Edited by
Stefan Larsson and Jonas Andersson Schwarz

DEVELOPING PLATFORMS

A EUROPEAN POLICY LANDSCAPE

elf

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DEVELOPING PLATFORM ECONOMIES

A EUROPEAN POLICY LANDSCAPE

Edited by Stefan Larsson and Jonas Andersson Schwarz

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Stefan Larsson and Joakim Wernberg

Developing Platform Economies:
A European Policy Landscape

Edited by Stefan Larsson and Jonas Andersson Schwarz

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INTRODUCTION: DEVELOPING PLATFORM ECONOMIES

Edited by

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Platforms and platformisation

Data-driven digital platforms have become a key organisational form of vast economic interest and impact in contemporary societies. These platforms and, arguably, the underlying data-driven platform logic[1] that they make part of, are having an increasing impact on most levels of our daily lives, addressing both public and private sectors and either disrupting or integrating with various markets. This calls for more scrutiny of the consequences of digital platform economies and what we in this report call *platformisation* for the conditions for innovation and economic welfare. One key example is the relationship between global, large-scale tech companies and more traditional incumbents on various markets – or, for that matter, the relationship between said platform corporations and smaller, emerging startups that partially rely on the platform-based infrastructures controlled by these gargantuan platform corporations. Moreover, geopolitical and jurisdictional dependencies abound – for example the different policy landscapes in USA and the EU.

The concept of platforms has emerged in recent years as one of the most important concepts of the digital economy.[2] Platforms enable a great number of new, rationalized ways of organizing society; but they are also based on an element of control, since users' latitude is circumscribed by the computer code, and they are in many ways forced to adapt their behaviour to it. A few platform-based corporations (Google, Facebook, Apple, Amazon, Microsoft) have gained massive global influence since not only users but also a long list of other societal actors have become dependent on the services provided by these global companies, including many smaller, upcoming platform corporations.

In the research literature, there is a growing body of knowledge on contemporary digital market development, often framed within concepts like *sharing* or *the gig economy* or *a fourth industrial revolution*. While there are recent accounts on aspects of capitalism and financial incentives in

1 See Andersson Schwarz (2017).
2 See for example van Dijck et al., (2018).

relation to "big data,"[3] or analyses of the monopolistic tendencies that emphasize the need to better understand what platform capitalism entails for society,[4] this report seeks to add to the knowledge on markets and policy issues in relation to digital platforms from a European perspective. Furthermore, from a more critical point-of-view, the lack of transparency in both code, data collection and markets is something that has been addressed by scholars[5] as well as debated politically, including labour market perspectives in terms of what has sometimes been referred to as a "myth" of a sharing economy.[6] Fores has, in earlier ELF-publications, addressed various aspects of automation in labour markets; e.g. productivity, unemployment, and the implications for legislation.[7] We have also addressed challenges with information asymmetries from a consumer protection perspective as well as notions of antitrust on data-driven markets.[8]

We see new algorithm-based systems changing and reshaping entire industries. The effects of these systems permeate our everyday lives at a micro level, as important aspects of our everyday lives are affected by algorithms, and at a macro level, as important social relations are being remoulded in ways that are premised on the designs of these platforms which are suffused by sometimes arbitrary prioritizations and have unexpected side-effects.

In addition, and very much in line with a platform economy highly driven by data and scalability, there is little doubt that aspects of artificial intelligence (AI), machine learning and the abilities of algorithmic systems can make many processes more efficient and individually relevant for consumers, be it in autonomous cars, in smart homes or recommendations systems. The "personalisation" of applications, and the abilities for predictive analytics and automated decision-making

3 I.e. Mayer-Schönberger & Ramge (2018).
4 Srnicek (2017).
5 I.e. Pasquale (2015).
6 I.e. Rosenblat (2018), through studies of Uber.
7 Wennberg & Bergström, eds. (2016).
8 Larsson (2017); see Larsson (2018).

do however create a number of policy challenges.[9] There is, then, an increasing need to address the AI-related policy challenges, for example in how to ensure fairness, accountability and transparency in autonomous systems operating with societal applications.

The present report addresses the social relevance of digital platforms and their impact on liberal-democratic society, and poses a number of follow-up questions related to innovation and policy challenges. This includes theories on digital platform economies, a wider notion of a "platform society", as well as more empirical insights on the regulation of platform companies and the establishment of market-making platforms, including data from accommodation provider Airbnb in four cities.

FOUR CHAPTERS

The report has four different chapters, which were initially discussed at a workshop conference in Stockholm, October 8, 2018. This one-day workshop at Fores gathered researchers and experts in the field to collaboratively pinpoint and address the most pressing aspects of the data-driven platform economy.

1. Inside the Black Box: Platform Economies and Digitalisation

In the first chapter of the report, Joakim Wernberg[10] addresses digital economies in terms of economic theories on multi-sided platforms. An initial, and important, point is that platform economies are not new, and actually have been key components in the economic system for a long time, before the Internet. This means that a theoretical foundation on

9 For example, in April 2018, the EU Commission adopted the Communication on Artificial Intelligence that lays out the EU's approach to AI. The EU Commission aims to 1. increase the EU's technological and industrial capacity and AI uptake by the public and private sectors; 2. prepare Europeans for the socioeconomic changes brought about by AI; and 3. ensure that an appropriate ethical and legal framework is in place.

10 PhD in economic geography and Research Director of the Megatrends programme at the Swedish Entrepreneurship Forum.

how to understand the phenomena has already been laid out, at least to some extent. To underscore this point, Wernberg discusses the "market-making" abilities of both e-traders as well as shopping centers. Scale, matching abilities and trust are all key components when addressing digital platform economies, according to Wernberg.

By referring to economist and political scientist Herbert Simon's work in the late 1960's and early 1970's, Wernberg concludes that need for search, sorting functions and personalised filtering increases with the amount of information. That is, search costs increase, creating a matchmaking problem of sorts, for which digital platforms with personalised matching and automated relevance assessments offer a solution that can entail far-reaching changes for markets that have not previously been exposed to digital technologies and platform economies. Further takeaways from Wernberg's chapter are:

COMPETITION OR LEVERAGE? Stores that digitise their business with the purpose of competing with platforms may face much larger obstacles than stores that digitise in order to utilise digital platforms as leverage;

THE IMPORTANCE OF TRUST. Trust, in Wernberg's words, is a "perishable commodity". Establishing a "trust infrastructure" thereby becomes a necessity in the context of a sharing economy. In fact, trust should be treated as an important bottleneck, sometimes even more important to address than issues of data collection.

SELLING DATA OR MATCHING? There is a very important distinction regarding what many platforms sell access to; while the data collected by the platform is necessary for effective matchmaking, what the platform actually sells is often the matching, not the data.

2. Two Policy Landscapes: How the Regulation of Digital Platforms is Handled in the EU and the US

In this chapter Jonas Andersson Schwarz, presented above, compares policy landscapes in US and EU. He explores seemingly rather different approaches to the contemporary digital economy in the two jurisdictions and utilises three case studies to do so:

> **THE DECISION** on Ohio v. American Express Co. by the US Supreme Court in June 2018, of particular relevance for American antitrust;
>
> **THE CONFLICT** between Google Ads versus publishers with regards to responsibilities of user consent, very much related to the GDPR[11] being enforceable within the EU from May 2018;
>
> **NORMATIVE REGULATION** of media-platform content, combining an analysis of the German NetzDG regulation, which requires that Internet platforms block hate speech and disinformation, and the new EU Copyright Directive that is currently being developed.[12]

The EU Commission has, in recent years, proposed what Andersson Schwarz calls "a flora of regulation bills" as part of what appears to be an organised strategy to establish clearer rules for "platform capitalism."

An absolutely crucial aspect of the platform economy is the fact that platform business models are generally intended to generate revenue by bringing together two separate groups and thereby combining two (or more) markets,[13] using automated and scalable methods.[14] This, in Andersson Schwarz's view, complicates conventional analyses of antitrust

11 REGULATION (EU) 2016/679 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation).

12 Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on copyright in the Digital Single Market {SWD(2016) 301 final} {SWD(2016) 302 final}.

13 As developed by Wernberg in this volume.

14 Further elaborated upon by Andersson Schwarz and Larsson in this volume.

legislation; in particular, the American approach to antitrust law seems to have had great difficulty in recent years, regarding how two-sided markets work, since the ensuing effects on consumer prices often appear to be negligible (or are deliberately deemed unproblematic by the regulators).

An optimistic – arguably too optimistic – perception is that platform companies would not exploit the benefits of their privileged position as key coordinators of market activities which enable them to maximise the synergetic effects of owning seemingly radically different kinds of subsidiaries. One critique by Andersson Schwarz is that regulatory approaches have yet to find a balanced approach towards those data-driven market activities that do not necessarily generate clearly measurable econometric effects, in the conventional toolbox.[15]

Andersson Schwarz connects his policy overview to a larger discussion of the nature of contemporary ideology, by addressing the topic of how to definite liberalism in a developing platform economy: "Are we talking about a humanistic liberalism which promotes the values of the Enlightenment in the hope that beneficial economic effects will automatically follow, or are we talking about an economic liberalism that promotes economic values in the hope that beneficial humanistic effects will follow?"

3. Regulating Airbnb in the EU and US: An Empirical study

The third chapter is an empirical study on AirBnB and the accommodation industry in four large cities: London and Paris in Europe, and Los Angeles and New York in the USA. This study is authored by Kristóf Gyódi[16] who, through an analysis of an extensive dataset mapping Airbnb listings, assesses market effects of different regulatory approaches in the four cities.

The results of the study indicate that the stricter rules on platform-based

15 See also Larsson (2018) for a consumer protection perspective.

16 Analyst and PhD candidate at DELab, an interdisciplinary research institute at University of Warsaw, as well as the Faculty of Economic Sciences.

accommodation industries enforced by the city administrations in New York and Paris have been more successful in restricting the activities of professional businesses, i.e. promoting more civic uses of the platform, while the lack of an effective regulatory framework contributed to a more business-oriented, professionalized Airbnb network in Los Angeles. Moreover, the data supports that in the absence of monitoring tools, it is relatively easy for hosts to run a large number of Airbnb listings in London. In this sense, Gyódi highlights aspects of professionalisation of the sharing economy, where e.g. Airbnb becomes akin to a parallel hotel business of sorts; an aspect that is often neglected or overlooked in conventional narratives of the sharing economy.

The chapter displays the necessity of an empirically grounded understanding of developments and practices in the market, whenever a regulatory body seeks to regulate it. Otherwise, regulatory efforts risks being mere expressions of token politics to show decisiveness – or, at worst, leading to unintended consequences unwanted by everyone concerned.

4. A Platform Society

The final chapter seeks to define the developing platform economy from a larger, societal perspective, and is co-authored by the two editors of the report, Jonas Andersson Schwarz and Stefan Larsson. We analyse the societal effects of a few platform-based corporations (Google, Apple, Facebook, Amazon, Microsoft) and show how smaller, newer, platform-based companies occasionally try to compete with them while often being dependent on them, or getting acquired. The geopolitical arrangement of the platform economy is of vital significance, and entails a need to better understand the implications of the North American origins of the largest platform-based corporations in which American politics and regulations have an impact on countries in the rest of the world, Europe in particular.[17]

17 On differences and similarities in the two policy-landscapes, see Anderson Schwarz's chapter in this volume.

Similarly, it is important to observe digal developments in China and the specific characteristics of the Chinese platform-based society, with its authoritarian governmental intervention, and fundamentally different views on individual rights regarding privacy and data protection than what the European GDPR expresses. Not only does China have the world's largest domestic market but also rapidly growing Internet giants such as Baidu, Alibaba and Tencent, which will likely also affect European markets in considerable ways.

Furthermore, we address the important difference between proprietary and open software when assessing digital platforms. We suggest a definition on digital platforms that includes the aspect of proprietorship, which forms a challenge both regarding transparency and accountability, but also fundamental aspects of datafication, scalability, automation, centralisation, and commercialisation. Moreover, both datafication and automation are essential components of scalability, which enables efficiency and personalisation. But there are also considerable indications that autonomous systems engaged in social structures have unintended effects[18] that need much further scrutiny.

In this final chapter of the report, we argue that it is important to study the type of business model on which a platform's growth or administration is based, in order to be able to understand the logics of its growth, for example into multiple branches. Not only does an increasing number of social sectors and industries become dominated by digitally originated platform operators; also traditional institutional actors are increasingly adopting data-driven platform logics – utilising and analysing consumer data in order to predict particular outcomes in order to automate and outsource decision-making. Therefore we clearly see a need to address not only the economic implications, but also the wider societal effects and the policy challenges that this development entails.[19]

18 I.e. Caplan et al. (2018) or the FAT conference.
19 See van Dijck et al. (2018).

In conclusion

This volume addresses the question of how to define a developing platform economy, one that is very data-centric and dealing with the need for sorting and filtering in an overflowing torrent of information. The report addresses the urgency to more clearly define the challenges of balancing interests on markets where notions of informed user consent are challenged by nearly ubiquitous data collection and design interventions into our everyday lives. Furthermore, there are conflicts between more traditionally developed markets and representatives of a newer platform logic of automated scalability that evokes significant questions of accountability for content and how to balance size against innovation; infrastructural claims of market-making against claims of unfair monopolism. The common complaint of lack of market transparency is also addressed, in combination with the empirical needs of policy development. Without proper assessment, any legislation risks imposing norms where the effects are mere chance. On the other hand, with regulators that are too passive, there is a risk that markets develop in ways detrimental to both consumers and innovation as a whole.

One consistent theme throughout this report concerns the question of how we, as a society, can benefit from the many advantages presented by these platforms while simultaneously managing the harmful effects and newly emerged vulnerabilities that may be built into these infrastructures.

REFERENCES

Andersson Schwarz, J. (2017). "Platform Logic: An Interdisciplinary Approach to the Platform-Based Economy". *Policy & Internet* 9(4): 374–394.

Caplan, R., Donovan, J., Hanson, L. & Matthews, J. (2018). *Algorithmic Accountability: A Primer*, NYC: Data & Society.

van Dijck, J.; T. Poell & M. de Waal (2018). *The Platform Society. Public Values in a Connective World*. Oxford University Press.

EU Commission {SWD(2018) 137 final} Artificial Intelligence for Europe. Communication from the Commission to the European Parliament, the European Council, the Council, the European Economic and Social Committee and the Committee of the Regions.

Larsson, S. (2017). "All-seeing giants and blindfolded dwarfs: On information-asymmetries on data-driven markets", in Lith, J., (ed.) *New Economic Models: Tools for Political Decision Makers Dealing with the Changing European Economies*, Brussels, Belgium: European Liberal Forum asbl.

Larsson, S. (2018). "Algorithmic Governance and the Need for Consumer Empowerment in Data-driven Markets". *Internet Policy Review* 7(2):1–12.

Mayer-Schönberger, V., & Ramge, T. (2018). *Reinventing Capitalism in the Age of Big Data*. Basic Books.

Pasquale, F. (2015). *The Black Box Society: The secret algorithms that control money and information*. Harvard University Press.

Rosenblat, A. (2018). *Uberland: How Algorithms Are Rewriting the Rules of Work*. University of California Press.

Srnicek, N. (2017). *Platform capitalism*. John Wiley & Sons.

Wennberg, K., & Bergström, A. (Eds.) (2016). *Machines, jobs and equality: Technological change and labour markets in Europe*. Stockholm: Fores.

INSIDE THE BLACK BOX: PLATFORM ECONOMIES AND DIGITALISATION

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INTRODUCTION

DIGITAL PLATFORM COMPANIES, i.e. companies that run multi-sided digital platforms, have become subject of increasing debate. These discussions tend to focus on how they earn revenue, whether they risk becoming too dominant, and the role they play, or should play, in the economy and society at large.[1] Typically, the core of these platforms, i.e., the platform economy, is reduced to a "black box" and marginalised in the ongoing debate, leaving two important questions unanswered:

- What is a platform economy, and what distinguishes platforms from other businesses?
- Why are multi-sided platforms increasingly assuming a key role in digitised economies?

Digital platforms already challenge the status quo in several parts of the economy. This gives rise to a number of issues related to individual

1 The concept of the platform economy is not intended to define the economic system in its entirety, but rather, the underlying dynamics of multi-sided platforms. A platform company, therefore, is a company that runs a multi-sided platform which is built on the logic of platform economics.

platforms or specific sectors, for instance concerning the the labour market. The problem is that as a growing number of such sector-specific issues call for the attention of policymakers, the aggregate role and function of platforms in the economy is easily overlooked – the forest is obscured by all the trees. This chapter instead adopts a holistic perspective based on common denominators between digital platform economies across sectors throughout the entire economy.

There are significant differences between multi-sided digital platforms and traditional business models geared towards selling services or products. Describing digital platforms as a combination of, on the one hand, platform economies and, on the other hand, digitisation contributes not only to our understanding of how they differ from other businesses but also how they fit into the digitised economy as a whole.

Platforms distinguish themselves from many of the companies they seemingly compete with both in terms of organisation and the products and services they offer. Uber and Airbnb have somewhat provocatively been described as the largest taxicab company and hotel chain in the world, respectively, without owning a single car or hotel room – but what does that really mean? Does Google compete with newspapers for readers just because they compete for advertisers? Are small companies that own their own stores forced to compete with Amazon? One of the main arguments in this chapter is that because of their differences, digital platforms and traditional businesses are not necessarily competing but may actually benefit from each others' business.

At first glance, it might seem that multi-sided platforms have emerged as a result of digitisation, but this is in fact not the case. On the contrary, platform economies have actually been key components of the economic system for a long time.[2] There were multi-sided platforms and platform economies long before companies and households began to use the Internet in the late 1990s.

2 Evans (2003).

Shopping centres, gaming consoles, and credit card companies are a few examples of platform economies that have had a noticeable impact on the economy. In its most basic form, a platform is a tool for *mediating, simplifying* and *matching* different kinds of demands with each other in a market. Put differently, platforms provide matchmaking services.[3] A shopping centre is a platform that concentrates a selection of stores to a single space, thereby allowing each store to reach the other stores' customers as well. This also benefits the customers who are able to access a greater selection of stores gathered under the same roof. Gaming consoles such as PlayStation or Xbox create markets that bring gamers and developers together. A newspaper can be described as a kind of platform that brings its readers to its advertisers. In the case of newspapers, this is illustrated by the share of revenue each paper gets from advertising in comparison to subscriptions.

Although there are many examples of "old" or pre-digital platform economies, for a long time there were no theories or frameworks for identifying and studying them in aggregate. Instead, existing platforms were often treated as an exception to the rule of how businesses were organised. It wasn't until the early 2000s that economists began to formulate a theory of platform economies. In other words, neither platforms nor platform companies are particularly new phenomena. This is an important starting point when studying digital platforms. Knowledge of these new platform companies needs to be grounded in an understanding of how digitisation has changed the conditions for platform economies and how these new digital platforms economies in turn affect the economy.

The rest of the chapter is divided into four parts. The next section deals with platform economies and the differences between multi-sided platforms and other kinds of businesses. The third section deals with the combination of platform economies and digitisation. In particular, two aspects of digitisation are highlighted and put in relation to platform economics: increasing flows of information and large, decentralised

3 Evans and Schmalensee (2016)

networks. The fourth section summarises the role of digital platform economies today, focusing on how they impact different sectors of the economy and society. The final section describes three overall factors that will have different kinds of impact on the future roles and development of these digital platforms.

What is a Multi-sided Platform Economy?

Even though platform economies are not a new phenomenon, researchers did not begin to pay much attention to them until the early 2000s. In an article by economists Jean-Charles Rochet and Jean Tirole, the authors present a model of how two-sided platforms need to gradually attract and maintain enough participants on either side in order to remain competitive.[4] In doing so, Rochet and Tirole highlighted two important factors that platform economies have in common: their business model is fundamentally based on matching different groups' demands and because one group's demand is the other's supply, the sides depend on each other for the platform to be attractive.[5] This makes platform companies very different from traditional companies that sell products or services directly to their customers. Platform companies do not sell access to services or products, but rather, access to a particular target group or type of content. The number of sides in a platform economy does not need to be restricted to two and therefore they are now more commonly referred to as *multi-sided platforms.*

As knowledge of multi-sided platforms has grown, it has also become increasingly clear that platform economies are already common and play a key role in large parts of the economy.[6] Shopping malls match their stores with relevant customers, credit card companies match sellers with buyers, and TV, radio and newspaper companies match readers, listeners and viewers with advertisers. All of them employ business models that are, in some way or another, based on multi-sided

4 Rochet and Tirole (2003)
5 Tirole was awarded the Nobel Memorial Prize in Economic Sciences in 2014, and one of the reasons was his research on platform economies.
6 Evans (2003).

platforms. The Swedish Public Employment Office is a public platform that is intended to match jobs with jobseekers, and has been doing so since at least the 1940s. You could also argue that the historic Hanseatic league was a network of platform economies (city markets) connecting buyers and sellers to facilitate trade within the Baltic Sea region.

The platform's value creation, and thus the heart of its business model, lies in its ability to match different groups with each other based on their respective demands.[7] There are at least three different kinds of platforms that can be distinguished by the characteristic relations between different sides: *market makers, audience makers and demand coordinators.*[8] Market makers enable transactions between two or several clearly defined groups. Here, the platform serves as a marketplace for a specific niche market. Both e-commerce platforms and shopping malls are typical examples of market makers.

Audience makers match advertisers with groups that post and/or consume content among themselves, for instance video streaming services like YouTube and newspapers that receive revenue from advertisers. Demand coordinators provide an infrastructure that connects each side to a wide variety of counterparts on the other side of the platform – the wider, the better. For example, the benefits of a credit card depends heavily on how the number of situations the consumer can use it for and the number of a seller's customers that use the card, respectively.

All platform economies are based on what is known as *network effects, or network externalities.*[9] These are effects that are external to the individual in the network but internal to the network (consisting of one or several sides of the platform) as a whole. In other words, the value benefit of each participant is affected by the network's overall size and composition.

7 This might mean highly personalised matches between groups with clear preferences, or offering a broad range to customers that appreciate the variety of offers that the platform, in its role as a counsellor.
8 Evans (2003).
9 Katz and Shapiro (1985); Evans and Schmalensee (2016).

Network effects can be direct or indirect, positive or negative.

Direct network externalities describe the value or benefit gained by one side of that platform as it grows in size. This kind of growth is positive when all participants value interactions within that side of the platform, for instance in social networking platforms like Facebook, Linkedin, Instagram, Snapchat or Whatsapp. Participants on one side of a platform can also benefit from increasing their numbers if this attracts more participants to other sides of the platform and thereby improves match-making opportunities between the sides. For example, shopping malls allow multiple stores to co-locate in order to attract more customers together. On the other hand, direct network externalities can be negative if they create bottlenecks or increased competition within one side of the platform, thereby leading to lower probabilities of matching. For example, there is a negative impact on men looking for women on an online dating site if their group grows significantly larger than the group of women looking for men, since that makes it harder for the men to compete for the women's attention.

By contrast, indirect network externalities describe the value or benefit to one side of the platform as other sides grow in size. For example, a platform for mobile payments will be more attractive to places of business if the number of potential users is big. However, growth on one side of a platform may not necessarily be positive for the other side. Economists David Evans and Richard Schmalensee use TV adverts as an example of negative, direct network externalities: If the number of advertisers grows or they purchase more advertising time, viewers might find less value in watching TV due to increased exposure to commercials. This type of development is evident, Evans and Schmalensee argue, in the case of premium membership fees that Netflix and HBO charge for ad-free content, or the fact that people pay for TiVo which allow them to skip past commercials in pre-recorded programs.[10]

10 Evans and Schmalensee (2016, p. 29).

The different varieties of network externalities clearly show the interdependencies between the different sides of the platform. A positive, direct network effect on one side may in turn lead to growth on another side that benefits from indirect positive network effects coming from the first side. In much the same way, a negative direct effect may raise competition on one side of the platform but could also create a positive indirect effect for another side, thereby balancing the initial negative effect or even create a net positive effect in terms of matching. These example give some hint that, at the end of the day, a platform economy is not just about positive direct network effects driving growth. It is a complex balancing act of multiple interdependencies.

In order for the platform economy to work, there has to be a *critical mass* of users on either side. What store would invest in a payment system that none of their customers use? Who would use an online dating site that has no suitable candidates to be matched with? One of the greatest challenges facing any platform is to develop a critical mass on several sides simultaneously. I general, it is not feasible to grow one side at a time, meaning there is an element of Catch-22 to the process. Many platform companies approach these issues by initially focusing on a specific niche or a geographically demarcated market (implying a smaller or more manageable critical mass), from which they can expand and scale up the platform's reach."

Furthermore, in most cases platforms need their users more than the users need the platforms. This is evident from the fact that people use several different, potentially competing or substitutable platforms simultaneously. This is known as *multi-homing*. For example, most stores accept several methods of payment, most shoppers are not restricted to only visit one shopping mall, and many people use more than one social media platform. Another example is found among Uber drivers,

11 Henriksson and Vinberg (2017)

a significant number of whom also work for competitors like Lyft or Taxify.[12] This has even led to the development of a specific service, Mystro, that coordinates incoming requests from different ride-hailing platforms in order to make it easier for drivers to prioritise and pick fares – that is, a platform that connects drivers with multiple platforms.

