Algorithm

Collusion

Abuse

Enforcement

Artificial Intelligence and Antitrust Law

Prof. Dr. Michael Beurskens,
LL.M. (Gewerblicher Rechtsschutz),
LL.M. (University of Chicago),
Attorney at Law (New York)

Gliederung

Algorithm

Collusion

Abuse

Enforcement

UNIVERSITÄT PASSAU

Collusion

Abuse

Enforcement
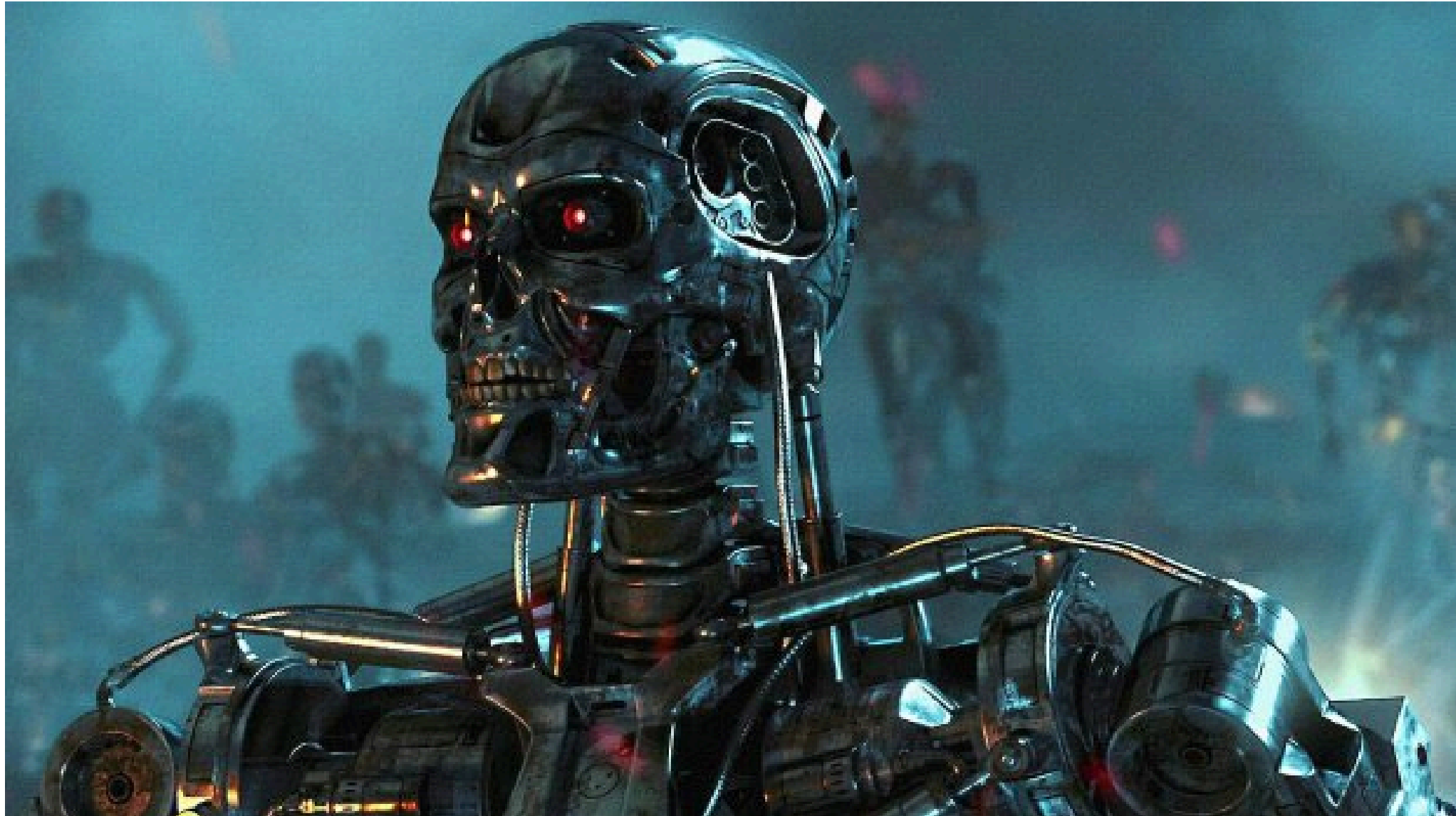
1 What is an "algorithm"?

Are Algorithms the **boogeyman** of the digital age?
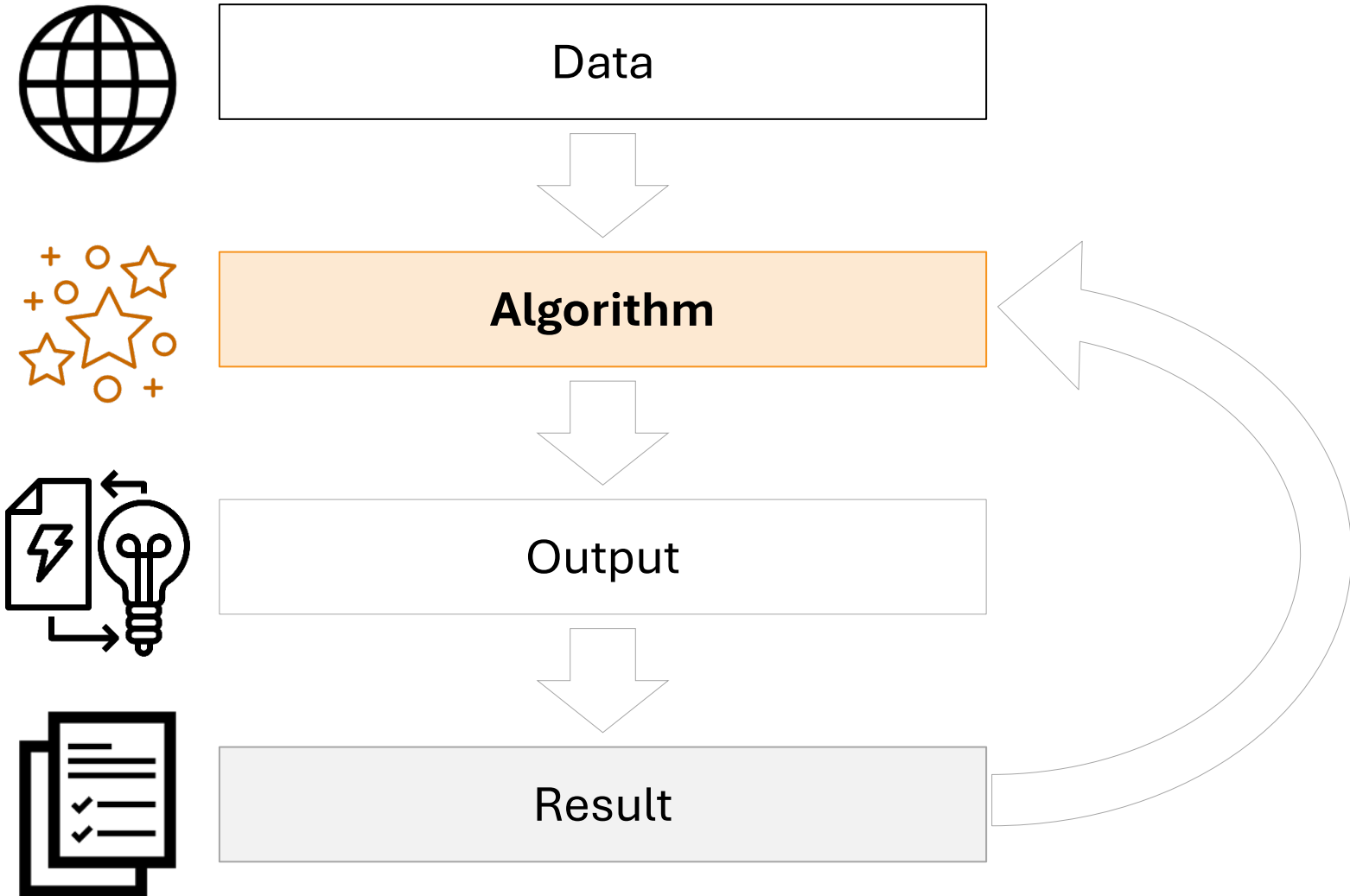
Algorithm

