

Virtual Competition



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Changing Market Reality



2003 - *BusinessWeek* - “Is Wal-Mart Too Powerful?”

2016 - Walmart announced its closing 269 stores.
\$2 billion investment in online commerce

Walmart’s revenues in 2014 were five times greater than Amazon’s (\$486 billion vs. \$89 billion).

But Amazon’s stock market value as of mid-2015 had eclipsed Walmart’s by over \$70 billion.

Amazon's Net Sales



\$34 billion in 2010,
\$48 billion in 2011,
\$61 billion in 2012
\$74 billion in 2013,
\$88.9 billion in 2014,
\$107 billion in 2015.

The fastest company ever to reach \$100 billion in annual sales.



amazon Prime instant video



Trends



- Online growth *v* Brick and mortar.
- Retailers/supermarkets diversify to make use of retail space. Shift from goods to services.
- Retailers/supermarkets invest in online tools.
- Online retailers invest in fast delivery and click and collect via multiple channels.

The Dynamics of Competition



The Promise of the Algorithm-Driven Economy

- Transparency and flow of information
- Lower Search Costs
- Dynamic competition
- Entry and Expansion
- Dynamic pricing
- Disruption and Efficiencies

- The Rise of Big Data and Big Analytics

The Perils of the Algorithm-Driven Economy



Competition, as we knew it -- the invisible hand of competition -- is being displaced in many industries with a digitalized hand.

- Collusion
- Discrimination
- Frenemy

The Collusion Analytical Framework



- **The Messenger Scenario**
 - The Algorithm as an Intermediary
- **Hub and Spoke**
 - Intentional and unintentional use of algorithms to align price.
 - *Eturas and Others*
- **Tacit Collusion on Steroids: The Predictable Agent**
 - *Fast* predictive & similar analytics
 - Adopt a similar approach to Mergers review?
- **God View and Artificial Intelligence**
 - Big data and big analytics

Behavioural Discrimination



- Price Discrimination and dynamic pricing.
 - Differential pricing and limited arbitrage
- ‘Almost’ perfect discrimination.
 - Insufficient Data
 - Predictability and (Ir)rationality
 - Sample Size

Behavioural Discrimination



- Controlled Ecosystems: *The Truman Show*
- The Rise of “Almost Perfect” Behavioural Discrimination
 - Over 100 biases,...
 - Decoys, price steering, complexity, drip pricing ...
- Minimize the Perceived Unfairness through Framing Effects

Frenemies



- The Dynamic Interplay among Frenemies
- Extraction and Capture
- The new Gatekeepers

AI as your trusted alter ego

Enforcement

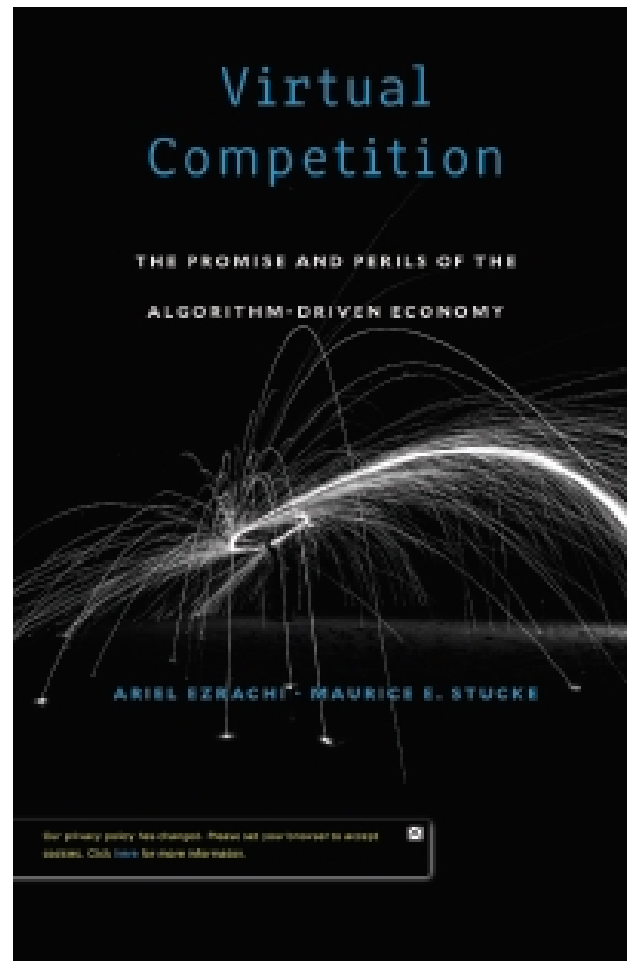


- Competition law
 - Conceptual and practical challenges.
 - Identify the adequate level of intervention.
- Privacy laws
- Customer Empowerment
- Ex-ante measures

Food for thought



- To what extent does the “invisible hand” still hold sway?
- What are the effects on choice and competition ?
- The end of competition as we know it.
- In markets continually manipulated by bots and algorithms, is competitive pricing an illusion?
- *As power shifts to the hands of the few – what are the risks to our democratic ideals, and our economic and overall well-being?*



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