Levelling the digital playing field:

How can competition policy regulate internet platforms?

Beatriz Kira, Oxford Internet Institute
University of Oxford
beatrizkira@gmail.com

Trinity 2018

Thesis submitted in partial fulfilment of the requirements for the degree of MSc in Social Science of the Internet at the Oxford Internet Institute at the University of Oxford.

Abstract

The size and power of internet companies have been considered threats to healthy markets and democratic values. Competition policy is often pointed out as one of the possible solutions to constrain these companies. However, they have complex business models and arrangements, which distinguish them from traditional companies and defy conventional antitrust analysis. First, internet platforms are multi-sided markets that simultaneously serve two or more groups of users. Secondly, they collect and process large amounts of users' personal data, which is central to their business models. This paper discusses how the dynamics of digital markets give rise to particular antitrust issues, which demand the update of the competition policy toolkit. It argues that the hard core of competition law should be applied and developed in the light of new policy goals. In particular, it sustains that competition policy should incorporate privacy and data protection concerns in order to better explain competition in digital markets, and also to enhance competition law enforcement and policy-making. In light of that, two policy recommendations are presented. One, competition policy should be, more than ever, evidence-based and consider the particularities of multiple sides of internet platforms. Two, the digital economy demands the employment of an integrated and coordinated antitrust regulatory approach, both within the same country and across jurisdictions.

Keywords

Competition policy, competition law, internet economics, internet regulation, personal data, data protection, privacy.

Table of Contents

1. Introduction

The development of new information and communication technologies, specifically the internet, has deeply changed social, political, and economic relations with consequences for different aspects of everyday life. Harvesting the benefits of being first movers in digital markets, technology companies – many of them founded only a few decades ago – are now among the largest in the world. In August 2018, Apple became the first public company to be worth US$1 trillion in market capitalisation, the collective value of all its shares of stock. The second most valuable company in the world is Amazon, with a market value of US$ 884.01 billion, followed by Google, worth US$ 854.86 billion, and in fourth place Microsoft, with US$ 827.53 billion (Gallagher, 2018).

The size and power of these companies have been considered threats to healthy markets and democratic values. Over recent years, governments around the world have been pressured to review and reform legislation to tame the so-called tech titans (The Economist, 2018). The general underlying assumption is that traditional law and regulation falls short of the new issues arising from the internet and its related technologies.

In light of this, academics across a large spectrum of disciplines, regulators, and policy makers now face the challenge of developing analytical and regulatory tools to frame markets in constant and rapid evolution. Competition policy and competition law are often pointed out as one of the possible solutions to constrain technology companies. Worldwide, governments, academics, and the civil society have been calling for greater antitrust scrutiny of internet platforms. However, little evidence has been provided so far to argue whether competition authorities are in fact dropping the ball.

A growing body of literature claims that many concepts and tools derived from models of traditional businesses generally do not apply to internet companies (Evans & Schmalensee, 2013), as digital platforms have complex business models and arrangements, which distinguish them from traditional markets (Evans 2008). Furthermore, antitrust complaints and inquiries also struggle to cope with the rapid pace of innovation and transformation of this sector (Evans 2008, p. 3), which turns players in the digital market into something of a moving target.

From a distance, it might be difficult to pinpoint the common characteristics that link together different technology companies, that offer a wide plethora of distinct goods and services. Social media platforms have features and uses that are very different from the ones offered by search engines, which in turn are clearly distinct from those of an operating system. Upon closer examination, however, it is possible to identify some shared features among the companies that are the object of this paper, which justify the adoption of the joint analytical framework proposed here.

First, these companies own and control key internet platforms, i.e. multi-sided markets that simultaneously serve two or more distinct and mutually attracting groups of users (Evans, 2003) having the internet as medium. These platforms offer connections and access to users (Evans & Schmalensee, 2016), and create value that could not be obtained without their intermediation and coordination (Evans & Noel, 2005). For example, Alphabet Inc. is the holding company which ultimately controls many widely used internet platforms: The search engine Google Search, the operating system Android, and the video platform YouTube, among others. Here I will use platforms and multi-sided markets as synonymies. They should not be mistaken with internet companies, or technology companies, which refers to the legal entity that controls such platforms. The figure below illustrates this difference. When qualifying such markets and companies, however, internet, digital, and online will be employed interchangeably.

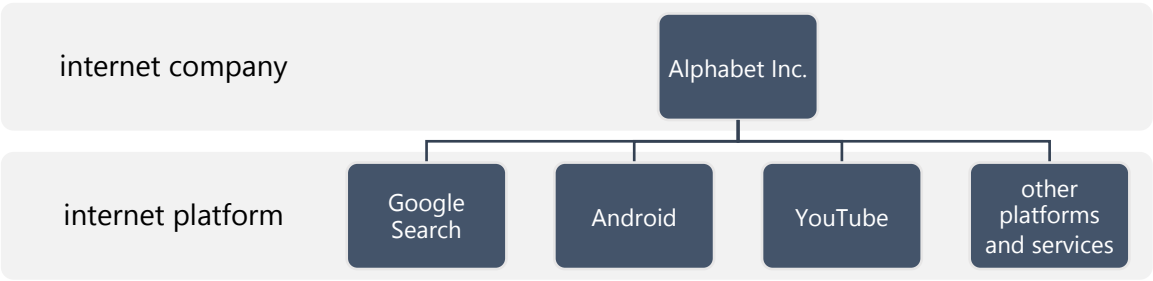

Figure 1. Simplified corporate organisation of Alphabet Inc.

A second common feature is that the internet platforms controlled by these companies collect and process users' personal data. Such data has a central role in the business model of these platforms. On the one hand, data collected and processed are used

by the platform to enable or improve the goods and services offered by it. On the other hand, data is transferred to third-parties, that use them for varied purposes, including, for example, advertisement.

Technology companies that fall within the above proposed definition defy conventional antitrust analysis. In particular, as they rely on users' data to thrive in the market, they give rise to a close relationship between privacy and competition policy, which challenges the orthodoxy in the latter. These companies compete for data, in attempts to expand their userbases, and through data, leveraging users' data to gain or maintain a dominant position in the market. Much of this data is personal data, which necessarily adds a privacy and data protection dimension to competition analysis.

In view of that, recent studies have discussed in which ways competition policy should be adapted to build models that are better suited to explain the behaviour of economic agents, and also to inform competition law enforcement and policy-making (Ezrachi & Stucke, 2016; M. Stucke & Grunes, 2016). In particular, traditional antitrust analysis has difficulty in addressing non-measurable dimensions of competition, such as the protection of privacy. In high-technology markets where innovation is markedly more dynamic, predicting the long-run effects of competition policy intervention is particularly challenging. As Judge Colleen Kollar-Kotelly observed when analysing *United States v. Microsoft Corp*, crafting a remedy for an innovative market might be similar to 'trying to shoe a galloping horse' (Page and Lopatka 2009, p. 20).

This paper aims to contribute to these efforts, focusing on the centrality of personal data collection and processing to the business models of internet companies, and its implications for the relationship between privacy and competition policy. The goal is to investigate how the data-driven nature of technology markets is framed by competition policy and what the limitations of traditional competition policy are when it comes to regulating internet platforms. In order to do so, I will address the following research question:

RQ. What is the relationship between competition policy and privacy in the context of internet platforms? How should traditional competition policy be adapted in order to properly address this relationship?

In answering this question, this paper seeks to build on the relevant literature on internet economics, competition law, privacy, and regulation of internet platforms. I argue that due to the characteristics of internet companies, the core skeleton of competition law should be applied and developed in the light of new policy goals. In particular, I sustain that traditional competition policy is not fit for purpose of regulating the data-driven digital market because it does not adequately consider privacy and data protection issues. This is a challenging theoretical enterprise that I face throughout the following sections.

Section 2 presents the theoretical framework and the research design of the paper, discusses important working definitions, and lays out the basis for the discussion of privacy and data protection. This research goes beyond a purely economic analysis of efficiency and looks at the topic also through the lens of legal scholarship, with both a descriptive and a normative claim. From a descriptive perspective, this paper examines competition issues arising from the digital networked economy and how antitrust tools are used to frame them. From a normative perspective, it seeks to discuss the scope of competition policy and to provide an update of the toolkit authorities should adopt when looking at these technology markets. In that sense, I aim at establishing a dialogue with legal and economic scholars, with regulators, policy makers, and competition authority officers.

Section 3 presents a review of the background literature about antitrust analysis of internet platforms. It details the business model and distinctive characteristics of technology companies which justify the adoption of a shared framework. It discusses the current state of knowledge on digital platforms and examines the evolution of related competition policy concepts, including network effects, switching costs, abuse of dominance position, and market definition.

Section 4 develops the main argument and original contribution of this paper. First, it discusses how the growing role data collection and data processing plays in online platforms changes the dynamics of digital markets. As data becomes the 'new oil' and fuels the digital economy (The Economist, 2017), it gives rise to particular antitrust issues and concerns, which have not been appropriately addressed by traditional competition policy. Secondly, it presents the arguments to support the claim that competition policy should include privacy and data protection as an objective. I argue that the market does not have incentives to resolve privacy-related competition issues on its own. On the contrary, digital

markets have a tendency to be dominated by data monopolies which pose risks, for consumers, workers, competition, and the overall health of the democracy (Stucke, 2018).

Section 5 claims that competition law and antitrust analysis should be updated and adapted accordingly to the arguments presented and proposes policy solutions to address the problems discussed. Finally, section 6 summarises the paper, presents its conclusion, and discusses some of the limitations of the study.

