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**BIG DATA: BRINGING COMPETITION POLICY TO THE DIGITAL ERA**

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*This paper by Annabelle Gawer (Professor, University of Surrey, Business School) was submitted as background material for Item 3 of the 126th meeting of the OECD Competition Committee on 29-30 November 2016.*

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**COMPETITION POLICY AND REGULATORY REFORMS FOR BIG DATA:  
PROPOSITIONS TO HARNESS THE POWER OF BIG DATA  
WHILE CURBING PLATFORMS' ABUSE OF DOMINANCE**

*- Note by Annabelle Gawer\* -*

## **1. Introduction**

### ***1.1 Digital Era: What is new and different?***

1. Over the past 20 years, the global economy has been reshaped by digital technologies. All over the world, individuals and organizations have adopted and increasingly rely upon digitally-enabled devices and technologies to help them conduct essential daily tasks.

2. We are connected via the Internet and telecommunication networks that span the earth, through a global grid of close to 8 billion mobile connected devices (more than the human population). Individuals and organizations increasingly use these devices to continuously engage with digitally-enabled activities (which in turn generate digital traces). The concomitant consumption, usage, and generation of computer-mediated, computer-processed, and network-transmitted data have become an intrinsic feature of economic and social activity.

3. This digital phenomenon cannot be reduced to its technological component: it is also social and economic. It is now abundantly clear that it changes not just how individuals and organizations use technologies, but also that it affects in non-obvious ways how firms compete and innovate. It also alters how humans relate to each other and to machines, how countries and regions redefine their competitive advantage, and it redefines to some extent the nature of work and the modalities of economic exchange. However, because it is such a recent and complex phenomenon that simultaneously affects individuals, organizations, industries (and to some extent countries, and regions) through a complex set of interactions along and across economic, social, and technological dimensions, we are just beginning to scrape the surface of comprehending the ways in which it impacts social welfare.

### ***1.2 Digital Economy: Benefits and Concerns***

4. The digital economy has generated new kinds of value for many individuals and organizations, as for example through increased connectivity and access to information, as well as access to online forms of commerce. The initial euphoria of the mid-1990s and early 2000s around the potential for the Internet and mobile connectivity to create value for many, through open markets by lowering barriers to entry into new growing markets for innovators and to lower barriers to access for millions of individuals to life-enriching technologies, and thus to create a more prosperous and equitable society, it is a somewhat paradoxical that the last few years have witnessed the rise to dominance of a very small number of firms, and an unprecedented concentration of economic and technological power in the hands of a few (mostly north-American) firms.

5. More specifically, amid increasingly widespread concerns of dominance of a few profit-seeking commercial enterprises such as Google, Facebook, Amazon and Apple who have risen to global prominence and which provide the fundamental technologies, or platforms, which most users rely upon to conduct their digital tasks, there is a widespread realization among institutions which are responsible for

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the protection and enhancement of social welfare of the need to examine and scrutinize the conduct of digital powerhouses, if only to ensure fair treatment of society's constituencies in their various expressions (consumers, citizens, smaller enterprises, workers, etc.) and take steps to curb potential abuses of dominance.

### 1.3 *Questions addressed in this article*

6. In this context, this article aims to answer the following two questions:

- **Question 1:** How should antitrust authorities adapt competition law enforcement in digital platform markets?
- **Question 2:** Should any regulatory reforms be implemented in this context? What would they consist of?

7. These hotly contested debates have attracted significant resources to influence the outcomes. These debates involve international organizations such as the European Commission and the OECD, governments, regulatory agencies including the FTC and the FCC in the US, various competition authorities, consumer protection agencies, powerful technologies companies, representatives of smaller companies or incumbent firms, other business lobby groups and representatives of civil societies, all supported or accompanied by consultancies from the legal and economic profession, as well as academics, who help formulate various and often contradictory arguments based on law and economics.<sup>1</sup>

8. For proponents of government intervention, the technological powerhouses of the digital economy should be scrutinized and their conduct regulated because they provide key digital platform technologies which are construed as the technological infrastructure of the digital economy, and because they own, control, and use users' personal data in ways that are potentially detrimental to social welfare (Newman, 2013). For proponents of market laissez-faire, these same firms are heroic and successful private enterprises who ought to be allowed to benefit in an unfettered way from the market power they have rightly earned through their investment, effort, and talent, the assumption being that the market can deliver the best outcome for society without government intervention, and that any monopoly which would fail to satisfy customers will be eventually overturned by dynamic market forces of supply and demand (Bork and Sidak, 2012).

