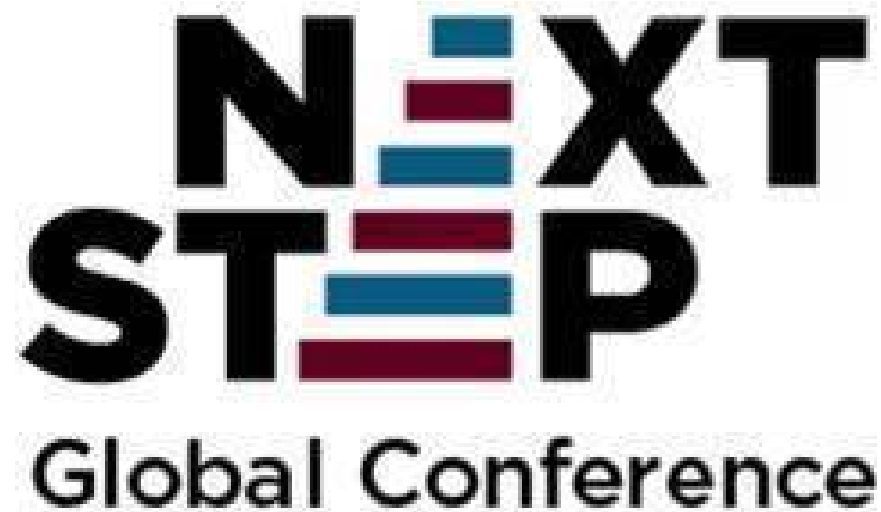


Big Data, Big Tech, and the global economy

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Technological Trends

- Smart phone
- Digital platforms/ecosystems - “digital lifestyle” (COVID)
- Big data, AI, deep learning, recommender systems
- Smart contracts and value chains:
 - contingent payments to minimize credit risk
- Internet of things: payments from machine to machine
- Token (instead of account-based) – DLT

Is data the new oil?

- Yes, key strategic “input”
- No,
oil is a private good (excludable, rivalrous),
information/data is non-rival?

	excludable	Non-excludable
Rivalrous	Private Goods	Common Goods
Non-rivalrous	Club Goods	Public Goods

- Type of information
 - Individual information
 - Statistical information (correlation)
 - X-ray of an individual itself vs. what combination of pixel allow to identify sickness

Inverse Selection (Brunnermeier, Lamba, Segura-Rodriguez)

The New York Times

Opinion | [THE PRIVACY PROJECT](#)

Insurers Want to Know How Many Steps You Took Today

The cutting edge of the insurance industry involves adjusting premiums and policies based on new forms of surveillance.

By Sarah Jeong

Ms. Jeong is a member of the editorial board.

1. Inversion of “Information Advantage”

- Information advantage for
 - Borrower
 - Insurance client, ...
- soon, for
 - Lender (platform) “will know more about me
 - Insurance company than I know about myself”
 - Asset managers, ...
- Customer has multiple attributes and knows most of them, but only platform can better connect/statistically infer them
 - Traditional example:
 - I like a red car
 - Insurance companies knows (from big data) that drivers of red cars are more accident prone

- Hard information
- Statistical information

From Adverse Selection to “Inverse Selection”

1. Inversion of “Information Advantage”

■ Information advantage for

- Borrower
- Insurance client, ...

soon, for

- Lender (platform) “will know more about me than I know about myself”
- Insurance company
- Asset managers, ...

■ Results:

1. Intricate price discrimination using algorithms

- Asymmetric information
- Size/dominance



Big data

2. Averaged investor info disadvantaged to large asset managers

- Concentration in asset management
- AI/algorithms to read data and devise strategy and asset allocation.
- Undermines efficient markets hypothesis

“Inverse Selection”