Collusion

Abuse

Enforcement

2 / 50

What is an **<u>Algorithm</u>**? (1)

Algorithm

Collusion

Abuse

Enforcement

3 / 50

What is an **Algorithm**? (2)
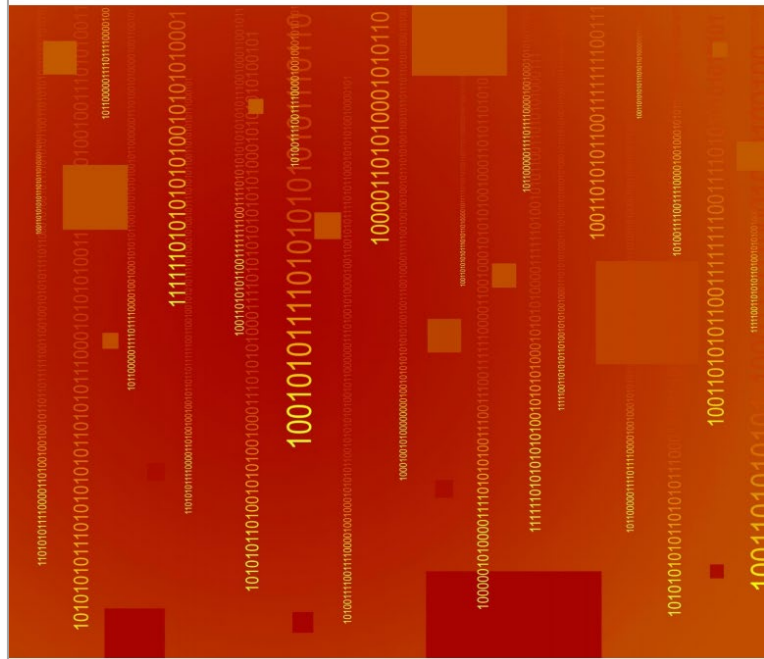
ALGORITHMS AND COLLUSION
Competition policy in the digital age

An algorithm is an unambiguous, precise, list of <mark>simple operations</mark> applied mechanically and systematically to a <mark>set of tokens or objects</mark> (e. g., configurations of chess pieces, numbers, cake ingredients, etc). The initial state of the tokens is the <mark>input</mark>; the final state is the <mark>output</mark>.

2017

OECD

How does this work in **real-life**?

Algorithm

Collusion

Abuse

Enforcement

- **if (%%purchasePrice%% *110% < %%amazonPrice%% * 90%)**
  - **price:=%%amazonPrice%% * 90%**
  - **else**
    - **price:=%%purchasePrice%% * 110%**

- **if((%%sales_lastMonth%%<%% sales_MonthBeforeLast) && (price>%%purchaseprice%%*110%))**
  - **price:= price -1**
  - **else**
    - **price := price +1**

UNIVERSITÄT PASSAU

Ist this a **new problem**?

Algorithm

Collusion

Abuse

Enforcement

Ariel Ezrachi / Maurice E. Stucke
ARTIFICIAL INTELLIGENCE & COLLUSION: WHEN COMPUTERS INHIBIT COMPETITION

2015

Is this a mere **national problem**?

Algorithm

Collusion

Abuse

Enforcement

7 / 50
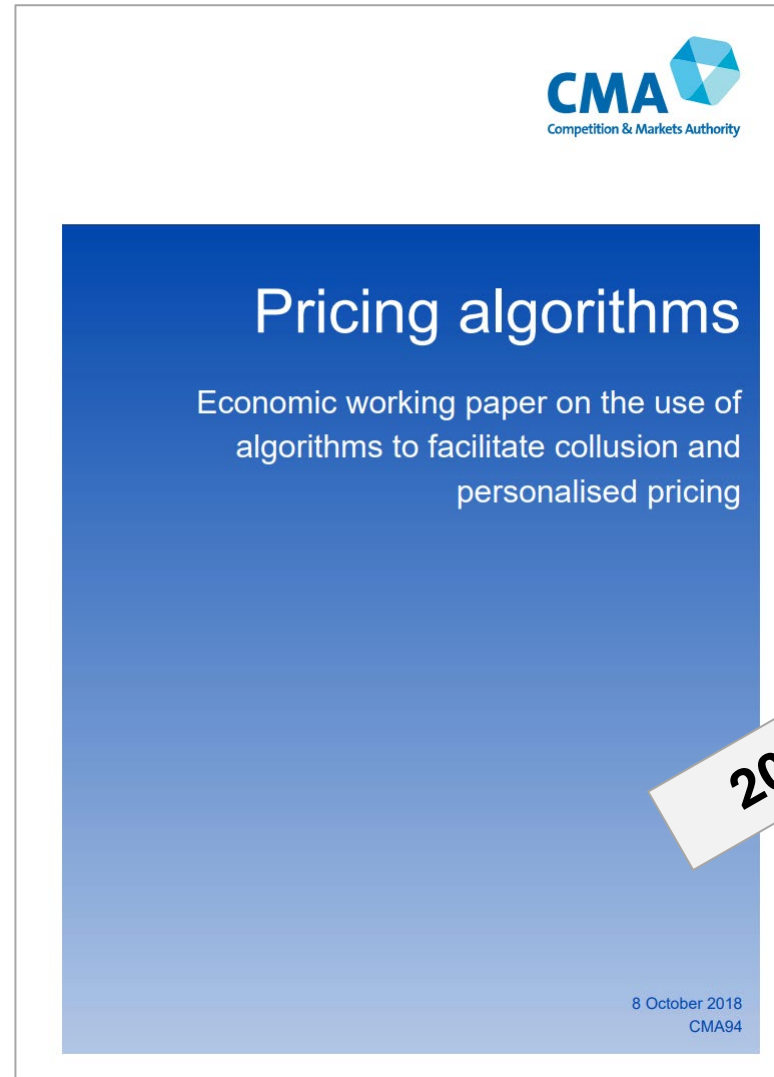
How does **Antitrust** cover the problem?

OECD

Unclassified

DAF/COMP/WD(2017)12

Organisation for Economic Co-operation and Development

14 June 2017

English - Or. English

**DIRECTORATE FOR FINANCIAL AND ENTERPRISE AFFAIRS
COMPETITION COMMITTEE**

Algorithms and Collusion - Note from the European Union

21-23 June 2017

This document reproduces a written contribution from the European Union submitted for Item 10 of the 127th OECD Competition committee on 21-23 June 2017.
More documents related to this discussion can be found at
www.oecd.org/daf/competition/algorithms-and-collusion.htm

Please contact Mr. Antonio Capobianco if you have any questions about this document
[E-mail: Antonio.Capobianco@oecd.org].

JT03415981

- ✓ First, if pricing practices are ==illegal when implemented offline, there is a strong chance that they will be illegal as well when implemented online==.

- ✓ Second, firms involved in illegal pricing practices cannot avoid liability on the grounds that their prices were determined by algorithms. Like an employee or an outside consultant working under a firm's "direction or control", ==an algorithm remains under the firm's control, and therefore the firm is liable for its actions==.

What is the „**Equivalency Test**"?

