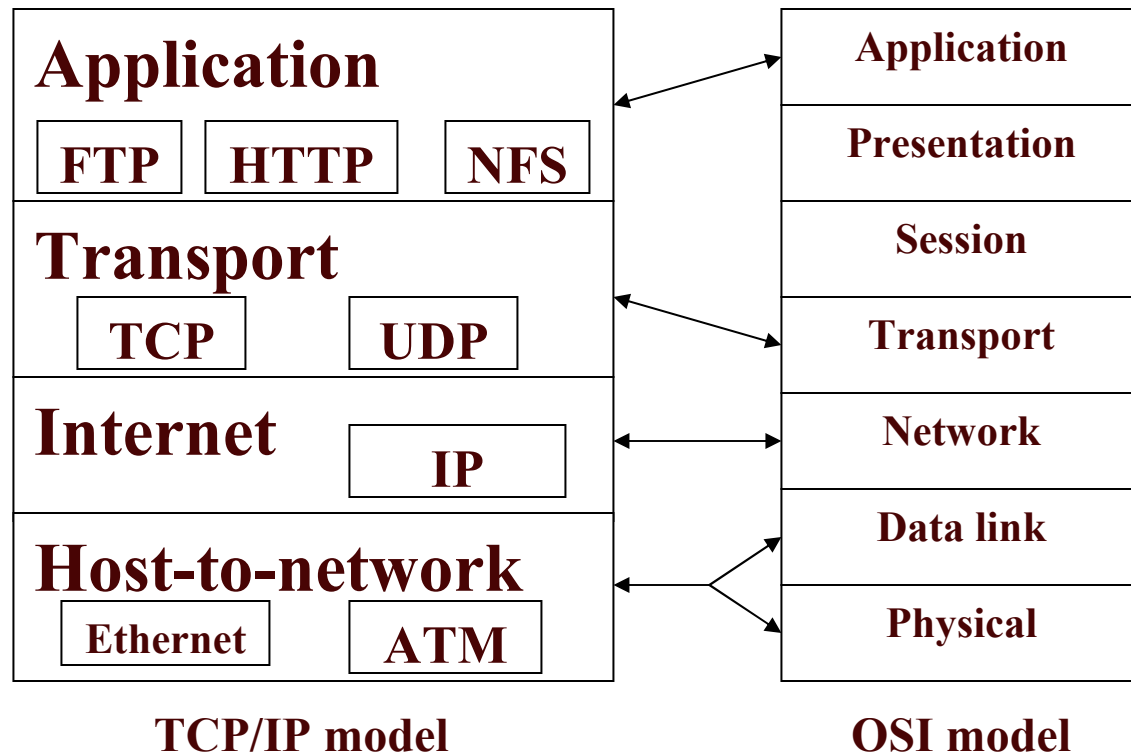


CS155a: E-Commerce

Lecture 4: Jan. 23, 2003

Archetypal Internet Businesses:
Netscape and Amazon

HTTP (Hypertext Transfer Protocol)



- Standard protocol for web transfer
- Request-response interaction
- Request methods: GET, HEAD, PUT, POST, DELETE, ...
- Response: Status line + additional info (e.g., a web page)

HTML (Hypertext Markup Language)

- Language in which web pages are written
- Contains formatting commands
- Tells browser what to display and how to display

```
<TITLE> Welcome to Yale </TITLE>
```

- The title of this page is "Welcome to Yale"

```
<B> Great News! </B>
```

- Set "**Great News!**" in boldface

```
<A HREF="http://www.cs.yale.edu/index.html">
```

```
Yale Computer Science Department </A>
```

- A link pointing to the web page

http://www.cs.yale.edu/index.html with the text "Yale Computer Science Department" displayed.