2. Methodology

This section lays out the theoretical framework that structures this paper, and briefly discusses research design and its methodological choices.

2.1. Theoretical framework

This subsection discusses important working definitions and presents the theoretical framework of the arguments developed here. First, it defines competition policy, its goals and scope, and discusses two misconceptions that are often associated with debates about the relationship between competition policy and regulation. Then it explains the relationship between competition policy and economics and presents economic theory as the lens of analysis of the paper. Finally, it makes a small detour in the narrative to briefly introduce the ideas of privacy and data protection that are employed here and that will gain importance as the paper unfolds.

2.1.1. Competition policy and regulation

Many debates around antitrust concerns in online markets come to the question of whether competition policy is enough to address the new challenges of the digital economy, or if some kind of regulation is necessary. Two misconceptions underlie these debates. The first involves a lack of clarity regarding what differentiates competition policy from regulation. While there are areas in which the two fields overlap, they present relevant distinctions in aims and scope, which are discussed below.

Competition policy comprises the set of policies and laws which ensure that competition in the marketplace is not restricted in such a way as to reduce economic welfare (Motta, 2004).[1] The study of regulation, in turn, is informed by debates from a range of disciplinary backgrounds (Baldwin, Cave, & Lodge, 2010). In the context of this paper,

[1] Although the traditional study of competition policy is either focused on conducts – anticompetitive behaviour by agents in a given market –, or on structures – how mergers and acquisitions might affect the structure and the competitiveness of a given market, the main argument of this paper holds true for both groups. For that reason, the categories of competition policy usually employed to differentiate the analysis of market structure from the analysis of and anticompetitive behaviour are not examined in depth.

regulation is understood as 'the intentional use of authority to affect behaviour of a different party according to set standards, involving instruments of information-gathering and behaviour modification' (Black, 2001).

However, while competition law can be seen as one of the institutions intentionally seeking to shape behaviour of agents operating in the market (Brownsword, Eloise, & Karen, 2016), regulation is typically a prescriptive *ex ante* set of rules and standards with sectorial and long-run application. Competition policy, in contrast, is usually reactive and *ex post,* and it usually responds case-by-case to anticompetitive and abusive practices (Veljanovski, 2010).

Competition policy seeks to ensure that markets continue to function well and prevent attempts by firms to undermine the competitive process, but is only useful, if the *status quo* is healthy competition. Regulation, in its turn, is focused on delivering good outcomes in markets that are fundamentally not well-functioning. Thus, it is useful (and most important) even when the market is structurally incapable of functioning well (Taylor, 2018). Table 1 below summarises the main differences between the two.

Table 2. Comparison between competition policy and regulation

	Competition policy	Regulation
Definition	Body of policies and laws which ensure that competition in the marketplace is not restricted in such a way as to reduce economic welfare (Motta, 2004).	Intentional use of authority to affect behaviour of a different party according to set standards (Black, 2001).
Nature	Reactive and *ex post*[2]	Prescriptive and *ex ante*
Intervention	Case-by-case	Geographical or sectorial
Context of application	Competitive markets	Both competitive and dysfunctional markets

The second misconception underlying the debates about competition policy and regulation is that these are exclusionary alternatives, which could not be applied simultaneously. There are indeed many situations in which legitimate public policy objectives justify the exclusion of competition analysis (Ezrachi, 2016). States may legitimately favour other enforcement or regulatory vehicles over competition law when dealing with distinct industries or markets (Ezrachi, 2016). For example, in the case of regulated sectors – such as energy, oil, or even telecommunication. According to Ezrachi, these 'bypasses' reflect social and political preferences (Ezrachi, 2016, p. 66), but they can also be reflections of limitations of competition policy to deal of the particularities of these markets.[3]

[2] Nonetheless, it is worth noting that there are situations in which competition policy also applies *ex ante*. In particular, many competition authorities require the file of premerger notification and subject mergers and acquisitions to an *ex ante* review processes, depending on particularities of the companies (e.g. market share or gross annual sales) and the sector in which they operate. For example, the European Commission requires notification of concentrations based either in the combined aggregate worldwide turnover of the undertakings, the aggregate Community-wide turnover of the undertakings, or the combined aggregate turnover in each Member States, articles 2 and 3 of the Council Regulation (EC) No 139/2004 of 20 January 2004.

[3] Many regulated markets (telecommunication, transport, infrastructure, etc.) are also natural monopolies, i.e. they have a natural tendency to be non-competitive. In these markets, a single firm can supply a good or service to the entire market at a smaller cost than could two or more firms (Mankiw, 2015). As competition policy is unlikely to work in that context, governments often choose to control the behaviour of natural monopolies through regulation. This is true especially in the case of markets that offer essential facilities, like water and electricity.

In other cases, however, competition instruments and regulatory instruments are complementary, they work together to achieve markets that work well. In many cases, competition policy enforcement and the developing of sector regulation are under the competency of the same body (Veljanovski, 2010), an arrangement that helps to ensure that competition policy objectives are considered in developing sectorial regulation. Frequently, the behaviour of a company can simultaneously be anticompetitive and violate regulatory provisions, which demands an integrated intervention.

In Australia, for example, the Competition and Consumer Commission (ACCC) recently started an inquiry to investigate the effect that digital search engines, social media platforms, and other digital content aggregators have on competition in media and advertising services market. The inquiry focuses on the impact digital platforms have on the supply of news and journalistic content, and the implications of this for media content creator, advertisers, and consumers (ACCC, 2018). Because the ACCC is both competition authority and consumer regulator, this inquiry will build on the knowledge and expertise of both areas. This will probably provide a better understanding of the business models of digital platforms, and their intertwined issues. Also, remedies of different natures might be applied together.

2.1.2. Economic theory and competition policy

The fact that it is possible to develop a strong and universal claim about the goals and content of competition policy is due to its close links with economic theory. This relationship is described below and provides support for the methodological choices reported in the following subsection.

The contours of antitrust doctrine and enforcement policy have long been defined by economic thinking. Since the late 19th century, economic learning has exerted an increasing impact on antitrust enforcement and economists have played a relevant and growing role in influencing competition law and policy (Kovacic & Shapiro, 2000). Over time, the links between economics and law have been institutionalised, with the 'increasing presence of an economic perspective in law schools, extensive and explicit judicial reliance

on economic theory, and with the substantial presence of economists in the government antitrust agencies' (Kovacic & Shapiro, 2000, p. 20).

Economics, however, is neither a static or a hermetic science, but rather dynamic in its nature and susceptible to be influenced by external values (Ezrachi, 2016). Different strands of economic theory, in distinct moments of history, have diverged in many aspects. Nonetheless, on a broader perspective, economists largely agree that economics focuses on understanding the behaviour of individual agents (consumers, firms, or others), by studying how society manages its scarce resources (Mankiw, 2015).

One of the central ideas in the study of economics is that people respond to incentives. An incentive is something that move people to act, to behave in a certain way (Mankiw, 2015). For example, if I decided to sign up for an online streaming service because it offered free membership for students for a period of time, the transitory reduction in the price was the incentive that lead me to join the platform. Economics assumes that individuals react to this incentives according to a given set of objectives, and build rigorous models of these behaviours (Mankiw, 2015). This framework and method are compatible with a wide range of economic theories throughout centuries of economic thinking.[4]

2.1.3 Privacy and data protection

The previous subsections provided some important concepts and cleared misconceptions related to the theoretical framework of this paper. This subsection briefly discusses working definitions of privacy and data protection. Although it might look like a slight deviation from the main narrative of the text, these are relevant concepts to the main argument of the paper and will be recurrent topics in the following sections.

[4] Over the past years, for example, behavioural economics has been deemed as a good model to explain the actions of individual agents and their consequences. In a nutshell, this trendy strand of economics holds that people systematically and predictably do not behave in rational, self-interested ways, driven by perfect willpower. Instead, agents have different and non-rational reasons to act the way they do. In particular, things like cognitive biases and other factors affect the decision-making process. Scholars, regulators, and policy makers have been discussing the applicability of behavioural economics to competition policy, and competition authorities worldwide are increasingly considering behavioural economics in antitrust analysis (Reeves & Stucke, 2011). When examining the foundations of competition policy and its relationship with economic theory, the arguments of this paper are also compatible with behavioural economics statements.

Privacy is an elusive concept (Solove, 2008) which has long been approached by legal scholarship. Samuel Warren and Louis Brandeis (1890) famously described privacy as the 'right to be let alone'. More recently, in the context of digital technologies, it has also been defined as 'informational self-determination', i.e. the right of individuals to control how, in what way, and to whom their data is made available (Westin, 1968).

The concept of privacy as a right itself, however, is not uniformly adopted in jurisdictions around the world. Privacy is intrinsically linked to social, political, and cultural values and, thus, its protection varies widely across jurisdictions (Antonialli, 2017). Solove (2008) offers a comprehensive taxonomy of the different values encompassed by the right to privacy, and an overview of the difficulties involved in discussions of this concept. He argues that no single definition can be workable, but rather that there are multiple forms of privacy.

Doing justice to the large literature on the topic, however, is beyond the scope of this paper. Rather for the purposes of this study it suffices to say that most democratic nations ensure some degree of protection to data, either through regulatory instruments (statutes, recommendations, guidelines, etc.) or through judicial decisions. For example, the Australian Privacy Charter limits the intrusion of both state and private organisations on individual autonomy and establishes that 'privacy is a key value which underpins human dignity and other key values such as freedom of association and freedom of speech'.

