



Digital Rights Management Overview – Focus on Music Industry

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Agenda

- Section 1: Background Information
- Section 2: DRM Systems in Practice
- Section 3: Some Possible Implications
- Section 4: Current Situation



Section 1:

Background

What is Digital Rights Management (DRM)?

- At a high level DRM deals with the control of the rights to content
 - e.g. How it can be used, how often, etc.
- Applicable to a variety of types of content
 - e.g. Books, Music, Video
- The term DRM is often used in a variety of ways
 - To refer to technical systems which control content
 - To refer to the technology underlying the technical systems
 - To refer to the concept of controlling content



Motivation for DRM

The media and technology landscape today offers many new and exciting opportunities:

- New distribution channels
- New marketing schemes
- Chance to reach audiences never before available

However these new opportunities also present risks

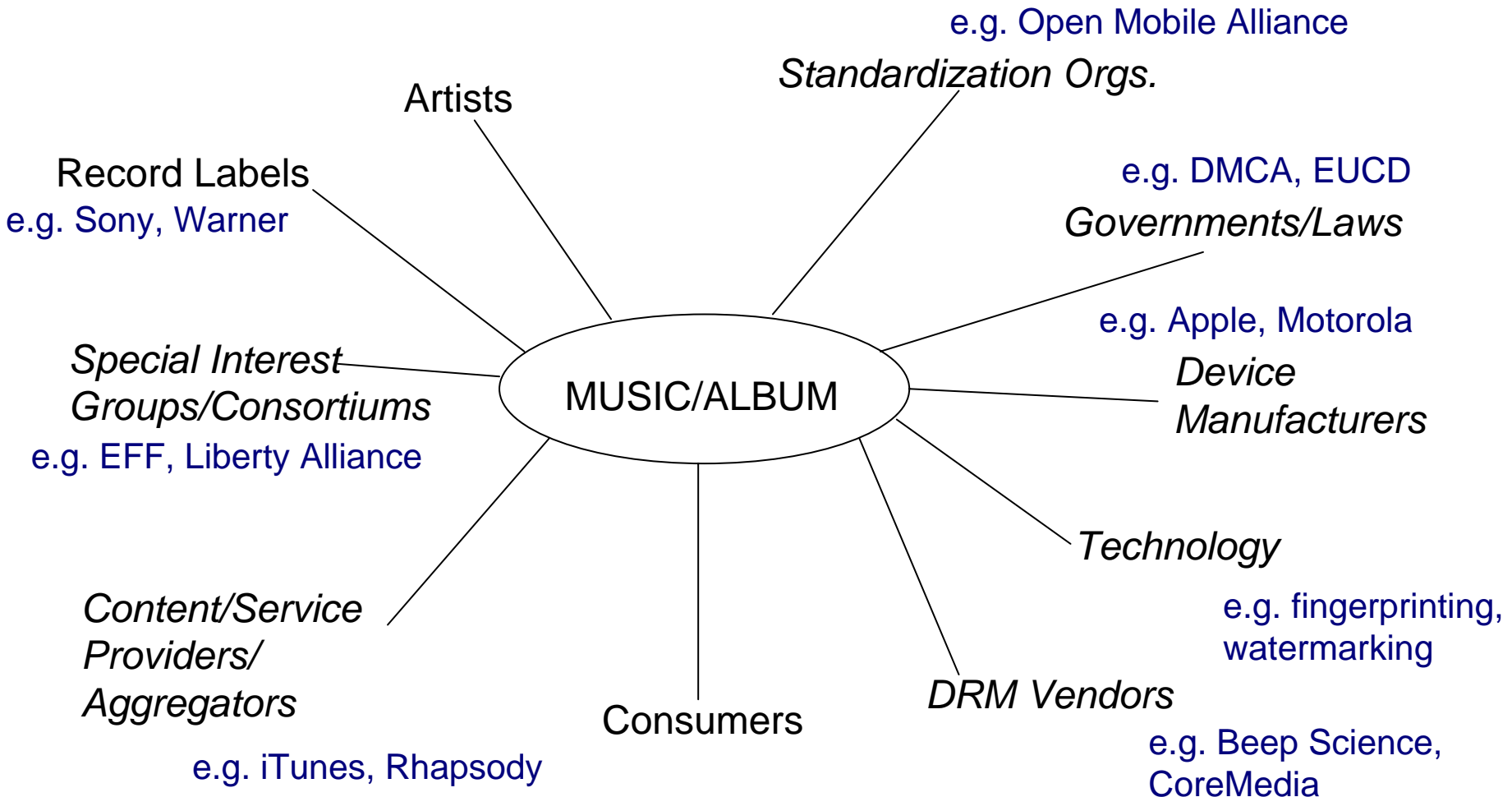
- Digital content is nonrivalrous, easy to distribute
- Piracy
- Loss of control