Another factor that distinguishes platforms from traditional businesses is that they are often free for the customers on one of the sides. It does not cost anything to visit shopping malls, nor does it cost anything to join Facebook or to google something. Of course, this does not mean that running shopping malls, social media platforms or search engines does not incur costs. Rather, the method of pricing is based on the difference in financial incentives between the different sides of the platform.

A restaurant that earns money from every match that generates a booked table has a strong incentive to pay for the matches, while a customer who wants to spend their money on a meal at a restaurant has a much weaker incentive to pay additional charges before being seated at the table. It is important to point out that both parties, in theory, have incentives to pay to simplify the matchmaking process, but the restaurant's incentive is greater than the customer's, which makes all the difference. If the number of restaurants is higher than the number of customers and if customers use several platform services to find a table, the resulting competition between platforms and restaurants respectively will jointly tend to reduce the costs for the party with weaker incentives – the customers, that is.

This means that platform economies can be divided into what Evans and Schmalensee call a *subsidy side* and a *money side*.[13] For example, store owners pay for location in a shopping mall that attracts many shoppers while advertisers promoting a travel agency pay to be

12 A comparison by The Rideshare Guy (a blog and podcast for rideshare drivers) estimates that 70 % of Uber drivers also work for Lyft, and 25 % work for more than two platforms at the same time.

13 Evans and Schmalensee (2016, p. 33).

exposed to Facebook users who love to travel and people googling for holiday trips.

Before academic researchers had formulated a framework to study multi-sided platform economies, most of these examples were viewed as a way of reducing so-called *transaction costs*. Based on this perspective, credit card companies and shopping centres are financially justified by providing services that reduce friction in payments and shopping. Lowering transaction costs is still at the core of platform economies, but there is a growing emphasis on the matchmaking aspect, and the *search costs* that precede transactions. This becomes all the more obvious when studying digitisation and digital platform economies.[14]

Digital Platform Economies

Digitisation constitutes a new *general purpose technology,* comparable to the introduction of the steam engine at the beginning of the Industrial Revolution, or electricity at the turn of the 19th century.[15] This essentially means that the same basic technological infrastructure has been integrated into the entire economy and that a wide variety of different applications have been built on top of this common infrastructure. Consequently, applications and innovations in one sector of the economy can spread more easily to others, and new innovations and digital business models can even be implemented with the explicit purpose of acting across sectors. Just like the steam engine and electricity, digital technology is changing some of the fundamental conditions for social and economic interactions. There are at least two such differences that are particularly important in the development of digital platforms: the increasing amount of information, and large, decentralised networks.

The combination of digital technology and the development of the Internet makes it possible to create, send, receive and store unprecedented amounts of information on something as small as a smartphone

14 It could be argued that search costs are a part of transaction costs but, regardless, the point is that search costs are more important for digital platforms.

15 McAfee and Brynjolfsson (2017); Bresnahan and Trajtenberg (1995).

or laptop. Furthermore, digital information can be copied without any loss of quality. Information content such as music has thus been separated from physical products like CDs or cassette tapes.[16]

In the early 1990s, music was largely distributed by selling CDs or sharing recordings on cassette tapes. Sharing music among friends was associated with to a loss of quality each time the music was copied to a new cassette tape. So-called *home-taping* was allowed precisely because it was difficult to stop and the quality of the distributed contents quickly attenuated.[17] Today, music and movies are streamed (or shared) upon demand directly to your mobile phone. The amount of digital information is growing as a result of the digitisation of "old" analogue information such as books and records, but even more so because more people are able to create their own digital texts, videos or music. Because copying and distributing digital content does not impair its quality, information has shifted from being a scarce resource to being ubiquitous in many applications.

Toward the end of the 1960s, economist and political scientist Herbert Simon was asked to analyse the effects of a future information overflow. Instead, Simon focused on the fact that if something grows larger – in other words, when information shifts from being a scarce to a ubiquitous resource – its size must be understood in relation to something else decreasing by comparison, namely our attention.[18] While the wide range and availability of different types of content has grown rapidly, our ability to digest this information grows at a relatively slow pace. This means that we need to learn and adopt new ways of searching, filtering and prioritising information to find what we are looking for.

In other words, *search costs* increase as the amount of information increases. Most people do not notice this since they rely on search engines, recommendation algorithms or other services to help them sort through the contents. Streaming services such as Spotify or Netflix

16 Wernberg and Dexe (2016).
17 Rydell and Sundberg (2011).
18 Simon (1971).

not only provide access to content, but also act as curators ordering that content and offering recommendations. These services in turn rely on data about users' tastes and behaviors to improve their ability to provide qualitative matching. In a similar manner, Amazon uses its recommendation algorithms to inform users of other books or products that might be of particular interest to them, based on products viewed or purchased by other users. The emergence and growth of the Internet has led to potential access to almost unlimited information, but sifting through the ever growing supply incurs large search costs. In other words, the indirect and positive network externalities grow exponentially with the search costs generated by an ever-growing supply of information.

Similarly, there is difference between *potential* and *realised* matches between people. The Internet's decentralised TCP/IP infrastructure theoretically enables individuals anywhere in the world to communicate with each other: Yet, this does not mean that everyone actually communicates with everyone else. On the contrary, in the early 2000s, network researcher Albert-László Barabási showed that although anyone can publish content on on their own websites, there is no guarantee that the contents will attract a larger audience, or even be viewed at all.[19] As access to potential contacts grows, so does the search cost related to finding the most relevant contacts. This kind of matchmaking problem arises regardless of whether a user is searching for a specific product or for romance on an online dating site. The same kind of matching problem also exists between companies looking for business-to-business exchanges, for example subcontractors. The platform company Alibaba has seized on this opportunity and developed a business-to-business (B2B) platform.[20]

In sum, digitisation has increased the potential access to information and potential contacts with other people, but has also contributed to significantly increasing search costs associated with finding the right match.

19 Barabási (2003)
20 Evans and Schmalensee (2016, p. 56).

Most people are unaware of this since it has simultaneously become a lot easier to find information, for example by using search engines. How well we are able to exploit the potential of this growing supply of information largely depends on digital platforms that develop services based on multi-sided platform economies.[21]

There are also a growing number of one-sided digital platforms – that is, digital infrastructures used by companies to provide cloud services or in other ways complement their products or services.[22] These distribution platforms play an important role in the digitisation of a variety of businesses and the development of data-driven economies. For example, small and medium-sized companies today have access to technical infrastructure and machine-learning software via cloud services which they otherwise would not have been able to afford if they had been forced to build the corresponding capacity in-house.[23] However, these platforms are not multi-sided platform economies, and therefore, we will not delve deeper into them here.

In a famous article published in 1937, economist Ronald Coase asked why firms even exist.[24] Coase's approach was to turn the question on its head and state that companies would *not* exist if it was easier and cheaper for all participants to enter into contracts independently in an open market rather than structuring their businesses in the form of firms.25 This way, Coase was able to infer the existence of what he called *transaction costs*. He concluded that by organising into firms, individual actors reduce their transaction costs, though at the cost of giving up some of their flexibility and earnings.

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21 From this perspective, large sectors of the digitalised economy are based not only in decentralised networks, but rather, decentralised network infrastructures in conjunction with a market populated by centralised platforms.

22 In other words, there are apps that are specifically tailored for businesses to order, for example, cabs or coffee deliveries that are limited to the range offered by an individual company.

23 Varian (2018).

24 Coase received the Nobel Prize in Economic Sciences for his research on transaction costs in 1991.

25 Coase (1937).

Similarly, we could ask why digital platforms exist when all involved parties should potentially be able to make contact with each other without intermediaries or the additional costs related to them. Orly Lobel, professor of law, employs Coase's framework to analyse platform economies and concludes that by providing a useful supply of information and optimal matches, platforms contribute to reducing transaction costs *before* (for example, when searching), *during* (negotiations and decisions) and *after* (implementation and compliance) having entered into agreements.[26]

Economists Erik Brynjolfsson and Andrew McAfee define digital platforms as one of three fundamental factors on which the digital economy is based, together with artificial intelligence and crowdsourcing.[27] Digital platforms combine multi-sided platform economies with what Hal Varian, chief economist at Google, has described as the four transformative abilities of computer-mediated transactions in business:[28] 1) the ability of remotely entering into electronic contracts, 2) the ability to collect and analyse data related to the business, 3) the ability to conduct controlled experiments within the business that can in turn be evaluated using collected data, and 4) the ability of customise offers to individual preferences. In combination with large digital networks and a growing amount of information, this makes it possible for new digital platforms to introduce platform economies into new parts of the economy. Also, digital platforms can boost existing platform economies by improving match-making through the use of data-driven analyses and algorithms. In effect, this means that they are able to quickly match highly personalised supply and demand in very large networks. This can entail far-reaching changes in an established business sector that has not previously been exposed to neither digitisation nor platform economies.

Platform companies and other businesses; competition and symbiosis

Brynjolfsson and McAfee describe the emergence of digital platforms

26 Lobel (2018).
27 McAfee and Brynjolfsson (2017).
28 Varian (2010).

as a "disruptive force" which incumbent businesses will have difficulty competing with.[29] This description is both true and false. It depends on to what degree incumbent businesses compete or cooperate with platform economies. For example, a brick-and-mortar clothing store selling only the biggest brands in jeans cannot compete with the many e-commerce platforms offering the same goods at a lower price. When the supply of jeans was locally scarce, the store had the advantage of providing a unique link between the jeans manufacturer and the local customer, but with digital retail local stores cannot compete for price or variation in supply of the most common brands.[30] Yet, stores do not compete with the platform as such, but with the the collective range of goods and services from all the producers and retailers that are aggregated on the platform. It is important to distinguish between the matchmaking services provided by platforms and the products made available to the consumer as a result of that matchmaking.

Rather than being outcompeted by platform economies, stores like the one in the previous example are able to provide their goods via a digital platform and reach more potential customers. When a store loses the competitive advantage provided by scarcity of supply, it can shift to specialise and gain competitive advantages by providing better services, local products or a unique niche supply. However, when a digital platform expands to sell their own products, they are of course competing directly with the supply-side but this is, strictly speaking, not part of a the platform economy. This means that stores can still compete with digital platforms in the local market (by specialising) and at the same time join the platform to compete with other suppliers for an online customer base. This implies that stores that digitise their business with the purpose of *competing* with platforms may face much larger obstacles than stores that digitise in order to utilise digital platforms as *leverage*.

29 To clarify, this refers to businesses that use modern technology to compete with established business sectors.

30 The same can also be said, of course, about the relation between stores located in cities, and shopping centres located out of town. If a shopping centre successfully collects a broad supply of big, well-known brands, individual stores must find other competitive advantages than mere access to the same products.

Brynjolfsson and McAfee give another interesting example of how platforms and content producers that seemingly compete with each other also benefit from each other: during the latter half of the 2000s, newspaper publishers in Germany, Spain and Belgium sued the search engine company Google over its Google News service which aggregated news contents and included links to the original articles.[31] The publishers demanded that Google News should pay for using their content. They won in all three cases and as a result Google News was closed down. However, what the publishers had not taken into account was the amount of web traffic Google News attracted to their newspapers. Consequently, as the service was shut down the newspapers experienced reduced web traffic and, thereby, diminishing advertising revenues.[32] In the end, the publishers appealed to reverse the court's decision. It turns out publisher and platform stood to gain more than they lost from their coexistence. Google and newspaper publishers do of course compete directly with each other for advertisers, but when it comes to users and web traffic they actually benefit from each other.

When it comes to platforms matching people who demand and supply services, things get a bit trickier. Here too, there is reason to distinguish between matching and the service being supplied. One example that has been hotly debated is transportation platforms such as Uber, Lyft and Taxify that match drivers with passengers. The business model of taxicab companies can be said to be based on two parts: offering access to available taxicabs (via a telephone or app) and offering transportation services (a cab driver with a car). Digital platforms like Uber can be described in one of two ways with regards to these two parts. Either the platform is a taxicab company that leases out the taxi drivers' services, thereby shirking any employer responsibilities, or the platform only offers one of the parts – in other words, the matching of drivers and passengers. In the former example, the platform competes with all aspects of traditional taxicab companies, but in the latter it only competes with

31 McAfee and Brynjolfsson (2017, p. 139–140).
32 See Andersson Schwarz's chapter, case study 3 (this volume).

the matching of transportation services, that is, the telephone exchange or the taxicab company's own app.[33] Arguably, the digital platform's main competitive edge is that it specialises in matching, and in doing so provides a service that is not limited to taxicab drivers from one single company or one single place locally or nationally. This is one of the main strengths of digital platform economies.

The fact that digital platforms compete with part of a traditional business model can be explained using Ronald Coase's transaction cost model. Technological developments resulting from digitisation, and in particular access to large networks of people, have resulted in a reorganisation of taxicab firms. Assuming that it used to be more efficient to group a number of drivers around a telephone exchange service into a firm, is it possible that digital technologies have made it more efficient separate matching and transportation, thereby organising matching into one firm and drivers either into individual contractors or, more likely, into firms of drivers. This is in fact already the case in Sweden.[34]

The existence of traditional taxi companies can be explained by the fact that they reduce drivers' search costs when looking for customers and vice versa, while simultaneously allowing transaction costs related to payments and administration to be coordinated within a single firm. Similarly, it could be argued that market-making digital platforms reduce transaction costs for both customers and drivers even further. Customers are able to use the same service in different places or different countries and payments are taken care of by the platform. Furthermore, both drivers and passengers are able to access a greater number of pooled matches, especially when drivers use several

33 If new drivers enter the market, taxi drivers are forced to compete harder. This is particularly relevant in cases where taxi drivers are restricted by some kind of licence or entry fee. One reason for these kinds of entry barriers is that drivers must be able to find their way around town, but it is worth pointing out that an earlier technological innovation, i.e., the GPS navigator, had already largely solved that problem. Without GPS navigators, digital transportation platforms, and particularly platforms that allow non-professional drivers, would have been almost impossible.

34 Most, if not all, Swedish taxi companies today do not employ drivers, but instead enter into agreements with fleet owners that in turn have a contractual relation with the drivers.

platforms at the same time.[35] In other words, it could be argued that specialisation towards matchmaking is associated with tangible value-creation that explains the emergence of digital platforms.

Platforms and the sharing economy

The so called *sharing economy* has become an umbrella term for digital, multi-sided platform economies associated broadly with the reorganisation of the supply of work in different parts of the economy.[36] In hindsight, "sharing economy" is nevertheless an unfortunate term since it brings to mind the sharing of resources rather than the economy which this sharing is part of.

Based on how this phenomenon has developed since it started gaining traction around 2010, it is now best described as a combination of decentralised supply, large digital networks and trust-creating institutions.[37] This amounts to a substantially different way of matching supply and demand compared to traditional business models, largely because the supply side, regardless of whether we are talking about taxicab services or borrowing a lawnmower, is aggregated across a large, decentralised network of potential suppliers. According to a Swedish governmental report on the domestic sharing economy, however, it should be noted that the number of people using sharing economy services still is relatively low at around 10 % of respondents in the survey.[38]

Predating the rise of the sharing economy, professor of law Yochai Benkler wrote a paper on resource sharing in which he described shareable goods that people buy and own as "lumpy", meaning that the full capacity of the good was greater than the customer's needs, and

35 Matching drivers with passengers in a single market might also have some socio-economic value (at least for the drivers). If this results in reduced minimum fares and distances, this would benefit both traffic conditions as well as negative environmental externalities. On the other hand, new platform economies can also lead to new negative externalities, such as a large number of drivers working during rush hour, thereby creating bottlenecks in traffic.

36 Sundararajan (2016).

37 Bergh et al. (2018).

38 SOU 2017:26.

"mid-grained" since they are only used a few hours a day. Benkler argues that digital networks make it possible to locate and utilise a greater portion of this redundant resources.[39] Because people are able to mobilise these resources, for instance by renting out a summer house via Airbnb, sharing makes the economy more efficient on an aggregated scale.[40]

The rise of the sharing economy does not, however, imply that people will stop owning property in favor of borrowing or renting. That is a terribly one-sided analysis. Rather, the possibilities of matching existing demand against a highly decentralised supply changes the conditions for investing in new resources. If it becomes easier to rent out a summer house while you are not using it, this also means more people will be able to afford buying a summer house in the first place since renting it out can contribute to financing it.[41] The supply side in this kind of platform economy is based on people buying property or goods that they then rent out. In the long term, the sharing economy will hopefully lead to increased access to material resources for everyone, but it partly does so by bringing about a shift in the conditions and incentives for ownership and a redistribution of resources.[42]

The sharing economy is not just about mobilising resources in new ways, but also about getting strangers being matched together to trust each other enough to engage in economic exchange. Only then can resource-sharing be scaled up and expanded beyond local communities, established relations. This is why trust is a crucial factor not only for the sharing economy but also for other kinds of multi-sided platforms.

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39 Gansky (2010).

40 Whether or not they do also depends, of course, on whether they think it's worth the effort. Rationalisation, here, refers to the possibilities of making available and demanding surplus capacity, and is not a measurement of how resources are used.

41 If it is not possible to rent out surplus capacity, the purchaser is forced to pay for the full capacity of the resource, even though they may only want to use a small part of it.

42 People who have the financial capacity to invest in, for example, an apartment or sailing boat will be able to capitalise on the resource to a greater extent, while those kinds of investments simultaneously give others (who cannot afford or have no interest in buying such a resource) access to the apartment or sailing boat.

Platforms, trust and user data

Digital, multi-sided platforms match supply and demand across large distributed digital networks but in order to facilitate transactions the matched parties need to trust each other, even though they may never have met before.[43] This is especially evident in the context of the sharing economy – establishing a *trust infrastructure* becomes a necessity to make it possible for people to travel with or allow a stranger into their car, to rent someone's home or rent out their home out to strangers, or even to lend someone their power tools. This is why most digital platform companies put great effort into their rating and review systems for users on either side of the platform. For example, Uber not only allows passengers to rate drivers, but also makes it possible for drivers to rate passengers.

The problem is that most parties are only matched once. However, by aggregating the feedback collected about one participant from a large number of different matches, the platform can compile a public trust record – in other words, a measurable reputation. This is then used to provide strangers with sufficient means to trust each other. These kinds of trust metrics in combination with the traceability and payment systems provided by digital platforms ensures not only that supply is matched with demand but also that the necessary conditions to facilitate an exchange are met.

Digital platforms create conditions under which strangers dare to conduct transactions that previously were often confined to socially or geographically isolated groups such as friends, acquaintances or neighbours. The platforms provide a trust infrastructure that, to some extent, complements aspects of trust and social capital otherwise associated with social and geographical proximity.

Platforms often have a competitive advantage when it comes to trust-building in the sectors they operate in, simply because they have

43 Since this concerns large and networks with a wide spread, the likelihood of users repeatedly being matched against the same users is reduced, which makes it harder to develop trusting relationships.

to. Taxicab companies rarely allow drivers or passengers to rate each other or to decline being matched to someone with a doubtful rating. Some hotels even have strategies to get their customers to rate them on platforms such as hotels.com, booking.com or Tripadvisor.[44]

As a growing amount of people accumulate and use trust metrics, or trust capital, the ability to export this capital beyond a single platform will increase. This is especially true for situations where suppliers multi-home and use several different platforms in parallel. In the same way that the Mystro app has been developed to allow drivers to coordinate requests from several transportation platforms, it is possible that future services will allow users to aggregate trust capital from different platforms into one score for their reputation. The fact that trust capital established on one platform extends beyond the platform is demonstrated in a study conducted by a team of researchers in collaboration with Blablacar. The results indicate that 88 % of respondents have more trust in Blablacar drivers that are complete strangers than in their neighbours or colleagues.[45]

The need for trust is not restricted to the parties being matched, but also extends to the users trust in the platform company. This applies to all forms of platform economies. For example, people are less likely to purchase a video game console regardless of how many games can be played on it, or how good they are, if they think the console will break easily. It is reasonable to expect that digital platforms are particularly sensitive to trust issues because they need to attract users to each side of the platform in the first place and then facilitate exchanges between strangers on either side. Furthermore, most if not all digital platforms rely on collecting user data in order to provide the services they do. This means users need to have sufficient trust in the way the platform treats their data, or they may leave the platform.

44 Hotel chains and taxicab companies rely instead on the overall level of trust people have in their brand.

45 Mazella et al. (2016).

Intuitively, it may seem that digital platforms are free of charge to end users because they are paying with their data, which the platform then sells on to others. This would make the platform a so called data broker. However, a closer look at how platform economies work reveals that acting as a data broker is not a sustainable business model for digital platforms. Many digital platform services are free for private individuals simply because they represent the subsidy side of the platform economy. The money side of the platform – advertisers, for example – pays for the costs of the subsidy side. The old saying "there is no such thing as a free lunch" therefore also applies to digital platforms. The data collected by the platform is necessary for effective matchmaking, but what the platform actually sells is the matching, not the data.

If a digital platform would sell its user data to third parties outside of the platform, the underlying platform economy would likely suffer considerable negative consequences. Firstly, selling user data would create an alternative supply of the information needed to match, say, advertisers with users. Why, then, should advertisers keep paying the platform once they have the data? That is to say, if similar user data is available outside the platform, it would have a negative impact on the platform's positive, indirect network effects. Even if advertisers keep paying for matchmaking on the platform, releasing user data to third parties increases the probability of competing services leveraging the same data. All in all, in this scenario platform revenues are set to decrease significantly over time. The combination of access to users and detailed user data is an important competitive advantage for multi-sided platforms when, for example, competing for advertisers.[46] Digital tools also make it easier to measure the level of user activity generated by an ad, which, in turn, contribute to generating more data on user behaviour.[47] In other words, it is in the platform company's interest to make advertisers want to use their platform *again and again.*

46 This also means that digital platforms that exploit technological possibilities to tailor personalised adverts that match against individuals have a competitive advantage in comparison with older platform models that, for example, match adverts with larger groups that watch TV at a certain time or read a certain newspaper.

47 The advantages of digital tools are not limited to new platforms, but are also commonly used by newspapers and tabloids on their websites.

Also, disseminating user data in this manner would harm the user side of the platform too, partly because it may generate unwanted advertisements targeting users in channels outside of the platform and partly because it would be detrimental to users' trust in the platform company.

In itself, these arguments do not prove that no platform company sells their user data to third parties, but confirm that it is in fact impossible to merge data brokering and platform economies in a sustainable way. It also indicates that digital multi-sided platforms are not inherently in conflict with the ambition of safeguarding privacy. These distinctions are crucial when it comes to discussions about appropriate market regulations.

Having said that, it should be pointed out that different digital platforms manage their user data in different ways. Michael Jones, former Chief Technology Advocate at Google, provides an important comparison between on the one hand Google and Amazon who both sell blind matches (the advertiser does not know who the receiver is), and Facebook which sells matchmaking in a way that discloses more information about the receiver of the ad.[48] Such differences may become even more important in the future as the competition grows between different platforms. Following investigations into consulting firm Cambridge Analytica, which has been associated with both the Brexit campaign and Donald Trump's presidential campaign, Facebook has been criticised for its management of user data.[49] Again, it is important to point out that Facebook's business model is to sell advertisements through matchmaking, but because of the way in which they did that external actors managed to get hold of user data. [50]

48 Fallows (2018).

49 Although Cambridge Analytica may well have intended to influence the two campaigns, as is sometimes claimed, there is reason to question how great an impact they actually made (see, e.g., Kavanagh 2018, Simon 2018).

50 The types of user data used by Facebook's platform differ greatly. Information made public by the user via their profile or by allowing an external actor to access their data is very different from the user's contacts information, or data that advertisers use to identify their target groups, and user behaviour data that Facebook stores internally. Facebook's business model, as described in this chapter, has never been to freely sell *all* their user data to external parties.

Platform Economies and Digitisation Thus Far

Although platform economies are not a new phenomenon, digitisation has contributed to creating conditions for new platform economies that operate on on a much larger scale, and in new sectors of the economy. The emergence of digital platforms means that platform economies are spreading and playing an increasingly important role throughout the economy.

This chapter emphasizes two characteristics of digitisation that provide fertile ground for new multi-sided platforms. First, the growing amount of information which leads to increased search costs. This leads to a greater demand for multi-sided platforms that can act as curators and matchmakers, lowering search- and transaction costs by providing for instance search engines or streaming services. The possibility of continuously collecting and analysing user data also contributes to improved matchmaking on digital platforms.

Second, the emergence of vast, decentralised digital networks allows people and organisations to be in contact with each other – in other words, matching demand and supply – without delay. When combined with algorithm-based matchmaking systems, this means that large groups can be matched against each other in real time with great precision. The level of accessibility provided by large networks also enables supply and demand to be matched against each other at a more disaggregate, fine-grained level. The most salient example of this can be found in the sharing economy, but matching personalised demand within large networks impacts a range of areas including online dating and the procurement of consultant services. It also fundamentally changes how we interact with other people in densely populated environments and cities, where the potential interactions provided by density were at least partly inhibited by search costs.

Trust constitutes a bottleneck for platforms matching together large and decentralized networks of strangers. Beyond matching, trust is needed to realise the intended transactions. It is often argued that data

is the key component of the digital economy, but trust quickly proves to be a decidedly more important, and rarer, resource. Digital platforms already offer a variety of tools for creating trust by aggregating peoples' experiences and ratings into a public measure of trust. These systems make up a trust infrastructure that enables economic activities that would not otherwise be possible.