9. This paper aims to offer an informed and balanced opinion which acknowledges the most important contributions of both sides of the debate, and aims to suggest productive ways forward in a synthesis which should promote social welfare as well as not weaken the vibrancy of economic enterprises.<sup>2</sup>

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<sup>1</sup> The author has not received any contribution or payment of any form from any of the organizations mentioned in this report. The author has been an Oral Witness for the UK Parliament for the Enquiry on Digital Platforms: see Gawer, A., (2015), House of Lords Supplementary Written Evidence (OPL0050), submitted to the UK Parliamentary Inquiry on Digital Platforms, *UK Parliament* <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/eu-internal-market-subcommittee/online-platforms-and-the-eu-digital-single-market/written/23342.html>. The author has also written a report for the European Commission: Gawer, A. (2016), Online Platforms: Contrasting Perceptions of European Stakeholders: A Qualitative Analysis of the European Commission's Public Consultation on the Regulatory Environment for Platforms, *European Commission* <https://ec.europa.eu/digital-single-market/en/news/study-online-platforms-contrasting-perceptions-european-stakeholders-qualitative-analysis>

<sup>2</sup> In order to contribute most effectively to the debate (in the required format of a short 10-page paper), I have elected to not repeat the arguments expressed in the Background Note [1] "Big Data: Bringing

## 2. Big Data and Platforms: Toward more precision on behaviours and conduct

### 2.1 Big Data

10. “Business models based on the vast collection and process of user data in nearly real-time in recent years have enabled companies to offer a wide range of innovative of customized services, often at zero prices, with substantial gains for consumers. At the same time, data-driven network effects reinforced by user feedback loops, and high economies of scale associated with information technology infrastructures, may provide companies that own the data with market power and create a tendency for markets to tip. Concern is rising that the increasing reliance and use of personal data is harmful to consumers. While some practitioners have proposed adapting competition tools and antitrust policy to tackle such issues, others believe that these can be better addressed by data and/or consumer protection agencies.” ([1], Abstract, p. 2).

11. The term “Big Data”, although admittedly vague and lacking precision (see [1], p. 5. 2.1. #5), has been increasingly used to refer to “the *information asset* characterized by such a high *Volume, Velocity* and *Variety* to require specific technology and analytical methods for its transformation into value” (See [1] citing Mauro et al. 2016). Stucke and Grunes (2016) add *Value* of data as another component of Big Data, and note that “for personal data, each “V” has increased enormously over the last decade” (see [1], p. 5. 2.1. #6).

12. Beyond the obvious benefit of offering a “catchy” label, vague or overly broad constructs such as Big Data are rather unhelpful conceptually. They obfuscate the differentiated composition of economic agents involved, and do not help identify the various directional forces which these economic agents respond to. Big Data is a concept that lacks precision and regroups, unhelpfully and confusingly, different categories of constructs: assets, capabilities, in addition to under-specifying who is performing the actions.

13. Because competition policy focuses on agents’ behaviours, rather than focusing on the Data asset itself (however Big it is), I suggest that rather than focusing on the “Big Data” as “information asset”, we should first clarify precisely the specific categories of agents and stakeholders active in digital contexts, and identify their behaviours and their impact. In other words, we need to make progress on the defining characteristics of the modalities of economic activity associated with digital competition and innovation.

14. The reason we need to be clear about the categories of economic agents (I find helpful to identify platform owners, complementors, suppliers, consumers, end-users, citizens) is that even if sometimes individuals or organizations play multiple roles, these roles are distinct and so are the incentives associated with these roles.

15. This more precise and granular approach will help us provide further clarity on micro-mechanisms of value creation and value capture in digital industries, leading to clarify the potential implications of “Big Data” for competition policy. One essential category of economic agent which is specific to data-intensive industries is the category of platforms.

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Competition Policy to the Digital Area” (OECD Ref. DAF/COMP(2016)14) which lays out clearly a number of important issues and broadly identifies the dimensions of existing debate based on a thorough review of the literature; instead, I aim to focus on points which have either not been adequately treated so far or have been overlooked.

## 2.2 *Platforms*

16. “At the epicentre of the Big Data ecosystem, where many of the competition concerns are observed, platforms operate as the main interface between consumers and other market players”. ([1], 2.4.1, p. 13).

17. Platforms constitute a dominant organizational form in digital economies (see Gawer, 2014). The term platform has been used in a variety of ways.<sup>3</sup> They associate specific multi-sided business models with connecting technologies which allow categories of economic agents to exchange and transact, as well as innovate, and are subject to network effects, which are increasing returns to scale on the demand side.

18. Enterprises that leverage the power of platform business models have grown dramatically in size and scale over the past decade.<sup>4</sup> No longer the sole domain of social media, travel, books or music, platform business models have made inroads into transportation, banking and even healthcare and energy. Platforms are now active in North America, Europe, Asia, Africa and Latin America. Some platforms are household names such as Amazon, Apple, Google and Alibaba. Others have emerged more recently or hail from parts of the world that get less attention such as Rakuten (Japan), Delivery Hero (Germany), Naspers (South Africa), Flipkart (India) or Javago (Nigeria). Platform ecosystems are gaining ground through the digitalization of products, services and businesses processes and in the process are reshaping the global landscape.

19. Platform companies contribute importantly to the economy. They have driven up productivity in multiple ways. One source of productivity has been achieved through highly efficient matching. E-commerce marketplaces like eBay provide one example. Professional networks like LinkedIn provide another. Platforms have also improved productivity by supporting more efficient asset utilization. The ability of platforms to better utilize houses, cars, workspaces among other assets has spawned considerable interest and passion around the potential of the so-called “share economy.”<sup>5</sup> In addition, platforms have been important sources of innovation. For example, in 2014, nine U.S. platforms were awarded 11,585 patents.<sup>6</sup> Finally, many start-up platforms have been successful in attracting significant investment from venture funds. Most so-called “unicorns” are in fact platform companies.<sup>7</sup>

20. At the same time, platform companies have been disruptive. Online platforms have upended numerous brick and mortar chains and are making deep inroads into other industries from television to transportation. Although it is still early days, they have the potential to be equally disruptive to traditional approaches to banking, healthcare and energy services. Platforms have also attracted regulatory controversy. There have also been concerns that it may be easier for platform companies to avoid tax and

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<sup>3</sup> See Gawer, A. and M. Cusumano (2002), *Platform Leadership: How Intel, Microsoft and Cisco Drive Industry Innovation*, Harvard Business School Press, Boston, MA, for one of the first treatments of platforms. For a more recent treatment of platforms, see Gawer, A. (2009) (Ed.), *Platforms, Markets and Innovation*, Edward Elgar Publishing Ltd, Cheltenham.

