Yale SCHOOL OF MANAGEMENT

Digital Platforms: Market Structure and Competition

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CRESSE July 2019

Characteristics of Digital Platforms

- Economies of Scale (low or zero MC)
- Economies of Scope (installed base)
- Increasing returns to data
- Network externalities, so prone to "tipping"
- Often two-sided

⇒Large firms => concentrated market structure
⇒Competition *for* the market, rather than *in* the market

Consumer behavior increases market power

Behavioral economics literature: 30 years old, Nobel prizes, theory and empirics

- Behavioral biases
  - Status quo or default bias
  - Impatience or hyperbolic discounting

So, consumers do not

  - Scroll down to see more search results
  - Multi-home on a competing platform
  - Change default settings, replace default apps
  - Test if results would be different using different service

=> Makes entry expensive; entrant finds consumers hard to attract

=> Little entry, so high concentration persists

Entry is valuable

Entry increases competition

- whether the entrant is vertical or horizontal,
- successful, nascent, or potential,
- or another large platform in an adjacent space.
- Any kind of entrant provides choice, different features different quality; or the threat of those options spurs the incumbent
-

⇒ lower prices, higher quality and more innovation

⇒ Entry raises consumer welfare

Lack of Entry

- If market structure is concentrated, competition comes from entry and overthrow of incumbent
- Difficult:
  - Entry barriers like network effects, scale
  - Entry barriers like myopic and inertial consumers
  - Anticompetitive conduct like exclusive contracts, bundling, technical rules
  - Acquisition of small entrants by incumbent platform that represent nascent or potential competition
- One of the most helpful policies a government can adopt: find a way to lower entry barriers, protect entrants, induce more entry

Harms from market power

- Prices:
  - Advertisers may pay markups for online ads
  - Consumers may pay markups for services
- Quality:
  - Digital businesses learn by using high-dimensional, large datasets to explore every nook and cranny of consumers' behavioral biases
  - A platform uses this learning to respond to user's data in real time and offer targeted sales (e.g. makeup to depressed teenagers).
  - Framing, nudges, and defaults can direct a consumer to the choice that is most profitable for the platform, but represents low quality content for the consumer

Free

- "Free" is not a special zone where economics or antitrust do not apply
- Free means the money price is set to zero, rather than $2 or -$2, and other, non-monetary, conditions could be required
- A competitive price could be negative: the consumer's data is so valuable that the platform would pay money as well as free services to get it
- It could be that insufficient competition results in a platform marking up this negative competitive price to zero
- In the US today, digital services are bartered by platforms in exchange for consumers' privacy and data
- In principle, both services and data have market prices

Harm to innovation

- Insufficient competition and entry result in harms to investment and innovation
- Economic research concludes that anticompetitive creation or maintenance of market power will cause a reduction in the pace of innovation
- The lessening or blocking of innovative entry is of particular concern given its value to consumers

=> Critical harms learned from past tech antitrust cases, IBM and Microsoft, was the harm from control of the direction of innovation by a powerful company

Incentives of Venture Capitalists

- A VC has little incentive to invest in an innovative startup that will implicitly or explicitly compete head-on with a tech giant
  - Will be excluded by platform (e.g. Vine)
  - Will be bought by platform (e.g. Instagram).
  - To the extent acquisition is profitable, it incentivizes duplication (e.g. pay for delay) which is inefficient
- If competition enforcement tougher in both mergers AND exclusion, then harder to be bought by platform but easier to take share from platform
  - Harder to get bought by platform → less profit and innovation
  - Easier to take share from platform → more profit and innovation

Complement or Substitute?

- Entry barriers and power of platform makes investing in a substitute risky.
- VC may want to fund a complement and sell its business to the platform at an early stage
- Exit event creates incentive to make complements, not substitutes
- However, often it is not clear whether startup is a complement or substitute.
  - Instagram is photos – complement to FB of text only?
  - Or, Instagram is better, differentiated, competing social media site?

Disintermediation by complement

- If a platform's complement is able to directly access and serve the platform's customers, that complement might disintermediate or replace the platform
- Platform will therefore position itself as a mandatory bottleneck between partners and customers
  - Platforms can supply key complements themselves
  - Platforms can steer customers to complements of most benefit to them
  - Platforms typically maintain control over the user relationship to prevent disintermediation
- This concern must be taken into account in merger analysis. Is a current complement a future threat to an existing platform? And is this the reason for the acquisition or conduct?

Solutions

- While some markets may self-correct, we conclude that self-correction in markets dominated by large digital platforms is unlikely
  - Prudent public policy should not rely on it
  - Risk and cost of inaction: technology moves fast and situation may worsen
- Two basic options: Antitrust and Regulation
  - Antitrust laws exist, but US has not enforced these to the extent of their capabilities in recent decades, nor developed experience using them on digital platforms (in contrast to the EU for example)
  - There is no US regulator

Tech platforms are challenging for existing antitrust enforcement

- Markets tip and economies of scale are large, so even effective antitrust enforcement is unlikely to generate fragmented markets
- Nonetheless, enforcement that protects competition on the merits in the first stage and prevents exclusionary conduct in the second stage would increase competition
- Antitrust law and its application by the courts over the past several decades have reflected the now outdated learning of an earlier era of economic thought, and the direction of change in recent years continues to make effective enforcement harder
  - Likely requires reforms to the law
  - Reforms to legal doctrine
  - and improved economic tools

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  - Likely requires reforms to the law (Congress must pass)
  - Reforms to legal doctrine (will take decades of successful cases)
  - and improved economic tools (academics can work on these now)