Considering many participants use multiple platforms and the value of their trust capital extends beyond any single platform, it is likely that this trust infrastructure will prove to be greater than the sum of its parts in the future. For instance, there may be services to collect and aggregate different rating systems into an overall digital reputation that could be implemented across platforms, but also potentially used as a form of resumé. Unlike data, however, trust is a perishable commodity, and it can be lost much faster than it was gained. This suggests that digital platforms providing trust infrastructure will continue to play an important role in the digitalised economy, but also that these platforms themselves rely heavily on their users' trust.

In summary, digitisation contributes to enabling new digital platform economies and to increasing demand for the matchmaking these platforms provide. New digital platforms introduce new business models and challenge incumbent businesses across a growing number of sectors. This is due to the fact that platform economies challenge the way many traditional businesses and their sectors have been organised. Taxi companies are used to compete with other taxi companies locally, not with an app that operates globally. Similarly, hotels are not used to competing with people renting out their apartments. in fact, digital platforms often give rise to both competition and new opportunities for incumbent firms. They are , in some sense, one manifestation of the structural change brought on the economy by digitisation. Accordingly, it is not evident that digital platforms can fit easily into the same sectoral categories and structures associated with the incumbent firms they partly compete with.

It could be argued that digital platforms provide a substitute for some of the market restrictions digitisation is considered to have overcome. Prior to the internet, most customers were limited to the suppliers present in their local or regional market. similarly, most firms would have to grow locally before they could reach customers in other parts of the world. In principle, the internet has lowered the threshold to buy from and sell to counterparts across the globe. However, accessing the *entire digital market* is associated with considerable search costs and frictions. Thus, digital platforms provide a demarcation of the marketplace, but instead of being geographically divided it is split into niche markets based on preferences and facilitated by digital platforms. Similarly, the level of trust built up by platforms replaces relationships and reputations typical of repeat interactions within a local marketplace.

This comparison between old and new demarcations also provides a partial answer to why digital platform economies involving people and interactions often are geographically concentrated to cities and why the expand from city to city rather than nation to nation. Digital platforms benefit from the combination of urban density and digital connectedness enabling matchmaking. This combination makes up to a unique kind of urban digital market.[51]

The Future of Digital Platforms

What, then, can be said against this backdrop about the future role of digital platforms in the economy? To begin with, the introduction of digital platform economies will continue to inspire lively discussion and a growing need for reforms, whether this means regulating platforms or adapting regulations to their presence in the economy. This friction between incumbent firms and digital platforms is for instance apparent in the labour market where it has sparked debates about the organisation of work and what employer responsibilities platforms should have for the parties being matched.

51 Wernberg and Dexe (2016).

There will also be a need for further discussions about competition and antitrust regulation regarding platforms. To what extent do platforms compete with retailers, and how should their size and market position be determined? Without getting further into details of specific policy areas, there are three more general factors that I believe will be decisive in the future development of digital platform economies and their impact on the economy and society: Size, complexity and reach.

Historically speaking, size has always been a straightforward way of measuring companies; as they grow financially, they employ more people and gain a greater share of the market.[52] All dimensions of size appear to grow in unison. Digital platforms do not conform to this pattern. A platform company may for instance be relatively small in terms of employment while simultaneously having many users. More importantly, the relation between a platform's size and its power or market position is not straightforward linearly increasing.

Because of the need to balance different network effects on different sides of the platform it could be argued that both very small and very large platforms are in fact harder to maintain than a mid-sized platform – in other words, that the difficulty of balancing network effects follows a U-shaped curve. Positive direct and indirect network effects benefit the platform, but they have to be balanced against negative direct and indirect network effects.

This is partly because as the platform grows, its user base on either side becomes more heterogeneous in its preferences. This means the platform has to satisfy much more diverse demands on each side, but at the same time it becomes more difficult to cater to niche demand. This suggests that a smaller platform dedicated to matchmaking within a specific niche could outcompete a larger platform by offering more specialized

52 It should also be noted that how to go about measuring the size of a digital platform is not entirely clear – should we count their users, market shares or the level of activity on the different sides of the platform?

or higher-quality matches, especially since users can multi-home between both platforms.

In other words, when it comes to digital platforms, size is not necessarily a good indication of their competitiveness or market position. This is evident by the large number of once great platforms like Myspace, Friendster, Altavista or the Swedish Lunarstorm that have faded from their former size and glory. It is clear that digital platforms are not governed by positive direct network externalities alone, and assuming they are makes for a poor analysis. Being first at getting big is not enough to succeed.[53] Instead, the survival and success of digital platforms depends on their capacity to satisfy the demands of their different sides even as they vary between countries, between social groups and over time, making it quite a balancing act. How size, diversification, geographical distribution and age affect digital platforms are questions that require further study.[54]

The issue of size is not only important in terms of competitiveness and competition between platforms, but also with respect to how policymakers treat the largest platforms. In the wake of Brexit, the American presidential election and growing polarisation in Europe, "fake news" and disinformation have become hot topics of discussion. This has caused a growing number of pundits and decision makers to question what sort of information people ought to be able to access via search engines and social networks. Some have gone so far as to argue that platforms such as Google, Youtube and Facebook should actively moderate and censor not only illegal but also inappropriate content. For example, Thomas Mattsson, editor in chief at the daily Swedish newspaper *Expressen*, proposed that Google should employ 200 editors to restrict the information available to users because, as Mattsson puts it, "there are several Youtube accounts and Google search results that cannot within reason be considered to be in line with what a large

53 Evans and Schmalensee (2016, p. 28).
54 However, there is more research on how platforms reach critical mass levels and build up their size from start-up.

listed corporation wants to distribute" (my translation).[55] First of all, there is a tremendous difference between a search result and a Youtube account. More importantly, what Mattsson proposes is essentially that large, privately owned companies should engage in what can only be considered arbitrary censorship of the internet since no legal procedure is involved.[56]

There is a seemingly small but significant difference between platforms removing content or reporting accounts that violate Swedish law, and pre-emptively blocking or censoring content that they do not agree with. In fact, making digital platforms responsible for censoring content without legal procedure may end up forcing upon these firms the type of power and influence their critics often worry about them getting. At any rate, putting it to platforms, instead of courts and lawmakers, to make such decisions is counterproductive at best.

Contrary to the idea of censorship, it could be argued that the capacity of digital platforms (especially search engines) to compress and make large amounts of information easily available to everyone makes makes it easier to identify, confront or report content that is inappropriate or illegal. From this perspective, openness and searchability provide tools not only for removing illegal content, but also for advancing democratic transparency and an informed public debate. In times of increasing political polarization it may be tempting to consider quick fixes, but removing search results is equivalent to treating the symptoms rather than their cause.

Another factor that shapes the future of digital platforms in the economy is the increasing complexity they contribute to. Platform operate in. This gives rise to interdependencies, between the different sides of

55 Lundquist (2018)

56 Mattson, in this context, views Google as a newspaper that produces and publishes its own contents, but in doing so completely ignores the individuals and organisations that create undesirable content on the Internet. In doing so, he addresses the symptoms rather than the underlying cause.

the platform but also economies running on top of decentralised digital networks become "entangled" into the economy in the sense that as they match people and resources together, the also interconnect parts of the economy in new ways. Platforms internalise the transaction costs associated with matchmaking in the sectors they between the platform and the firms and people using it.

These types of interdependencies appear to increase within the economy, and not just because of digital platform economies. for example, a firm using cloud services becomes dependent on the supplier of said services. A survey on software use in Swedish firms revealed that at least a third of the respondents are dependent on technological infrastructure owned and managed by a third party. At least 40 percent report that their business depends on an ecosystem developed and managed by other companies.[57] These interconnections and interdependencies are a hallmark characteristic of complexity and complex systems.

Complexity can be defined in terms of the relation between the number of components in a system and the the number of interdependencies between these components. A system with a large number of components is complicated, while it becomes increasingly complex as the number of interdependencies between the components grows. For example, a car becomes less complicated if a seat is removed, but it becomes less complex if the timing belt is removed.[58]

Companies have always been interconnected with each other through, for example, relations with subcontractors or customers. The connection between digital platforms, software infrastructure and ecosystems, however, is distinct from purely contractual relations since both parties' business operations become integrated or entangled in each other

57 Andersson and Wernberg (2018).
58 Miller and Page (2009).

on a deeper level.[59] By extension, this implies that economic activities become harder to separate into different sectors or even firms as they become increasingly entangled. To illustrate this, consider app developers that are dependent on digital platforms such as Apple App Store and Google Play in order to sell their products.[60]

From this perspective, increasing technological and economic complexity also changes the conditions for innovation and entrepreneurship. This is oftentimes how platform economies are introduced into new parts of the economy. First, as mentioned previously, small firms and startups can use cloud services to access resources they would not be able to afford otherwise. Second, new business models can be implemented on top of existing platforms and infrastructures, for instance games distributed via App Store or Facebook. Third, because of their access to resources and the existing network infrastructure, entrepreneurs can build digital services outside of the incumbent systems in their sectors. This is for instance illustrated by ride-hailing apps, but also by digital healthcare services developed outside of the medical infrastructure. Finally, while increased interconnectivity creates new opportunities it also makes it harder to switch dependencies. Put differently, it is much harder to switch providers of cloud services or IT infrastructure, than to switch subcontractors in a traditional business.

Understanding the interplay between digital platforms and growing economic and technological complexity as well as its effects on the economy as a whole will be crucial not only to business leaders but also to policymakers aiming to govern an increasingly interconnected market.

Increased interconnectivity also brings us to the third factor shaping the

59 It also means that it becomes harder to substitute one business relationship with another. For example, it is decidedly harder for a company or authority to switch to a new IT provider than a new coffee supplier.

60 Of course, this is a parallel to, for example, video game developers that are similarly dependent on console platforms. What is worth noting, here, is that these kinds of platform economies and inherent dependency issues have spread throughout the economic system, in part as a result of the growth of digital platforms.

future of digital platforms, namely their geographic reach. Digital platforms create virtual marketplaces that are in principle not restricted by geographical distance or national borders. Many digital platforms, not least in the sharing economy system, match parties with each other at a highly localised level, but do so within a global market consisting of a network of many local markets. For instance, Uber matches drivers and passengers locally, but the same app can be used in any city across the globe where there are drivers. At the time, digital platforms also make it possible to match supply and demand on a global scale.

There is a dual relationship between digital platform economies and international trade. On one hand platforms play a key role in advancing transnational market integration, for example in the case of a single digital market within the European Union.[61] On the other hand, the fact that digital platforms makes it easier to transcend national borders also poses a challenge to domestic regulation and the ability of nation states to control and their internal markets. Ironically, this is also true for the European digital single market with respect to the EU's borders. By lowering barriers to international trade, digitisation and digital platforms also highlight regulatory issues that were marginal as long as trade was kept low by those barriers. A salient example of this is Swedish postal company *Postnord*'s administration of packages from China and the ensuing special VAT fee.[62]

Essentially, the geographical reach of digital platforms challenge the scope of territorial regulations. In transparent and democratic economies such as Sweden, this may not appear to be an issue. In the previous example, it simply lead to tougher VAT rules for packages from China. However, in less transparent economies the effects may be more profound, for instance services such as Youtube have been shut down i Turkey.[63] There is growing tension between on the one hand digital market integration furthered by the reach of digital platforms, and on the

61 European Commission (2018)
62 Postnord (2018)
63 Amnesty Press (2018)

other hand national restrictions on platforms and contents leading to a sort of fragmentation of the digital market. The EU's data protection regulation, GDPR, illustrates this tension between national borders and digital reach. When the GDPR was being implemented, several non-European websites including newspapers blocked European internet traffic in order to avoid violating the new data protection regulation.[64]

This tension is also partly reflected by the EU legislation dubbed "the right to be forgotten".[65] The Swedish Administrative Court recently determined that Google, in accordance with the right to be forgotten, must remove certain search results from queries made in Sweden, but not internationally. The Swedish Data Inspection Board is currently appealing this decision to the Supreme Court in order to establish the geographic extent of the right to be forgotten.[66] This is not only an issue of Swedish or European territorial regulation but also, taken to its extreme, about enforcing a Swedish court ruling outside of its national territory.

The relationship between digital platforms and different countries' disparate regulatory environments raises the question of how globalised we actually want to be. To further complicate matters, digital platforms contribute to increasing complexity not only within but also between national markets, making it even harder to separate them.

This chapter has focused on the interaction between platform economies and digitisation and, based on this, what role digital platforms can be expected to play in the economy and society at large. A primary conclusion is that digital platforms are crucial for firms and individuals to be able to leverage the benefits of digitisation. Growing digital networks and rising amounts of information incur increasing search and transaction costs that can be balanced by platforms taking on the role of matchmakers locally as well as globally.

64 BBC (2018)
65 See Andersson Schwarz's chapter (this volume), case study 3.
66 Datainspektionen (2018).

Austrian economist Friedrich Hayek described the market in terms of coordination of information and knowledge.[67] Perhaps the simplest way of understanding digital platform economies is in terms of a market within the market – a modular coordination function dedicated to a specific niche of the larger market. Digital platforms will come and go, depending on which ones better capture the preferences and niches people are looking to coordinate around at the moment. It is unlikely that all platforms will converge into one global platform, simply because such a platform would just reflect the entire market and no specific niche of it. Furthermore, variations not only in preferences but also in national regulations will favor different platforms in different places and contexts. At the same time, more meta-platforms will emerge to allow us to review or choose functions and content from several, different platform services. In short, platforms will become increasingly important as we navigate an economic system that is growing bigger in terms of geographical reach, interconnectivity and interdependencies, and content.

On a final note, the descriptions and discussions provided in this chapter are restricted to the assumption that platforms play a crucial role to us – that is, to humans. The emergence of artificial intelligences will further challenge the role of platforms because the machines are not restricted by search costs and attention spans in the same way we humans are. This suggests that the balance between humans and intelligent machines in different markets will affect the role digital platforms play in the economy.

67 Hayek (1945).

REFERENCES

Amnesty Press (2018). "Efter fyra dagar stängs Youtube ner igen". No date. http://www.amnestypress.se/notiser/12036/efter-fyra-dagar-stangs-youtube-ner-igen

Andersson, M., Wernberg, J. (2018) Den osynliga infrastrukturen – en kartläggning av mjukvarans roll och behovet av mjukvarukompetens i svenska företag. Report, Swedsoft.

Barabási, A. L. (2003). *Linked: How everything is connected to everything else and what it means*, Basic Books

BBC (2018). "GDPR: US news sites unavailable to EU users under new rules". May 25. https://www.bbc.com/news/world-europe-44248448

Benkler, Y. (2004). Sharing nicely: On shareable goods and the emergence of sharing as a modality of economic production. *Yale LJ*, *114*, 273.

Bergh, A., Funcke, A., Wernberg, J. (2018). *Timbro Sharing Economy Index*. Timbro, Stockholm, Sweden.

Bresnahan, T. F., & Trajtenberg, M. (1995). General purpose technologies 'Engines of growth'?. *Journal of econometrics*, *65*(1), 83-108.

Coase, R. H. (1937). The nature of the firm. *Economica*, *4*(16), 386-405.

Datainspektionen (2018). "Datainspektionen överklagar Google-dom". May 30. https://www.datainspektionen.se/nyheter/datainspektionen-overklagar-google-dom/

European Commission (2018). "Digital single market: Bringing down barriers to unlock online opportunities". Information page on listed "priority" area. https://ec.europa.eu/commission/priorities/digital-single-market_en

Evans, D. S. (2003). Some empirical aspects of multi-sided platform industries. *Review of Network Economics*, *2*(3).

Evans, D. S., & Schmalensee, R. (2016) *Matchmakers: The new economics of multisided platforms*. Harvard Business Review Press.

Fallows, J. (2018) "Google's One-Time 'Chief Technology Advocate' on Making Facebook Likable". *The Atlantic*, April 5. https://www.theatlantic.com/notes/2018/04/googles-one-time-chief-technology-advocate-on-making-facebook-likable/557378/

Gansky, L. (2010). *The mesh: Why the future of business is sharing.* Penguin.

Hayek, F. A. (1945). The use of knowledge in society. *The American economic review*, *35*(4), 519-530.

Henriksson, J., Vinberg, J. (2017). Online Market Makers – A study of what they do to reach critical mass, masteruppsats vid Lunds Universitet 2017

Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. *The American economic review*, *75*(3), 424-440.

Kavanagh, C. (2018). "Why (almost) everything reported about the Cambridge Analytica Facebook 'hacking' controversy is wrong". *Medium.com*, March 26. https://medium.com/@CKava/why-almost-everything-reported-about-the-cambridge-analytica-facebook-hacking-controversy-is-db7f8af2d042

Lobel, O. (2018). Coase and the Platform Economy. In *Sharing Economy Handbook 2018*, Cambridge University Press.

Lundquist, H. (2018). "Mattsson: 'Anställ 200 redaktörer, Google!'". Journalisten, March 7. https://www.journalisten.se/nyheter/mattsson-anstall-200-redaktorer-google

Mazzella, F., Sundararajan, A., D'Espous, V. B., & Möhlmann, M. (2016). How digital trust powers the sharing economy. *IESE Business Review*, 24-31.

McAfee, A., & Brynjolfsson, E. (2017). *Machine, platform, crowd: Harnessing our digital future*. WW Norton & Company.

Miller, J. H., & Page, S. E. (2009). *Complex adaptive systems: an introduction to computational models of social life: an introduction to computational models of social life*. Princeton university press.

Postnord (2018). "Så hög blir nya avgiften på Kinapaketen". https://www.postnord.se/information/om-postnord/en-foranderlig-varld/moms-pa-kinapaket/sa-hog-blir-nya-avgiften-pa-kinapaketen

Reidenberg, J. R. (1996). *Governing networks and rule-making in cyberspace. In Borders in Cyberspace: Information policy and the global information infrastructure*, MIT Press

Rochet, J. C., & Tirole, J. (2003). Platform competition in two‐sided markets. *Journal of the european economic association*, *1*(4), 990-1029.

Rydell, A., Sundberg, S. (2011). *Piraterna: de svenska fildelarna som plundrade Hollywood.* Ordfront Förlag.

Simon, F. (2018). "The Big Data Panic". *Medium.com*, March 25. https://medium.com/viewpoints/cambridge-analytica-and-the-big-data-panic-5029f12e1bcb

Simon, H. A. (1971). Designing organizations for an information-rich world. *Computers, communications, and the public interest (1971), pp. 37-72*

SOU (2017). Delningsekonomi på användarnas villkor - Betänkande från utredningen om användarna i delningsekonomin. SOU 2017:26

Sundararajan, A. (2016). *The sharing economy: The end of employment and the rise of crowd-based capitalism.* Mit Press.

Varian, H. R. (2010). Computer mediated transactions. *American Economic Review*, *100*(2), 1-10.

Varian, H. (2018). Artificial Intelligence, Economics, and Industrial Organization. In *The Economics of Artificial Intelligence: An Agenda*. University of Chicago Press.

Wernberg, J., Dexe, J. (2016). Rewiring Europe: Five Priorities for a lasting digital economy, Policy report for Wilfried Martens Centre.

TWO POLICY LANDSCAPES: HOW DIGITAL PLATFORMS ARE REGULATED IN THE EU AND THE USA

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IN THIS CHAPTER, I will explore the seemingly rather different approaches to contemporary digital economy in the USA and the EU. I will do so by noting three key case studies. The American approach is exemplified in, for example, US Supreme Court rulings and the regulatory approaches of the Federal Trade Commission (FTC) and Federal Communications Commission (FCC) on issues like privacy and net neutrality, while the EU's approach is evident in new legislation like the General Data Protection Regulation (GDPR) and "the right to be forgotten," as well as in recent approaches manifested by the EU commission,[1] such as the EU Copyright Directive (approved by the EU Parliament in September 2018) and other currently ongoing cases in which the EU Commission (DG Competition) has struck down on, for example, Google for unlawful market dominance practices.

These developments in the potential regulation of platforms take into account that said platforms are characterised by being two-sided or

1 Please see EU Commission (2018a) for further reading. Further reading on Sweden's interpretation: The government offices, Regeringskansliet (2018).

multi-sided markets, which – as Joakim Wernberg shows in his chapter in this report – complicate relations between companies and customers, leading to more complex market arrangements than in the past. Platform business models are generally intended to generate revenue by bringing together two separate groups and thereby combining two (or more) markets, using automated and scalable methods. This absolutely crucial aspect of the platform economy complicates conventional analyses of antitrust legislation; in particular, the American approach to antitrust law seems to have had great difficulty in recent years, regarding how two-sided markets work, since the ensuing effects on *consumer prices* often appear to be negligible, or deemed unproblematic.[2] In many platform models, the customer pays very little, or nothing at all. But, as Wernberg hints about when discussing indirect network effects, and so on: Do hidden costs arise elsewhere in society? And what are the societal effects when a platform provider in a two-sided market restricts access to their platform to particular actors, or groups of actors?

An optimistic reading (that is, seeing platform models as having positive effects on society) would conclude that different kinds of restrictions on the service supply side – let us say, the platform provider's demands of the contractor (for example, demanding that taxicab drivers accept low wages) – would put pressure on the surplus capacity of these suppliers, thus reducing their profit margins, which the platform provider, in turn, passes onto consumers, in the form of lower prices. This alleged increase of net efficiency in the whole market relies on the assumption that the platform provider would act generously and transfer the lowered production costs into lower consumer prices, an assumption that is unlikely in the case of companies whose goal is to be profitable and raise their own profit margins. Certainly, new technology has led to a number of efficiency improvements, especially regarding search and transaction costs, and these should certainly not be dismissed; but at the same time, we should also be aware that platform companies seek to maximise their own profits. One such strategy to maximise profits would be short-term

2 Hovenkamp (2018).

price dumping in order to build up a critical mass of users in the long-term, and/or in order to develop a number of technical path dependencies in order to be able to charge either the contractor or the users more in future, since the participants using the platform become reliant on the platform and do not want to miss out on future access to attractive supplies of customers.

Another, equally optimistic perception is that platform companies would not exploit the benefits of their privileged position as key coordinators of market activities which enable them to maximise the synergetic effects of owning seemingly radically different kinds of subsidiaries – which, on the face of it, would be expected to operate in different markets and are therefore not be deemed to be horizontally integrated, while they all generate data that the platform coordinator could use to synchronize even the most heterogeneous markets. Let us clarify by looking at my first case study, which tracks the abovementioned optimism, as this seems to be what has guided the US Supreme Court, not least their opinion on Ohio v. American Express Co. This was a legal case in 2018, concerning credit card company American Express (forthwith AmEx). The case concerns AmEx's dealings with stores that had in various ways encouraged their customers to make purchases using other cards than AmEx, this due to AmEx's generally higher transaction fees.

CASE STUDY 1

When dominant market actors are allowed to make the rules: The American Express case

In 2010, the US federal government, together with 17 attorney generals, sued AmEx, MasterCard and Visa for exacting unreasonably high costs from their affiliated retailers. The latter two companies agreed to settle out of court and removed the restrictions on retailers that had been singled out. AmEx chose to appeal the ruling, pointing out that AmEx serves not only retailers *but also* credit card holding customers. Therefore, according to the US Court of Appeals for the Second Circuit, the affected retailer – when filing a complaint for anti-competitive practices among credit card-companies against retailers – must prove that the credit card users have *also* suffered injury (a concept known as "dual liability"). The court argued that although the retailers had suffered injury, it had not been established that the credit card customers had also been harmed, particularly since the number of transactions carried out using charge cards had continued to increase during the time period in question. This decision was then upheld by the Supreme Court in June 2018.

But according to several legal experts, the abovementioned court deliberations actually go against a lot of the historically established case law in American antitrust.[3] The intent behind antitrust law was never to allow monopolies to exert unhindered dominance in the market against *one* group of actors, as long as *another* group was benefited.

The problem is that when charging retailers with these kinds of credit card fees, the costs are then passed on to the consumers, leading to higher prices, similar to VAT costs. Although AmEx customers receive incentives such as bonus points, gift cards, and cheaper air flights to compensate for higher rates, the first court verdict in 2010 showed that such compensation only partially requited the higher costs. Consumers

3 Further reading: Sagers (2018), Khan (2018).

who do *not* use credit cards are also forced to pay higher prices caused by these kinds of fees, *without* receiving any rewards. This means that AmEx's anti-competitive practices very likely mean that well-off consumers are subsidized by less well-off customers.[4] It is already established that AmEx is a premium-segment credit card, used by well-off customers rather than low earners. Furthermore, the Supreme Court decision would also deprive other credit card companies of the possibility to compete through pricing rather than through customer rewards schemes. Hence, as pointed out by macro-economist Michael Kades in an expert debate on the ruling, a situation is created where credit card companies are in fact impelled to compete through offering customer rewards schemes instead of pricing.[5]

A likely consequence of the Supreme Court's ruling in the AmEx case is that it will provide protection for typical multi-sided digital platforms, such as Amazon's Marketplace, Uber, Airbnb and eBay, but not necessarily for companies such as Google or Facebook, since these latter actors use business models that more closely resemble traditional advertising models. At the same time, it is perfectly conceivable, as Lina Khan has pointed out,[6] that Google would be able to commission studies that show that targeted adverts constitute a form of transaction that the users themselves would in fact *value*. If so, this would likely qualify Google's business model for a similar kind of protection as AmEx was afforded. And if companies like Google and Facebook were afforded this kind of legal protection, there would be nothing stopping them from introducing exclusive contracts with their advertisers, thereby raising the costs of advertising space. By increasing the price of advertising space, they would be able to provide additional, more advanced and cheaper services in line with their customers' preferences, which would make these platform even more attractive to users, attracting more users and thereby increasing the value of the platform for advertisers as well, once again, as a result of indirect network effects. Google and Facebook would, of course, see this as a virtuous circle.

