Slide 1

UNLOCKING IP
18-19 November 2004
New models for sharing and trading intellectual property
A conference on 18-19 November, 2004
The Scientia, University of NSW, Sydney.

DRM Technologies: Flexibility & Interoperability

live *events*

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Slide 2
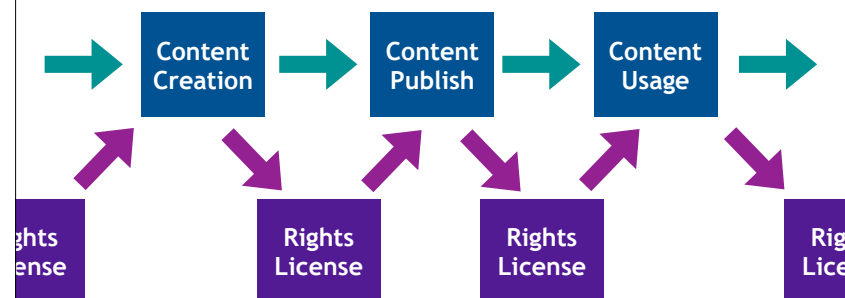
Overview

live events

- Principles of DRM
  - Architecture, Framework, Information Model
- Flexibility: Social, Legal
- Standards
- Mobile DRM
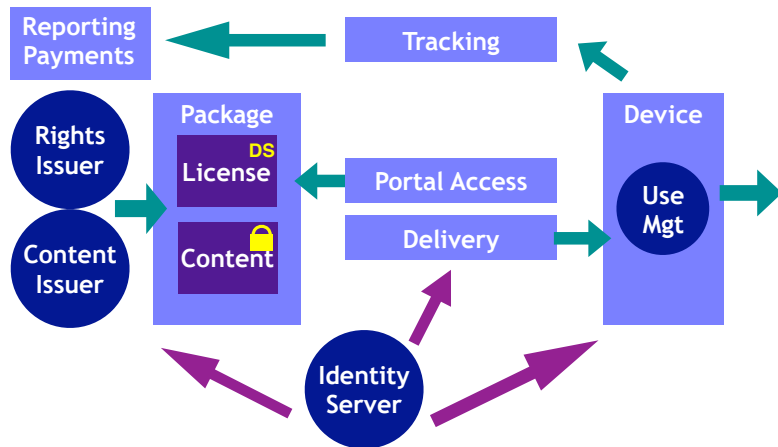- Flexibility: Technical Interoperability
- DRM Threats
- Summary

Slide 3

DRM Principles

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- **DRM is a balance between**
  - **Business, Social, Legal, and Technical issues**
- **DRM Definition**
  - **Rights Information Management (Metadata)**
    - **Rights Holders, Royalties, License Mgt…**
  - **Technical Protection Measures (Enforcement)**
    - **Security, Encryption, Trust…**
- **DRM is an end-to-end solution**
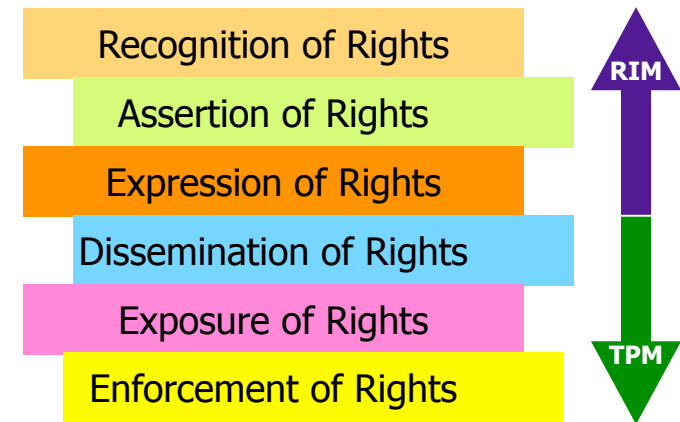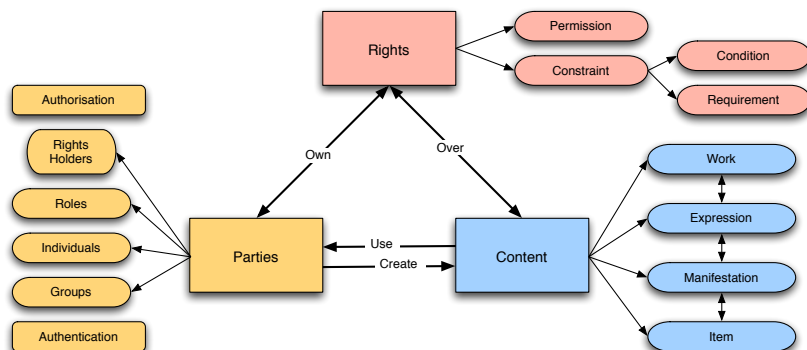 - **Needs to work with the content creation, management, distribution, and usage value chains**

Slide 4

DRM Framework

live events

Content Creation → Content Publish → Content Usage

Rights License — Rights License — Rights License — Rights License

DRM Architecture

UK JISC DRM Study 2004

Recognition of Rights	
Assertion of Rights	RIM
Expression of Rights	
Dissemination of Rights	
Exposure of Rights	
Enforcement of Rights	TPM

ODRL REL Model

Flexibility

- **Business**
  - **Unlimited business models**
  - **Interface to eCommerce systems**
- **Legal**
  - **Copyright laws (eg fair dealing)**
  - **Contract law (eg license agreements)**
- **Social**
  - **Allow existing "norms" (eg gifts)**
  - **Impact on end consumers**
- **Technical**
  - **Interoperable systems and services**
  - **Standards**

Social DRM

"The main purpose of DRM is not to prevent copyright infringement but to change consumer expectations about what they are entitled to do with digital content"

