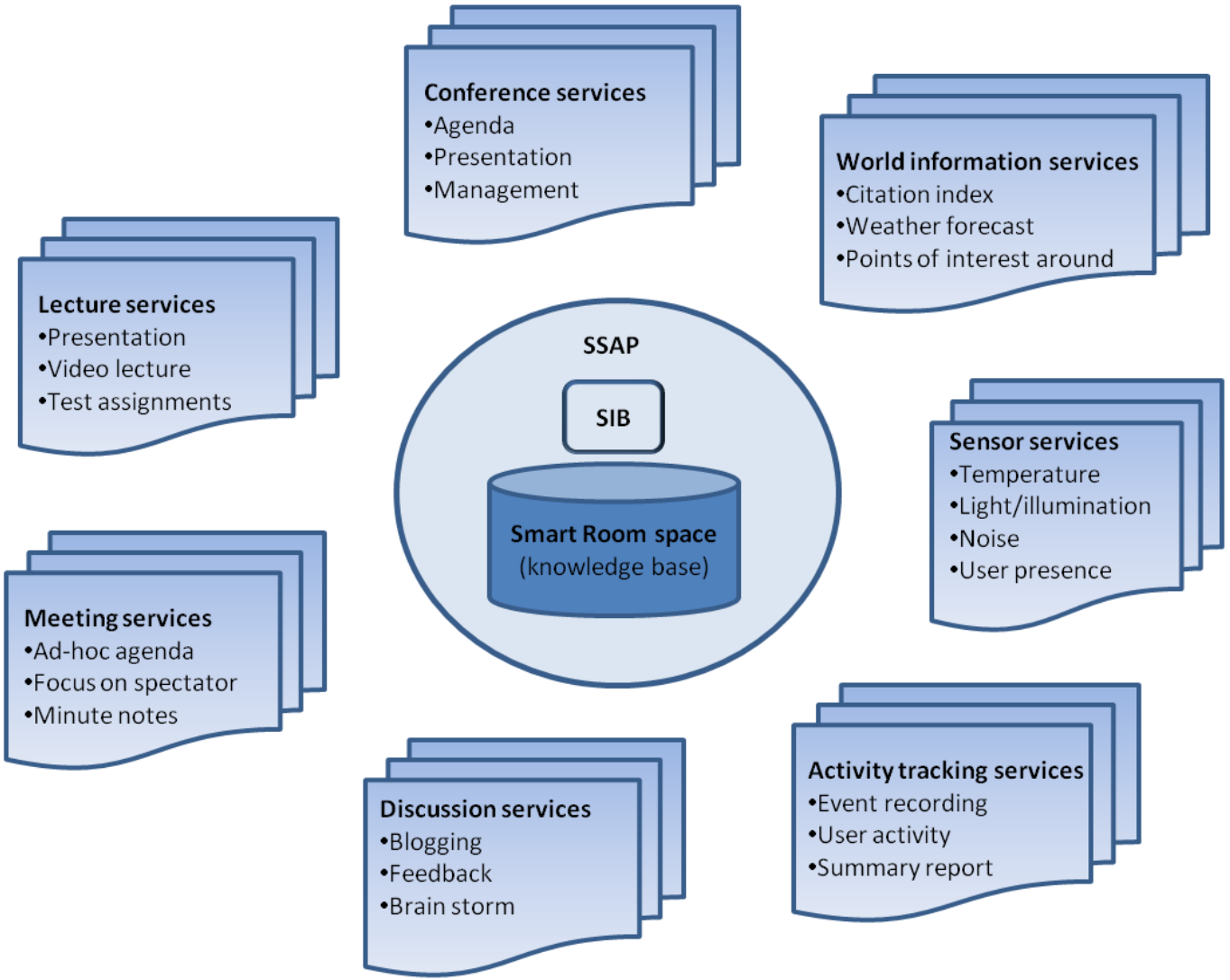
Multi-Service Property: Client

Service delivery: access interface on personal device



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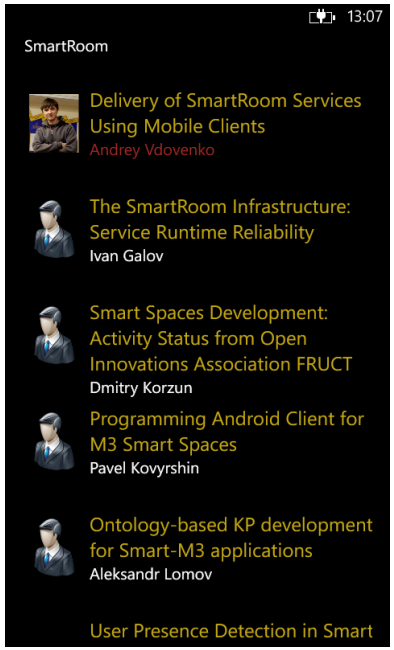
Two types of services (from client perspective)

- **Off-the-shelf service**
  - thick client: local processing
  - UI is customized