4 This is fully in line with Turow (2006).
5 Washington Bytes (2018).
6 Khan (2018)

This would also provide companies like Amazon with legal protection to continue to put pressure on suppliers and retailers that are dependent on their platforms, since this would allow Amazon to claim that, by applying pressure on their affiliated suppliers, retailers and workers in order to rationalise their services, they would simply be improving consumer benefits.

ON OUR SIDE of the Atlantic, the regulatory landscape is, in many cases, quite different, as is the political and historical background in which it is based. Criticism of platform companies' management of privacy issues and market dominance has mainly been levelled by the EU Commission, as well as by significant fractions of the European Parliament. In recent years, the Commission has increasingly focused on web-based platforms, and argue that business relations are often characterised by a lack of predictability, transparency, trust and fairness.[7] Additionally, the Commission argues that platforms, in some cases, exploit their influence over markets in order to give preferential treatment to their own products and services, which has had a negative impact on competing companies that offer similar products in the market.[8] The UK government has also voiced hesitance, regarding advertising practices in digital media and the ways in which these could circumvent conventional competition law.[9]

Austrian Internet activist Max Schrems is currently challenging EU legislation to establish whether the economic relations that two-sided markets entail are legally feasible. He has instigated a number of legal cases with reference to the EU's new data protection regulation, the GDPR, which seemingly declares that companies such as Facebook and Google should not be allowed to demand that their users be forced to provide

7 Regeringskansliet (2018:1).
8 Ibid.: 2.
9 News Media Association (2018).

personal data as a *necessary condition* of their services. User information gathered by Facebook might not necessarily be of benefit to the users themselves used, or be primarily used for the provision of services to these users. Rather, such data might primarily be used to offer services to advertisers. Facebook, for example, is able to connect customers with specific characteristics, and who belong to specific demographic groups, with actors that advertise specific goods and services. Facebook has always claimed that the services they offer to their users are inseparable from the services they offer to their advertisers. Should the European Court of Justice agree with Schrems and conclude that these two markets must be separated, Facebook and other similar platforms might face exceedingly difficult challenges. Either they would be forced to radically change their business model, or they would have to leave Europe.

This, then, highlights a significant difference in case law between the two sides of the Atlantic. The American courts seem to be caught up in an argument about the evasive concept of "consumer benefit" (a value that is primarily expressed through pricing), which has long been the focus of the school of antitrust theory established by Robert Bork.[10] This approach does have some advantages, not least since the intent is to reduce the politicisation of antitrust law by demanding a sort of "scientific" evidence of diminished consumer benefit; but at the same time, this approach would seem to be inadequate in cases where consumers are harmed in ways that are not necessarily evident through increased prices or decreased supply in the relevant market, or in other cases concerning negative effects on society that are not covered by the concept of "consumer benefit". Civil rights are relegated to other areas of law and are not encompassed by the econometric vocabulary. This means, I would argue, that a strict focus on "consumer benefit" often fails to identify actual injury to persons.

In contrast, European case law, in areas such as data protection, tax obligations, and e-commerce, instead seems to have a more preventative

10 Caves & Singer (2018).

intent than balancing alleged injury to a group of customers with alleged benefits for another group of customers. There have been a number of notable legal cases in which powerful American platform companies have been sentenced to record-breaking fines. European law and case law focuses more on traditional humanistic values such as transparency, predictability, trust in business relations, privacy and, by extension, freedom of expression.

One example would be the recent user-interface design changes, implemented by Google on their search engine results pages, which allow Wikipedia results to be previewed in advance. This might, at first glance, look like a way of marketing Wikipedia as a guarantor of reliable information; but, in practice, this in actually seems to have curtailed a considerable bulk of Internet traffic to Wikipedia and would then have led to considerably fewer Wikipedia users than previously." As a result of Internet traffic to Wikipedia being reduced, it is likely that this also has a negative impact on the quality of moderating practices and contributions on that site.

Should such side effects be seen as "market disturbances"? The actor in question suffering from these disturbances is, after all, a non-profit organisation. Would it be reasonable to see this kind of dominant behaviour as pertaining to some sort of competition law? When it comes to public-service media there are cases where this is seen to be subject to competition law, despite there being no monetary exchange or profit-maximising motives. One could even claim that Google's change in access conditions to Wikipedia would limit the market for Wikipedia and that, in contrast with the AmEx case, this has manifestly led to a decrease in usage. Or are issues like these to be understood as beyond the domain of economics, exclusively pertaining to liberal, humanistic values such as access to information, knowledge and social trust? Some people seem to regard humanistic values like these to have extraneous

11 Edwards (2018). Please see Luca (partly funded by Google competitor Yelp) et al. for an empirical study on this issue (2016).

social benefits that can be expressed as economics values – for example, alleged effects on the "innovation environment." Perhaps it should all be left to the "self-correcting market" to sort out?[12]

What does this say about a society and a historical era in which regulation is only deemed legitimate when it is directly related to measurable econometric effects? Furthermore, this raises the topic of the definition of liberalism. Are we talking about a humanistic liberalism which promotes the values of the Enlightenment in the hope that beneficial economic effects will automatically follow, or are we talking about an economic liberalism that promotes economic values in the hope that beneficial humanistic effects will follow?

Under contemporary platform capitalism, the ways in which user agreements are written speaks volumes, as the legal prose in these documents interprets citizens as solitary consumers whose negotiating position in unilateral agreements with gigantic corporations would be of a binary nature: "take it or leave it". Users may not use the services unless they agree to *all* the terms of the agreement. New EU legislation on the protection and management of personal data will bring many of these questions to a head. Although it is perfectly possible to individually adapt user agreements, and there are no actual obstacles to allowing users to choose between different payment models or influence other aspects of their user terms, many platform companies continue to use these unwieldy user agreements.

One of the targets of the new European data protection regulation (GDPR) is this kind of unwieldiness. One of the key ideas behind GDPR is to restrict the civil-law principle of contractual freedom in order to protect consumers/citizens. In other words, a "minimum" is

12 A somewhat drastic view of the radically optimistic trust in the market that I'm envisaging is that market proponents might claim that when sufficiently large groups of consumers realise that ignorance and disinformation leads to fascism, they will be more likely to pay for increased quality, scrutiny and problematized sources of information, thus countering this ignorance and disinformation; problem solved.

established, which can not be contractually written away. Moreover, it is somewhat tricky to treat data protection purely as civil-law because one cannot "transfer" personal data in the same way as, for example, copyrights. Personal data is always personal data, regardless of whether the person in question has allowed someone to use it. GDPR thus stipulates that subjects shall not be able to sell their rights; they are, for example, always entitled to withdraw consent. Still, given this "minimum" of what can and cannot be signed away, if users are to enjoy an optional/personalised user experience – should they not, then, be able to demand equally optional/personalised user terms? Additionally, this includes the notion that citizens should be able to demand a level of transparency by being allowed to retrieve their data – mainly in order to be able to review the extent of traceability of their data and compare different services' use of said information. This, in turn, relates to the concept of "data portability"; the right to be able to transfer some of the data to other service providers.[13]

However, the GDPR is not at all as explicit when it comes to companies and business sectors and their capacity to demand influence by requesting comprehensive, aggregated and anonymised summaries of the data collected by gigantic infrastructural platforms in order to level the playing field in an impartial and fair way, with regards to competition and innovation. Quarterly reports of revenue and financial resources already conform to established practices; why shouldn't we demand that the advertisers, as a business collective, also publish more concise, detailed, and – most imporantly – standardized reports of actual exposure to adverts on platforms? The tech-sector has already established standard metrics expressed in terms of "monthly active users" and "daily active users", but these metrics are arbitrary in the sense that companies are not required to be consistent in their disclosure of such numbers, or in their definitions of things like "impressions," nor do these numbers say

13 This latter right would, arguably, fall more squarely under competition law than privacy protection.

much at all about the actual distribution of users.[14] Statistics that show what users actually do on platforms, how diverse they are, and how much time they spend on each platform respectively ("time spent") are very rarely made public by the companies. Consequently, estimates of how users behave have to be made by third parties, even when it comes to gigantic companies with vast resources, such as Google and Facebook.[15]

14 These companies often define "active use" as some form of interaction and/or logging on to the platform – but what they mean by interaction or logging on is completely arbitrary; each company uses a different definition. In Twitter's case, an account that follows 30 other Twitter accounts and is also followed by a third of those accounts is counted as an active user. Until 2015, Facebook included any interaction with third-party services as "usage", that is to say when individuals logged on to completely different apps by using their Facebook ID, or when they shared or "liked" contents on websites integrated with Facebook. Consequently, Facebook would have defined a user logging on to Tinder, or "liking" an editorial article on a conventional news site, as an "active user" of Facebook.

15 Third-party information has shown that the use of media platforms varies greatly with regard to extent, intensity, and type of use. The American research institute Pew Research (Smith 2014) has shown that 44 % of Facebook users generally "like" some kind of content at least once a day, while only 10 % update their status on a daily basis. Statistics from Sweden show that only around half of Swedish Facebook users read news, post comments or share other people's comments on the platform. Older Facebook users tend to share other people's posts more often than younger users do, whereas younger users prefer to use Facebook for events and group pages (Davidsson & Thoresson 2017).

CASE STUDY 2:

Who is allowed to use data on media audience behaviour and who is responsible for obtaining consent? The case of Google Ads versus the publishers

The implementation of the GDPR in May 2018 exposed a conflict within the online advertising business, which became evident in Sweden when leading media conglomerate Schibsted issued a moratorium and simply refused to use any of Google's tools for buying and displaying ads on different websites. This was due to a dispute that had ensued, regarding who should actually be held responsible for the personal data these tools are based on. Said personal data is gathered from the publishers' websites and used to design the adverts for target groups by *personalising*, as it is called, the user experience. This kind of automated sales of online advertising is known as *programmatic advertising*, and at the time, Google was in control of approximately half of the Swedish market.

The online advertising infrastructure is a typical example of a platform-based business. It is dominated by a few actors, such as AppNexus and Google. The advertisers purchase access to target groups on so-called demand-side platforms (DSP), such as Google Ads (formally *Doubleclick Bid Manager*). Often, these purchases are conducted in real time through auctions where advertising inventory is sold for different hours of the day, for different groups of users. Media companies, on the other hand, sell their advertising space on so-called supply-side platforms (SSP); here too, automated tools are commonplace. And here too, the driving force is to sell the right kinds of adverts, in the right context, at the right time. Platform providers help coordinating purchases of adverts and media companies in order to ensure that the "right" kind of adverts are displayed on editorial websites, based on vast amounts of data on the users that visit the site.

Hence, both sides of the markets have unique strengths: Media companies own the content that is sought after by the users. Ad providers (in

this case, Google) own the users' data profiles, which are cross-matched with the users' entire browsing history, and thus provide user profiling that is allegedly more detailed than what the media companies are capable of. After all, the latter companies are only able to profile user behaviour retrieved from their own websites. Perhaps, it is these two exclusive strengths, on each respective side of the market, that have led to the current standstill in negotiations with, as yet, no apparent resolution. It is the result of two fundamentally conflicting media-industry interests.

This dispute reaches far beyond the Swedish market, and represents a key issue for the entire European online advertising market. In an open letter[16] to Google CEO Sundar Pichai in April 2018, four European publishing organisations expressed their shared view on the problem: According to these media companies, platform behemoth Google had demanded, in conjunction with the impending implementation of the GDPR, that users of their advertising system would be responsible for obtaining consumer consent before gathering their data, and that they would also be legally responsible for the data used, in turn, by Google. Additionally, the publishers argued, the American company wanted publishers to do this on behalf of Google without being afforded any insight into how the personal data actually would be used.

Google's rebuttal was that they always ask that their publishers to obtain consent before using their advertising technology on their websites, and that they had updated this practice in 2018, in connection with the implementation of the GDPR. Additionally, Google has also developed technology that provides non-personalised ads in cases where no consent has been obtained.

Media companies demand the legal right to refer to the relevant section of law when "legitimate interests" are at stake, for example, in cases where a publisher collects data for security reasons, or when they need

16 Digital Content Next, European Publishers Council, News Media Alliance and News Media Association; see Kint et al. (2018).

to know the user's age in connection with content of a potentially sensitive or adult nature. They argue that Google's interpretation of the GDPR stops them from doing so, and that Google's motives cannot possibly be legitimate since they themselves indiscriminately collect user behaviour data from the entire Internet.

Within the GDPR framework, the term *data controller* refers to those legal parties who have overall responsibility for ensuring safe and secure management of data in compliance with the GDPR, while the actual management of said data can be assigned to their counterparts, actors legally referred to as *data processors*. In this particular conflict, Google prefers to define themselves as data controllers rather than data processors, thereby emphasising the issue of user consent. In general, gigantic corporations such as Google are, in fact, so complex that they cover both of these legal categories, depending on the context and the business in question. Large parts of the corporation's business operations are categorised as controlling data, while other sectors only involve administering data.[17] However, with the Google Ads conflict the corporation has proposed to act together with the publishers in question, as *mutual* data controllers with regard to data generated by the publishers' use of tools such as Google Ad Manager (formerly *DoubleClick for Publishers* and *Google Ad Exchange*). Sharing responsibility is an important issue for Google, because it means that they would take legal custody of the personal information. If Google had decided to be deemed solely as data processors, the company would only be able to use data allowed by the data controller; in this case, the publisher. But the publishers disagree with Google's notion of shared custody, and argue that Google wanting to designate themselves as data controllers is an arbitrary notion, since the company could just as well be seen as a mere data processor, the publishers argue, since all the relevant behaviour data would ultimately be retrieved from publishers' websites.

The negotiations between Google and the publishers currently seem to be at a standstill. One would imagine that both parties, in the context of

17 Google (2018).

shared responsibility for personal data, would have an interest in clearly defining the dividing line in their responsibilities. If it is necessary to get user consent on behalf of both companies, then both companies must be able to trust each other to obtain consent in a manner that complies with all relevant obligations and risk assessments. This can lead to an unsustainable situation in which all parties along the value chain are made responsible – which would be very hard, if not impossible, to maintain manually, considering the number of publishers in Google's network. Therefore, Google seems to have vouched for the publishers being responsible for obtaining user consent while simultaneously demanding to be counted as data controllers with the power to verify that personal data are correct and have been collected with informed consent. Additionally, Google also states that when making decisions on data processing to help publishers optimise their advertising revenue, the publishers act as controllers of their own advertising tools, in compliance with GDPR requirements, but that this role does not give the publisher any other rights to said data. Google argues that they require that the publishers obtain user consent on their own websites with regard to *personal data-based technology used for targeted advertising in general* – and not only for Google's advertising services, but for all advertising services.[18]

This naturally poses several questions: Does this mean that advertisers are allowed to use other providers' services? Moreover: Do such broad consent requirements actually benefit the users?

According to anonymous sources at the highest level in one of the largest publishing houses in the Nordic region, different media companies have very different interpretations of the new regulations, as well as how tightly linked to Google they would prefer to be. Some publishers use what is generally referred to as a "full stack" – in other words, they use Google's entire range of products. This makes it trickier for them to formulate consent forms than for larger publishers, such as Bonnier and Schibsted, who manage their own platforms and are able, to a degree, to

18 Lomas (2018).

provide their own DSP solutions, and also collaborate with a number of ad-tech partners. The International Advertising Bureau (IAB), which is the leading trade association for online advertising, has developed a common standard, the Transparency & Consent Framework (TCF), to ensure that consent is obtained on a robust basis. In 2018, Google stated that they would comply with this standard – but has, as yet, not done so.

FIGURE 1 Consent form used by one of the newspapers owned by JP/Politikens Hus (screen capture 22/10 2018). The list includes 430 named companies.

Other publishers, such as Danish JP/Politikens Hus, have carefully guarded their independence and credibility, and JP/P in particular have chosen to develop their own interface and are firmly committed to breaking down

user consent into more specific categories. Their interface is based on IAB's templates, but they have manually added Google as one of the optional partners that users are able to give their consent to (Figure 1). According to the company, user tests show that a surprisingly high share of users click the "No" button if the interface is designed to make that option easier to choose – which is not really what the publishers want, though. Publishers, just like advertisers and Google, want as many users as possible to click "Yes", since it is in the publishers interest, too, to expose as many users as possible to adverts. But this is not what the conflict is really about; rather, the conflict revolves around the fundamental issue of publishers' requests for consent to be formulated in accordance with the rule of law. Breaking down consent issues, as JP/P have done, is in line with the spirit of the GDPR, which prescribes that consent should be as granular as possible. Each party must explicitly ask for the user's consent; the users must be able to decide for themselves.

Another obvious market disturbance issue is that Google owns blog platforms and has an interest in maximising views, not to mention the strong interest that the company has, regarding its fundamental business idea: maximising search results. This means that Google has a vested interest in displaying adverts on their own DSPs. Is Google really able to provide a neutral DSP if the company is itself simultaneously a media purveyor? Additionally, online advertising, and the programmatic auctions that it builds upon, is already known to have transparency issues as well as quality issues, with regard to the websites on which the adverts are actually displayed.

Perhaps, the core problem is that in situations where Google quite clearly acts as a data controller (for example, with services like Gmail, YouTube and the Google.com search engine), obtaining consent from users is a relatively straightforward matter: most users see these services as more or less necessary, not to mention useful, and would thus be willing to consent to being tracked, while, when it comes to peculiar technocratic systems with esoteric names and unclear user value, many people would

object to giving consent. Perhaps, this is why Google recently changed the names of their products from *DoubleClick Bid Manager*, *DoubleClick Campaign Manager*, *DoubleClick for Publishers*, *AdWords* and *Google Ad Exchange* to slightly less tongue-twisting names like *Google Marketing Platform*, *Google Ads* and *Google Ad Manager*. It appears to me to that ingratiating pleas from publishers regarding customer consent might after all be a more rhetorically viable vehicle, since it refers to known entities: "Do you want to allow The Newspaper to collect your data in order to give you a more relevant and personalised user experience?"[19]

In portraying itself as a data controller, Google goes against the image the company has sought to project in some of its previous policies. When it comes to other Google services, such as the web analysis service Google Analytics, for example, the company has instead argued that they are merely acting as data processors (while simultaneously claiming extensive rights to the data they collect, which should indicate that they could actually be seen as responsible, on par with a data controller).

In connection with the legal framework addressing "the right to be forgotten,"[20] a law allows EU citizens' data not to be displayed by search engines, The European Court of Justice ruled in May 2014 that Google should, in fact, be seen as a data controller. This ruling was based on a legal case in Spain in which an individual demanded that Google's stored search results for his name be removed from the search engine's list of hits. The court ruled that search engine operators such as Google were responsible for personal data obtained through their website indexing and for any republishing of such information, regardless of the fact that said data may have originally been published by third parties.[21]

However, it should be noted that this ruling was based on the former data protection directive (95/46/EC) which has now been replaced by the GDPR. Furthermore, the European Court of Justice clarified that

19 Peterson (2018).
20 See Joakim Wernberg's chapter in this volume.
21 Depypere (2014).

people's right to be removed from search results indexes did not oblige data collectors to *immediately* delete personal data. Rather, it was determined that the data controller was responsible for establishing a *fair balance* between Internet users' legitimate interest to be granted access to information and their fundamental rights as stated in articles 7 (Respect for private and family life) and 8 (Protection of personal information) of the Charter of Fundamental Rights of the European Union. It is often necessary to weigh privacy matters against freedom of expression, not least with regards to journalistic, artistic, literary and academic freedom of expression. In other words, data protection is often more focused on balancing different interests against each other rather than on mechanical, binary requests for consent.[22]

If the European Court of Justice's ruling is seen as legal precedent, then all digital platform operators that exercise a level of control over the data used in their services should, in principle, be held responsible for removing or filtering undesired data (unless it concerns platforms covered by the directive's special exception for journalistic content). A legal case, C 210/16 (Bot 2017), is currently being processed by the EU Court of Justice which may become definitive. Current Advocate General, Yves Bot, argues that "the manager of a website that contains a social plugin should, to the extent that it has a de facto influence over the phase of data processing which involves the transmission of personal data to Facebook, be classified as a 'controller'" (Bot 2017 §72). This perspective would mean that any person who administrates, for example, a WordPress blog, or any website that uses social plugins, would be viewed as a joint controller, and could, then, be held partly responsible for not complying with GDPR rules.[23] This would be problematic in many ways. These issues are all related to the next case study below – that is, the copyright directive approved by the EU Parliament in September 2018.

22 Frantziou (2014). It is worth pointing out that the attorney general at the time, Niilo Jääskinen, interpreted the question very differently to the court, and viewed search engine operators as data processors rather than data controllers (Pinsent Masons 2013).
23 Bot (2017).

THIS GIVES PAUSE for reflecting on aspects of power. In terms of actual influence – that is, market power and political power – one could question the European Court of Justice's ruling and Advocate General Bot's statement. Is it feasible that minor, peripheral website owners should be deemed as violating *fundamental human rights* by not immediately removing data that individuals' have deemed to be unwanted or offensive?

Eleni Frantziou[24] writes, in a critical socio-legal article on "the right to be forgotten": "It can hardly be argued that all these scenarios generate the same degree of control and therefore should give rise to the same kind of fundamental rights obligations as those imposed on Google."

Olivier Sylvain makes a similar argument[25] in his critique of over 20-year-old rules of exception in the American law that, in practice, have allowed digital, user-based media platforms such as YouTube and Facebook to emerge, leading to an endless series of phenomena being enabled by these platforms that are likely detrimental to society (incitement, hate speech, disinformation, etc.).

In American law, it was section 230 of the Communications and Decency Act (CDA) 1996 and the "safe harbor" exceptions under the Digital Millennium Copyright Act (DMCA) 1998 that resulted in a kind of regulatory void that enabled the creation of companies such as YouTube. In the EU, similar legal exceptions are found in the E-commerce Directive (2000). The current regulatory media landscape can be traced back to a number of other deregulations in the USA in the 1980s and '90s. In terms of actual infrastructure, the abolishment of the Office of Technology Assessment by Newt Gingrich in 1995, is one example;[26] another example is the abolishment of the "fairness doctrine" in 1987, which allowed broadcast media to drift toward increased partisanship. A logical result of these deregulations has been the emergence of highly partisan, propagandistic broadcast media such as Fox News and "talk

24 Frantziou (2014: 771).
25 Sylvain (2018).
26 Wexler (2015).

radio." It has been established that older people (who consume more broadcast media than younger people) have weaker media literacy skills, and are less adept at telling truth from untruth. It is perfectly reasonable to assume that this is related to a higher degree of consumption of broadcast media.[27] A more optimistic interpretation, in the context of platforms, would be that younger people, who are more likely to consume news published on Internet platforms, appear to have better critical skills with regard to media and information. A more critical interpretation of the role of platforms might conclude that said platforms were able to emerge in a regulatory vacuum, and that they remain largely under-regulated, which may also allow platforms to be used for shameless propaganda and incitement.

The Internet, today, is not the same as the Internet of 1996. The business models and the distribution of power that have emerged as the result of modern technology have changed, shifted and grown, and the law must keep up with these changes, Sylvain argues. In the 1990s, digital forums were in many respects relatively difficult to moderate; in practice, most moderation was manual. Today, major platform companies produce an endless array of automated selections, filters, ranking lists, personalised targeting and moderation of behaviour on their platforms. The law must be adapted so that operators that have, throughout their existence, been relieved of almost all responsibility for the actual uses of their services and third-party agreements of data collection, have in recent years been forced to admit that also they must weigh freedom of expression against other values. Many of the business models for targeted marketing claim that these platform operators are very good at administering and guiding their users' attention, which means that the same operators should also be able to use the same technical capacities to comply with legal requirements that society demands necessary. Their demonstrable capacity to automatically filter and moderate content – take Content ID, for example; a technical solution that Youtube introduced in order to automatically track and identify copyright-protected content – likely

27 Madrigal (2018)

means that major actors are similarly able to conduct less commercial, but not less societally important, forms of moderation. The emergence of artificial intelligence (AI) makes it all the more possible to proactively moderate platforms. However, as we will see, this is itself not entirely without problems.

CASE STUDY 3

Challenges and problems of moderating user-circulated content: The NetzDG case and the Copyright Directive

The concept of balanced responsibility is a recurring theme throughout the main points of the Copyright Directive, recently approved by the EU parliament. A similarly controversial law, which compels a comparatively strict regulation of incitement and disinformation, was recently passed in Germany, the Netzwerkdurchsetzungsgesetz (NetzDG), based on similar notions.

This kind of regulation seeks to balance freedom of expression with concerns for copyright holders and for vulnerable individuals and groups. Although it is motivated, it is nevertheless vital that laws like these do not lead to so-called "chilling effects"; that is to say, various kinds of unnecessary or overarching restrictions on freedom of expression. For example, it should not lead to people hesitating when posting content, posting quotes, making remixes, satire, modifying or commenting on other works, or even freely expressing their thoughts – out of fear of incurring fines or other forms of punishment. Furthermore, if platform companies are forced to preview and moderate content, they would, in effect, get unilateral power to censor, in one fell swoop, which is why Facebook, for example, opposed the German NetzDG regulation and warned about so-called "overblocking", which I describe in greater detail below.

