

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,”

[http://www.theatlantic.com/issues/2000/09/
mann.htm](http://www.theatlantic.com/issues/2000/09/mann.htm)

Appendix G of The Digital Dilemma

http://books.nap.edu/html/digital_dilemma/

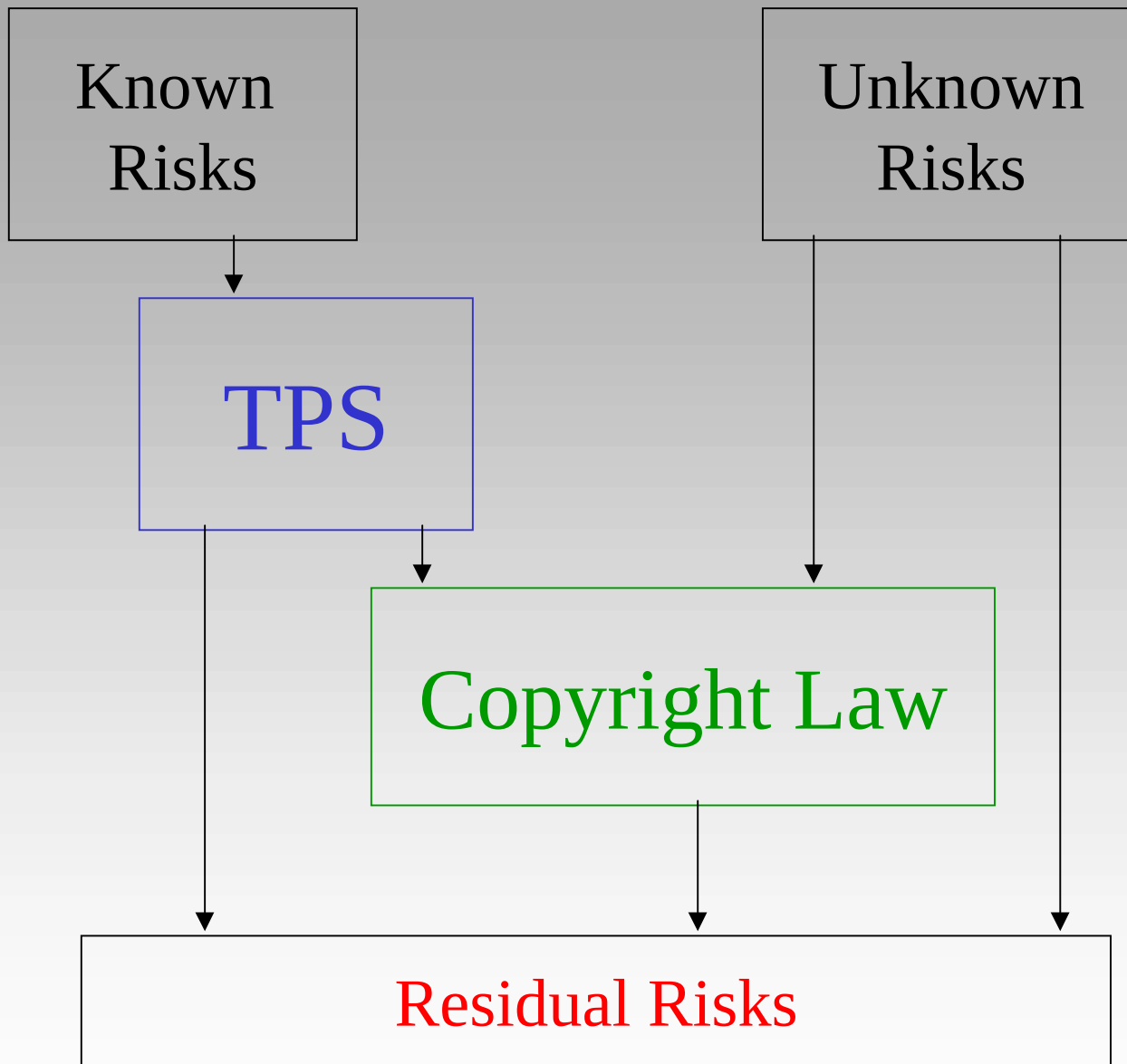
Product- or Service-Developer's Goal

- 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/Improvable Security
- Don't let Pirates use your distribution channel
- Provide value that pirates don't



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 The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.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.”

Lacy *et al.*, IEEE Symposium on Industrial Electronics, 1997.

