The Impact of Information Diffusion on Bidding Behavior and Seller Profit in Name-Your-Own-Price Markets (Oliver Hinz and Martin Spann)

Rufus Pollock (Discussant)

Department of Economics

University of Cambridge

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Does Information Diffusion Impact on Bidding Behaviour in Name-Your-Own-Price Auctions in the *Real World*?

(In the Way We Would Expect)

How Should a Seller Design Name-Your-Own-Price Environments To Take Information Diffusion into Account (Level of Reservation Price / Forums / etc)

The Paper

Name-Your-Own-Price Auctions

- Many homogenous goods, one bidder per good and single bid per person
- Secret reservation price (RP) common across goods
- Bounds on reservation price impacts on bids
  - Lower bound on RP raises bids
  - Upper bound on RP lowers bids
- Information on accepted (rejected) bids gives upper (lower) bound on RP
- More information reduces difference between bid and RP

Predictions and Results: Basic Rationality

- Predictions
  - P1: Information about rejected bids leads to higher bids
  - P2: Information about accepted bids leads to lower bids
  - P3: Information reduces difference between bid and RP
  - P4: More reliable information reduces difference
  - P5: Greater diversity of information reduces difference
- Results
  - Test in an experimental setting
  - Most propositions confirmed

Predictions and Results: Social Networks

- Predictions
  - H1: More connections $\Rightarrow$ more info $\Rightarrow$ reduced difference
  - H2: Greater betweenness $\Rightarrow$ more diversity of info $\Rightarrow$ reduced difference
  - H3: Higher clustering $\Rightarrow$ more info (sharing) $\Rightarrow$ reduced difference
- Results
  - Experiment in a online-world (HabboHotel)
  - H1: o/+, H2: +, H3: -

Mechanism Design: Simulations

- What is the best reservation price?
- What is the impact of a forum which allows information sharing?
- Investigate under various belief scenarios using simulations
- Results
  - Information diffusion $\Rightarrow$ raise reservation price
  - Forums good if buyers underestimate price
  - Heavily dependent on form of beliefs

Comments

The Paper

- Nice paper with clear predictions and good tests
- Good to have confirmation of basic predictions
- But real interest (IMO) lies in the ‘real-world’ results
  - HabboHotel setup is really nice
  - Good results
- Simulation results: interesting but ...
- Concerns regarding NYOP setup (which apply generally)

Rationality in the HabboHotel

- Rational buyers?
  - Who needs a white plastic chair in an online world?
  - A large number of bidders bid 20 Euros
  - Endogenizing WTP ...
  - Participation in social network and status
  - Clustering: need what everyone else has (drives up WTP)
- Control for full vs. partial members (wealth differentials)
- Use questionnaire data to update analysis (who used their network?)

Name-Your-Own-Price (NYOP) Auctions

- Slightly unusual: don't compete against other bids
- Driving factor is need to exceed reservation price
- Bidder: trade-off prob of winning vs. lower post-win surplus
- More information $\Rightarrow$ bid price closer to RP
  - Perfect information: bid RP $\Rightarrow$ standard monopoly pricing
  - Information diffusion $\rightarrow$ monopoly pricing
- But let's ignore information diffusion ...

Why Use NYOP rather than Monopoly Pricing?

- Auctions good when a single good and multiple buyers
- Here: only one bidder and homogenous goods ...
- Inconsistency in beliefs is a possibility:
  - Unit set of buyers WTP $U[0, 10]$, believe threshold is $U[5, 10]$
  - MC = 0 and seller sets $RP = MC = 0$
  - Then NYOP drives up revenue

- Two factors making NYOP better:
  - Revenue from those who would be excluded by monopoly pricing
  - Higher prices from buyers
- But this raises problems with strategic behaviour
  - Ex post: seller would accept any bid above cost
  - But knowing this bidders would bid MC
  - Public price solves commitment problem ...
  - With NYOP: need to commit to a secret RP that is inconsistent ex post

Name-Your-Own-Price Has Problems

- Inconsistency itself is troubling ...
  - Why should buyers be predictably 'biased'
  - With consistent beliefs monopoly pricing better than NYOP
- Even with inconsistency monopoly pricing might be better
  - cf. the simulations: monopoly pricing does better!
  - Similarly in HabboHotel might monopoly pricing be better
- So why use NYOP (even without information diffusion)?
- If not using NYOP information diffusion issues go away and social networks do not matter ...