

COMPETITION LAW 2.0 – THE DIGITAL ECONOMY AND ITS CHALLENGES FOR ANTITRUST DEVELOPMENT

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1. INTRODUCTION

- 1.1 The Digital Economy is upon us and has brought the future with it. Data is the new oil, treated as asset and currency alike. Computer algorithms recommend new products based on our previous online purchases, predict and adapt to changes in the market almost immediately, and may not even need human intervention to do so.
- 1.2 In *The Hitchhiker's Guide to the Galaxy*¹, a supercomputer called Deep Thought was even designed to calculate the answer to the Ultimate Question of Life, the Universe, and Everything. This exercise took Deep Thought 7.5 million years, just to find that the (unsurprisingly unsatisfactory) result was '42'.
- 1.3 This teaches us two lessons. First, that even the best computers may not be able to do it all. Second, that it is not advisable to tackle discrete challenges with a nut/ sledgehammer approach, but to carefully consider first what question actually needs answering. Digital Markets have many facets and accordingly evoke many concerns. The key question – the Ultimate Question if you will – is, however, what challenges they present for antitrust development, and whether the existing tools are sufficient and adequate to address them.
- 1.4 The author considers that there is no immediate ground for panic. It is true that the rise of Big Data, multi-sided platforms and network effects may complicate traditional market definition, that free services dodge turnover-focused merger tests, or that increasingly intelligent algorithms veil collusive activities. However, competition authorities are not incapable of adapting their methods to meet the demands of an evolving market.
- 1.5 The principle purpose of this article is to examine some of the emerging challenges and suggest a range of potential responses. Whilst the author would have liked to address all concerns identified in relation to digital markets, the limited scope of this article only permits a high level analysis of a few select issues.
- 1.6 Equally, the Digital Economy is not just source for concern, but also promises benefits for consumers through lower prices and increased transparency. Regrettably though, these benefits will not be considered in more detail in this article.

2. CHALLENGES OF THE DIGITAL ECONOMY

Big Data

- 2.1 The term Big Data was originally coined by computer scientists, but has become increasingly popular in regulatory circles. Although lacking a precise definition, Big Data is commonly understood as referring to a large volume of datasets comprising of different information.² Moreover, it is often characterised by the three Vs³:
 1. **Volume** of data processing has expanded exponentially and is only expected to surge in the future;
 2. **Velocity** in which data can be processed has almost reached real time; and

¹ D. Adams, *The Hitchhiker's Guide to the Galaxy*, Pan Books, 1979.

² Directorate for Financial and Enterprise Affairs, 'Big Data: Bringing Competition Policy to the Digital Era', *DAF/Comp(2016)14*, 27 October 2016, p.5, [https://one.oecd.org/document/DAF/COMP\(2016\)14/en/pdf](https://one.oecd.org/document/DAF/COMP(2016)14/en/pdf) (accessed 6 Oct 2017); Bundeskartellamt and Autorité de la concurrence, 'Competition Law and Data', 10 May 2016, p.4, http://www.bundeskartellamt.de/SharedDocs/Publikation/DE/Berichte/Big%20Data%20Papier.pdf?__blob=publicationFile&v=2 (accessed 6 Oct 2017).

³ Bundeskartellamt and Autorité de la concurrence, 'Competition Law and Data', 10 May 2016, p.4.

