

Can Computers Collude and Discriminate?



Pros and Cons 2016
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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

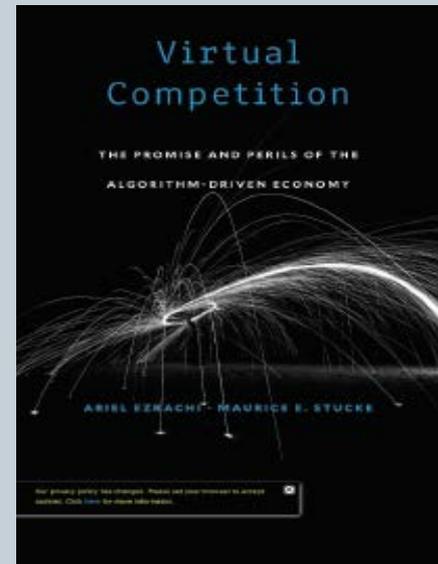
- The Rise of Big Data and Big Analytics

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
- Limitations to perfect discrimination.
 - Insufficient Data
 - Predictability and (Ir)rationality
- Controlled Ecosystems: *The Truman Show*
- The Rise of “Almost Perfect” Behavioural Discrimination
 - Over 100 biases,...
 - Decoys, price steering, complexity, drip pricing ...

The digital butler



- **The Digital Butler**

“The goal is to build a personal Google for each and every individual”
Sundar Pichai, Google’s chief executive

- **Entry barriers - data-driven network effects:**

- Traditional Direct network effects.
- Spill-Over network effects.
- Trial-and-Error (learning by doing).
- Scope of Data.

- **The purist butler?**



WHAT YOU NEED. WHEN YOU NEED IT.

But what about disruptive innovation ?



The formidable market forces will fix it,...

‘In Silicon Valley a handful of giants are enjoying market shares and profit margins not seen since the robber barons in the late 19th century.

“**Competition is for losers**” says Peter Thiel, a co-founder of PayPal, a payments system, and the first outside investor in Facebook.’

The Economist , Sep 17, 2016 (The superstar company)

Intellectual capture

Defenses used to shield the giants include:

Network effects, interconnectivity, M&A, deep pockets,....



Enforcement



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

- EU Commission 'e-commerce sector inquiry preliminary report'
- CMA 'digital comparison tools' market study and possible subsequent market Investigation.
- OECD, EDPS, House of Lords, Joint France/German Report

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?
- How ‘stable’ or ‘sponge-like’ is our competition law analysis?

*As power shifts to the hands of the few –
what are the risks to our democratic ideals,
and our economic and overall well-being?*