Following the European Court of Justice's decision of 2014 on "the right to be forgotten", companies like Google have been forced to remove links to individuals' personal details in cases where the concerned individuals claim that the information is improper, irrelevant or misleading. Since then, European officials have increasingly begun to circumvent the rules of the original E-commerce Directive (2000), which initially granted a high degree of freedom. In early 2017, Germany approved the controversial NetzDG regulation, which requires that Internet platforms block hate speech and disinformation – or else run the risk of incurring large fines. Additionally, the European Commission has begun to place demands on platform companies in several areas, not least with regards to the aforementioned Copyright Directive currently being drafted, which demands that platforms take proactive action against pirated content.

NetzDG gained legal force in January 1, 2018, and orders social media platforms to make contents that are deemed unlawful in Germany inaccessible to German users. Content must be removed speedily, (within 24 hours of receiving notice), or else the platform owner runs the risk of incurring fines of up to €50 million. In Germany, incitement is illegal, as are other forms of related criminality and symbols of antidemocratic groups and ideologies. Although the general public and several political parties seem to support the law, there are major technical and legal problems involved in the actual implementation of it. Additionally, illiberal, antidemocratic regimes around the world have taken notice and proposed variations of this kind of law: In Russia, for example, the Duma proposed an exact copy of the NetzDG regulation that requires that content deemed unlawful must be removed within 24 hours. In Germany, the far-right party, AfD, has also seized upon the opportunity to spur dissent towards NetzDG, since they see it as a gagging order issued by the state, comparing it to a new kind of Stasi-esque censorship or "DDR 2.0" and, by doing so, portraying themselves as martyrs in the name of freedom of expression.

However, once the law had been implemented, much fewer complaints were filed than expected. At the same time, there were documented

examples of content being removed by Facebook at their own behest, without flagging said contents as inappropriate in advance. This led to a number of anecdotal but symbolic cases that have come to exemplify the unreasonable unwieldiness of the law.[28]

With regards to the copyright directive bill currently being drafted by the EU (late 2018), key aspects of this Copyright directive refer to a legal case in Spain in 2014, in which a business association representing major national publishers, the AEDE, exerted pressure on politicians to introduce a law that required search engine operators to pay a fee to those editorial actors whose contents would be displayed by search engines. Germany and Belgium had already proposed a similar "link tax", but lawmakers in both of those cases had ultimately backed down and agreed that Google's news aggregator must be allowed to display news content free of charge. Politicians and publicists in Spain, however, were reluctant to allow this and, instead, persisted in arguing for the implementation of an obligatory fee. Google argued that if they were forced to pay for providing news links, they would be forced to shut down those kinds of services in Spain – which they consequently did. Beginning in December 2014, Spanish newspapers were no longer displayed by Google News.[29]

Barely a year later, it became evident that this had led to a net loss in web traffic to *all* Spanish newspapers. Smaller operators were affected the most. Domestic news aggregators[30] were forced to shut down completely. A study by the Spanish newspaper publishers' association (the AEEPP) concluded that the new law had led to losses and that blocking news aggregators had been a failure. Theoretically, such aggregators would actually provide a larger market for the original news sources, rather than shrinking or restricting their market.[31] It was particularly sad for smaller actors who had not lobbied for legislation, but had to collectively bear the consequences anyway. Here, the new copyright law appears to have

28 Kinstler (2018)
29 Google (2014).
30 Planeta Ludico, NiagaRank, InfoAliment och Multifriki.
31 Mullin (2015), Nera (2015). See also Joakim Wernberg's chapter (this volume).

contributed to an increased monopolisation of the Spanish publishing sector. Without platform-based aggregators, it became harder for small independent publishers, who do not have strong marketing capacities of their own, to reach a critical mass of readers.

The copyright directive currently being drafted by the EU in many ways reflects the conflict between different business sectors as mentioned in case study 2 (above). The problem has to do with how a number of business sectors earn revenue which is, to a large degree, based on copyright material (news media, sports and entertainment industries, artistic creativity) have started to place greater demands on commercial Internet platforms (search engines, social media, video and image sharing sites, news aggregators), since, in an increasingly more platformized media landscape, these latter actors become increasingly critical for the former. The copyright industry needs the infrastructural platform industry to provide links to, advertise, preview, sell, and distribute copyrighted content – and the platforms need the copyrighted content, since without it there would be much less incentive for people to use the platforms. The proposed directive stipulates that Internet platforms must either be prepared to share a portion of their advertising revenue by paying license fees to copyright holders, or speedily make it possible to remove copyright protected content in case of copyright violations.

One interesting, geopolitical aspect is that the copyright industry involves several regionally and nationally established actors that have great economic and cultural importance in Europe, while the platform actors largely consist of American, transnational blue-chip companies. Both sides of this conflict are, unsurprisingly, represented by powerful lobby groups. Google opposes the copyright directive and supports, *inter alia*, lobbyists such as the Computer and Communications Industry Association (CCIA) which are opposing the bill, while large publishing companies such as Axel Springer in Germany, and Rupert Murdoch's UK-based News Corp argue that some form of tax is necessary if the news industry is to be protected. The latter actors often use their own newspapers to add fuel to

concerns about social media. The concept of "filter bubbles," for example, is a widely debated topic in the press, but is actually rather questioned by media researchers.[32]

Summary

While most of the broad infrastructural platforms shaping our daily lives and contemporary society are based in America,[33] there are a number of more sectorally specific platforms[34] whose goals are more limited and affect individual markets only. These kinds of platforms are often more nationally based, and are quite common in Europe. However, these sector-specific platforms (for education, healthcare, transport, identity management and so on) are often reliant on the larger infrastructures established by the former group. In some cases, they compete directly with each other, and the infrastructure giants are then able to exploit synergetic effects in their own proprietary ecosystems, for example when Apple Pay or Google Pay are competing with nationally established platforms like the Swedish payments system Swish.

Against this background, the EU Commission has proposed a flora of regulation bills as part of what appears to be an organised strategy to establish clearer rules for "platform capitalism." Studies of digital platforms have been carried out as part of a comprehensive strategy to safeguard domestic markets, such as the Commission's public inquiry of 2015 to obtain opinions from affected parties. The results were published in May 2016.[35] This report defines and describes the platforms and the problems associated with them; the possibility of creating new markets and changing existent markets; how they benefit from network effects (that is, the value of the infrastructure dramatically increasing as

32 Dahlgren (2018).
33 Evans & Gawer (2016).
34 For *infrastructural* platforms versus *sector-specific* ones, see van Dijck et al. (2018).
35 EU Commission (2016).

the amount of users increases); dependence on information technology with regard to both communication and value-creation. The concept of platforms, according to the report, covers both online advertising, marketplaces and software applications such as search engines and social media. The main purpose of the regulation is to establish appropriate conditions that allow platform solutions to be implemented in Europe in a manner that conforms to the rule of law. The Commission argues that market fragmentation poses a significant challenge, and that competition law, consumer rights and data protection are key elements. The goals of the Commission are:

- A level playing field for comparable digital services
- That platform operators take responsibility for the EU's core values
- Transparency and legal security to maintain societal trust
- That innovation and open-minded, non-discriminatory markets are protected

Many of these measures within the EU have been formulated as requests for markets to self-regulate. The European Commission has invited platform companies to sign a voluntary code of conduct entailing that they actively and speedily remove counterfeit products and hateful content, but a series of more robust restrictions have also been implemented in a short time. In sum, there are a number of regulatory measures in the EU:

Imposition of voluntary self-regulation of fake news and hate speech. In March 2018, the Commission presented a bill of proposals requiring that media platforms take concrete action against hate speech,[36] which was closely followed by EU guidelines concerning disinformation (April 2018)[37]. This resulted in a self-regulatory "Code of Practice" in connection with which Google, Facebook, Twitter and Mozilla presented their proposed commitments (September 2018).[38] This ties in with domestic initiatives such as the NetzDG in Germany and the overarching,

36 EU Commission (2018b).
37 EU Commission (2018d).
38 EU Commission (2018c).

transnational, coordinated efforts by security services and anti-terror legislation in different countries.

Regulation of digital marketplaces in order to encourage fairness in domestic markets. In April 2018, the EU Commission proposed new rules for online platforms in order to protect small and medium-sized companies operating in the digital economy. The ambition, here, is to attempt to regulate market conditions for companies by demanding that megaplatforms become more transparent, that conflict resolution processes become more efficient, and by creating a new EU organisation to monitor the effects of the new rules.[39] This implies updating the E-commerce Directive in the future.

The Copyright Directive was subject to intense discussion in connection with the Parliament's vote in September 2018. As mentioned above, this directive is based on the Spanish legal case in which search engines were ordered to pay a fee when publishing editorial content, and also involves rules that require social media platforms to moderate user content, in line with the German NetzDG regulation.

The General Data Protection Regulation, adopted in 2016 and effective as of May 2018, where the rules for informed consent were reformed, and citizens' opportunities for transparency and control of how personal data are used were tightened. One side effect of this regulation is the struggle between Google and leading publishers in Europe, regarding who is supposed to be responsible for obtaining consent and protecting personal data (see case study 2 above).

Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services[40] will very likely also apply to digital platforms, not least since this directive has been complemented by Directive 2009/136 and Regulation 2015/2120 which, among

39 EU Commission (2018e) and the government offices Regeringskansliet (2018).
40 The European Parliament & Council of Europe (2002).

other things, entails that member states are obliged to ensure that Internet users are able to use a set minimum of services at affordable prices, and must determine penal measures, implemented by national regulatory authorities, against major operators. Currently, these laws largely apply to telecommunications, but as digital communication converges with telecom infrastructure layers, it is reasonable to expect that they are becoming more and more applicable also to platform-mediated communication services.

EU Commission competition authorities The Commission, via the Directorate-General for Competition (DG Competition), assumes overall responsibility for enforcing competition rules in collaboration with national competition authorities. In June 2017, the Commission sued Google for €2.4 billion for improperly prioritising the company's own trade services in its search results. The company accordingly changed its search engine results in Europe, and appealed the ruling, which remains undetermined. In July 2018, the EU Commission ruled on another record fine of €4.3 billion and argued that Google had exploited its market position and restricted consumers' freedom of choice when browsing and searching the Internet, by allowing Android units to be sold with the company's own, proprietary web browsers, maps and search engine services pre-installed. This ruling was also appealed by Google.

In comparison with the USA, the overarching differences are substantive – and under Trump, and, moreover, a Supreme Court that shows little interest in restraining monopolistic tendencies, blue-chip capitalism has arguably less regulations than ever. However, the differences between Europe and USA should not be overstated. The US is a federation, and there are efforts at both state level and within civic society in general to strengthen civic and consumer rights.

In the US, there are, for example, substantive disagreements regarding net neutrality. Net neutrality entails that broadband providers must treat all Internet traffic equally; major platform operators are not

allowed to pay broadband providers to prioritise traffic to their platforms. This concept gained legal force in America in 2015 (during the Obama administration), when the FCC determined that broadband Internet should be viewed as public infrastructure and should therefore be regulated in the same way as telecommunications. In December 2017, however, the FCC, under Ajit Pai's stewardship (appointed by Trump) decided to abolish net neutrality and allow network operators to discriminate between different kinds of traffic on their networks. The decision attracted much attention, and New York's attorney general, Eric Schneiderman, argued that the ruling violated the law and stated that he would contest it. Although the Senate voted against abolishing net neutrality regulations in May 2018, Congress (with a Republican majority, at the time) was unable to stop the abolishment. In June 2018, the American net neutrality rules expired and the new rules gave large companies far more arbitrary control over consumers' access to the Internet. However, individual states, such as California, have opposed the decision and introduced their own net neutrality rules.

California, in fact, is a prime example: This is the state where the majority of the companies mentioned in this anthology are seated, but it is paradoxically also one of the states where legislators and experts seem to be most committed to regulating platform capitalism. The California Consumer Privacy Act, adopted in 2018 and expected to gain force in 2020, aims to give consumers the right to request information on how they have been categorised as well as specific personal data on them, the kinds of sources used, for what business purposes the data has been collected and/or sold, and what kinds of third parties the data is shared with.

The US has a long history of civil society actors (non-profit foundations, consumer organizations, and so on) committed to safeguarding civic interests. In an era that sees significant rates of profit extraction, rent-seeking behaviour and increasing consolidation of blue-chip companies, there is a resistance movement in which institutions such as Open Market and Public Knowledge have initiated discussions on how

giant corporations distort the market in order to block competition. These think-tanks and institutes argue that the concept of monopoly should be redefined and should focus less on the vague concept of "consumer benefit" and more on the distorted incentives that result from vast synergies and infrastructural control.

Moreover, the US also has the Federal Trade Commission (FTC), an authority with considerable power in consumer protection matters, competition law, contract law as well as regarding some of the relevant data-protection aspects. Since US law places a strong emphasis on contract law, violations of civil agreements between consumers and suppliers have a significant impact on society, decidedly more so than in countries with very different legal traditions, such as the EU countries. Orrin Hatch (R) and other senators have for example called upon the FTC to investigate antitrust effects resulting from Google's dominance in the online advertising and search engine market, which indicates that the introduction of bills similar to the EU's proposals may not be all that far-fetched in the USA, even if the means and the ways in which the regulations are formulated differ.

If the FTC takes their job seriously, this could result in record fines for Facebook: In connection with the so-called Cambridge Analytica scandal, the British data protection authority, the Information Commissioner's Office (ICO) recently showed that Facebook indeed shared a large amount of users' personal information with third parties between 2007 and 2014, without sufficient clear and informed consent. This is in direct conflict not only with the GDPR, but with the explicit warnings Facebook was given by the FTC in 2011 and a subsequent agreement between the FTC and Facebook.[41] Potential damages amounting to thousands of dollars per claimant, multiplied by the number of affected individuals in the Cambridge Analytica scandal, could result in countless billions of dollars.

41 FTC (2011).

A number of US politicians and leading experts now argue that companies like Google should be broken up, or at least prevented from acquiring more companies. It seems that the existent regulatory systems have, for a long time, been incapable of addressing the dominance that large actors can achieve through concealed data synergies, made possible by the endless acquisitions that these giants have long been allowed to carry out. Google has acquired more than 200 start-ups since it was founded, including key brands such as YouTube, Android and DoubleClick. Google's company structure, which is largely akin to an ecosystem consisting of different, partially overlapping and tightly connected platforms that operate under the same umbrella, is without a doubt a direct result of this.[42] It would be hard to imagine Google in its current form had it not been allowed to make that many acquisitions. Similarly, Facebook has acquired over 70 companies, including those who would otherwise have remained clear competitors to it, such as Instagram and WhatsApp. American senators, such as Mark Warner (D) and Amy Klobuchar (D), have proposed different ways of restricting the dominant positions of many of these megaplatforms, such as the Honest Ads Act that deals with political online adverts, and by categorising some of these platforms' services as public utilities, thereby making it harder for companies to wholly monopolise them, However, these politicians appear to think that actual proposals to split up the megaplatforms would still be too radical an approach.

42 See Figure 1, Andersson Schwarz and Larsson's final chapter.

REFERENCES:

Bot, Y. (2017). "Förslag till avgörande, mål C-210/16". *InfoCuria*, 24 October. http://curia.europa.eu/juris/document/document.jsf?text=&docid=195902&pageIndex=0&doclang=SV&mode=lst&dir=&occ=first&part=1&cid=564716

Caves, K.W. & H.J. Singer (2018). "When the Econometrician Shrugged: Identifying and Plugging Gaps in the Consumer Welfare Standard". Working paper, George Mason Law Review. https://ssrn.com/abstract=3205518

Dahlgren, P. (2018). "Filterbubblor – ett hotfullt och vilseledande begrepp". I: Truedson, L. (ed.) *Fejk, filter och faktaresistens – hotar sociala medier demokratin?*. Stockholm, Institutet för mediestudier, 39–70.

Davidsson, P. & A. Thoresson (2017). *Svenskarna och internet 2017*. Stockholm: IIS.

Depypere, L. (2014). "CJEU Google/AEPD: Google is a data controller and data subjects have the right to be forgotten". *Lexology*, blogginlägg skrivet för juristbyrån CMS Belgium, 27 May. https://www.lexology.com/library/detail.aspx?g=87095f02-06be-473b-978b-413650b157da

Edwards, J. (2018). "Wikipedia suddenly lost a massive amount of traffic from Google". *Business Insider*, 12 August. https://www.businessinsider.com/wikipedia-sees-traffic-from-google-decline-2015-8

EU Commission (2016). *Onlineplattformar och den digitala inre marknaden: Möjligheter och utmaningar för Europa*. Meddelande från kommissionen till Europaparlamentet, Rådet, Europeiska ekonomiska och sociala kommittén samt Regionkommittén. COM(2016) 288 final. 25 May.

EU Commission (2018a). *Digital Single Market Policy: Online Platforms*. Website that summarises the EU Commission's policy initiatives. https://ec.europa.eu/digital-single-market/en/policies/online-platforms (Retreived 29/10 2018).

EU Commission (2018b). "Ett EU som skyddar – Kommissionen stärker EU:s svar på olagligt innehåll online". Press release, 1 March. http://europa.eu/rapid/press-release_IP-18-1169_sv.htm

EU Commission (2018c). *A multi-dimensional approach to disinformation: Report of the independent High level Group on fake news and online disinformation*. 12 March.

EU Commission (2018d). "Bekämpande av desinformation online: kommissionen lägger fram EU-omfattande riktlinjer". Press release, 26 April. http://europa.eu/rapid/press-release_IP-18-3370_sv.htm

EU Commission (2018e). "Proposal for a regulation of the European Parliament and of the Council on promoting fairness and transparency for business users of online intermediation services". COM(2018) 238 final. 2018/0112 (COD), 26 April. http://ec.europa.eu/newsroom/dae/document.cfm?doc_id=51803

Europaparlamentet och Europarådet (2002). *Direktiv 2002/22/EG om samhällsomfattande tjänster och användares rättigheter avseende elektroniska kommunikationsnät och kommunikationstjänster (direktiv om samhällsomfattande tjänster)*. 7 March. http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2002:108:0051:0077:SV:PDF

Evans, P.C. & A. Gawer (2016). *The Rise of the Platform Enterprise: A Global Survey*. The Emerging Platform Economy Series. New York: Center for Global Enterprise. January.

Frantziou, E. (2014). "Further Developments in the Right to be Forgotten: The European Court of Justice's Judgment in Case C-131/12, Google Spain, SL, Google Inc v Agencia Espanola de Proteccion de Datos". *Human Rights Law Review*, 14(4): 761–777.

FTC (2011). "Facebook Settles FTC Charges That It Deceived Consumers By Failing To Keep Privacy Promises". Press release, 29 November. https://www.ftc.gov/news-events/press-releases/2011/11/facebook-settles-ftc-charges-it-deceived-consumers-failing-keep

Google (2014). "An update on Google News in Spain". *Google Europe Blog*, 11 December. https://europe.googleblog.com/2014/12/an-update-on-google-news-in-spain.html

Google (2018). "Google Ads Data Protection Terms: Service Information". Information on Google's ad services. Updated 24 July. https://privacy.google.com/businesses/adsservices/ (from 29/10 2018)

Hovenkamp, E. (2018). "Antitrust Policy for Two-Sided Markets". Working paper. https://ssrn.com/abstract=3121481

Khan, L. (2018). "The Supreme Court just quietly gutted antitrust law". *Vox*, 3 July. https://www.vox.com/platform/amp/the-big-idea/2018/7/3/17530320/antitrust-american-express-amazon-uber-tech-monopoly-monopsony

Kinstler, L. (2018). "Germany's Attempt to Fix Facebook Is Backfiring". *The Atlantic*, 18 May. https://www.theatlantic.com/international/archive/2018/05/germany-facebook-afd/560435/

Kint, J.; A. Mills Wade; D. Chavern; D. Newell (2018). Open letter to Sundar Pichai, Google ceo. 30 April. http://epceurope.eu/wp-content/uploads/2018/04/Publisher-Letter-to-Google-re-GDPR-Terms.pdf

Lomas, N. (2018) "Google accused of using GDPR to impose unfair terms on publishers". *TechCrunch*, 1 May. https://techcrunch.com/2018/05/01/google-accused-of-using-gdpr-to-impose-unfair-terms-on-publishers/

Luca, M., T. Wu, S. Couvidat, D. Frank, W. Seltzer (2016). "Does Google content degrade Google search? Experimental evidence". Harvard Business School Working Paper, No. 16-035, September 2015. (Revised August 2016.)

Madrigal, A.C. (2018). "Older People Are Worse Than Young People at Telling Fact from Opinion". *The Atlantic*, 23 October. https://www.theatlantic.com/technology/archive/2018/10/older-people-are-worse-than-young-people-at-telling-fact-from-opinion/573739/

Mullin, J. (2015). "New study shows Spain's "Google tax" has been a disaster for publishers". *Ars Technica*, 30 July. https://arstechnica.com/tech-policy/2015/07/new-study-shows-spains-google-tax-has-been-a-disaster-for-publishers/

Nera (2015). *Impacto del Nuevo Artículo 32.2 de la Ley de Propiedad Intelectual*. Informe para la Asociación Española de Editoriales de Publicaciones Periódicas (AEEPP). NERA Economic Consulting: Madrid. 9 July. https://www.aeepp.com/pdf/InformeNera.pdf

News Media Association (2018). "Government Says Digital Services 'Pose Challenges' To Existing Competition Frameworks". 26 July. http://www.newsmediauk.org/Latest/government-says-digital-services-pose-challenges-to-existing-competition-frameworks

Peterson, T. (2018). "Google's GDPR consent plan could be a template for other tech giants". *Digiday UK*, 27 March. https://digiday.com/media/googles-gdpr-consent-plan-template-tech-giants/

Pinsent Masons (2013). "Google not always a 'data controller' of data processed by search engines, says legal advisor". *Out-Law.com*, 27 June. https://www.out-law.com/en/articles/2013/june/google-not-always-a-data-controller-of-data-processed-by-search-engines-says-legal-advisor2/

The government offices, Regeringskansliet (2018). "Förordning om onlinebaserade förmedlingstjänster". Faktapromemoria 2017/18:FPM97. 30 May.

Sagers, C. (2018). "Ohio v. American Express: Clarence Thomas Sets Sail on a Sea of Doubt, and, Mirabile Dictu, It's Still a Bad Idea". *Pro Market: The blog of the Stigler Center at the University of Chicago Booth School of Business*, 27 June. https://promarket.org/ohio-v-american-express-clarence-thomas-sets-sail-sea-doubt-mirabile-dictu-still-bad-idea/

Smith A. (2014). "What people like and dislike about Facebook". *Fact Tank*, Pew Research Center, 3 February.

Sylvain, O. (2018). "Intermediary Design Duties". *50 Connecticut Law Review* 203; *Fordham Law Legal Studies* Research Paper No. 2997141. From 29 May. https://ssrn.com/abstract=2997141

Turow, J. (2006). *Niche Envy: Marketing Discrimination in the Digital Age*. Cambridge, MA: MIT Press.

van Dijck, J., T. Poell, M. de Waal (2018). *The platform society: Public values in a connected world*. Oxford: Oxford University Press.

Washington Bytes (2018). "Will the Supreme Court's Amex Decision Shield Dominant Tech Platforms From Antitrust Scrutiny?" *Forbes*, 18 July. https://www.forbes.com/sites/washingtonbytes/2018/07/18/antitrust-enforcement-of-dominant-tech-platforms-in-the-post-american-express-world/#47fc71992f76

Wexler, C. (2015). "Bring Back the Office of Technology Assessment". *New York Times*, 28 May. https://www.nytimes.com/roomfordebate/2015/05/28/scientists-curbing-the-ethical-use-of-science/bring-back-the-office-of-technology-assessment

REGULATING AIRBNB IN THE EU AND US: AN EMPIRICAL STUDY

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INTRODUCTION

ONLINE PLATFORMS HAVE become key players not only in our virtual activities, but in the physical world as well. From the economy to the state of democracy, the role of platforms has significantly increased in the recent years. Therefore, the functioning and impact of platforms should be carefully examined in the context of different social challenges and economic activities.

Platforms amplify practices that previously could not reach a larger scale. A good example is home-sharing that existed in previous decades as well, although remained a niche activity. This has dramatically changed with the emergence of such platforms as Couchsurfing or Airbnb. What began as a mainly alternative way of travelling, has become a major trend in the tourism sector.

Airbnb and similar platforms have certainly benefited travellers with a wider variety of choice and often lower prices. In the case of the hotel industry, economic studies show a rather negative impact.[1] However,

1 E.g. Zervas et al., (2017).

there are additional effects of Airbnb on cities, making the overall economic impact difficult to assess.

While home-sharing is usually associated with peer-to-peer and non-professional services, Airbnb has become increasingly professional. Businesses and investors have acquired a growing share of the residential space and transformed it into accommodation for tourists. Such process contributes to the rising rental prices for local residents, which has been already a problem in major cities prior to Airbnb. Besides contributing to the gentrification of attractive city areas, local residents often face other negative externalities, e.g. more tourists in city centres or noisy guests in their surroundings.

