Digital Distribution of Music
Napster/P2P v. RIAA et al.

Frank Field
ESD.10, Fall 2002

Plan of Attack - Reprise

- Given The Current Rhetoric, Start With the Legal Domain
  - Copyright Law
  - Origins, History and Policy Basis
- Music and Online File Sharing
  - The Market
  - The Business
  - The Technology and Its Role
- Framing The Problem
  - Lessig’s Architecture Paradigm
  - Policy Questions
A Complex Structure of Relationships

- Creators of Intellectual Property
  - Composers
  - Performers
  - Arrangers

- Distributors of Intellectual Property
  - Music Publishers
  - Phonorecording Manufacturers
  - Performers
  - Broadcasters, etc.

- Consumers of Intellectual Property

Music Licensing Structures - Current Non-Digital

(Simplified, focus on music delivery & mechanical reproduction)
Music Licensing Structures - Digital Phonorecord Issues

- Performer
- Record Company
- Mechanical reproduction (CD, etc.)
- Public performance (digital, permanent)
- Public performance (digital, not copyable)
- Harry Fox Agency
- ASCAP/BMI
- Song (writer)
- Music Publisher
- Contract

Enter - Napster and its Peers

- Shawn Fanning -
  - Northeastern U. Undergraduate
  - 1st prerelease - mid-1999

- Concept
  - MP3 Search Engine
  - File Sharing Protocol
  - IRC/Communication Tool Within A Community

- Peer-to-Peer Technology Rather Than Central File Store
  - Central Indexing/Locating Mechanisms

- Explosive Growth
  - Feb 2000; 1.1 million
  - Aug 2000; 6.7 million
  - Feb 2001; 13.6 million US

Every logged on client sends updated list of files to be shared

1. Song title query sent to server
2. Receive client list w/ title hit
3. Select and contact client
4. Transfer file
**Pew Study - Upward Trend**

**Percent of Internet Users Who Download Music (+/- 3%)**

<table>
<thead>
<tr>
<th>Adults - Gender &amp; Race</th>
<th>Household Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>24%</td>
</tr>
<tr>
<td>Women</td>
<td>20%</td>
</tr>
<tr>
<td>Whites</td>
<td>20%</td>
</tr>
<tr>
<td>Blacks</td>
<td>29%</td>
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<tr>
<td>Hispanics</td>
<td>35%</td>
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<table>
<thead>
<tr>
<th>Educational Attainment</th>
<th>Age Cohorts</th>
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<tr>
<td>&lt; High Sch</td>
<td>48%</td>
</tr>
<tr>
<td>Grad HS</td>
<td>25%</td>
</tr>
<tr>
<td>Some Coll</td>
<td>25%</td>
</tr>
<tr>
<td>Grad coll+</td>
<td>15%</td>
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**2001 RIAA Yearend Statistics**

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<thead>
<tr>
<th></th>
<th>Jan-Dec 2000</th>
<th>Jan-Dec 2001</th>
<th>% Change</th>
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<tbody>
<tr>
<td>CD Units</td>
<td>$13,214.5</td>
<td>$14.02</td>
<td>$12,909.4</td>
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<tr>
<td>CD Single</td>
<td>942.5</td>
<td>17.3</td>
<td>881.9</td>
</tr>
<tr>
<td>Cassette</td>
<td>34.2</td>
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<td>881.9</td>
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<tr>
<td>LP/EP</td>
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<td>-1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>Vinyl Single</td>
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<td>-1.5</td>
<td>2.3</td>
</tr>
<tr>
<td>Music Video</td>
<td>4.8</td>
<td>5.5</td>
<td>31.4</td>
</tr>
<tr>
<td>DVD Video</td>
<td>18.2</td>
<td>17.7</td>
<td>329.2</td>
</tr>
</tbody>
</table>

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Massachusetts Institute of Technology
Cambridge, Massachusetts

