Launched as *AuctionWeb* in 1995
By 2012, total gross merchandise volume on eBay marketplace $67B each year
Evolution from beanie babies to sales channel for retailers
Auction Design

- $b^{(1)}, b^{(2)}$: 1st and 2nd highest bids
- Price $p_t = \min(b^{(2)} + \text{eps}, b^{(1)})$; amount to pay by leading bidder (“proxy”)
- $p_{\text{ask}, t} = p_t + \text{eps}$; ensure progress
  - Initially = starting price $r$
- Closing time

eBay Design choices

“enter maximum then sit back and watch”
We do see this

But we also see bidding wars
eBay Design choices

• “enter maximum then sit back and watch”
• Why not do this?

• Some reasons:
  – Close substitutes in the marketplace
  – Learn from bids of others
  – Hide your own information about item
  – Avoid bidding wars with “incremental bidders”
eBay Design choices

• If eBay wanted to promote simplicity, why didn’t they just use a SPSB?

Possible reasons:
• Entertainment
• Transparency
• Promotes information aggregation
• Allows a bidder to bid across multiple auctions for close substitutes
Bidding Strategies

- Incremental bidding
- Late bidding ("sniping")

Why care about late bidding?
Why care about late bidding?

• Reduces information aggregation-- someone may know something you don’t

• Increases participation cost-- early prices don’t reflect prices when auction closes

Effect of the Closing Rule

• eBay Auctions: hard closing rule

• Amazon auctions: soft closing rule
  – extend for 10 mins if new bid received in the final 10 mins
  – not possible to bid in a way where others cannot respond
Distribution on Time of Last Bid

Last bids = last bid placed by any bidder

(Roth and Ockenfels 2002)

Distribution on Time of Last Bid

Last bids = last bid placed by any bidder

Time remaining in Amazon: before current closing time

(Roth and Ockenfels 2002)
Benefits of Hard Closing Rule?

• Predictability – close 5pm Sundays; clusters of similar items form communities that close at the same time
• Good for buyers: lots of choices, know when to look
• Good for sellers: market becomes thick, lots of demand
Effect of starting price?

• Early field experiments suggested “bidding frenzy”
• Lower starting price leads to higher price, conditioned on sale

Empirical eBay study

• L. Einav, T. Kuchler, J. Levin and N. Sundaresan
• “Learning from Seller Experiments in Online Markets” (NBER, 2011)
A “Seller experiment”: multiple listings same seller; some with a posted price that was accepted

A “Seller Experiment”

- Listings from same seller, for same item, that vary in starting price
  - Only use listings with free shipping (no secret reserve, no “buy it now” price)
  - At least one item sold at a posted price

- 19,000+ exper.; 490,000+ listings in 2009

(Einav et al. 15)
Empirical Results

Starting price effect

• Refutes theory of “escalation”: price conditioned on sale does not increase with smaller starting prices
Trend to Fixed Prices

(Einav et al. 13a)

• Auctions had 90% transaction volume on eBay in 2003; but less than 36% in 2012 – not category specific
• Price in auction conditioned on sale 5% less than posted price sales in 2003; but 17% less in 2009. (Adjusted for product mix.)

Possible reasons:
• many different things to do online now!
• mobile-commerce (“one-click” shopping?)