

# **Workshop on Virtual Goods AXMEDIS Conference 2005**

## **An Incentive Based Distribution System for DRM Protected Content Using Peer-to-Peer Networks**

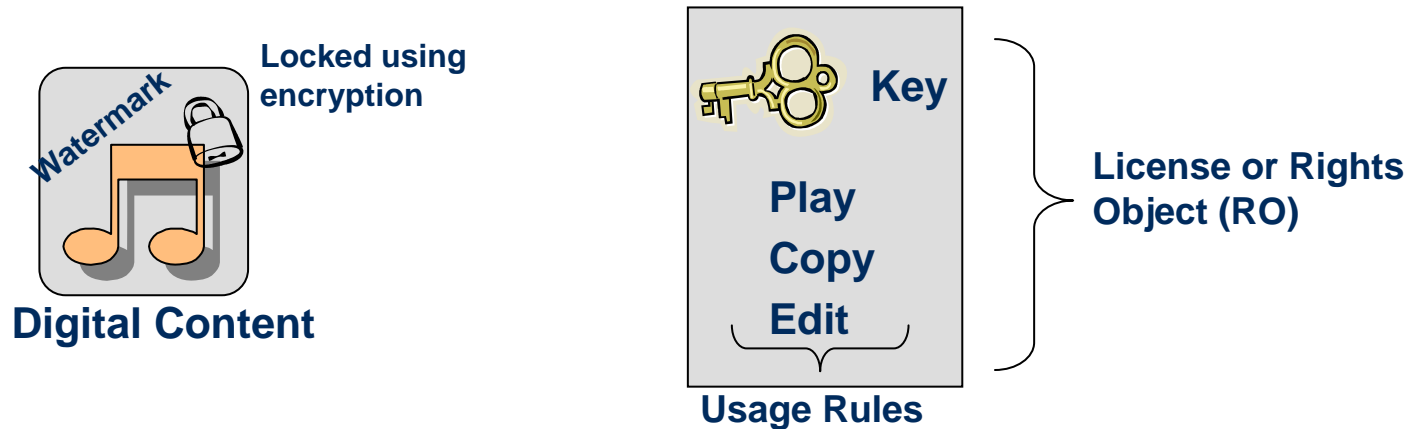
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# Digital Rights Management (DRM) – The Basics

What is DRM?

- Technology to protect and manage digital content



- The license is issued by the content owner
- User can distribute encrypted content to others → Super distribution

# DRM – Current Distribution Channels

DRM protected  
Audio Files



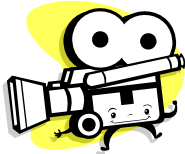
Typical file size (6 to 30 MB)



- Online Music Stores (e.g. iTunes)
- Online Audio Streaming

▪ iTunes operating at a loss!

DRM protected  
Video Files



Typical file size (5 to 6 **GB**)



- Video on Demand (VOD)  
– Not widely deployed

▪ Online Video Stores are not economically attractive for content owners

The Best Solution



Distribution via Peer-to-Peer  
(P2P) Networks

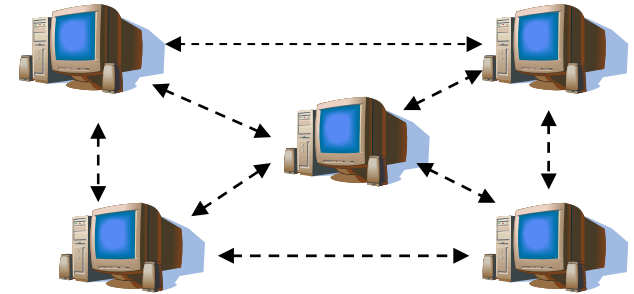
# Peer-to-Peer (P2P) Networks

What do P2P networks offer?

- Cost effective and efficient transfer of huge files

But we have a few problems...

- Dubious files
- No effective search functionality
- No reliability for file availability
- Not many people share as much as they download (“leechers”)
- Bandwidth Throttling for uploads



Example of a P2P network

The Solution?  $\longrightarrow$

Offer Incentives to Users

## Peer-to-Peer Networks – Incentives Offered Today

### Problem

- Bandwidth Throttling for uploads
- Dubious files
- File availability
- File search

### Offered Incentives

- Faster uploads are rewarded with faster download speeds
- Hash checks
- Increase download priority for file sharers
- Content owners to offer search results (suggested solution)

Are these incentives sufficient to distribute DRM protected content via P2P?