F. Field, 2002
RIAA Annual Sales - 2000 Report

Billions of dollars in revenue

Note: 2001 CD Revenues Are 93.94% of Total Revenues

Unit Revenue (MSRP) - From RIAA Statistics

Unit Revenue

Massachusetts Institute of Technology
Cambridge, Massachusetts

MSL
Materials Systems Laboratory
Immediate Controversy

- Typical Positions - “Napster…”
  - “Is Theft of Intellectual Property; Abuse of Artists”
  - “Lets Me Sample Before Buying”
  - “Lets Me Find Music Unavailable Otherwise”
  - “Lets Me Acquire Only That Which I Like On A CD”
  - “Lets Me Stick It To The Record Companies”

- Other Points
  - “MP3s Allow Me To ‘Space Shift’ Just Like Analog Cassettes”
  - “MP3s Are Infringing Copies”
  - “MP3s Are/Can Be Degraded Copies, Not Pure Digital Copies”

RIAA Sues Napster For Copyright Infringement

- Making Copies
  - No Right To Distribute
- Playing Phonorecords
  - No Licensing
- Economic Harm To Artists, Industry

- Napster Counterpositions
  - Fair Use
  - Noncommercial Use - Home Recording Act
  - DMCA - Safe Harbor Provision
    - Transitory digital network connections
    - Information location tools
  - Lawful Sharing (uncopyrighted works or copyrights not enforced by owners)

Rejected at Trial

- Appeals Process Seemed To Go Napster’s Way
- Ultimately Failed - “100% requirement”
Effect Of The Decisions On Napster

- February, 2001 - Peaked
- Trailed Off Rapidly Thereafter
- Ultimately, Complete Shutdown
- Still Weak, Tried To Convert To Subscription Service
- Purchased By Bertelsmann
- Declared Bankruptcy
- Only Remaining Asset: Brand Name

Alternatives Immediately Emerge

- According to WebNoize, 3.05 billion audio files were shared in August, 2001
  - FastTrack - 970 million
  - AudioGalaxy - 910 million
  - IMesh - 640 million
  - Gnutella tools - 530 million
- Compared with 2.79 billion in Feb 2001, Napster's peak
  - Growth Has Continued Subsequently
- Alternative Technologies
  - KaZaA - downloaded 141,147,219 times in total; 3,097,221 times last week (CNet)
  - Morpheus - comparable rates (for obvious reasons!)
  - Everyone else is an order of magnitude less; but only one
Artists Split on the Subject

- Disdain for Record Companies
  - Outstanding FTC Consent Degree On Price Collusion in CD Market
  - High Profile Artist Controversies
    - *Prince, Courtney Love, Janis Ian*
    - *Recording Artists’ Coalition*
- Others Working With RIAA
  - Metallica, Dr. Dre
- Independents On The Outside, In Many Respects

Complicating Factor - Distribution As A Player

- Injuries To Artists - Generally Decried
- Injuries To Users - Generally Decried
- Injuries To Record Companies - Generally Applauded
Music As A Copyrighted Expression

- Technology Has Been A Key Element Of Its Distribution For More Than A Century
  - Sheet Music
  - Player Piano Rolls
  - Music Boxes
  - Phonographic Recordings
  - Analog Tape
  - Radio
  - Digital Tape


- And Then We Get The Internet

Napster Confronts Us With Some Key Questions

- What Is It That Record Companies Sell?
- What Is It That Consumers Buy?
- What Is The Value Proposition For Both?
- What Is The Business Model That Underlies This Industry?
- What Is The Proper Role Of Technology In This Area?
- How Should The Modalities Of Control Be Employed?
Let's Look At Our First Block Of Questions

- What Is It That Record Companies Sell?
- What Is It That Consumers Buy?
  ➤ Who Are The Consumers?
- What Is The Value Proposition For Both?

Consider The Language Of The US Copyright Statute:

Copyright protection subsists, in accordance with this title, in
- original works of authorship
- fixed in any tangible medium of expression, now known or later developed,
- from which they can be perceived, reproduced, or otherwise communicated,
- either directly or with the aid of a machine or device.