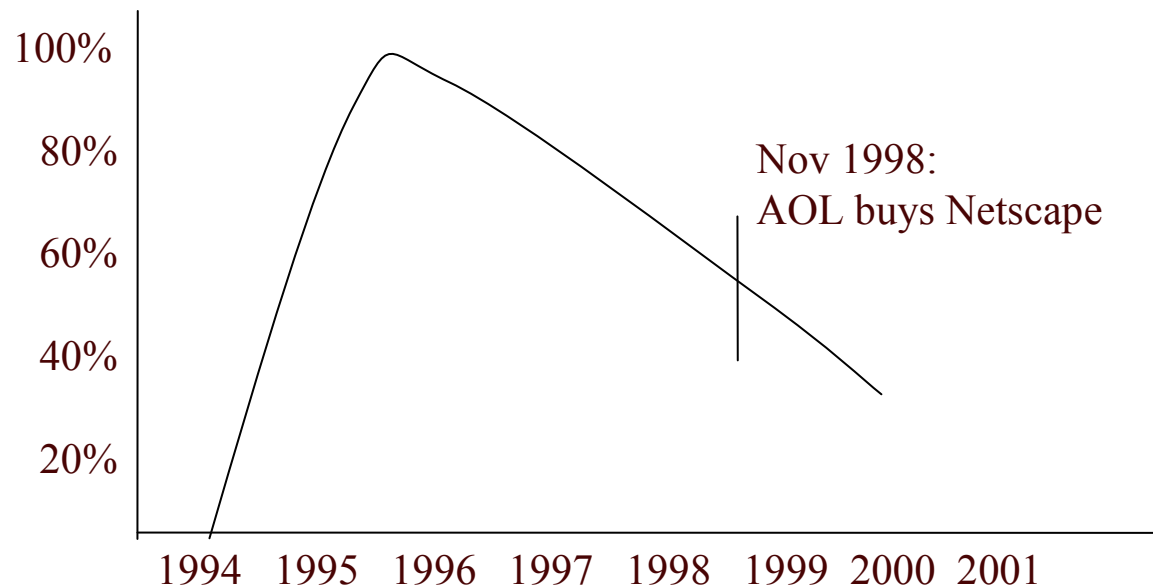
What does "http://www.cs.yale.edu/index.html" mean?

Protocol Host, Domain Name Local File

http	www.cs.yale.edu	index.html
------	-----------------	------------

- **Late 1990:** WWW, HTTP, HTML, "Browser" invented by Tim Berners-Lee
- **Mid-1994:** Mosaic Communications founded (later renamed to Netscape Communications)
- **Summer of 1995:** Market share 80%+
- **August 1995:** Windows 95 released with Internet Explorer
- **January 1998:** Netscape announced that its browser would thereafter be **free**; the development of the browser would move to an **open-source** process

Estimated Market Share of Netscape



NOTE: data are from different sources and not exact

Perfectly Captures the *Essence* of Internet Business

- Enormous power of Internet architecture and ethos (*e.g.*, layering, "stupid network," open standards)
- Must bring new technology to market quickly to build market share
- Internet *is* the distribution channel
 - First via FTP, then via HTTP (using Netscape!)
 - Downloadable version available free and CD version sold

Uses Many "Internet Business Models"

(esp. those that involve making money by "giving away" an information product)

Complementary products (esp. server code)

- Bundling
 - Communicator includes browser, email tool, collaboration tool, calendar and scheduling tool, *etc.* One "learning curve," integration, compatibility, *etc.*
- Usage monitoring
 - Datamining, strategic alliances
 - "Installed base" ≠ "Active installed base"

Browser as "Soul of the Internet"

- "New layer" (Note Internet architectural triumph!)
- Portal business
 - Early "electronic marketplace"
 - Necessity of strategic alliances
 - "Positive transfers" to customers
- (Temporarily?) Killed R&D efforts in user interfaces

Pluses and Minuses of Network Effects

- + Initial "Metcalfe's Law"- based boom
- + Initial boom accelerated by bundling, complementary products, etc.
- Market share \neq lock in
high market cap \neq high switching costs
- Network effects strong for "browser" but weak for any particular browser

Exposed the True Nature of Microsoft

- 1995: Navigator released, MS rushes IE to market
- 1996: Version 3.0 of IE no longer technically inferior ("Openness" and standardization begets commoditization)
- MS exploits advantage with strategic allies (Windows!)
 - Contracts with ISPs to make IE the default
 - Incentives OEMs not to load Netscape products
 - Exclusive access to premium content (from, e.g., Star Trek)
- 1998: MS halts browser-based version of these "strategies" under DoJ scrutiny of its contracts with ISPs.