3. **Variety** of data has increased with undertakings now storing information such as addresses, birth dates, but also habitual data including GPS location, duration of visits to stores and purchasing history.
- 2.2 The value that derives from the interaction of these characteristics gives Big Data an elevated status in today's markets where business models often feature the acquisition of data in their competitive strategies. Once acquired, such data is fed into a feedback loop⁴ and used to:
 1. Improve service quality directly; or
 2. Target advertisement campaigns, thus gaining more funds for investment which in turn result in an improved service quality.
 - 2.3 Either way, existing customers benefit from better services whilst new customers are attracted by them. This is, however, where competition concerns start. For one, economies of scale mean that initial costs of entering the market are high, whilst marginal costs are virtually non-existent once the system is running.⁵
 - 2.4 Moreover, the feedback loop hampers the ability of new entrants to compete with established players which profit from a large customer base and thus a vast data pool. This double barrier means that markets that use data as a key asset – search engines or matching platforms – are often concentrated between a few big players which can exclude competitors by withholding access to their data.
 - 2.5 A good illustration is the French *Cegedim*⁶ case, involving the biggest national provider of medical information databases. Cegedim refused to grant licenses to its database to customers which used software by Euris. The latter was directly competing with Cegedim on the separate market for customer relationship management. Cegedim would sell its database to customers using any other software. The French competition authority and the Supreme Court agreed that this constituted abusive behaviour.⁷
 - 2.6 *Cegedim* was a straight-forward case between buyer and seller with an obvious infringement. Things have become slightly more complicated, however, with the rise of multi-sided platforms;⁸ entities that serve more than one user/ customer group – providers and receivers alike.⁹ The challenge for competition authorities in such an environment is not just to determine which parties might be involved in, or adversely affected by, an infringement, but also how to define the relevant market. Should platform activities be regarded as one holistic market, or separate markets depending on the user groups involved? And should authorities adopt a general approach or determine the relevant market on a case-by-case basis?

Free Services

- 2.7 Many digital services are free for consumers (or charged at minimal cost). Facebook does not charge for its messages services, Google offers its search engine at no cost, and so do many price-compare websites.
- 2.8 Whilst undoubtedly appealing, an analysis shows that such services are often not free at all. For one, in the absence of monetary costs, consumers commonly have to 'pay' by accepting an increasingly higher and more serious degree of intrusiveness by platform providers. The loss of choice or control over privacy options is an issue that has recently emerged.

⁴ Directorate for Financial and Enterprise Affairs, 'Big Data: Bringing Competition Policy to the Digital Era', DAF/Comp(2016)14, 27 October 2016, p.10.

⁵ Directorate for Financial and Enterprise Affairs, 'Big Data: Bringing Competition Policy to the Digital Era', DAF/Comp(2016)14, 27 October 2016, p.11.

⁶ Autorité de la concurrence, decision n°14-D-06, 8 July 2014, <http://www.autoritedelaconurrence.fr/pdf/avis/14d06.pdf> (accessed 7 Oct 2017).

⁷ Cour de Cassation, Case n°926 F-D, 26 June 2017, https://groupes.renater.fr/sympa/d_read/creda-concurrence/CaP/21juin2017/Cegedim.pdf (accessed 7 Oct 2017).

⁸ E.g. Amazon Marketplace, Ebay, Google, Facebook, etc.

⁹ Bundeskartellamt and Autorité de la concurrence, 'Competition Law and Data', 10 May 2016, p.27.

- 2.9 In the US, officials have emphasised the importance of evaluating the impact of a transaction on users' privacy as a key part of the merger review, both in the context of the *Google/DoubleClick*¹⁰ merger and the *Microsoft/Yahoo*¹¹ JV. Similarly, EU Commission officials remarked that if the Facebook/WhatsApp entity required more personal data from its users post-merger then this "*could be seen as either increasing its price or as degrading the quality of its product*"¹². In the Digital Economy, personal data has become the new currency of choice.
- 2.10 This triggers the second conundrum of 'free' services; they may easily slip through existing merger control regimes where thresholds are predominantly based on financial turnover. In a merger situation, this issue may arise in two different ways:¹³
1. There is no relevant turnover at all: either both undertakings offer their services free of charge or at such low costs that the turnover generated is negligible; or
 2. There is no relevant turnover yet: for instance, where a large 'free' service provider acquires an emerging player in its infancy stage, when turnover figures are still low, but the potential for rapid growth high.
- 2.11 The challenge, as Commissioner Vestager remarked, is
- "that it's not always turnover that makes a company an attractive merger partner. Sometimes, what matters are its assets. That could be a customer base or even a set of data. [...] By looking only at turnover, we might be missing some important deals that we ought to review"*¹⁴.