Proposition: The CD Is Just One Type Of Music Package

<translation>

<an original expression>
<reified by the author>
<alt="alienated from the author"/>
<into a distributable form>
<convertable into a human experience>
</translation>
Alienation

- Merriam-Webster Collegiate Dictionary Online:
  - a withdrawing or separation of a person or a person’s affections from an object or position of former attachment

- The Author/Creator, in “fixing” her/his creation into something tangible, can now distribute and sell it to others

- The law of copyright dictates who can copy and distribute this fixed creation for profit;
  - creates a legal basis for buying, selling and transferring this right to others
  - creates an economic basis for a business in producing and distributing this “fixed” creation

Note That The Consumer Is Also Alienated

“from which they can be perceived, reproduced, or otherwise communicated, either directly or with the aid of a machine or device.” (the “player piano” text <G>)

- Compare a CD with a book or traditional sheet music
  - Converting the fixed expression (a book or sheet music) into an experience is completely under the individual, personal control of the reader/music player
  - Converting a CD into an experience requires a set of devices, generally owned by the purchaser of the CD

- The consumer invests her/his time/effort/resources into this acquisition and conversion process to achieve the experience implicit in the fixed expression that has been acquired
Incentives To Be Alienated On Both Sides

- **Artist/Creator**
  - Alienation enables reproduction and distribution
  - Reproduction and distribution enable extraction of economic rents
- **Consumer**
  - Alienation enables access to experience otherwise unavailable, under circumstances otherwise unavailable
- **But, alienation also opens the door to control**
  - Stationer’s Guild
  - Copyright Laws
  - Other Forms?
- **How To Maintain The Balance Of Control?**

The Next Question

- **What Is The Business Model That Underlies This Industry?**
  - "Courtney Love Does the Math" - Courtney Love; *Salon*, June 14, 2000 - A Look at the Economics of the Record Industry
  - Worth Examining, Given Conflict Between Artists and Industry, As Well As Utilitarian Arguments For Copyright - Is It Working?
    - Note That Love Presented These Materials While Engaged In A Lawsuit With Her Record Company
    - Settled Out of Court
  - Objective: To Demonstrate The Unfairness Of The Industry To The Basic Performer (vs the Superstars)
  - Presents The Basic Elements Of A Modern Recording Contract
Courtney's Math

- Presents Numbers For A Band Signed To
  - $1,000,000 Advance; 20% Royalties
  - Sales of 1,000,000 CDs

- Her Bottom Line:
  - Artist/Band Nets $180,000 after taxes
    (and net royalties from CD sales = $0)
  - Record Company Nets ~$6-7 million

- Band Has To Cover Costs That Might Be Surprising To Outsiders
  - Recording Costs (Profit to Record Company?)
  - Video Production Costs
  - Tour Costs
  - Radio Promotion Costs

The Details @ 1,000,000 CDs Sold
(& with some inconsistencies resolved)

- Monies Received By The Band
  - Advance:............................$1,000,000
  - Royalties:..........................$2,000,000
    - 20% of Assumed $10/unit

- Monies Expended By The Band
  - NOT to Record Company
    - Agent:.................................$100,000
    - Legal:.................................$25,000
    - Manager:............................$25,000
    - Taxes:...............................$170,000
  - TO Record Company
    - Recording Costs:..............$500,000
    - Recouped Video Costs:.....$500,000
    - Recouped Tour Support:..$200,000
    - Recouped Promotion:......$300,000
    - Recouped Advance:.......$1,000,000
  - Net: $180,000

- Monies Expended By Record Company
  - Advance:.............................$1,000,000
  - Video Production:........$1,000,000
  - Tour Support:...............$200,000
  - Radio Promotion:............$300,000
  - CD Manufacturing:.........$500,000
    - Assumed per 1,000,000 units
  - Publisher Royalty:.........$750,000
    - $0.75/unit
  - Marketing:....................$2,200,000
  - Net: $6,050,000

Monies Received By Record Company
  - Sales Gross: $10,000,000
  - Recouped Video Costs: ...$500,000
  - Recouped Tour Support: $200,000
  - Recouped Promotion: ....$300,000
  - Recouped Advance: .......$1,000,000

Net: $6,050,000
At First Blush, Seems Inequitable

- Although Taxes Will Change Things, a 30x Differential Seems Substantial
- Of Course, This Was At Least One Of The Key Objectives Of The Piece
- However, It’s Not Quite So Simple
  - What If the Band Doesn’t Sell 1,000,000 units?
  - What If the Band Sells More than 1,000,000 units?
  - Who’s Facing The Risks?

