# DIGITAL PLATFORMS AND CONCENTRATION

SECOND ANNUAL ANTITRUST AND COMPETITION CONFERENCE
STIGLER CENTER FOR THE STUDY OF THE ECONOMY AND THE STATE
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# EDITOR'S INTRODUCTION

by **Guy Rolnik**

Last year we embarked here on a project to reinvigorate the discussion on the questions of concentration and monopoly in the United States—a discourse that has ebbed in the last decades. For two days scholars from various disciplines debated the question of whether we have enough empirical evidence to support the notion that concentration and monopoly are growing problems.

Given the University of Chicago's unique position and role in economics in general and specifically in antitrust, the discussion here drew considerable interest—enough to get more people engaged in these questions. In the year that has passed since our "Is There a Concentration Problem in America?" conference further studies and research have engaged with questions of concentration and monopoly and potential influence on inequality wages and prices.

Some of last year's participants argued that market power has become a dominant phenomenon in 21st-century capitalism, others focused on the role that horizontal shareholding may have in the debate, and more radical voices called for reviving the political criteria that have at times played a role in antitrust in the past. Others argued that the antitrust toolbox is not the answer for the challenges to democracy posed by concentration of political power among large corporations.

While most scholars and experts agree that the current antitrust toolbox is sufficient to tackle most questions of market power and competition in the traditional product and service industries, this is not the necessarily the case with the digital platform giants that have emerged in the last decade.

Winner-take-all dynamics, network externalities, and two-sided markets where most consumers are on the "free" side, combined with vast accumulation of data among just a few firms, may force us to enlarge or amend the antitrust toolbox—or complement it with other policy levers—if we want to address the significant concerns for the economy, privacy, and democracy.

When we announced in summer 2017 that the second antitrust and concentration conference would focus on the digital platforms, discussion of these questions in the United States was mostly limited to experts. That has changed markedly: just two weeks before the conference we witnessed ten hours of testimony by Facebook CEO Mark Zuckerberg before Congress. While most of the discussion dealt with the recent Cambridge Analytica data breach, the challenges and concerns associated with the dominance of Facebook and the nature of its business model also started to get much attention.

What is probably clear today is that the discussion of the dominance of the digital platforms cannot be limited to users welfare; it must also address the systemic risks and harms that concentration of data can wreak on our democracy.

Political considerations and threats have always loomed behind the antitrust and competition debate, but clearly do even more so with the digital monopolies. It will be hard to separate economic considerations from politics given the outsized influence that some of the digital giants have on the markets for informations, news, and ideas. Of course, the norm that antitrust enforcement should be immune from direct political influence is integral to maintaining its integrity and must be defended. Nevertheless, there is room for discussion whether antitrust should continue to rely on purely economic analysis, or whether it should also take into account the reality in which firms can wield market power to acquire enormous political influence.

The 2nd Annual Stigler Center Antitrust and Concentration Conference again brings together scholars, experts, and practitioners from many disciplines: economics, law, political science, technology, venture capital, psychology, design, and the news media. Their challenges are formidable and it's high time to bring the most rigorous and broad intellectual energy to make sure that the benefits of technology and innovation will not be squandered by concentration of data and political and economic power.

# CHAPTER 1

# eDISTORTIONS: HOW DATA-OPOLIES ARE DISSIPATING THE INTERNET'S POTENTIAL

by **Ariel Ezrachi** and **Maurice E. Stucke**

In its early days, the Internet was idealized as an infrastructure where control is dispersed, and access and use are optimized. The advanced communications network promoted connectivity, information flow, and innovation. Indeed, in many ways, the Internet brought us closer to some economists' notions of perfect competition, with lower prices, greater choice, lower transaction costs, and better-informed market participants.

The overwhelming abundance of information called for efficient filtering systems to match one's desires with the market offerings. After all, the theoretical benefit of endless choice serves for little in the real world. As the economist Herbert Simon eloquently said: "A wealth of information creates a poverty of attention." And so, the online environment has seen the growth of filters, data pools, and analytical tools aimed at optimizing our use of the Internet.

Economies of scale and traditional and data-driven network effects have characterized the evolution of the online system and led to the rise of key online gatekeepers. While such a dynamic is welcomed when it delivers greater efficiencies, innovation, and quality, reality has not always been as impressive. With size and power came the inevitable distortions, as leading platforms and data-opolies take advantage of their privileged position to control the flow of information and data and favor their own related operations.