- Pamela Samuelson
- Uni of California at Berkeley, 2003

Social DRM

Permissions on : Alice's Adventures in Wonderland

Copy
No text selections ca

Print
No printing is permitte

Lend
This book cannot be

Give
This book cannot be

Read Aloud
This book cannot be

Info   Bookmarks

Document Security

Security Method: Password Security
Document Open Password: No
Permissions Password: Yes
Printing: High Resolution
Changing the Document: Not Allowed
Content Copying or Extraction: Not Allowed
Commenting: Not Allowed
orm Field Fill-in or Signing: Not Allow
Content Accessibility Enabled: Not Allowed
Document Assembly: Not Allowed
ow (40-bit RC4)

OK

Legal DRM

- Fair Use/Dealing Factors
  - the purpose and character of the use
  - the nature of the copyrighted work
  - the amount and substantiality of the portion used
  - the effect of the use upon the potential market
- Technical dangers
  - very difficult to "code"
- Legal dangers
  - you get it wrong!
- Trusted third-party to make decision?

DRM - Standards

- Key Standards Bodies involved in DRM
  - Open Mobile Alliance (OMA)
  - MPEG-21 - Parts 4,5,6
- Rights Expression Languages
  - Open Digital Rights Language (ODRL)
    - as used in OMA
  - Extensible Rights Markup Language (XRML)
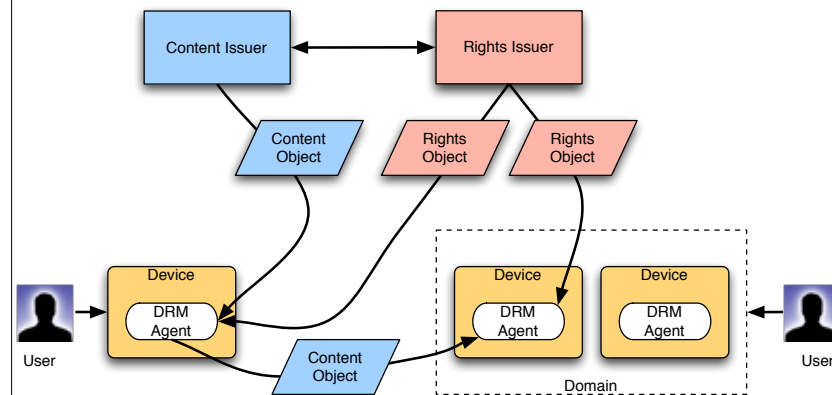   - as used in MPEG-21(5)
  - Creative Commons

Mobile DRM - OMA

- **Open Mobile Alliance (OMA)**
  - **Lack of DRM has inhibited content owners**
- **OMA DRM Version 1 - Low grade media**
  - **Rapid entry into the market**
- **OMA RDRM Version 2 - Premium content**
  - **Complete trust model, secure content+rights**
  - **Advanced business models for latest devices**
- **Why Mobile**
  - **new handsets (trusted DRM agents)**
  - **mobile identity & billing services**

OMA DRM 2 Architecture

Rights Offers

Creative Commons

- **Licenses are aimed at sharing open content**
- **Mix and match from the following (booleans):**
  - **Permissions (rights granted by the license)**
    - **Reproduction, Distribution, Derivative Works**
  - **Prohibitions (things prohibited by the license)**
    - **Commercial Use**
  - **Requirements (restrictions imposed by the license)**
    - **Notice, Attribution, ShareAlike, Source Code**
- **ODRL/CC joint Working Group**
  - **Express CC semantics in richer ODRL language**

AEShareNet

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Development of Derivatives					
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- **Mapping to ODRL language (+extensions)?**
  - **<odrl:recontext>**
  - **<odrl:attribution>**
  - **<odrl:purpose>**
  - **<aes:vetting>**
  - **<aes:consolidation>**
  - **<cc:notice>**

Apple iTunes

Key Points

As the authorized rightholder of music you buy from the iTunes Music Store:

- You don't need an Internet connection to listen to your purchased music.
- You can include your purchased music in custom playlists and burn it to a CD.
- You can listen to your purchased music on an unlimited number of iPod devices.
- You can share your music on four other computers.
- Your purchased music is yours forever; you don't need to subscribe any service.
- You can use your purchased music in applications other than iTunes. For example, you can use it in a movie you make or in a presentation you create.

DRM Interoperability

- **"A prerequisite to ensure Community-wide accessibility to DRM systems and services by rightsholders as well as users and, in particular, consumers, is that DRM systems and services are interoperable"** EU Copyright Report 16/4/2004
- **DRM Systems should be compatible**
  - **Commercial Systems - No**
    - **Windows, Apple, Real…**
  - **Standards - No**
- **Why Not?**

DRM Threats

- **The DRM "Patent War"…**
  - **"The solution…is patenting as much as we can…A future start-up with no patents of its own will be forced to pay whatever price the giants choose to impose."**
    - **William H. Gates (Internal Microsoft Memo, 1991)**
  - **"The big issue is what people call patent terrorism"**
    - **Jack Russo, intellectual property attorney, Palo Alto, CA**
- **RIAA - "Song Download" fee per student per university**

Summary

- **RELs still need to evolve to capture more of the "transaction space" with**
  - **Identity, Commerce, Content systems**
  - **Copyright laws**
    - **exceptions and statutory licensing**
- **Mobile is leading the DRM deployment**
  - **OMA "open standards"**
  - **But not limited to mobile sector - Internet protocols**
- **Technical Interoperability will become a big issue**
  - **Will flexibility be achievable?**

ODRL License

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      <print/>
    </permission>
    <party>
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      <rightsholder/>
    </party>
  </offer>
</odrl>
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