CS 155b: E-Commerce

Lecture 9: February 6, 2001

TPSs, Business Models, and the Napster Challenge
Reading Assignment for Feb. 13, 2001:

C. Mann, “The Heavenly Jukebox,”

Appendix G of The Digital Dilemma
http://books.nap.edu/html/digital_dilemma/
Product- or Service-Developer’s Goal

- Choose the right ingredients and weave them together into an effective end-to-end technical protection system (TPS).
- Ingredients must be “right” w.r.t. business model and legal and social context as well as technical context.

Notoriously Difficult! (Shapiro and Varian may be too optimistic.)
TPS Design Principles

- Know the $$ value of content
- Following rules: Convenient
- Breaking rules: Inconvenient
- Breaking rules: Conscious
- Renewable/Improveable Security
- Don’t let Pirates use your distribution channel
- Provide value that pirates don’t
Known Risks

Unknown Risks

TPS

Copyright Law

Residual Risks

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Dual Doomsday Scenarios

Today’s Rights Holders and Distributors: TPSs won’t work. Copying, modification, and distribution will become uncontrollable.

Fair-Use Advocates and (Some) Consumers: TPSs will work. Rights holders will have more control than they do in the analog world.
Limitations on Exclusive Rights
(“4 factors” test for “Fair Use”)

- The purpose and character of the use, including whether such use is of a commercial nature or is for non-profit educational purposes
- The nature of the copyright work
- The amount and substantiality of the portion used in relation to the copyright work as a whole
- The effect of the use upon the potential market for or value of the copyrighted work. The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.
Other Relevant Issues

“Fair Use is a Defense” ??
(Could a good TPS render it moot?)

- “Private-use copying” may be harder to keep private in the digital world.
- “Private-use modification” needs to be considered. For example, do Linux users have the right to view DVDs for which they have paid full price?
Best TPS is a Great Business Model

“The first line of defense against pirates is a sensible business model that combines pricing, ease of use, and legal prohibition in a way that minimizes the incentives for consumers to deal with pirates.”

Holy Grail: A Great Business Model for Internet Music Distribution

Hal Varian (quoted in C. Mann’s “Heavenly Jukebox” article): “Maybe Coke will find a way integrate itself directly into the shows. Or they’ll release the music free on the Internet, except that it will be wrapped in a commercial.” What’s the difference if the Spice Girls are marketed by Coca-Cola or by Virgin Records, soon to be a subdivision of AOL-Time Warner?

1999 Sales by RIAA members: $14.5B
1999 Coca-Cola Net Operating Income: $20B
Napster Client-Server Interaction

Client$_1$'s IP address
Names of MP3s on Client$_1$'s Machine
Request

IP address of online user (client$_2$) who has requested file
[repeat]

goodbye

Searches a db of currently online users for one that has previously stored the requested MP3.
Adds client$_1$ and its list to db.

Removes client$_1$ and its list from db

hello
ack
Notes on Client-Server Interaction

- Proprietary protocol and db search.

- No MP3 files stored on server.

- Don’t *need* usernames. Could have made the service anonymous.

- No need to save IP addresses between sessions. Many are assigned dynamically.

- Discussion point: Are anonymity and memorylessness threats or opportunities for business?
Napster Client-Client (P2P) Interaction

Client₁

Client₁’s IP address

Request

Client₂

Requested MP3

Note: This part uses “standard Internet protocols,” e.g., FTP
Napster History

- 1987: MP3 format developed by Fraunhofer Gesellschaft. “CD ripping” now feasible.
- 1999: Shawn Fanning develops Napster, believing he has “bypassed” copyright law. Napster has >25M users in its first year.
- April, 2000: Metallica sues Napster, Yale, Indiana Univ., and USC. (Yale bans the use of Napster within a week.)
Napster History, continued

- July, 2000: US District Judge Patel grants RIAA’s request for an injunction. The injunction is temporarily stayed soon thereafter.
- October, 2000: Napster announces partnership with Bertlesmann AG (one of the “major labels” in the industry whose trade association is suing it!).
- January, 2001: Napster announces partnership with Edel Music AD (one of the “independent labels”).
- January, 2001: Napster and Bertlesmann say that they will roll out a “subscription service” by “early summer” and will use “DRM technology.”
Existing Business Models for Information Products

- Fee models: Subscription purchase, Single-transaction purchase, Single-transaction license, Serial transaction license, Site license, Payment per electronic use
- Advertising models: Combined subscription and advertising income, Advertising income only
- “Free” distribution models: Free distribution (no hidden motives), Free samples (e.g., coming attractions), Free first version, Free information when you buy something else (complementary products, bundling).
Less Traditional Business Models for Information Products

• Extreme customization: Make the product so personal that few people other than the purchaser would want it
• Provide a large product in small pieces, making it easy to browse but difficult to get in its entirety
• Give away digital content because it complements (and increases demand for) the traditional product
• Give away the product, sell the service contract
• Allow free distribution of the product but request payment (Shareware)
• Position the product for low-priced, mass market distribution
Discussion Points

* What should the Bertelsmann-Napster business model be?
* Why does Bertlesmann need P2P?? They could have more control and possibly higher quality by “serving” music themselves.
* Are DRM (and, more generally, TPS) and P2P (particularly Napster) antithetical?
  - What does the subscription fee ($15/month?) entitle the subscriber to?
  - Are they critically dependent on technical protection? (If so, they may be in trouble…)
  - Why can’t someone else develop equivalent P2P software and steal Napster’s user base? (Recall IE and Netscape.)
  - Are users concerned about copyright law?