The once decentralized market still retains its charm, but behind the façade one may identify eDistortions that risk undermining some of the benefits the online world is expected to deliver. To illustrate, consider the following four examples.

The first notable eDistortion concerns *quality degradation*. In a competitive market one would expect providers to compete

***The potential harms from data-opolies can exceed those of earlier monopolies. They can affect not only our wallets but our privacy, autonomy, democracy, and well-being. One should therefore think hard before resorting to the familiar mantra that antitrust can often do more harm than good, as markets do a better job self-correcting.***

on price, service, and quality. And yet, leading platforms that offer users limited outside options or impose high switching costs often engage in degradation of quality. One example, which we explored elsewhere, is degradation of search.[1)] Another one concerns privacy protection, which is increasingly accepted as a potential parameter of non-price competition. Leading platforms can depress privacy protection below competitive levels and collect personal data above competitive levels. In heavily concentrated markets, personal data is concentrated in a few firms. Consumers have limited outside options that offer better privacy protection. The collection of too much personal data can be the equivalent of paying an excessive price, but one may question whether it should be viewed as a reward for winning the competitive process.

A second eDistortion concerns wealth transfers to data-opolies. Increasingly one may identify the use of technology and asymmetric information to exploit consumers. Even when products and services are ostensibly "free," data-opolies can extract significant wealth from users on several levels, by getting personal data without having to pay for the data's fair market value, by getting creative content from users for free, or by using data as means to engage in discriminatory pricing and behavioral discrimination. Data-opolies can also extract wealth from input providers and suppliers upstream. One example is when data-opolies scrape valuable content from photographers, authors, musicians, and other websites and post it on their own website.

A third eDistortion relates to costs on third parties. Those in control of a key platform (such as a mobile phone operating system, leading search engine, or leading online platform) can engage in cheap exclusion. This may include steering users and advertisers to the provider's own products and services to the detriment of rival sellers on its platform (and contrary to consumers' wishes); degrading the independent app's functionality; or reducing traffic to the independent app by making it harder to find on its search engine or app store. Data-opolies can also impose costs on companies seeking to protect our privacy interests. One example, which our book Virtual Competition discusses, was Google kicking the privacy app Disconnect out of its Android app store.

The fourth example concerns the rise of negative innovation. Here data-opolies innovate, but in ways that work against the interests of consumers and markets, such as exploitative techniques to increase users' engagement with their platforms or exclusionary elements. eDistortions may lead to such innovation being more prominent. As the market dynamic changes, one may argue that the level of investment in innovation, which is often the focal point of yearly analysis, should be considered alongside a more refined prism that considers the beneficial or harmful nature of innovation.

## SO WHERE DOES THIS LEAVE US?

First, the super-platforms' control over the interface and users' behavioral biases have drifted us further from an undistorted landscape. The gatekeeper can often influence what one sees and clicks. Second, vertically integrated super-platforms can advance their own interests even when it harms users and competition. And so these eDistortions emerge in a seemingly competitive and neutral environment where users may still believe they are sovereign. The eDistortions are made possible by users' increased reliance on a handful of favorite interfaces and those interfaces' ability to shape the online environment, identify changes in purchasing behavior and changes in taste, and track users' presence online. Third, eDistortions may result in a deadweight welfare loss. Two examples are when privacy degradation increases distrust or when consumers become aware of super-platforms distorting the results to favor their own operation. The abuse of asymmetric information once exposed may lead users to forego transactions they would have made in a competitive market.

From an antitrust enforcement perspective, several challenges emerge: First, should eDistortions be viewed as harmful? Antitrust's price-centric approach has led some to suggest that there is no case for monopolization where services are free. Second, are eDistortions a problem that competition law can remedy? Or should other legal avenues address them? Third, if competition law can target eDistortions, can it do so predictably, quickly, and accurately with its current tools?

These questions go to the heart of antitrust policy, to our understanding of its social aims and its role in society.

Should antitrust law focus on narrow issues (such as the ability to raise price in narrowly defined markets) that make it irrelevant to many activities that impact the citizens' welfare in a digital environment, or should antitrust take into account the political, social, and economic risks from concentrated economic power?

