

CS155b: E-Commerce

Lecture 13: Feb. 27, 2001

C2C Internet Commerce, continued

Massive Scale Commercial-Website Operation

eBay scale:

- Approximately 20M users.

- Over 500K items added each day.

Massive strain on website reliability and availability.

Major issue for high-traffic B2C sites, too.

June 1999: Three eBay Crashes

- eBay service unavailable for “prolonged” periods of time.
 - Revenue-loss estimates: \$3M to \$5M
 - Stock-price fall: 20%
 - Blamed on ISP router failure and SUN OS “memory bugs.”
- Outsourcing to Exodus since Oct 1999.

EXODUS

- Full Name: Exodus Communications, Inc.
- Employees: 600
- Stock Price: \$16.125 (Feb 19, 2001)
- Revenues in 1999: \$242,100,000
- Business Area: Internet Hosting Service

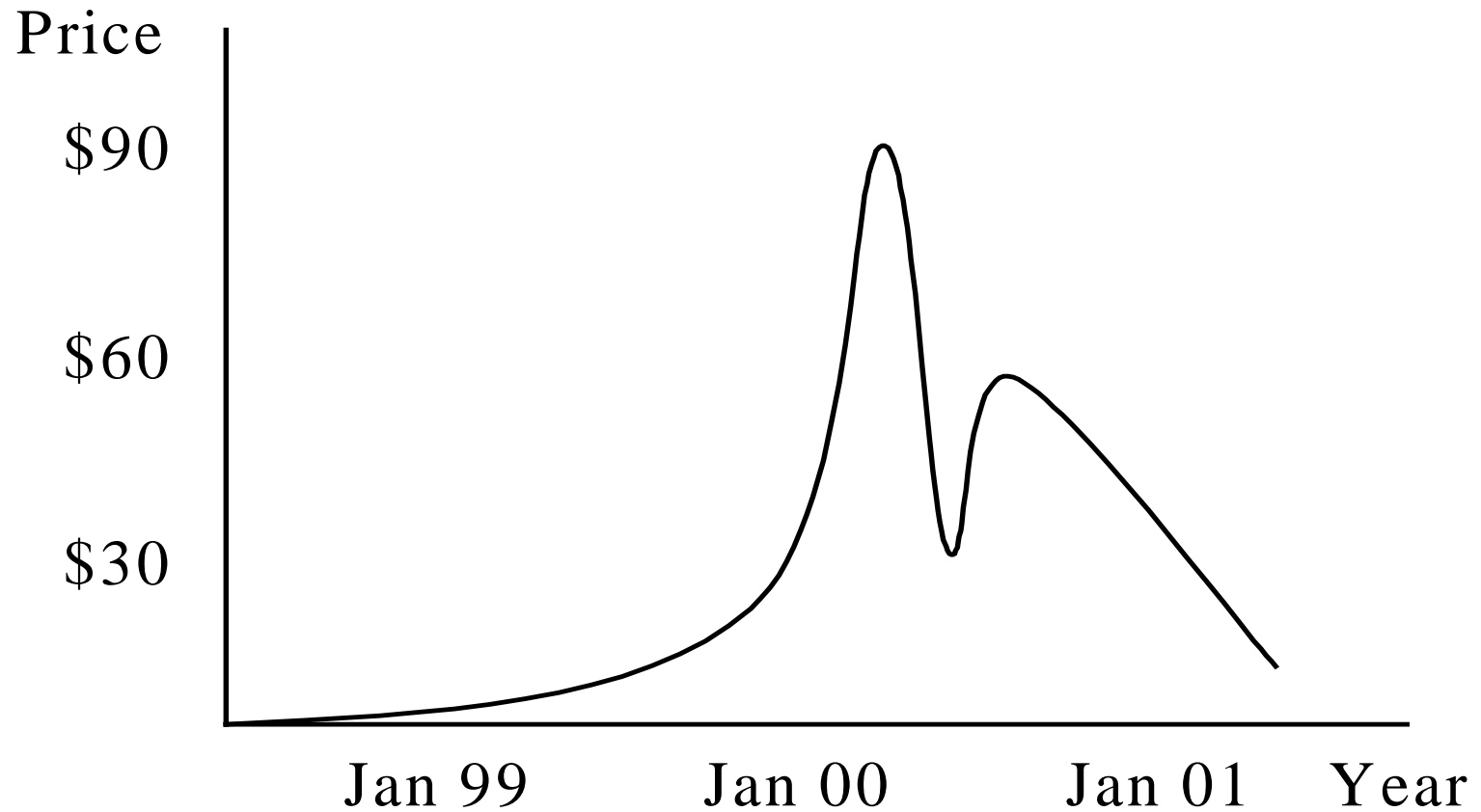
WHAT EXODUS OFFERS

- “Internet Data Center” facilities in major metropolitan areas
- Connectivity to the Internet through a high-speed, high-availability, redundant network infrastructure
- Services, including security technologies
- Major clients: eBay, Yahoo Geocities, MSN, Lycos, Macromedia, CBS Sports, *etc.*