In the field of economics of privacy, privacy is understood on its informational dimension as trade-offs arising from protecting or sharing of personal data. Personal data, in turn, is defined as 'personal information of actual individuals' (Acquisti, Taylor, & Wagman, 2016). The framework developed in this paper, however, equally applies to both concepts. Therefore, for the purposes of this study, data protection and privacy will be employed interchangeably.

2.2. Research design

The previous subsections discussed how economic theory establishes the basic intellectual foundation of competition policy. It argued that economics provides a framework which is flexible enough to accommodate many strings of thinking, across distinct institutional and

historic contexts. Because economic theory shapes competition policy, the latter borrows its flexibility from the former, making it possible to develop universal and normative claims about how competition policy should be. This subsection unfolds the argument that the hard core of competition policy is shared between different jurisdictions. That is the underlying assumption of this theoretical study, which claims that privacy should be considered part of competition policy.

According to Ezrachi (2016, p. 51), 'while competition laws around the world differ in language, provisions, and interpretation, they reflect large degrees of consensus on what competition law is set to achieve'. These key principles constitute the core of competition policy, which is shared by different jurisdictions, despite differences at philosophical, political, legislative, and enforcement levels (Ezrachi, 2016). All normative claims and policy recommendations presented in this paper, therefore, have this core analytical framework as a target.

Due to the nature and scope of the arguments developed here, this study is not a legal analysis of a single jurisdiction or a group of jurisdictions. Mentions of antitrust cases and rulings by competition authorities in different jurisdictions are included to support arguments and should not be read as in-depth case studies that lead to overreaching conclusions (Yin, 2003), but rather as illustrations of the points being made. Also, this paper is not a comparative legal analysis of either competition laws or competition enforcement. References to different pieces of legislation or rulings issued within the contexts of specific countries should not be considered a systematic analysis with the pretension of drawing comparisons across different countries or legal cultures. The goal here is not to analyse and explain similarities and differences between the cases (Zweigert & Kötz, 1998). Rather, the examples were selected with the objective of helping to illuminate aspects of the issues under analysis.

Finally, even though this study is mainly situated in the intersection of law and economics, when addressing such a complex topic, I do not refrain from turning to considerations from other fields in the social sciences, in order to complement and enrich the analysis. As the internet has no boundaries, the knowledge employed to analyse it should not be restricted to inflexible limits.

3. Shoeing a galloping horse: Competition analysis of internet platforms

Over the past decades, a wide body of literature has discussed particularities of platform markets, focusing on network effects and high switching costs. More recently, economists and legal scholars have focused on the challenges to enforcement of antitrust legislation when it comes to internet companies. The concept and scope of privacy and data protection has also long been approached by legal scholarship and updated in light of new issues arising from digital technologies. However, these two bodies of literature have largely evolved in parallel, and little attention has been paid to what the relationship between competition policy and privacy and data protection in the context of the digital economy is. This paper aims at bridging this gap, by arguing connecting discussions of privacy and competition policy.

As mentioned before, two main aspects of internet companies defy traditional competition analysis. One, they control key internet platforms, which simultaneously serve distinct groups of customers. Two, their business models heavily rely in the collection and processing of large amounts of personal data. This subsection discusses what internet platforms are and how competition policy applies to them. First, it presents the concept of platform markets and how to identify them, both in the online and in the offline world. Second, it discusses the evolution of legal and economic concepts employed by competition policy, highlighting how they are applied to the analysis of internet platforms, and the shortcomings of the traditional antitrust tools in that context. Third, it discusses the centrality of data for the business models of internet companies, which provides the link to the discussion of privacy and data protection. Thus, the background literature presented here sets the scene for the analysis of section 4, in which I analyse antitrust issues related with privacy and data protection.

3.1. Connections for sale: Economic analysis of platform markets

Internet companies that raise the antitrust issues addressed in this paper control key internet platforms, i.e. multi-sided markets that serve two or more groups of customers simultaneously. In this subsection, I present the concept of platforms markets in more detail.

Platforms markets are not a new idea. Some of them date from thousands of years. In Athens around 300 BCE, merchants, shipowners, and lenders would gather near the docks to connect with each other in order to assemble a trading voyage (Evans & Schmalensee, 2016). But only in this century the first economic model of multi-sided platforms was developed by Jean-Charles Rochet and Jean Tirole (2003), focusing on how the relative prices charged to two sides of a platform coordinated demand. More recently, Evans and Schmalensee (2007a) defined multi-sided platform as one that 'has (a) two or more groups of customers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and (d) rely on the catalyst to facilitate value-creating interactions between them'.

Platforms exist both in the online and in the offline world. There are many traditional industries in which multi-sided platforms play important roles, including payments, financial exchanges, and shopping-centres. Even though this analysis will focus on digital multi-sided markets, many of the competition issues discussed in the following subsection also apply to bricks and mortar platforms.

Internet platforms also come in many flavours and sizes. They are commonly associated with tech behemoths such as Google, Amazon, Facebook, or Apple (collectively known by the acronym GAFA), other smaller niche-businesses also profit from selling connections. For example, OpenTable is an internet application that connects restaurants and clients willing to make reservations for a meal.

It is worth noting, however, that not all online businesses are platforms. There are companies that offer goods and services using the internet as medium but serve only one group of customers, i.e. one-sided online markets. Typical cases are traditional retailers that also have online stores, where they sell the same products that are available in bricks and mortar shops. For example, if I want to buy white t-shirts from Marks & Spencer I can either get them from to the nearest M&S shop or access the M&S website and order them online.

In both cases, whether online or offline, M&S will be serving only one user, i.e. the t-shirt buyer. Table 2 below provides examples of the different types of markets discussed in this subsection and highlights the group that is the focus of this paper.

Table 2. Examples of markets operating online and offline

	Non-platform (traditional, or one-sided markets)	**Platform (multi-sided markets)**
Offline	Supermarkets, hairdressing, laundry services.	Shopping-centres, credit-card companies, printed newspapers, and magazines.
Online	Traditional retailers' websites, online banking apps, airline companies' websites.	Google Search, Facebook, Instagram, Twitter, WhatsApp, WeChat, Weibo.

3.2. When networks compete: Antitrust analysis of platform markets

Multi-sided platforms have been challenging antitrust analysis and economics concepts for many years. Evans and Schmalensee (2013) provide a wide review of the economics literature on multi-sided platforms with particular focus on competition policy issues. They argue that many of the analytical tools that are commonly used in antitrust matters do not necessarily apply, without significant adaptation, to industries with multi-sided platforms (Evans & Schmalensee, 2013). In particular, there are features of online multi-sided markets make them even more susceptible to malfunction. This section discusses the antitrust analysis of platform markets, focusing on the specificities of internet platforms.

Multi-sided markets are subjected to stronger network effects, both direct and indirect. Page and Lopatka (2009) describe direct network effects as scale economies on the demand side, which 'arise when the user of a product receives not only the product's inherent benefit, but also a network benefit that increases with the number of other users of the product' (Page and Lopatka 2009, p. 39). Social media platforms are typical examples of markets with direct network effects. I use Facebook, for example, to stay in touch with friends and acquaintances. If more people I know join the network, the number of connections I can make increases, and so does the attractiveness of the network for me.

Indirect network effects, in turn, are related to multiple sides of the market and are present when the number of agents engaged in one side of the market affects the value of the platform to agents operating in the other side (Varian, Farrell, & Shapiro, 2004). Mobile operating systems, like the Apple iOS or the Google Android, are good examples of multi-sided platform with strong indirect network effects. The bigger the number of mobile users adopting it, the more developers write apps for that system, which in turn attracts more users to the platform (European Commission, 2018).[5]

Platforms are also characterised by large switching costs for users. They arise 'when consumers value forms of compatibility that require otherwise separate purchases to be made from the same firm' (Farrell & Klemperer, 2007), i.e. they result from a consumer's desire for compatibility between his current purchase and a previous investment (P. Klemperer, 1995). In this context, the benefits of swapping to a different provider must be high enough to persuade customers to pay those costs. For example, I have owned an iPhone for many years and have acquired many applications and accessories that are compatible with it. If I was considering buying a new mobile phone, the cost of swapping to a different mobile operating system (e.g. Android) would include not only the price of the computer itself, but also the cost of replacing all incompatible gadgets, all the apps, and learning how to use the new operating system.

Markets with high switching costs are more susceptible to foreclosure, and rivals could be prevented from entering, or forced to leave the industry even when they are more efficient (Eisenmann et al., 2011). When switching costs are too high, there is also a tendency that consumers be locked-in with the dominant firm, and only significant benefits could convince them to change to a different seller (Motta, 2004). Thus, platform markets are often served by only a few competing platforms.

Furthermore, competition policy seeks to prevent firms from acquiring or abusing a position of dominance to exercise market power. Thus, the definition of the relevant market is a relevant aspect of the antitrust analysis. Market definition establishes the sources of

[5] Indirect network effects can also be negative, whereas the value of a service or product decreases for one user group as a result of another group's growth. For example, an increase in the number of subscribers of a YouTube channel may be positive for companies that advertise on that channel. However, if the videos are interrupted by too many adds, that might annoy viewers and lead them to unsubscribe the channel, or to turn to a different streaming platform (Bundeskartellamt, 2016).

demand-side and supply-side constraints that should be taken into consideration when assessing the market power of any given company (Kwoka & White, 2014). Evans and Schmalensee (2013) argue that even though traditional antitrust analysis adopts many proxy measures of market power, such as market share or price-cost margins, no single method is reliable for assessing relevant market in all situations, and the analysis should consider multiple sources of evidence. For example, the widely employed SSNIP (small, but significant non-transitory increase in price) test[6] is not very reliable in cases in which the market is already uncompetitive, so this analysis could only be conducted at competitive prices. Further issues arise when it comes to platforms, that serve more than one group of users, and an accurate analysis must consider all interdependent customer groups that a platform serves (Evans and Schmalensee 2013, p. 11).