  - platform-aware implementation
  - low runtime flexibility



- **Ad-hoc service**
  - runtime construction
  - thin client: delegated processing
  - lightweight UI
  - flexibility for personalization

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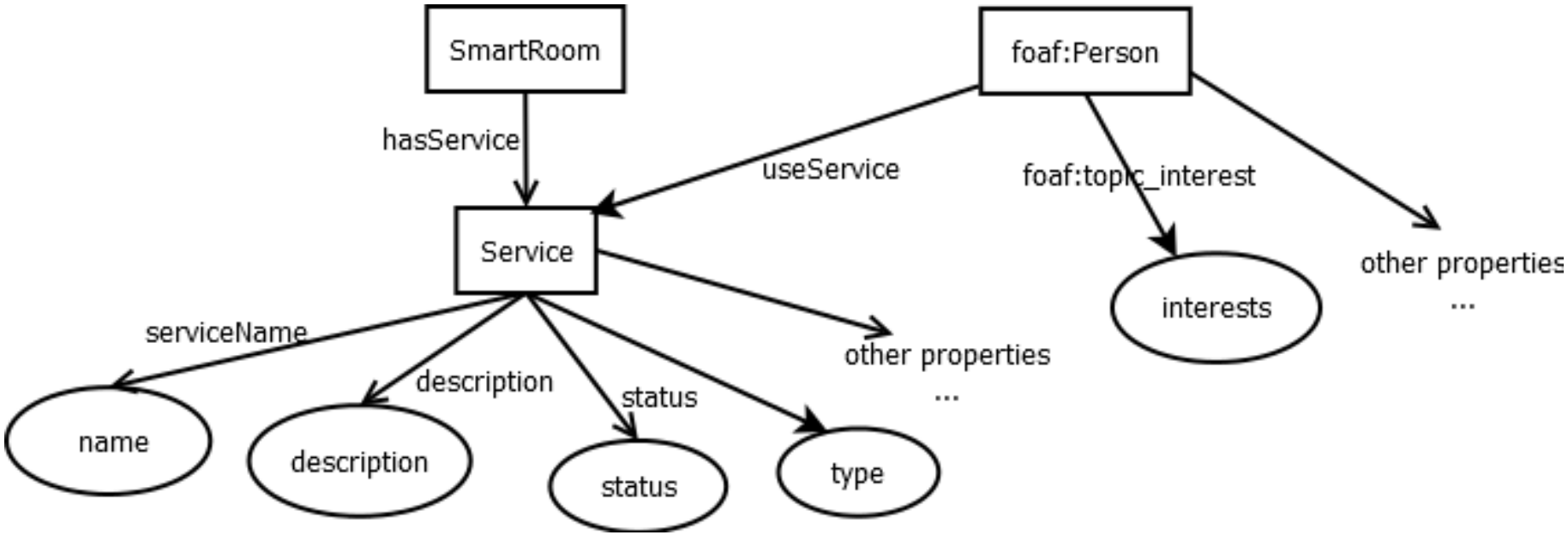
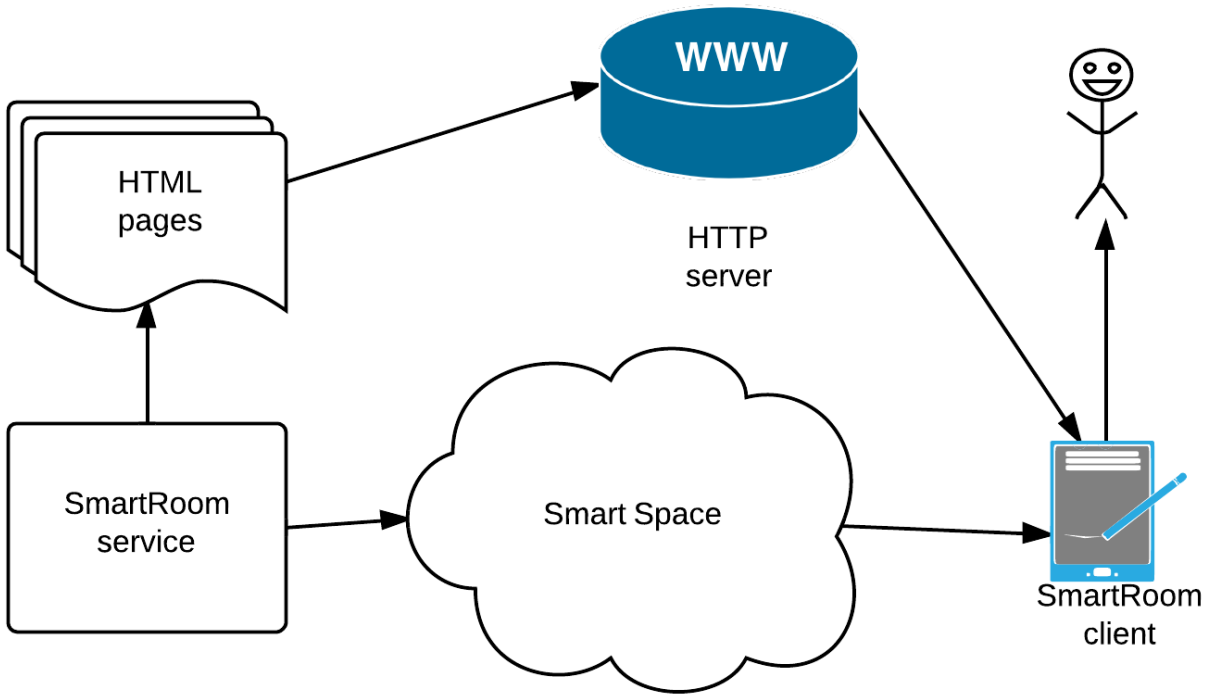
Service Ontology