**NO !!!**

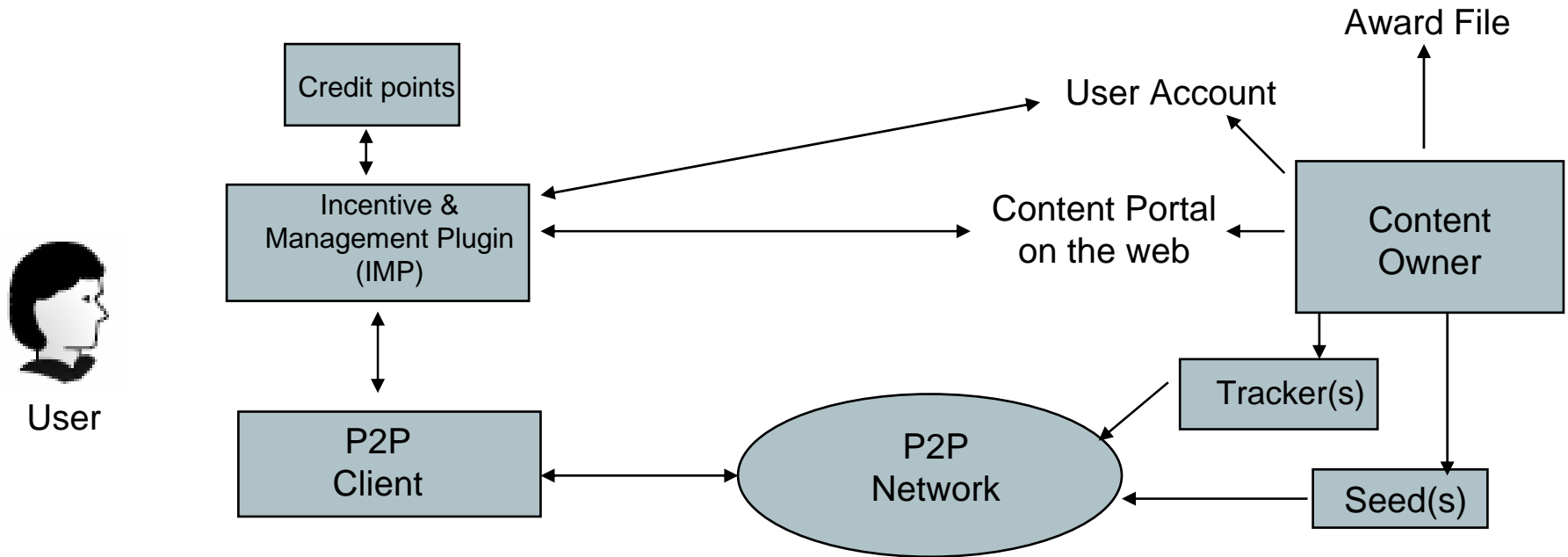
## Why Current Incentives Fall Short?

- Bartering is not possible with DRM content
  - User can always get content from the content owner
  - There is no incentive to share DRM content
- Current incentives do not guarantee better download experience
- Content Owner is the only entity who benefits when DRM content is shared.

