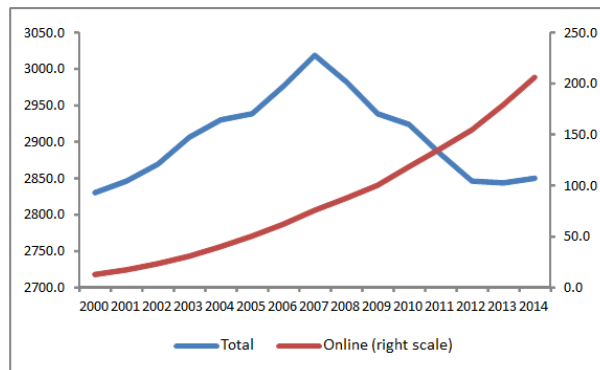


# E-commerce, algorithms, big data

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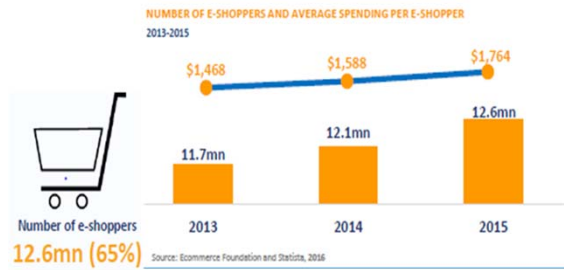
## Total and Online Sales (Europe)



Estimated evolution of the total and online retail sales in goods, 2000-2014 (in billion EUR, from Duch-Brown and Martens, JRC, 2015)



## Online Sales (China)



Source: Global B2C E-Commerce Report 2017, Ecommerce Foundation

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## E-commerce sector inquiry

- Focus on consumer goods and digital content:
  - Better understanding of the market and trends
  - Identifying possible competition issues in e-commerce
- Legal basis - Article 17 of Regulation 1/2003
- Process:
  - Launched in May 2015
  - Questionnaires to stakeholders (about 1 800 respondents)
  - Paper on Geo-Blocking published March 2016
  - Preliminary Report published September 2016
  - Final Report May 2017

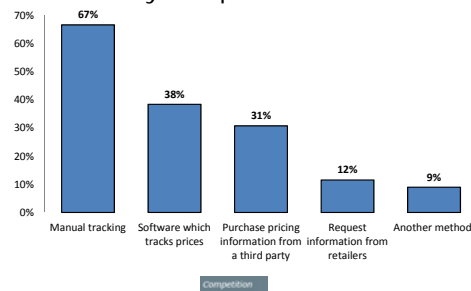
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## Online prices: increased transparency and monitoring

- ~ 50% of retailers track online prices of competitors
  - ~ 70% of those use (also) software (pricing algorithms)
  - some adjust their own prices automatically (no manual intervention)
- ~ 30% of manufacturers track systematically online retail prices of their products sold by independent distributors

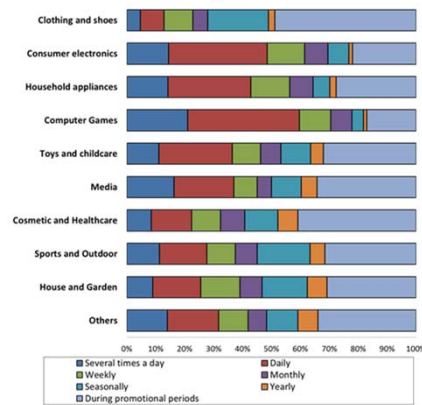


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## Online prices: Increased price competition



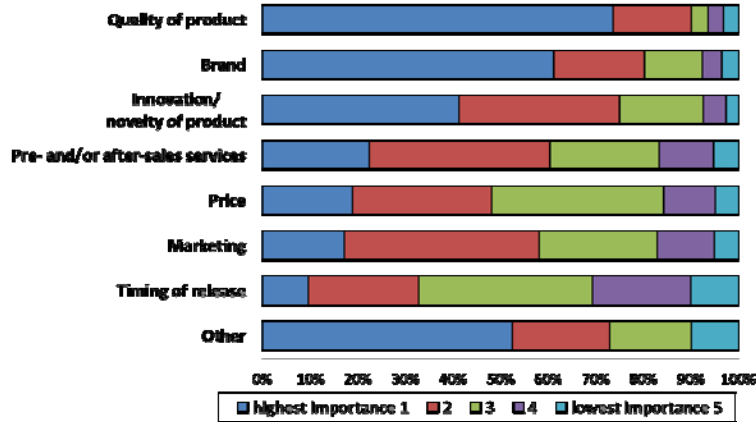
Frequency of modifying online prices based on the responses of retailers