As one approaches these challenges, it is important to note that the potential harms from data-opolies can exceed those of earlier monopolies. They can affect not only our wallets but our privacy, autonomy, democracy, and well-being. One should therefore think hard before resorting to the familiar mantra that antitrust can often do more harm than good, as markets do a better job self-correcting.

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# CHAPTER 2

# A GERMAN APPROACH TO ANTITRUST FOR DIGITAL PLATFORMS

by **Justus Haucap**

The fast growth of digital platforms such as Amazon, Google, Facebook, and company, as well as their high market capitalization, is causing rising concerns for many policymakers around the globe, especially—but not exclusively—in Europe. Given that share prices reflect what markets expect regarding a firm's future profitability, high share prices can also reflect expectations about (future) market power. As platforms are characterized by economies of scale and network effects, expectations or concerns about increasing market concentration are legitimate (see, e.g., Haucap & Heimeshoff 2014).

However, not every platform market is highly concentrated. Counterexamples include online retailers, digital real estate brokers, travel agents, and online dating sites. The presence of indirect network effects is not sufficient for a monopoly or high levels of market concentration. From a theoretical point of view, it is also not clear whether competition between several platforms is necessarily welfare-enhancing when compared to a monopolistic market structure. While, generally speaking, competition between several firms is almost always beneficial in standard markets (as long as the market is not characterized by natural monopoly conditions), this general wisdom does not always hold for multi-sided markets. Even if multiple platforms are not associated with additional fixed costs, the existence of multiple platforms may not be efficient due to the presence of direct and indirect network effects.

As Caillaud and Jullien (2003) and Jullien (2006) have shown, a monopoly platform can be efficient because network effects are maximized when all agents manage to coordinate on a single platform. Strong network effects tend to make monopoly structures efficient, while the risk of platform overload and lower participation rates and users' so-called multi-homing opportunities suggest that competition is also efficient in digital markets. In fact, it is not only the welfare effects of a monopoly

in such markets that are unclear, but also whether the market is quasi-naturally converging towards a monopoly structure.

## FACTORS DETERMINING CONCENTRATION IN PLATFORM MARKETS

Evans and Schmalensee (2008, 2015) have identified five factors that determine the concentration process in two-sided markets, as described in the following table:

| DETERMINANT | EFFECT ON CONCENTRATION |
|---|---|
| Strength of indirect network effects | + |
| Degree of economies of scale | + |
| Capacity constraints | - |
| Differentiation of Platforms | - |
| Multi-homing | - |

*Table 1. Determinants of Concentration on Platform Markets. Source: Evans and Schmalensee (2008, p. 679).*

It is relatively straightforward and immediately plausible that indirect network effects and economies of scale lead to increasing concentration. The strength of these indirect network effects will differ from platform to platform. In general, digital platforms are typically characterized by a cost structure with a relatively high proportion of fixed costs and relatively low variable costs (see, e.g., Jullien 2006). For example, for eBay, Expedia, Booking.com, etc., most of the costs arise for managing the respective databases, while additional transactions within the capacity of the databases usually do not cause additional cost. Increasing returns to scale are therefore typical for digital platforms.

The most important countervailing force is multi-homing opportunities. How easy it is for users to multi-home depends, among other things, on (a) switching costs (if they exist) and (b) the structure and height of platform charges. To switch, for example, from one online travel agency to another is usually associated with relatively low switching costs. Users can also switch away from Google to another search engine without major costs if a switch appears attractive. Similarly, it is typically relatively easy for sellers to open a second, third, or fourth Internet store, especially when compared to opening more brick-and-mortar stores. In contrast, switching costs between social networks are generally higher because of strong direct network effects and the effort needed to coordinate user groups. While for Google no significant direct network effects exist—i.e., it does not *directly* matter how many other people use Google—this is not true for social networks such as Facebook where the number of users is an important determinant.

Another form of switching costs can be found on auction platforms such as eBay, where apart from indirect network effects individual reputations are also highly relevant. As the reputation is built up as a function of the number of transactions already conducted over the platform and is therefore eBay- or platform-specific, changing platforms involves some switching costs if reputations are not portable across platforms.

Another countervailing force is capacity constraints. While for physical platforms such as shopping centers, fairs, and nightclubs, space is physically limited,[1)] this does not hold for digital markets. However, with regard to online markets advertising, space is often restricted since too much advertising can be perceived as a nuisance by users and can therefore decrease the platform's value in the recipients' eyes (Becker and Murphy 1993; Bagwell 2007).