The solution we propose

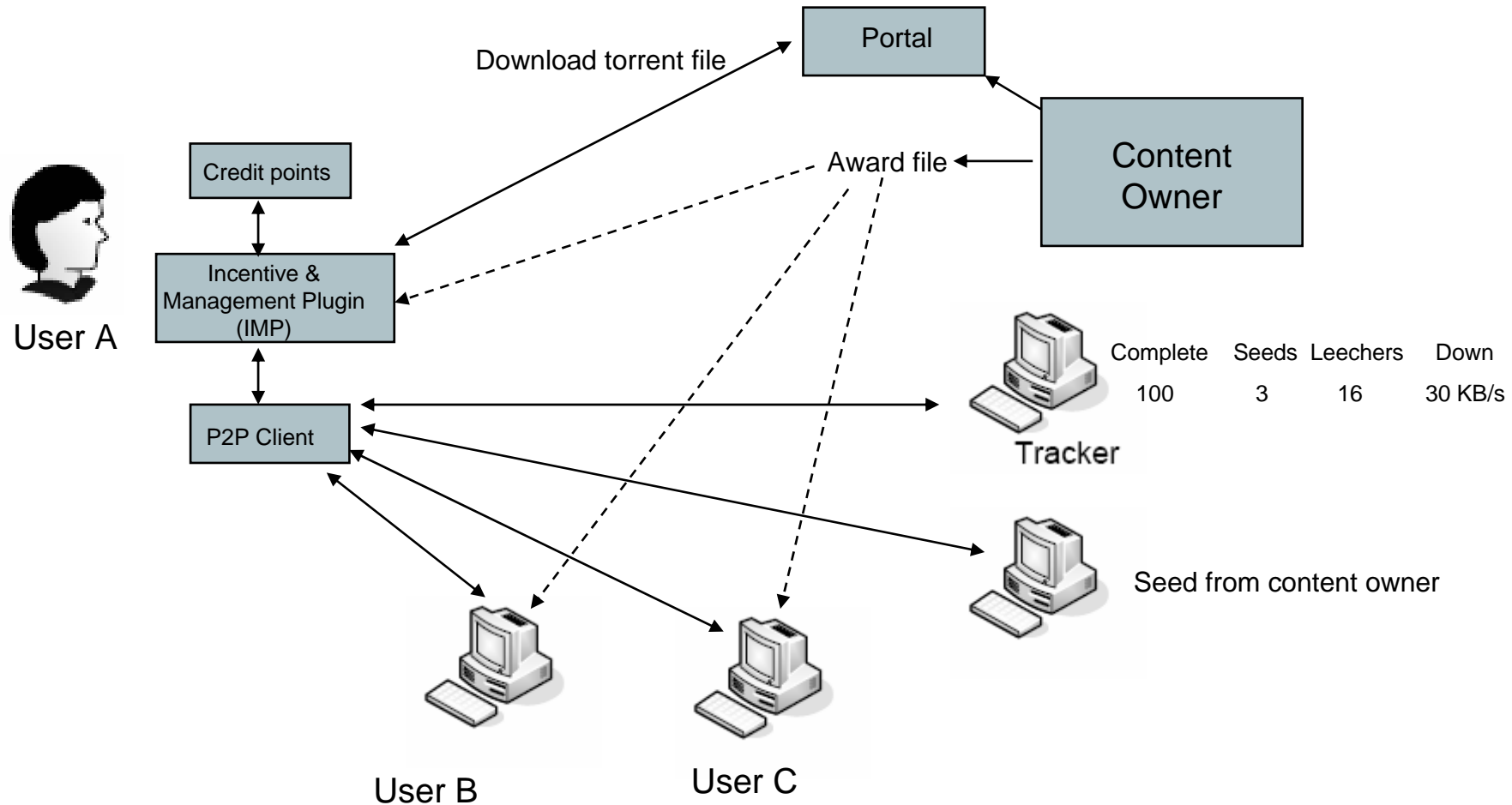
- Offer monetary incentives to users for sharing DRM content
  - The incentive is proportional to the amount of data uploaded by the user

# The Proposed Distribution System



- Monetary incentives are proportional to the amount of data uploaded
- IMP manages the administration of user account and delivering incentives
- Award files dynamically change the incentives offered on a per-file basis

# An Example of the system using BitTorrent



## Features of the System

- The IMP plugs into a certified open source P2P client.
- The IMP gets the licenses for the content.
- User can opt out of the system when running the P2P client.
- The IMP monitors the sharing of unauthorized files by the P2P client.
- Specialized plugins can maximize user incentives by monitoring award files.
- The content owner can influence the distribution of individual files by changing the award file.

## Is There a Business Case?

- World Media's "Peer Impact" P2P distribution scheme uses a similar concept.
- The product was launched on 15th November 2005 (two weeks ago!)

### Reaction among content owners?

- The major labels use the Peer Impact system to distribute music.
- NBC Universal has signed up to distribute movies through the "Peer Impact" network from early next year.

Thank You For Your Attention!!



Questions?