- Service **type**: for clients
- Service **description** and Person **interests**: semantic matching for personalization
- **useService**: runtime linking

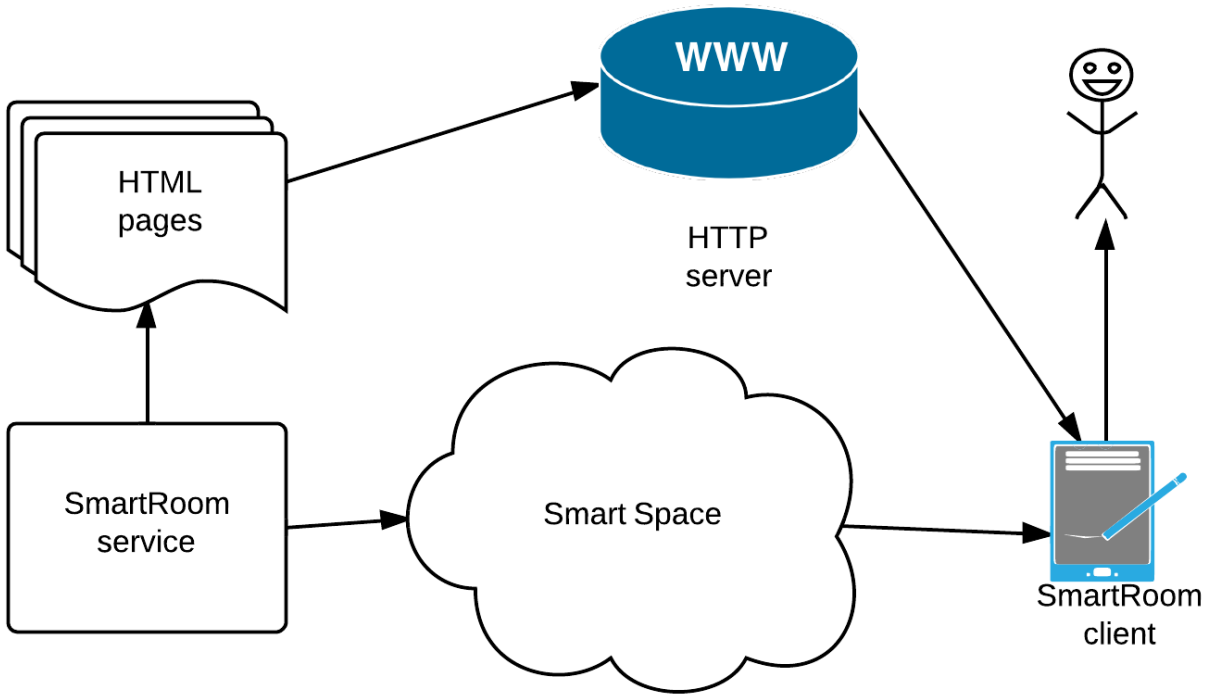
Ad-hoc Services: Architectural Vision (1/2)