From where/why has DRM evolved?

- Concept of controlling content is not new (e.g. software industry)
- Technological advances:
 - high value content such as music or video increasingly available in digital form
 - internet (file sharing, etc.)
- Copyright regulations
- Media industry
- DRM still in the process of evolving

There are a variety of perspectives

Many New Actors





Variety of Perspectives

- Arguments for strict control of content
 - Ensure artists are compensated
 - Protect copyrighted work
- Arguments for less control of content
 - Encourage Innovation
 - Artist and Consumers should be 'free' to choose how to use their work



Section 2:

DRM in Practice

Exercise

Look at Napster (www.napster.com) and think about the following:

- What kind of service does the site provide?
- How can the music be 'consumed'?
- What kind of mechanisms are in place to control the music accessed through the site?
- What are your general feelings about this site and the services it offers?

DRM at napster.com

- Transformed to a legal music service at the end of 2003
- \$9.95 per month subscription service
 - Streaming
 - Download tracks - save tracks to a hard disk of up to 3 personal computers
- Purchase individual tracks (Napster Light)
 - Burn a track to a CD
 - Transfer to a portable device
- Napster to go service
 - Transfer the tracks to a portable device unlimited amount of times on up to 3 devices
- Tracks are WMA format, enforced by Windows Media DRM
- Need active subscription to play tracks and use Napster to go (renewed monthly)
- Terms of Service specify usage rules



'How much' DRM?

- Music Site on the Internet
 - What type of service
 - How much control of content
 - What mechanisms would be used



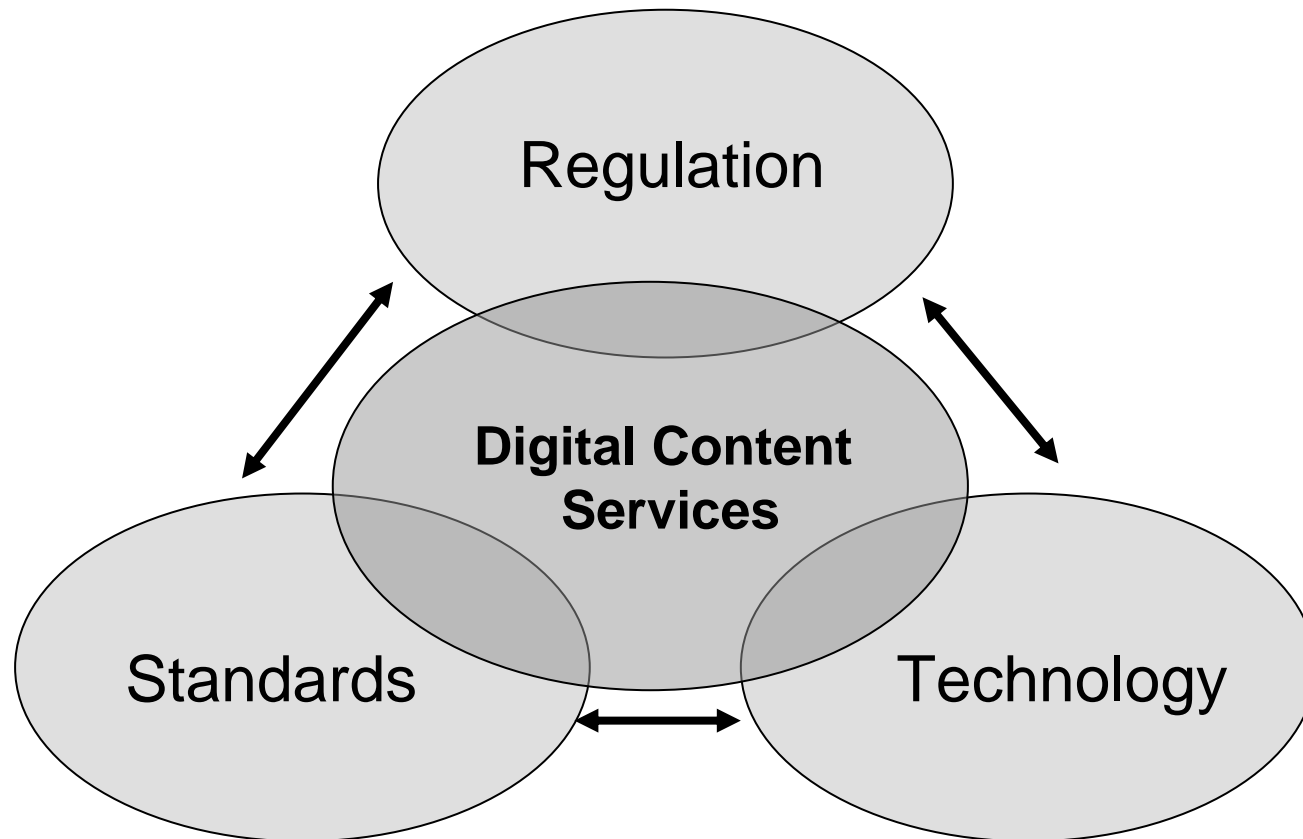
Section 3:

Some Possible Implications

Some Important aspects of Napsters model: controlling content

- User Agreement/Terms and Conditions specify how content accessed on Napsters site can be used (much of which is motivated by basic Copyright laws)
- WMA files allow for use on a variety of devices
- Windows Media DRM to enforce content use/control
- Monthly verification of subscription to renew licenses (Napster to go)
- Regulation (e.g. DMCA) protects Napster and its Technology from tampering and circumvention
- Additional technology such as fingerprinting/watermarking to track and report usage

Some Influences for Digital Content Services



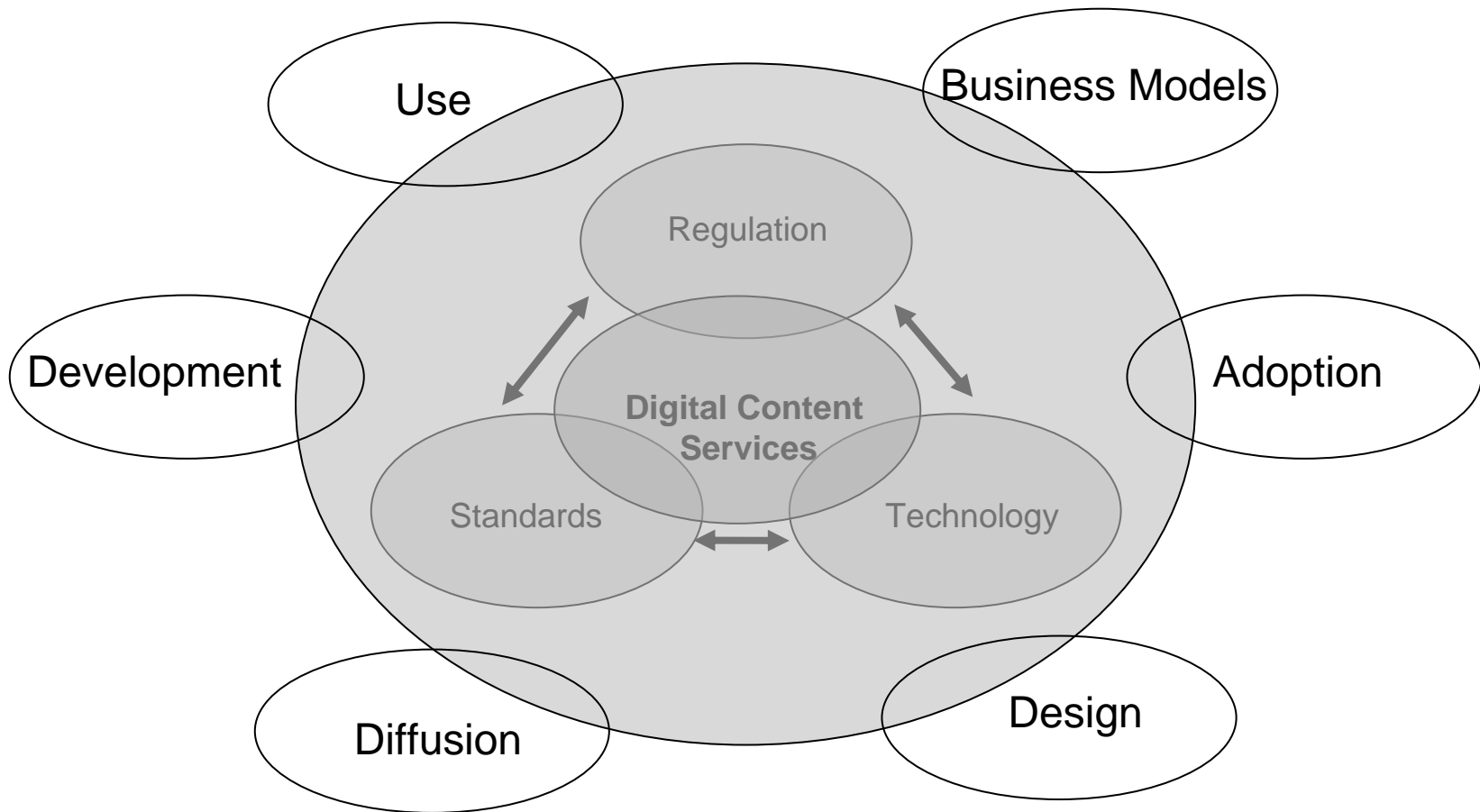
Digital Content & Regulation

- Copyright Law
 - Protect basic rights to work
 - Includes all work
 - Contains important exceptions such as 'fair use'
 - Updates (DMCA, EUCD) include technological protection measures
 - Other potential issues such as 'first sale' doctrine, etc.
 - Other continuous updates
- Contract Law
 - Important part of e- and m-commerce
 - Can be used to negotiate exact content usage rights
 - Other potential issues such as 'rights of withdrawal', 'required information before contracting', etc
- Privacy and other issues

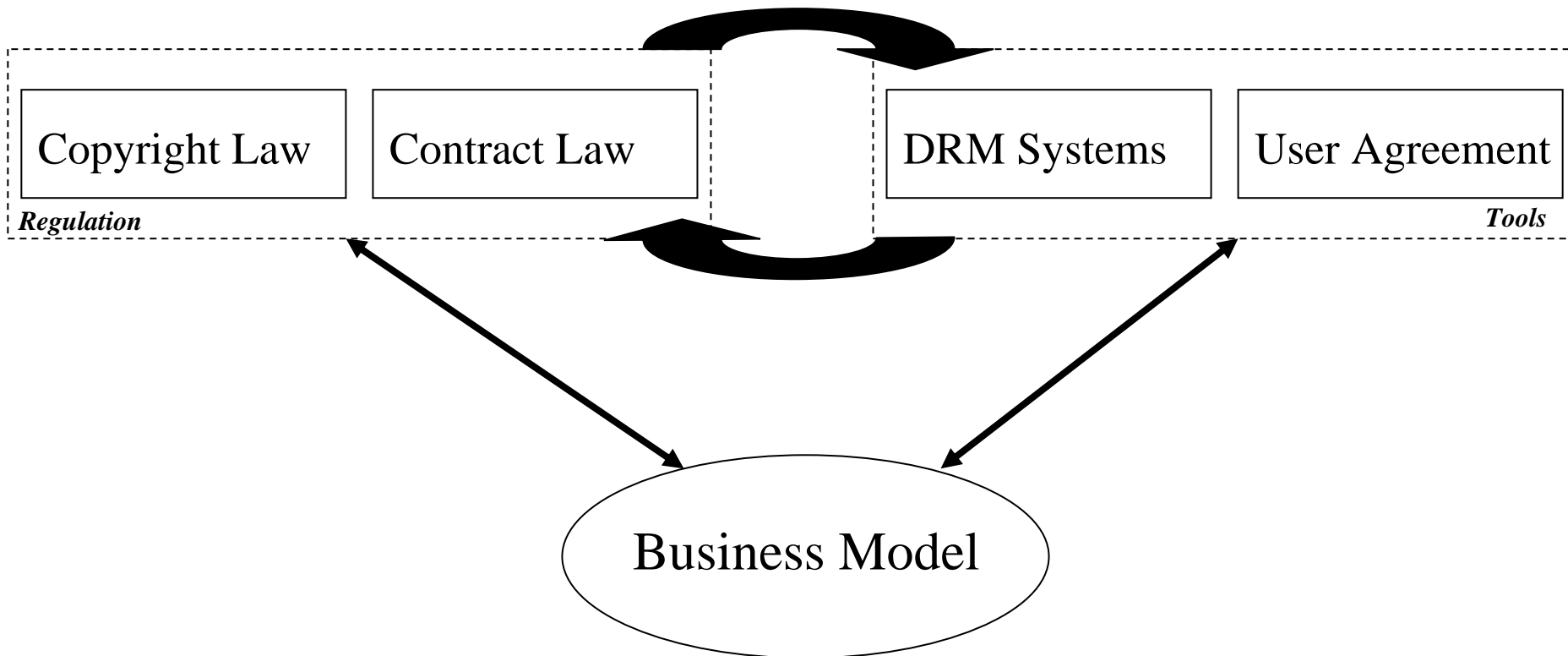
Digital Content & Standards & Technology