Collusion
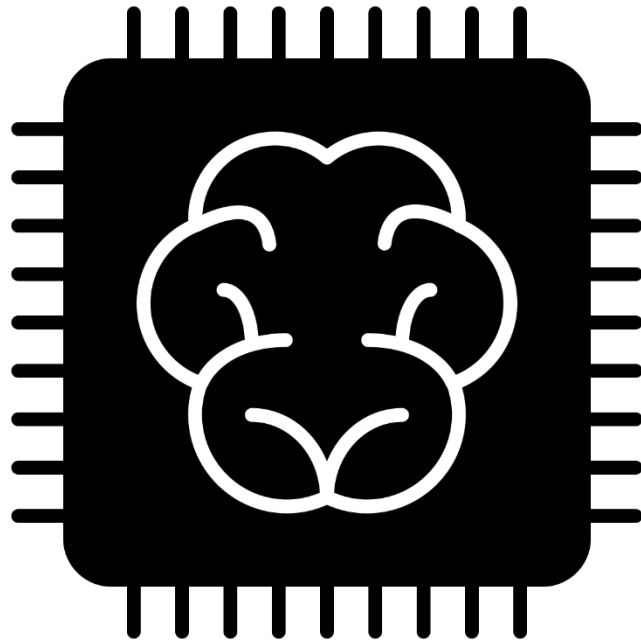
Abuse

Enforcement

Artificial Intelligence
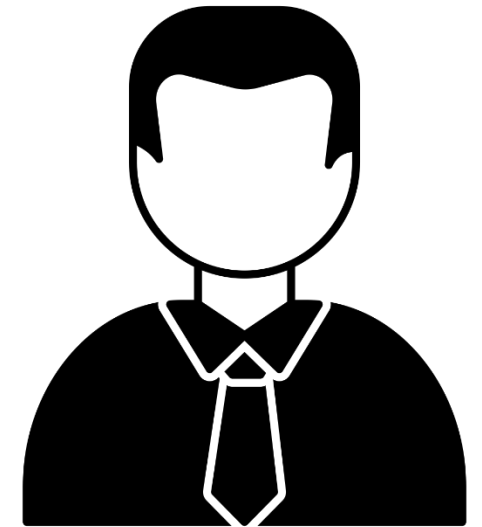
„Bob"

(competent) Employee

Replace Computer by (fictive) Human

What are the specific risks caused by **Algorithms**?

Algorithm

Collusion

Abuse

Enforcement

| **Less competition through perfect monitoring** | **Discrimination against specific customers/ customer-groups** |

more Information, faster Reaction

dynamic pricing → quick Adaptation

Individual pricing → price discrimination

Interim result

Algorithm

Collusion

Abuse

Enforcement

- Algorithms provide for **fast automated actions** using **changing and up-to-date input-data**.

- Usually algorithms will substitute (human) employees - therefore a mere "**Equivalency-Test**" will lead to workable results.

- The issues caused by algorithms are universally acknowledged; however, there is only a consensus that algorithms should not provide an **escape from regulation**.

Algorithm

Collusion

Abuse

Enforcement

2   In how far does the ban on cartels cover algorithms?

Art. 101 TFEU

1. The following shall be prohibited as incompatible with the internal market: all **agreements between undertakings, decisions by associations of undertakings and concerted practices** which may **affect trade between Member States** and which have as their **object or effect** the **prevention, restriction or distortion of competition within the internal market**, and in particular those which:

    (a) directly or indirectly fix purchase or selling **prices** or any other **trading conditions**;

    (b) limit or **control production, markets, technical development, or investment**;

    (c) **share markets** or sources of supply;

    (d) apply **dissimilar conditions to equivalent transactions** with other trading parties, thereby placing them at a competitive disadvantage;

    (e) make the conclusion of contracts **subject to acceptance by the other**

Algorithm

Abuse

Enforcement

Art. 101 TFEU

2.   Any agreements or decisions prohibited pursuant to this Article **shall be automatically void**.

Algorithm

Collusion

Abuse

Enforcement

Art. 101 TFEU

3. The provisions of paragraph 1 may, however, be declared **inapplicable** in the case of:

   - any agreement or category of agreements between undertakings,

   - any decision or category of decisions by associations of undertakings,

   - any concerted practice or category of concerted practices,

   which **contributes to improving the production or distribution of goods** or to **promoting technical or economic progress**, while **allowing consumers a fair share of the resulting benefit**, and which does not:

   (a) impose on the undertakings concerned **restrictions which are not indispensable to the attainment of these objectives**;

   (b) afford such undertakings the **possibility of eliminating competition** in respect of a substantial part of the products in question.

Can there be an "agreement" without **human involvement**? (1)

Algorithm

Collusion

Abuse

Enforcement

16 / 50

Forbes

LEADERSHIP > LEADERSHIP STRATEGIES

Why Antitrust Regulators Are Focused On Problematic AI Algorithms

By Alden Abbott, Contributor. ⓘ I'm an antitrust expert and former FTC g...   Follow Author

Mar 13, 2024, 12:14pm EDT

Share   Save   Comment 0

WASHINGTON, DC - OCTOBER 30: U.S. President Joe Biden hands Vice President Kamala Harris the pen he ... More
GETTY IMAGES

Can there be an "agreement" without **human involvement**? (2)

Algorithm

Collusion

Abuse

Enforcement

Such algorithms are not written in heaven by the good Lord.

Companies cannot hide behind algorithms.

https://www.bundeskartellamt.de/DE/UeberUns/ Bundeskartellamt/DerPraesident/derpraesident_node.html

Algorithm

Collusion

Abuse

Enforcement

Are **<u>Computers</u>** able to (independently) form a contract?

It is **not the computer system**, but the person (or the company) using it as a means of communication that makes the declaration or is the recipient of the declaration made...

The content of the declaration is therefore **not to be determined according to how the automated system is likely to interpret and process it**, but according to how the human addressee may understand it in good faith and in accordance with common usage.

German Federal Supreme Court, Case of 16. 10. 2012 – X ZR 37/12

What kind of **agreements** are we talking about?

Algorithm

Collusion
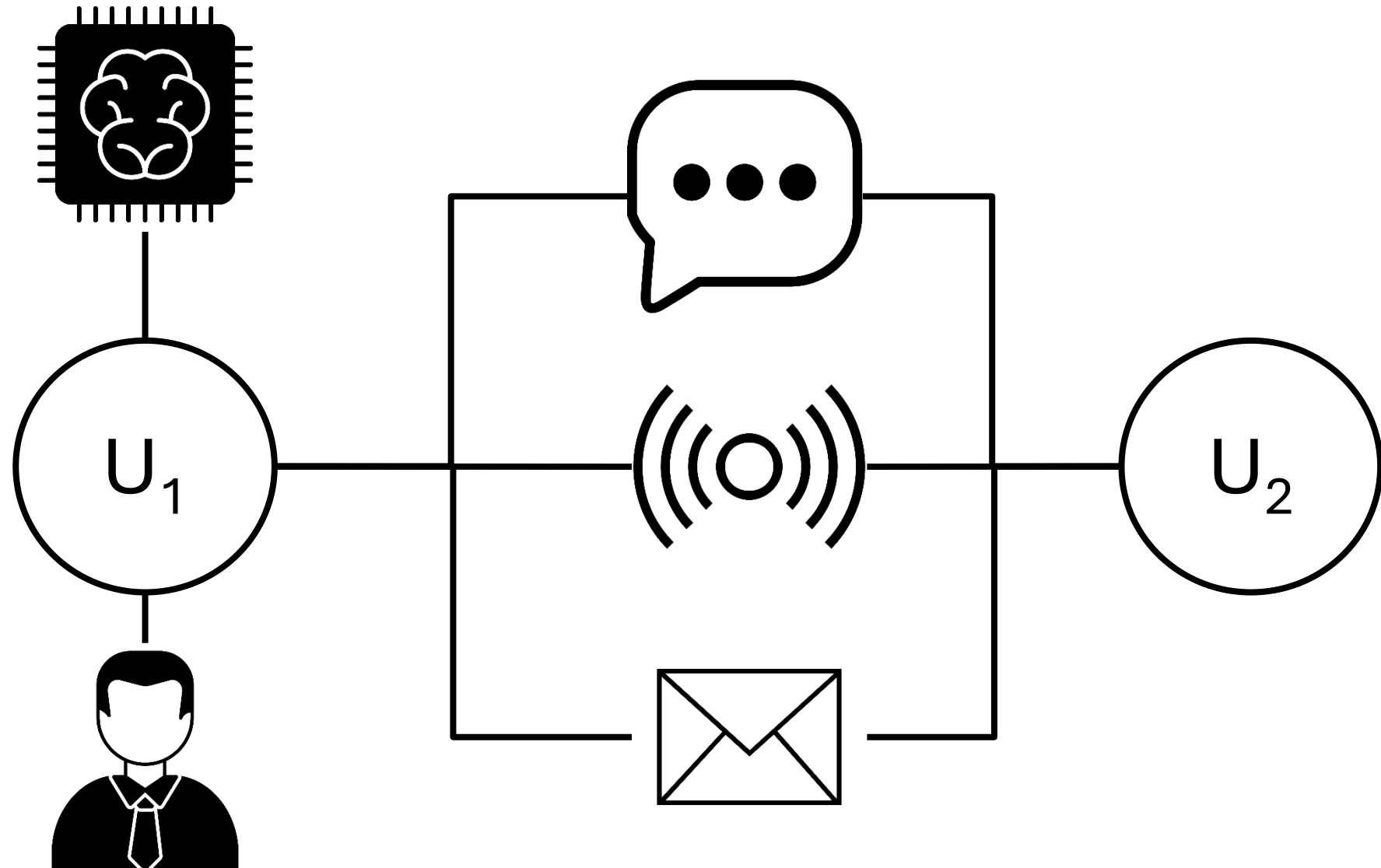
Abuse

Enforcement

U₁

U₂

What was the "**Poster-Case**"?