- web application
- runtime construction is possible
- service has URL (shared in the smart space)



Ad-hoc Service: Architectural Vision (2/2)

- Web-application: HTML pages, JavaScript files, CSS styles
- Construction: client side vs. infrastructure



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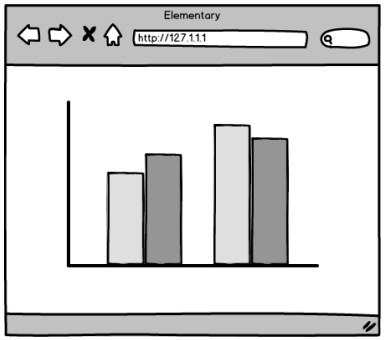
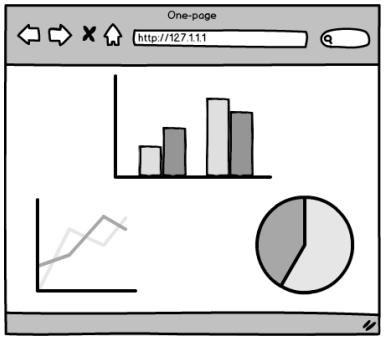
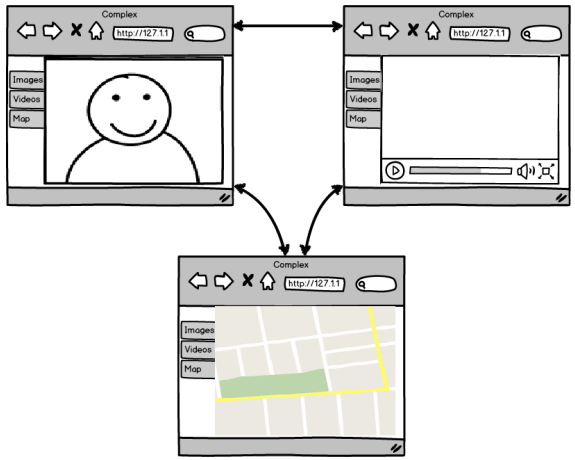
Ad-hoc Service: Composition on Client Side

- Elementary
  - small piece of information
  - e.g., data from a sensor
- One-page
  - fits one web-page
  - structured visualization
  - e.g., activity report
- Complex
  - several web-pages
  - essential data processing on the client side
  - e.g., image search function



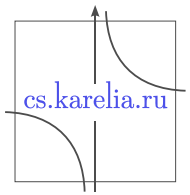




Personalization

Relation of users and services

- Available services: this info shared in the smart space
- Personal information (personal space)
  - user registration
  - anonymous users
- known semantic matching methods
  - keyword matching with synonyms
- updates in personal space: context-awareness
- service composition on the client side



Conclusion

- Initial design solution
- Ad-hoc and off-the-shelf services: from client perspective
- Personalization in service delivering
- To appear in SmartRoom clients: Windows, Windows Phone, Android, Qt-based
- Open source code:
  `http://sourceforge.net/projects/smartroom`