Algorithms

- 2.12 Algorithms are another novelty that formerly only played an important role in sci-fi works, but have become an intrinsic part of today's online markets. Search algorithms facilitate our hunt for information, recommendation algorithms suggest new products based on our past purchases, and pricing algorithms assist sellers in their price-setting decisions. It is these pricing algorithms that may raise concerns if developing – quite literally – a life of their own. Of the different pricing algorithms currently existing, three types are particularly noteworthy:
1. **Monitoring algorithms** are designed to monitor the behaviour of competitors to adept to their practices and/ or to enforce collusive agreements. Whilst the collection of data is still a cumbersome task, once gathered, these algorithms can evaluate information and react almost immediately if they detect deviations by rogue 'cartel' members¹⁵; e.g. by mirroring any price cuts. Because of the speed with which the algorithms process data and thus potentially punish deviating

¹⁰ Google/DoubleClick, F.T.C. File No. 071-0170, Dissenting Statement of Commissioner Pamela Jones Harbour, 20 December 2007, p.9, https://www.ftc.gov/sites/default/files/documents/public_statements/statement-matter-google/doubleclick/071220harbour_0.pdf (accessed 6 Oct 2017).

¹¹ S. Stefanini, 'Lawmakers Jump into Google-Yahoo Probe', *Law360*, New York, 10 July 2008, <https://www.law360.com/articles/61876/lawmakers-jump-into-google-yahoo-probe> (accessed 6 Oct 2017).

¹² E. Ocello, C. Sjödin and A. Subočs, 'Lessons from the Facebook/WhatsApp', in European Commission, 'Competition merger brief', *Issue 1/2015*, p.6, http://ec.europa.eu/competition/publications/cmb/2015/cmb2015_001_en.pdf (accessed 6 Oct 2017).

¹³ European Commission, Competition merger brief No 1/2015, p.2.

¹⁴ M. Vestager, 'Refining the EU Merger Control System', Speech at the *Studienvereinigung Kartellrecht*, Brussels, 10 March 2016, https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/refining-eu-merger-control-system_en (accessed 6 Oct 2017).

¹⁵ Oxera, 'When algorithms set prices: winners and losers', Discussion paper, 19 June 2017, p.18, <https://www.oxera.com/Latest-Thinking/Publications/Reports/2017/Algorithmic-pricing.aspx> (accessed 6 Oct 2017); OECD (2017), 'Algorithms and Collusion: Competition Policy in the Digital Age', <http://www.oecd.org/competition/algorithms-collusion-competition-policy-in-the-digital-age.htm> (accessed 6 Oct 2017).

behaviour, there is virtually no incentive for market participants to undercut their competitors.

2. **Parallel algorithms** function in a dynamic, semi-autonomous way to adjust to market changes, subject to their initial settings.¹⁶ This may allow competitors to collude without the need for further communication once an agreement is in place.

Where the programme is calibrated incorrectly, however, amusing anecdotes may occur such as that of the biological textbook *The Making of a Fly*. In 2011, two pricing algorithms led to an upward spiral on Amazon Marketplace which saw the price of the publication skyrocket to more than \$23m.¹⁷ When setting up their software, unfortunately, neither of the sellers had thought of including a price ceiling.

Entertainment aside, the same ingredients can concoct a serious antitrust violation. In 2015, the US Department of Justice¹⁸ fined various sellers of posters over fixing prices on Amazon Marketplace. The undertakings had agreed to coordinate their prices on the platform and designed an algorithm to automatically adjust prices to this end. A similar case¹⁹ was fined by the UK Competition and Market Authority ("**CMA**") in 2016. However, these cases raise the important question as to what happens where no underlying agreement is in place.

3. **Self-learning algorithms** are complex and subtle, and may achieve such a collusive outcome without leaving a paper trail. The algorithm uses data on past and present market activities to predict patterns and future behaviour.²⁰ It learns constantly, readjusts to market changes, and may thus "*easily determine the price that maximises joint profits and which harms consumers the most*"²¹.

