OSGi Value and Attributes for Manufacturers and SP

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Content

- Current Challenges for a Connected World
- Benefits of the OSGi Alliance
  - Connected Home
  - Automotive
  - TSP/ISP
- Conclusion
The Emerging Product Scenario

- **Consumers**
  - The distinction between what is in the box and what is outside will blur: user will enjoy the combination
  - Flexibility, mobility and the use of the customized service combination anywhere become important (increase of productivity)
  - The flexible devices shall be able to manage new applications when other functions will enter the home, the car or other environments

- **Device Manufacturers**
  - Multiplicity of new devices will have (always on) internet connection
  - A service platform enables lifetime cycle management and renewable applications
  - An integration platform will facilitate the cooperation in the value chain

- **Service Providers**
  - Each device will be a potential target for added value service
  - The possibility to run a service on different target appliances will boost the addressable market
Facts and Figures

- **117 million broadband homes worldwide by 2005 (~50% Asia)**
  - 75% will have home networks; PCs first, STB and media devices next
  - More than 25% of US-broadband homes have home networks (2008: 44%)
  - 20% of the European households will be equipped with a network in 2005
  - Explosive growth of networking devices, especially for the segments data and entertainment networks

- **Increasing percentage of electronics and software use in the car**
  - Turnover of in-car infotainment technologies in Europe will rise from 2.6 billion to 9 billion Euros in 2010
  - 90% of innovations rely on electronics; 80% of car functionality enabled by SW
  - SW Percentage of total manufacturer costs increase from 22% (2003) to 35% (2010)

- **Consumers consider the current network of computers and devices too difficult and expensive**
Today's challenges in the cross-industrial world

- **Increasing consumer requirements**
- **Need for strategic market differentiation**
  - State of the art, extensible devices on a variety of models
  - Addressing costly remote diagnosis and maintenance, teleservices
- **Massive increase in system complexity**
  - Life-cycle mismatch (SW/HW)
  - SW is becoming predominant
  - Complexity leads to exponential integration & testing efforts
  - System maturity is difficult to achieve
  - Implementation risks are high
  - Time to market uncertainties
Increasing Consumer Requirements Connected Home

- Remote Diagnosis and Maintenance
- Demand for high speed connections, streaming video and audio
- Shared Internet access (50%)*
- Shared data and information (45%)*
- Service Delivery on command
  - Entertainment
  - Home Care
  - Remote security services
  - Energy saving options (special contracts/remote maintenance of the heating system)
- No new wires (WiFi, HomePNA, + HomePlug)
- Ease of use
- Improved Security to Protect Consumer, Provider & Content
Primary Manufacturer Expectations Connected Home

- **Integration platform that fits the needs of operator driven and retail driven markets**
- **Support of multiple service providers on a common platform**
  - Modularity
  - Tunable security mechanism
  - Decomposition of services
- **Integration of different devices via plug&play**
- **Increasing demand for ease of use technologies**
- **Ability to complement native code environment**
  - Augment pure Java bundles with alternative payloads such as markup languages, graphic images, native libraries
  - Integration of existing software-components
Increasing Consumer Requirements Automotive

- Safety and security
- Theft prevention and breakdown support
- Improved service quality
- Broad range of services
  - Customized services
  - Entertainment and communication
  - Information services
  - Real-time traffic information
  - “Always online”, including phone
  - Interaction with other devices (mobile office)
  - Productive time in vehicle
- Ease of use / less complex HMI
Primary Manufacturer Expectations Automotive

- **Fast integration of new technology**
  - Facilitates overall dependencies (platform vendor, service provider, network)
  - Less proprietary HW and BlackBox components
  - Reduction of development and maintenance costs

- **High maturity and quality**
  - SW/HW life cycle mismatch solved: dynamic services separated from car manufacturing
  - Focus on innovative applications rather than basic architecture
Primary Expectations Automotive (continued)

- **Cost-optimized, future proof platform**
  - Modular and standardized HW abstractions
  - APIs that guarantee portability and re-use of software

- **Secure infrastructure**
  - Central data and application management; persistent data
  - Integration of optional third party services via dynamic authorized service deployment
Content

- **Current Challenges for a Connected World**
- **Benefits of the OSGi Alliance**
  - Connected Home
  - Automotive
  - TSP/ISP
- **Conclusion**
OSGi benefits for the Device Manufacturer Connected Home

- **Cost savings through...**
  - Flexible and scalable integration platform based on open standards
  - Standardized API's and basic libraries
  - Modular platform: Decomposition of services and SW reuse
  - Reduced software maintenance costs through remote diagnosis and maintenance
  - Value Chain: Facilitation of overall dependencies (bundles, platform vendor, service provider, network)

- **Decreased time to market for new applications and services through SW reuse**
  - Less project risk through incremental improvements instead of bottom-up re-design for each project
OSGi benefits for the Device Manufacturer
Connected Home (continued)