<sup>4</sup> This section is derived from Gawer (2015), Gawer (2014), and Evans and Gawer (2016).

<sup>5</sup> “The rise of the sharing economy: On the Internet, everything is for hire,” *The Economist*, March 9, 2013.

<sup>6</sup> The companies are Microsoft, Google, Apple, Intel, Amazon, Yahoo!, Facebook, eBay and Salesforce. The patent data is from “2014 Top Patent Owners,” Intellectual Property Owners Association, June 2015.

<sup>7</sup> Unicorns are private start-up companies that have achieved a valuation of \$1 billion or more without going to public capital markets. A review Gawer and Evans (2016) conducted of the 115 companies listed as Unicorns by CB Insights in June 2015 found that 80 of these companies or 70 percent are platform companies.

insurance obligations.<sup>8</sup> There has been a range of concerns about how platform companies classify workers as independent contractors in ways that unfairly squeeze wages and benefits.<sup>9</sup> And, there have been concerns over the ability of platforms to dominate markets and undermine competition.<sup>10</sup>

21. **Definition:** Digital platforms are technologies, products or services (which we sometimes associate with the companies that produce them) which create value in two main ways, which I call Transaction Platforms and Innovation Platforms

22. **Transaction Platforms:** Facilitate transactions or exchange between a large number (and different types) of individuals or organizations, which otherwise would have difficulty finding each other, or exchanging with each other: these are transaction platforms (e.g., Uber, Google search, Amazon Marketplace; Facebook), using capture and transmission of data, including personal data, over the Internet. Within transaction platforms, one can distinguish matching platforms that provide a marketplace where different types of economic agents can interact such as buyers and sellers, and so-called “attention platforms” such as search engines or social networks which typically provide a set of free services that are subsidized by advertising sold on a per-click basis.

23. An important feature of platforms is the ability to efficiently match buyers and sellers in the market. While there is always friction associated with transactions between buyers and sellers, by building new software and harnessing the speed and scale of the Internet, platforms help reduce that friction. Innovative platform entrepreneurs have discovered that there are ways to get the flywheel going faster if one side of the market is incentivized to join, for example, by being subsidized. This is why it is not uncommon to see platforms offering deep discounts to one side of a market or even provide “freemium” goods or services to third parties to induce them to join, contribute and even innovate on the platform.

24. Innovation Platforms: Offer a technologically shared resource which can be connected upon and tapped into by (i.e., they act as a foundation on top of which) a large number of individuals or organizations who can innovate in complementary products or technologies or services. In other words, innovation platforms act as a technological foundation on top of which external entities can innovate. Archetypal examples include the iPhone and hundreds of thousands of app developers; Google Android and its vast ecosystem of app developer. These platforms offer digital tools such as APIs (Application Programming Interfaces) or Software Developer Kits to make it easier for developers of complementary software to innovate on complementary services or technologies or apps.

25. Innovation platforms consist therefore of technological building blocks that are used as a foundation upon which a large number of innovators can develop complementary services or products. These complementary innovators can be anyone, anywhere in the world, and together they form what is called an innovation ecosystem around the platform. An example is the iPhone, which has hundreds of thousands of applications. Those applications are developed by innovators all over the world, who use Apple technology the company makes available through software connectors sometimes called APIs—

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<sup>8</sup> See, for example, Pierre Collin, and Nicolas Colin. “Task Force on Taxation of the Digital Economy.” Report to the French Minister for the Economy and Finance, the Minister for Industrial Recovery, Minister Delegate for the Budget and the Minister Delegate for Small and Medium-sized Enterprises, Innovation and the Digital Economy 2013.