These negative effects have led to a wide discussion on regulating Airbnb. As in the case of other online platforms, two main narratives have been dominating the debate. The first line of argument emphasises that regulations are always behind technological advancements, and policy should not hinder innovative activities. The other perspective focuses on the negative effects and unfair competitive advantage over traditional businesses. As an example, while traditional hotels need special permits to increase capacity and build new hotels, Airbnb can expand based on existing flats in the vicinity of tourist attractions. There are often also significant differences in taxation and other requirements, e.g. fire regulations.

As Airbnb has been quickly expanding, these negative effects have become visible for local residents and city administrations. Instead of a complete liberalisation or ban on home-sharing, many cities have adopted more nuanced regulations, recognising the difference between casual home-sharing and the permanent provision of business services. Therefore, cities usually aim at preserving the positive aspects of home-sharing, like the additional income for residents or the spread of tourism to new, unexplored city areas, while limiting the negative effects of professional business offers.

The aim of this chapter is to examine the evolution of Airbnb networks in the context of home-sharing regulations in the four greatest Airbnb markets in the US and EU. The cities are: Paris (65,000 listings) London (49,000 listings), New York (47,500 listings) and Los Angeles (39,500 listings). These cities have responded to the challenge of Airbnb in different ways, enabling us to examine the potential impact of regulations on Airbnb characteristics.

Different regulatory approaches

Home-sharing has been at the centre of regulatory battles in major world cities, including the United States, the European Union, and recently Japan and Australia as well. Cities usually differentiate between non-professional and business services. The rental of private or shared rooms in the host's own home is a non-professional service that do not affect the housing market or create too much burden for local residents. On the other hand, when entire homes are permanently offered via Airbnb, tourists take away flats from locals and more negative externalities are created. Cities across the world focus on selected characteristics when designing 'Airbnb laws', including the accommodation type, the number of listings offered by the host or the location of the offer. However, city regulations significantly differ in detail as well as execution.

New York already began to pro-actively regulate home-sharing as early as 2010, when the Multiple Dwelling Law was passed. The law banned the rental of entire apartments in shared buildings for less than 30 days in the absence of the host. On the other hand, the rental of accommodation remained legal, if the host is the permanent resident of the apartment and is present during the stay of guests. The rule was initially not taken seriously by hosts and Airbnb, which led to further restrictions, e.g. a ban on advertising listings that did not follow the regulation.[2] Finally, the city administration passed an additional rule requiring

2 Hempel, (2017).

Airbnb to share data on hosts with the city in July 2018.[3] Having access to data, the city could more efficiently enforce the regulation. However, the bill is currently questioned by Airbnb, filing a lawsuit against the city.[4]

The second largest US market is Los Angeles, where short-term home-sharing is illegal, forcing Airbnb to operate in the grey-zone. The regulation setting the frames for Airbnb has been in the process for years. Currently, the proposal enables the rental of the primary residence of hosts only, with an annual cap of 120 days.[5] Another notable example from the US is Airbnb's home town, San Francisco. San Francisco applied strict rules early on in 2014, limiting entire home rentals in the absence of hosts to 90 days. Moreover, the city required the registration of homes with the city, cracking down illegal listings in 2018. The battle with Airbnb resulted in an almost 50% drop of listings.[6]

The efforts of EU cities are similar to the previous cases. Paris is the city with the highest number of Airbnb listings in the world. Since November 2017, entire apartments can be offered for a maximum of 120 days. Moreover, hosts need to register their apartment with the town hall and display the registration number in the description of offer.[7] Airbnb committed itself to enforce the 120 day cap, but only in the case of four centrally located arrondissements out of 20. Following the difficulties in enforcing the regulation in the majority of Paris, the city administration filed a lawsuit against Airbnb in April 2018.[8]

In London, the regulatory solutions are similar to the ones in Paris. While short-term rental has been illegal in Greater London, the city administration introduced the "Deregulation Act" in May 2015, allowing short-term accommodation rental for a maximum of 90 days per annum. Since January 2017, Airbnb automatically disables the offer after

3 Coldewey (2018).
4 Ghaffary (2018).
5 Reyes (2018).
6 Said (2018).
7 Griswold (2017).
8 France24 (2018).

reaching the limit (similarly to central Paris). However, hosts are reportedly bypassing the rule by re-registering the listing.[9] Other major EU cities with active Airbnb regulation include Berlin and Amsterdam. Berlin requires a permit if the host wants to rent more than 50% of the home. Amsterdam, similarly to London and Paris, limits the rental of entire homes to 120 days. Moreover, Amsterdam managed to commit Airbnb for sharing data with the city administration.[10]

To conclude, regulation limiting the short-term rental of entire homes is becoming standard in major touristic cities. However, cities have been struggling with enforcing these rules. Potential tools for higher efficiency include the access to Airbnb data, or the requirement towards hosts to register at the city administration.

The evolution of Airbnb and different regulations

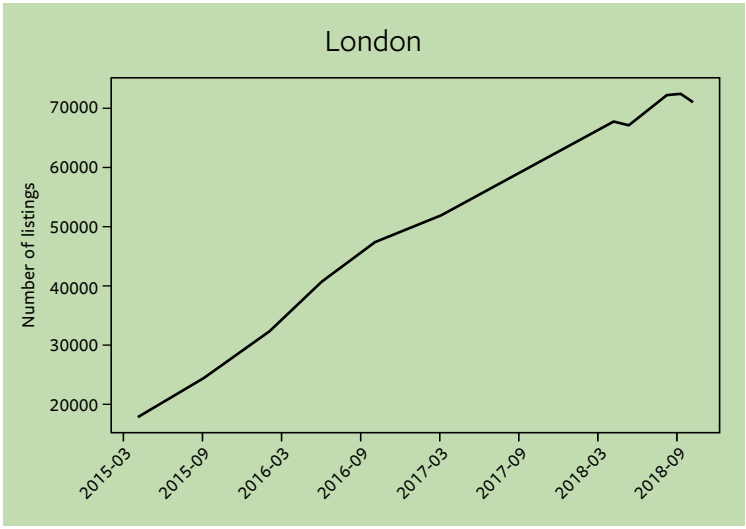
The data used in the empirical analysis is collected by the independent, non-commercial Inside Airbnb project. The data sets are prepared using web-scraping tools and made available at insideairbnb.com. The data sets are presenting a snapshot of Airbnb offers for a given time. As the listing information has been regularly collected since 2015, the evolution of Airbnb networks can be observed over time. The analysis includes the four greatest Airbnb cities in Europe and the US: Paris, London, New York and Los Angeles. For these cities, all available data sets were downloaded from the website. The following attributes are examined:

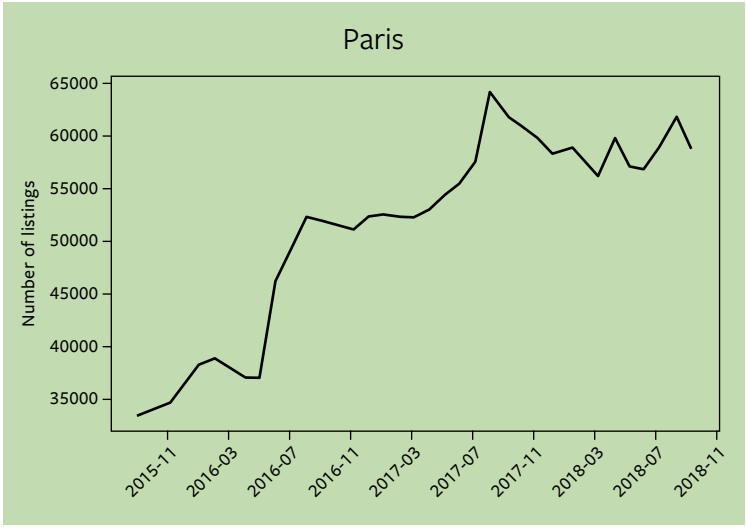
- Listing type
- The number of listings that belong to the host
- Location of the listing (latitude and longitude data)

These characteristics enable us to evaluate the professionalisation of Airbnb networks and potential impact on local residents.

9 Lynn and Allen (2017).
10 Lomas (2018).

Figure 1a–d, next page shows the number of Airbnb listings, revealing that the number of Airbnb listings has been strongly rising in the analysed time period. The size of Airbnb has at least doubled in all cities, while the greatest increase was in London and Los Angeles, with more than threefold increase. Therefore, cities witnessed an almost steady expansion of Airbnb in the period 2015–2018. Based on the number of listings, a few observations can be made. In Paris, the number of Airbnb offers decreased by around 10 000 offers following the introduction of the Airbnb laws in 2017 (120 day cap and registration). Whether this was a temporary fall or the growth of Airbnb has been stopped, is the tale of the future. On the other hand, the numbers did not change in London, neither following the Deregulation Act in 2015, nor after the automatic enforcement of the rule by Airbnb in 2017. It is important to note that the greater volatility seen in Paris and New York stems to a large extent from the larger number of data points.


London
Number of listings
70000
60000
50000
40000
30000
20000
2015-03
2015-09
2016-03
2016-09
2017-03
2017-09
2018-03
2018-09


Paris
Number of listings
65000
60000
55000
50000
45000
40000
35000
2015-11
2016-03
2016-07
2016-11
2017-03
2017-07
2017-11
2018-03
2018-07
2018-11

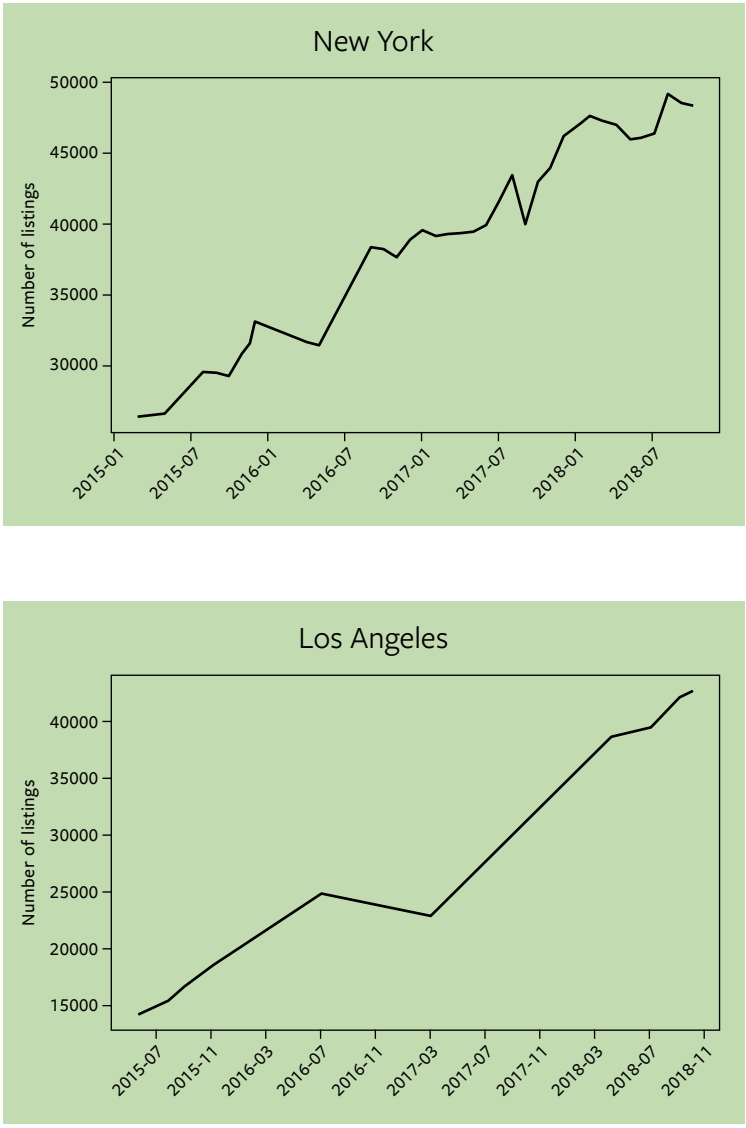
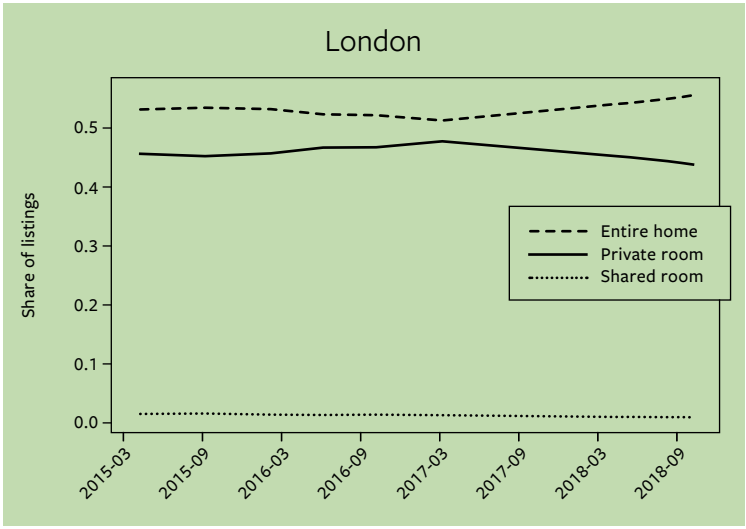


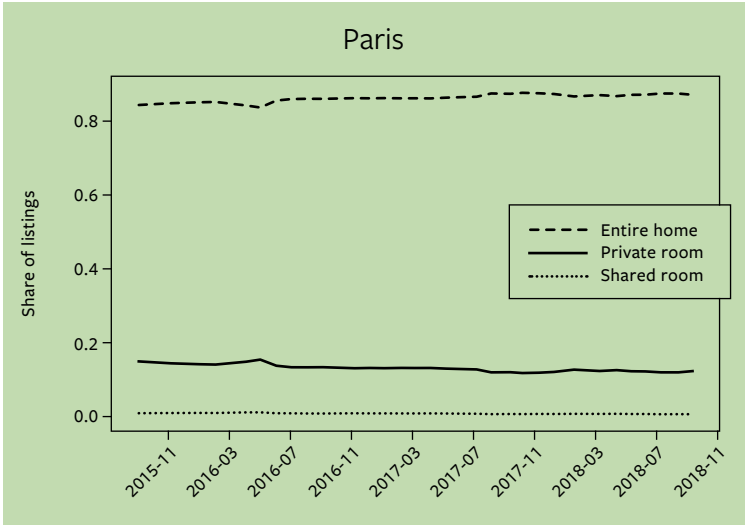
FIGURE 1A–D. Number of Airbnb listings.

SOURCE: Calculations based on Inside Airbnb.

The rental of private and shared rooms is more beneficial for local residents, as it does not decrease the stock of available flats on the long-term rental market.

Figure 2a–d shows the evolution of Airbnb networks by accommodation type. There are differences across cities: entire homes comprise more than 80 % of Airbnb in Paris, around 60 % in LA and NYC, and below 60 % in London. Private rooms form the second greatest group, while shared rooms make only few percent of Airbnb across all cities. Such structure supports previous studies showing that Airbnb is usually used as a substitute for hotel services (e.g. Zervas et al., 2017). Based on the data, the shares of the specific accommodation types are rather stable and do not change significantly over time. The exception is New York, where a steady convergence is observed between entire homes and private rooms in the period 2015–2016. On the other hand, the shares did not change significantly for entire homes in London or Paris, despite the efforts to constrain the rental of entire homes.


London
Share of listings
0.0
0.1
0.2
0.3
0.4
0.5
2015-03
2015-09
2016-03
2016-09
2017-03
2017-09
2018-03
2018-09
Entire home
Private room
Shared room


Paris
Share of listings
0.0
0.2
0.4
0.6
0.8
2015-11
2016-03
2016-07
2016-11
2017-03
2017-07
2017-11
2018-03
2018-07
2018-11
Entire home
Private room
Shared room

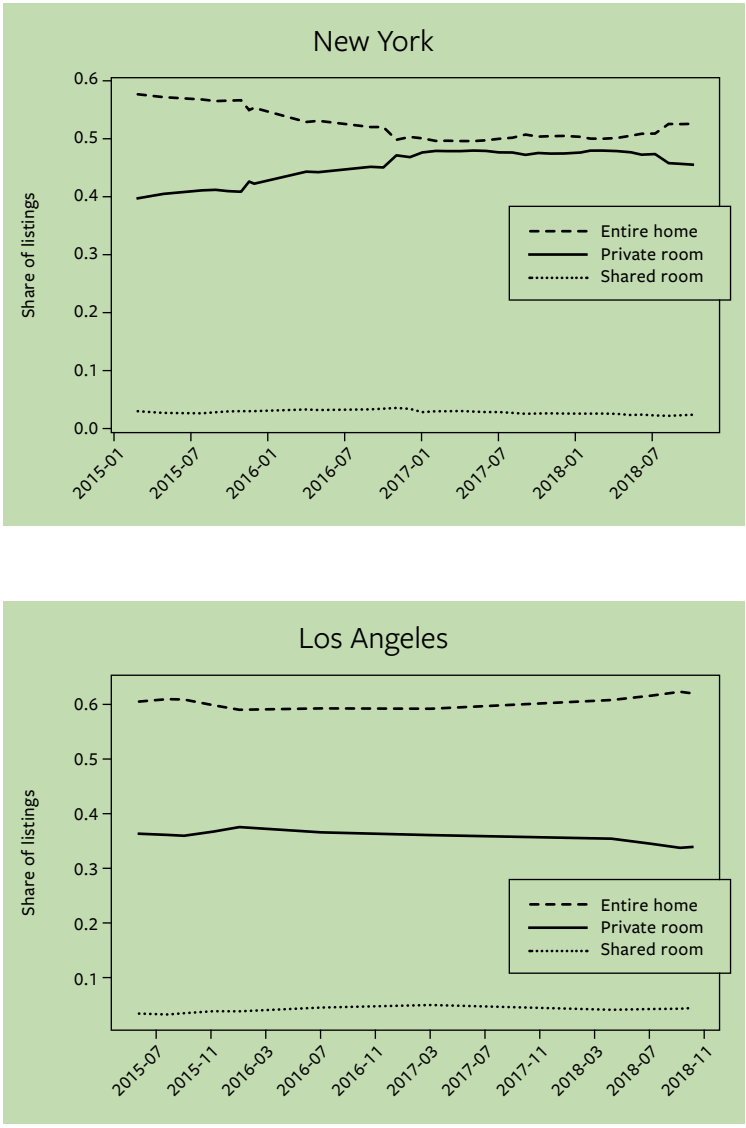


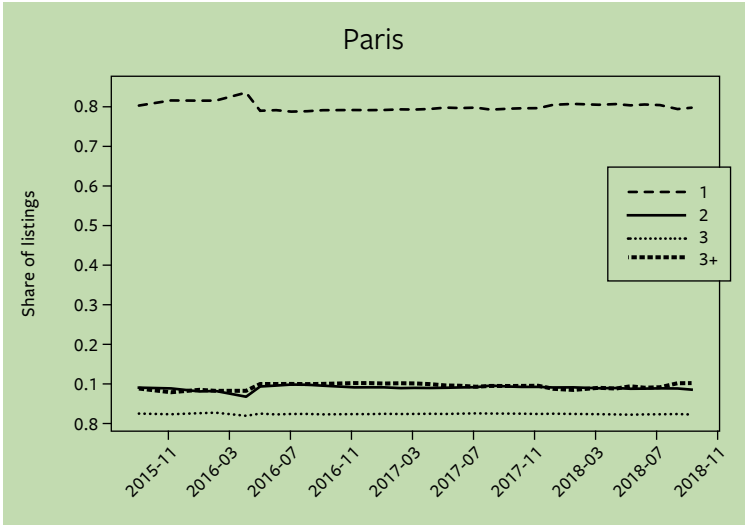
FIGURE 2A–D. The structure of Airbnb by accommodation types.

SOURCE: Calculations based on Inside Airbnb.

Next, the ownership structure of Airbnb is examined. The number of Airbnb listings that belong to a host indicate if the host is a casual, peer-to-peer service provider or rather a professional, who is managing a larger portfolio of property.

Figure 3a–d presents the shares of listings offered by hosts with a given number of Airbnb listings. The share of single listings (offers that belong to hosts with only 1 listing) is highest in Paris (above 80 %), lower in NYC (around 70 %), London (below 60 %) and lowest in LA (below 50 %). The other interesting indicator is the share of listings that belong to hosts with more than 3 listings. Such hosts are professional service providers with a high probability, therefore the share of such offers indicates the presence of businesses. The share is the lowest in Paris and New York (10 %), and higher in London and Los Angeles (nearly 30 %). Moreover, the trend is rising in London and especially in Los Angeles, with declining share of single-listings. The results suggest that the stricter rules in New York and Paris have been more successful in restricting the activities of professional businesses, while the lack of an effective regulatory framework contributed to a more business-oriented Airbnb network in Los Angeles. Moreover, the data supports that in the absence of monitoring tools, it is relatively easy for hosts to run a large number of Airbnb listings in London.


London
Share of listings
0.6
0.5
0.4
0.3
0.2
0.1
2015-03
2015-09
2016-03
2016-09
2017-03
2017-09
2018-03
2018-09
1
2
3
3+


Paris
Share of listings
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.8
2015-11
2016-03
2016-07
2016-11
2017-03
2017-07
2017-11
2018-03
2018-07
2018-11
1
2
3
3+

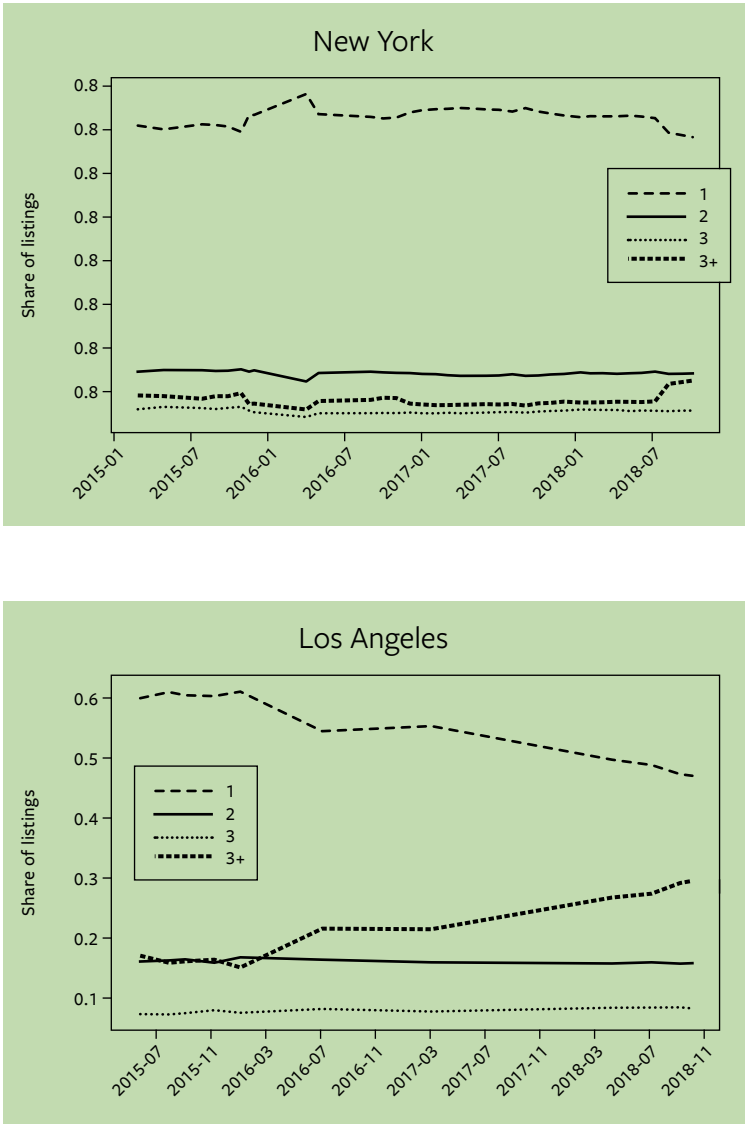


FIGURE 3A–D . The ownership structure of Airbnb.

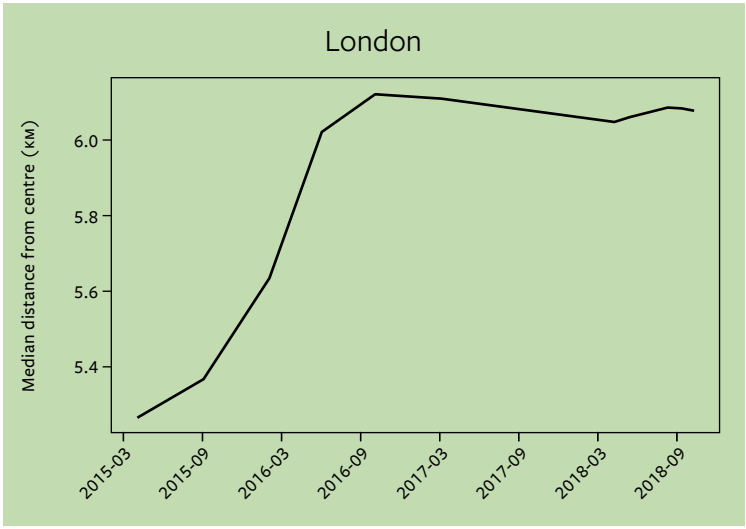
SOURCE: Calculations based on Inside Airbnb.