Pricing adjusted by Algorithm

Pricing adjusted by Algorithm

- https://www.justice.gov/opa/pr/former-e-commerce-executive-charged-price-fixing-anti trust-divisions-first-online-marketplace

- CMA, Case 50.228 – Online Sales of posters and frames.

Algorithm

Collusion

Abuse

Enforcement

In how far does central infrastructure lead to a **Hub & Spoke – Cartel**? (2)

Algorithm

Collusion

Abuse

Enforcement

(Adjustable) Default: Maximum Rebate 3%

Violation of Art. 101 TFEU

21 / 50

EuGH, 21. 1. 2016 – C-74/14, K&R 2016, 253 – Eturas

In how far does central infrastructure lead to a **Hub & Spoke – Cartel**? (2)
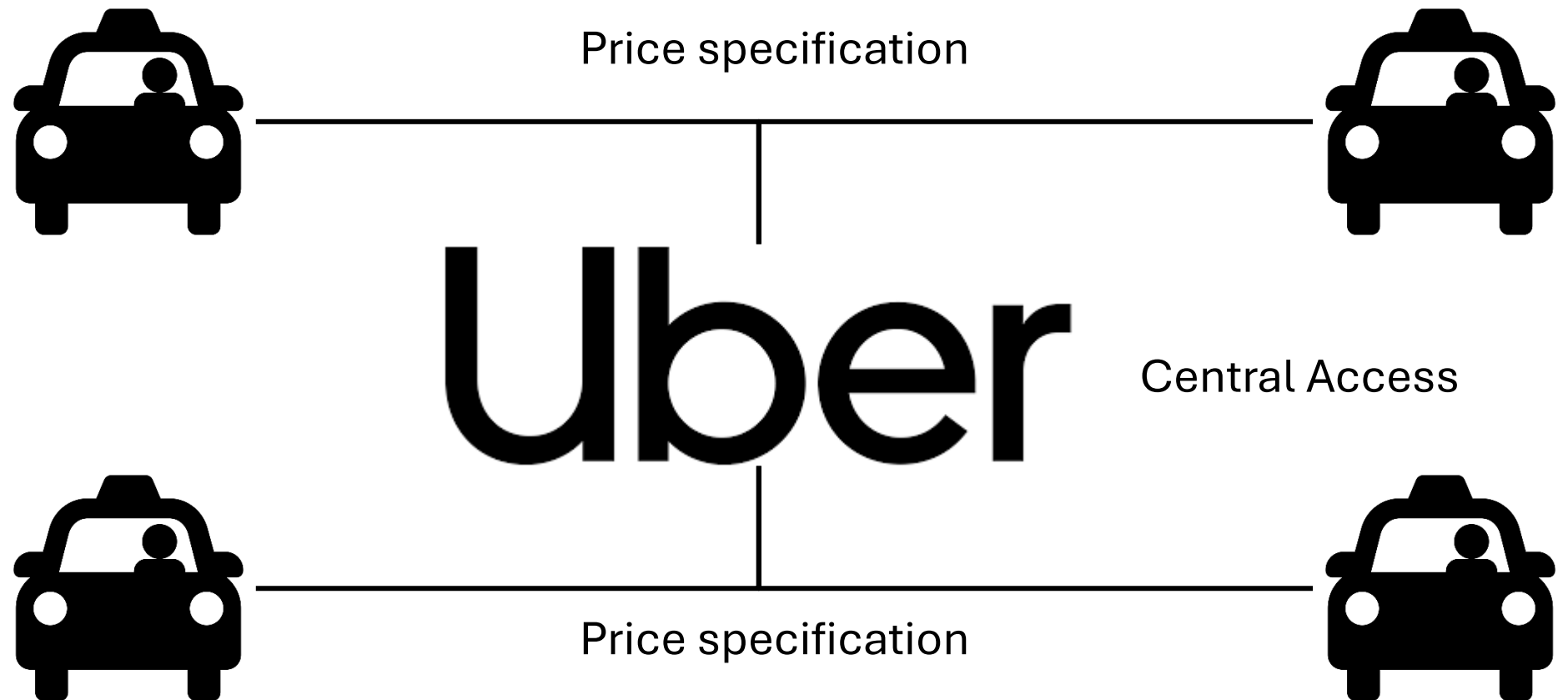
Algorithm

Collusion

Abuse

Enforcement

Price specification

Central Access

Price specification

United States District Court Southern District of New York, Case 1:15-cv-09 796-JSR

In how far do pricing algorithms impact **<u>vertical agreements</u>**?

Algorithm

Collusion

Abuse

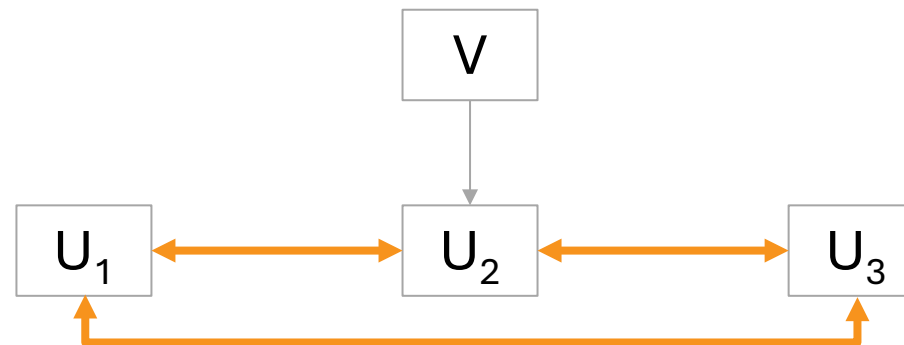Enforcement

„Many, including the biggest online retailers, use pricing algorithms which automatically adapt retail prices to those of competitors. In this way, the pricing restrictions imposed on low pricing online retailers typically had a broader impact on overall online prices for the respective consumer electronics products."

https://ec.europa.eu/commission/presscorner/detail/en/ip_18_4601

Welche Rolle spielen IT-Dienstleister (insb. <u>**Accenture Partneo**</u>)?

Algorithm

Collusion

Abuse

Enforcement

lexxion — Workshops & Konferenzen — Zeitschri...

| EN

Sie befinden sich hier: Lexxion › Competition Blogs › Features › When Algorithmic Pricing meets Concerted Pract...

