Discussion of Antitrust, Regulation, and User Union in the Era of Digital Platforms and Big Data

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Motivation

- Modern economy is an **information** economy
  - clear that data is valuable to firms
  - less clear data-sharing is costly for customers (i.e., privacy paradox)
- Heightened concerns about role of data in **competition**
  - improved products/experience for customers...
  - but potential for reduced competition and stifled innovation
  - and harm to consumer choice and/or privacy
- Regulatory response has been *local solutions* to a **global** problem
  - e.g., GDPR (EU), CCPA (California), VCPDA (Virginia), CPA (Colorado), GDPL (Brazil), Amended APPI (Japan)
  - different degrees of individual rights / protections
  - with uncertainty, firms often conform to strictest regulation...

This Paper

- Two-period **Hotelling** model of firm competition
  - firms can collect user data to innovate across periods
  - ...but innovation a source of market power via markups
  - amplified by network effects and diff. in data-processing abilities
- Data is **non-rival** and can be shared freely across firms
  - requires cost to collect from users and investment to structure
  - data competitively priced by users who do not internalize externalities
- Examines impact of various data-sharing schemes on **user welfare**
  - regulation: privacy regulation (e.g., GDPR), mandated data-sharing (e.g., open banking)
  - market-based: users sell their data, firms own and can sell data
  - organized data-sharing: user union / user data trust

Key Insights

- Tension between **investment** and **market concentration**
  - firms initially invest a lot and under-price to gain market share
  - initial technological / taste asymmetries among firms are amplified
  - data through quality improvement and network effects can lead to "winner-take-all" dynamics (e.g., Garratt and Lee (2021))
- Customers do not internalize data **externalities**
  - cost of acquiring data $\rightarrow$ higher marginal cost passed to customers
  - exacerbated by non-rivalry of data (i.e., increasing returns)
- Proposed regulatory / market-based remedies **insufficient**
  - neutral: privacy regulation
  - under-investment in data: mandated sharing, customers sell data
  - exacerbation of market power: firm data sale
- **Novel Solution:** User data union / data trust
  - coordinates users *like* a labor union

Understanding Costs of Data-Sharing

- Cost in model is **intrinsic** disutility fungible with consumption payoff
  - constant marginal cost (compared to *increasing* (e.g., Jones and Tonetti (2022)) or *decreasing* (e.g., Ichihashi (2022)))
  - independent of what data is collected and scales (η) in how it is used (e.g., shared between firms)
- Cost in practice also **extrinsic** and likely more nuanced
  - individual's value of privacy mutable and highly context dependent (e.g., Acquisti, John, and Loewenstein (2013))
  - *disconnect* between privacy preferences and privacy actions (e.g., Goldfarb and Tucker (2012), Athey et al. (2017), Tang (2019))
  - those who care most also use services most (Chen et al. (2021))
- Getting costs right important for **policy implications**
  - arguably differentiates data privacy costs from labor disutility

Understanding Costs of Data-Sharing

- Costs **heterogeneous** and **manipulable**
  - 25% of U.S. survey respondents willing to share personal data for benefits/rewards compared to 35% China & 8% Japan (GfK (2017))
  - simple user interface manipulation (*dark patterns*) can increase data protection plan acceptance rates 228% (Luguri & Strahilevitz (2019))
- Several microfoundations for privacy
  - price discrimination (e.g., Acquisti, Taylor and Wagman (2016))
  - data security (e.g., Fainmesser, Galeotti, and Momot (2019))
  - vulnerability (e.g., Liu, Sockin, and Xiong (2020))
  - surveillance and legal liability
- Latter three motivations can induce **deadweight loss** in welfare
  - price discrimination and market concentration can harm user welfare but *improve* allocative efficiency (e.g., matching, screening)
  - potential for **consumer harm** can motivate privacy regulation

Targeting Vulnerable Consumers

Crypto Scams Are Spreading Fast on This Social Media Platform

BY **SARAH HANSEN** *MONEY RESEARCH COLLECTIVE*
JUNE 5, 2022

"Americans have lost more than $1 billion to crypto scams since the beginning of 2021."

Investing in cryptocurrency has made it to the mainstream — and unfortunately, crypto scams have probably invaded your social media feeds.

Commitment and Data-sharing

- Firms in model **cannot commit** to data-usage policy
- Neither can firms in practice...
  - Facebook Δ'd data policies over time (Beacon 2007, ToS update 2008, etc...) & settled w/ FTC for violating privacy promises in 2011
  - Amazon engages in "copycat" practices on two-sided platforms that harm sellers (e.g., Kirpalani and Philippon (2020))
- Lack of commitment suggests even firms ex ante can benefit from a **commitment device**
  - alternative to privacy regulation and market-based solutions
- Novel role for recent innovations in crypto space
  - e.g., *smart contracts* (e.g., Chod and Lyandres (2022)), *decentralization* (e.g., Sockin and Xiong (2022)), privacy-preserving currency (Garratt and Lee (2021))
  - decentralized platform consensus akin to representation by user union

Data-Sharing on Streamr Platform

Discover the Streamr application layer

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Data Unions

Framework to incentivize the creation of crowdsourced data.

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Monetize your real-time data. Build and publish in Core.

Learn more • Visit app ↗

Core app

Connect your wallet to create and manage your streams.

Learn more • Visit app ↗

Network Explorer

Explore live metrics for nodes and streams on the Network.

Visit app ↗

Data-sharing and Competition

- Data-sharing has nuanced relation with competition
  - data-sharing in search can intensify competition (de Cornière (2016))
  - opt-in privacy regulation can entrench monopolies (Campbell, Goldfarb, and Tucker (2015))
  - mandatory data-sharing among lenders can harm welfare (Gehrig and Stenbacka (2007))
- Would be helpful to understand which firms mechanism explains
  - large online platforms or specialized service platforms
  - concerns of ring-fencing of inter-operability (e.g., Guennewig (2021))
- What happens if we start from a position of data entrenchment?
  - arguably firms (e.g., Amazon, Google, Apple, Tesla) are already leaders because of data
  - how to remedy an unequal landscape?

Implementation of User Unions

- Labor unions tailored to workers that sell similar good to firms
  - e.g., AFL-CIO, United Auto Workers, Amazon Labor Union, Starbucks Workers United
  - alignment of interests and worker skill sets / tasks
- Conceivably significant heterogeneity in value and valuation of data
  - users who shared in past likely value same data less
  - different demographics may value same information differently
- Likely a role for many data unions in practice!
  - can potentially overcome monopoly pricing of data (e.g., Acemoglu et al. (2019), Bergemann, Bonatti and Gan (2019))
- How would user unions interact with regulation?
  - e.g., digital equivalent of "Right-to-Work" (e.g., "Right-to-Share")