Internet-ERA Anti-Trust Questions are Still Open

- Can consumers benefit from full integration of browser and OS?
- How to prevent "pre-emptive strikes" on potential competitors in the Windows-monopoly universe?
 - ("post-desktop era" technical Solution?)
- Remember: DoJ case was not about protecting Netscape!

Definitions of E-Commerce

Electronic commerce is a set of technologies, applications, and business processes that link business, consumers, and communities

- For buying, selling, and delivering products and services
- For integrating and optimizing processes within and between participant entities

What is B2C?

- B2C Commerce: Interactions relating to the purchase and sale of goods and services between a business and consumer—retail transactions.
- “Novelty” is that retail transaction is done on the Internet, rather than in a “brick and mortar” store location.
 - All the customer needs is a browser!
- Technical evolution of B2C from “brick and mortar” model not new.

A Different Approach to Location Retailing

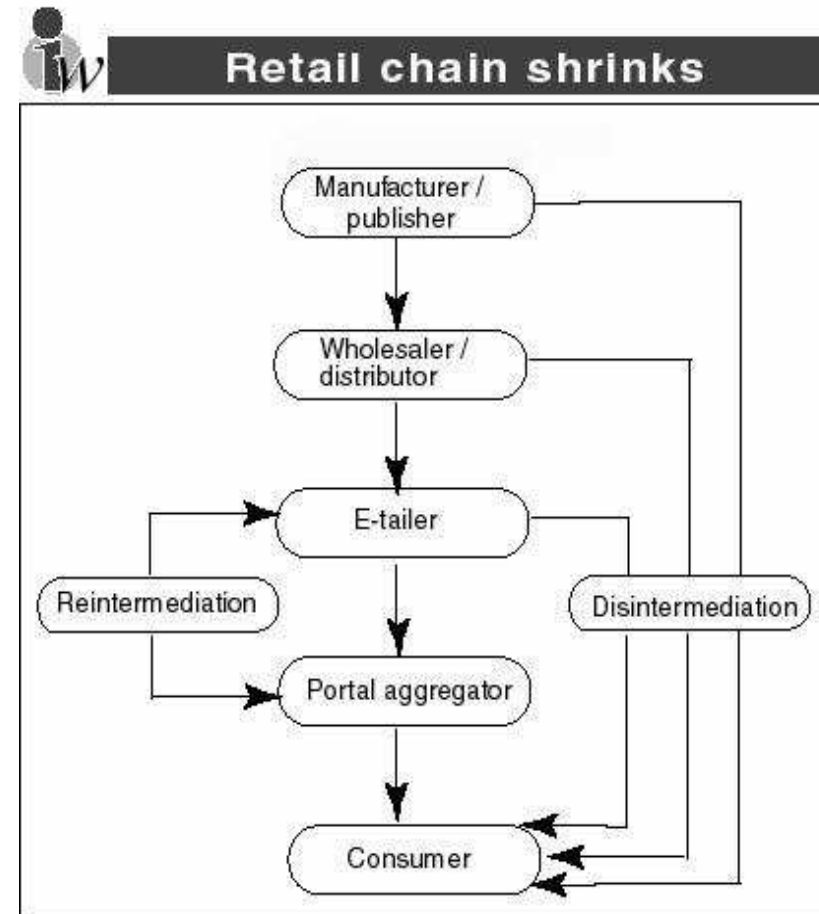
- In 1886, a jeweler unhappy with a shipment of watches refuses to accept them.
- A local telegraphy operator buys the unwanted shipment.
- Uses the telegraph to sell all the watches to fellow operators and railroad employees.
- Becomes so successful that he quits his job and started his own enterprise, specializing in catalog sales.
- Name: Richards Sears of Sears Roebuck

