



Developing Vietnam's Infrastructure

***Creating investment opportunities by including
interoperability in deployment plans***

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Mobile Vietnam

Open Mobile Alliance

- Quick review of yesterday's key messages
- What OMA brings to the table
- Basics on some OMA Enablers
 - Device Management
 - Content Management
- OMA TestFests



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

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

In an emerging market, many consumers will have their first Internet access capability via a mobile device

Interoperability with the ever expanding global applications and services is essential for investment in Vietnam's infrastructure to develop the market

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OMA – Cross industry representation in end-to-end chain

- 350 Global Members
 - Operators who have experience launching new services
 - Broadcasters and IT companies that want to sell rich content
 - Terminal vendors, IT and network infrastructure vendors
- 37 Formal Cooperation Agreements around the globe
 - Browser work with W3C
- 50 Enablers published and over 100 active work items
 - Digital Rights Management and Gaming
 - Broadcast
 - Location Services
 - Mobile Commerce and Charging
 - Messaging
 - Device Management
 - IOP Testing



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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 CP 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

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**
 - Seamless operation of device over all the various protocols without manual administration of the device
 - UMTS, CDMA2000, 802.11
 - 3GPP Packet Switch or WAP 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

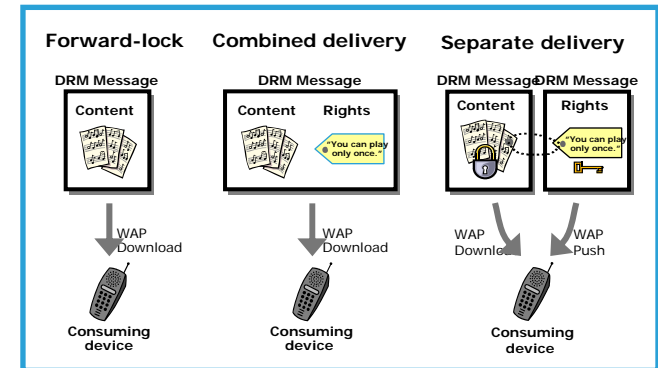
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OMA Digital Rights Management 1.0

- Light media content first to market
- Need for a **mass market solution**
 - Timely and inexpensive to deploy
 - For mass market mobile devices
 - Did not require costly infrastructure
- Targeted protection for light media content (mainly ring tones)
- Three levels of functionality
 - **Forward Lock** prevents content from leaving device
 - **Combined Delivery** adds rights definition
 - **Separate Delivery** provides content encryption and supports legitimate viral distribution (Super-Distribution)
- Approved specification in September 2004



OMA DRM 2.0

- Premium content now widely available
- OMA DRM evolves with the mobile industry
 - High bandwidth cellular networks becoming widely available
 - Mobile devices with removable media and larger color screens supporting rich media
 - Content and service providers eager to release rich audio/video content and applications
- Greater security and trust management required to protect high value content
 - Need to ensure target device can be trusted to keep content and trade secrets safe
 - Need greater security to prevent content from leaking out during distribution



OMA's Latest Developments in Content Management

- **Categorization Based Content Screening**
 - Access to content from any device is ever increasing
 - Broadcast and push content now finds users
 - Based on content categorization and screening rules
 - CBCS specifies the interfaces between actors
 - Scanning engine
 - Application receiving content
 - Content is categorized and flagged based on its characteristics
 - Screening rules are applied and action is taken
 - Rules are provisioned by either end-user or service provider
- **Device Profiles Evolution**
 - 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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The Value of Testing

- Provides confidential neutral environment
- Allows inter-working between competitors
- Provides complete infrastructure in a real world environment
 - 2G and 3G networks (GSM, CDMA, W-CDMA)
 - WAP Gateway, PPG, SMS Centre, IMS System(s)
- Formal testing against Test Specifications
- Results reported anonymously to IOP WG
 - Allows assessment of enabler for approval
- Problems and issues fed back into OMA process through neutral reporting system

OMA TestFest Achievements

- 20 Test Events held to so far
- Over 1100 product implementations tested
 - 144 in 1st Year (11/02 – 10/03 – 5 events)
 - 178 in 2nd Year (11/03 – 10/04 – 4 events)
 - 263 in 3rd Year (11/04 – 10/05 – 4 events)
 - 429 in 4th Year (11/05 – 10/06 – 5 events)
 - 116 so far in Year 5
- Over 500 problems and issues raised to OMA
 - All related to specifications and improving them
 - Implementation errors dealt with by participants