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## Manufacturers – Drivers



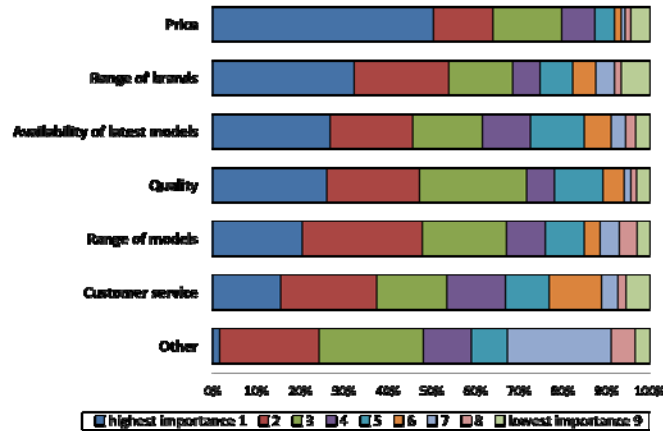
Rating the parameters of competition by manufacturers

7

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## Pure Online Players – Drivers



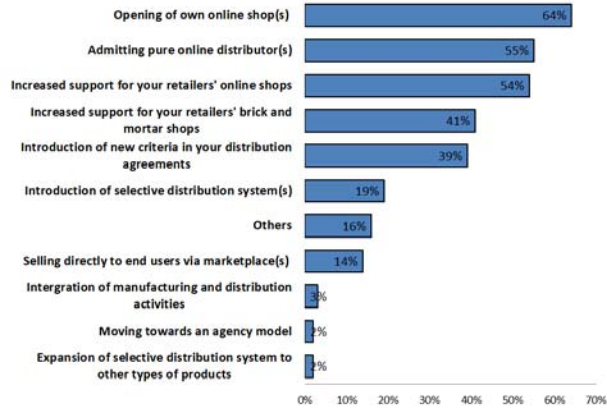
Rating the parameters of competition by pure online players

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## Manufacturers' Strategies



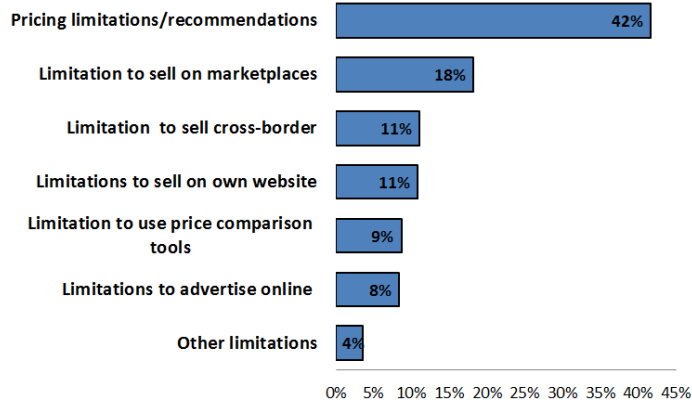
Measures taken by manufacturers in the last 10 years to react to the growth of e-commerce

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## Contractual Restrictions



Proportion of retailers having contractual restrictions, per type of restriction

Competition

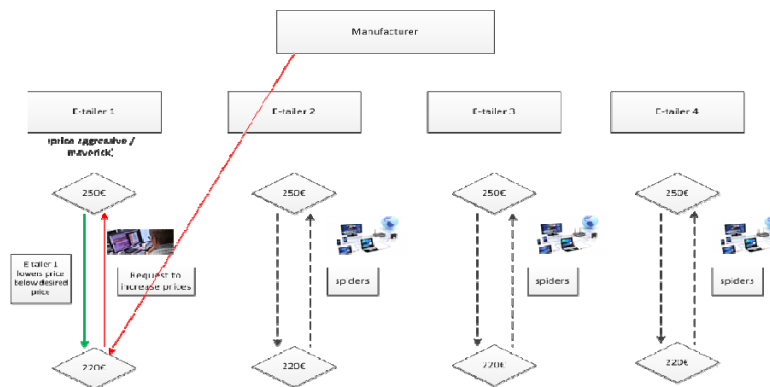
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## Pricing Algorithms

May increase price competition, but potentially ...

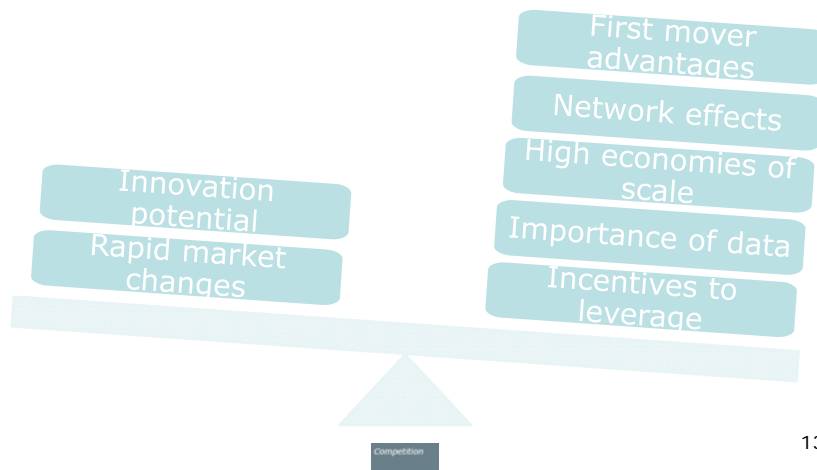
- facilitate horizontal collusion
- Hub and spoke (usage of same algorithm)
- incentivize RPM practices
- Artificial Intelligence and tacit collusion?

