



# Digital Rights Management

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# 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

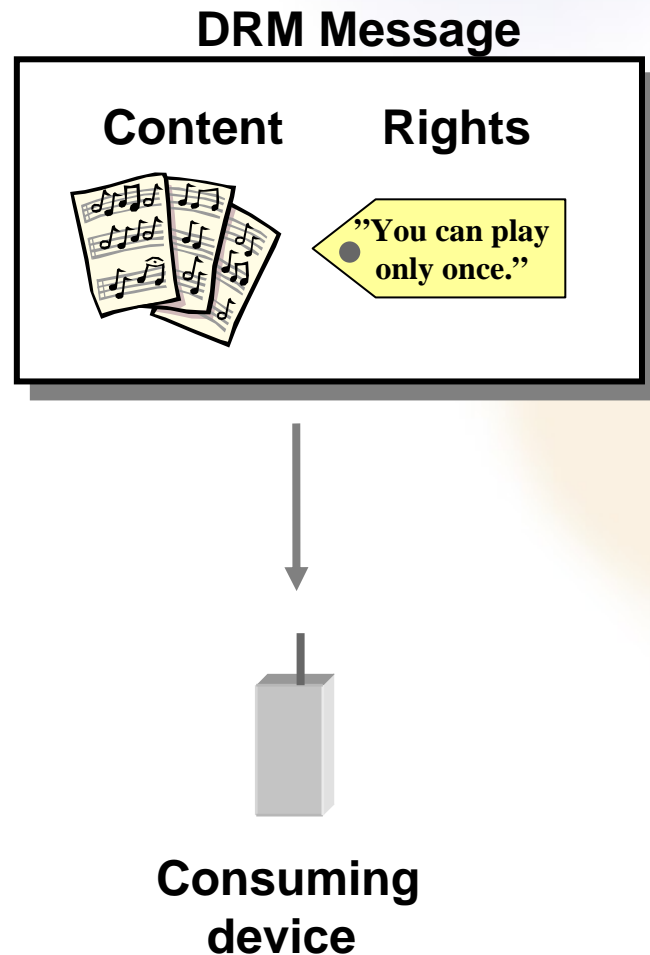
## DRM Message



## Consuming device

- **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

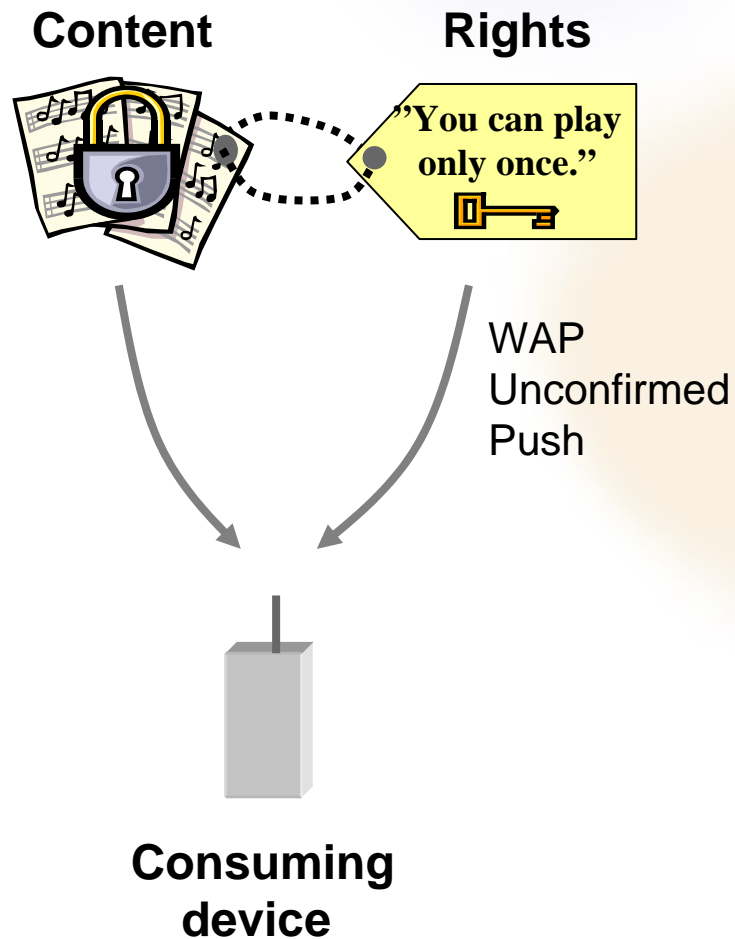
# Combined Delivery



- **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

# Separate Delivery

(1 of 2)