- Record Companies Claim
  - Most Bands Don’t Sell 1,000,000 Units
  - In Fact, Sales of 500,000 Units Needed For Them To Break Even

Profits As A Function Of Sales Volume

- Assume “recoupable” costs come out of royalties/sales
  - If sales are not high enough, record company “eats” the loss
- Assume CD production costs constant with volume and produced in million-unit lots
- Assume no profit to company on recording studio time
What About Uncertainty?

Exponential Distributions

Expected Net Income

<table>
<thead>
<tr>
<th>Total Sales (Millions)</th>
<th>Pr(Sales)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10%</td>
</tr>
<tr>
<td>1</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>25%</td>
</tr>
<tr>
<td>4</td>
<td>30%</td>
</tr>
</tbody>
</table>

Mean CD Sales/Band (1000s)

<table>
<thead>
<tr>
<th>Mean Income (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
</tr>
<tr>
<td>$5</td>
</tr>
<tr>
<td>$10</td>
</tr>
<tr>
<td>$15</td>
</tr>
<tr>
<td>$20</td>
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Mean Income (millions)

<table>
<thead>
<tr>
<th>Company</th>
<th>Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$5</td>
</tr>
<tr>
<td>$5</td>
<td>$10</td>
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<tr>
<td>$10</td>
<td>$15</td>
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<tr>
<td>$15</td>
<td>$20</td>
</tr>
<tr>
<td>$20</td>
<td>$25</td>
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</tbody>
</table>

Company Band

Expected Net Income

<table>
<thead>
<tr>
<th>Company</th>
<th>Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>$20</td>
<td>$25</td>
</tr>
<tr>
<td>$15</td>
<td>$20</td>
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<td>$10</td>
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<td>$5</td>
<td>$10</td>
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<tr>
<td>$0</td>
<td>$5</td>
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Mean CD Sales/Band (1000s)

<table>
<thead>
<tr>
<th>Expected Net Income</th>
<th>Company</th>
<th>Band</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0</td>
<td>$5</td>
<td>$10</td>
</tr>
<tr>
<td>$5</td>
<td>$10</td>
<td>$15</td>
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<tr>
<td>$10</td>
<td>$15</td>
<td>$20</td>
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<tr>
<td>$15</td>
<td>$20</td>
<td>$25</td>
</tr>
<tr>
<td>$20</td>
<td>$25</td>
<td>$30</td>
</tr>
</tbody>
</table>

What About Uncertainty? (detail)

<table>
<thead>
<tr>
<th>Mean CD Sales/Band (1000s)</th>
<th>Expected Net Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>500</td>
<td>$5</td>
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<tr>
<td>1,000</td>
<td>$10</td>
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<tr>
<td>1,500</td>
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<td>2,000</td>
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<tr>
<td>2,500</td>
<td>$25</td>
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<table>
<thead>
<tr>
<th>Company</th>
<th>Band</th>
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<td>$3,487,667</td>
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<td>$12,437,418</td>
<td>$180,000</td>
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</table>

(expected values)

MSL
Materials Systems Laboratory
Conclusions?

- Of Course, the Shape of the Distribution Can Change a Lot
- But, What Does the Base Analysis Suggest?
- Are the Companies That “Unfair?”
- Or, Is There Something Else?

Note:
For Comparison, See Steve Albini’s “The Problem With Music”

- Other Artists With Perspectives Online
  (Links : IP Controversies : Digital Music : Record Industry Practices)
  - Prince - http://www.npgmusicclub.com
  - Janis Ian - http://www.janisian.com
The Last Set of Questions

- What Is The Proper Role Of Technology In This Area?
- How Should The Modalities Of Control Be Employed?