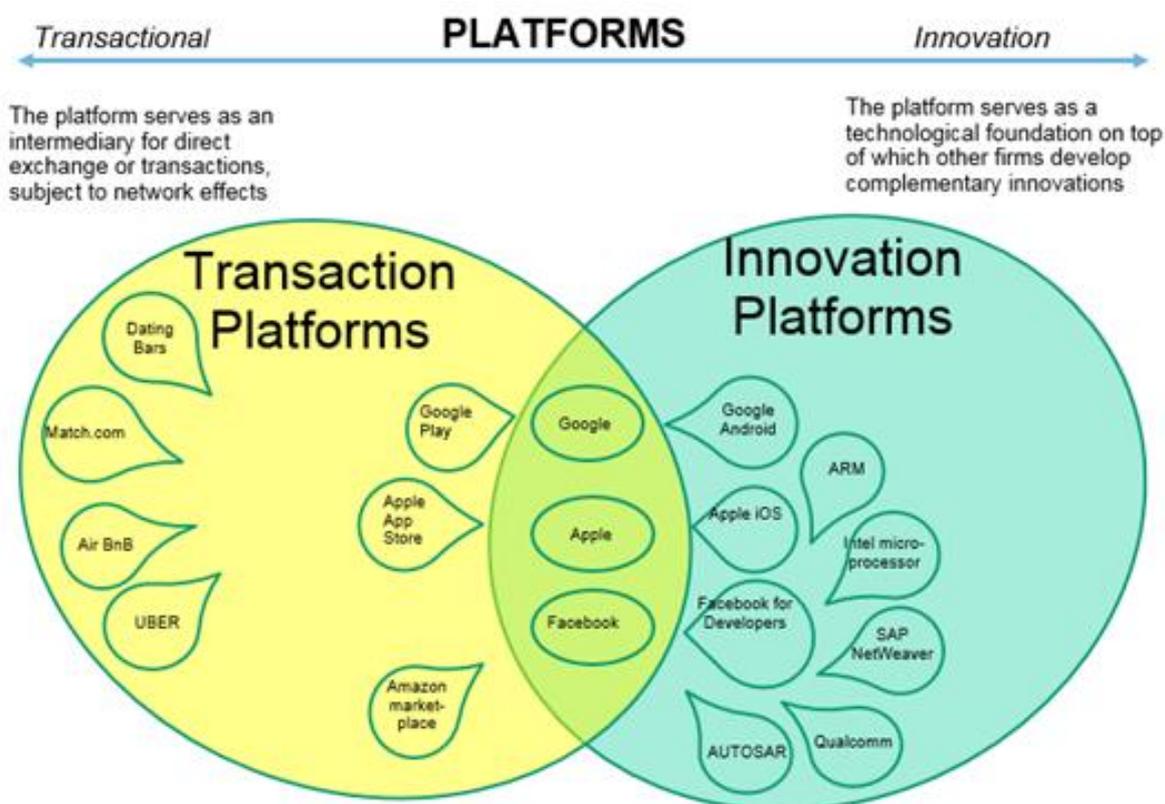
<sup>9</sup> Greg Bensinger, “Startups Scramble to Define ‘Employee’,” *Wall Street Journal*, July 30, 2015; and Naom Scheiber, “Growth in the ‘Gig Economy’ Fuels Work Force Anxieties,” *New York Times*, July 12, 2015.

<sup>10</sup> Gawer, A. (2016), Online Platforms: Contrasting Perceptions of European Stakeholders: A Qualitative Analysis of the European Commission’s Public Consultation on the Regulatory Environment for Platforms, *European Commission* <https://ec.europa.eu/digital-single-market/en/news/study-online-platforms-contrasting-perceptions-european-stakeholders-qualitative-analysis>;

application programming interfaces—or software developer kits, which will in effect continue the cycle of innovation and growth. Most innovation platforms today are digital and have a versatile and powerful software engine.<sup>11</sup>

26. One key feature of innovation platforms is that they allow platform owners to tap into a potentially unlimited pool of external innovators, in what is called an innovation ecosystem. Contrary to what happens within a traditional supply-chain, platform owners do not have to know in advance who or where the external innovators might be: it is these external innovators themselves (the developers of complementary products or services) who seek the platform and attempt to connect to it: The platform becomes a magnet for complementary innovators. The degree of openness, which the platform owner will design the interfaces (often associated with Software Developer Kits and Application Programming Interfaces, coupled with relatively low fees of access) will encourage and stimulate complementary innovation, which will allow the ecosystem to thrive.

Figure 1. Transaction and Innovation Platforms



27. Gawer and Evans (2016) suggest that the largest and most successful platforms such as Apple, Facebook, Google and Amazon, all tend to combine transaction platforms with innovation platforms: Apple iOS and App Store, Facebook and Facebook Connect, Google Search and Google Play.

<sup>11</sup> See Evans, D.S., Hagi, A. and R. Schmalensee (2006), *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, MIT Press, Cambridge, MA.

### 3. Competition Concerns about Digital Platforms (in the context of Big Data)

#### 3.1 *Network Effects and Barriers to Entry*

28. A fundamental feature of platforms is the presence of **network effects**: platforms become more valuable as more users use them.<sup>12</sup> As more users engage with the platform, the platform becomes more attractive to potential new users. This goes a long way toward explaining why some platforms have had viral growth. There are two kinds of network effects: direct network effects (where more users beget more users, as in more Facebook users will beget more Facebook users) and indirect network effects where more users of one side of the platform (for example, video game users) attracts more users on the other side of the platform (in this example, video game developers). Jeff Bezos, the founder and CEO of Amazon, refers to this reinforcing virtuous dynamic as the “Amazon flywheel.”<sup>13</sup>

29. They become more valuable to users when other users use them. E.g., Facebook, but also Google. In addition to the ability to efficiently and imaginatively match, they also have an amazing ability to accelerate innovation. One way is to open up to third-party applications. Apple created an innovation machine facilitated by the App Store. The company readily admits that third-party developers came up with ideas at a speed and scale that Apple could not have achieved with internal developers alone. Specific programs give developers promotional credits to assist in advertising apps and access to its App Store network of millions of customers in nearly 200 countries.

