

**CS395T**  
**Agent-Based Electronic Commerce**  
**Fall 2006**

**Peter Stone**

Department of Computer Sciences  
The University of Texas at Austin

Week 2a

# Logistics

---

- Mailing list and archives

# Logistics

---

- Mailing list and archives
- Submitting responses to readings

# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)

# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)
  - by 10pm

# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)
  - by 10pm
  - cc David (on everything!)

# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)
  - by 10pm
  - cc David (on everything!)
  - include page numbers

# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)
  - by 10pm
  - cc David (on everything!)
  - include page numbers
  - Won't respond to all



# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)
  - by 10pm
  - cc David (on everything!)
  - include page numbers
  - Won't respond to all
- Trying to permit registration

# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)
  - by 10pm
  - cc David (on everything!)
  - include page numbers
  - Won't respond to all
- Trying to permit registration
- Get on the presentation schedule

# Logistics

---

- Mailing list and archives
- Submitting responses to readings
  - no attachments, strange formats
  - use specific subject line (see web page)
  - by 10pm
  - cc David (on everything!)
  - include page numbers
  - Won't respond to all
- Trying to permit registration
- Get on the presentation schedule
- Any questions?

# Beauty Contest Results

---

- Winners: Todd Hester and Edmund Wong (20)

# Klemperer

---

- A survey
- Purpose: a broad overview of terms, concepts and the **types** of things that are known

# Klemperer

---

- A survey
- Purpose: a broad overview of terms, concepts and the **types** of things that are known
  - Geared more at economists; assumes some terminology
  - Results stated with not enough information to verify
  - Apologies if that was frustrating

# Klemperer

---

- A survey
- Purpose: a broad overview of terms, concepts and the **types** of things that are known
  - Geared more at economists; assumes some terminology
  - Results stated with not enough information to verify
  - Apologies if that was frustrating
  - May return to finer points in later weeks

# Perspective

---

- Makes simplifying assumptions about bidders for purposes of analysis



# Perspective

---

- Makes simplifying assumptions about bidders for purposes of analysis
  - Bidder perspective also important (incomplete info)
  - Empirical results also important!

# Perspective

---

- Makes simplifying assumptions about bidders for purposes of analysis
  - Bidder perspective also important (incomplete info)
  - Empirical results also important!
- Not going to answer all of your questions
  - Some answered in later readings
  - Some details not relevant to later

# Some Terms

---

- Ascending bid/open/oral/English auction
  - variant: Japanese auction
- Descending bid/Dutch auction
- First-price sealed-bid auction
- Second-price sealed-bid/Vickrey auction

# Some Terms

---

- Ascending bid/open/oral/English auction
  - variant: Japanese auction
- Descending bid/Dutch auction
- First-price sealed-bid auction
- Second-price sealed-bid/Vickrey auction
- Double auctions

# Some Terms

---

- Ascending bid/open/oral/English auction
  - variant: Japanese auction
- Descending bid/Dutch auction
- First-price sealed-bid auction
- Second-price sealed-bid/Vickrey auction
- Double auctions
- Surplus = value – cost
- Reserve price
- All-pay auctions

# Bidder value models

---

- private-value model
- pure common-value model
- general value model

# Bidder value models

---

- private-value model
- pure common-value model
- general value model
- SIPV (symmetric, independent, private value)

# Bidder value models

---

- private-value model
- pure common-value model
- general value model
- SIPV (symmetric, independent, private value)
- signal, value, valuation, type
- atomless distribution



# Auction Efficiency (from Milgrom)

---

In the asymmetric case, first-bid auctions aren't necessarily efficient in equilibrium.

# Auction Efficiency (from Milgrom)

---

In the asymmetric case, first-bid auctions aren't necessarily efficient in equilibrium.

- Bidder 1 has value of \$101
- Bidder 2 has value of \$50  $\frac{4}{5}$  of time, \$75  $\frac{1}{5}$  of time

# Auction Efficiency (from Milgrom)

---

In the asymmetric case, first-bid auctions aren't necessarily efficient in equilibrium.

- Bidder 1 has value of \$101
- Bidder 2 has value of \$50  $\frac{4}{5}$  of time, \$75  $\frac{1}{5}$  of time
- Note: Bidder 2 is the “weaker” bidder

# Auction Efficiency (from Milgrom)

---

In the asymmetric case, first-bid auctions aren't necessarily efficient in equilibrium.

- Bidder 1 has value of \$101
- Bidder 2 has value of \$50  $\frac{4}{5}$  of time, \$75  $\frac{1}{5}$  of time
- Note: Bidder 2 is the “weaker” bidder
- Bidder 1 bids \$51 gives \$50 profit  $\frac{4}{5}$  of the time, so expected profit of \$40

# Auction Efficiency (from Milgrom)

---

In the asymmetric case, first-bid auctions aren't necessarily efficient in equilibrium.

- Bidder 1 has value of \$101
- Bidder 2 has value of \$50  $\frac{4}{5}$  of time, \$75  $\frac{1}{5}$  of time
- Note: Bidder 2 is the “weaker” bidder
- Bidder 1 bids \$51 gives \$50 profit  $\frac{4}{5}$  of the time, so expected profit of \$40
- Bidder 1 bids more than \$62 gives less profit even if he wins

# Auction Efficiency (from Milgrom)

---

In the asymmetric case, first-bid auctions aren't necessarily efficient in equilibrium.

- Bidder 1 has value of \$101
- Bidder 2 has value of \$50  $\frac{4}{5}$  of time, \$75  $\frac{1}{5}$  of time
- Note: Bidder 2 is the “weaker” bidder
- Bidder 1 bids \$51 gives \$50 profit  $\frac{4}{5}$  of the time, so expected profit of \$40
- Bidder 1 bids more than \$62 gives less profit even if he wins
- So if bidder 2 has value of \$75, she can win by bidding \$62.

# Auction Efficiency (from Milgrom)

---

In the asymmetric case, first-bid auctions aren't necessarily efficient in equilibrium.

- Bidder 1 has value of \$101
- Bidder 2 has value of \$50  $\frac{4}{5}$  of time, \$75  $\frac{1}{5}$  of time
- Note: Bidder 2 is the “weaker” bidder
- Bidder 1 bids \$51 gives \$50 profit  $\frac{4}{5}$  of the time, so expected profit of \$40
- Bidder 1 bids more than \$62 gives less profit even if he wins
- So if bidder 2 has value of \$75, she can win by bidding \$62.
- That's an inefficient outcome