1. “Big is better” AI, Machine/Deep Learning

■ Economies of Scope

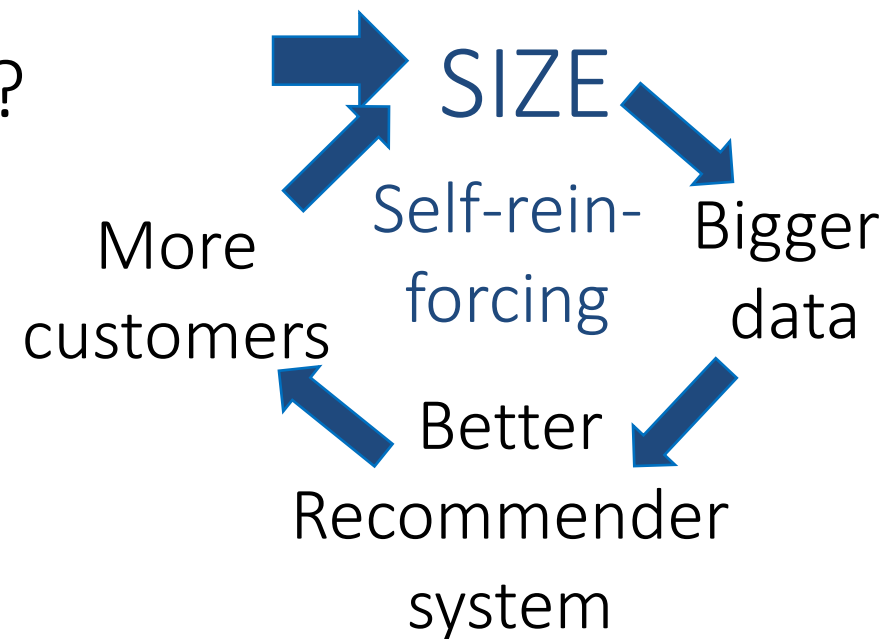
- Unstructured data, textual data
- Social media data
- Payment system data
- Diversity

“statistical information”



Scale

- Diminishing returns to scale?

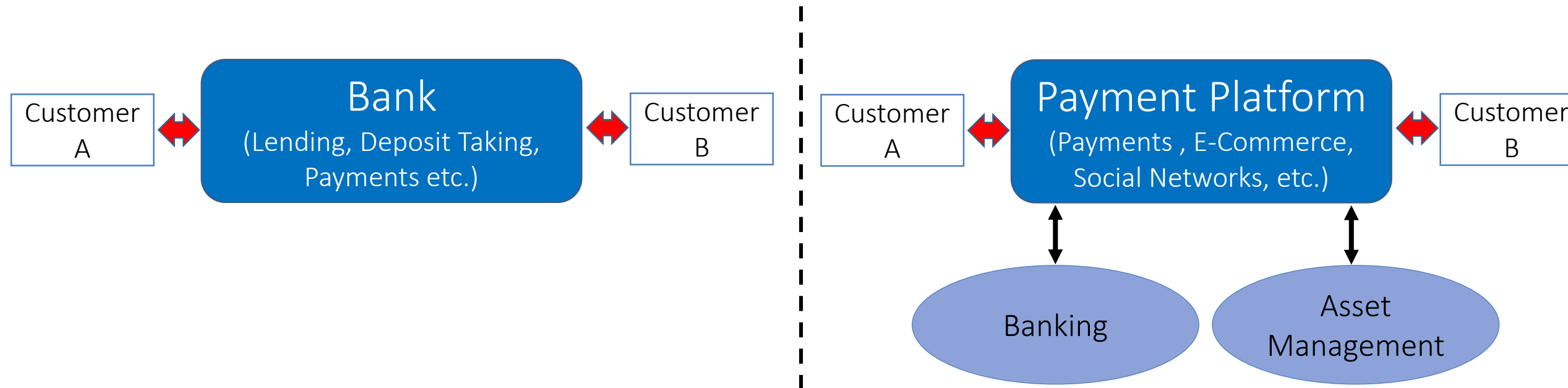


AI, ML/Deep learning vs. Bayesian approach

- Information **rent**/consumer rent vs. better recommender system
 - Information advantage
- ML/Deep learning/neural networks
 - No structural assumption
 - Good if truth can be ex-post verified
 - Ignores a lot of valuable input information
- Bayesian approach
 - Imposes some **prior** structure

2. The rise of platforms

- Aggregation of diverse activities in closed ecosystem
- Capture of diverse data
- E.g. payments: can change the structure of financial intermediation



- Fundamental challenge for banks' business model
 - Bundling with other activities (on platforms)
 - Unbundling of activities (cream skimming by FinTech)

Markus' intro on Privacy

- Information **rent**/consumer rent vs. better recommender system
 - Information advantage
- In the private sphere one can one's authentic self
- **Privacy and Brainstorming**
 - Private sphere involve people who know me well already
(who have a tight prior and hence their posterior doesn't shift)
 - “free to think/bold brainstorm openly”
fosters creativity without distorting self-image
 - Overcome “cancel culture”
- “Free to **plot a revolution**”
 - Is privacy regulation (privacy of letters) helping/harming democracy?

Policy issues

1. Does “info power reversal” induce us to rethink **privacy** regulation?
Should algorithms be made public/transparent? With a delay?
2. Avoid **privacy rules** that impose **digital borders**
and segment global financial markets, in US, China, Europe?
 - How to keep European market attractive for global investors?
3. Slow down **shift to platforms** at the risk of
losing the ability to remain **standard setter**?
4. Enforce **interoperability** across competing platforms or/and
make part of **data public good**? (open banking)
 - Incentivize data collection/analysis

Thank you!

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