

CS155b: E-Commerce

Lecture 6: Jan. 30, 2003

Introduction to Online Content Distribution

Revolution in Content-Related Technology

- Computers and digital documents radically change content **creation**.
- WWW radically changes content **publication**.
- Internet radically changes content **distribution**.

Revolution in Content-Related Business?

- Plenty not scarcity?
- Anyone can be a publisher?
- Disintermediation and reintermediation?

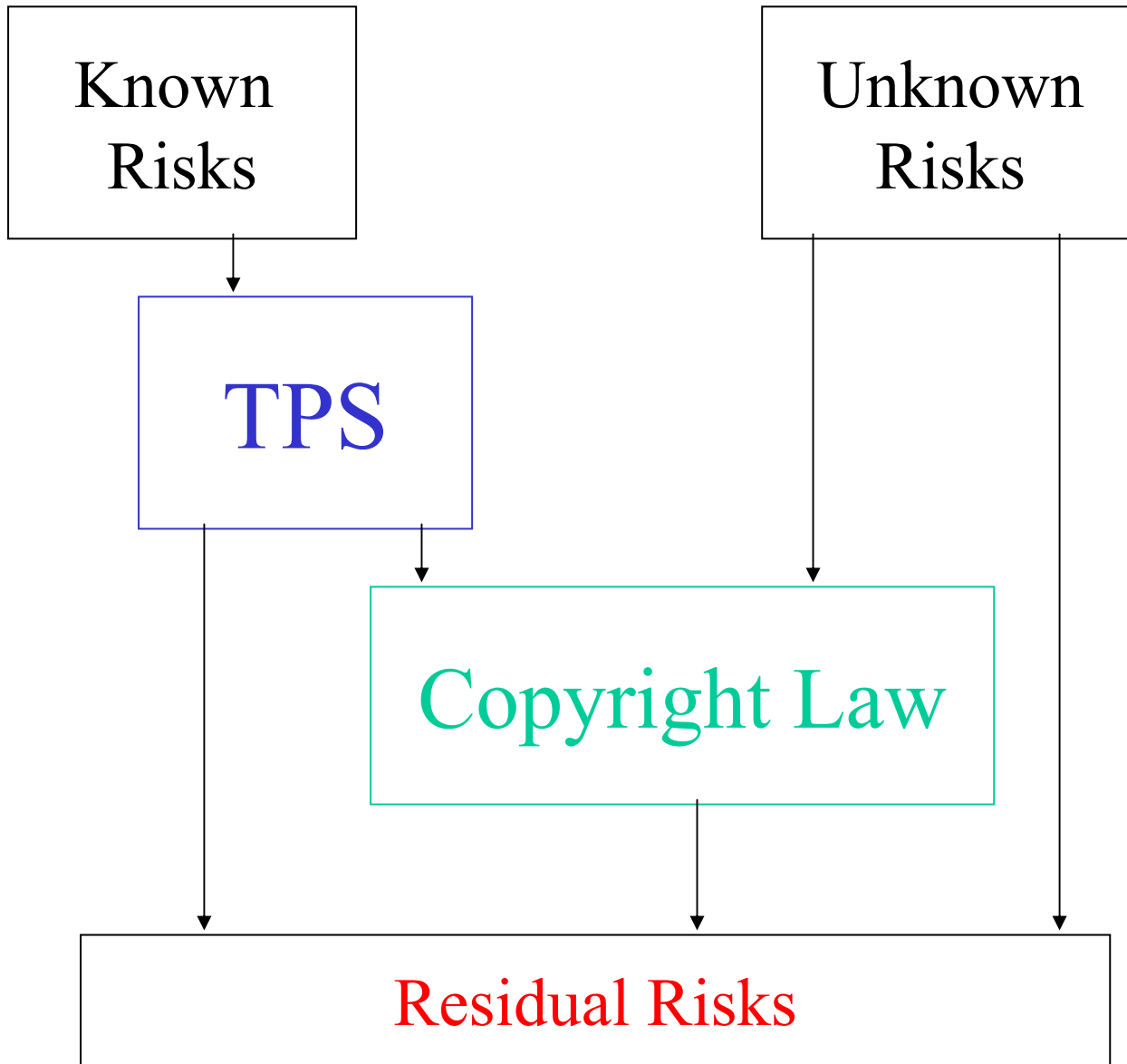
Three Major “Enforcers” Support a Content-Distribution Business

- Legal Protection
- Digital-Rights Management
- * Business Model

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 content as well as technical context.

Notoriously Difficult!



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.

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 to 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?

2000 Sales by RIAA members: \$15B

2001 Coca-Cola Net Operating Income: \$20.1B

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**

RealNetworks: An Internet Media Delivery Solution

- Full Name: RealNetworks, Inc.
- Employees: 1,000 (2001 report)
- Stock Price (NASDAQ:RNWK):
 - \$3.31 (at close 1/28/2003)
 - 52-week range: \$2.68 to \$9.28
- EPS: **-\$0.02** (qtr), **-\$0.24** (year)
- Provides client and server software for streaming multimedia content over the Internet.