In electronic markets like auction platforms or dating sites capacity limits can also emerge as a result of negative externalities caused by additional users. If additional users lead to a more heterogeneous group search costs may increase. In contrast, the more homogeneous the users are, the higher the value of a given platform can be for the demand side. If for example only certain people visit a particular platform (as some platforms are, for example, mainly visited by women, golf players, academics, etc.), targeted advertising is easier for advertising companies. Also note that some dating sites advertise that they only represent a certain group of clients (for example, only academics). This reduces the search costs for all visitors involved. Additional users would make the group of users more heterogeneous and not necessarily add value as they increase the search cost for other users.

In summary, while there are tendencies that foster concentration in digital markets, there are also countervailing forces. Moreover, one should note that many digital platforms drive competition in their respective product markets. Amazon, eBay, and other online retail platforms have intensified competition in retail markets, Uber and company have injected competition into the taxi cab industry, AirBnB and similar platforms facilitate competition within the short-term accommodation market, and so on. Not surprisingly, quite a few parties that advocate platform regulation also have a vivid interest in limiting competition in the concerned markets.

## ANTITRUST LAWS FOR PLATFORM MARKETS

In response to the growing relevance of digital platforms, Germany—probably as the first jurisdiction—has, in 2017,

introduced a number of additional criteria into its competition law that the German competition authority and the courts now need to consider when assessing market power in platform markets. The newly introduced §18 no. 3a of the Act against Restraints of Competition now requires that, when assessing an undertaking's position in a market, the following five factors need to be also considered for multi-sided markets and networks:

(1) Direct and indirect network effects

(2) The parallel use of several services and users' switching costs

(3) Economies of scale in relation with network effects

(4) Access to data relevant for competition

(5) Competitive forces of innovation

While these five factors certainly help to prevent especially the courts from focusing too narrowly on markets shares and other concentration measures only, it is rather unclear how these factors can be measured in practice. While the ease and practice of multi-homing may be relatively easily measured empirically, the strength of network effects is more difficult to measure, as are the remaining three factors. While competition authorities have so far heavily relied on factors that are reasonably easy to determine (market shares, concentration rates, price-cost margins, profitability measures, patterns of substitution, and so on), thereby economizing on law enforcement costs, the newly introduced factors are more difficult to operationalize. Hence, the additional factors also introduce more leeway for the competition authority as well as greater legal uncertainty for firms.

A second issue addressed in last year's competition policy reform has been a clarification with respect to market definition. The fact that some services are not offered in exchange for money in itself no longer prevents competition authorities from defining a separate market for them. Hence, social networks or Internet search engines may constitute relevant markets not only in advertising, but also for users. Even though this clarification may be helpful for the courts, the practical difficulties in defining markets in the absence of sales and price variations remain. While theoretically an adjusted SSNIP test may be defined (see Filistrucchi 2008; Filistrucchi et al. 2014), it is in practice extremely difficult to measure a percentage decrease in quality or privacy or a percentage increase in data requirements. The practical difficulties in defining markets without sales can be illustrated by the approach the European Commission has taken in the Google shopping case.

## ON THE EUROPEAN COMMISSION'S GOOGLE SHOPPING CASE

The European Commission holds the view that "Google has systematically given prominent placement to its own comparison shopping service" and it has "demoted rival comparison shopping services in its search results." As Google Shopping is much more visible to consumers than typical comparison shopping services, the European Commission is of the view that "Google's practices amount to an abuse of Google's dominant position in general internet search by stifling competition in comparison shopping markets." As will be outlined below, from an empirical perspective it is unclear, however, whether (a) there is a market for general internet search and, if so, who is active in that market and (b) whether Google Shopping is part of a comparison shopping market.

To be more precise, the European Commission assumes that there is a distinct market for comparison shopping services where consumers do not actually shop, but only compare offers. In the Commission's eyes, Google Shopping, foundem, idealo.de, etc., are active in this particular market, while market places such as Amazon and eBay or online retailers such as Zalando are not.