In 2017, the European Commission (EC) fined Google €2.42 billion, for abusing its dominance as a search engine by giving illegal advantage to its own comparison-shopping service (European Commission, 2017). The case started in 2010, when the EC decided to open formal proceedings to investigate whether Google Inc. had abused a dominant market position in online search provision by lowering the ranking of unpaid search results of competing price comparisons websites and by according preferential placement to the results of its own shopping service.

Google is an internet company that offers a plethora of different services with very different features and serves many different groups of users, the EC ruling, however, established that the relevant market was very narrow: 'Comparison shopping services'. The shopping tool, however, is only one of the many intertwined services offered within Google's platform, which also include Google News, Google Maps, and Google Books, for example. By focusing on a very restricted part of the market, the EC decision failed to acknowledge all the other groups of users served by the broader constellation of Google's services that orbit around its main star: Google Search engine.

[6] A method generally used for identifying the relevant market is the SSNIP (small, but significant non-transitory increase in price) test. It is also called 'hypothetical monopolist' test, as it departs from a hypothetical situation in which the smallest unit that might plausibly be the relevant market is controlled by one company. In this context, one should ask whether this one firm could profitably increase its price above the current level. If the answer is yes, there is a market. If the answer is no, the scope of the market should be broadened and the question asked again (Chang, Evans, & Schmalensee, 2011; Taylor, 2018).

More recently, in July 2018, the EC fined Google €4.34 billion for illegal practices regarding Android devices. After years of investigation, the EC concluded that Google imposed contractual restrictions on device manufacturers and mobile network operators to strengthen its dominant position in general internet search. The decision was based in EC's understanding that Google is dominant in the national markets for general internet search throughout the European Economic Area (EEA), with shares of more than 90% in most member states.

The EC decision, however, ignored the fact that Android phones compete with Apple iOS phones (Pichai, 2018). The Commission focused on the fact that Android is open source whereas iOS is proprietary to justify the distinction between the two markets. Even though this might be relevant for one group of customers served by the platforms, i.e. app developers, the same does not hold for other users. When the economics of the business is centred in linking users and providing connections, one side cannot be considered in isolation (Evans & Schmalensee, 2016). For mobile phone users, the basic functionalities of an iOS smartphone and a device running Android might be very similar, so that they are reasonable interchangeable. Here, again, the EC assessment of the relevant market overlooked the bigger picture, restricting the analysis to one of the multiple sides of the Android platform.

3.3. There is no such thing as a free lunch

The previous subsection reviewed the literature related to key concepts of competition policy and how it has evolved to address the particularities of internet platforms. Although analytical tools and frameworks have been developed to address some of the issues raised by online markets, many challenges remain. For example, I briefly discussed how the EC's failure to address the multiple sides of online platforms led to misguided definitions of the relevant markets in the decisions of the two Google cases. In this section, I argue that the business models of most internet companies heavily rely on the collection and processing of users' personal data.

In economics, the influence of prices on the behaviour of consumers and producers play a central role in understanding how a market economy allocates scarce resources

(Mankiw, 2015). Thus, price dynamics are also crucial to antitrust analysis. Platforms often present particular pricing dynamics, which challenges conventional economic analysis. Caillaud and Jullien (2001) look more specifically at cyberintermediation – informational intermediation activities on the internet. The authors argue pricing dynamics in these markets privilege access to products and goods (or even access to consumers) over usage or acquisition of a good.

Armstrong (2006) argues that in markets in which two or more groups of agents interact via intermediaries, three main factors determine the structure of prices offered to the two groups: (i) the relative size of the externalities members of one group exert on members of the other group, (ii) whether users are charged fixed fees or per-transaction charges, and (iii) whether groups single-home, use only one platform, or multi-home, simultaneously use several intermediaries. For example, if someone is an active user of both Instagram and Snapchat, then this user multi-homes.

In order to attract more users, platforms often subsidise agents in the group that is most price-sensitive or more likely to single-home. When platforms have to compete for single-homing agents, the profits generated from the multi-homing side can be passed on to the single-homing side in the form of low prices (Armstrong, 2006). In other words, the prices for single-homing groups of users are often below marginal cost of production or even zero and are compensated by the profits made on the other side of the market (Evans & Schmalensee, 2013). For example, the fact that Google search engine is free for internet users is partially because the platform profits from advertisements, on the other side of the market. While advertisements companies use various mediums and platforms to showcase their products (they multi-home), internet users often adopt one search engine as their favourite and rely on the information provided by it (they single-home).

In internet platforms, however, the 'zero-cost' of many of the services offered online cannot be explained solely in terms of networks effects and cross-subsidies between the different sides of the market. Even though these incentives, which are typical of all platform markets, do hold true in digital markets as well, they only partially explain the value, size,

and power of most internet companies. In fact, these companies extract wealth from the collection and processing of users' personal data, in many different ways.[7]

When the data provide detailed information about users' preferences, it is possible to tailor the offer of products and services according to the specific interest of users. Companies might, for example, use it to improve the design and features of their own platforms, use it to employ microtargeting techniques themselves, or sell it for advertisement purposes (Brown & Marsden, 2013). When the dynamics of the market change and prices are no longer central to companies' business models, the focus and the methods of antitrust analysis should also shift. Addressing the new pricing dynamics that prevail in these markets, however, remain a challenge. Data has become a valuable asset, but it is not a measurable one.

Competition policy is much dependant on what is quantifiable. It is very good in assessing price effects, or developing tools to assess price effects, but it falls short in offering tools to analyse things that are not measurable. Data is one of them, privacy is another.[8] How much is data worth? When services are offered 'for free', in exchange of personal data, how much are users actually paying? And how much are companies profiting from them? These issues are addressed in the next section, where I set the grounds to the debate about competition policy and data protection.

[7] There are exceptions to the general rule. There are cases in which the particularities of the platform and of the service provided make the users less price sensitive. In that cases, internet platforms might profit primarily from membership fees and other paid features. That is the case, for example, of the dating-app Tinder (Kim, 2015).

[8] There are other characteristics of markets which are also not quantifiable and with which competition policy has been dealing for a longer time, like quality or innovation. They are also hard to assess, but proxy measurements have been developed and to a certain degree employed.

4. Privacy and competition policy in the digital era

The previous section discussed key concepts of competition policy in light of internet platforms, highlighting the limitations of traditional antitrust analysis. This section discusses in more detail how the shortcomings described above give rise to particular privacy issues, which endanger consumers and undermine competition in the digital market. First, it points out that there are four different ways privacy and competition policy interact with each other, which build a strong relationship between the two. Second, it discusses how this relationship challenges the orthodox analysis of markets and demands adaption of competition policy. In particular, it argues that privacy is now a relevant dimension of competition policy, i.e. there are anticompetitive practices that can only effectively be addressed through privacy concerns. Finally, it discusses to which extent privacy and data protection should be a part of competition law.

4.1. The relationship between competition policy and privacy

In the context of internet platforms, competition problems and privacy problems are often inextricable. This subsection argues that the central role played by data in digital markets builds a close relationship between competition and data protection. Competition drives privacy outcomes and, vice versa, privacy drives competitive outcomes. Such outcomes can either be positive or negative, which gives rise to four different groups of issues. The different ways through which competitive outcomes interact with privacy outcomes are summarised in table 3 below.

Table 3. Relationship between privacy and competition

	good competitive outcomes	**bad competitive outcomes**
good privacy outcomes	Companies compete on privacy, privacy can be a competitive advantage, and there are incentives for companies to invest in products and policies that offer greater levels of protection to users' data (e.g. privacy by design)	Lack of data can prevent companies from building a critical database, or from offering goods and services at competitive levels, which makes them less likely to survive in data-driven markets, leading to a decrease in competition.
bad privacy outcomes	In competitive markets, companies compete fiercely for data, employing invasive techniques to gather large amounts of users' data. This information, however, can be used to improve the quality and efficiency of goods and services, leading to a drop in costs	Intrusive data collection techniques might lead to data concentration. Data monopolies have less incentives to compete on privacy and are able to use market power in new anticompetitive ways. Data concentration also enhances the risks of surveillance and security breaches.

Good privacy outcomes and good competitive outcomes can, sometimes, come hand in hand. Antitrust authorities increasingly recognise that companies can compete on privacy and data protection (Stucke, 2018). With reports of data breaches on the rise (Acquisti et al., 2016, p. 475) and privacy scandals such as the one involving the company Cambridge Analytica[9] reaching the news, the relevance of data protection has become increasingly relevant. When users understand the risks involved in sharing personal information online better, they value services and devices that show more commitment to their privacy. Enhanced privacy awareness, thus, creates incentives for companies to invest

[9] In early 2018, multiple media outlets reported that the data analytics and political consultancy company Cambridge Analytica had illegally harvested personal data from millions of Facebook users. The information was used to develop highly personalised political advertisements based on the psychological profile of users. There are allegations that the company's services were hired by many political campaigns around world, including Donald Trump's 2016 US presidential campaign (Kang & Frenkel, 2018).

in products and policies that offer greater levels of protection to users' data and many companies have now acknowledged that privacy can be a competitive advantage.

Despite the growth in adoption of data protection measures and privacy by design products, however, technology companies still have strong economic incentives to employ powerful data collection and processing tools, which ultimately leads to bad privacy outcomes. In some circumstances, poor privacy outcomes can be associated with competitive markets and with more innovative and efficient products.

