Agenda

- Overview of the Open Mobile Alliance
- Why we created OMA Digital Rights Management
- Types of DRM functionality
- Applying OMA DRM to protect content
- Success and evolution of OMA DRM
- Questions
Open Mobile Alliance overview

OMA is designed to be a center for mobile service specification work, stimulating and contributing to the creation of interoperable services.

OMA’s organizational goals include:

- Deliver high quality, open technical specifications based upon market requirements that drive modularity, extensibility, and consistency amongst enablers to reduce industry implementation efforts.
- Ensure OMA service enabler specifications provide interoperability across different devices, geographies, service providers, operators, and networks; facilitate interoperability of the resulting product implementations.
OMA Membership

- As of October, 2003 OMA has 300 member companies - representing the entire mobile value-added chain
  - Content Providers
  - Information Technology Companies
  - Mobile Operators
  - Wireless Vendors
- Participants from all of these industry segments are involved in OMA DRM
OMA recognizes market need for DRM

- OMA DRM work started in 2001 in response to market demand
  - Content sales to mobile devices becoming lucrative
    - Phones coming to market able to support downloadable ringtones, wallpapers, screensavers, applications
    - Content and service providers wanted to protect their investment in these types of content
  - Various levels of protection needed commensurate with the value of the content being protected
  - Service providers and vendors wanted a solution that was timely and inexpensive to deploy
    - Can be implemented in mass market mobile devices (not just high-end)
    - Must not require costly infrastructure to be rolled out
OMA defines DRM for mobile industry

- **OMA DRM version 1 created to meet market reqs**
  - Developed 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
  - Specifications rapidly developed to reduce time to market
    - Delivered specifications in Nov, 2002
    - Specs currently available as candidates for implementation
    - OMA “Test Fest” planned for 2003 to test interoperability
Forward Lock

**Purpose**
- Prevent peer-to-peer distribution of low-value content

**How it works**
- Plaintext content packaged in a DRM Message content type
- Content delivered to device
  - E.g., via download, messaging, etc
- Device prohibited from forwarding content to other devices
Combined Delivery

- **Purpose**
  - Prevent peer-to-peer distribution
  - Control content usage

- **How it works**
  - Rights object defines permissions and constraints
  - Both content and rights object packaged in DRM message and delivered to device
    - Neither can be forwarded from the target device

"You can play only once."
Separate Delivery

Purpose
- Protect higher value content using encryption
- Enable viral distribution to grow the mobile content market
- Allow new “rights” to be purchased without downloading content again
How it works

- Content encrypted using symmetric key and packaged in DRM Content Format (DCF)
  - DCF provides plaintext headers describing content type, encryption algorithm, and other useful information
- Rights object created using OMA Rights Expression Language (REL)
  - OMA REL is a mobile profile of ODRL 1.1
  - Rights object contains symmetric content encryption key
- Protected content delivered over any medium
- Rights object delivered via WAP Push (i.e., over SMS)
  - Provides “safe” delivery of content encryption key
OMA evolving the DRM solution

- **DRM solution evolving with mobile industry**
  - High bandwidth 3rd Generation cellular networks available
  - Proliferation of wireless Internet “hotspots”
  - Mobile devices with removable media and larger color screens support downloading and streaming rich media
  - Content and service providers eager to release rich audio/video content and applications into the marketplace

- **Greater security and trust management required to protect high value content**
  - Need to ensure target device can be trusted to keep content and secrets safe
  - Need greater security to prevent content from leaking out during distribution
What OMA DRM version 2 adds

- **Security**
  - Rights object and content encryption key encrypted using device’s public key to bind to target device
  - Integrity protection for content and rights object added to reduce risk of tampering

- **Trust**
  - Mutual authentication between device and rights issuer
  - Rights issuer can accurately identify device to determine revocation status

- **Support for a wide variety of distribution and payment use cases**
Example DRM deployment

Browse to website and download protected content

Purchase "rights" and establish trust

Deliver protected rights object

Super-distribute content to a friend

Establish trust; purchase and deliver rights object

Content encryption key

Content Issuer

Rights Issuer
Applying DRM to protect content

- **Steps for distributing DRM protected content**
  - Encrypt the content and package in DRM Content Format
  - Assign permissions and constraints during consumer purchase transaction
  - Consumer receives content and “rights” and begins using the application

- **DRM enables viral distribution of content**
  - Consumers can send your protected content to all their friends that have OMA DRM enabled mobile devices
  - Their friends purchase the permission to consume the content
  - You make money through “word of mouth” advertising
Why OMA DRM will succeed

- **OMA is an open organization with representation from all industry segments**
  - Anyone can join and participate in the technical work
  - Anyone can implement the open specifications and interfaces

- **OMA DRM is being deployed today**
  - Several vendors have announced servers and mobile devices supporting OMA DRM v1
  - Mobile network operators are beginning to deploy DRM-based services

- **OMA DRM is developed by the entire mobile value chain for the mobile industry**
Future directions for OMA DRM

- **OMA DRM will continue to evolve**
  - New ideas and experiences will drive OMA DRM in new directions

- **Feedback from the developer community is highly desirable**
  - Ensures OMA DRM satisfies your business models

- **Join OMA and help define the future of DRM**
  - Participate in the DRM group, or
  - Participate in the OMA Developer’s Interest Group