Open Mobile Alliance

Status of MDM Standardization and the Impact on the Operator and Handset Manufacturer Community

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Agenda

- Overview of the Open Mobile Alliance
- Current specifications from OMA DM
- Current Issues Facing the Industry
- OMA DM Pipeline
- Summary

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OMA – The Open Mobile Alliance

VISION

No matter what device I have,

No matter what service I want,

No matter what carrier or network I'm using,

I can communicate, access and exchange information.

The Open Mobile Alliance is an international organization, developing open, market driven interoperable specifications for global adoption of data services.

OMA runs a robust Interoperability Testing Program, where all level of members test product implementations in a trusted zone.

OMA was created in June 2002 by leading mobile operators, device and network suppliers, information technology companies, content and service providers.

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OMA History and Context

- In 2005 OMA expanded its charter to include fixed line specifications
- OMA is aiming to increase its interaction with developer communities
- About 350 Member Companies
- 42 Formalized Liaison Relationships – DSL Forum, Telematics Forum, W3C
- Over 100 Enablers in the current Work Program
- 6 Specification Development Meetings per Year
  - 600 attendees contributing to OMA specifications
- 5 TestFests per Year
  - 110-130 Engineers
  - 60 - 70 real client and server products

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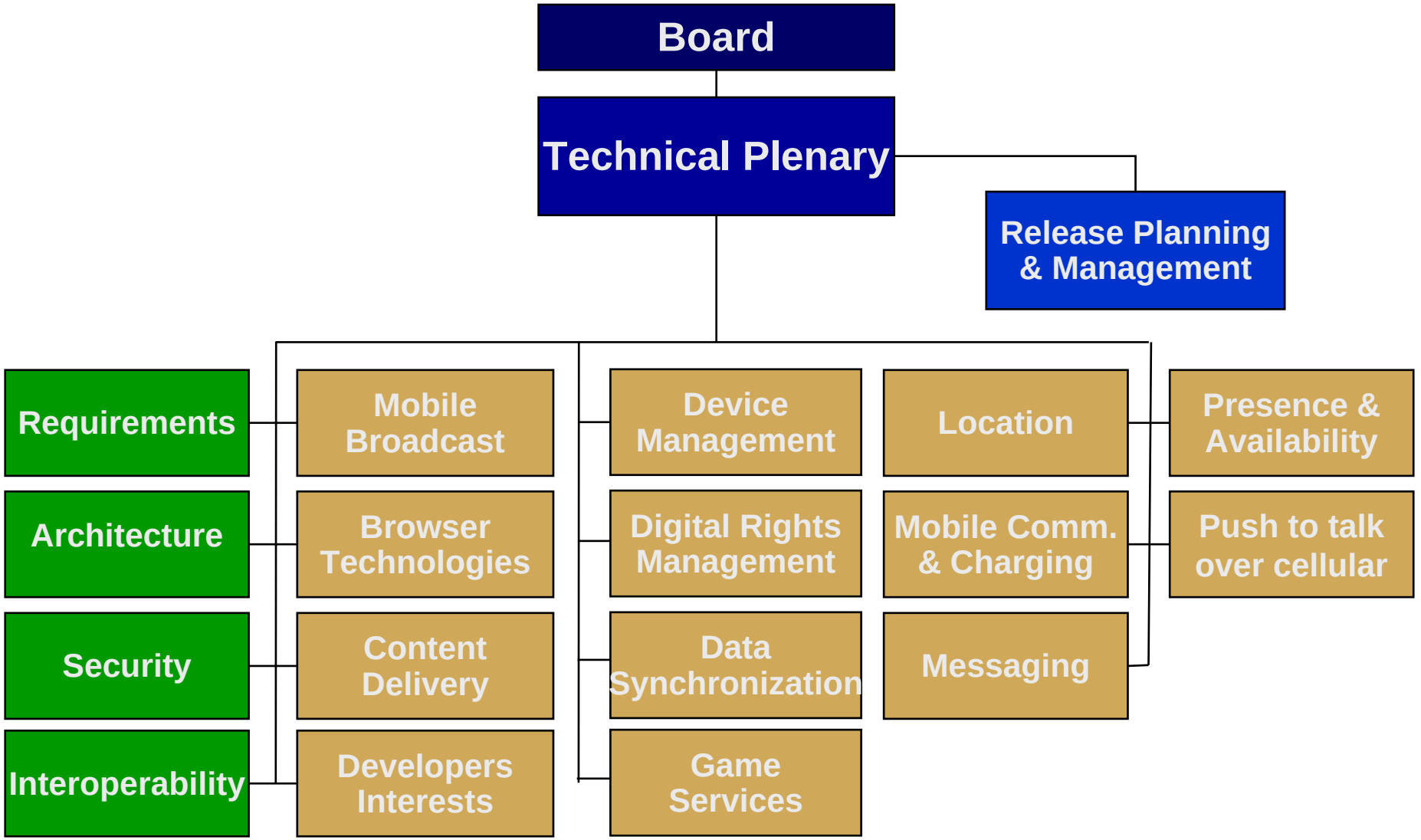
OMA Organization



OMA Release Program

- **37 Published Enablers to date**
  - Ongoing interoperability program to validate Enabler specifications, as well as the implementations of member products and services.
- ***Candidate Enabler Release (CER)*** delivers an approved set of open technical specifications that can be implemented in products and solutions, and then tested for interoperability.
- ***Approved Enabler Release (AER)*** represents Candidate Enabler Releases that have gone through the Interoperability Program (IOP) of OMA. The IOP tests interoperability between different member company's implementations – either within the OMA or through other means.