- **Resolve life-cycle mismatch (HW/SW)**
  - Remote configurability, management and dynamic download of new software
  - No need for expensive recalls
  - Post sale deployment of personalized services

- **Customizable and reliable security mechanism**

- **Reduced platform choice risk through platform independence (underlying Java technology)**
OSGi Benefits for Automotive Manufacturer and Suppliers

- **Cost savings through...**
  - Flexible integration platform based on open standards
    - Modular, configurable and scalable platform offers enhanced functionality on command
  - Standardized API’s and basic libraries
  - Reusability of SW leads to rapid application development
  - Remote diagnosis and maintenance
  - Value Chain: Facilitation of overall dependencies (bundles, platform vendor, service provider, network)

- **Less project risk through incremental improvements instead of bottom-up re-design for each project**
OSGi Benefits for Automotive Manufacturers and Suppliers (continued)

- **Better software quality/ faster time to market through extensive source code re-use**
- **Resolves life-cycle mismatch (HW/SW)**
  - Remote configurability, management and dynamic download of new software
  - No need for expensive recalls
  - Post sale deployment of personalized services and future “killer applications”
- **Customizable and reliable security mechanism**
- **Platform independence (underlying Java technology)**
OSGi Benefits for TSP/ISP

- **Extended life cycle without retrofit**
  [Eliminate product obsolescence]
  - Dynamic software downloads
  - Ability to diagnose, start-stop-update and install/remove services and applications remotely

- **Easier service provisioning and aggregation**
  - Remotely install service provisioning bundles
  - Establish configuration parameters for those services
  - Common provisioning formats
OSGi Benefits for TSP/ISP (continued)

- **Seamless service availability over different venues (home, car, mobile devices etc.)**
  - Tunable security mechanism
  - Easier product management & diagnostics in the field
  - End-point diagnostics of service performance and update of configuration parameters
  - Increased profits for network usage by enabling network traffic optimization

- **Decouple devices from specific services**
  - Service provider focus on services, manufacturers provide the platform
General Benefits for the Early Adopters

- **Adoption made easier**
  - Remote maintenance and service delivery
  - Increasing, evolving and improving services
  - Makes the best use of their time anywhere

- **Secure**
  - Connect trusted service providers to secure service platform

- **Future Proof**
  - Dynamic services ensure the latest capabilities
OSGi Benefits for the Mass market

- **Life made easier**
  - Services, not technology, that save money, time, and provide peace of mind
  - Connected – Services, Information, Value

- **Transparent Maintenance**
  - Embedded Hardware & Software services
  - Automatic upgrades

- **Secure**
  - Connect trusted service providers to secure service platform

- **Low cost**
  - Single platform for all services
Content

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New Key Factors

- Increasing Complexity
- Increasing Consumer Requirements
- Internet & Broadband Availability
- Wireless Connectivity
- Family Dislocation & Household Isolation
- Ease-of-use for Senior Customers
- Individual Treatment (Patients) and Cost-Optimization (Hospitals)
- Product Digitalization & New Business Models
Needs for Realization

- Standards / Integration Platform
- Simplify Technology via Plug&Play
- Reliability of Technology
- Network Capability
- Available Content and Services
- Consumer Interest (Challenge)
- Partnership / Value Chain
OSGi Core Value

- **Available, Scalable, Stable, Secure, Manageable, Interoperable**

- Integration platform that fits the needs of operator driven and retail driven markets
  - Life Cycle Match (HW/SW)
  - Transparent Maintenance/ Ease of use
  - Facilitation of overall dependencies and increase of efficiency
    - OEM: Focus on innovations/functions
    - Supplier: Reduction of version proliferation
    - Supplier: Development partitioning among suppliers
    - Tool provider: common interfaces with development processes
OSGi Core Value (continued)

- Support of multiple service providers on a common platform
  - Modularity
  - Tunable security mechanism
  - Decomposition of services, Software reuse

- Ability to complement native code environment
  - Augment pure Java bundles with alternative payloads such as markup languages, graphic images, native libraries
  - Integration of existing software-components

- Integration of different devices via plug&play capabilities

- Cost savings up to 30-50%
  - Development on OSGi standard service platform instead of a proprietary solution (no bottom-up design for each project)
  - Subsequent costs (SW reuse and post sale)
OSGi Service Platform - The Proven Solution

- **25 OSGi member company deployments (non-confidential)**
  - Smart Home/Health Care (13)
  - Automotive/Telematics (8)
  - Service Provisioning (4)

- **Plus 10 EU-projects (using OSGi-certified platforms)**

- **More information**
  Deployment Fact Sheet on [www.osgi.org](http://www.osgi.org)

... AND THE FUTURE LOOKS BRIGHT ...

WELCOME TO THE OSGi WORLD CONGRESS 2003!
Thank you!