All | Editors | Case Digests | Features | SUBMIT GUEST BLOG POST

When Algorithmic Pricing meets Concerted Practices- the case of Partneo

7. Juni 2018 | Features von Daniel Mandrescu
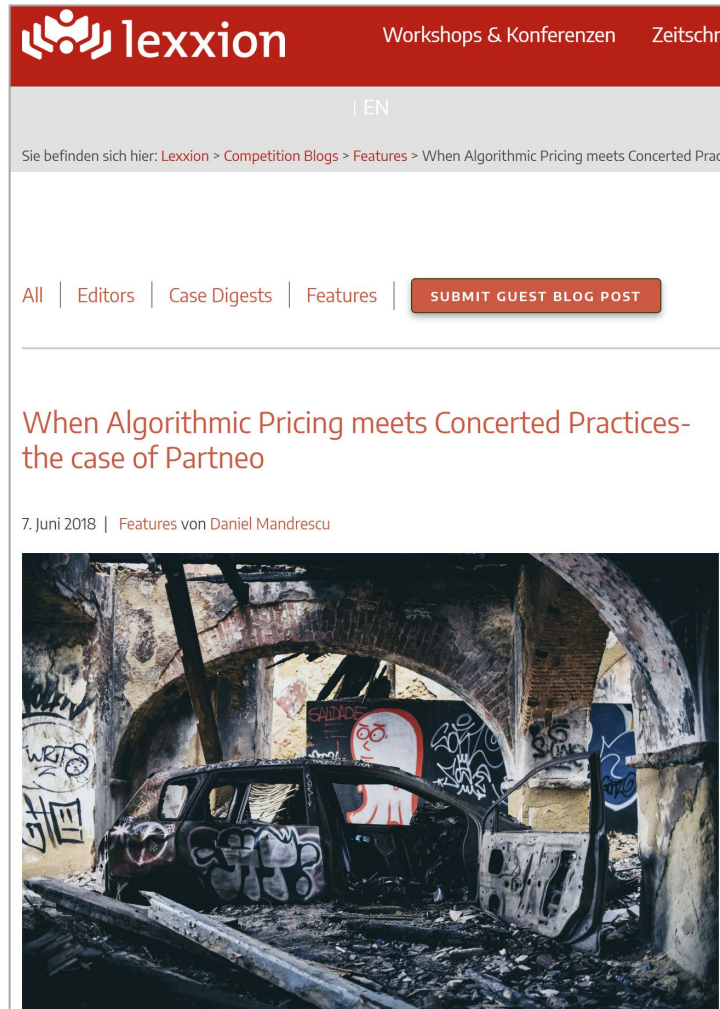
The algorithm behind the Partneo software was designed to identify the maximum price consumers would be willing to pay for (visible) cars parts such as fenders or bumpers where there is almost no inter or intra brand competition.

In the period of 2008 to 2013 five major carmakers have boosted their revenues by more than 1 billion dollars thanks to using Partneo, which increased the prices of their inventory with 15% on average.

Confidential records obtained by the media apparently show that Accenture helped co-ordinate the price levels of Renault and PSA Peugeot Citroen...

Should losses be compensated?

Purpose of Sanction	Profit skimming

Bunte, NJW 2018, 123

Which cases are **<u>problematic</u>**?

Algorithm

Collusion

Abuse

Enforcement

```
                        Coordination
              ┌──────────────┴──────────────┐
          explicit              implied = without direct
            │                       communication
            ├── Enforcement („Guardians")        │
            │                                Oligopolization through
            └── Automated adjustment              algorithms
```
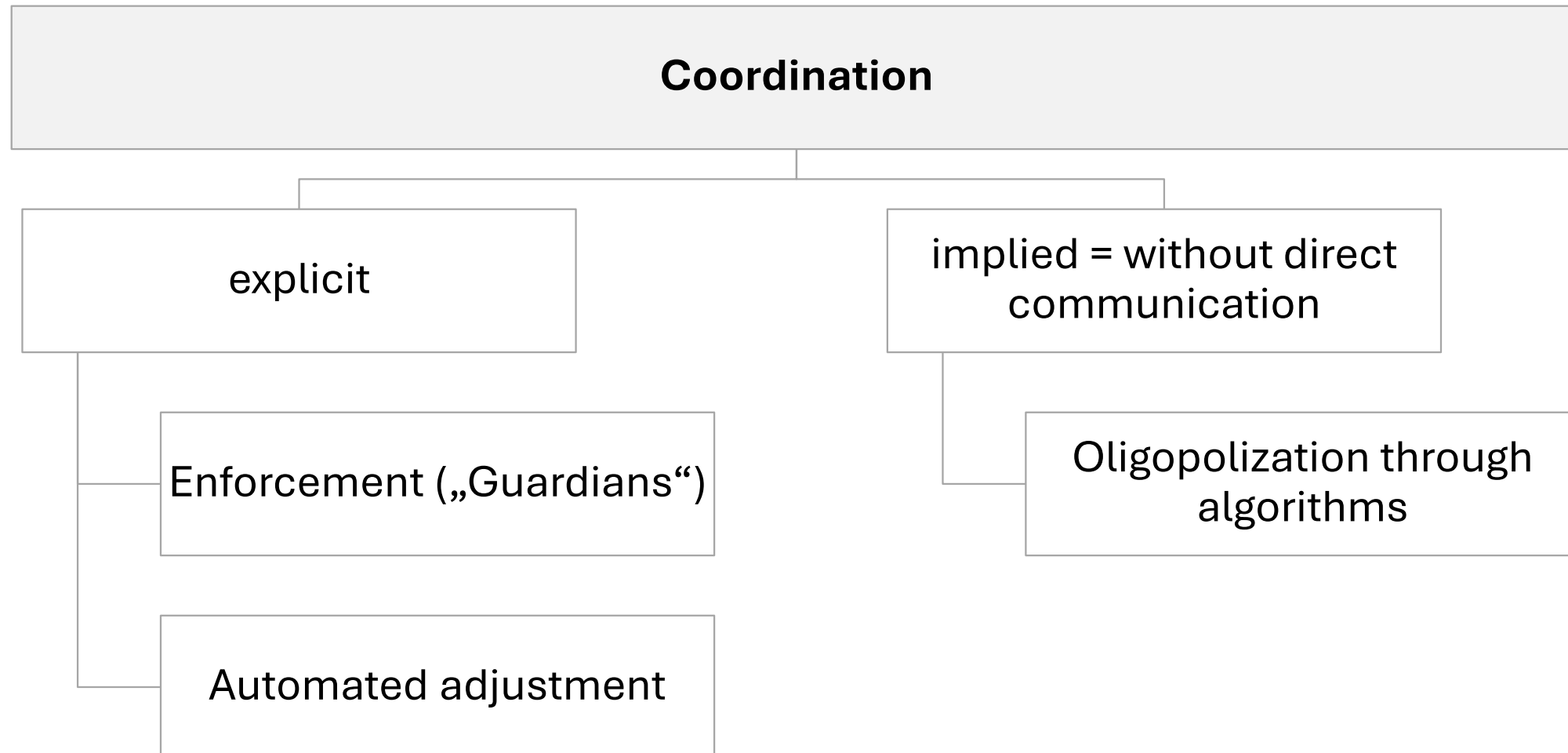
Why is **perfect information** problematic?

Algorithm

Abuse

Enforcement

Competition [is] only important [...] because and in so far as its **results are unpredictable** and on the whole different from those which anyone could have consciously aimed at...

Wherever we make use of competition, this can only be justified by the fact that **we do not know the essential circumstances** that determine the actions of those in competition."

v. Hayek, Wettbewerb als Entdeckungsverfahren, in: Freiburger Studien, S. 249

UNIVERSITÄT PASSAU

Werden jetzt alle Märkte zu **Tankstellenmärkten**?

