



TECH FIRMS IN THE MIDDLE

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*OPINIONS ARE MY OWN AND DO NOT REPRESENT THE VIEWS OF MY EMPLOYER

MULTI-SIDED MARKET PLACES

- Many tech firms operate as multi-sided marketplaces
- Value generated depends on the number of participants on each side
 - More games \leftrightarrow More gamers
 - More readers \leftrightarrow More advertisers
- Typically monetized through fees or advertising
- Examples: Newspapers, Video Game Systems, Operating Systems
- See Rysman (2009) “The Economics of Two-Sided Markets.”

TECH FIRMS PLAY MATCHMAKER

- Key feature of tech marketplaces is matching consumers to suppliers
 - Riders to Drivers
 - Viewers to content
 - Shoppers to products
- A large number of participants on each side requires a discovery mechanism
 - Random matching is likely a bad experience
 - Information on preferences is hard to get
 - Personalization tries to figure out better matches based on previous behavior
- How matching is done becomes economically relevant

EXAMPLE 1: ONLINE ADS

- Ads are disruptive
 - Video ads: Interrupt content
 - Search ads: If ranking is correct, then ads must be weakly worse
- How should the firm tradeoff that disruption vs ad payment
 - Valuation may depend on how disruptive ad is
 - Disruption might be context specific
- Can use value to set reserve prices in auctions or prices for ads

EXAMPLE 2: NEW PRODUCT RANKINGS

- Are product rankings right?
 - Pandora / Netflix “thumbs” (collaborative filtering)
 - Click prediction
- Spiral of success
 - Show up high in results → more clicks regardless of quality → show up higher in the future
 - Might not be because of inherent quality but history dependence
- Leads to a cold start problem for new results
 - If you show them at the top, quality signal is distorted
 - If you show them too low, you never get any signal on their true quality
- Economic measures of quality (hedonics) could help jumpstart the ranking
 - Product features may be ill defined or not recorded
 - Products may have lots of features that are hard to use in standard models (description text)

CHALLENGES

- Personalization takes data. GDPR / CA Consumer Privacy Act allow users to purge their data
 - Not obvious that restricting use of data is better for consumers
 - Dube & Misra “Personalized Pricing and Customer Welfare” (2019, wp)
- Controlling discovery mechanism is another way firms influence behavior
 - What sort of inefficiencies does that create?
 - Hodgson & Lewis “You Can Lead a Horse to Water...” (2020, wp)