

COMPETITION

Big data, big competition law issues – emerging competition enforcement in the fourth industrial revolution: big data, algorithms and abuse of dominance

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Introduction

1. Digitalization enables companies to systematically collect, analyse and draw conclusions from data almost in real time. Many companies achieve large profits with business models which are based on the collection and commercial use of (often personal) data. Google's search engine and Facebook's social network are two prominent examples. However, data collection is not only crucial for search engines, social networks or online advertising, but key for traditional industries such as energy, telecommunications, insurance, banking or transport

2. Recently, The Economist noted that data, particularly consumer data, had become "*the new raw material of business an economic input almost on a par with capital and labour*". Modern computing power has expanded ability to collect, store process and analyse data on a large scale raising complex questions:

2.1 the commercial nature of the accumulated "Big Data"; and

2.2 the implications for competition in numerous industries across the global economy.

3. As artificial intelligence (AI) machine learning (ML) and the Internet of things (IoT) promise to make big data analytics a central feature of virtually every area of commerce, competition lawyers, economists and regulators have to define big data and analyse it under the world's competition laws.

4. Some argue that big data is an important barrier to entry because data is difficult to collect, access, replicate and process. However, others assert that data rich companies are not an economic threat, but rather an important source of innovation which policymakers should encourage, not limit. From a competition perspective, data is a class of assets that vary widely in their competitive significance.

5. The challenge for regulators and courts will be to separate cases requiring closer scrutiny from the cases where data ownership and usage is economically beneficial, drives innovation and is competitively benign. In 2013, a McKinsey^[1] study estimated that improved use of data could create \$3 trillion in additional value within various industries, including \$1.3 trillion in the United States.

The meaning of the fourth industrial revolution

6. The fourth industrial revolution will be an era that will be driven by intelligent machines that can perform complex tasks automatically, by communicating with other machines, with little or no human intervention and impact on all disciplines, economies and industries. An important component of the fourth industrial revolution is artificial intelligence, robotics, quantum computing, 3D printing and autonomous vehicles. An example, particularly in the legal world is the use of Artificial Intelligence to ensure compliance with regulatory changes like the General Data Protection Regulation. **Without data this cannot happen!**

7. President Cyril Ramaphosa, during the 10th BRICS Summit, himself stated that –

"...innovation has the potential to dramatically improve productivity and to place entire countries on a new trajectory of prosperity...they can expand economic participation by ensuring that knowledge and information is more broadly disseminated across the population"^[2]

Data and Big Data

8. For the term "data", there is no single definition:

8.1 in a wider sense the term is used to refer to (any) information, or to the representation of such information, often in combination with it being stored on a computer; and

8.2 in the context of many online business models the term "data" often refers to personal data – providing information about an individual's characteristic traits, preferences, geographic locations etc. Companies also make use of data about economic entities and objects, e.g. such as specific information about competitors, business strategies and business transactions or the status of operation of certain machines.

9. The buzzword of choice in the current debate concerning competition law and digitalization, however, is not simply "data" but the term "big data":

9.1 a concept lacking a common definition;

9.2 it is often used to describe the recent developments of collection and utilisation of data in the digital economy; and

9.3 aspects of "big data" that are often mentioned in the debate are large amounts of different types of data, produced at high speed from multiple sources, whose handling and analysis require new algorithms, new and more powerful processors, storage and data transport technology.

10. In a shorter form "big data" is often characterized by the three "**V**"s – **Velocity, Variety and Volume** – or the fourth of them adding "**Value**"^[3].

11. The advantages of big data are innumerable comprising of, *inter alia*, significant economic potential which includes:

11.1 collecting and analyzing data on a large scale can help make economies work better and be more efficient;

11.2 companies can create new products and services that were not existent before;

11.3 data and technological changes affect traditional industries and can significantly improve companies' products and services; and

11.4 The technological changes induced by digitalization have significantly improved the possibilities to collect, process and commercially use data in almost every business sector. *In many cases that increases economic efficiency.* However, it also has the potential to raise competition concerns!

Interplay between data, market power and competition law

12. Under certain circumstances, the collection and analysis of data can be a factor contributing to competition concerns.^[4] The debate usually circles around three aspects:

12.1 data can be a factor contributing to market power If – and this is a crucial precondition – the access to data is important to compete on the markets, the possession of or the access to data can constitute a barrier for market entry if new entrants are unable to either collect similar data or to buy access to sources of such data as the incumbents;

12.2 data can increase market transparency among suppliers and thereby facilitate collusion – data collection increases transparency between suppliers. In certain cases that can limit competition. Particularly concentrated markets with a high transparency among suppliers can be vulnerable to (tacit or explicit) collusion – easier to agree on collusive prices, adapt collusive prices to changes or to detect deviations by using analytical algorithms on that data; and

12.3 data can be an instrument for certain anticompetitive conduct, abuse of dominance such as access restrictions and essential facility foreclosure.

13. The questions to be considered by regulators and authorities when considering an abuse of dominance of data^[5] ought to relate to the following:

13.1 do the parties own or control the relevant data?;

13.2 is the relevant data commercially available as a product or as an input for products of downstream competitors?;

13.3 is the relevant data proprietary to the owner's or controller's products or services and a competitively critical input?; and

13.4 do reasonably available substitutes for the relevant data exist or is it unique?

Conclusion

14. The notion of "Big Data" has caught the imagination of many, including in the competition law world. The ever-growing digitization of the economy and connectivity of goods and devices, the volume of data that can be collected has never been as high as today. Data is arguably everywhere and the real value of data will in fact significantly depend on the knowledge that can be extracted from it.

15. While data is "unique" in some sense in that it is not a bridge or a building, it is not unique when one considers how to approach it under competition law. Data – in whatever form – may constitute an asset. To the extent it has been fully productized, it is relatively easy to identify its importance. As it moves into being a potential input, there are several preconditions to consider before determining whether an issue may exist. Before taking any action based on a company's use or acquisition of sets of big data, regulators should proceed with great caution to understand in depth what data is relevant in each case, how that data is used, and whether any substantial foreclosure is indeed possible.

15. Finally, when considering digital markets, it is often argued that these are characterized by rapid changes, strong innovation and easy entry of new challengers. In a speech on the use of algorithms in pricing, EU Competition Commissioner, Margrethe Vestager, warned –

"They [businesses] may not always know exactly how an automated system will use its algorithms to take decisions. 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....And businesses also 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."

[1] Open Data: Unlocking Innovation and Performance with Liquid Information", McKinsey Global Institute (October 2013).

[2] Statement by President Cyril Ramaphosa during the open session of the 10th BRICS Summit, Sandton Convention Centre, 26 July 2018.

[3] Hu, Han et al., "Toward Scalable Systems for Big Data Analytics: A technology Tutorial", IEEE Access Vol. 2 (2014).

[4] B Lasserre & A Mundt "Competition Law and Big Data: The Enforcers' View", The New Frontiers Innovation and Competition Big Data Debate, No. 1 (2017).

[5] G Sivinski, et al, "Is big data a big deal? A competition law approach to big data", (2017) European Competition Journal, Vol 13, NOS 2-3, 199-227.



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