30. It is important to understand that **with platforms, scale is both the outcome of initial success and the engine for the further growth**. Network effects existed before online platforms, for example, the telephone network. But today, where individuals have access to pervasive connectivity that is facilitated by the Internet, and where there are 7 billion mobile phones in the hands of users—this ease of communication has increased the network effects. With platforms, scale creates value and attracts additional users. This dynamic creates a self-sustaining momentum for growth.

31. Some scholars have wrongly assumed that the presence of network effects directly leads to winner-take-all outcomes. We now understand that strong network effects are not sufficient to ensure a winner-take-all outcome.

#### 3.2 *The European Commission Enquiry on the Regulatory Environment of Digital Platforms: Focus on Platforms*

32. The European Commission orchestrated in 2016 a public consultation on platforms has generated a very large number of responses from a wide variety of European stakeholders. I analysed the evidence corresponding to the qualitative questions about digital platforms (see [3] Gawer, 2016). Across this diverse stakeholder grouping, a number of key themes emerge, which include:

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<sup>12</sup> See Parker and Van Alstyne (2005), “Two-Sided Network Effect: A Theory of Information Product Design,” *Management Science*; 51 (10); Armstrong (in “Competition in Two-Sided Market”, *RAND Journal of Economics*; 2006, p. 66) defines two-sided markets as “markets involving two groups of agents interacting via ‘platforms’ where one group’s benefit from joining a platform depends on the size of the other group that joins the platform”. They have also been defined as “businesses in which pricing and other strategies are strongly affected by the indirect network effects between the two sides of the platform” according to: Evans and Schmalensee (2008), “Markets with Two-Sided Platforms,” *Issues in Competition Law and Policy (ABA section of antitrust law)* 1, p. 667.

<sup>13</sup> See Stone, B. *The Everything Store: Jeff Bezos and the Age of Amazon*, Random House, 2013, p. 126.

1. Businesses and associations of businesses were primarily concerned with platforms dominance leading to competition and fair-trading issues, copyright/IP rights protection, and to some extent the fairness of rankings and neutrality of online search results. A number of business respondents would like to see online platforms taking more responsibility for the user-generated content they provide access to.
2. Associations of consumers and individual citizens were mostly concerned with data protection, and the difficulty to enforce consumer rights.
3. Civil society associations were mostly concerned with issues related to privacy, anonymity, and censorship. They are concerned with online platforms' "taking down" of user-generated content, which they attribute to online platforms being overly responsive to contestation of posted content by either governments or by private entities, and which they see as an arbitrary form of censorship threatening free speech and diversity of views.
4. There were some common broad themes around concerns for illegal, criminal and fraudulent online activity, and the difficulty of enforcing existing legislation.
5. Contrasting views emerged however between businesses and civil society respondents around the question of liability of online platforms on the user-generated content they provide broad access to. While business respondents tend to want to increase the responsibility of some online platforms for the content they publish and the potentially illegal activities they indirectly facilitate, civil society respondents warn of the potential censorship implications.

### **3.3 *Market Power in Digital Platforms***

33. The conventional wisdom on platforms and big data associates platforms with market power which is apparently due to network effects. Some also mention a "data barrier to entry" (Newman 2013).
34. Network effects are increasing returns to scale in demand. It is important to dispel the myth that network effects necessarily lead to winners take all: in general, they don't. They only do if there are strong network effects, little room for differentiation, and high cost of multihoming (Eisenmann, Parker and Van Alstyne, 2007)
35. Phenomena that are similar to network effects (increasing returns to scale) also exist in non-digital, non-"big data" space. Examples include: learning, or economies of scale in manufacturing. The existence of increasing returns to scale (whether in supply or in demand) does not necessarily guarantee success in the market place.
36. There is nothing automatic in the use of data or the use of double sided business models who lead automatically to market success or market dominance: market power is achieved through efforts and talent, and meeting consumer demand in the face of competition. The existence of network effects can help, but cannot alone guarantee success.
37. The strength of network effects alone does not magically lead to market success: it requires investment and not all firms have similar capabilities in uncovering the power of data (as attests telecommunication operators' failure to utilise the vast amount of data they had on their installed base, versus how internet companies such as Google managed to do it.
38. So, it is plausible that market dominance may be the result of superior performance and superior value proposition being delivered to users. However, once market power is achieved, how do firms maintain it? How do they erect barriers to entry (to sustain their competitive advantage)?

39. Furthermore, it is perfectly normal, expected, and even taught in any MBA class, that as an innovator and a pioneer in a market you should try to prevent competitors to imitate you in order to protect your profits in a sustainable manner. These firms are just trying to do this: protect their ability to derive profits from their innovations.

40. In what way is this “bad” (or even “new”)? All firms try to the extent of their capabilities to solidify, strengthen and increase their ability to capture value from their innovation: it usually requires them to exert some degree of control over tightly held complementary assets or complementary activities (distribution, branding, or patents etc. – a la Teece (1986).

41. In the digital context, the “complementary assets” are the Data and complementary activities are “making sense of the data” (through data analytics and big data). The locus of these complementary assets and the nature of this activity require elaboration (as these are specific to the data / digital phenomenon and digital activities):

42. There are some important specificities about Data as assets: Data can be found at the individual level, as well as at the aggregate level. It can be originated by humans, as well as by machines. It can also be combined and be morphed and be made to generate new data through automatic, non-human mediated processes.

