

# Competition and digitalization - *Recent evolution*

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# Competition dynamic

Significant benefits,... *but* concerns over virtual competition

- ▶ Network effects
- ▶ Economies of scale and scope
- ▶ Data as critical input
- ▶ Advanced analytics (algorithms) and data collection
- ▶ Asymmetry of information and analytical power
- ▶ Key gate keepers
- ▶ Stealth - tracking, harvesting, targeting and manipulation
- ▶ Zero price markets and quality degradation

Aggregated effect



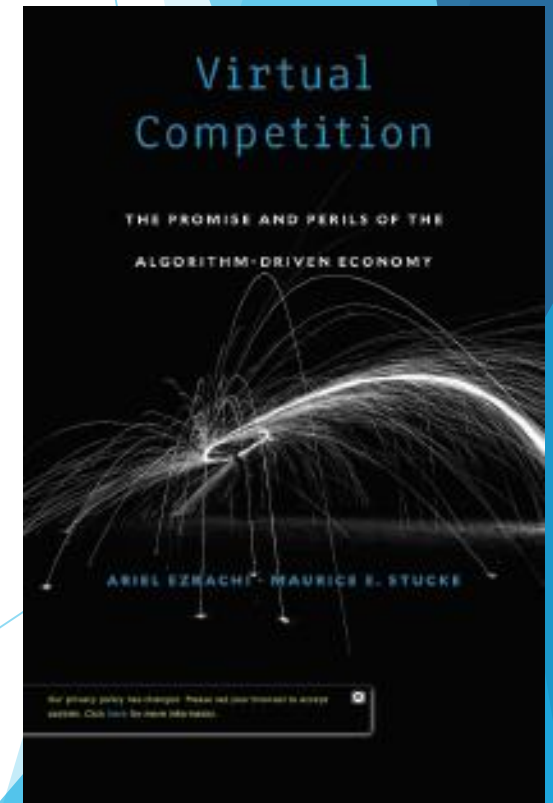
# OK,... *but what's new?*

- ▶ Aggregated effect,.... Tipping effect  
*Network effects, limited (true) outside options, control of ecosystem, innovation 'Kill zones', ...*
- ▶ Limited competition in key markets
- ▶ Competition for markets requires significant innovation,...
- ▶ Sustained market power
- ▶ Market power below threshold
- ▶ Change to competition dynamics



## *Hub and Spoke*

1. Intentional v incidental.
2. Use of same algorithm.
3. Use of same provider - A2I ...
4. Challenge - Identify a threshold of illegality
5. "Avoid price wars"

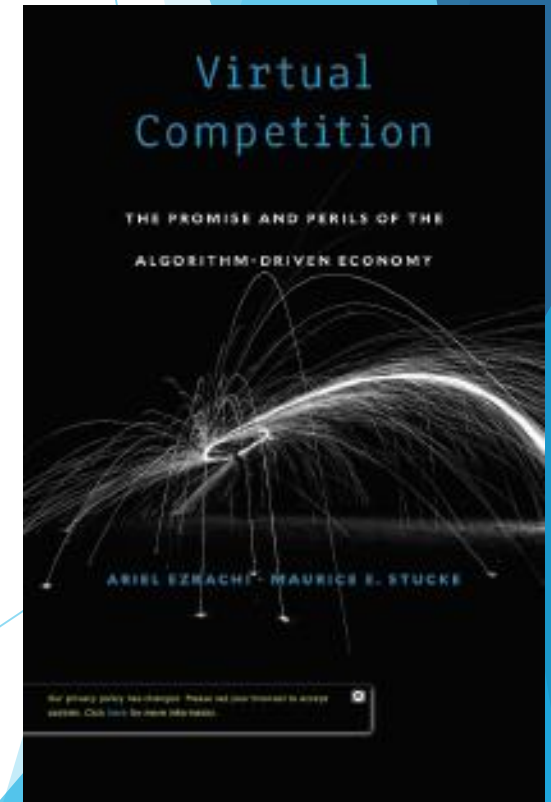


# Tacit collusion

Relevant for transparent concentrated markets with entry barriers, homogeneous products, no brand recognition or loyalty.

- ▶ ‘Simple’ algorithm-stabilising-mechanism
- ▶ Monitoring algorithms
- ▶ Transparency | Stability | Speed | Wider participation.

Consider increased use of algorithm and increased market concentration.



# Coordination problem

Views expressed by some economists - based on experimental observations

The important role of communications in stabilizing and optimizing collusion.

Firms are unlikely to develop a mutual understanding over a collusive strategy absent direct communication in the initiation phase.

The number of collusive equilibria present in a repeated game defies simple alignment of price

As a result →

When we observe what appears to be tacit collusion in these markets, it is likely the result of illegal human communications.