## RPM



Spiders are a software which monitors resale prices of key competitors and automatically adjust prices to match (lowest) price in the market. Getting price mavericks to adhere / raise to desired price levels has knock-on effects on multiple e-tailers.

## E-commerce platforms



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## Market Power

In fast-growing sectors/frequent market entry/short innovation cycles: large market shares may turn out to be ephemeral (Facebook/WhatsApp merger decision; T-79/12, Microsoft/Skype **but** Google, Microsoft)

Factors to consider:

- Multi-homing
- Platform competition
- Preinstallation

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## (Big) Data

- Personal data = identifies any individual through any parameter
- Not all big data is personal data
- Big data → useful to improve services
- Personal data → useful for targeted advertising

## Data - 4 different perspectives

- Data as a currency
- Data protection as quality (= mostly about personal data)
- Data as an input/asset (= mostly about big data)
- Data as an output





## Market definition: addressing the role of data

**Market definition:** the traditional inquiry into demand side and supply side substitutability is relevant also for data-driven markets with a high rate of innovation.

There is no such thing as a *free lunch*: **data is a currency**

Traditional market definition tools often rely on price, but also **other parameters of competition** matter (e.g. quality). It is also possible to define markets when there is no price: e.g. by reference to the product's characteristics or intended use.



## Market power: addressing the role of data

**Market power:** looking at **data as an asset**. Does the accumulation of data give an insurmountable advantage?

- Is data a significant component in the attractiveness of the relevant product?
- Is data exclusive or easily replicable?
- Does the value of the data decrease over time?

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## Example: Google search case

The screenshot shows a Google search for "nike shoes" with approximately 69,300,000 results. The results are categorized into three main sections:

- AdWords ("paid search"):** This section includes sponsored results such as "nike.com - Nike Shoes Range - Buy Today & Get Free Returns", "Nike Collectie bij Zalando - Vind hier de highlights - zalando.be", and "Nike Shoes - kickz.com".
- Generic search results:** This section includes organic search results such as "Nike Mens Shoes, Clothing and Accessories. Nike.com (UK)", "Women's Shoes & Trainers. Nike.com UK", and "Men's Shoes & Trainers. Nike.com CA".
- Specialised search results (Google Shopping):** This section displays a grid of product listings with images, prices, and ratings, such as "Nike Lunar More Royal Gelfoam", "Nike Air Max Typha", and "Nike Free RN Flyknit 2017".

Annotations on the slide include "Links to standalone pages of specialised search services" pointing to the Shopping tab, and "Generic search results" pointing to the organic search results.

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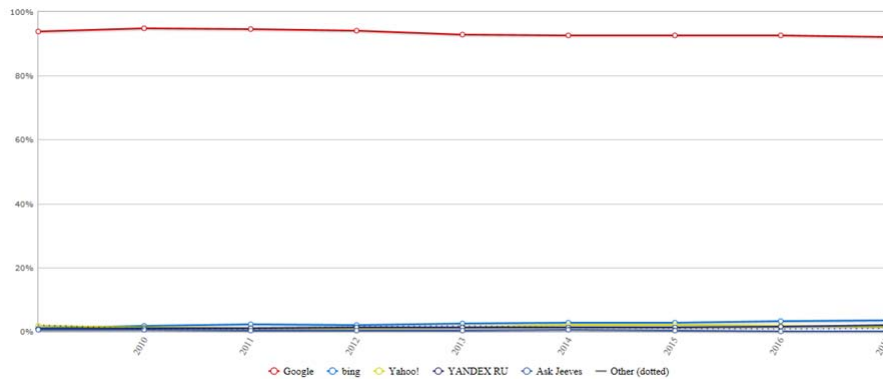
## Market for general search services

- General search is different from:
  1. Content sites (including Wikipedia)
  2. Social networks
  3. Specialised search sites
- General search markets are national in scope.
- General search services offered on static and mobile devices belong to the same market.

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## Google is dominant in general search



Search Engine Market in Europe – 2009 to 2017

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## Google is dominant in general search

- Barriers to entry and expansion
  - significant investments necessary
  - importance of the volume of queries to provide relevant results
  - new entrant to match investments in product improvements
  - positive feedback effects
- Infrequency of multi-homing and existence of brand effects
  - minority of users in the EEA multi-home
  - users trust in the relevance of results provided by Google
- Lack of countervailing buyer power

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## Conclusion

- E-commerce presents new challenges for competition law enforcement
- Tools are flexible enough