- Various standards: formats (AAC, MP3, WMA, etc.), DRM systems (e.g. OMA DRM), etc.
- Standards can allow interoperability between devices (e.g. WMA files in a variety of devices)
- Or non-interoperability between devices (e.g. Apple's AAC)
- DRM Systems to control content (e.g. Microsoft Windows Media DRM, Apples 'Fairplay')
- Additional Software (e.g. QuickTime, Windows Media Player, RealOne)
- Additional Technology (e.g. fingerprinting, watermarking, etc.)

...and further implications?



Technology, Regulation, Standards & Business Models



(based on (Gasser et al. 2004))

Some examples

	# of CD Burns per purchase	# of Computers per purchase	# of Portable Device Transfers	Format Conversion	Account Sharing
iTunes	Not enforced	DRM and Contract enforced	Not enforced	DRM enforced	Contract enforced
PressPlay (Napster)	DRM and Contract enforced	DRM and Contract enforced	DRM and Contract enforced	DRM enforced	Contract enforced
Rhapsody	DRM and Contract enforced	Not enforced	DRM and Contract enforced	DRM enforced	Contract enforced
MusicNet	DRM and Contract enforced	DRM and Contract enforced	DRM and Contract enforced	DRM enforced	Contract enforced
MusicNow	DRM and Contract enforced	DRM and Contract enforced	DRM and Contract enforced	DRM enforced	Contract enforced

Enforcement mechanisms for business models (from (Mulligan et al. 2003), p. 89)

Standards and Design, Use and Adoption

Example OMA DRM

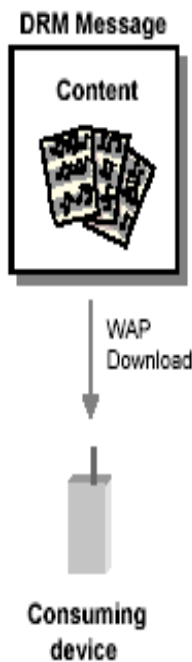
- The OMA follows an industry consortium model
 - What actors are involved?
 - Why are they participating?
 - What implications might this have?
- The OMA DRM Standards includes many functionally oriented standards and are de jure standards
 - Why are standards such as this being created?
 - What implications might this have?

