• 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

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

eBay Design choices

“enter maximum then sit back and watch”
Early Bidding

Bidding War

(Steiglitz 2007)
eBay Design choices

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

• Some reasons:
  – May be close substitutes in the market
  – Can learn from bids of others
  – Can hide your own information about item
  – Avoid price war with “incremental bidders”
eBay Design choices

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

The open, eBay design provides:
• Entertainment
• Transparency
• Promotes information aggregation
• Allows coordinated bidding 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 in last 10 mins
  – no time at which a buyer can bid at which other buyers cannot respond
When are “Last Bids” submitted?

Last bids = last bid placed by any bidder

(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?

• Some earlier field experiments suggested “bidding frenzy”
• Lower starting price would lead to higher price \textit{conditioned on sale} (!)

Empirical eBay study

• L. Einav, T. Kuchler, J. Levin and N. Sundaresan
• “Learning from Seller Experiments in Online Markets” (2015)
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 BIN price
  - Seller also sold one item at a posted price

- 19,000+ exper.; 490,000+ listings in 2009
Sale Price and Prob. Sale

Trend to Fixed Prices

• Shift in demand from auction to PP. Why?
• Auctions had 90% transaction volume on eBay in 2003; less than 36% in 2012
  – not category specific
• Price conditioned on sale in an auction was 5% less than PP sale in 2003; it is 17% less in 2009. (Adjusted for product mix.)
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Possible reasons:
• There are other things to do online today!
• Mobile (need for ‘one-click’ shopping?)