43. How does aggregation of data make sense? Data can be assembled about an individual, over time, revealing patterns of behaviour. Firms that manage to establish sustained relationships with individuals over time can hugely benefit, as connected individuals are endless sources of coherent patterns of data. Individual data points can also be treated as elemental sources of data units which can be aggregated into patterns (classes of data) to extract meaning from them. Individuals are both sources of continuous patterns at the individual level, and are data points within clusters of aggregate data comprising of populations of individuals. There are therefore many ways to “make sense” of data.

44. “Making sense of data” is a key complementary activity which reinforces the ability to generate and to capture value from digitally-mediated engagement with end-users.

45. Why is it then that these firms who are applying perfectly normal (and expected) strategies to protect their ability to capture value are being “reproached” for mis-behaving? What is that that they are doing wrong? What is it that they are “missing”? Or, are the accusations unfounded?

46. The answer hinges on an assessment of whether the data is perceived or not as an “essential input”, and that the behaviour of companies not to share it is “exclusionary”. As this is obviously going to be a contested point, it will be up to society to decide how essential it is for individuals to control their data, how valid a claim and realistically feasible it is to design technological and organizational or market mechanisms to assess the value of data captured (this is a hard problem as data can be morphed and aggregated and can be used in multiple contexts by multiple constituencies) and to install systems that allow users to get compensated from others’ use of their data. Society (as regulators) could also decide that data, perhaps anonymized, should be a shared resource.

47. What does abuse of power / abuse of dominance express itself in this context? (i.e., what does it look like in this context?) Traditionally, we can expect market power to be expressed by high prices. However this is not the case here because of multi-sided pricing. Hint: not always by high prices on one side. How do you know there is market power? it is not that clear cut, because it depends on your vantage point and on your assumption of what is socially desirable and how you evaluate the trade-offs involved.

48. As a suggestion: when in doubt, let us return to first principles: The concept of power or abuse of power rests on sometimes implicit assumption of what “fair” or “socially desirable” objectives not being

met. A clarification is therefore needed and will require discussion among society representatives: What are the socially desirable objectives?

- Is it: free access to search? (if so, then all is well in this world – no complaint should be had)
- Is it: fair compensation for individuals who are “giving away” their information (and their data?) It is fair to say that people’s own perception of the value of their data has changed (thanks to the creation of value and capture of value from their data by firms such as Google and Facebook and Amazon etc.) It is therefore the case that these firms have played an irreversible role into the development of consciousness about the value of data – nobody before them had been able to generate such value from data and to capture so much from it (in combination with their efforts of course).
- And how does competition law or regulation can effectively play a role in digital contexts to ensure these are met?

#### **4. A proposal for Regulation of Data**

##### **4.1 A problem: What is the Value of Data?**

49. The process of using digital technologies, requires us to voluntarily or unwittingly share our personal information. In doing so, we are helping digital platform firms to create and appropriate value from ever more sophisticated data-rich web services. It is unclear as to how users, beyond the free services such as Internet search or connectivity with friends on social networks (offered at zero price – a kind of flat-fee payment to users -- thanks to the multi-sided business models adopted by platform firms), can obtain direct benefits from their data input.

50. Obviously, *creating value* does not necessarily imply *capturing value*. In order to understand why only a small number of economic agents seem to derive most value from the data that is generated by so many, it is not enough to examine their *incentives* in this space, but we also need to be mindful of the *heterogeneous capabilities* of stakeholders to *create value* from Big Data (by processing it, aggregating it, analysing it, making sense of it, re-injecting it into dynamic databases or social graphs, etc.), as well as their differential abilities to *capture value* from data (this has to do with the amount or lack of competition they face, as well as the relatively low or high degree of bargaining power from suppliers, buyers, and complementors). It is in retrospect self-evident but too often forgotten that rather than discussing “Value” in the vacuum, it is always important to always clarify *Value for Whom*. We need to understand better the determinants and consequences of *behaviours* of these important categories of economic agents that are involved in the big data-related activities.

51. It is difficult for individuals to know what the value of their data is ex-ante. It might even be impossible to assess this ex-ante. This difficulty however does not preclude making efforts toward a more equitable way to distribute the value ex-post that is stemming from the use of the data.

52. Cross-subsidies business models, frequent in multi-sided markets, obfuscate the value of data.

53. Right now the benefit which users get from sharing their data is not proportional, nor is it directly related, to the value that is being captured by the platform owner. Is this an externality which is not being internalized? Is this a source of inefficiency? Does this create a lack of incentive to provide more or better data, as well as a (perhaps unfounded) concern that this data-sharing constitutes an “unfair transaction”? But what would a “fair transaction” over personal data look like? And how do you know that a transaction is fair if you don’t have the means to evaluate the value (in the other person’s eye) of the asset you are



1. **Data as input:** if data (or certain kinds of data) are to be considered as essential input, or part of an infrastructure, then the consequences might be compulsory disclosure of some parts of that data, to ensure free or fair access to input. This would be the case in particular in the case of essential input or essential facility
2. **Data as expression of free speech;** consequence: rules regarding free speech and concerns about censorship
3. **Data as output:** here the consequences would be to ensure ability for stakeholders to benefit from selling the data (which is problematic when intellectual property rights are not respected)
4. **Data as integral part of the production technology** (inseparable from production processes in digital technologies, i.e., in deep-learning algorithms). Challenges stemming from that would concern the lack of protection of consumers who have difficulty evaluating a separable and measurable value for their data and a price for themselves, who would have generated that data.