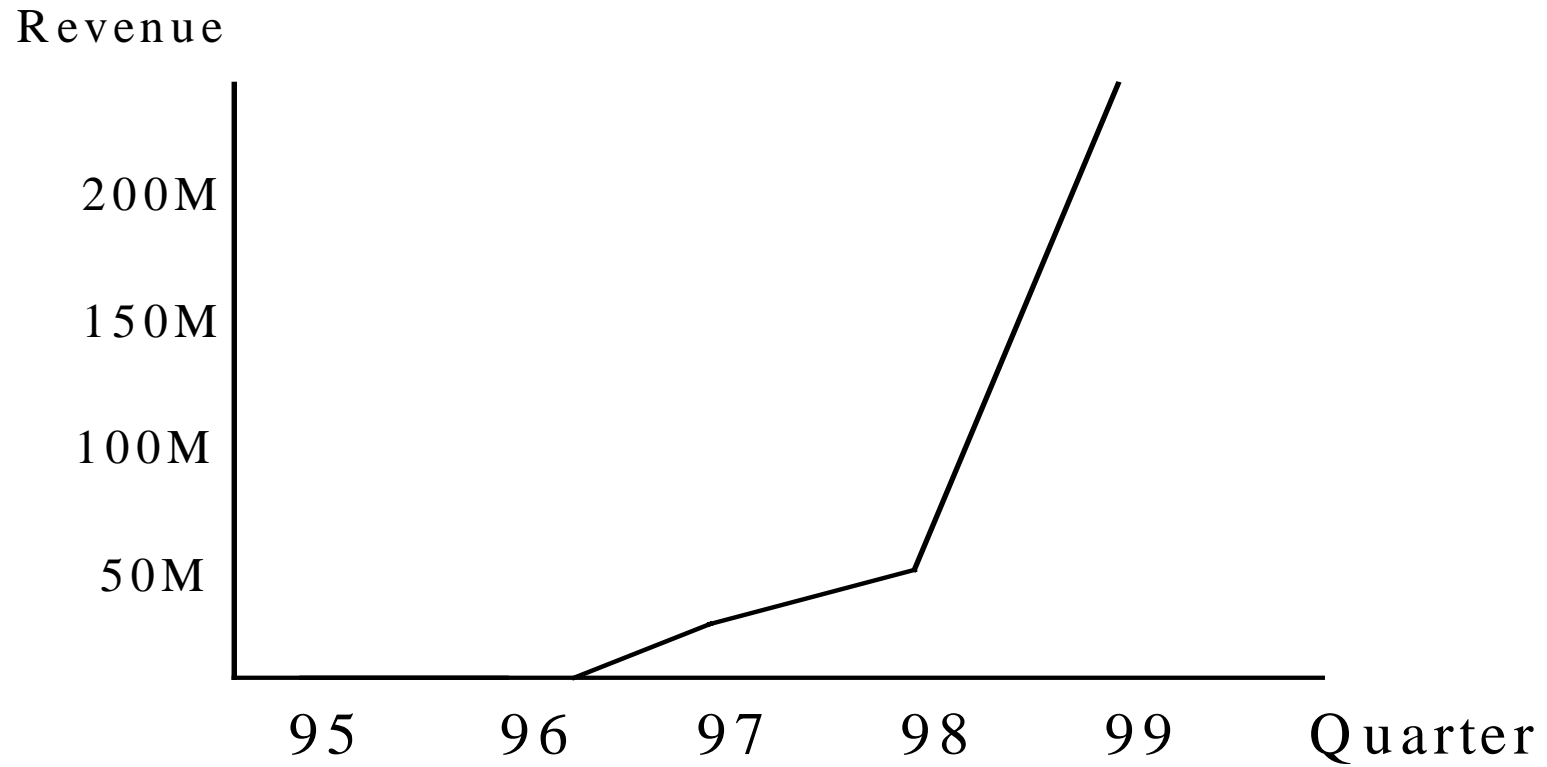
BRIEF HISTORY

- 1994 Founded
- March 1998 Went Public
- 1999 Revenue more than \$100M
- 1999 Net loss more than \$100M
- March 2000 Historic Peak of Stock Price
(\$83)

STOCK PRICE CHART



REVENUE CHART



Auction Design in C2C Commerce

Why Auctions?

- Hard for typical C2C seller to do market research and set optimal fixed price. Auctions allow seller to maximize revenue.

eBay ascending-bid auctions include:

- Starting Price
- Ending Time
- Bid Increment
- (Sometimes) reservation price
- “Proxy bidding agents”

eBay Ascending-Bid Auctions, cont.

- Technically equivalent to 2nd-price Vickrey
- Importance of “strategyproofness”:
 - Buyers, like sellers, will have little or no information about others’ valuations of the items; so “dominant-strategy solution concept” is appropriate.
 - “Truth telling is a dominant strategy” helps sellers maximize revenue.
- Seller can choose to use a descending bid structure (“Dutch Auction”).

Auctions for Unlimited-Supply (Digital) Goods

- “Optimal Fixed Pricing” (OFP)
- No truthful auction (even multi-price) can beat OFP revenue
- “Competitive” = Ω (OFP revenue)
- No truthful, deterministic auction is competitive.
- There exists truthful, randomized auctions that are competitive.

[Goldberg, Hartline, Wright '99]

Sale of Monroe Photos and Release

(From February 22, 2001 WSJ)

Auctioneer: eBay Premier and Butterfields of SF
(eBay acquired Butterfields in 1999)

Seller: Tom Kelley Studios of Ventura, CA

Item: Five outtakes of Marilyn Monroe's 1949 "Red Velvet" photo shoot *and the negatives and the "model's release form"*

Expected price: \$700K to \$1M

Implications for Internet-Based Business

Intellectual-Property Rights Questions Inescapable

- Butterfield’s auction catalog: Right to use name and likeness for “trade and advertising purposes”
- CMG Worldwide (which represents Monroe estate): Will go after anyone who uses “those images in a commercial fashion”
- Potential limits to eBay scope
 - Previous sales of high-end photos, prints, and art have “fallen flat.”
 - Can eBay be more than a “hugely successful ... online flea market”?