As data is the main asset of digital markets, access to users' data is a determinant of which companies succeed in these markets. Thus, the variety and velocity of capturing and harnessing data are relevant sources of market power (Stucke, 2018a). In that regard, internet companies compete fiercely for users' data and have few incentives to be transparent about their privacy policies, or to change them in ways that would in fact enhance the data protection. On the contrary, the greater the pervasiveness of data collection and processing techniques, the greater the chances of a company to survive in data-driven markets.

Large amounts of data about user's preferences and characteristics are also crucial to inform the creation of content that is better tailored to people's interests and the development of more efficient products and services. Information harvested by internet companies, thus, can contribute to reduction in the cost of production and improvement in quality in such markets (Prüfer and Schottmüller, 2017). In contrast, precisely because collection and processing of data is a determinant of which companies can compete and thrive in digital markets, good privacy outcomes can often lead to a decrease in competition. When lack of data prevents companies from building a critical database, or from offering goods and services at a competitive level, they might not be able to survive, leading to less competitive markets.

4.1.1. The perils of data monopolies

In digital markets, strong network effects might eventually allow one platform to open up an advantage that is essentially insurmountable, leading the market to tip in favour of one player over the others (Taylor, 2018). In platform markets, 'late developers struggle while

networks that are preferred by early pivotal customers thrive' (Klemperer, 2006). When data-driven platform markets tip and data monopolies exert market power, many potential harms arise. This subsection discusses the most worrisome group of issues resulting from the relationship between privacy and competition, which arises when bad competitive outcomes overlap with poor privacy outcomes.

Data monopolies have fewer incentives to compete on privacy. Once the market has tipped, and a company acquires a dominant position, strong network effects and high switching costs would prevent users from looking for alternative platforms. Moreover, data concentration makes it harder for more efficient entrants to displace an incumbent, as new players would have difficulty gathering a large enough critical mass to enter the market (Evans, 2009). Thus, data monopolies do not have incentives to develop products and services that enhance data protection.

Data monopolies also pose greater surveillance and cybersecurity risks. When a small number of firms control a large amount of data, it is easier for governments to target these companies and to have access to the stored data, either by formal legal requests or through government hacking.[10] Similarly, data monopolies are more vulnerable to data policy violation and security breaches by ill-intentioned agents. When data is concentrated in the hands of a few companies, if security measures of one of them are breached or circumvented, a much greater amount of information would be exposed (Stucke, 2018a).

Concentration of data can also be purposely used by data monopolies as leverage in many anticompetitive ways. Data monopolies 'control a key platform which, like a coral reef, attracts to its ecosystem users, sellers, advertisers, software developers, apps, and accessory makers' (Stucke, 2018b). The ability to control a key platform give them significant power to control the market and other groups of users. In traditional markets, the fact alone a company is big and holds a dominant position is not itself a problem that requires antitrust intervention. However, 'dominant companies have a special responsibility not to abuse their powerful market position by restricting competition' (European Commission, 2018). In digital markets, a similar reasoning applies. The fact that a company is too big, or

[10] For an overview of how government hacks computer systems for law enforcement purposes and how federal law regulates government malware in the US, see Mayer, 2018.

has too much data, should not be considered a competitive issue in itself, but the abuse of this data-dominance position should raise concerns of competition authorities.

In data-driven markets there are new ways through which abuse of dominance might take place. In the Facebook case, for example, the Bundeskartellamt (Germany's competition authority) decided that the company abused its dominance 'by making the use of its social network conditional on its being allowed to limitlessly amass every kind of data generated by using third-party websites and merge it with the user's Facebook account'. (Bundeskartellamt, 2017).[11] Thus, Facebook's business strategy to thrive in the data-driven digital market was condemned an abuse of dominant position because it was too invasive of users' privacy.

Another anticompetitive behaviour through data is the possibility of the dominant platform leverage its userbase in order to prevent potential competitors to enter the market. This happened in 2012 when Facebook acquired Instagram. In that occasion, the deal was notified to competition authorities both in the United States (US) and in the United Kingdom (UK) and subjected to their analysis and approval. With the deal, Facebook won access to the valuable Instagram user base and harnessed the shelter of strong network effects and high switching costs. The acquisition also ensured that Instagram would not fall into the hands of one of Facebook's major data competitors, such as Twitter or Google (TechCrunch, 2012).

Neither the US nor the UK authority, however, discussed possible anti-competitive outcomes arising from the concentration of user data under one company and how it could impact competition among online platforms in the long run. In August 2012, the US Federal Trade Commission (FTC) closed its antitrust investigation into Facebook acquisition of Instagram, clearing the transaction without taking any action (Oreskovic, 2012). In the same month, the UK Office of Fair Trading (OFT) gave the takeover the green light and decided not to refer it to the Competition Commission (OFT, 2012). The acquisition made it possible for Facebook to leverage the data it has from Instagram (and later also from WhatsApp).

[11] The Bundeskartellamt proceeding and preliminary findings was focused on the collection and use of user data from third party sources, the German watchdog left it open whether the collection and use of data on the Facebook network itself also constitutes a violation of data protection provisions and the abuse of a dominant position (Bundeskartellamt, 2017). This was a preliminary assessment in an administrative proceeding. According to the Bundeskartellamt, a final decision on the matter is not expected before early summer 2018.

These platforms are now part of the same company. The data collected by either of the platforms expands a data based shared by them, which collectively gives them the leverage competitors do not have (Beaton-Wells, 2018c).

Digital markets are also subjected to data-driven indirect network effects, which arise on the supply side of a market (Prufer & Schottmüller, 2017). The more the services provided by the platforms are used, the larger the amount of data about user preferences or characteristics that is harvested by the companies. Because of that, data concentration raises special antitrust concerns and should be addressed carefully by competition authorities. The possibility of discriminatory treatment based on users' data is one of them.

Personal data collected and processed by internet companies reveal a great deal about users' preferences and characteristics, which in turn allow the employment of highly tailored and segmented profiling technologies, like microtargeting or geotagging. Such technologies make it possible to restrict competition and prevent users' access to certain goods or services based on their personal features. For example, in 2017, the EC launched an investigation to assess if certain video game companies were engaging in practices to prevent consumers from purchasing digital content based on their location or country of residence. This would be considered a geo-blocking practice, which uses consumers' data to prevent them from enjoying cross-border choice and being able to buy video games at competitive prices.

4.2. Why should policy incorporate privacy concerns?

The previous section addressed how competitive outcomes interact with privacy outcomes and give rise to specific antitrust concerns. In the data-driven economy, the appropriate mode of competition is the one that simultaneously produces good privacy and good competitive outcomes. In order to achieve that, I argue that privacy and data protection considerations should be included in the design and enforcement of competition law.

A classical debate in the literature is whether an economic policy should consider 'non-economic' distributional factors. In the field of competition policy, it is generally accepted that competition policy have important social effects – fighting cartels, for example, benefits the poorest, while taming abuse of market power contributes to wealth

distribution (Beaton-Wells, 2018a). However, the question about whether competition policy should address fairness and equity outcomes remains controversial. One the one hand, many argue that there are good reasons why distributional issues cannot be ignored, especially from a normative perspective (Veljanovski, 2010). On the other hand, some economists claim that economic policy should be solely about economic efficiency and that using it to re-distribute income might lead to distortions in prices and incentives, and thus to substantial efficiency losses and unintended effects (Veljanovski, 2010).

As discussed above, digital markets addressed in this paper do not comply with traditional price structures and market power of internet platforms can no longer be assessed in terms of prices. In this scenario, price distortion can no longer be considered a plausible objection to the inclusion of non-economic liberal-democratic values in economic policies such as the competition and regulation. Thus, the possibility of broadening the scope of regulatory goals should be more carefully considered. In fact, there are characteristics of the data-driven economy that brings with it strong reasons to include privacy considerations in competition policy. These reasons are discussed in more detail below.

4.2.1. Privacy and competition concerns overlap

As described in the the subsections above, there are many areas where competition policy and privacy overlap, which makes the two inseparable. Thus, there are both gains in applying the two sets of tools together as well as losses if this relationship is disregarded. In that regard, failing in competition policy can be traced, at least in part, to its failure to account for privacy.

For example, when Facebook notified the acquisition of WhatsApp in 2014, one of the issues analysed by the EC under the EU Merger Regulation was whether it was possible to establish reliable automated matching between Facebook users' accounts and WhatsApp users' accounts. Whether or not the provision of a misleading information by Facebook was decisive to the outcome of the review,[12] the possibility of the two platforms sharing user's

[12] At the time, Facebook argued that the matching was not possible. In August 2016, however, WhatsApp announced updates to its terms of service and privacy policy, which included

personal data was raised as a possible competitive issue. Nonetheless, the EC the Committee failed to recognise the potential risks to privacy and data protection arising from the deal.

In that case, the deal did not violate any competition regulation per se. However, there were negative outcomes both in terms of competition itself, with a greater concentration of data-driven market power in the hands of Facebook, and in terms of privacy, through the possibility of unrestrained sharing and matching of user's personal data. However, had the EC properly addressed privacy concerns of the merger, the outcome of the analysis might have been different.

This case illustrates that there are some data practices which does not explicitly violate antitrust law, so that an analysis focused only on traditional competition would allow them. They are nonetheless anticompetitive and bring risks both for the competition in the market and for the privacy of individuals, as discussed in the subsections above. The risks of such behaviours, however, could only be appropriately assessed if the privacy implications were considered. Therefore, competition policy should bring privacy concerns on board, which would prevent the analysis of digital market from missing important issues that bridge the two domains.