#### **4.3 *European Commission enquiry on the regulatory environment on digital platforms: focus on data***

59. The results of this study indicated that online platforms' use of information and data is a cause for concern for consumers and citizens, as personal data is used in ways than are not transparent. However, the General Data Protection Regulation seems to reassure businesses.

60. The main theme was increased transparency to help build trust and mutual confidence.

- Businesses and associations of businesses suggested clear display of online platforms' compliance with IP rights, clarity over usage of data, transparency / traceability of online service operators.
- Associations of consumers and individual citizens suggested displaying display of information on how personal data is monetized by online platforms, clearer terms and conditions, and clearer display of what remedies are available to consumers.
- Civil society associations suggested clear displays of the criteria for de-listing content, better information on how user at is tracked and where data is stored, and display of controls to ensure child protection.
- Think tanks recommend clear displays of distinction between professional and non-professionals operating on online platforms.
- Common themes included displaying the extent which sponsored content is included in generating search results, and better information on reviews.
- Types of formats commonly suggested for additional displayed information included the use of icons and pictograms, and layered summaries instead of lengthy texts.

61. Online platforms themselves consider that they treat suppliers fairly, and identify various means by which they do. They point to the natural alignment of business incentives and the regularly efficient business terms and practices, including open communication, transparency, compliance with rules, help desks, and efficient APIs allowing customisation.

62. Access to data on online platforms: A number of respondents in these categories recognize that data is a key resource in the digital economy, and the economic potential of innovative data-driven businesses. A number of respondents express concerns over too much regulation in this area. Some online platforms in particular oppose mandatory portability of data. However, some businesses and consumers welcome an open repository of personal data, subject to consents, that would act as an “open platform”.

## 5. Conclusion: Regulating “Digital Platforms”

63. To what extent should Competition Policy and Antitrust Enforcement be changed? To what extent should a new regulation be designed on digital platforms? What institutional form should it have?

64. Digital platforms over the Internet are reaching every aspect on economic life. They have a huge strategic importance, have become central to a significant portion of the economic activities, and this set of technologies which can be compared to a digital infrastructure, has as much importance as electricity, water, highways, which joins together people livelihoods, people well-being, people security, people access to basic services and other access to fundamental services, including energy, transport, health, education, etc.

65. The early years of the Internet and the emergence of digital platforms have created a lot of value for consumers and citizens, and for many companies, but there have now been increasing concerns that we might be getting to a point where a number of issues are becoming salient.

66. The dangers of over-regulation or overly complex regulation are well understood: the results of the Enquiry on the Regulatory Environment for Digital Platforms from the European Commission have indicated the caution that many stakeholders want governments to exert vis a vis the creation of a new set of encompassing regulations on platforms, favouring better implementation of existing rules and only the minimum amount of new rules.

67. This said, there is a plausible economic and social case for the creation of a global regulatory framework that will regulate the use, handling, and ownership and transmission rights of data.

68. The challenge for regulators is to protect and stimulate the vibrancy of digital platforms as creators of growth, jobs, and value, while protecting consumers and citizens from the very power that stems from the growth of these platforms. Crafting rules that will benefit the multiple categories of stakeholders is challenging, but there are strong reasons to attempt to do it well.

69. In the current geo-political context, there are vast discrepancies across the world regions in their ability to capture value from digital platforms. At the same time, there are observable differences and even divergences in the way antitrust and competition policy is applied (for example in the US vs in Europe). This creates distortions in the global market, and will eventually weaken the market. The most powerful digital platforms are North American multinational commercial enterprises, and regions have had difficulty enforcing laws in specific geographic areas, as data can be re-routed and multinational have proven adept at evading local laws (as in for example evading tax). In the face of growing concern about digital platforms, and in a general context of protectionism as exemplified by Brexit and the recent US presidential election, it should be self-evident to digital platform firms that they should have a strong interest to work in partnership with economies all over the world.

70. The European digital platform market has underperformed the US, and it is possible that this is at least partially due to lack of a single digital market, which prevented European firms from benefitting from economies of scale on the demand side. In this context, and if there is not enough cooperation from the US and North American powerful digital platforms, it is possible that Europe too would be tempted to resort to political protectionism in this area.

71. If countries could find a way to agree to some common international rules through the help of coordinating organizations such as the OECD, working to overcome the difference in outlook between the US and Europe, they would achieve a key step towards a truly global market for digital platforms. There is great collective interest in agreeing on “the rules of the game” which would create a global level-playing field. Failing that, it is likely that just like China and Russia, Europe and other countries would be tempted to resort to knee-jerk, over-zealous protectionism.

72. As consumers are also co-producers of data-driven technologies, and are also citizens who care for the protection of their data, for regulation purposes, it is important that these issues (competition policy, consumer rights) are not addressed in a piecemeal fashion, but rather that they benefit from an integrated and coordinated treatment across functional regulatory areas.

73. The OECD could play a leading role in orchestrating the discussion among member countries as well as non-member countries toward the establishment of:

1. **A Global Digital & Data Regulator**, on the model of international organizations such as the International Atomic Energy Agency (IAEA), the ITU (which already has a locus to oversee internet connectivity, data and voice) or the WIPO, which would help build consensus to create a global regulatory framework.

