

Virtual Competition



The Promise and Perils of the Algorithm-Driven Economy

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Digitalised Collusion

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Automated, algorithm driven environment:

- Hub and Spoke
 - Intentional and unintentional alignment of price.
 - *Eturas and Others*
 - *Dynamic pricing*

Example: Gas stations in the Rotterdam area using the same **a2i Systems pricing software...**

Tacit Collusion on Steroids

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- Relevant for transparent, concentrated markets with entry barriers, homogeneous products, no brand recognition or loyalty.
- ‘Simple’ algorithm-stabilising-mechanism
- Transparency | Stability | Speed | Wider participation.
- Consider increased use of algorithm and increased market concentration.

Illustration – Retail Petrol Markets



Starting point: Oligopolistic markets, small number of sellers (4-6), Search costs, limited transparency.

- Chilean retail petrol industry.
- German ‘real-time’ transparency measures.
- Perth, Australia – ‘Fuel watch’.

Improved transparency via online system + Automated real time pricing = Increased likelihood for tacit collusion and softening of competition. (subject to market characteristics)

Price-Point

Artificial-intelligence software is being used by some gas stations to constantly adjust prices to maximize sales or margins. Here's how it works:



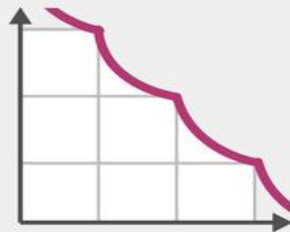
Step 1

Build a database of historical transactions to teach the software about market dynamics; add competitors' info.



Step 2

Connect software to live feeds of purchase data and other variables such as weather and traffic.



Step 3

Software compares live data to historical numbers to predict demand linked to prices.



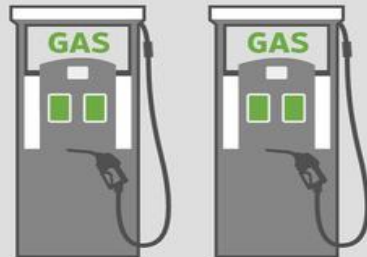
Step 4

Owner sets strategy for each fuel at each station, including preferred balance between volume and margin and constraints such as minimum price.



Step 5

Algorithms determine price for each fuel and automatically adjust pumps throughout the day.



Step 6

Transactions in reaction to those prices fed back into system to generate new predictions and prices.

Source: WSJ analysis of a2i systems

THE WALL STREET JOURNAL.

Disruptive strategies and Counter-measures



DECELERATION
MARKET ENTRY
DISRUPTIVE ALGORITHM

SECRETE DEALS
BUYING ALLIANCES
JOINT BIDS

Behavioural Discrimination



A complementing strategy:

- Controlled Ecosystems: *The Truman Show*
- *Asymmetric information.*
- *Big Data, Big analytics*
- *Dynamic & personalised pricing*
- 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.

The Purist Butler



Entry barriers - data-driven network effects:

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

Leverage the power of the super platform

... But what about disruptive innovation ?

Its not the end of the world,... but it is the end of competition dynamic as we know it.



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COMPETITION COMMITTEE

Algorithmic Collusion: Problems and Counter-Measures - Note by A. Ezechri & M.
E. Stucke

Roundtable on Algorithms and Collusion