RealNetworks Overview

- Founded by Rob Glaser (as Progressive Networks) in 2/1994.
- Acquired Vivo Software in 3/1998, Xing Technology in 8/1999, and Netzip, Inc. in 1/2000.
- Went public in 11/1997; reached an all-time high (adjusted) price of \$93/share in 2/2000
- Over 200 million registered users as of 1/2003; RealPlayer is installed on 90% of home PCs (note: down from 95% in 2001).

RealNetworks Stock Chart

(source: Quicken.com, market close 1/28/2003)

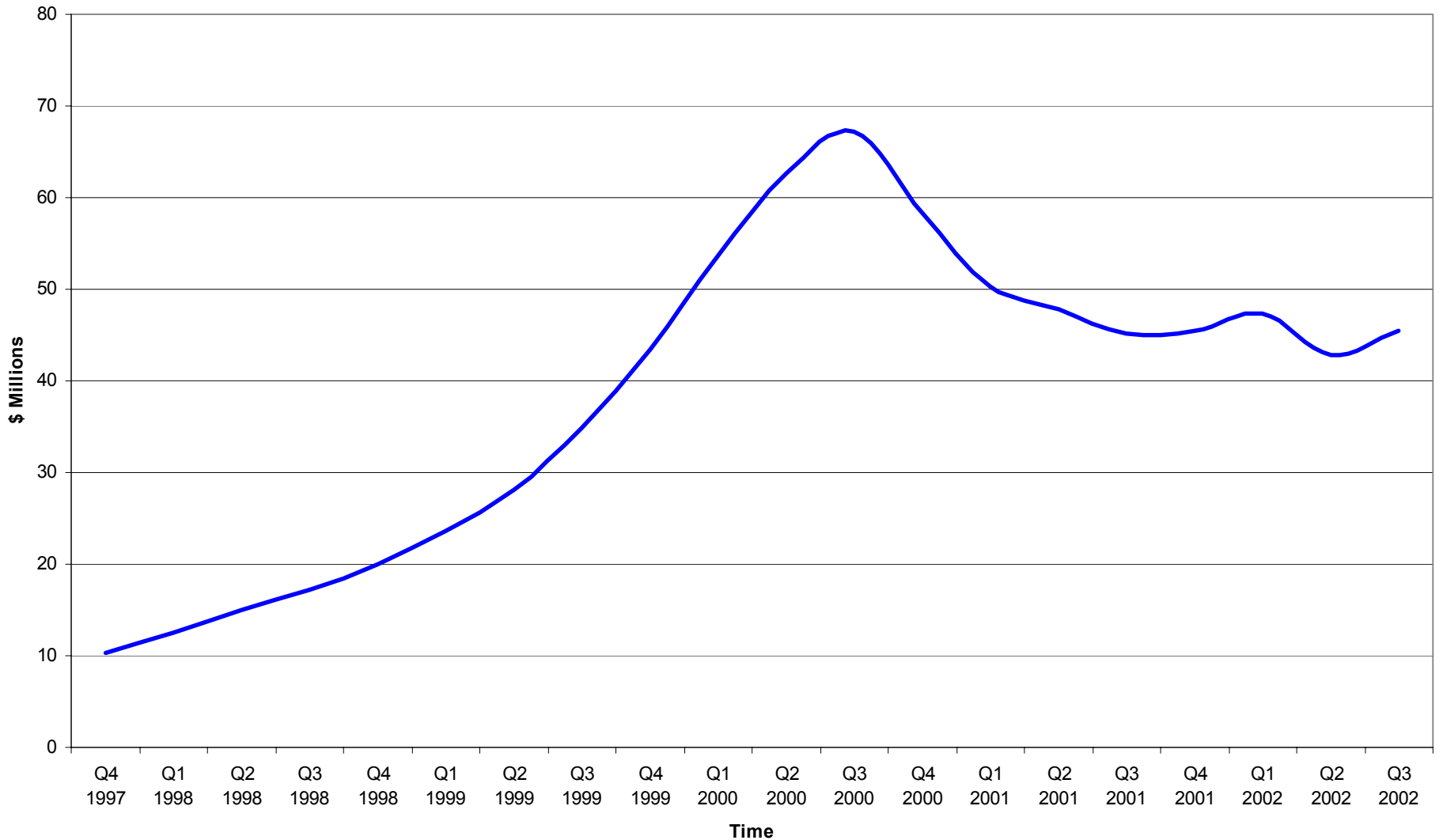


Period : Jan-28-1998 - Jan-28-2003

[S] = Stock Split

RNWK Quarterly Revenues

(source: SEC Filings, Forms 10-Q and 10-K)



RealNetworks Business Model

- Roughly 60% of RealNetworks' 4Q2002 revenue came from consumers. (13% in 2001)
 - The basic RealPlayer software is free. Users may pay a small fee (~\$20) for an advanced version with more features.
 - Users also pay for subscriptions to premium content.
- Roughly 5% of its 4Q2002 revenue is from services and advertising. (35% in 2001)
- Roughly 35% of its revenue stream is from charging broadcasters of streaming data for the RealServer software. (50% in 2001)
- In summary, business model is (slightly exaggerated): give away the player, sell the server and content!

