cis3.2
electronic commerce
27 march 2006
lecture # 17
interaction mechanisms

topics:

- types of interaction mechanisms
- negotiation spaces
- terminology
- types of auctions
- issues
- case study

slide credits:
– Peter McBurney, Univ of Liverpool
– E-commerce 2004, Prentice Hall

interaction mechanisms for commercial transactions

- transaction spaces
- auction mechanisms and their properties
- procedures or *protocols*:
  - auction protocols
  - negotiation protocols
- *languages* for transactions

negotiation spaces

- 2 or more participants:
  - one *buyer* and one *seller* $\Rightarrow$ **auction**
  - one *buyer* and multiple *sellers* $\Rightarrow$ **auction**
  - multiple *buyers* and one *seller* $\Rightarrow$ **auction**
  - multiple *buyers* and multiple *sellers* $\Rightarrow$ **market**
- what are the *rules* for interaction?
  i.e., *protocols*
- what are *acceptable* deals?
- what are *strategies* to help bring about these deals?
- what *good(s)* or *service(s)* are being traded?

terminology (1)

- *buyer:*
  person or agent who wants to purchase good(s) or service(s)
- *seller:*
  person or agent who wants to sell good(s) or service(s)
- *trader:*
  general term that refers to either/both buyers and sellers
- *auctioneer:*
  person or agent who controls the exchange of goods or *settling* or *clearing* of the auction or market; i.e., auctioneer sets the trading price and determines who will exchange with whom

terminology (2)

- *bid:*
  amount that a buyer offers to pay for a good or service
- *ask:*
  amount that a seller offers to sell a good or service for
- *shout:*
  general term that refers to either/both bids and asks

terminology (3)

- *private value:*
  the actual amount a trader values the good(s)/service(s) being traded; not necessarily the amount that the trader shouts
- *transaction price:*
  the price set by the auctioneer for which a good or service is exchanged
- *winner:*
  buyer or seller who gets the good or service for which they are bidding; there may be multiple winners in an auction or market
- *efficiency:*
  the closer that trading prices come to traders' private values, the more efficient the market is

types of auctions

- English auction
- Dutch auction
- first-price sealed-bid auction
- Vickrey auction

English auction (1)

- ascending price auction
- also called: "open cry"
- procedure:
  1. auctioneer starts at *reserve price* — amount below which seller will not sell
  2. potential buyers call out prices they are willing to pay, in ascending order; sometimes the auctioneer calls out prices in ascending order and potential buyers agree to prices as they are called
  3. until there are no more bids; or until there are no more buyers agreeing to prices being called
- winner is person who bids the highest amount
- winner pays the amount that s/he bid
- best strategy for a bidder: add a little to the previous bid

English auction (2)

- additional rules:
  - sometimes, bids must exceed previous bids by a certain percentage
  - sometimes, buyers must declare when they are leaving the auction, i.e., when the price has exceeded what they are willing to pay

Dutch auction

- descending price auction
- procedure:
  1. auctioneer starts at a high price and calls out prices in descending order
  2. buyer calls out as soon as auctioneer reaches acceptable price for buyer
  3. if there's a tie, then the auctioneer backs up some distance and descends again
- winner is first person to call out
- winner pays price bid (called)
- best strategy for a bidder: call out as soon as acceptable price is reached

first-price, sealed-bid auction

- procedure:
  1. bidders write their acceptable price on a piece of paper and submit it in a sealed envelope to the bidder
  2. auctioneer opens all envelopes and ranks the bids in price order
- winner is highest bidder
- winner pays price bid
- note: this is essentially equivalent to Dutch auction
- best strategy: bid below private value (acceptable price)

Vickrey auction

- bids ascend
- bids can be either "open cry" or "sealed"
- winner is the one with highest bid
- BUT winner pays second highest
- best strategy: bid truthfully!

issues

- winner's curse
- signalling
- poor planning
- illegal activities

“winner’s curse”

- winner pays much more than his private value
- problem with all three of the above types of auction
- example:
  - mobile license auction in New Zealand (1994)
  - winner’s bid: \$7M
  - second-highest bid: \$5,000
- Vickrey auctions reduce effect of winner’s curse

signalling

- bidders encode messages in their bids
- example: US mobile licenses
  - most bids were round numbers, e.g., \$25,000,000
  - GTE's bids were not: e.g., \$25,000,483
  - signalling: $4 - 8 - 3 \Rightarrow G - T - E$

poor planning

- example: Australian pay tv licenses
  - anonymous sealed-bid auction
  - winning bidder couldn't be found
  - government didn't anticipate multiple bids or false bidders

illegal activities

- buyer collusion
- auctioneer lying

case study: eBay (1)

- world's largest auction site
- started by collector of "Pez" dispensers
- *e-business auction*
- originally mostly C2C auctions
- company collects *submission fee* up front
- company collects *commission fee* as a percentage of sales

case study: eBay (2)

- process
  - seller registers item description and minimum opening bid price
  - buyers register bids online
  - after price is agreed, traders negotiate other aspects of the trade (e.g.):
    * payment method
    * shipping details
    * warranty
  - designed for C2C

case study: eBay (3)

- seller payment protection plan introduced in 2002
  - credit card protection
  - secure processing
  - privacy
- new directions
  - `http://www.ebaybusiness.com`
  - business-related listings
  - geared for B2B