

DIGITAL RIGHTS MANAGEMENT

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OVERVIEW

- *What is DRM?*
- *Examples of DRM*
- *Is DRM effective?*
- *Impact on end consumers*
- *Ethical evaluation*
- *Summary*

WHAT IS DRM?

- *DRM is a broad term*
- *Anything that limits the use of digital content and devices with the use of access control technologies*
- *Very common today*
 - *DVDs*
 - *Blu-ray*
 - *iTunes*
 - *Software*
 - *Media streaming sites*

MANIFESTATIONS OF DRM

- *Countless implementations of DRM*
- *Most common:*
 - *Content Scrambling System (CSS)*
 - *Advanced Access Content System (AACCS)*
 - *Authentication servers*

CONTENT SCRAMBLING SYSTEM (CSS)

- *Used on DVDs*
- *Content is put through an encryption algorithm*
- *Turns content into garbled data*
- *Garbled data is decrypted using a key*
- *Only licensed devices had the key*
- *Limits what devices can play the content*

ADVANCED ACCESS CONTENT SYSTEM (AACS)

- *Used on HD-DVDs and Blu-ray discs*
- *Similar to CSS :*
 - *Key based encryption*
 - *Restricted access to keys*
- *Key differences:*
 - *Much longer key*
 - *Ability to revoke keys*

AUTHENTICATION SERVERS

- *Commonly used with PC software*
- *Software authenticates itself with predetermined authentication servers*
- *Software publishers able to prevent authentication, rendering software unusable*

EFFECTIVENESS OF DRM

- *Purpose: Protect copyright holders' rights by thwarting thieves*
- *In general: Ineffective*
 - *Encryption keys exposed*
 - *Keygens and cracks created to get around DRM*
- *Vast majority of DRMs are circumvented shortly after release*
- *CSS key exposed by Linux enthusiast*
- *First AAC3 key exposed within first few months*
 - *Second key exposed before it was even used on consumer discs*

EFFECTIVENESS OF DRM CONTINUED

- *Piracy rates for DRM protected and DRM-free content is similar*
- *One study of DRM found that DRM can actually increase piracy*
- *DRM protected mp3s*
 - *DRM protected – 7.5%*
 - *DRM-free – 6.2%*
- *DRM reduces utility, and thus value*
- *Pirated material becomes more desirable for some*
- *Consumer retaliation for lost rights*

IMPACT ON THE END CONSUMER

- *Sped adoption of the internet as a distribution medium*
- *Restricts both legal and illegal uses*
- *DMCA makes removal of DRM illegal*
 - *Even for fair use*
- *Reduces utility of media*
 - *Reduced utility means reduced value*
- *Possibility for consumers to lose access to purchased media*
 - *Microsoft's PlaysForSure*
- *Privacy issues*

ETHICAL EVALUATION - KANTIANISM

- *1st categorical imperative: “act only from moral rules that you will to be universal laws”*
- *Universal rule: always ok to take away rights of individuals to protect those of copyright holders*
- *Contradiction between the way individuals and copyright holders should act*
- *Kantianism – DRM is wrong*

**ETHICAL
EVALUATION – ACT
UTILITARIANISM**

- *Positive net result of action = ethical*
- *DRM helped make all sorts of media available on the internet*
 - *Convenience and availability leads to increased total happiness*
 - *Most consumers not aware of lost rights*
- *DRM is ethical*
- *Pirating also makes all sorts of media available on the internet*
 - *Happiness increased for pirates*
- *Pirating also ethical*
- *Contradiction*

**ETHICAL
EVALUATION –
RULE
UTILITARIANISM**

- *Rule is ethical if total happiness increases*
- *Universal rule: always ok to take away rights of individuals to protect those of copyright holders*
- *Over time, individuals lose rights, leading to decreased happiness*
- *Increase in happiness of copyright holders dwarfed by decrease in happiness of individuals*
- *Rule Utilitarianism – DRM is wrong*

ETHICAL EVALUATION – SOCIAL CONTRACT

- *Rule ethical if collectively accepted by the community due to beneficial results*
 - *DRM does not make copyright infringement any more illegal*
 - *DRM takes rights of community members away*
 - *DRM not effective against copyright infringement*
- *DRM asks community members to sacrifice their rights to protect the rights of a select few*
- *DRM has not proven to be more beneficial than harmful to the community*
- *Social Contract – DRM is wrong*

SUMMARY

- *DRM is a broad term*
- *DRM proven to be ineffective at preventing pirating*
- *DRM has helped make media more available, but also takes away rights of consumers*
- *All but one ethical theory concluded that DRM is wrong*