Specific antitrust tools needed

- The role of behavioral biases in a) the creation of barriers to entry and market power and b) effect on the quality of content
- The measurement of quality in light of zero money prices, and implications for quality-adjusted prices
- Tools to assess the impact of potential competitors and nascent competition on consumer welfare
- Competition on the platform. Both
  - A complement adding value / disintermediating the platform
  - The platform competing with /foreclosing an application
- Market definition: what are consumers substituting between, competition on the platform between complements, competition between platforms
- Better articulation of innovation harms

Behavioral

- Stress long literature, established results, Nobel Prizes
- Existing regulations already respond to these results (Cass Sunstein) in mortgages, credit cards, defined contribution plans, gambling, cigarettes, etc
- More translational work showing defaults create barriers to entry and market power
- Foundational and translational work needed on how preferences affect quality of content consumed, esp in advertising-supported platforms

Quality adjusted prices

- Familiar, established, often used as a defense
- No problem with theory – everything has a price in principle
- Need more empirical methods to measure quality
  - Useful settings with individual level data (discrete changes to privacy or capabilities, e.g. link traffic data to calendar entries)
  - Translational work
- More methods to value data provided by consumers
  - Big datasets, accurate prices
  - Robust methods

Potential competition

- Consensus that most jurisdictions don't capture this
- Large amounts of uncertainty must be accepted; incorrect to conclude that uncertainty means optimal policy is to allow all mergers
- Critical to value entry in light of the consumer surplus it will create which will fall with the competitiveness of the status quo (e.g. if FB=99% then entrant is very valuable)
- Methods?
- Data?
- Do we need to use probabilities? (big debate)

Competition on the platform

- Microsoft case covers:
  - Complement threatens to disintermediate the platform which then forecloses
- Harder:
  - The platform opens its ecosystem, finds what is popular
  - Enters popular complement/application and competes with own complements to earn more profit
  - "Closes" platform to competing complements
- Quality: integration, data sharing, tech choices; or foreclosure?
- In the US, does antitrust protect a complement?
  - Platform to platform competition? Or "duty to deal"?

Subtle foreclosure

- Limits of antitrust: need clear policy, with documents, years to litigate
- Platform has huge control to provide good service:
- Return to this issue when discuss regulation
- “Fairness”
- Platform to business regulation in Europe
- See no solution in the US

Innovation harms

- Need translational work into the law concerning value of innovation, frontier methods in measuring innovation
- Research on appropriate burden given state of the art methods
- Better articulate that incentive and ability may be best evidence
- Are documents and incentives "economics" or are Greek letters and / or a regression required?

Antitrust necessarily looks back

- Vigorous antitrust enforcement – and successful government litigation – could result in the ability to impose remedies
- These should restore competition that was lost due to the anticompetitive conduct
  - Fines do not change market structure;
  - Ceasing the behavior that "tipped" the market may not result in any change
  - Divestiture can alter market structure: a
    - Acquirer divests the acquisition
    - Digital business divests a dataset (non-rivalrous)
    - Platform divests an application / complement business

Facebook remedies

- When violation of competition law, antitrust authority devises a remedy
- Structural remedies most desirable: e.g. divestiture
  - Calls everywhere for FB to divest Instagram and WhatsApp
- But it is KEY to choose a remedy that restores the lost competition
  - Notice that a fine does nothing to repair market structure
  - Zuck is 'scrambling the eggs' so future divesture unlikely to be effective
  - Better option? mandatory interoperability of FB
- Interoperability eliminates network effects:
  - Entering social media site can offer its customers a data feed from their friends (with permission) who are on Facebook
  - Similar to Tmobile phones connecting to Verizon or Vodophone

Need for regulation as a complement

- Suppose a competition/antitrust authority did succeed in bringing such a case against FB and determined interoperability was the best remedy.
- Can antitrust agency monitor/oversee the remedy?
  - When technology changes quickly, constant updating. Law enforcement not suited.
  - Firm will naturally resist complying, so ongoing monitoring and enforcement capability will be necessary
- Types of remedies where regulator is a complement to antitrust / competition enforcement
  - full protocol interoperability, ongoing data sharing, non-discrimination requirements, unbundling content from a platform, etc

Platforms with bottleneck power

Balance of harms is different for these companies. A regulator could:

- Engage in merger review where the burden of proof falls on the merging parties to demonstrate the transaction increases competition and benefits consumers (combat asymmetric information)
- Enforce against exclusionary conduct: may see behavior and adjudicate more quickly
- Enforce against foreclosure: may see behavior and adjudicate more quickly
- Create automatic data transfer capability that allow users to authorize porting of their data from one service provider to another; monitor compliance
- Should government request, regulator could oversee a mandate for interoperability in any market where market power has become entrenched and threatens long term harm to competition

Regulator creates conditions conducive to competition

- Routinely collect data on digital transactions and interactions, and make public to the extent possible;
  - Allows for real time regulation and observation
  - Researchers can assess the performance of the sector
- Oversee data porting
- Create "light touch" behavioral nudges when they will make markets more competitive; make important dimensions of competition more salient to consumers
- Facilitate open standards in such areas as
  - Micro-payments (to allow negative prices)
  - Digital identities
  - Internet of Things
- Platform to Business regulation

Conclusion

- While there are downsides to both increased antitrust and new regulation (capture, pace of innovation), the costs of no oversight are higher than commonly thought even a few years ago
- The balance of harms has shifted significantly and therefore policy should respond
- Antitrust works well when agencies are quick and courts enforce the law well, but not a complete solution even in that world
- Regulation is needed both for all the non-competition topics still to come in the conference, but also to create a competitive environment, lower switching costs, and protect every type of entrant
- Together, these two policy instruments can create healthy competition in the digital sector