Java ME Evolution

Craig Gering
Vice President Java Development
7/26/10
The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Agenda

• Who's asking for what
• Java ME Today
• Java ME Evolution
  • Common updates to CLDC and CDC
  • CLDC Evolution
  • CDC Evolution
  • Expanding the Platform
• Q&A
Developers Ask for...

- More re-use
  - Library code – common across client types and servers
  - Programming skills – no dumbing down for Java ME
  - Tool leverage – use the same tools for clients, servers
- Programming power – Java language features
- Access to phone/device features – sensors, events, etc.
- Robustness – reliable and predictable software, fewer differences between devices
- Provisioning – one stop certification, distribution, revenue model, ...
OEMs Ask for...

- Low cost with good features
- Quick time to market
- Flexibility in implementing interfaces to OS functions
- Support for more platforms – not really a JCP issue
Operators Ask for...

- Features that differentiate
  - Customization of look, feel, user experience
  - Security policy management of sensitive features
  - Branding of device, application store and applications
- Continued ROI in applications and infrastructure
- Service infrastructure
  - Operator services
  - Payment
  - Sync and backup
  - etc.
Java ME Today

• CLDC Platform
  • Minimal Subset of JDK 1.4.2
  • Profiles - MIDP 2.1, MIDP 3.0
  • 18 Optional Packages
  • Platforms - MSA 1.1, MSA 2.0
  • MSA 2.0 update in progress since 2007

• CDC Platform
  • Subset of JDK 1.4.2
  • 3 Profiles, FP, PBP, PP
  • 6 Optional Packages (AGUI, JDBC, RMI, JAAS, JSSE, JCE)
  • Platforms defined by vertical markets (TV, Blu-Ray, etc.)
  • CDC/FP/... last updated August 2006
Proposed Java ME Direction

• Phase I - Modernize ME platform
  • Adopt/Incorporate platform/language enhancements from jdk 1.5, 1.6
  • Preserve CLDC/CDC split, but drive for larger common ground between them

• Phase II - Expand ME Platform
  • Many requests for additional APIS/Capabilities, prioritize and include as part of platform, optional packages.

• Phases can be performed sequentially or in parallel
Java ME Evolution (Phase I)

- Common updates to both CLDC and CDC
  - Java Language
  - Java Virtual Machine
  - Java Runtime Libraries
- No business disruption
  - Keep backward compatibility
  - Application ecosystem stability
- Optional Packages
  - Backwards compatible
  - May be updated to use Common Language, VM, Libraries
Common Language Enhancements

• Compatible with the Java Language Specification
• JSR 14: Add Generic Types To The Java™ Programming Language,
• JSR 41: A Simple Assertion Facility*
• JSR 175: Annotations, and
• JSR 201: Extending the Java™ Programming Language with Enumerations, Auto-boxing, Enhanced for loops and Static Import

* CDC Supports full Annotations, CLDC supports a subset due to the absence of reflection
Common VM Enhancements

- Compatible with the VM Specification
- JSR 133: Java™ Memory Model and Thread Specification Revision,
- JSR 202: Java™ Class File Specification Update
- JSR 292: Supporting Dynamically Typed Languages on the Java™ Platform
Common Library Enhancements

- Update APIs already in CLDC to Java 6
- Updates to primitive type support
  - java.lang.String – extended to full Java 6 Strings
  - Math functions – Trig, BigDecimal, etc.
- NIO Buffers
- Create common specification for Generic Connection Framework (GCF)
CLDC Evolution

• Common enhanced language, VM, and Libraries
• Retain equivalent level of functionality
  • Security model (same as CLDC 1.1.1)
  • No dynamic loading of classes
  • Generic Connection Framework for files, networking, etc.
  • No reflection
• Update MSA2 w/ CLDC.next
CDC/FP Evolution

- Common enhanced language, VM, and Libraries
- Combine CDC and FP (No separate FP)
- Updates
  - Security,
  - Unicode,
  - JSR 51: New I/O APIs for the JavaTM Platform,
  - Networking,
  - Logging
Expanding the Platform (Phase II)

- Evaluate and Add capabilities in existing optional packages or define new where appropriate
- User Interface
  - Multi-touch, Gestures, Virtual keyboard control
- Persistent database support
- UPnP and DLNA integration with remote media
- Ajax, JSON support for Web 2.0
- Speech output
- Social Networking integration API
- Search (platform wide integration)
- Etc.
Next Steps

• Feedback
• Timeframes
  • Target JSR in next 3 months
The preceding is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
ORACLE IS THE INFORMATION COMPANY