4.2.2. Privacy has teeth

This subsection argues that privacy offers tools to address the challenging new dynamics of competition in data-driven markets. Traditional antitrust tools, e.g. price-centric tools, were developed to analyse measurable things. Price, quality, and innovation are, to some extent, measurable and comparable variables of antitrust analysis. If both M&S and

---

the possibility of linking WhatsApp users' phone numbers with Facebook users' identities. As a response, the EC fined Facebook €110 million for providing misleading information about the WhatsApp takeover. According to the EC, the fine applied was 'unrelated to either ongoing national antitrust procedures or privacy, data protection or consumer protection issues', and had no impact on the Commission's 2014 decision to authorise the transaction under the EU Merger Regulation. EC argued that the deal was authorised on the basis that (a) Facebook Messenger and WhatsApp were not close competitors in the market for communications apps, (b) Facebook and WhatsApp were only distant competitors in the market for social networking, and (c) 'regardless of whether Facebook would introduce advertising on WhatsApp and/or start collecting WhatsApp user data for advertising purposes, the transaction raised no competition concerns' (European Commission, 2017).

Debenhams sell very similar white t-shirts, the price of the product in each store is one way of comparing the two. The quality of the product is another. If the one from M&S is 100% cotton and the one from Debenhams has some percentage of polyester, we can clearly differentiate the two. Data, in contrast, has no clear measure.

In face of the data-driven character of digital markets, traditional antitrust tools are not able to assess anticompetitive behaviours of internet companies. Increasingly, competition authorities are faced with practices that are intrinsically related to the exploitation of personal data. For example, as discussed above, anticompetitive practices in digital markets might take the shape of unduly use or unrestricted collection of user data. Also, assessing the relevant market in order to identify market power might demand identifying how and how much data a platform process.

While that is a new topic for competition policy, privacy and data protection scholarship has long been dealing with the adverse effect companies' behaviours have in the life and autonomy of individuals. Privacy, in this sense, offers the benchmark of analysis of data-related immeasurable and intangible factors affecting competition policy. 'Too much' data, here, would be the amount of data that violates the privacy of individuals. Furthermore, as data-related issues take many shapes and sizes, competition policy should be flexible enough to adapt to the particularities of the specific cases. Privacy, as a contextual value, has the required features for that.

Therefore, including privacy as a necessary dimension of antitrust analysis of internet companies gives competition policy the necessary tools to analyse the behaviour of agents in digital markets. Privacy, in other words, has the teeth competition policy is lacking in this realm.

4.3. The place of privacy in competition policy

In the previous subsections, I argued that internet platforms raise problems that are both related to competition and to data protection, and that some issues can be effectively addressed if competition policy incorporates privacy concerns. This subsection discusses how this incorporation should take place and where the place of privacy within competition policy is.

Competition law is intrinsically dynamic in its nature and has a wide range of goals, scope, and outcomes (Ezrachi, 2016). Nonetheless, the normative argument of this paper is grounded on the understanding that there is a common 'DNA' of competition law. In other words, there is a set of values and characteristics that shape and influence competition law worldwide, which is informed by economic thinking (Ezrachi, 2016). In this subsection I argue that the broader domestic context of a given jurisdiction affects the way privacy considerations integrate the hard core of competition law in two ways.

The first way is a matter of degree, depending on the specific country the degree in which privacy considerations will be part of the analysis change, i.e. how much privacy and data protection should be considered by competition authorities depends on how much importance a given jurisdiction gives to privacy. As discussed above, competition law is a political creation, which is inherently susceptible to distinct social, economic, and political variants. In that regard, different levels of economic development, market realities, government, and enforcement structure affect how competition law is designed and enforced (Ezrachi, 2016). Likewise, the degree to which privacy concerns should be integrated to competition policy vary according to the broader context of each country. It means that privacy will be more or less relevant across different jurisdictions, but will also vary across time (Ezrachi, 2016). As social and economic realities are dynamic, the pressure they exert over the 'membrane' of competition law will also vary over time, as well as the degree to which values are incorporated by the 'sponge'. Thus, even though the central argument is that privacy should be a competition goal in any case involving technology platforms, the role it plays and the extent to which this value should be considered varies across countries and over time.

In this sense, the antitrust analysis should be considered in terms of a spectrum of competition policy goals. Privacy is only one of the many goals that constitute this spectrum. The position of each country in this spectrum depends on the wider domestic context. In other words, the place of a given country within the spectrum varies according to the importance this country gives to privacy in relation to other values. For example, US approach to competition policy and to privacy is very different from the EU approach, which puts them in different positions within the spectrum. Nonetheless, in both countries privacy concerns are part of competition law and should be addressed by competition authorities.

The second way is a matter of procedure. While prices can be objectively measured and compared across firms, the same does not hold true when comparing privacy and data protection. In order for competition policy to be able to address privacy issues, thus, it would be necessary to adopt a benchmark, against which competition in terms of privacy protection could be assessed. There are two different possibilities.

The first option would be to adopt a benchmark which is external to competition law, i.e. sets of rules that regulate the protection of privacy and data protection in a wider context, but that could be used as tool to assess the legality of conducts. In many jurisdictions this would mean either adopting rules established by specific data protection laws and regulations, such as the General Data Protection Regulation (GDPR), in the case of the EU, or general principles and sectorial rules applied to privacy, such as the case of the US.

A second alternative, which implies a stronger claim of the place privacy has within competition policy, is to argue that privacy should be assessed against a benchmark internal to competition policy. This means that competition law should internalise privacy and data protection concerns, so that competition authorities would not have to resort to any external set of regulations. But it also means, in some cases, that competition authorities should be prepared to acknowledge and enforce privacy values, building jurisprudence accordingly.

These two different procedural alternatives have advantages and disadvantages. On the one hand, the adoption of an external benchmark would make it easier for competition authorities not used to privacy considerations to enforce data protection rules. In that sense, there would be greater transparency and legal certainty in the enforcement of the rules. Also, it would not be necessary to alter laws or issue new regulations in order to apply to antitrust cases. On the other hand, adopting an internal benchmark would bring further legitimacy to the claim that the protection of privacy should be part of competition law goals. Furthermore, this would be possible regardless of the existence of privacy laws or regulations. In the case of jurisdictions where data protection laws are still inexistent, it would mean that competition authorities and competition law could take the lead in the enforcement of privacy laws.

In the European Union (EU), for example, privacy enjoys wide and robust protection. It is recognised as a fundamental right by the Universal Declaration of Human Rights (article 12) and the European Convention on Human Rights (article 8). The European Court of Human Rights (ECHR) has also defined the concept of privacy through its judgments.[13] More recently, the EU adopted the GDPR, a detailed and comprehensive regulation, which unifies data protection law across the EU and establishes a series of detailed rules about the processing of individuals personal data.

In contrast, in the US, the Federal Constitution does not directly protect the right to privacy, and data protection is governed by a series of sectoral laws that regulate the collection and processing of personal data in specific sectors (such as health data and financial data), or federal laws with limited application scope to federal public administration bodies such as the Privacy Act of 1974 and the Freedom of Information Act (FOIA) (Antonialli, 2017).[14] Nonetheless, court decisions have ensured some kind of constitutional protection to the privacy of citizens.

4.4. Regulatory burden

This section briefly addresses one possible objection that might be raised against the main argument of this paper, namely that privacy concerns should be part of the hard core of competition policy in cases involving internet platforms.

A common criticism to the introduction of privacy concerns to antitrust analysis is that strict privacy laws and regulation, such as the GDPR, can favour stronger companies and prevent incumbents from accessing the market due to a disproportional increase in the

[13] For example, in *Axel Springer AG v. Germany* (Application n. 39954/08, 7 February 2012), the ECHR decided that the concept of 'private life' is a broad term covers personal information which individuals can legitimately expect should not be published without their consent. In *Von Hannover v. Germany* (No. 2) (Applications n. 40660/08 and 60641/08, 7 February 2012) the court acknowledged that the scope of private life protections even interactions that take place in a public context. Also, in *Rotaru v. Romania* the court held that private data systematically collected and stored in a file held by agents of the State, falls within the scope of 'private life' (Application n. 28341/95, 4 May 2000).

[14] Nonetheless, the US Constitution establishes a series of safeguards that are related to the protection of privacy, such as the right to be anonymous, or the right to be secure in their persons, houses, papers, and effects, against unreasonable searches and seizures. These, however, are limits to the government's intrusion into individuals' right to privacy and protects against state actors (Antonialli, 2017). Violation of privacy by private actors, as in the case of users and companies, are usually discussed at the federal level in light of case law, i.e. previous court decisions (Solove & Schwartz, 2011).

regulatory burden (Gault, 2018; Wakabayashi & Satariano, 2018). According to these critics, small firms and new firms are most adversely affected by compliance costs associated with regulatory attempts to protect the privacy of consumers' and thus negatively affect the competitive structure of data-intensive industries (Campbell, Goldfarb, & Tucker, 2013).

Any regulatory intervention, however, has impacts on who are the winners and the losers of tomorrow, and the fact alone that a privacy driven intervention might contribute to some business closing doors is not a strong enough reason not to intervene. In fact, both lack of intervention and intervention can potentially change market structures because the aim of regulation itself is to shape behaviour. That is true for any regulatory intervention. In that sense, if the protection of privacy and personal data is considered a relevant value by a given legal culture, then the burden of complying with regulation should be considered part of the total cost of doing business in that jurisdiction.