- **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

# Separate Delivery

(2 of 2)

- **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

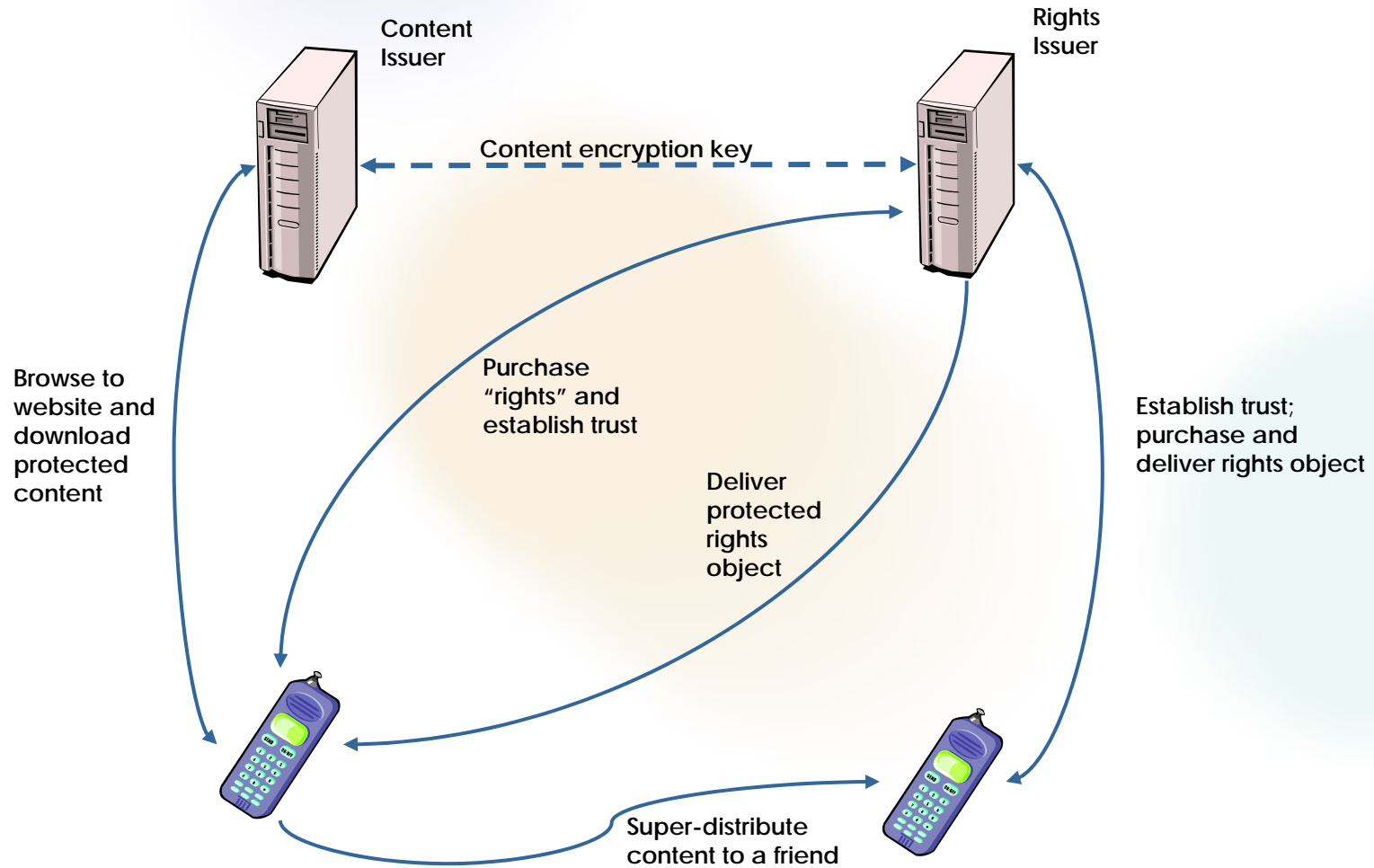
- **DRM solution evolving with mobile industry**
  - High bandwidth 3<sup>rd</sup> Generation cellular networks available
  - Proliferation of wireless Internet “hotspots”
  - Mobile devices with removable media and larger color screens support downloading and streaming rich media
  - Content and service 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



# 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





**oma**

Open Mobile Alliance

**Questions?**

[www.openmobilealliance.org](http://www.openmobilealliance.org)