Although it is currently still unknown how the algorithm might set up the initial collusion, any subsequent collusive practices could virtually happen in a black box – without any intervention, communication or even knowledge of the undertakings involved. Proving this new form of tacit collusion may not only cause a headache for competition authorities, but also raises the question of liability where 'intention' is not part of the equation.

Speed of the Digital Realm

- 2.13 A last challenge that requires mentioning does not derive from any specific feature of the Digital Economy, but underlies its entire nature; the speed with which change occurs. In the early 2000s, MySpace and Yahoo were household names; today, they have been eclipsed by newer entities such as Facebook, Twitter or Google.
- 2.14 Both CMA Executive Director Michael Grenfell²² and Bundeskartellamt President Andreas Mundt²³ agree that fast-moving digital markets leave authorities in a pickle. Is it sensible to intervene where the changing dynamics of the market itself lead to the rise and fall of dominant players? And where authorities do act, are they even able to make suitable adjustments, or do the painstakingly slow regulatory processes mean that any response is already outdated by the time it takes effect?

¹⁶ OECD (2017), 'Algorithms and Collusion: Competition Policy in the Digital Age', p.27.

¹⁷ D.J. Lynch, 'Policing the digital cartels', *The Financial Times*, 8 January 2017, <https://www.ft.com/content/9de9fb80-cd23-11e6-864f-20dcb35cede2> (accessed 6 Oct 2017).

¹⁸ U.S. v. Topkins, U.S. District Court, Northern District of California, No. 15-cr-00201.

¹⁹ Case 50223 of 12 August 2016 on 'Online sales of posters and frames', <https://www.gov.uk/cma-cases/online-sales-of-discretionary-consumer-products> (accessed 6 Oct 2017).

²⁰ OECD (2017), 'Algorithms and Collusion: Competition Policy in the Digital Age', p.31.

²¹ OECD (2017), 'Algorithms and Collusion: Competition Policy in the Digital Age', p.31.

²² Competition and Markets Authority, Speech by 'Michael Grenfell on antitrust in the digital age', 15 November 2016, <https://www.gov.uk/government/speeches/michael-grenfell-on-antitrust-in-the-digital-age> (accessed 6 Oct 2017).

²³ Interview with Andreas Mundt, 'Digitale Welt erfordert neue Antworten', *Frankfurter Allgemeine Zeitung*, 18 August 2017, p.19.

- 2.15 There is no answer as of yet. Authorities will have to find innovative solutions where traditional procedures may simply be too sluggish to be effective.

3. STEPS FORWARD

- 3.1 In light of the above, it is not advisable to look for the one right solution, but for a number of reasonable ones. Intervention might not be sensible, or feasible, in every scenario, but should be assessed on a case-by-case basis. However, whilst it may not be possible to determine one definitive response to address all challenges, a number of reasonable suggestions have been made:
1. Andreas Mundt has indicated that unconventional measures are required to cope with the speed of digital markets. In its current investigation of Facebook, the Bundeskartellamt has therefore opted for a purely administrative procedure, foregoing any inspections or witness interrogations. Depending on the circumstances, *"this makes things quicker and more efficient"*²⁴.
 2. Following *Facebook/WhatsApp*, and to address the issue of free services in a merger context, the newly amended version of the German Act against Restraints of Competition has introduced a threshold based on transactional value (i.e. the target's 'significant activities') rather than pure turnover.²⁵ Similar non-monetary merger tests exist in the US, UK and Mexico.²⁶
 3. Commentators have similarly suggested that it may be appropriate to substitute the traditional SSNIP test with a SSNDQ – small but significant non-transitory decrease in quality – test when attempting to measure and define the market in relation to free services or multi-sided platforms.²⁷
 4. Michael Grenfell²⁸ remarked that ex-ante measures could be used to complement more traditional reactionary approaches. In particular concerning issues of access to platforms or data, wider ex-ante regulation might be a more appropriate response; provided, of course, that such regulations are not completely outdated by the time they take effect.
 5. Finally, another approach has seemingly been that 'if you can't beat them, join them' – or have them join you. To this end, Competition Commissioner Vestager has recently announced that she is *"looking to set up a panel of experts from outside the Commission"*²⁹ to consult on likely changes and how antitrust enforcers should react to them.