Revenue Models

- Sell goods and services and take a cut (just like B&M retailers).
(*e.g.*, Amazon, E*Trade, Dell)
- Advertising
 - Ads only (original Yahoo)
 - Ads in combination with other sources
- Transaction fees
- Sell digital content through subscription. (*e.g.*, WSJ online, Economist Intelligence Wire)

First-Generation B2C

- Main Attraction: Lower Retail Prices
- "B2C Pure Plays" could eliminate intermediaries, storefront costs, some distribution costs, *etc.*
- Archetype: www.amazon.com



Source: Benchmark Capital Group ; The Economist

Amazon.com

- Full Name: Amazon.com, Inc.
- Employees: 7,200
- Stock Price:
 - \$22.10 (at close December 17, 2002)
 - 52 Wk Range: \$9.03 to \$25.00
- 2001 Sales \$3.12 B
Sales growth: 33%
- Internet's largest retailer. Best known for books, CDs, DVDs, and Videos.

The Amazon.com logo, featuring the text "amazon.com." in a bold, black, sans-serif font, with a yellow curved arrow underneath the text pointing from the 'a' to the 'm'.

Brand Strength

Source: U.S. Bancorp Piper Jaffray (July 24, 2000)

	Company	Mind Share	Company	Company Online Purchaser Share
1	Amazon.com	24.1%	Amazon.com	18.7%
2	eBay.com	16.1%	eBay.com	15.8%
3	Yahoo.com	4.9%	BarnesandNoble.com	6.0%
4	priceline.com	2.7%	BMG.com	3.9%
5	buy.com	1.9%	CDNow.com	3.3%
6	BarnesandNoble.com	1.8%	ColumbiaHouse.com	3.1%
7	CDNow.com	1.3%	JCPenney.com	3.0%
8	AOL.com	1.1%	priceline.com	2.7%
9	Egghead.com	1.0%	buy.com	2.6%
10	Iwon.com	0.9%	Yahoo.com	2.3%
	JCPenney.com	0.9%	1800flowers.com	2.3%

Main Lines of Business

- Retail
 - Broad product range, from textbooks to household tools
- Shopping Mall
 - Individuals and companies pay Amazon.com to offer their products on its site.
- "Overseeing" other websites
 - Has invested in some of them
 - Broad range of offerings, from prescription drugs to wedding planning
- 2001 Sales
 - 54% Books, music, video
 - 71% North America

Amazon.com History

- Founded: 1994
- Website launched: July, 1995
- 1997
 - IPO: 3 million shares, \$54.0 million
 - Moves to "cement the Amazon.com brand."
 - Becomes the sole book retailer on America Online's public website and on Netscape's commercial channel.

History (continued)

- 1998: Expansion
 - Launched online CD and video stores.
 - Began selling toys and electronics.
 - Bought online booksellers in the UK and Germany.
 - Bought Internet Movie Database.
 - Expanded online services, buying Junglee (comparison shopping) and PlanetAll (address book, calendar, reminders).
 - Attracted so much attention that its market capitalization equaled the combined values of profitable bricks-and-mortar rivals Barnes & Noble and Borders Group, even though their combined sales were far greater than Amazon's.

History (continued)

- 1999: More Expansion
 - Raised \$1.25 billion in a bond offering.
 - Spending spree with deals to buy all or part of several dot-coms
 - Some have since been sold (HomeGrocer.com), and others have gone out of business or bankrupt -- Pets.com, living.com
 - It also bought the catalog businesses of Back to Basics and Tool Crib of the North.
 - Began conducting online auctions and partnered with Sotheby's.
 - Added distribution facilities, including one each in England and Germany.

