

Big data - some observations from an economics perspective

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23 February 2017

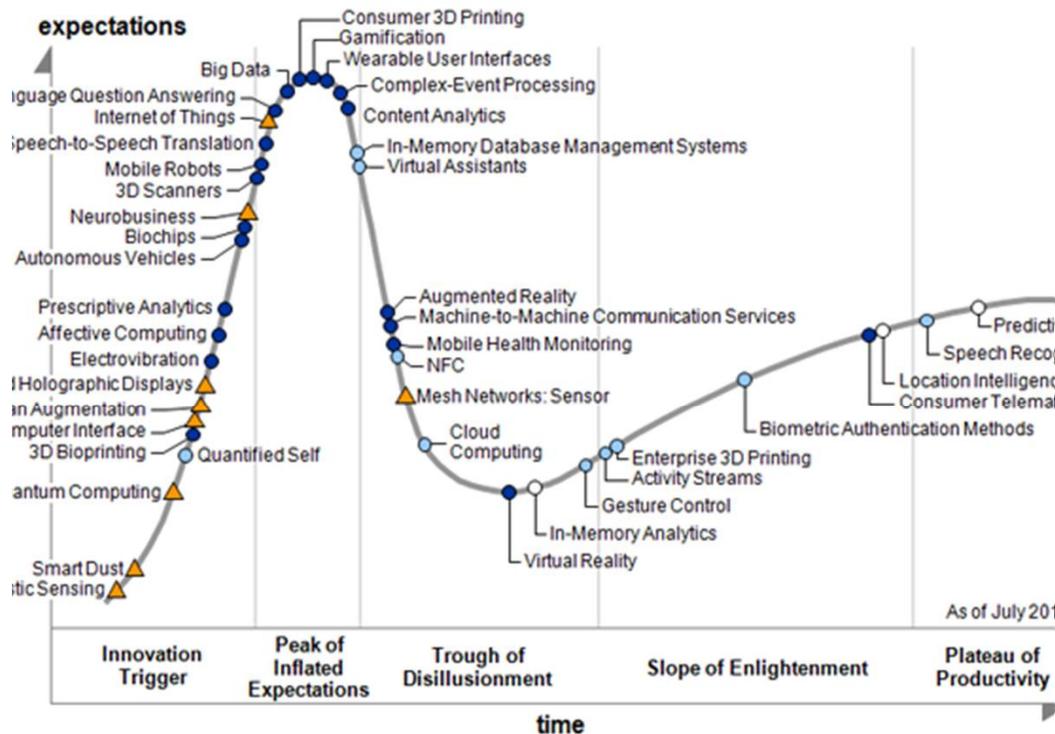
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- **Why is the CMA interested?**
- **Big data and market power**
- **Big data and dynamic vs static analysis**
- **Price discrimination and algorithms**
- **Consumer protection and remedies**
- **CMA as a consumer of big data**
- **Summary**

Emerging Technologies Hype Cycle for Emerging Technologies - where is big data at?

2013

2016



Source: Gartner Inc.

is the CMA interested?

Big data touches on full gambit of an authority's work. Some e.g.s:

- **Mergers**
 - Google/DoubleClick (2008)
 - Facebook/WhatsApp (2014)
 - Microsoft/LinkedIn (2016)
- **Anti-trust**
 - Exploitative: price discrimination
 - Exclusionary (Google)
- **Cartels/collusion**
 - Increased transparency
 - Algorithmic collusion (Trod)
- **Consumer protection**
 - Cloud storage
- **Markets**
 - Remedies (banking, energy)

act of big data on competition, kets and consumers

- **Big data and dynamic vs static analysis**
- **Price discrimination and algorithms**
- **Consumer protection and remedies**

data and dynamic vs static competition I: market power

- Network effects and platforms
- High up-front sunk costs and low marginal costs
- Data is often non-exclusive non-rivalrous by its nature: But access not always easy – does this raise barriers to entry?
- Snowball effects – marginalisation of smaller competitors due to differentiated data access self reinforcing – access to a larger amount of data may support better services, which in turn attracts more customers and more data
- Convergence towards monopolisation of data-related markets?

data and dynamic vs static analysis II

- **Exclusionary conduct**
 - Tied sales and cross-usage of datasets
 - Refusal to access data
- **Does static market power confer dynamic market power?**
 - Solutions: FRAND?
 - What price is reasonable given zero price setting?
 - Consumer data protection issues?
 - Impact on dynamic competition?

e discrimination and algorithms collusion

- **Data collection can lead to price discrimination which has the potential to benefit (or harm) consumers**
 - Personalised pricing online is not likely to be harmful as a rule. Some factors that make price discrimination more likely to be harmful are more likely to occur online than in traditional offline retail markets
- **Tacit collusion through sophisticated machine learning**
 - Ezrachi and Stucke
 - Human culpability? -> MIR regime?
 - CMA Cartel Case: Trod
- **But data also allows for price discrimination, providing greater incentives to cheat on any agreement**

Consumer protection and the marketing/ownership of 'big data'

- **Data collection has an implicit price**
 - Does this lead to price uncertainty?
 - Does this reduce comparability, search activity and switching?
 - Could there be a softening of competition?
- **Ownership**
 - What rights should consumers have to own their data?
 - Implications for remedies?

As a consumer of big data

- **Opportunity:** Access to new types of data and tools opens the door to new sources of evidence that can help us in our work.
- **Opportunity:** Create / put in place data-based solutions to problems in markets (e.g. banking)
- **Challenge:** Ensuring we have the tools to fully appreciate the competitive implications of the data-heavy evidence we get in. For example, 3rd used data scientists in a recent data room.
 - Special data tools and technologists?

- **Fast developing area of strategic importance to the CMA.**
- **Obvious benefits to ‘big data’.**
- **CMA keen to build on its knowledge of online markets and the internet to understand what impact ‘big data’ it will have on markets and consumers to ensure benefits are maximised and potential downsides minimised.**
- **Use of big data implies very dynamic markets.**
- **Need better economic models to assess the impact on competition in these dynamic models.**
- **How can the CMA capitalise on big data/machine learning?**