SUSTAINABLE AND UNCHALLENGED ALGORITHMIC TACIT COLLUSION

Available on SSRN

# Coordination problem

The law accepts parallel behavior as possible outcome under specific market conditions

Tacit collusion falls outside the scope of Section 1 of the Sherman Act and Article 101 TFEU.

It is only when parallel behavior cannot be explained as the outcome of tacit collusion (or due to other factors), that it may serve as proof of illegal collusion.

“Competitors in concentrated markets watch each other like hawks.”

- ▶ *CISAC v Commission*
- ▶ Imperial Chemical Industries (ICI) v Commission (Dyestuffs)

# A gap?

## Legal explanation -

If one were to reject the prevailing legal viewpoint, we may quickly shift to a Type I error (false positive).

If anticompetitive conscious parallelism/tacit collusion is considered implausible without communication, the court could infer communications.

If the skeptics are right, humans have somehow successfully skirted antitrust liability for decades by disguising their communications. No point in using algorithms, as humans have cracked the system.

## Market explanation -

Misalignment between market realities and the experimental evidence that some economists rely upon.

“Industry awareness”

## Current work with Q-learning ...

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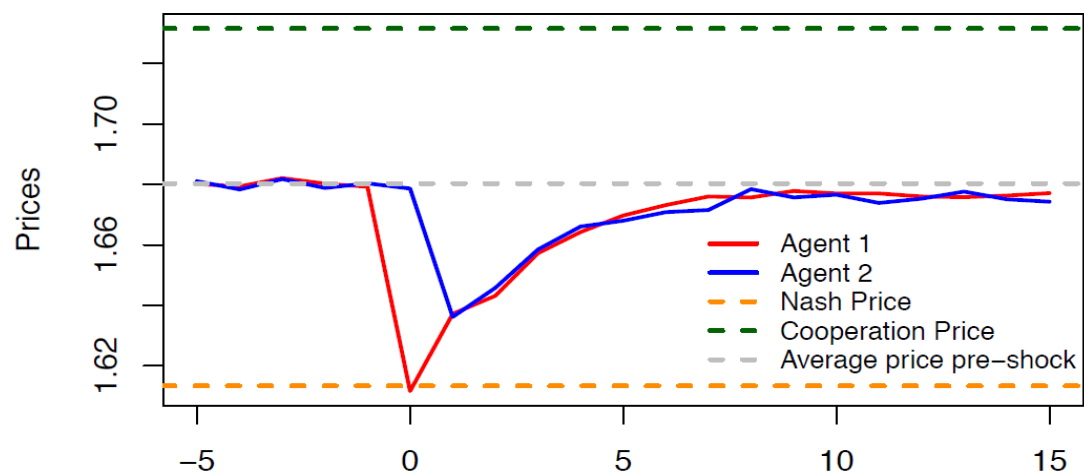
Available on SSRN



# *Q-learning*

- ▶ Timo Klein, Amsterdam
- ▶ Giacomo Calzolari, EUI

Impulse responses, average prices



Source: Calvano, Calzolari, Denicolò and Pastorello 'Q-Learning to cooperate'

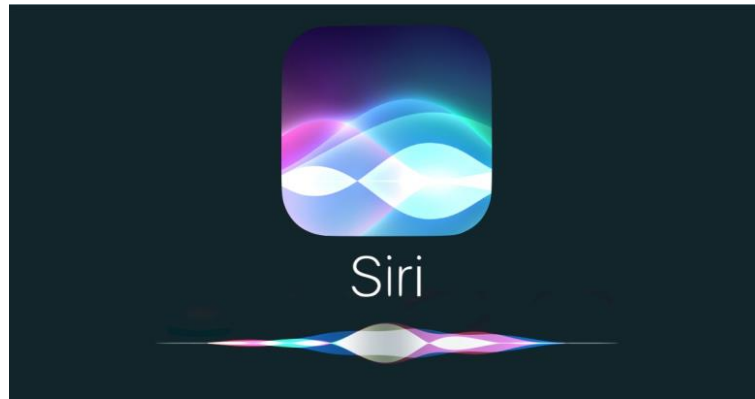
# Policy considerations as we look to the future

- ▶ What is the market price?
- ▶ What amounts to unilateral action?
- ▶ Same threshold for *Algorithmic* and *Human* tacit collusion ?
- ▶ Is the legal concept of agreement outdated for computer algorithms?
- ▶ How can the agencies identify when algorithmic collusion occurs, especially when pricing is dynamic?
- ▶ Should companies have an affirmative duty to program the computers so as to not tacitly collude?

# Behavioural Discrimination

- Controlled Ecosystems: *The Truman Show*
- *The invisible hand being pushed aside by the digitalized hand.*
- Friction and outside options.
- Exploit emotional bias. ...*"moments when young people need a confidence boost."*... *"insecure," "defeated," "anxious," "silly," "useless," "stupid," "overwhelmed," "stressed," and "a failure."*
- 
- The role and limits of digital comparison tools (DCTs)
- Fairness as a limit of behavioral discrimination.
- Minimize the Perceived Unfairness through Framing Effects

# The Digital Butler



WHAT YOU NEED. WHEN YOU NEED IT.