Competition in the Market

- Microsoft's Windows Media Player (WMP) has become a competitor, as it now offers functionality similar to RealPlayer.
- Microsoft has been very aggressive in its attempts to gain market share:
 - By **bundling** WMP with Windows, users are more likely to use it instead of RealPlayer; it's one less program to download.
 - By signing **Windows-only deals with various radio stations** (including Boston's WGBH and New York's WNYC), Microsoft is forcing users to use WMP if they want to access these resources.

RealNetworks Maintains Dominant Market Share

- RealNetworks has successfully maintained a dominant market share: **over 85% of the streams on the Web are RealNetworks-encoded.**
 - This fact has held true since (at least) 2001.
- Many independent websites broadcast streams in both RealMedia and Windows Media formats because both are popular with users.
- RealNetworks has, like Microsoft, formed contracts with companies and sells consumers access to premium content through **subscriptions.**

The Importance of Consumer Subscriptions

- Consumer subscription revenue grew 167% from 2001 to 2002.
- Examples of premium content:
 - Starz on Demand (web-based movies)
 - NBA Inside Ticket
 - PGA Tour
 - SEGA Arcade (for web-based games)
- RealNetworks has over 900,000 subscribers.
- The more subscribers, the more partners that might affiliate with RealNetworks, which leads to larger market share and revenue.

RealNetworks: Important Strategies

- Unlike what Netscape did with its browser, *RealNetworks gave away the player for free from the beginning*. This was crucial in establishing such a large user base in the first place.
 - RealPlayer is the second most-widely used application on the Internet.
- While Microsoft's content-distribution is just limited to the Windows and (for content receivers only) Mac OSs, *RealServer runs on 11 different OSs*. Because Windows servers make up only about 20% of the publicly accessible Internet, this poses a significant bottleneck for Microsoft.

Responding to Technology

- Media-delivery companies can take advantage of **physical-layer developments**:
 - **Broadband**: as more consumers adopt fast home Internet connections, it becomes more feasible to stream (and charge for) high-quality media.
 - **Wireless networking**: media can be streamed to many new types of devices.
- Because of Internet layering, RealNetworks can deliver media to any IP-speaking device (that goal is stated in its annual report).

“Daft Club” Model

Purchase Daft Punk CD and you also get a “personalized code” that gives you access to the Daft Club server. From it you get:

- Ability to download a new Daft Punk “bonus track” each month. The bonus tracks are not released on CDs.
- Access to the rest of the Daft-Club user community.

Bonus tracks will be wrapped with DRM metadata that says they can't be copied. Almost surely circumventable, but would many people bother circumventing?

"Napster++ as Superdistribution" Model (Napster--??)

- Napster users pay monthly subscription fee.
- They can download DRM-wrapped songs from Bertlesmann server. (And other labels if others also settle.)
- When they redistribute via P2P file sharing, they get rebates on their next month's subscription fees. DRM system keeps track.
- They retain the chat-room, "Napster community" network effects.

Again, probably circumventable. But is there a price point at which circumvention would not be worth it?

"Street Performer" Model

Novelist gives chapter 1 to publisher and promises rest of book after she is paid $\$X$.

Publisher posts chapter 1, collects payments, issues signed receipts to customers ("donors"?).

If publisher collects $\$X+Y$, he gets rest of book from novelist, posts it, gives $\$X$ to novelist, and keeps $\$Y$.

If he collects less than $\$X+Y$, he sends refunds to customers. Also, if novelist doesn't deliver rest of book, she gets bad publicity and customers get refunds.

"Street Performer" Model (continued)

Many variations:

- New author gives first book away.
- Non-anonymous big donors
- Some publishers "edit" and choose, and some don't.
- Famous authors don't have to deliver chapter 1 in advance.

"Hum A Few Bars" Model (K. McCurley, Financial Crypto '00)

"I listen to music in the living room, in the office, in the car, in the shower, and while jogging. I want the music companies, consumer-electronic companies, and data-networking companies to wire these environments so that I can hum a few bars and get the song I've hummed looked up, retrieved from their databases, and piped into my speakers. I'd expect to pay one monthly fee, as I do for cable TV."

JF Note: Can be "all streaming"; no need to clutter your living room floor or your computer disk with a "CD collection." Music will be purely a service, not a product.

Notable Business-Model Components

- + Buy one song at a time (cheap!).
- ? "Lock" content to user.
- "Lock" content to device(s).
- "Play k times."

(+ / ? / -: Just my guesses.)

Reading for February 4

- Chapter 4 and Appendix G of *The Digital Dilemma*
(http://books.nap.edu/html/digital_dilemma/ch4.html,
http://books.nap.edu/html/digital_dilemma/appG.html)