Example of Actors Involved in OMA DRM

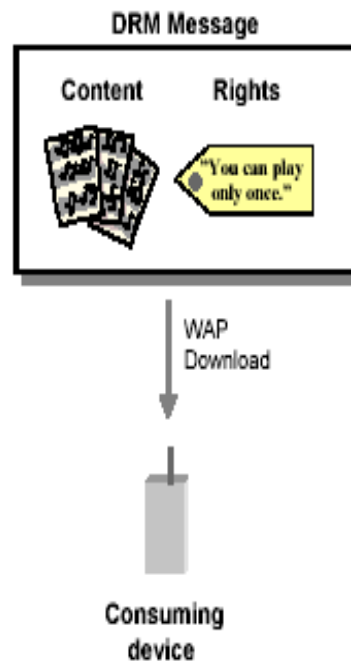
- Comprised of ca. 200 organizations
- Members from the entire value chain of mobile services:
 - e.g. Ericsson, Nokia, Microsoft, SK Telecom, T-Mobile, Vodafone, TeliaSonera, AOL TimeWarner, Sony, etc.

Example of OMA DRM Standards

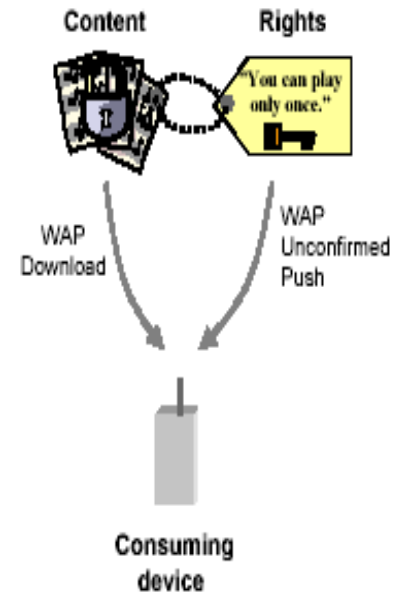
Forward-lock



Combined delivery



Separate delivery





Section 4:

Current Situation

DRM in music services today

- Services with varying 'levels' of DRM – 'bar' continuously being raised
 - e.g. number of times content can be transferred, etc.
 - e.g. launch of www.mp3tunes.com – no DRM, emerging artists
- Services 'experimenting' with varying types of business models
 - e.g. streaming models, subscription versus pay as you go
- Additional concepts for managing content are being explored
 - e.g. central licensing administration, use of P2P in models such as Weedshare, etc.
- Various Standards evolving – eventual 'battle' likely
 - Mobile services primarily adopting OMA DRM standards
 - Internet services primarily using Windows Media DRM (although there are exceptions such as Apples iTunes)
 - Interoperability will likely be an issue
- Continuous discussions by regulators regarding content control
 - Yet privacy concerns beginning to circulate (e.g. Napsters monitoring of usage likely will be an issue)

Some current cases/issues

- Continues efforts to control content
 - e.g. Recent Norwegian supreme court decision against Napster.no for having links to 'illegal' MP3 files
- Upcoming US Supreme court hearing MGM vs. Grokster
 - Liability of technology vendors
 - Revisit to Sony Betamax decision
- Various ongoing discussions of P2P and DRM in general
- Proposed changes to Åndsverkloven
- And many more!

References

- US Copyright laws including DMCA: <http://www.copyright.gov/title17/>
- EU laws including EUCD available through: <http://europa.eu.int/eur-lex/>
- Åndsverkloven: <http://www.lovddata.no/all/nl-19610512-002.html> plus changes, newly proposed updates: <http://www.odin.dep.no/kkd/norsk/dok/regpubl/otprp/043001-050019/dok-bn.html>
- Gasser, Urs, Derek Bambauer, Jacqueline Harlow, Charles Hoffmann, Renny Hwang, George Krog, Stephen Mohr, Ivan Reidel, Derek Slater, C. Lee Wilson, and John Palfrey. 2004. "iTunes: How Copyright, Contract and Technology Shape the Business of Digital Media - A case study." Pp. 1-100: Berkman Center at Harvard Law School.
- Mulligan, Deirdre K., Jon Han, and Aaron J. Burstein. 2003. "How DRM-Based Content Delivery Systems Disrupt Expectations of "Personal Use"." Pp. 77-89 in *Third ACM Workshop on Digital Rights Management*, edited by Moti Yung. Washington, DC USA: ACM Press
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- OMA: various information accessed from: www.openmobilealliance.com
- Larssen, Sissel Henrietta (2003), Mobile Content Market & Mobile Digital Rights Management (DRM), ETSI Workshop, Mobile Commerce Transactions, Sophia-Antipolis, 9th – 10th of April 2003.