# Policy considerations

- ▶ Is this a competition problem?
- ▶ Consumer protection problem?
- ▶ Welfare effects...
- ▶ Price effects...
- ▶ Welfare effects -
  - Third degree or first degree price discrimination?
- ▶ Empower consumers?
- ▶ What is the market? How wide?



# Market power & Self-favouritism

- ▶ Case AT.39740 – Google Search (Shopping)
  - ▶ Google gave its own comparison shopping service an illegal advantage.
  - ▶ ‘Google to stop its illegal conduct... refrain from any measure that has the same or an equivalent object or effect... comply with the principle of giving equal treatment to rival comparison shopping services and its own service - apply the same processes and methods to position and display rival comparison shopping services.’
- ▶ Amazon investigation
- ▶ Apple investigation

# Market Power, Quality degradation & Exploitation

## ▶ Facebook

- ▶ Market power & Network effects → Limited outside options  
→ .... Quality degradation & Exploitation
- ▶ Gathering and combining data from multiple sources.
- ▶ Degradation of quality - Privacy
- ▶ Excessive data collection ?
- ▶ Bundeskartellamt imposed restrictions on Facebook's freedom to process data

# Policy considerations

- ▶ Is this a competition problem?
- ▶ Consumer protection problem?
- ▶ Welfare effects...
- ▶ Price effects...
- ▶ Empower consumers?



BEUC Discussion paper



# The Game Makers

- ▶ Platforms can obtain higher margins when they position themselves as a mandatory bottleneck between partners and customers.
- ▶ Perception of competitive environment
- ▶ Thousands of providers compete for our attention
- ▶ Thousands of advertisers bid to reach us
- ▶ Ample choice.
- ▶ Opacity and distortions as key.
- ▶ The hunger games ...



- ▶ *Lever 1 - The Gamemakers Hook Us*
- ▶ *Lever 2 - The Gamemakers Extract Our Personal Data*
- ▶ *Lever 3 - The Gamemakers Use Our Data to Attract Bidders*

- ▶ The Illusion of Choice and Control.
- ▶ Opacity and distortions as key.
- ▶ Either way, the Game Maker wins.

# What do do?

## *Is there a competition problem?*

### EU Law

- ▶ Prevent distortion of competition
- ▶ Ensure fair competitive market
- ▶ *Google*
- ▶ *Amazon*
- ▶ *Facebook*
- ▶ Parity (Booking,...)
- ▶ Regulation - GDPR, E-privacy...

### US Antitrust law

- ▶ The market ability to correct
- ▶ Prevent chilling effect
- ▶ No competition harm

Yet,...

- ▶ Inequality
- ▶ Political condemnation,...



# U.S. debate:

Break up the largest US  
tech companies, including  
Amazon, Google, and  
Facebook?

**Sen. Elizabeth  
Warren**

Facebook co-founder  
Chris Hughes:  
"It's time to break up Facebook"





The Federal Trade Commission and Facebook negotiations of a fine due to privacy violations, that have put the personal information of Facebook users at risk.

## Facebook's Imminent Billion-Dollar Fine From FTC Already Drawing Criticism

The FTC has become the de facto privacy regulator in the U.S., and the outcome of its negotiations with Facebook could serve as a bellwether for future enforcement.  
(May 7, 2019)

**“A \$5 billion fine from the FTC is huge — unless you’re Facebook”**  
(Vox Apr 25, 2019)

## Facebook's FTC settlement delayed by political infighting, report says

And you thought Congress was bad. Apparently Democrats and Republicans on the FTC can't agree on a potentially \$5 billion deal over Facebook's privacy breaches. (May 24)



# Competition policy for the digital era

A report by  
Jacques Crémer  
Yves-Alexandre de Montjoye  
Heike Schweitzer



## Digital Platforms Inquiry

Preliminary report

December 2018



### Stigler Center for the Study of the Economy and the State

George J. Stigler Center for the Study of the Economy and the State  
The University of Chicago Booth School of Business

Committee for the Study of Digital Platforms  
Market Structure and Antitrust Subcommittee

## Unlocking digital competition

Report of the Digital Competition Expert Panel



March 2019



Only the French version is authentic and it prevails in  
the event of its differing from the translated version.

Opinion no. 18-A-03 of 6 March 2018  
on data processing in the online advertising sector

# Final reflections

- ▶ New market reality - Enforcement needs to adapt.
- ▶ The limits of price-centric approach.
- ▶ The limits of static analysis.
- ▶ Be mindful of over/under intervention.
- ▶ Consumers should be able to trust the competitive process,...
- ▶ Combined Ex-post & Ex-ante approach.