4. CONCLUSION

- 4.1 This article sought to provide a high level introduction to the challenges of the Digital Economy and to provide reasonable responses to the Ultimate Question on antitrust development. New challenges notwithstanding, competition authorities are not left without means to address them.

²⁴ Original quote: *"...wir prüfen einen Verdacht auf Missbrauch von Marktmacht und beschränken uns dabei auf ein Verwaltungsverfahren [...] Das ist weniger spektakulär, weil es ohne Durchsuchungen und Zeugenvernehmungen auskommt. Aber es kann je nach Sachlage effizienter und schneller sein."*, in Interview with Andreas Mundt, 'Digitale Welt erfordert neue Antworten', Frankfurter Allgemeine Zeitung, 18 August 2017, http://www.bundeskartellamt.de/SharedDocs/Interviews/DE/2017/170818_FAZ.html (accessed 6 Oct 2017).

²⁵ § 35(1a)4 GWB.

²⁶ Directorate for Financial and Enterprise Affairs, 'Big Data: Bringing Competition Policy to the Digital Era', DAF/Comp(2016)14, 29-30 November 2016, p.20.

²⁷ Directorate for Financial and Enterprise Affairs, 'Big Data: Bringing Competition Policy to the Digital Era', DAF/Comp(2016)14, 29-30 November 2016, p.15.

²⁸ Competition and Markets Authority, Speech by 'Michael Grenfell on antitrust in the digital age', 15 November 2016.

²⁹ Margrethe Vestager, 'How competition can build a better market', Speech at the American Institute, Washington, 18 September 2017, https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/how-competition-can-build-better-market_en (accessed 6 Oct 2017).

- 4.2 The author notes that there are things that can be done to bring existing regimes in line with the new digital era. This does not require a whole new set of rules, but simply deliberate tweaking in the right places; an upgrade of the old programmes if you will. As merger regimes in Germany and the UK show, this might be accomplished by simply shifting from a purely financial to a more 'activity-focused' assessment; or by recruiting brain power from the relevant sector itself, as done by the European Commission. Margrethe Vestager was right when she remarked that *"asking the right questions is important, but understanding the answers matters even more"*³⁰.
- 4.3 Over the past decades, competition authorities have proven time and again that they are capable of understanding changes in the markets and evolving accordingly. We've gone from cartels in smoke-filled rooms to disputes over the dominance of internet browsers to a world where the prices of products are determined by semi-autonomous algorithms. Digital markets are merely the next step and Commissioner Vestager's proposed panel of experts is a step in the right direction.³¹
- 4.4 Of course, not all challenges of the Digital Economy will be easy to solve and it remains to be seen how authorities reform the instruments at their disposal. While it might not be a suitable source of wisdom in guiding the development of antitrust law, the *Hitchhiker's Guide* may nevertheless teach us another (more comforting) lesson. When it comes to the challenges of the Digital Markets, we should follow the advice printed in big, friendly letters on the Guide's cover and

"DON'T PANIC!"³².

³⁰ Margrethe Vestager, 'Algorithms and competition', *Bundeskartellamt 18th Conference on Competition*, Berlin, 16 March 2017, https://ec.europa.eu/commission/commissioners/2014-2019/vestager/announcements/bundeskartellamt-18th-conference-competition-berlin-16-march-2017_en (accessed 6 Oct 2017).

³¹ Margrethe Vestager, 'How competition can build a better market', *Speech at the American Institute*, Washington, 18 September 2017.

³² D. Adams, *The Hitchhiker's Guide to the Galaxy*, Pan Books, 1979.