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Approved Enablers

- DM 1.2 moved from Candidate to Approved status in 6 months, and there are already some implementations in the market.
  - 89% deployment rate of OMA DM according to major handset vendors around the globe
  - 90% deployment rate of OMA DM in operator implementation of services
- FUMO 1.0 has gone through the Interoperability Testing Program and is an Approved Enabler Release
- Quality and reliability of these Enablers is well established and bodes well for the future pipeline of OMA Device Management Enablers
- New applications and developer activities need to consider OMA DM to support global adoption of new services

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The Need for Device Management

- Before DM was specified, the only way to configure devices was:
  - In Factory
  - In Store
  - Remotely via Client Provisioning and one-way only configuration
- Evolving devices and services creates the need to manage the devices remotely
  - Firmware update
  - Diagnosis and monitoring
  - Individual installation of software
  - Device configuration
  - Scheduling of all of these tasks
- Why standardize these functions?
  - Uniform visibility into the resources and functionality of all devices
  - Network operators can manage devices, conduct diagnosis and update devices remotely and without direct vendor support
  - Interoperability directly impacts consumer experience

Current Issues Facing the Industry

- Preparing for increase in number of data-enabled mobile device
  - Emerging markets will find low cost devices that provide first time internet access to new users
  - Maintaining these devices necessary OTA
- Coping with many new players in the market
  - Emerging businesses in emerging markets
  - CE industry, PC industry DM needs
  - DSL Forum interested in OMA DM
- Reducing time to market with well-devised standard
  - New products and services find global adoption possible with standardized approach

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OMA's Latest Developments in DM

- Diagnostic Monitoring Object – In OMA Work Program
  - Detect and repair actual or potential troubles
  - Report faults to the network
  - Enable terminals to measure and report key performance indicators
  - Query the device for additional diagnostic data
  - Operators or corporate helpdesks can also use the diagnostic enabler
    - Invoke specific repair procedures embedded in a given handset model
  - Use case
    - Subscriber reports an error indicator or problem to operator or helpdesk
    - Customer care server or help desk agent queries device for more information
    - Cause of error or problem is identified
    - Action taken to repair or correct

OMA's Latest Developments in DM

- Connectivity Management Object -- In OMA Work Program
  - Seamless operation of device over all the various protocols without manual administration of the device
    - UMTS, CDMA2000, WiFi
    - 3GPP Packet Switch or other Proxy settings
  - Wireless data connectivity
    - Specification of a set of data management object schema
    - Exposure by an OMA DM client
    - Targeting by an OMA DM server from operator or corporate infrastructure
- Software Component Management Object SCOMO - in OMA Work Program
  - Operator and corporate IT departments can manage software inventory such as libraries and user interface elements.
  - Allows operators and corporate IT departments to ensure compatibility of old and new software.
  - Remove and update existing software and install new software.

OMA's Latest Developments in DM

- Smart Card
  - Management objects can be stored on the (U)SIM card.
  - Users can switch between devices and take security and other settings with them from device to device.
- Additional Enablers in Early Stage Development within OMA DM
  - Lock and Wipe Management Object – allows deactivation of the device over the network.
  - Device Capabilities Management Object – allows activation or deactivation of hardware on the device, such as WiFi access or other capabilities.
    - Taken from Asian market and brought to OMA for specification and standardization
- Device Profiles Evolution -- In OMA Work Program
  - Not in the OMA DM group, but related
  - Applications and services need to address variable network environments
  - Different users with different devices have a wide range of capabilities and features
  - DPE creates an enhanced device profiles mechanism
  - Allows devices to convey real time dynamic device properties to an ASP
  - Enable any ASP to provide content best suited to device's capabilities
    - Memory size, cache size, CPU load, battery life

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Summary

- OMA DM is well established and reliable in the mobile value chain.
- Interoperability is the key to seamless maintenance and integration of devices, services and applications - now and in the future.
- OMA DM helps operators and IT departments manage access capabilities, diagnose problems, fix and update devices over the network.
- The future of OMA DM will see increased security and maintenance capabilities
- Mobility is for everyone, everywhere
  - At home, in the office, on the road, consumer and enterprise applications must work with evermore complex multi-use devices in multiple environments across a variety of networks and regions.
  - Interoperable and standardized OMA DM has the agility and complexity to meet the demands of this environment.
- OMA DM Working Group is the place for the industry to best address the challenges of development with a goal of global adoption.