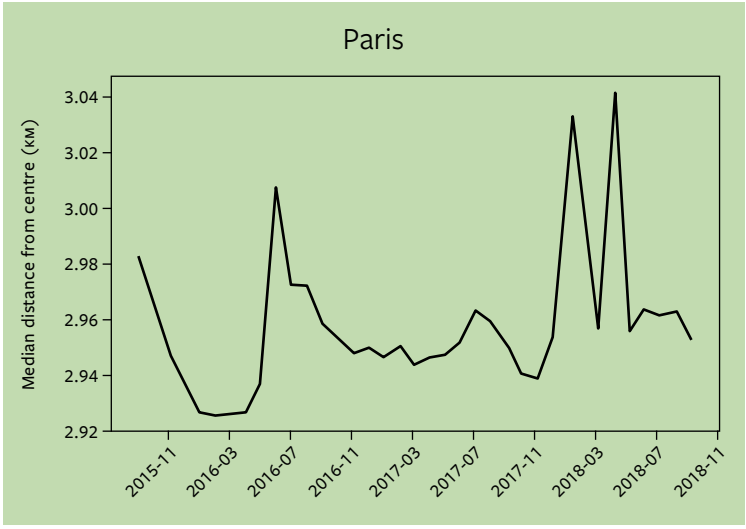
The final analysed attribute is the spatial dispersion of Airbnb networks. Based on the location data of Airbnb listings, the distance from a central attraction is calculated for every Airbnb listing (London: Big Ben, Paris: Louvre, New York: Empire State Building, Los Angeles: Grand Park).

Figure 4a–d presents median distance over time (half of the Airbnb listings is within such distance). This is a simple measure to see if the network is becoming more centralised with time. A more decentralised network is here hypothetically seen as preferable for local residents, so that Airbnb does not burden touristic city centres and helps the spread of tourism to less discovered city areas.

The data shows a clear trend in London and New York, where the median distance has been increasing from five to six kilometres. In Paris, the distance is rather constant (the volatility stems from the small scale of the axis), while the drop of value in 2017 shows a greater centralisation of LA.

To conclude, Airbnb in London and New York expands rather further from the city centre that may be more advantageous for locals. In Paris, the spatial dispersion is constant, probably due to the limited city area. It is important to note the pattern across different attributes in the case of Los Angeles. The relatively quick growth in 2017 has come in pair with the rising share of multi-listings and decreasing distance from the city centre. These developments suggest a growing professionalisation of Airbnb, with a stronger presence of businesses and increasing density in touristic areas. Such process is not observed in the other cities that have already introduced regulatory frameworks for Airbnb.


London
Median distance from centre (KM)
6.0
5.8
5.6
5.4
2015-03
2015-09
2016-03
2016-09
2017-03
2017-09
2018-03
2018-09


Paris
Median distance from centre (KM)
3.04
3.02
3.00
2.98
2.96
2.94
2.92
2015-11
2016-03
2016-07
2016-11
2017-03
2017-07
2017-11
2018-03
2018-07
2018-11

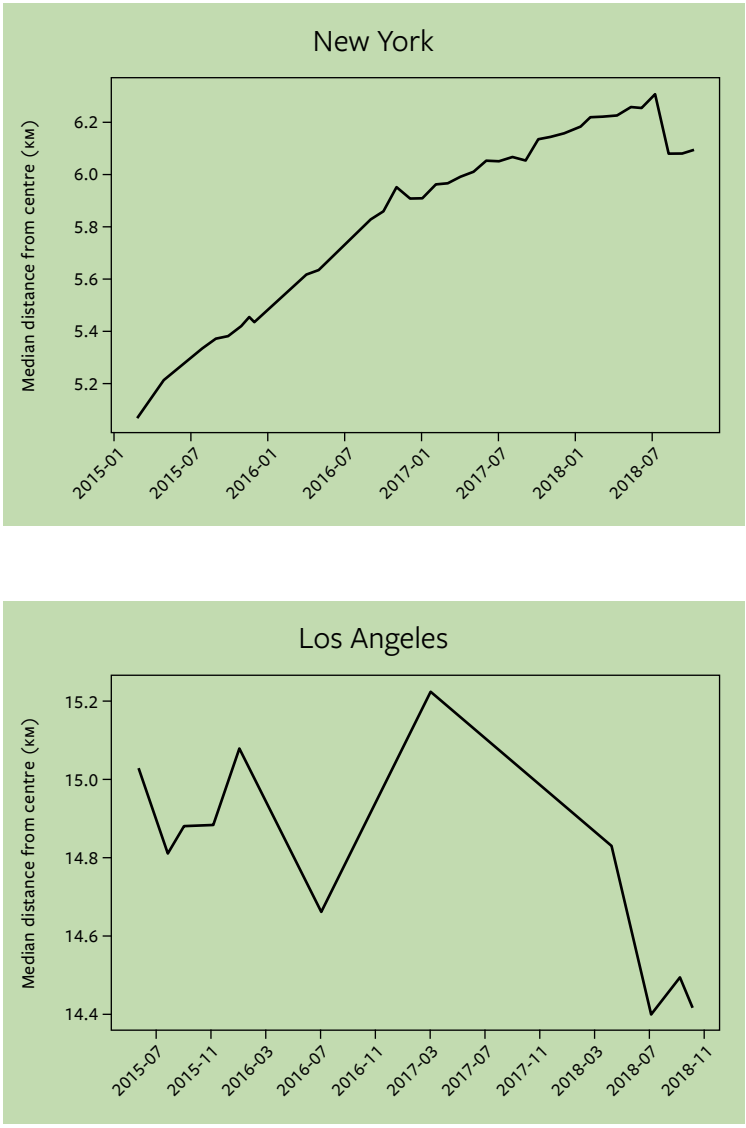


FIGURE 4A–D. The median distance from the city centre.

SOURCE: Calculations based on Inside Airbnb.

Conclusions

The empirical analysis focused on four EU and US cities with the greatest number of Airbnb offers. The selected cities present different policies and regulatory efforts to constrain the negative effects of Airbnb on local residents. In the case of US cities, New York has the longest history of active policy regarding Airbnb, while Los Angeles has not implemented any "Airbnb law" yet. In the EU, both Paris and London capped the maximum number of days for the rental of entire homes. Moreover, Paris requires hosts to register their listing in the city administration as well.

What does the data tell us about the relationship between policy and evolution of Airbnb in the analysed cities?

FIRSTLY, city administrations have an impact on the development of Airbnb networks. Airbnb in New York is characterised by a lower share of entire homes and multi-listings than the remaining cities. The stricter rules implemented in Paris in 2017 also seem to have a significant impact, halting the expansion of the platform. On the other hand, the 'no-regulation' scenario in LA has led to the highest share of professional service providers.

SECONDLY, passing a bill is often not enough to effectively regulate Airbnb, as the platform's lack of transparency is a major hurdle in enforcing rules. It seems that cities that design tools for an easier control of hosts have a better shot at creating limits for the platform. In the case of London and Paris, the latter achieved better results in shaping Airbnb, although both cities limited the rental of entire homes. However, Paris also requires hosts to register at the city hall, which enables a higher degree of control. In the absence of access to Airbnb data, cities can create such tools for an easier verification if an offer is compliant with regulation.

THIRDLY, the 'no-regulation' scenario does not lead to an optimal outcome, seen from the perspective of a non-professionalised sharing economy.

The case of Los Angeles shows that without means of controlling home-sharing, Airbnb becomes more business-oriented and professional. Moreover, cities that introduced strict regulation (New York and Paris) did not resign from the benefits of non-professional home-sharing.

The regulatory battle between Airbnb and cities will certainly continue in the examined cities, and will also spread to other locations with housing problems.

REFERENCES

Airbnb (2018), *Responsible hosting in the United Kingdom*, available at: https://www.airbnb.com/help/article/1379/responsible-hosting-in-the-united-kingdom

Coldewey, D. (2018), *New law forces Airbnb to open its books to New York authorities,* available at: https://techcrunch.com/2018/07/18/new-law-forces-airbnb-open-its-books-to-new-york-authorities/

France24 (2018), *Paris sues Airbnb over unregistered apartment listings*, available at: https://www.france24.com/en/20180412-france-paris-sues-airbnb-over-unregistered-apartment-listings

Ghaffary, S. (2018), *Airbnb is suing New York City so it won't have to share user data about its hosts,* available at: https://www.recode.net/2018/8/24/17779208/airbnb-suing-new-york-city-user-data-hosts-privacy-brian-chesky

Griswold, A. (2018), *Paris is beyond fed up with Airbnb*, Quartz, available at: https://qz.com/1153390/paris-threatens-to-sue-airbnb-over-illegal-apartment-rentals/

Hempel, J. (2018), *Airbnb can't win New York – but it can't quit either*, available at: https://www.wired.com/story/airbnb-cant-win-new-yorkbut-it-cant-quit-either/

Lomas, N. (2018), *Amsterdam to halve Airbnb-style tourist rentals to 30 nights a year per host*, Techcrunch, available at: https://techcrunch.com/2018/01/10/amsterdam-to-halve-airbnb-style-tourist-rentals-to-30-nights-a-year-per-host/

Lynn, G., Allen A. (2018), Airbnb time limits 'ineffective in London' councils say, BBC News, available at: https://www.bbc.com/news/uk-england-london-38924720

Reyes, E.A. (2018), *Los Angeles moves to regulate Airbnb rentals,* Los Angeles Times, available at: http://www.latimes.com/local/lanow/la-me-ln-airbnb-vote-20180502-story.html

Said, C. (2018), *Airbnb listings in San Francisco plunge by half,* San Francisco Chronicle, available at: https://www.sfchronicle.com/business/article/Airbnb-listings-in-San-Francisco-plunge-by-half-12502075.php

Zervas, G., Proserpio, D., & Byers, J. W. (2017). The rise of the sharing economy: Estimating the impact of Airbnb on the hotel industry. *Journal of Marketing Research*, 54(5), 687-705.

A PLATFORM SOCIETY

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COLLOQUIALLY SPEAKING, a **digital platform** generally refers to a relatively new phenomenon, i.e., commercial, data-driven actors whose business idea is to connect buyers and sellers using Internet technology,[1] and to continuously keep a log of the resulting data. This process has been revolutionised partly through mobile Internet technology which allows geographic position and other sensory data to be used commercially, and partly through the emergence of an Internet infrastructure that enables companies to store the identities of individuals and keep logs of their behavioural data. The term "platform" originates from the literature on technology e.g. where it has been used in connection with operating systems, but has, in recent years, morphed into a synonym for all kinds of data-based services. It is important to analyse and survey the power structure that this leads to, as well as the societal effects of a few platform-based corporations (Google, Apple, Facebook, Amazon, Microsoft) that have gained enormous global influence – in the present report, we refer to these as mega-platforms. Smaller, newer platform-based companies occasionally try to compete with them while often being dependent on them, such as when apps developed by smaller platform-based companies must be approved by Apple's App Store or Google Play in order to work at all.[2] This geopolitical arrangement is a key issue which entails a need to understand the significance of the North American origins of the largest platform-based corporations in which American politics and regulations have an impact on countries than the US, including EU member states, and where recent EU regulations – primarily competition law, the Data Protection Regulation (GDPR) and most recently the Copyright Directive – have led to extensive debate on the matter. Similarly, it is important to observe digitisation developments in China and the specific characteristics of the

1 Seen from a media economics perspective, social media sites such as Facebook act as brokers between media users and advertising revenue that finance platforms; in fact, Facebook's entire business model is fundamentally based in said brokering. If you apply the platform concept to smaller, less commercial services such as online providers of civil-service mail (in Sweden, *Kivra* or *Mina meddelanden*), then these too can also be seen as "marketplaces" or matchmakers with the reservation that the "profits" in these cases are more related to organisational rationalization rather than conventional understandings of revenue.

2 cf. Andersson Schwarz (2017), van Dijck et al. (2018).

Chinese platform-based society, with its authoritarian governmental intervention, the world's largest domestic market and rapidly growing Internet giants such as Baidu, Alibaba and Tencent.

When sectors of society and industries are increasingly becoming dominated by platform-based actors, what are the ensuing social effects? The following phrase, originally coined by Tom Goodwin,[3] has by now become worn out: *Uber, the world's largest taxi company, owns no vehicles. Facebook, the world's most popular media owner, creates no content. Alibaba, the most valuable retailer, has no inventory. And Airbnb, the world's largest accommodation provider, owns no real estate.* To be sure, these ways of running companies and organising work and capital investments are all new; but with regards to the preservation of social institutions, the following questions are important: Does this **platformisation** in effect constitute a template for technocratic control and administration of society? And what are its effects? They seem to be far-reaching, but difficult to predict. And, in that case, how are these effects manifested? Who actually benefits from the new modes and systems of control that these platforms represent? New innovators and entrepreneurs (who see possibilities in developing unexpected, leading platforms), leading global Internet corporations (that dominate markets in several areas), users (who benefit from dramatic increases in efficiency and available products), or the authorities (which, in theory, now have access to perfect surveillance and formalisation systems)? These are all important questions – and they beg some perhaps even more urgent questions: Which groups become disadvantaged, and how? Does the market dominance of platform actors have an unhealthy impact on competition and innovation? Are our national authorities, unions and trade organizations being deprived of influence as platform operators transcend national borders and reorganise society? If the financial value of data-driven platforms is largely based on collecting and storing personal data, does this mean that they in actual fact have created a "surveillance economy", as some critics argue? What about transparency? Has there been an increase in

3 Goodwin (2015).

transparency as a result of the users' options to manage their own settings on websites or has it decreased as a result of an opaque corporate culture in which the platform operators only make public such information as serves them? [4]

Recently, in public discussions in both the USA and Europe, focus has increasingly been directed to platform corporations in general and mega-platform corporations in particular. This is no surprise given that the issues concerning this technological upheaval that is being driven by these corporations have also emerged as some of our era's most important social issues: automatization, inequality, trust, privacy, and security. The platform giants have absolutely vital roles in all these areas and are often portrayed as "bad guys," not only by left-wing and right-wing populists, but also by a growing number of liberal opinion leaders, who view monopolistic tendencies as deeply troubling. Many people oppose a "Big Tech" industry that employs cross-subsidization and predatory pricing by way of covert synergistic effects; they hamper competition and innovation, they argue, as well as the well-being of citizens and fair and equal trade. However, others welcome the rationalization effects and "seamlessness" that emerges when these actors occupy many different positions in market ecologies, and when common standards and currencies benefit transaction opportunities.[5] This means that there is disagreement on how to formulate relevant regulation, whether it should be based in compulsory legislation and governmental intervention by providing incentives for commercial third-party actors, or by the platform giants practising various forms of self-regulation – or even, perhaps, using new, unproven methods.

What is a platform, and what do we mean by the "Platform Society"?

Digitisation is a phenomenon that is fundamentally revolutionising the world, and is expected to continue to have a powerful structural impact on

4 These questions have been problematized by, among others, media researcher and Professor of Law, Frank Pasquale (2015).

5 Pasquale (2018), working in an American context, has identified the former group as "Jeffersonians" and the latter as "Hamiltonians".

all aspects of society. Naturally, such a revolution has the capacity to provide many fantastic opportunities for societal progress. At the same time, it creates great uncertainty, since many of the changes that are occurring today have effects that are difficult to gain a comprehensive understanding of. Additionally, in some cases, there is an apparent lack of consensus on some fundamental concepts, such as the concept of *platforms*. Briefly put, we argue that a digital platform is a software-based, centrally controlled space, with a considerable degree of capacities for automation, in which various third-party actors can meet and conduct market exchanges.

There is much talk about the so-called *sharing economy*. The generally accepted, and optimistic perspective of this phenomenon, is that digital platforms should be capable of enabling a more efficient use of available resources by allowing actors to share the use, or allocation, of them in a manner that is flexible and saves time and space. With regards to Sweden, for example, a recent report states that:

> **BY USING INTERMEDIARY,** digital platforms to distribute resources in the form of capital investment, manpower and information, the sharing economy has paved the way for new patterns of consumption and production. Often, the purpose is to reduce environmentally unsustainable consumer behaviours. Many transactions communicated via platforms are only possible due to systems and structures that create trust between suppliers and customers – conditions that allow more decentralised structures to replace traditional ones in a number of areas. With regards to the labour market, this means that jobs can be mediated between individuals more easily, and involve fewer intermediaries.[6]

But in an era when commercial corporations, whose corporate philosophy is to maximise profits, also own the most successful platforms with regards to exploiting digital resources, the sharing economy concept becomes far too imprecise and uncritical. It would be better to discuss

6 Söderqvist (2016: 4), our translation.

what constitutes the "catalyst and lowest common denominator" of this phenomenon[7] – the actual **intermediary platform** itself. This enables us to continue to address the **platform economy** at a general level, as well as different kinds of **platform-based markets** and even a **platform society.**

The concept of intermediary platforms has existed in the business world and technology sectors for at least a decade, but in recent years it has also emerged in public discussions. A narrow definition of a platform usually refers to a software-based, and sometimes also hardware-based, digital infrastructure which is intended to allow users either to run computer programs on it (i.e., run applications on it or retrieve data from it), or to apply human behavioural patterns to it (behavioural patterns that, like computer programs, are clearly delimited, formalised and based on the design of the platform). The aforementioned report claims that platform solutions will allow methods that are conceptually simple but in many respects consist of new ways of mediating and organising, for example, labour:

> **THE INTERMEDIARY PLATFORM** can be assumed to have great technological potential, but perhaps even greater organisational, innovative potential. This potential is based on the fact that platforms are used to reduce **transaction costs** in various markets, which means that costs arising from mediating and conducting transactions between two parties can be reduced. Often, this is carried out by refining the roles of contractors [or suppliers] and the marketplace, but can also entail making procedures and conditions standardised in order to simplify matters for suppliers and customers when carrying out a transaction. In addition to the significant environmental rationalization benefits, they also have great potential to increase productivity.[8]

To begin with, we need to consider the important, fundamental difference between **proprietary** and **open** software. Proprietary systems are private property and/or are designed for a specific supplier, in contrast

7 Ibid, p. 5.
8 Ibid, p. 5., emphasis added.

with open source code, open contents or open technological standards. The kinds of digital platforms we focus on consist almost solely of proprietary systems, and these are almost always protected by intellectual property restrictions (copyrights and patents) which we all encounter when we accept the platform corporations' terms and conditions of use.

The definition of digital platforms by which we take our starting point refers primarily to **proprietary platforms developed for individual users,** but it also covers **operating systems** and **business-to-business systems** (B2B). Many contemporary platforms are hybrids and can be difficult to clearly define as belonging to either category. Apple's App Store is in a sense a B2B platform since it allows companies to develop and adapt apps according to the terms and conditions of Apple's digital store space, but it also targets consumers; after all, they are the ones who log on and download individual apps to use on their connected appliances. Moreover, the App Store, in common with iTunes, is also a core component of Apple's operating system in terms of integration between the apps and the software structure of the app.

A fundamental aspect of digital platforms lies precisely in the characteristic nature of the process of producing data – i.e., **datafication** – from the interactions that take place on the platform.[9] Events that previously were conducted interpersonally become **quantifiable artefacts** that are analysed, managed, traded, and used as means for management and trade in the digital economy. Interpersonal interactions that used to be transient and sometimes allowed for a high degree of ambiguity are remoulded to leave traces that are permanent, traceable and, by all appearances, unequivocal. What used to be highly informal exchanges become significantly more formalised. Exchanges that take place via digital platforms are rarely as non-mediated or informal as non-digital exchanges; in fact, exchanges that are mediated via digital platforms are formulated in accordance with technically unrelenting rule-systems, since binary technology by definition sets limits for what is possible to

9 See, e.g. Kitchin (2014) and Mayer-Schönberger & Cukier (2013).

do. This is relevant in cases where software programming expresses normative stances that the user is obliged to comply with, and is sometimes expressed as "code as law".[10] Take, for example, second-hand trading which, when negotiated using platforms like Ebay, Facebook, Gumtree, or Swedish platforms like Blocket, become highly formalised compared to earlier methods of similar trading. While simplifying conventional, informal, small-scale market trading (car boot sales, flea markets etc.) digital services that mediate transactions, such as the Swedish payments service Swish, simultaneously render these transactions quantifiable, traceable and formalised.

It is important to keep in mind that platforms are, to a large degree, subject to **centralised control** – in contrast with digital standards and protocols which are often radically decentralised and are based solely on voluntary adaption. Therefore, we exclude standards (e.g., file formats such as HTML, PDF or hardware standards such as USB) and protocols (e.g., Internet communication protocols such as TCP/IP, SLL, BitTorrent). Such centralized control is of interest not least in relation to normativity and the values that regulate the use of the platforms.[11] For example, sometimes social media platforms such as Facebook are criticised for being all too influenced by North American culture and values in which the platforms are steeped, as platform usage develops into local and social infrastructures for millions of users around the world.

Seen from a classical liberal perspective, another tendency can be observed in services that provide access to **large-scale instrumental user exchanges**. There is a clear risk of so-called "absentee ownership" in which social and ethical aspects of interpersonal interactions are weakened or ignored when transactions are mediated at a distance

10 This argument and terminology has primarily been developed by American Professor of Law and Creative Commons founder Lawrence Lessig (2006). Cf. Larsson (2013) for a socio-legal perspective on this.

11 Caplan & boyd (2018) view platforms as administrative mechanisms which reassemble relations between organisations and individuals. Users benefit from reliability and efficiency, but pay for this by way of increasing homogenization and adaption.

by large-scale, automatized and centralised mediators.[12] Small-scale exchanges are often characterised by moral contracts where the actors seldom have any incentive to trick each other since everyone is dependent on maintaining a good reputation. However, dramatic changes to the economic infrastructure can create crises in these moral contracts and be detrimental to the legitimacy of ongoing communicative and financial exchanges.[13] Perhaps this is exactly what we see happening right now: not only in the economic sphere,[14] but also in political discussions where platform infrastructures seem to give malicious actors a voice, thus enabling them to grow rapidly.

Therefore, it is important to study **the type of business model** on which a platform's growth or administration is based, and to what extent a specific, digital platform is considered **commercial**. Collecting and using large quantities of personal data, often gathered through free services, is generally seen as being at the core of the digital economy and the fundamental base for the benefits and added value that individualised services give to consumers in terms of matching services and having relevance to individuals. The collection of demographic data, Internet behaviours, networks of contacts, consumer patterns etc. therefore often represent the financial value that the platform, by way of extension, provides – via data trading, the production of consumer profiles, targeted advertising, etc. With regards to transparency, the growth of large-scale consumer profilers, so-called **data brokers**, present a great challenge to consumers

12 Eckhardt and Bardhi (2015), Jenkins et al. (2013: 52-53), Pasquale (2018).

13 Andersson Schwarz (2016: 147–148).

14 To adopt a critical stance toward Uber and Amazon, these companies' business models can be seen as a form of predatory pricing in relation to other competitors by allowing finance capital to cover losses and lower the production costs of these platform actors – particularly wage costs. Additionally, the American Supreme Court recently granted credit card companies *carte blanche* to implement a business model based on high fees with rewards (bonus points, special offers, etc.) to their users, while consumers that do not use credit cards are forced to pay higher consumer prices caused by these kinds of fees, but without receiving the benefits. Both of these business models can be seen as different ways of subsidising wealthy consumers; in the first case at the expense of producers (the workers who make the product) and in the second case at the expense of the extraneous community of consumers (those without credit cards) who bear the brunt for the externalised costs (cf. Turow 2006). See Andersson Schwarz (this volume) for further discussion.

– partly because the data-driven markets are so complex that they have become highly opaque, and partly because these institutions are rarely sufficiently overseeable, transparent and open about the data they collect or how they use it.[15] For those who are not aware of this, it became obvious during early 2018, when the British consulting firm Cambridge Analytica was found to have collected enormous amounts of data on Facebook users – this data was used, among other things, to tailor information pertaining to the Brexit vote, as well as regards the American presidential election of 2016. The significance of the value that personal data represents is discussed and sometimes problematized in terms of said personal data being exploited as currency for services which are otherwise seen as free services.[16] Digital media researchers have voiced criticism about how business models such as Youtube's may prioritize radical, click-baiting videos, thereby contributing to a form of sensationalism,[17] as well as the fact that Facebook's business model and lack of transparency in purchased targeted advertising involving so-called dark posts probably contributed to misleading voters in the USA presidential election of 2016.[18]

An additional aspect worth considering with regards to the development of platform solutions is when phenomena that were previously **digitalised to a small extent** (e.g., taxi rides, home deliveries, residential rental properties, sales of second-hand goods between private persons) are **increasingly being digitally mediated**. This is sometimes described in terms of a trend[19] with reference to cases such as Amazon's acquisition of the Whole Foods supermarket chain, various actors developing drone deliveries, etc. Digital platforms automatize market exchanges and mediate social behaviour; but, when relations are mediated via digital platforms, they are forced to comply with a software-based template and will, in addition, leave traceable data.

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15 Cf. Larsson (2018 and 2017).
16 For a consumer protection perspective, please see Larsson (2018).
17 Gillespie (2018b).
18 Vaidhyanathan (2017). We should point out that since 2018, Facebook has begun to implement several changes with regards to searchability and other aspects in order to increase transparency in advertisement purchases.
19 For example, please see Dolata (2017).