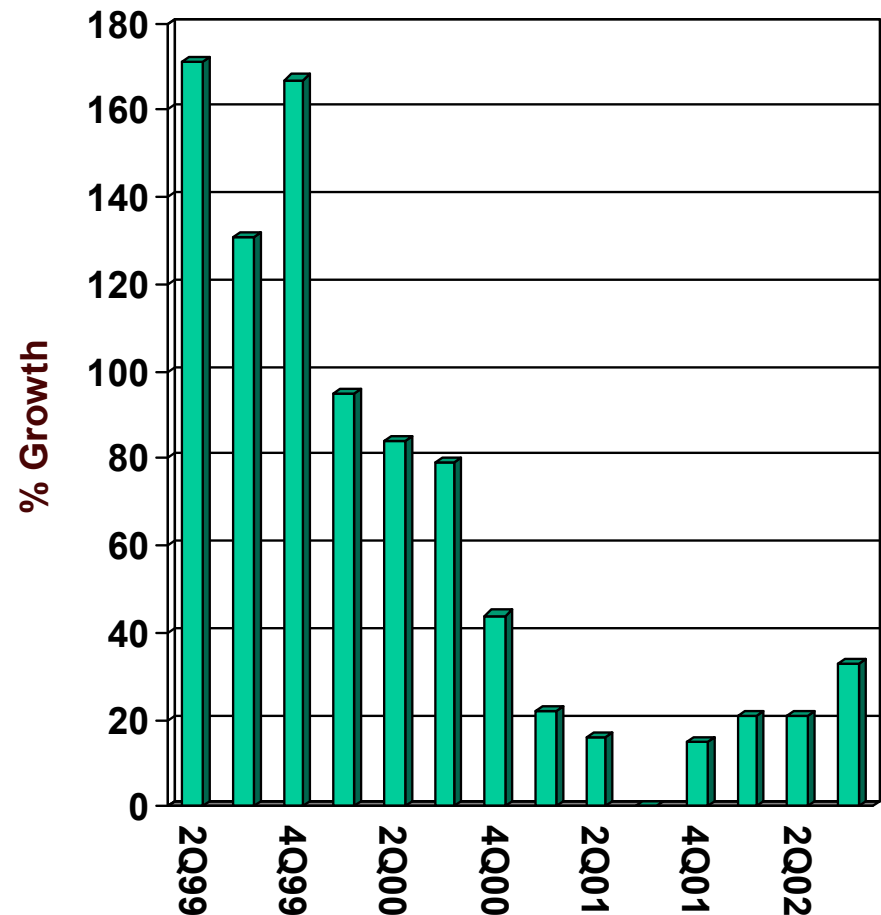
History (continued)

- 2000: Yet More Expansion
 - Placed a link to drugstore.com on its homepage; drugstore.com paid more than \$100 million for that access.
 - 10-year deal with toysrus.com to set up a co-branded toy and video game store.
 - Added foreign-language sites for France and Japan.

2001: End of the Beginning

- Investors demand profits
- Amazon announces plans to restructure and layoff of 15% of its workforce.
- Takes a \$150 million charge.
- Announces a deal with Borders to provide inventory, fulfillment, content, and customer service for borders.com

Percent Growth From
Same Quarter Previous Year
Source: SEC Filings



2002: Growth Renewal

- U.S. books, music, and video segment is profitable for consecutive quarters.
- Sales growth is accelerating again.
- New segments (*e.g.*, apparel & accessories)
- New international markets (*e.g.*, Europe marketplace, Japan, Canada)
- New services (*e.g.*, wedding registry)
- Strengthening partnerships (including services for other retailers, *e.g.*, Target)

Amazon.com, Inc. Stock Quotes (AMZN)