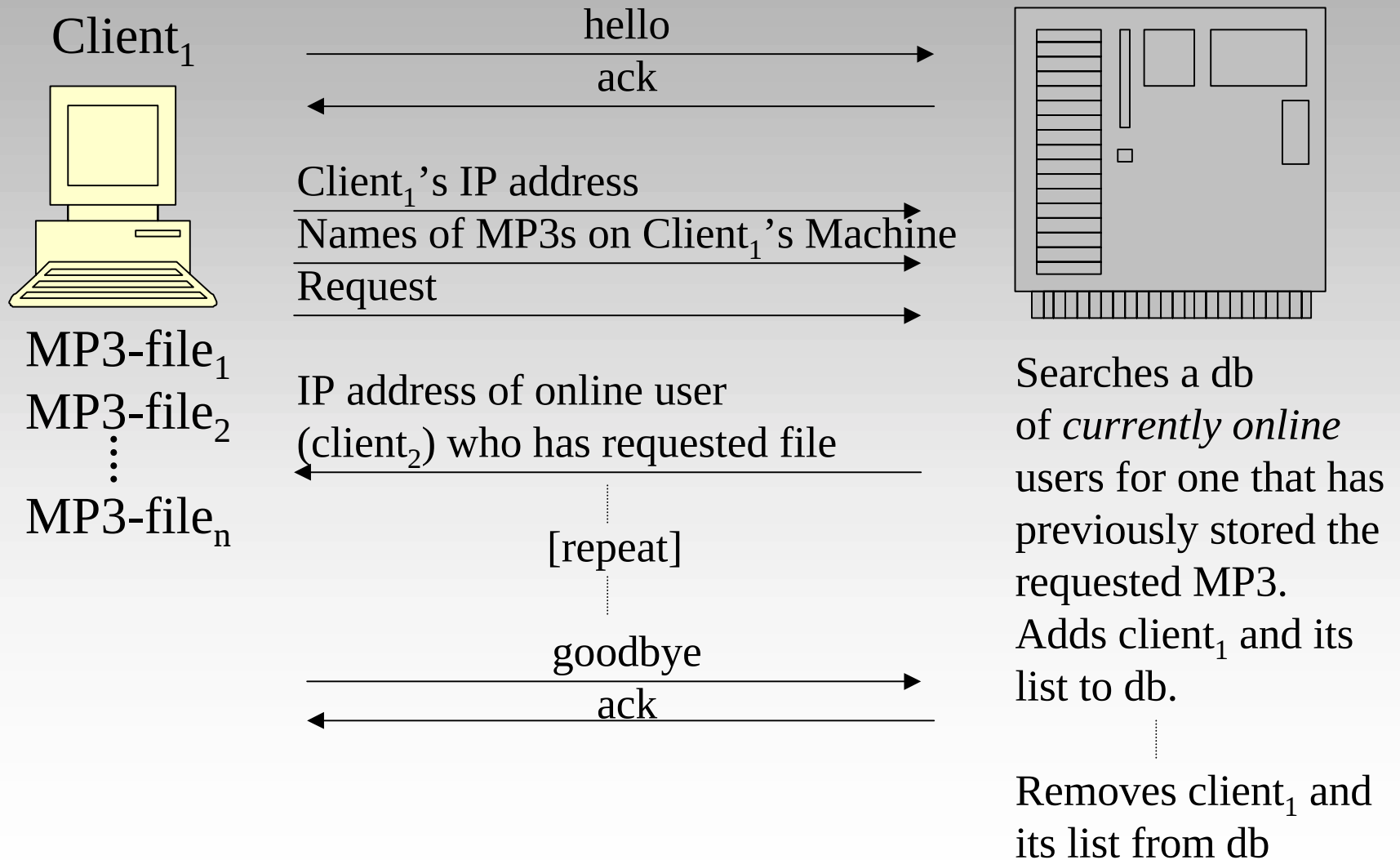
Holy Grail: A Great Business Model for Internet Music Distribution

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

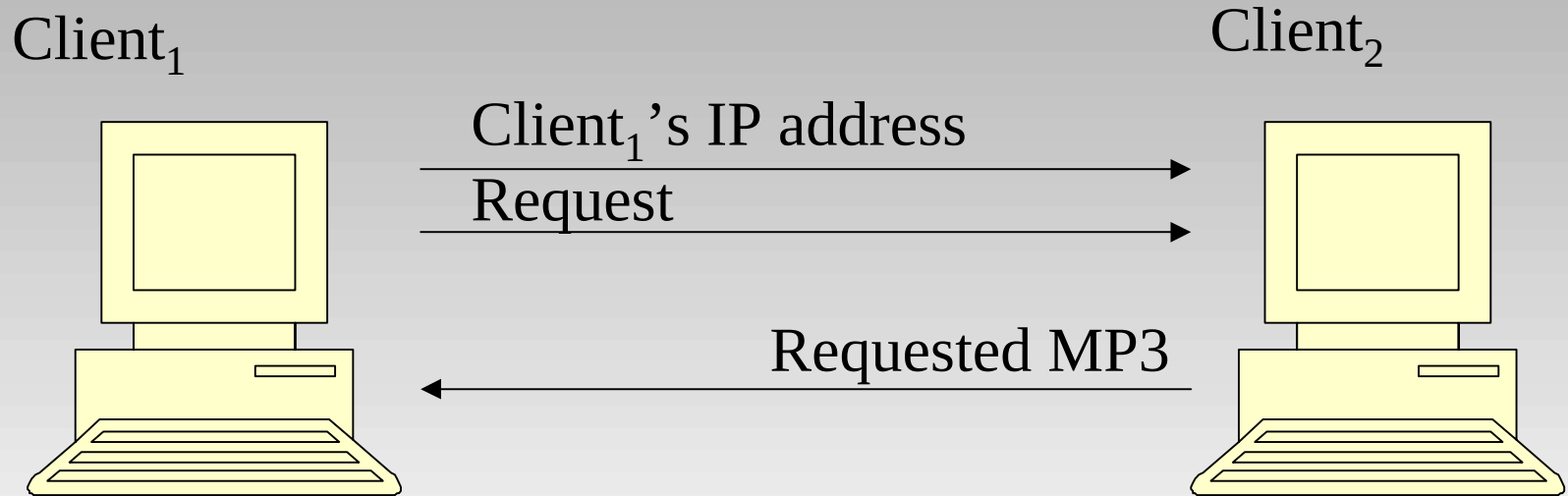
Napster Client-Server Interaction



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



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.
- Dec., 1999: RIAA sues Napster for “tributary” copyright infringement.
- 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 Bertelsmann 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 Bertelsmann 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 Bertelsmann 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?