- This would be a central and independent regulatory agency that coordinates and oversees the different aspects of monitoring and regulating the Internet and the data that flows through it: consumer protection and protection of data against commercial abuse or criminality (including mafia, terrorism, extremism and cyberattacks, etc.)
- This Digital & Data regulator also needs to ensure citizens’ protection from governments who are increasingly accessing personal data often without good cause
- The Digital & Data regulator would have to submit every single new regulation, to be cleared with the Global Competition Authority

2. **A Global Competition Authority**, on the model of international organizations which have legal and arbitration panels such as the WTO and the WIPO:

- This Authority will deal with all aspects of competition and anti-competitive behaviour, whether digital or no.
- Every regulatory decision made by the new Global Digital & Data Regulator would have to be subject to a cost-benefit analysis from the independent Global Competition Authority.

## REFERENCES:

- Armstrong, M. (2006), Competition in Two-Sided Market, *RAND Journal of Economics* 37(3), 668-691.
- Bork, R.H. and J.G. Sidak (2012), What does the Chicago School Teach About Internet Search and the Antitrust Treatment of Google? *Journal of Competition, Law and Economics*, 8(4), 663-700.
- Collin, P. and N. Colin (2013). Task Force on Taxation of the Digital Economy. *Report to the French Minister for the Economy and Finance, the Minister for Industrial Recovery, Minister Delegate for the Budget and the Minister Delegate for Small and Medium-sized Enterprises, Innovation and the Digital Economy*
- Eisenmann, T., Parker, G., and M. Van Alstyne (2007), Platform Networks – Core Concepts: Executive Summary, *MIT Center for Digital Business*, Paper 232 (June)
- Evans, D. S and R. Schmalensee (2008), Markets with Two-Sided Platforms, *Issues in Competition Law and Policy (ABA section of antitrust law)* 1, p. 667.
- Evans, D.S., A. Hagiu and R Schmalensee (2006), *Invisible Engines: How Software Platforms Drive Innovation and Transform Industries*, MIT Press, Cambridge, MA
- Evans, P. and A. Gawer (2016), The Rise of the Platform Enterprise: A Global Survey, *The Emerging Platform Economy Series, Vol. 1, The Center for Global Enterprise* [http://thecge.net/wp-content/uploads/2016/01/PDF-WEB-Platform-Survey\\_01\\_12.pdf](http://thecge.net/wp-content/uploads/2016/01/PDF-WEB-Platform-Survey_01_12.pdf);
- Gawer, A. (2016), Online Platforms: Contrasting Perceptions of European Stakeholders: A Qualitative Analysis of the European Commission’s Public Consultation on the Regulatory Environment for Platforms, *European Commission* <https://ec.europa.eu/digital-single-market/en/news/study-online-platforms-contrasting-perceptions-european-stakeholders-qualitative-analysis>
- Gawer, A., (2015), House of Lords Supplementary Written Evidence (OPL0050), submitted to the UK Parliamentary Inquiry on Digital Platforms, *UK Parliament* <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/eu-internal-market-subcommittee/online-platforms-and-the-eu-digital-single-market/written/23342.html>
- Gawer, A. (2014), Bridging Differing Perspectives on Technological Platforms: Toward an Integrative Framework, *Research Policy* 43(7), 1239-1249 <http://www.sciencedirect.com/science/article/pii/S0048733314000456>
- Gawer, A. and M. Cusumano (2014), Industry Platforms and Ecosystem Innovation, *Journal of Product Operation Management* 31(3), 417-433
- Gawer, A. and M. Cusumano (2002), *Platform Leadership: How Intel, Microsoft and Cisco Drive Industry Innovation*, Harvard Business School Press, Boston, MA
- Gawer, A. (2009) (Ed.), *Platforms, Markets and Innovation*, Edward Elgar Publishing Ltd, Cheltenham
- Bensinger, G. (2015), Startups Scramble to Define ‘Employee’, *Wall Street Journal*, July 30, 2015

- Newman, N. (2013) Search, Antitrust, and the Economics of the Control of User Data, [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2309547](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2309547)
- OECD (2016), “Big Data: Bringing Competition Policy to the Digital Area”, Background Paper prepared by the Secretariat for the Competition Committee Meeting DAF/COMP(2016)14)
- Parker, G. and M. Van Alstyne, Two-Sided Network Effect: A Theory of Information Product Design, *Management Science* 51 (10)
- Scheiber, M., (2015), Growth in the ‘Gig Economy’ Fuels Work Force Anxieties,” *New York Times*, July 12
- Stone, B. (2013), *The Everything Store: Jeff Bezos and the Age of Amazon*, Random House.
- Stucke, M.E. and A. P. Grunes (2015), “Debunking the Myths over Big Data and Antitrust”, *CPI Antitrust Chronicle*, University of Tennessee Legal Studies Research Paper, No. 276, <http://ssrn.com/abstract=2612562>
- Teece, D.J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research policy*, 15(6), 285-305
- UK Parliament, House of Lords (2016), Online Platforms and the Digital Single Market, 10<sup>th</sup> Report of Session 2015-2016, *Select Committee on European Integration*, HL Paper 129