Algorithm

Collusion

Abuse

Enforcement

high transparency of prices

replaceable goods
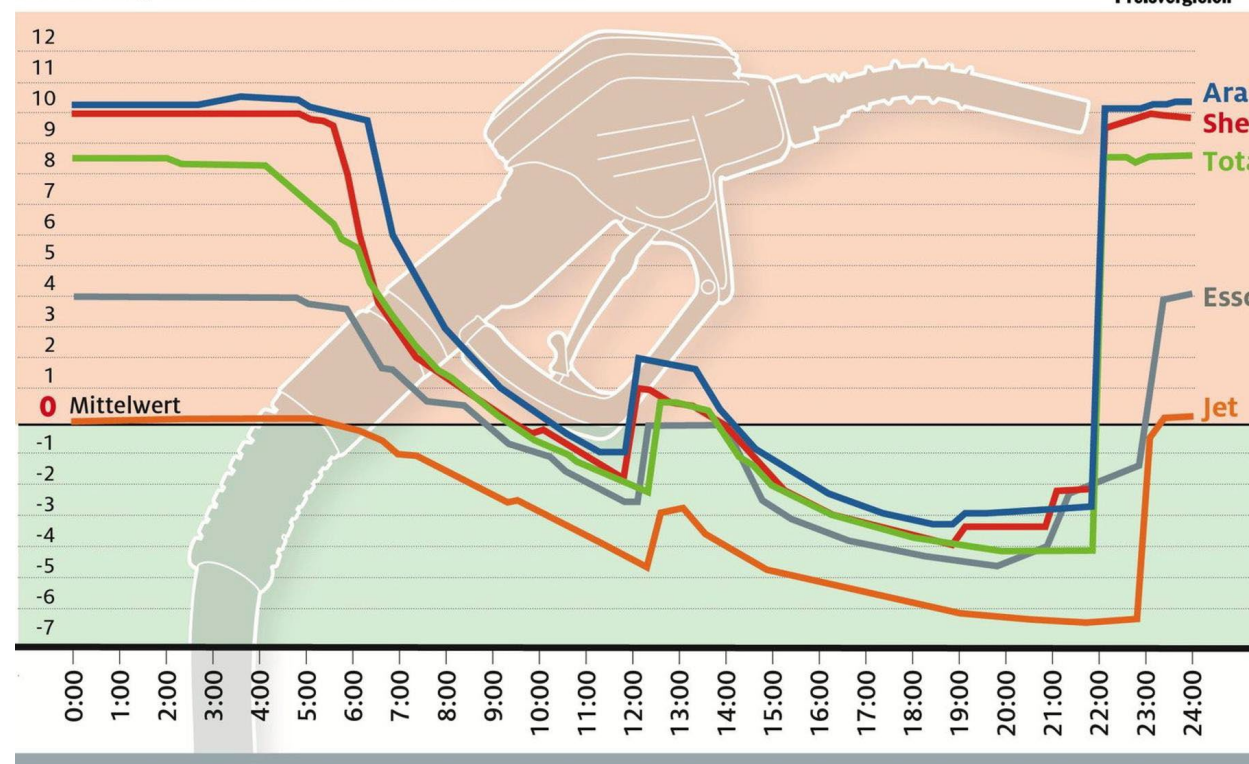
change easy and fast
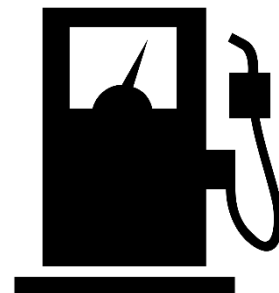
28 / 50

Interim result

Algorithm

Collusion

Abuse

Enforcement

- Most current cases regarding algorithms deal with **mere "guardians", the higher adaptability to price changes and common infrastructure**.

- Those cases can be **resolved easily under the current legal framework** - either as a horizontal agreement or a vertical agreement involving a service provider.

- Identical actions caused by using an algorithm operating on public input data are currently **unregulated**. They may cause identical effects as an agreement but are not prohibited.

Algorithm

Collusion

Abuse

Enforcement

3   How do Algorithms relate to Market Abuse?

In how far can technology ensure dominant markt positions?

Algorithm

Collusion

Abuse

Enforcement

Data	**Algorithms**
Effects of scale	Technological leadership

Algorithm

Collusion

Abuse

Enforcement

Art. 102 TFEU

Any **abuse** by one or more undertakings of a **dominant position within the internal market or in a substantial part** of it shall be prohibited as incompatible with the internal market in so far as it may affect trade between Member States.

Such abuse may, **in particular**, consist in:

(a) directly or indirectly imposing **unfair** purchase or selling **prices** or other unfair trading **conditions**;

(b) **limiting production, markets or technical development** to the prejudice of consumers;

(c) applying **dissimilar conditions to equivalent transactions** with other trading parties, thereby placing them at a competitive disadvantage;

(d) making the conclusion of contracts **subject to acceptance by the other parties of supplementary obligations** which, by their nature or according to commercial usage, have no connection with the subject of such
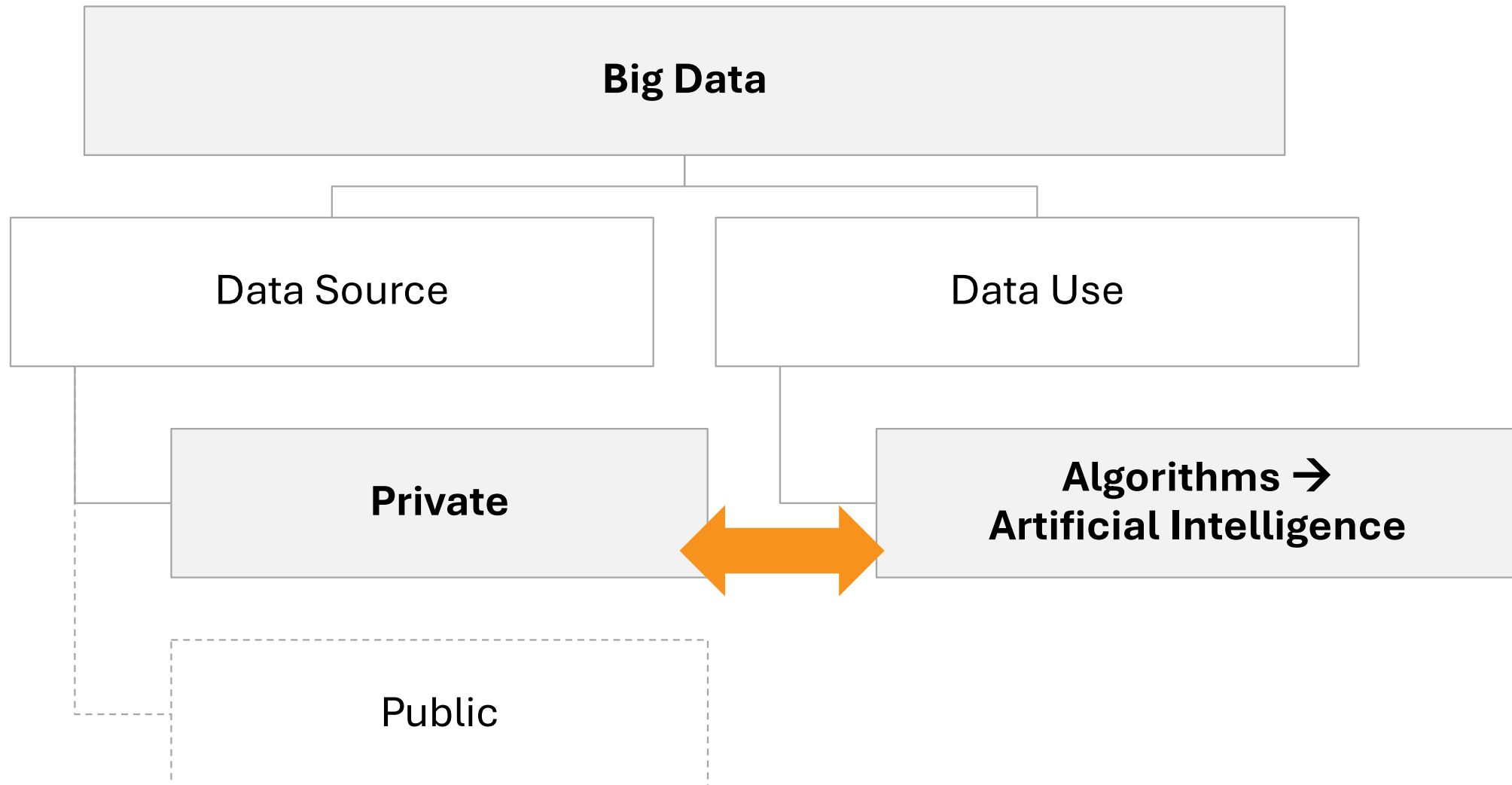
Where are the dominant positions in **<u>Big Data</u>**?