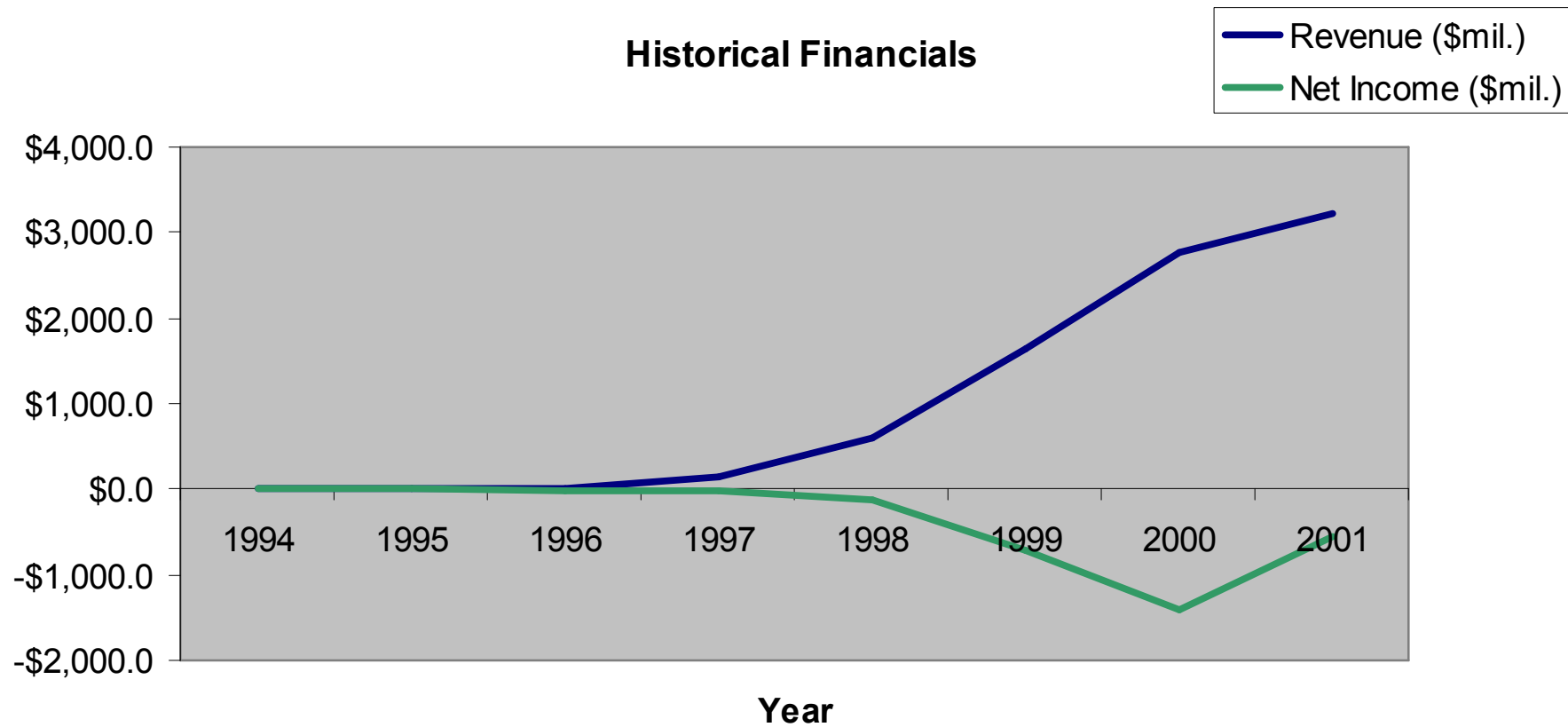
Source: Quicken.com (12/18/2002)



Period : Dec-17-1997 - Dec-17-2002

[S] = Stock Split

Amazon.com, Inc. Financials



Financials and Employees ("Long March to Profitability")

Source: Hoovers and SEC Filings

Year	Revenue (\$mil.)	Net Income (\$mil.)	Employees
2002 (Q1-3 only)	2,504.3	-151.8	7200
2001	3,122.4	-567.3	
2000	2,762.0	-1,411.3	9000
1999	1,639.8	-720.0	7600
1998	610.0	-124.5	2100
1997	147.8	-27.6	614
1996	15.7	-5.8	151
1995	0.5	-0.3	33
1994	0.0	-0.1	

Reminder: First Written Homework Assignment

- Due in class on Tuesday, Jan. 28
- Covers readings and lectures through today
- Available online
(<http://zoo.cs.yale.edu/classes/cs155/spr03/hw1.pdf>)