To put it differently, the Commission assumes that most consumers do not choose between, say, Amazon and Google when they want to compare offers for new sports shoes, electronic consumer goods, or other products. In the Commission's view, eBay or Zalando are not relevant alternatives for consumers, either, but only true product comparison sites where consumers cannot shop are in the same market. This assumption is, however, not based on any study or evidence of consumer behavior, but on the mere insight that Google Shopping does not offer products for sale, but only links to other webpages that offer products for sale. This also implies that the market definition would change should Google Shopping introduce one-click shopping, or vertically integrate into retailing products itself, or develop into a marketplace in its own. To ignore Amazon, eBay, Zalando, and the like as competitors for Google Shopping without studying actual consumer behavior is risky, at best. If I ask my students, for example, where they start shopping

***The Commission has decided to take a normative rather than a positive approach to market definition, which leaves for economics the role of identifying effects that remedies may have, at best.***

for products, many start immediately at Amazon and it is not implausible that many other consumers also shop this way. Neglecting true consumer behavior, however, is rather problematic.

In addition, the Commission's analysis also ignores that Google Shopping is very clearly labelled as advertising. Hence, it is questionable whether many consumers expect Google Shopping to be an encompassing comparison shopping site. Moreover, it is even explained that Google is paid for these advertisements, which is by far less clear on other comparison shopping sites. Hence, it is not clear how many consumers really expect a "neutral" listing of Google Shopping results, given that it is labelled as advertising. Put differently, Google Shopping does not portray itself as a neutral metasearch engine, as some competing comparison shopping sites do. Quite possibly advertising platforms (such as Google Shopping) and metasearch engines are regarded as substitutes by consumers, but it still remains speculative without any evidence on consumer behavior.

Similarly, the Commission simply assumes that a market for general search exists. Whether such a distinct product market exists is rather unclear, however. Consumers typically have specific rather than general questions. They look for information on books, people, the weather, sports results, hotels, flights, share prices, restaurants, sports shoes, and so on. Most of this information can be searched for on Google, but it can also be searched at Amazon (books, sports shoes), LinkedIn and Wikipedia (people), specialized weather and sports sites, Booking (hotels), Yelp and Foursquare (restaurants), and so on. While it is true that many of these sites do not directly provide links to third-party webpages (even though many also do), people typically do not search for links, but for information. For almost every specific question that Internet users have there are more options than searching on Google. Taking books as an example, one may assume that Amazon is the world's leading search engine for books where people want to find new books or information about certain books. Is Amazon, therefore, the dominant book search engine that may not favor its own offers?

Given that Google does not charge users who search and, hence, Google's price (of zero) on this side of its market does not vary, we know close to nothing about potential consumer responses to potential price increases. This also implies that we do not know whether a market for general search in fact exists at all or whether there are many, many markets for specific searches and it just happens that Google is active in all of these markets. Again, completely neglecting consumer behavior does not strengthen the European Commission's case.

The Commission has decided to take a normative rather than a positive approach to market definition, which leaves for economics the role of identifying effects that remedies may have, at best.

## ON THE GERMAN FACEBOOK CASE

Since many platforms do not charge both sides of their market, but only one of them (e.g., advertisers, but not users), new forms of exploitative abuse may (theoretically) emerge, such as demanding "too much data." Interestingly enough, Germany's Federal Cartel Office (FCO) is currently conducting an investigation into Facebook's behavior vis-à-vis its users. More precisely, the FCO is investigating whether Facebook has a dominant position in the market for social networks and whether Facebook's general terms and conditions are inadequate and constitute an exploitative abuse of market power. While the FCO's theory of harm has not been laid out in writing yet and is therefore not entirely clear as to the details, it appears that, as a supposedly dominant player, Facebook has responsibilities that go beyond the responsibilities of non-dominant parties with respect to privacy standards and data usage.

***Quite a few parties that advocate platform regulation also have a vivid interest in limiting competition in the concerned markets.***

Such a requirement, however, may not safeguard but even jeopardize competition in the concerned markets. The reasoning leading to this conclusion can be briefly explained as follows: if one assumes that social network users do not receive disutility from sharing personal data and having data sets combined, collecting and combining data from users can obviously not be an exploitative abuse, as consumers cannot be exploited if they do not mind providing the data that is collected. Put differently, there cannot be any harm inflicted onto users if they do not receive any disutility from having their data combined. On the contrary, as combining data facilitates the development of better matching technologies to rank news and other information to match user interests, the prohibition to do so would lead to a deterioration of the services offered (as the matching technology would deteriorate).