5. Policy recommendations

One of the goals of this research is to inform regulators, policy makers, and competition authorities towards the development of competition policy. It aims at providing arguments to support the improvement of analytical tools, so that they are better suited to understand competition among internet companies and to prevent anticompetitive practices that harm consumers, destabilise markets, and undermine democracy.

The previous section argued that privacy and data protection concerns should inform the update of the analytical toolkit of competition, i.e. that privacy and data protection concerns are part of competition policy and should be addressed by antitrust analysis of digital markets. This subsection builds on this argument and on the findings of this study to propose two broad groups of policy recommendation, which are discussed below.

5.1. Evidence-based competition policy

First, because privacy and data protection concerns are embedded in the broader economic, political, and cultural contexts, the antitrust analysis should carefully consider the business reality and pay close attention to the particularities of all sides of the markets.

While price-centred tools are often objective and uniformly applied across industries and companies, the data-related dimensions of competition are more subjective and highly dependent on the broader institutional context. Thus, competition should match the evidence, not the slogans (Evans & Schmalensee, 2016). This means that the analysis must be not only vastly based on the particularities of the specific case, but and also rooted in evidence.

Furthermore, because these are market platforms which serve multiple groups of users, the analysis should consider all the sides and the relationships between them. Failing to do so might lead to misconceptions similar to the ones of the EC when defining the relevant market in the Google cases. As discussed before, by focusing on a specific part of the market, the Commission disregarded relevant relationships between agents, which ultimately led to Google's conduct being condemned.

A clear and accurate understanding of the market is important in all antitrust cases, but it is even more relevant in digital markets, due to limited availability of knowledge about them. Competition authorities faced with digital market cases increasingly turn to experts or to market participants in order to build knowledge about the specificity of the cases and the markets. For example, in the ACCC Digital Platform Inquiry, in order to gather information and inform the proceedings, the Australian authority published an issues paper and encouraged the submission of responses from market participants, including media content creators/journalists, media outlets, digital platforms, advertisers, consumers, small businesses and industry associations. The Commission has also been hosting a series of public forums with different groups of stakeholders (journalists, consumers, and advertisers) to gather their views on the topic of the inquiry (ACCC, 2018).

These proceeding show that the ACCC is committed and evidence-based approach in the conducting of the inquiry and open to contributions for multiple actors to build an understanding on the issue is noteworthy. It is still too soon to identify the effects these efforts will have in the outcome of the case. The ACCC inquiry is expected to publish a preliminary report by the end of 2018, and a final report by mid-2019. However, the inquiry has already triggered an important and praiseworthy process of reflection on the adequacy of antitrust tools to frame digital economies and contributed to building literature and expertise on the topic.

5.2. Integrated and coordinated regulatory approach

The subsections above argued that competition policy should play closer attention to the specificities of the markets under analysis. Here, I argue that in order to adequately address the issues arising from internet platforms, there is the need for an integrated regulatory approach and the competition policy toolkit should go hand in hand with other regulatory frameworks.

There are areas of regulation that are especially close to competition policy, like consumer protection. In fact, in many countries, competition policy and consumerist legislation are enforced by the same body, as in the case of the Australian Competition and Consumer Commission. Nonetheless, many other institutional arrangements are possible.

For example, the Brazilian Conselho Administrativo de Defesa Econômica (CADE) is an independent agency reporting to the Ministry of Justice, which focuses on the enforcement of antitrust, while consumer protection falls under the competency of another body of the same Ministry, the National Consumer Secretariat (Senacon). However, regardless of the institutional arrangement, they often work together and share information and expertise in many cases where consumer protection and competition policy intertwine.

Internet platforms markets demand an even closer integrated and coordinated regulatory approach, which is not restricted to consumer protection. According to the ACCC, digital markets make it even more relevant for competition authorities to adopt a holistic approach (Beaton-Wells, 2018b). Cases involving technology companies should be analysed through the lenses of both regulation and competition policy, because only by employing an integrated regulatory approach all the relevant dimensions of competition are considered.

Furthermore, integration and cooperation are important not only at the county level, but also between competition authorities and regulators around the world. New challenges of digital markets make it even more relevant for enhanced cooperation between competition authorities across the globe. Similar investigations and procedures involving digital companies are being conducted in different jurisdictions, and authorities could benefit from working closer together and sharing experiences and best practices in order to build up expertise and appropriated resources.

6. Conclusion

This paper aimed at providing insights for a deeper understanding of the interface between the competition policy, regulation of internet platforms, and privacy. First, it described aspects of the business models of digital platforms which defy traditional analysis, namely the fact they are multi-sided markets that heavily rely on the collection and processing of users' data. Second, it discussed some antitrust concerns specifically related to these features. Third, I argued that in light of the new context of the digital economy, traditional competition policy should be reformed and adapted in order to adequately frame these companies. In other words, competitive outcomes might need to be addressed differently when it comes to internet platforms. Finally, I proposed two policy recommendations, informed by the findings of the study.

The main argument of the paper is that competition law goals and interests should make room for privacy and data protection concerns, and that these values should inform the update of the analytical framework of competition policy, and also impact its enforcement. Data-driven online markets do not have the incentives to correct themselves, which make calls for a specific sort of policy intervention.

By saying that, I don't mean to imply that competition in online markets might never be sustainable. Rather, I argue that traditional antitrust analysis tools need to be adapted in order to frame internet-based platforms, and to better prevent anti-competitive behaviour. Economic theory provides useful concepts and models to support these arguments, but it is still unclear how suitable they are to be put into action and enforced. How these concepts will be operationalised in law is still to be discovered.

Furthermore, technology markets are still galloping horses. The data age has only just begun and new technologies and uses involving collection and processing of personal data are in constant and rapid evolution. For example, artificial intelligence and machine learning technologies are still in the very early stages of development but have the potential of spreading across different industries and sectors. This make the design of analytical frameworks that are fit for purpose and up to scratch even more urgent.

Despite its contributions, there are some limitations in the present study. First, although it recommends the conduction of empirical studies in order to adequately address

competition in online markets, this paper was not informed by systematic data collection and analysis. In the context of a broader project, with more time and resources, this research could be expanded to include an empirical perspective.

Second, this study could also be expanded to address how the internationalisation of competition law and policy could affect the proposed analysis. More specifically, if international organisations, such as the Organisation for Economic Co-operation and Development (OECD) or the World Trade Organisation (WTO) could provide an external benchmark to competition policy, to be enforced domestically by member states. New proposals for measuring global trade and for tracing how value is created and how trade flows are currently on the table, in attempts to also account for intangibles goods and services (Fu, 2018). Framing personal data as an intangible good, in that context, could give internet platform competition also an international dimension, with international organisations setting rules and enforcing them at a global level. In that sense, the possibility of a minimal degree to which privacy should be considered by domestic antitrust regimes might not be very far away and could contribute to the ongoing process of enhancing harmonisation and convergence of competition regimes around the world (Ezrachi, 2016).[15]

A third limitation of the paper lies in its western-centred approach to technology companies and platforms, which misses a considerable part of the digital market. There are 4 billion internet users in China (World Bank, 2018), where is also home of some of the biggest internet companies in the world, namely JD.com, Tencent, Alibaba, and Baidu. A comparative analysis between competition in the Chinese digital market and competition in western economies could provide interesting conclusions. There are two main reasons, however, for this relevant part of the world economy to be left out the analysis. One is that the theoretical framework adopted here might not be adequate to address the particularity of China's economy, where there are high levels of government intervention. The other is the lack of access to reliable data about the functioning of the markets and of the platforms to inform the discussion. If those challenges could be overcome, the antitrust analysis of Chinese internet companies could bring interesting insights to the discussion.

[15] International scrutiny by international organisations could also prevent countries from advancing political agendas and protectionist policies in the guise of competition enforcement.

Nonetheless I believe there are strong theoretical arguments and examples in competition practice supporting the arguments of this paper. I expect this work to contribute to the literature of social sciences of the internet, specially law and economics, to inform policy-making, and to enhance the enforcement of competition law by competition authorities and regulators worldwide.

References

ACCC, A. C. and C. C. (2018). *Digital Platforms Inquiry: Issues Paper*. Australian Competition and Consumer Commission. Retrieved from https://www.accc.gov.au/system/files/DPI%20-%20Issues%20Paper%20-%20Vers%20for%20Release%20-%2025%20F.._%20%28006%29.pdf

Acquisti, A., Taylor, C., & Wagman, L. (2016). The Economics of Privacy. *Journal of Economic Literature*, *54*(2), 442–492. https://doi.org/10.1257/jel.54.2.442

Antonialli, D. (2017). *A arquitetura da Internet e o desafio da tutela do direito à privacidade pelos Estados nacionais*. University of São Paulo, São Paulo.

Armstrong, M. (2006). Competition in Two-Sided Markets. *The RAND Journal of Economics*, *37*(3), 668–691.

Baldwin, R., Cave, M., & Lodge, M. (2010). *The Oxford Handbook of Regulation*. Oxford: Oxford University Press. Retrieved from https://books.google.co.uk/books?id=w3hOswEACAAJ

Beaton-Wells, C. (2018a). Competition Lore: Do competition authorities need to transform themselves in a digitally transformed world? Retrieved from https://competitionlore.com/podcasts/digital-disrupted-competition-authorities/

Beaton-Wells, C. (2018b). Competition Lore Podcast: Are digital platforms destroying the news? Retrieved 3 August 2018, from https://competitionlore.com/podcasts/accc-inquiry-into-digital-platforms/

Beaton-Wells, C. (2018c). Competition Lore Podcast: What are data-opolies? Retrieved 3 August 2018, from https://competitionlore.com/podcasts/what-are-data-opolies/

Black, J. (2001). Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World. *Current Legal Problems*, *54*(1), 103–146. https://doi.org/10.1093/clp/54.1.103

Brown, I., & Marsden, C. T. (2013). *Regulating code: good governance and better regulation in the information age*. Cambridge, Mass: The MIT Press.