Algorithm

Collusion

Abuse

Enforcement

33 / 50

What are the core questions regarding **data sources**?

Algorithm

Collusion

Abuse

Enforcement

Data Ownership $\leftrightarrow$ Access Rights
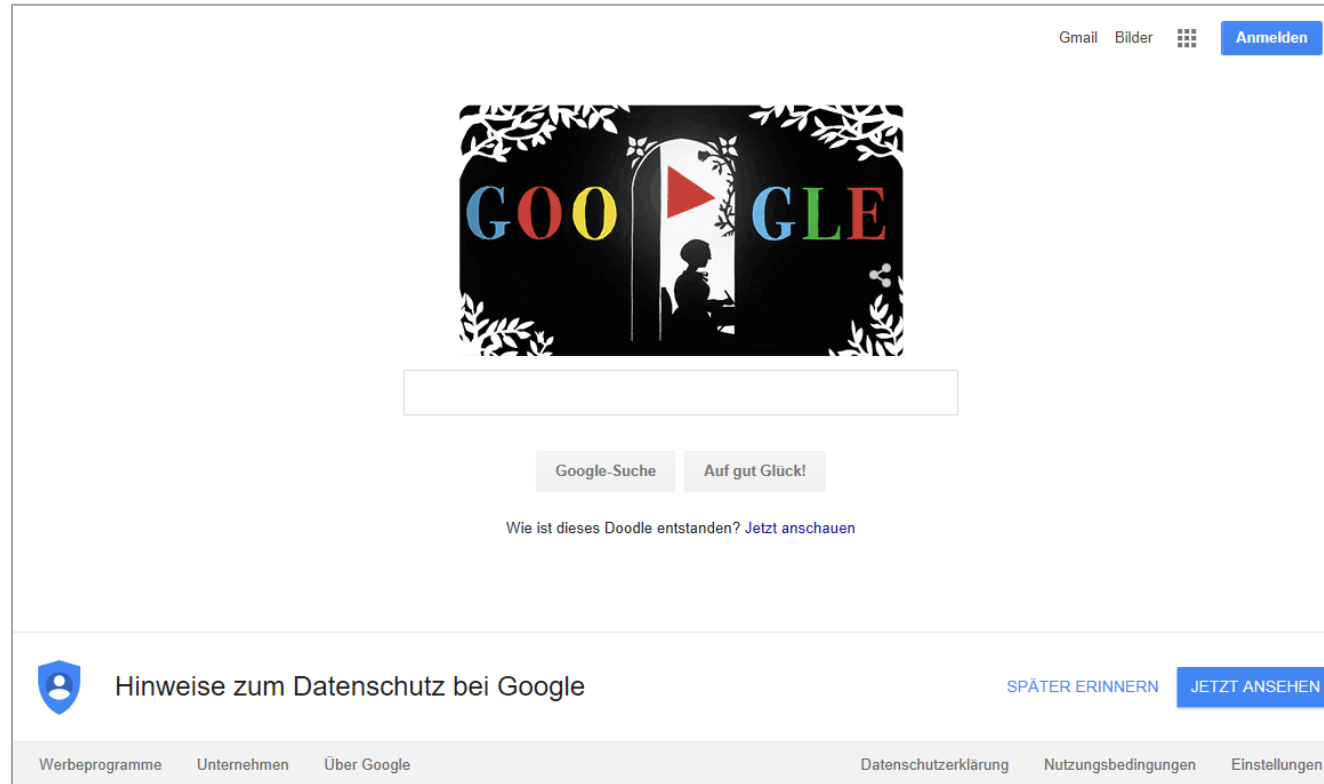
Over-Transparency as a danger to competition

What are the obligations for data generation / processing?

Algorithm

Collusion

Abuse

Enforcement

Neutrality?

Completeness?

Prevention of manipulation?

Will there be an „**Algorithm-Defense**"?

Algorithm

Collusion

Abuse

Enforcement

airliners.de

| Nachrichten | Stellenmarkt | Trainings | Comm... |

Ticker | Themen » Fluggesellschaften Flughäfen Industrie Luftfracht

UMFASSENDE LUFTFAHRTDIENSTLEISTUNGEN
FÜR DIE FASZINIERENDSTE BRANCHE UNSERER ZEIT.

Kartellamt tadelt Lufthansa für "Algorithmus-Ausrede"

28.12.2017 - 12:17   💬 21 Kommentare

Die hohen Ticketpreise auf innerdeutschen Flügen bringen Lufthansa viel Kritik ein. Konzernchef Spohr schiebt dies auf den Algorithmus des Buchungssystems. Für Kartellamtspräsident Mundt zählt die Ausrede nicht.

Why do we feel uneasy about algorithms?

Algorithm

Collusion

Abuse

Enforcement

DER TAGESSPIEGEL

Online-Shopping   05.04.2016, 13:42 Uhr

Im Netz hat jeder seinen Preis

Online-Händler nutzen Daten der Kunden, um individuelle Preise festzusetzen. Wer viel verdient, zahlt oft mehr. VON SONJA ÁLVAREZ

Wer ein teures Smartphone zum Online-Shopping nutzt, der zahlt womöglich mehr als ein Kunde, der über den PC bestellt. Mit nur... FOTO: ISTOCK

„Deadweight Loss by Distrust"

Excursus: Are data protection violations a case of antitrust abuse?

Algorithm

Collusion

Abuse

Enforcement

The use of inadmissible general terms and conditions by market-dominant companies may constitute an abuse within the meaning of Section 19 GWB.

BGH NZKart 2014, 31 - VBL Gegenwert I Rn. 65

Interim result

Algorithm

Collusion

Abuse

Enforcement

- Data power can lead to market power in downstream markets. Conversely, an excess of public information can promote the oligopolization of the market.

- In the absence of special rules, a right of access to data can only arise in accordance with the IMS Health principles. However, these do not exist for the typical cases of algorithmic pricing.

- The protection of consumers from individualized pricing is primarily guaranteed by data protection law.

Algorithm

Collusion

Abuse

Enforcement

4   How can we detect, prevent and sanction autonomous systems?

Do we need „**Compliance by Design**"?

Algorithm

Collusion

Abuse

Enforcement

"What businesses can – and must – do is to ensure antitrust compliance by design. That means pricing algorithms need to be built in a way that doesn't allow them to collude."

What do we expect from the algorithm providers (and users)?

Algorithm

Collusion

Abuse

Enforcement

„Antitrust by Design"

Ethical Coding

Product monitoring obligation

What could such regulation look like?

Algorithm

Collusion

Abuse

Enforcement

Preventive regulation (approval)

Restriction of price adjustment (once a day)

Does strict liability for algorithms make sense?

Algorithm

Collusion

Abuse

Enforcement

44 / 50

Businesses ... need to know that when they decide to use an automated system, they ==will be held responsible for what it does==. So they had better know how that system works

Does strict liability for algorithms make sense?

Algorithm

Collusion

Abuse

Algorithms act in an unintended manner or exceed the field of activity

Exclusion of exculpation?