At the same time, Facebook would become less competitive in advertising markets vis-à-vis Google and other market participants. As data is used to develop and offer better services, preventing Facebook from collecting, combining, and using the data is equivalent to requiring Facebook to be less innovative and to offer inferior services—both would harm competition.

In contrast, Facebook users and advertisers tend to benefit from the use and combination of "on-Facebook" and "off-Facebook" data, as the usage and combination of different data sources facilitates the improvement of matching algorithms to rank information and news for users. In addition, it is difficult to conceive how users can be exploited by using their data as their data resources are not depleted when used. Hence, any analogy with data as a form of money or payment is misleading, as monetary resources cannot be used multiple times. Finally, empirical evidence suggests that (most) people do not feel exploited when their data is used. Quite in contrast, people tend to willingly share data in order to obtain benefits such as improved services.

If, however, we assume that sufficiently many consumers do receive disutility from data being combined, requiring Facebook to use or combine less data or only data from certain sources and to offer higher privacy standards than competitors would be equivalent to requesting Facebook by law to offer superior products than rivals (and, in the extreme case, to foreclose the market), which would also harm competition.

Hence, requiring Facebook to use or combine less data or only data from certain sources would stifle competition. Either Facebook would be required to become less innovative and to deteriorate their service (in the likely case that most users do not receive disutility from having data sets combined) or, alternatively, Facebook would be required to outperform its rivals (if most users did receive disutility from having data sets combined).

While privacy issues may need to be newly addressed in digital markets, antitrust laws do not appear to be the most effective instrument for safeguarding privacy.

## DATA PORTABILITY AND DATA ACCESS AS A SALUTARY REMEDY?

A remedy regularly proposed to facilitate competition in digital markets is regulated access to data resources that dominant—or even all—firms use (see, e.g., Argenton & Prüfer 2012). While there are obvious privacy issues, access may be granted to anonymized or pseudonomized data. It is unclear, however, whether access to a dominant firm's anonymized or pseudonomized data can really mitigate major competition problems.

To provide an example, consider the case of Google search where access to Google's historical search and click data has been proposed as a promising remedy. Since Google search is becoming more and more personalized, access to pseudonomized data is of limited usefulness. Google's search results are, among other things, very good because many people also use Google calendar, Gmail, Google Maps, etc. Given that Google can use personal information from my mails, my calendar and so on, it can produce very good, personalized search results. Hence, it is access to very personal, non-anonymous data that is decisive for obtaining ideal search results, while anonymous data is of limited usefulness. Forcing Google or Google users, however, to also provide private data to competitors would conflict with privacy concerns. Similarly, access to anonymized or pseudonomized data from social networks is likely to be of limited usefulness for competitors. Simply assuming that competitors can offer services of equal quality by accessing a dominant's firm data in pseudonomized form may only yield limited insights.

What may be more helpful is empowering users to voluntarily port their data themselves to competing service providers. One should note, however, that difficult questions remain for data that is generated through interaction (as, for example, in social networks) so that individual rights of more than one party are concerned.

## CONCLUSION

The concern that digital platforms may become dominant in certain markets is clearly legitimate. How to react and which remedies to impose is a much more difficult question, though. A number of proposals for fiercer platform regulation would also limit competition in the concerned markets such as retailing, transport, accommodation, etc., and should, accordingly, be digested with caution.

In addition, competition authorities sometimes even over-enforce nondiscrimination rules, as, for example, in most so-called dual pricing cases (see Haucap & Stühmeier 2016), thereby even promoting market concentration.

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# CHAPTER 3

# WHAT MAKES TECH PLATFORMS SO POWERFUL?

by **Lina M. Khan**

A handful of tech platforms mediate a large and growing share of our commerce and communications. Over the last year, the public has come to realize that the power these firms wield may pose significant hazards. Elected leaders ranging from Senator Elizabeth Warren (D-MA) to Senator Ted Cruz (R-TX) have expressed alarm at the level of control that firms like Amazon, Alphabet, and Facebook enjoy. In a recent poll, a majority of Americans expressed concern that the government wouldn't do enough to regulate US tech companies. As the editor of BuzzFeed observed, a "major trend in American politics" is "the palpable, and perhaps permanent, turn against the tech industry," now viewed as "sinister new centers of unaccountable power."

