Moving from research to market. Pending issues
- Research projects about services at home
- Commercial services
- Pending issues
Research projects about services at home

- Telefónica is mainly interested in offering added value services to increase its customers’ loyalty.
- One of the Key strategies is: Improve and offer New and Attractive Services!
- Several research projects in which OSGi took a key role:

  - The Developed services were: VoIP, home automation, tele-health, distribution and streaming of contents, security and surveillance, multimodal interfaces, tele-education
Our most common scenario

Service Provider

Service Aggregator & Gateway Operator

Internet

Multidevice Access

Mobile Devices

Car

PVR

Residential Gateway

Security

Home Networks

Electrical appliances

Sensors

Home PCs

GSM/GPRS/UMTS

WIFI/WI MAX

Telephone

PVR

Energy
Why OSGi in this scenario?

- OSGi eases the management of dynamic services:
  - Offers Java based APIs that allow building platform independent flexible applications.
  - Provides mechanism for the coexistence of different services
  - Follows a collaborative model in which an application can discover and use the functionality provided by other applications
  - Facilitates the management a great number of devices from a single domain.
- Provides a bridge to manage non-IP networks: e.g. security and home automation networks
- Interoperability of devices over different networking domains is feasible thanks to OSGi
• Commercial services
Home Automation Service

• Telefonica I+D is launching an OSGi based commercial service:
  • Home Automation – “Telegestión domótica”.
  • Roadmap: summer 2007.

• The platform used to manage this service follows a service aggregation architecture.
  • New services can be provided using the same platform
  • New service providers can benefit from the existing infrastructure and service components
    • Offering similar or New services.
Home Automation Service

- **Service Functionality:**
  - Control
  - Technical alarms
  - Lighting
  - Heating systems

- Focusing on energy management and saving.
Home Automation Service

• Supported home automation networks
  • EIB/Knx
  • Hometronic
  • Busing
  • Dinitel
  • X10

• OSGi allows to make the service independent from underlying home automation protocols and devices.
Home Automation Service

- Graphical user interfaces:
  - Web
  - PDA
  - Mobile phone
  - Imagenio (IPTV service)

- Future service extensions:
  - Access control
  - Security
  - Integration with an already existing video surveillance service
• Pending issues
Cost of devices

• Telecom Operators usually base their services on cheap modem-routers paid off before replacement. A competitive prize for an OSGi gateway:
  • less than 100 €

• Telcos should invest more on CPEs to be able to offer this type of services:
  • Is the market prepared for that? Is there any “life” beyond Triple Play?
  • What’s the killer application that REQUIRES something like OSGi to succeed?
    • A sustainable Home: We must consume less energy and find new ways for its procurement!
Cost. Possible solutions

• Independent OSGi box
  • Separated from the router, which has already been paid. This box is paid only by the interested users (approach taken for the home automation service).

• Customized gateways
  • Different gateways for different users, or customizable gateways with pluggable hardware modules (extra memory or new functionalities). The user pays for extra functionalities when needed.

• A single box with all the required hardware and software capabilities
Remote management infrastructure

- Telecom operators traditionally don’t manage customer networks.
  - There is no Integration with the Core Networks
    - Some solutions are being developed and tested

- Complexity
  - Different protocols for different kind of devices
    - TR-069 for fixed devices
    - OMA DM for mobile devices
    - Others (DMTF for desktop and mobile clients)
  - Try to reduce this complexity:
    - “Converged Device Management Initiative” launched recently by Telefonica
Lack of integration on devices

- **OSGi TR-069 management:**
  - The available home gateways can be managed through TR-069, but there is no integration with OSGi. Standardization could help to have an integrated remote management solution for this kind of devices.

- **OSGi OMA DM management:**
  - Included in the R4 specification
  - But... solutions aren’t integrated with the native management agent, you should add another OMA DM client for the OSGi framework
    - The agent should be just one
Conclusions

• OSGi seems to be the best solution
• First commercial services are on the way: Market Feedback.
• We need to solve the integration of platforms and protocols!
Thank you!

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