Emerging Uses of the OSGi Service Platform

Mark B.M. Ossel – VP & GM Echelon EMEA
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Value of Strategic Business Systems

- Drive down costs
  - Centralized management (Enterprise Management)
  - Direct sales (E-Business)

- Increase efficiencies
  - Streamlined supply and distribution (Supply Chain Management)
  - Integrated business operations (Enterprise Resource Planning)

- Increase customer satisfaction, revenues
  - Personalized services (Customer Relationship Management)
  - Responsive, detail-oriented sales experience (Sales Force Automation)

- Make informed, fact-based decisions
  - Identify trends and potential problems (Business Intelligence)
  - Managing people resources (Human Resource Management)
Integrating Your Strategic Business Systems

- SFA
- E-Business
- ERP
- SCM
- BI
- EM
- HRM
- CRM
Industrial Applications

Asset tracking
Automated parking systems
Automotive manufacture
Avionics and engine control
Car washes
Chemicals processing
Clean room air handlers/scrubbers
Cluster tools
Compressor/decompressor stations
Drilling rigs
Electro-pneumatic braking
Emergency power generation
Emissions monitoring and testing
Equipment monitoring
Exhaust analysis
Fermentation control
Fire/gas leak detection
Food processing
Fusion Laser Control
Gas delivery systems
Gas pipelines and tank farms
Gas station automation
Harvester/combine equipment
IC manufacturing
ID systems
Injection molding
LCD display manufacture
Livestock management
Mass flow control/gas panels
Mass spectrometers
Material tracking and handling
Medical instruments
Metals processing
Milk processing
Oil wells
Oxidation furnaces
Package marking
Paint booths
Pallet-tracking systems
Parts pull systems
PCB manufacture
Petrochemicals
Pollution monitoring and control
Power generation and distribution
Printing machinery
Pulp and paper manufacturing
Remote monitoring
Shock absorber testing
Special deposition equipment
Textile dying and manufacturing
Toxic gas monitoring
Toxic site monitoring and remediation
Underwater exploration vehicles
Vacuum gauges
Vacuum systems
Vehicle systems
Wafer cassette tracking
Wafer inspection
Water/wastewater treatment
Wet stations
Integrating Your Strategic Business Systems

Building Activity Management

ERP

SFA

BI

HRM

CRM

E-Business

SCM

EM
Managing a Single Facility

**FIRE**
- Functionality checks
- Detector service
- Fire, Life, Safety

**SECURITY**
- Doors
- PIR
- Integration

**ACCESS**
- Doors
- Buildings
- Occupancy
- Feed Forward

**ENERGY**
- Utility Monitoring
  - (Elec/Water/Gas/Oil)
- Tenant Building
- Air/Water
- Heat
- Lighting
- Back-up Generation

**COMMUNICATIONS**
- Voice/Video/Data

**LIFTS**
- Breakdown
- Maintenance
- Traffic Performance

**LIGHTING**
- Schedules
- Occupancy Sensing

**24/7 Monitoring**
- Breakdown
- Plant Tuning
- Conditioned Monitoring
- Car Park Utilisation

**HVAC**
- Air-Handling Unit
- Boilers
- Pumps
- Fans
- Energy Control
- Variable Air Volume
- Air Quality
Are Your Facility Costs Significant?

Costs within facilities
- Energy
- Repair
- Maintenance
- Lost opportunity

Productivity
- Gaining a few % due to the optimized environment
  Temperature, humidity, light level, light color, air quality

Corporate and governmental compliance
- Data log
Building Automation

- Not usually considered industrial, but certainly Building Automation is not the home, telematics or mobile phone market
- Small buildings
  - Light commercial building automation configuration system
  - Typically a one-box, no-PC environment, with many different applications
    - Configuration
    - Monitor and control
    - Data logging
    - Scheduling
    - Remote trouble reporting usually via POTS (rarely GSM or broadband)
- Large buildings
  - Floor management panels for both control and visualization
- Multiple locations
Benefits of Networking a Single Building

- Leverage a common infrastructure
- Energy management and conservation
- Automation of manual activities
- Monitoring and notification of certain conditions
- Preventative and predictive maintenance
- Interoperability among products from multiple OEMs
Benefits of Integrating Your *Entire* Enterprise

- Understand energy consumption
  - Identify trends and benchmark operations
  - Uncover and replicate Best Practices
- Manage energy consumption
  - Lower total consumption via central management
  - Peak power demand management
  - Prevent inadvertent and undesirable local system overrides
  - Increase employees awareness
- Energy procurement
  - Negotiate better pricing with your utility or utilities
  - Usage strategies
Benefits of Integrating Your *Entire* Enterprise

- **Remote management**
  - Equipment monitoring and diagnostics
  - Complete management of remote assets from anywhere, anytime

- **Streamline business processes**
  - Integration with existing IT systems
  - Integration with service partners
  - Centralized notification and maintenance dispatch

- **Other things specific to your industry**
  - Verification of signage and lights turned on in a timely manner
  - Enterprise-wide security and access logging
  - Regulatory compliance
How to Unlock the Information in Your Devices?
Building Automation market supplier side..

- All major HVAC companies have an interpreted programming language that they port from platform to platform
  - Moving to Java solves their porting and future proofing problems
- All HVAC companies have multiple system applications that run on the same platform simultaneously
  - Moving to an OSGi Service Platform eases their integration and life-cycle management development and support burden
Standards

- Decrease cost of development
- Decrease cost of integration
- Creates a bigger market for all
- Enable more sophisticated solutions

In a world with R&D budgets being squeezed and time-to-market is getting down

- Go for world-wide, open standards like OSGi, LonWorks
- Do not re-invent the wheel
- Spend the resource on the application
Questions?