IN SUM, we can establish a schematic of important characteristics that should be emphasized in the context of digital platforms. In addition to connecting third-party actors within a comprehensive, interactive digital space, digital platforms are also:

1. Software-based
2. Connected to the Internet
3. Datafied/data-driven
4. Automated (employing algorithmic categorization of mediation/distribution)
5. Scalable
6. Proprietary (often commercial, i.e., based in an underlying business model)
7. Centralized

What, then, is *not* a platform? A platform is not just any old software product. The concept is sometimes incorrectly used to describe integrated bundles of software products which purpose is to provide vertically integrated services or products. This definition ignores the financial aspect mentioned above, i.e., connecting different markets, as well as the technological aspect, i.e., that the system allows third-party actors to develop new functions based on the platform. Web shops run by the owners who sell products from their own inventory therefore do not constitute platforms. With regards to Amazon, we note that this company actually began as a linear web shop and that their original services could hardly be described as a platform. However, Amazon Marketplace, which allows third-party vendors to market their products via Amazon's digital trading site in exchange for a fee is, in fact, a platform actor; and the same applies to Fulfilment By Amazon, where third-party vendors can rent access to Amazon's inventory and distribution infrastructure; as well as to Amazon Web Services which allows Internet users to rent space on Amazon's extensive, global server infrastructure.

Whether Netflix constitutes a platform or not is debatable. In a strictly technological sense, some researchers argue that so-called media-on-demand, or "over-the-top media services" (OTT) – i.e., services that overlay the fundamental infrastructure of the Internet – are primarily linear and should not necessarily be seen as platforms since the users' possibilities of interacting or developing new third-party services on top of such services are limited.[20] In financial terms, however, services such as Netflix and Spotify should be seen as multi-sided markets that are of great analytical interest in relation to the markets they operate within, not least with regards to the tension between regulation, innovation and legitimacy.[21]

As has been argued by Tarleton Gillespie,[22] the **platform metaphor** is, in many ways, misleading. It risks making things look more orderly and stable than they actually are, and it may deceive people into believing that it refers to equal, fair, and undifferentiated spaces for market exchanges when, in actual fact, they may employ very different terms and conditions for different actors, while the seemingly "flat" technical infrastructure of the platform might be characterised by much more complex arrangements "under the surface" than its users would suspect. In theory, everyone may have the same opportunities to participate, but in practice, some events (and some actors) may benefit from this while others are at a disadvantage. Furthermore: How does the ownership of the space that they all act within affect the socioeconomic arrangements? Whose interests does the owner serve and for what purposes? These are the kinds of knotty questions this report seeks to unravel.

Platforms, politics and policies

Much of what has been said about digital platforms is full of praise since platforms in many salient ways constitute spaces for **technological**

20 Snickars et al. (2018).
21 For example, please see Fleischer & Snickars (2017). For a comparative analysis of entrepreneurship and legitimacy of Spotify, Skype and The Pirate Bay, please see Palmås et al. (2014).
22 Gillespie (2017).

innovation. New actors are able to develop additional services or products based on them, and they also have an aura of modernity and efficiency, since they enable completely new services or simplify a number of services which have previously been hard to simplify. Digital platforms also seem to provide discernible public benefits since they facilitate **new social functions and business opportunities.**[23] From an economics perspective, platforms constitute so-called multi-sided markets in which transactions occur between actors who would otherwise encounter difficulties when identifying or communicating with each other. Platforms hence reduce transaction costs that previously either blocked exchanges completely or made them very costly. At the same time, platforms do not only work as spaces for people to act within, but in fact, they also **shape our actions** based on a number of factors: open and concealed algorithms that are built in to the design of the platforms; the terms of access to the platforms services; the data that is created by the platforms; financial and/or political side-effects as certain platforms become dominant in different sectors of society; etc.

Many digital platforms have immense innovative and generative potential[24] since they have been constructed to **enable new product developments.** The term "platform" indicates a physical property with similar characteristics as those the material world; it refers to a surface that objects can be placed upon – often with less effort than placing it on the platform's underlying base. The open, standardised Internet is an extremely large and general system and constitutes the grounding on which the digital platforms we are discussing here reside. Many digital platforms allow for applications (including other platforms) to be laid on top of the surface, but not all of them. An important difference between the open Internet and the platforms overlaid on top of it is that the latter tend to strengthen their position in comparison

23 An example of this is the investigation *Delningsekonomi på användarnas villkor*, SOU 2017:26, or the EU commission's agenda with regards to the "collaborative" economy, as part of a strategy for an internal market.

24 "Generativity", in the context of digital design, is a term that has primarily been developed by American professor of law and computer expert Jonathan Zittrain (2008: 62).

with smaller actors who are dependent on the platform infrastructure in question. For example, in 2012, Twitter acquired the software client Tweetdeck and effectively started a policy of discouraging third-party Twitter clients, and in 2014, Twitter acquired the social media aggregation company Gnip which sells access to archived tweets. Subsidiaries of Facebook, like Instagram, have restricted access to its application programming interfaces (APIs), making it harder for third-party developers to build new services in conjunction to, or atop of the existing (proprietary) infrastructure. And subsidiaries abound. At the present time, Facebook has acquired over 70 companies, including competitors such as Instagram and WhatsApp, while Google's parent company Alphabet has acquired over 200 companies, including cell phone manufacturer Motorola and GPS service provider Waze. Previous acquisitions of companies such as DoubleClick and YouTube have greatly contributed to Google's current market dominance in the media sector.

The innovative potential of platforms should therefore be considered in the context of other values that are sometimes at odds with sheer economic profit. One good example of this is the kind of standalone software that many of us use, i.e., so-called apps, each of which must be approved by Apple and Google in order to be allowed to run on their operating systems. The mega-platforms' infrastructures for such apps – Google Play and Apple's App Store – function as portals for other actors to introduce their apps. This is an absolutely vital nexus in the digital ecosystem since smaller, newer platforms such as Uber function by way of specialised apps, each of which needs to be approved and allowed to operate by the mega-platforms. Attempts to separate policy from implementation has, in many cases, proven to have problematic consequences. Apple has been criticised for the power it yields over which apps it allows in the App Store since this blocks or obstructs apps produced by competitors, for being inconsistent or simply for making incorrect assessments of various apps.[25] Apple's strict control of their Apple Store does assure a level of quality with regards to the apps that have been approved, not least with

25 This is further elaborated on by, among others, Gillespie (2018a: 84–85).

regards to functionality, but it also means that local or national innovations in the relevant area are dependent on Apple's policies and implementations which are in some cases unpredictable: In June 2016, Apple implemented updates to their App Store user policy which resulted in the temporary suspension of apps that were dependent on the BankID app, a Swedish e-identification service used by millions of Swedes to transfer money, pay bills and access the authorities' e-services. Apps that can only be logged onto via BankID, such as Swish, were deemed to be in violation of Apple's rules, since apps are formally not supposed to be dependent on other apps for their functionality. A wave of concern and indignation swept over the Swedish technology sector, and Apple's head office decided to act quickly by once again allowing an exception for the BankID app.[26] This demonstrates an aspect of dependency on the platform society we live in, with regards to **security, societal provision, and durability:** Sweden's capacity as an IT nation is, in large parts, dependent on American, multinational platform corporations and the sometimes arbitrary ways in with which they implement their own terms and conditions. This can be problematic, both with regards to rule of law aspects as well as geopolitics – not least in the context of platform corporations that are endowed with the powers of infrastructural control and surveillance by non-democratic states, such as China. Nevertheless, in light of the previous example concerning the BankID app, we can however note that nationally-ran services like BankID in many ways provide Swedish organisations with considerably more power to control for their own security, durability, and provision of e-identification (e.g. for logging onto public services) than they would have been able to do in the case of having been wholly dependent on mega-platforms, e.g., resorting to using Facebook as an "identity provider".

It is important to identify digital platforms' comparative degrees of difference in terms of **active and passive mediation** in relation to other

26 Apple's general user terms for actors that wish to market their software via App Store stated that an app may not be dependent on other apps; this theoretically forbids apps such as Swish, which are completely dependent on mobile BankID in order to work. Cf. Andersson Schwarz (2017) for a system theory perspective.

infrastructures. When code becomes law, the system also begins to exert more concrete, "hard" methods of control than would be the case in social negotiations, characterised by "soft" norms. Traditional policies, i.e. legislation, may also prescribe certain behaviours, but when taking place in the physical, analogue world, implementation of said prescribed behaviour occurs in a different, less binary manner. Certainly, analogue spaces and environments have clear boundaries with regards to what can or cannot be done; some boundaries are highly concrete and insurmountable, while others are softer and can be negotiated. These boundaries have different characteristics within different digital and analogue spaces, as well as between different kinds of digital and analogue spaces. With regards to platforms, this kind of control has decidedly proprietary and centralised characteristics. Therefore, not least from a policy perspective, it is important to ask: What should an actor be able to regulate unilaterally? At what point does centralised control become problematic for innovative challenges or other societal values? Should big platform corporations be allowed to act as both judge, jury and executioner? Even if the benefits of rationalisation and increased efficacy are great, are all of them really compatible with liberal and democratic values?

According to platform theory, users comprise "inputs" to the system since their participation creates value for the system as a whole (both for other users as well as for the owner of the digital platform).[27] Digital platforms are, therefore, not just software-based media, they also **control systems** that compel users to adapt their actions to predetermined code-systems and templates, in order to extract economic value from these behaviours. They transform markets (social, often partially informal, networks of exchanges that do not necessarily leave data traces) into substantive, material infrastructure (system-engineered, formalised arrangements where all activities can be logged). The ensuing **data traces** are stored – and they accumulate into an ever-increasing glut of behavioural data.

A precondition for the **scalability** aspect that is often pointed out as an

27 Jullien (2008).

innovative advantage of digital platforms is that sorting and matching becomes **automated**. This means that variations of artificial intelligence (AI) are increasingly becoming the tool for administering platforms, primarily **machine learning** which is used to train algorithms on vast quantities of data. For mega-platforms, this has become a necessity since the user base amounts to hundreds of millions users and countless interactions every day; and for smaller startups, including Swedish ones, this potential scalability is an important component when targeting an international market at a relatively early stage. However, the challenges are great, perhaps particularly in normative contexts where platforms are forced to make decisions on what may or may not be allowed, thereby interacting with both cultural norms and legislation in different jurisdictions. Social media platforms, for example, have developed different mixes of editorial review when moderating their contents: user flagging and automatized facial recognition, video ID systems and language analyses.[28] There is a growing awareness, including within the social sciences, of the risks of autonomous systems reproducing already existing norms, prejudices and discrimination, as well as the challenges of allocating responsibility when outcomes sometimes turn out to be illegitimate, unlawful or offensive.[29]

Additionally, there is a power aspect that becomes salient as individual platforms become immeasurably popular and dominate the market. This becomes even more obvious for individual companies that own platforms which are **key resources in the global ecosystem of products and services**, such as operating systems and platforms that control which applications can be run on mobile and connected appliances. By owning a range of market-dominating platforms, corporations are able to use – and in the worst-case scenario, exploit – the cumulative effects that arise when different platforms are interconnected, or create strategic advantages in other ways – for example, by owning the exclusive rights to user data and behavioural data which, in turn, can be used to

28 For a more in-depth discussion on this, see Gillespie (2018a).
29 See, for example, Caplan et al. (2018), Noble (2018) or Larsson (forthcoming).

develop far more sophisticated functions than less established competitors are capable of. It is not hard to envisage the synergic effects between data on real-time mobility (smartphone geolocations) and granular geodata (maps) when mapping traffic jams and patterns of urban movement (i.e., getting an advantage in potential markets for urban transport and self-driving cars). These exclusionary market advantages are referred to in the tech industry as "moats" and are often viewed positively by the market actors involved. But in cases where leading actors' platforms block other actors from interacting with each other, competition can quickly become distorted. There is a tension between what may be seen as infrastructure – where the importance of net neutrality is often emphasized – and market dominance, that may lead toward different kinds of monopoly.[30]

Synergistic effects that arise when different digital platforms interact with each other and with the surrounding world may be difficult to predict in advance. The number of platform solutions that interact in different ways is constantly increasing, and global giants such as Apple and Alphabet often act as umbrella organisations that each have **their own ecosystems of interacting digital platforms**[31] – e.g., when Internet users browse the Internet on a Chromebook using the Chrome browser, in order to be exposed to advertising via Google's advertising infrastructure, and search for a film using Google's search engine which is then streamed via Google Play and/or Chromecast, while the viewer posts comments about it online, using her Google username.

30 The concept of monopsony is enlightening: If monopoly infers that there is only one seller that many buyers, monotony entails that there is only one buyer of a product but many sellers. This is becoming a serious problem with regards to wage developments in the American labour market; and it is being caused by a high degree of consolidation and concentration of the market economy among a small supply of dominant employers (Naidu et al. 2018). The degree to which platformization contributes to these tendencies, specifically in the labour market, is an open question, but digital market leaders such as Amazon, Spotify and App Store are typical examples of platforms that would be expected to cause monopsonic effects in their respective markets.

31 Andersson Schwarz (2017).

Conclusion

In recent years, the concept of platforms has emerged as one of the most central concepts in the digital economy. Platforms enable a wealth of new, effective ways of organising society – but they are also based on certain intrinsic elements of governance and technocratic control, as one of their key premises is how human actions have to adapt to computer code, and how the proprietary, centralised mode of organisation that platforms give rise to entails a considerable degree of opacity and secrecy. A handful of platform-based companies (Google, Facebook, Apple, Amazon, Microsoft) have gained enormous global influence, who wield power not only over their end-users but also numerous other societal actors, who in different ways either directly rely on, compete with, or have to take into consideration the workings of these platform giants. Many of the smaller platform actors in the digital ecosystem are in many respects depend on these mega-platforms.

We see how algorithm-based systems affect and even configure entire industries. Likewise, technocratic systems affect the minutiae of people's daily lives. Perhaps more importantly, important social relations are transformed due to the sometimes whimsical priorities and unexpected side effects of digital platforms. Moreover, what are the macro economic repercussions when more and more sectors and industries are dominated by platform-based actors? What role does personal data play in the new economy, and are external actors really able to assess the relevance, representativity, and efficacy of said data?

As traditional market actors (that is, those that were born long-before the digital era) embrace *platformisation* as defined above – utilising and analysing consumer data, in order to predict particular outcomes, and automate and outsource decisionmaking – the vital policy challenges are growing in significance. Note, for example, how insurance companies are transitioning into so-called InsurTech and perform granular, individual-level rather than traditional demographic, aggregate-level risk-assessments and, moreover, sometimes trade in personal data on

an increasingly complex market. Platformisation affects banks and financial industries, it affects healthcare and precision medicine, as well as automated decisionmaking in the public sector. It affects property management and real-estate brokerage, an expressly slow-moving sector, as they take on so-called PropTech. Part of this development is fuelled by the megaplatform companies, those that were indeed born online; note, for example, how Google and Amazon engage and experiment with domestic environments, collecting data from households via microphones and speakers, or offer payment solutions in place where banks and credit cards companies might previously have been controlling the monetary flows. And, it is also fuelled by startup ventures, smaller and newer, aiming for pieces of the market where incumbents fail to be relevant.

What then, ultimately, is a "platform society"? Are we seeing the emergence of genuinely new ways of running companies and organising human work and capital, and what does it mean for innovation skills, nationally, regionally, and worldwide? Rates of innovation were, according to some measurements, higher at the beginning of the millennium – when many of the now incumbent platforms were founded, while rates of innovation would arguably be lower given an increasingly consolidated economy dominated by functional gatekeepers, raising barriers of entry for new entrepreneurs. At the same time, the platform business model appears to be a template for technocratic governance and automated administration, enabling the scale, security, and speed required for machine learning and algorithmic behavioural nudging. The effects are likely to be far-reaching, but difficult to comprehensively predict. Is this even the case of new forms of monopoly? What lessons can we learn from contemporary developments in major global power blocks such as the USA, the EU, and China? What does this mean for singular countries' own domestic abilities to make policy and retain sovereignty? What should a desirable regulation of the digital economy look like, and what legal spaces are there for this to be implemented, realistically?

There are so many questions to ask, and a report like this one is barely skimming the surface. Nevertheless, let us conclude this report by looking forward and noting three key areas of policymaking.

THREE KEY ISSUES

1. Law

Does the platform society need new regulation? In such case: what type, and why? If we look at the largely diverging (yet, in some aspects, converging[32]) US and European policy contexts, what should a platform-conscious regulation look like? As digital platforms tend to challenge traditional legal categories, it becomes important to judge large platforms based on the various concrete features they offer and the effects that they evidently generate, and propose regulation based on the distinct (but sometimes partially overlapping) features. For example, Facebook operates as an e-identification, as a matchmaker for small and medium-sized businesses, as well as a disseminator of editorial content: These are all very different functions that each would adhere to partially different legal systems. Moreover, regulation is unavoidably something that needs to anticipate and balance different, sometimes mutually incompatible social values – we therefore suggest that future regulation should not only be feature-specific, but it must also be preceded by comprehensive democratic discussions about what values one wants to determine, why and how. How should we, for example, prioritise security, both on the individual level (personal integrity) and on the national level (general legal compliance as well as geopolitical considerations) versus economic and technical efficacy? Can such considerations differ from case to case, area to area, or are there also some generalizable basic conditions that could be observed?

2. Economy

What is the price of "free"? Many people look no further than the possible inconvenience caused by customised advertising. With customised (personalised) advertising, personal data acts as a kind of currency, but at the same time it is difficult to evaluate what the cost really is for the platform users (i.e. for the ad buyers as well as for the end-users who

32 See Andersson Schwarz' chapter (this report).

are exposed to advertising and whose data is extensively collected).[33] It may be that transparency is inadequate regarding personal data, and how it is used – something that the recent EU data protection law is intended to address. What do the underlying business models look like and are their societal impacts only net positive? What possible negative effects could be observed – negative for whom, and why? How could, and should, these negative effects be remedied? How to combine low barriers to innovation with strong consumer-friendly services (premised on winner-take-all tendencies where one and the same provider offers a superior range of supply) while at the same time setting limits to profit from rent-seeking behaviour, anticompetitive cross-subsidization and predatory pricing?

3. Politics

What ideological approaches should be taken, with regard to the platform society? Despite the apparent efficiency gains that platformisation begets, from a liberal point of view, if the platform society is in effect a control society and in many respects a dream scenario for central planners, as well as a catalyst for monopoly tendencies and rent-seeking behavior, this cannot be compliantly and uncritically accepted. At the same time, it is a society of potentiality, where digital technology makes a lot of exciting, even life-changing developments possible. The devil is in the detail: It very much comes down to the ways in which the infrastructures are designed. Are they making innovation conditional on the goodwill of large actors? Are we already living in far more of a surveillance society than many would be inclined to admit? The balance between those who benefit and those who become disadvantaged or, for that matter, what values are gaining traction at the expense of other values – these are political considerations. What is "right" and "left" in a digital platform context – or is it even possible to make that distinction in a platform society? Who or what institutional actors should look after citizens' rights and obligations in the platform society? Is there even a need for a digital "reclaim" movement?

33 E.g. Larsson (2018).

This ELF report is part of a much larger assignment, conducted throughout the last year, in which we have sought to address the social relevance and importance of digital platforms for the liberal and democratic society – with a series of follow-up questions regarding innovation, policy, and regulation. This has taken shape in the form of an anthology, soon to be published by Swedish think-tank Fores, on the subject (Eds. Jonas Andersson Schwarz and Stefan Larsson). At its core, we argue that we need to get collectively better at understanding what platformisation (as a specific subcategory of digitisation at large) really means for society as a whole. What promises, challenges and threats are there? The publication of this ELF report also happens to coincide with the publication of another book, *The Platform Society: Public Values in a Connective World* (Eds. José van Dijck, Martijn de Waal, and Thomas Poell) which addresses the same topics from a decidedly European perspective. We would like to express our sincere gratitude to professor van Dijck for letting us take part of the manuscript of that volume at such an early stage of this process.

REFERENCES

Andersson Schwarz, J. (2016). "Delningslogik och plattformisering". In: SOU 2016:30, p. 133–163.

Andersson Schwarz, J. (2017). "Platform Logic: An Interdisciplinary Approach to the Platform-Based Economy". *Policy & Internet* 9(4): 374–394.

Caplan, R. & d. boyd (2018). "Isomorphism through algorithms: Institutional dependencies in the case of Facebook". *Big Data & Society*, January–June 2018: 1–12.

Caplan, R., Donovan, J., Hanson, L. & Matthews, J. (2018). *Algorithmic Accountability: A Primer*, NYC: Data & Society.

van Dijck, J.; T. Poell & M. de Waal (2018). *The Platform Society. Public Values in a Connective World*. Oxford University Press.

Dolata, U. (2017). *Apple, Amazon, Google, Facebook, Microsoft: Market concentration-competition-innovation strategies* (No. 2017-01). Stuttgarter Beiträge zur Organisations-und Innovationsforschung, SOI Discussion Paper.

Eckhardt, G.M. & F. Bardhi (2015). "The Sharing Economy Isn't About Sharing at All". *Harvard Business Review*. January 28. https://hbr.org/2015/01/the-sharing-economy-isnt-about-sharing-at-all

Fleischer, R., & Snickars, P. (2017). "Discovering Spotify–A Thematic Introduction". *Culture Unbound: Journal of Current Cultural Research*, 9(2): 130–145.

Gillespie, T. (2017). "The Platform Metaphor, Revisited". Blog post, Alexander von Humboldt Institut für Internet und Gesellschaft, August 24. https://www.hiig.de/en/the-platform-metaphor-revisited/

Gillespie, T. (2018a). *Custodians of the Internet: Platforms, content moderation, and the hidden decisions that shape social media*. Yale University Press.

Gillespie, T. (2018b). "The Logan Paul YouTube controversy and what we should expect from internet platforms. When users abuse a platform, who is responsible?" *Vox*, January 16. https://www.vox.com/the-big-idea/2018/1/12/16881046/logan-paul-youtube-controversy-internet-companies

Goodwin, Tom (2015) "The Battle Is For The Customer Interface". *TechCrunch*. March 3. http://techcrunch.com/2015/03/03/in-the-age-of-disintermediation-the-battle-is-all-for-the-customer-interface/

Jenkins H.; S. Ford & J. Green (2013). *Spreadable Media: Creating Value and Meaning in a Networked Culture*. New York: New York University Press.

Jullien, B. (2008). "Price Skewness and Competition in Multi-Sided Markets." IDEI Working Papers 504, Institut d'E conomie Industrielle (IDEI), Toulouse.

Kitchin, R. (2014). *The Data Revolution. Big data, open data, data infrastructures and their consequences*, SAGE.

Larsson, S. (2018). "Algorithmic Governance and the Need for Consumer Empowerment in Data-driven Markets". *Internet Policy Review* 7(2):1–12.

Larsson, S. (2019). "Artificiell intelligens som normativ samhällsutmaning: partiskhet, ansvar och transparens" in Banakar et al., eds. (2019).

Larsson, S. (2017). "Digital konsumentprofilering. Stora data, prediktiv analys och policyutmaningar". In: Sandberg, A. (Ed.) *Kunskapsöversikter inom det konsumentpolitiska området*, Konsumentverket. 2017:1.

Larsson, S. (2013). "Sociology of Law in a Digital Society – A Tweet from Global Bukowina". *Societas/Communitas* 15(1): 281–295.

Larsson, S. & Ledendal, J. (2017). *Personuppgifter som betalningsmedel*, Karlstad: Konsumentverket. 2017:4.

Lessig, L. (2006). *Code version 2.0*. New York: Basic Books.

Mayer-Schönberger & Cukier (2013). *Big Data – A Revolution That Will Transform How We Live, Work, and Think*, Boston and New York: Eamon Dolan/Houghton Mifflin Harcourt.

Naidu, S.; E.A. Posner; G.E. Weyl (2018). "Antitrust Remedies for Labor Market Power" (February 23, 2018). Harvard Law Review, forthcoming; University of Chicago Coase-Sandor Institute for Law & Economics Research Paper No. 850; U of Chicago, Public Law Working Paper No. 665.

Noble, S. U. (2018). *Algorithms of Oppression: How search engines reinforce racism*. NYU Press.

Palmås, K., J. Andersson Schwarz & S. Larsson (2014). "The Liability of Politicalness: Legitimacy and Legality in Piracy-proximate Entrepreneurship". *International Journal of Entrepreneurship and Small Business*, 22(4): 408-425.

Pasquale, F. (2015). *The Black Box Society. The Secret Algorithms That Control Money and Information*, Harvard University Press.

Pasquale, F. (2018). "Tech Platforms and the Knowledge Problem". *American Affairs*, II:2. https://americanaffairsjournal.org/2018/05/tech-platforms-and-the-knowledge-problem/

SOU 2017:26 (2017). *Delningsekonomi på användarnas villkor*.

Söderqvist, F. (2016). *Plattformsekonomin och den svenska partsmodellen*. Stockholm: Unionen.

Turow, J. (2006). *Niche Envy.* Cambridge, MA: MIT Press.

Vaidhyanathan, S. (2017). "Facebook Wins, Democracy Loses". Op-ed in *The New York Times*, 8 september. https://www.nytimes.com/2017/09/08/opinion/facebook-wins-democracy-loses.html

Zittrain, J. (2008). *The future of the Internet*. London: Allen Lane.

What is a digital platform economy and what are its key policy implications? This report on Developing Platform Economies collects four chapters from researchers in the fields of economy, media and law to define, scrutinize and draw empirically based policy-recommendations for a European context, particularly in comparison to the US.

FORES