Reversal of the burden of proof?
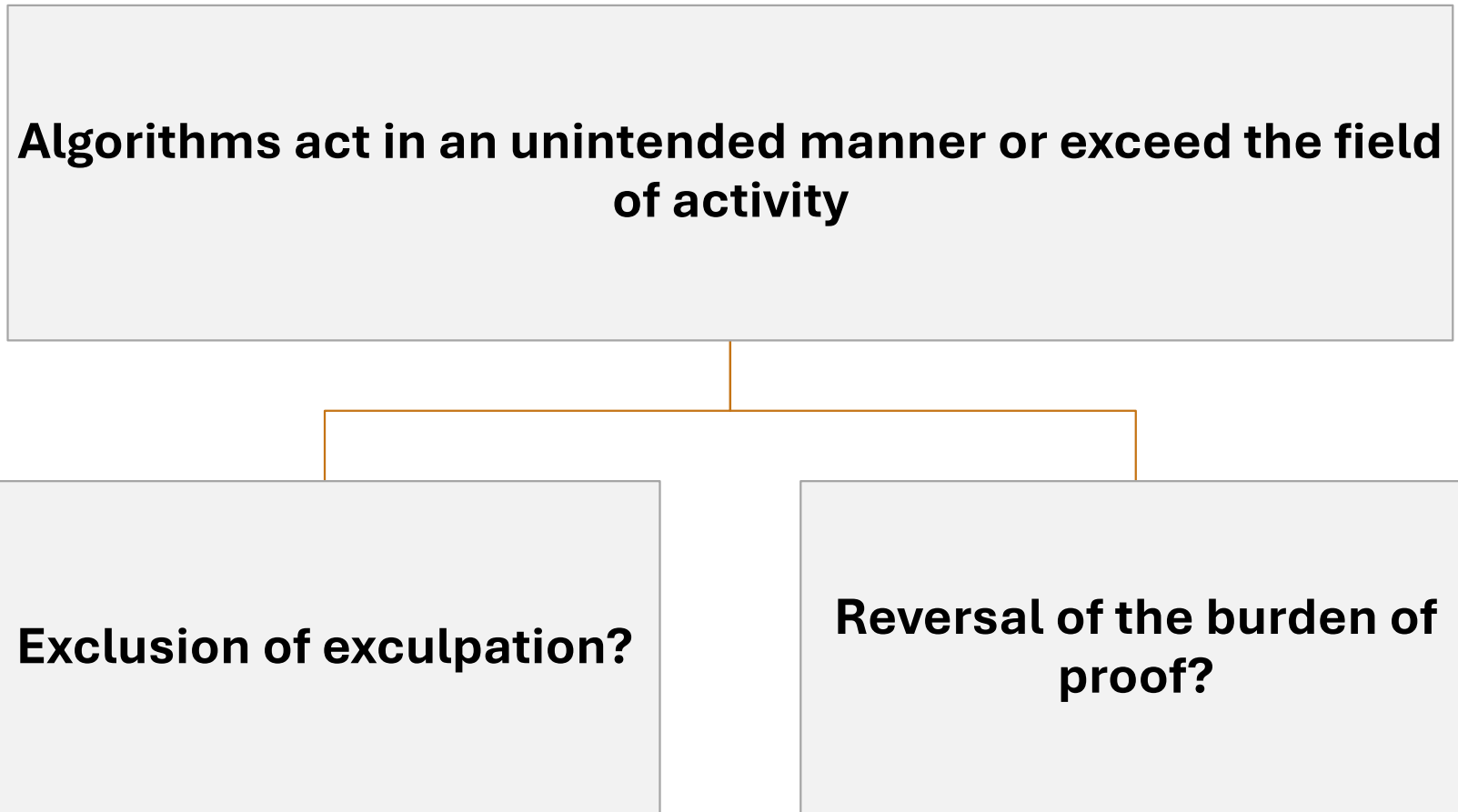
Problem: Deterrent effect (investment-inhibiting effect)

In relation to what should there be transparency?

Algorithm

Collusion

Abuse

Enforcement

Disclosure that conditions are individualized?

Disclosure of the criteria?

Disclosure of the weights?

Gibt es diese Transparenz nicht **<u>ohnehin schon</u>**?

Algorithm

Collusion

Abuse

Art. 15 GDPR - Right of access by the data subject

The data subject shall have the right to obtain from the controller confirmation as to whether or not personal data concerning him or her are being processed, and, where that is the case, access to the personal data and the following information:

the existence of automated decision-making, including profiling, referred to in Article 22(1) and (4) and, at least in those cases, meaningful information about the logic involved, as well as the significance and envisaged consequences of such processing for the data subject.

Can the market counterparty protect itself?

Algorithm

Collusion

Abuse

„Algorithmic Consumer"

Gal/Niva Elkin-Koren, Harvard Journal of
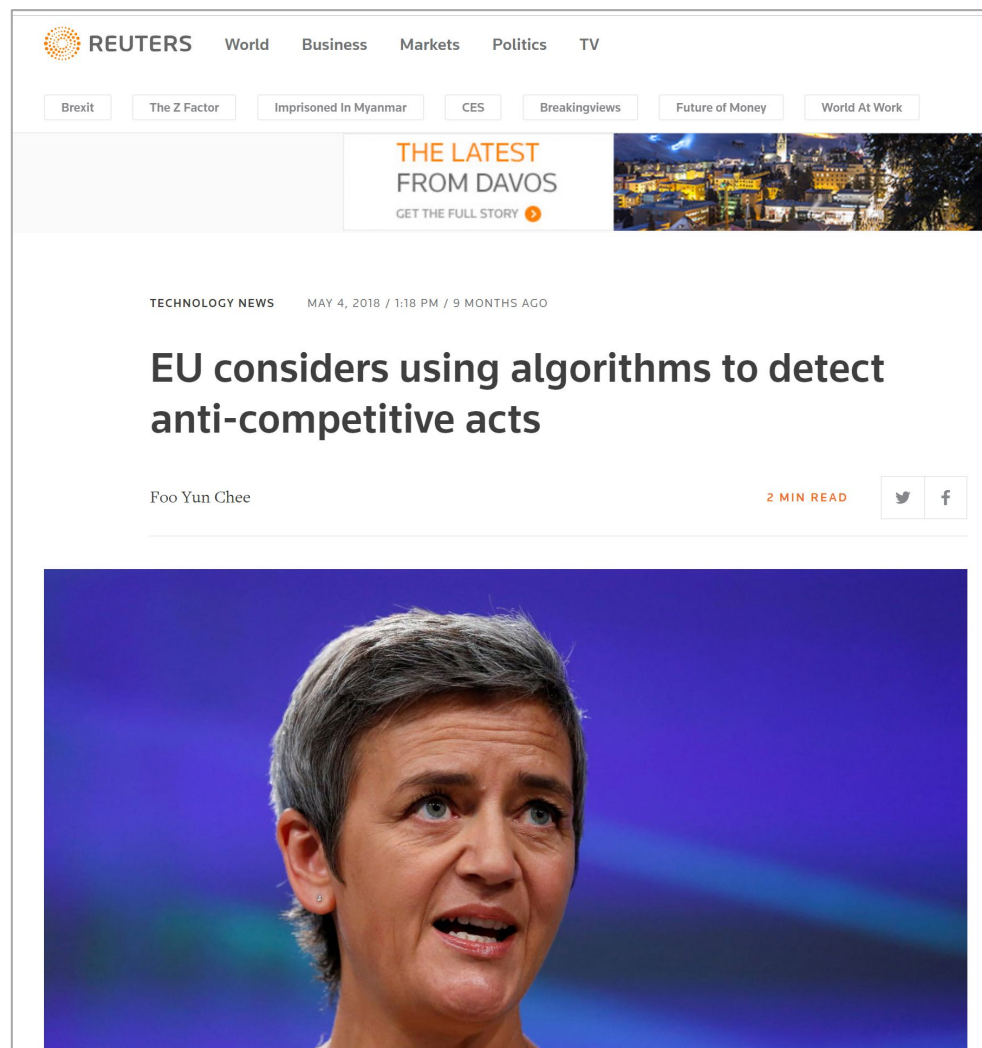Law & Technology 2017, Vol. 30 No. 2,
(5 ff.)

Do algorithms also have a positive effect on the antitrust authorities?

Algorithm

Collusion

Abuse

Cartel detection by algorithms?

Analysis of price data

https://www.reuters.com/article/us-eu-antitrust-algorithm/eu-considers-using-algorithms-to-detect-anti-competitive-acts-idUSKBN1I5198

Algorithm

Collusion

Abuse

Summary

- Algorithms are **no „Black Box"**. Their result is either predetermined or at least reproducible.

- However, the **risk of high losses** due to increased capacity and speed is higher than when dealings with natural persons.

- Usually replacing "AI" with a **fictive human employee** is sufficient to resolve antitrust cases.

- Currently algorithms using public data are only subject to antitrust regulation when a common algorithm is agreed upon.

- Over-use of data may constitute an abuse of market power (**Art. 102 AEUV**).

- Algorithms may be used by the **opposing market side and antitrust authorities** as a "counter-poison".