Brownsword, R., Eloise, S., & Karen, Y. (2016). Law, Regulation, and Technology: The Field, Frame, and Focal Questions. In *The Oxford Handbook of Law, Regulation and Technology* (p. 38). Oxford: Oxford University Press.

Bundeskartellamt. (2016). *Market Power of Platforms and Networks* (Working paper, B6-113/15).

Bundeskartellamt. (2017, December 19). Preliminary assessment in Facebook proceeding: Facebook's collection and use of data from third-party sources is abusive. Retrieved 4 August 2018, from

https://www.bundeskartellamt.de/SharedDocs/Meldung/EN/Pressemitteilungen/2017/19_12_2017_Facebook.html

Caillaud, B., & Jullien, B. (2001). Competing cybermediaries. *European Economic Review*, *45*(4–6), 797–808. https://doi.org/10.1016/S0014-2921(01)00123-4

Campbell, J., Goldfarb, A., & Tucker, C. (2013). Privacy Regulation and Market Structure, 38.

Chang, H. H., Evans, D. S., & Schmalensee, R. (2011). *Market Definition: Assessment of the Relevant Market in Competition Matters* (Report Prepared for the Federal Competition Commission of Mexico).

Eisenmann, T., Parker, G., & Van Alstyne, M. (2011). Platform envelopment. *Strategic Management Journal*, *32*(12), 1270–1285. https://doi.org/10.1002/smj.935

European Commission. (2017). *Mergers: Commission fines Facebook €110 million for providing misleading information about WhatsApp takeover* (No. Press release). Retrieved from http://europa.eu/rapid/press-release_IP-17-1369_en.htm

European Commission. (2018). *Antitrust: Commission fines Google €4.34 billion for illegal practices regarding Android mobile devices to strengthen dominance of Google's search engine*. Brussels: European Commission. Retrieved from http://europa.eu/rapid/press-release_IP-18-4581_en.htm

Evans, D. S. (2009). How Catalysts Ignite: The Economics of Platform-Based Start-Ups. In A. Gawer, *Platforms, Markets and Innovation*. Edward Elgar Publishing. https://doi.org/10.4337/9781849803311.00011

Evans, D. S., & Noel, M. (2005). Defining antitrust markets when firms operate two-sided platforms. *Colum. Bus. L. Rev.*, 667.

Evans, D. S., & Schmalensee, R. (2013). *The antitrust analysis of multi-sided platform businesses*. National Bureau of Economic Research.

Evans, D. S., & Schmalensee, R. (2016). *Matchmakers: The New Economics of Multisided Platforms*. Cambridge, MA: Harvard Business Review Press.

Ezrachi, A. (2016). Sponge. *Journal of Antitrust Enforcement*, jnw011. https://doi.org/10.1093/jaenfo/jnw011

Ezrachi, A., & Stucke, M. (2016). *Virtual competition*. Oxford University Press.

Farrell, J., & Klemperer, P. (2007). Coordination and Lock-In: Competition with Switching Costs and Network Effects. In *Handbook of Industrial Organization* (Vol. 3, pp. 1967–2072). Elsevier. https://doi.org/10.1016/S1573-448X(06)03031-7

Fu, X. (2018). *Trade in Intangibles and A Global Value Chain-based View of International Trade and Global Imbalance*. TMCD Working Paper Series, No. 078, Department of International Development, Oxford University. Retrieved from

http://www.oxfordtmcd.org/sites/www.tmd-oxford.org/files/publications/GVC-based%20trade%20framework%20-English-4-May2018-clean-WP078-6-clean.pdf

Gallagher, S. (2018, August 2). That's trillion with a T—Apple hits market value of $1 trillion. *Ars Technica*. Retrieved from https://arstechnica.com/information-technology/2018/08/thats-trillion-with-a-t-apple-hits-market-value-of-1-trillion/

Gault, M. (2018, May 18). Why Europe's New Privacy Laws Are Causing Some Online Games to Shut Down. *Motherboard*. Retrieved from https://motherboard.vice.com/en_us/article/pavbn9/gdpr-privacy-law-and-online-games-loadout-ragnarok-online

Kang, C., & Frenkel, S. (2018, April 5). Facebook Says Cambridge Analytica Harvested Data of Up to 87 Million Users. *The New York Times*. Retrieved from https://www.nytimes.com/2018/04/04/technology/mark-zuckerberg-testify-congress.html

Kim, E. (2015, October 20). Here's how the dating service company that owns Tinder makes money. *Business Insider*. Retrieved from http://uk.businessinsider.com/how-match-group-and-tinder-make-money-2015-10

Klemperer, P. (1995). Competition when Consumers have Switching Costs: An Overview with Applications to Industrial Organization, Macroeconomics, and International Trade. *The Review of Economic Studies*, *62*(4), 515–539. https://doi.org/10.2307/2298075

Klemperer, Paul. (2006). *Network Effects and Switching Costs: two short essays for the new New Palgrave*. Economics Group, Nuffield College, University of Oxford.

Kovacic, W. E., & Shapiro, C. (2000). Antitrust Policy: A Century of Economic and Legal Thinking. *Journal of Economic Perspectives*, *14*(1), 20.

Kwoka, J. E., & White, L. J. (2014). *The antitrust revolution: Economics, competition, and policy* (Sixth). New York: Oxford University Press.

Mankiw, N. G. (2015). *Principles of economics* (Seventh edition). Stamford, CT: Cengage Learning.

Mayer, J. (2018). Government Hacking. *The Yale Law Journal*, *127*(3), 570.

Motta, M. (2004). *Competition Policy: Theory and Practice*. Cambridge: Cambridge University Press.

OFT. (2012). *Anticipated acquisition by Facebook Inc of Instagram Inc ME/5525/12*. Office of Fair Trading. Retrieved from https://assets.publishing.service.gov.uk/media/555de2e5ed915d7ae200003b/facebook.pdf

Oreskovic, A. (2012, August 23). FTC clears Facebook's acquisition of Instagram. *Reuters*. Retrieved from https://www.reuters.com/article/us-facebook-instagram/ftc-clears-facebooks-acquisition-of-instagram-idUSBRE87L14W20120823

Pichai, S. (2018, July 18). Android has created more choice, not less. Retrieved 18 July 2018, from https://www.blog.google/around-the-globe/google-europe/android-has-created-more-choice-not-less/

Reeves, A. P., & Stucke, M. (2011). Behavioral Antitrust. *INDIANA LAW JOURNAL*, *86*, 61.

Rochet, J.-C., & Tirole, J. (2003). Platform competition in two-sided markets. *Journal of the European Economic Association*, *1*(4), 990–1029.

Solove, D. J. (2008). *Understanding privacy*. Cambridge, Mass: Harvard University Press.

Solove, D. J., & Schwartz, P. M. (2011). *Privacy, information, and technology* (3rd ed). New York: Wolters Kluwer Law & Business.

Stucke, M. (2018a). Should we be concerned about data-opolies? *Georgetown Law Technology Review*, *Forthcoming*, 50.

Stucke, M. (2018b, March 27). Here Are All the Reasons It's a Bad Idea to Let a Few Tech Companies Monopolize Our Data. Retrieved 3 August 2018, from https://hbr.org/2018/03/here-are-all-the-reasons-its-a-bad-idea-to-let-a-few-tech-companies-monopolize-our-data

Stucke, M., & Grunes, A. (2016). *Big data and competition policy*. Oxford: Oxford University Press.

Taylor, G. (2018, March). *Competition (Antitrust) Policy*. Presented at the The Economics of the Internet, Oxford Internet Institute.

TechCrunch. (2012, April 9). Facebook Buys Instagram For $1 Billion, Turns Budding Rival Into Its Standalone Photo App. Retrieved 11 May 2018, from http://social.techcrunch.com/2012/04/09/facebook-to-acquire-instagram-for-1-billion/

The Economist. (2017, May 6). Fuel of the future, the data economy. *The Economist*, *423*(9039). Retrieved from https://www.economist.com/briefing/2017/05/06/data-is-giving-rise-to-a-new-economy

The Economist. (2018, January 18). How to tame the tech titans: Competition in the digital age. *The Economist*. Retrieved from https://www.economist.com/leaders/2018/01/18/how-to-tame-the-tech-titans

Varian, H. R., Farrell, J., & Shapiro, C. (2004). *The Economics of Information Technology: An Introduction*. Cambridge: Cambridge University Press.

Veljanovski, C. (2010). Economic Approaches to Regulation. In *The Oxford Handbook of Regulation* (p. 24). Oxford: Oxford University Press.

Wakabayashi, D., & Satariano, A. (2018, April 23). How Looming Privacy Regulations May Strengthen Facebook and Google. *The New York Times*. Retrieved from https://nyti.ms/2HpH9Nl

Warren, S. D., & Brandeis, L. D. (1890). The Right to Privacy. *Harvard Law Review*, *4*(5), 193-220.

Westin, A. F. (1968). Privacy and Freedom. *Washington and Lee Law Review*, *25*(1), 166. https://doi.org/10.1177/000271626837700157

Yin, R. K. (2003). *Case study research: design and methods* (3rd ed). Thousand Oaks, Calif: Sage Publications.

Zweigert, K., & Kötz, H. (1998). *Introduction to comparative law* (3rd rev. ed). Oxford : New York: Clarendon Press ; Oxford University Press.