New revelations continue to unveil the degree of power these firms wield and its consequences. The potential effects range from stifling startups and undermining innovation to manipulating the flow of information and enabling foreign interference in our elections. Despite growing recognition of platform power, public conversation about why this power exists and what to do about it is still in its early stages. This essay seeks to help advance that discussion by identifying forms and sources of platform power, explaining how this power is being or could be exploited, and exploring historical analogies and legal hooks that could help us tackle it.

## FORMS AND SOURCES OF PLATFORM POWER AND ITS ABUSES

The markets in which these firms operate and the specific mechanics of their business models somewhat vary. For this reason, more extensive studies of platform power would benefit from being platform-specific. But despite their differences, Amazon, Alphabet, and Facebook share key forms and sources of power.

The first is gatekeeper power. The source of this power is the fact that these companies serve effectively as infrastructure for digital markets. They have captured control over technologies

***By placing a platform in direct competition with the firms using its infrastructure, this form of integration also creates a core conflict of interest, incentivizing a platform to privilege its own goods and services over those offered by third parties.***

that other firms rely on to do business in the online economy. Fifty-five percent of online shopping searches, for example, now begin on Amazon's platform; last year the company enjoyed over 40 percent of online revenue in the United States. Alphabet and Facebook together capture 73 percent of all digital advertising in the country and 83 percent of all growth, while Apple and Alphabet jointly account for 99 percent of the world's smartphone operating systems. For producers, retailers, advertisers, and app developers looking to reach users and consumers, these platforms are vital intermediaries, the railroads of the 21st century.

The degree of market control enjoyed by dominant platforms is protected both by network effects and the self-reinforcing advantages of data, which serve as an entry barrier. Their entrenched positions are reflected partly in their skyrocketing valuations; Wall Street is pricing their stock at multiples that seem to reflect market power. Newcomers that have attempted to compete with a platform in a platform market (like Jet.com) have been acquired by other giants (Walmart).

This means that not only are the platforms vital intermediaries, but—in many instances—they are the only real option. Even when producers, retailers, advertisers, publishers, and app developers manage to find alternate channels, those narrower paths can only really supplement access on the margins. The platforms generate too much business and attract too many eyeballs for firms to bypass them entirely. This renders business users highly dependent on the platforms—a finding confirmed by a recent study undertaken by the European Commission. The EC wrote, "Many of the business users have indicated that they try to avoid any conflict with platforms, fearing a negative impact on their business. This applies especially to conflicts with the largest platforms, as business users indicate that often no viable alternative for these major platforms exists due to their scale, geographic range and the number of (potential) customers active on the platforms."

Platforms can use their gatekeeper power to extort and extract better terms from the users that depend on their infrastructure. For example, Amazon has disabled the "buy-buttons" for book publishers in order to extract better terms; executives have also described how the company tweaks algorithms during negotiations to remind firms of its power to sink their sales. Recently the company has started offloading costs onto suppliers, subsidizing its shipping costs by raising fees for the companies that sell through its platform. Merchants attempting to negotiate with Amazon risk seeing their accounts suspended, and getting kicked off its platform often means not just seeing lower revenue but having to lay off employees. Google and Facebook's ad duopoly, meanwhile, gives them ample power to raise prices. Last quarter Facebook hiked the average price per ad by 43 percent.

Platforms also use their gatekeeper power to entrench their gatekeeper power, limiting the ability of third-party merchants to reach users independently. Amazon, for example, closely monitors communications between third-party Marketplace merchants and consumers, penalizing merchants who direct consumers to their own independent websites or other sales channels. Gatekeeper power now also risks shaping the content and production of news. Dependence on Facebook and Google for traffic has led publishers to package news according to the dictates of the platforms' algorithms. As a bill recently introduced by House Representative David Cicilline stated, "An entity with the power to dictate the terms of distribution of news has the power to dictate the content of news." The head of the Newspaper Association of America noted, "Facebook and Google are our primary regulators."

A second form of power is leveraging. The source of this power is the fact that the platforms not only serve as critical infrastructure, but are also integrated across markets. This enables a platform to leverage its platform dominance to establish a position in a separate or ancillary market. By placing a platform in direct competition with the firms using its infrastructure, this form of integration also creates a core conflict of interest, incentivizing a platform to privilege its own goods and services over those offered by third parties.

Last year the European Commission announced that this form of discrimination violates European competition laws. It fined Google $2.7 billion for "systematically giv[ing] prominent placement to its own comparison shopping service" and "demot[ing] rival comparison shopping services in its search results," leading traffic to third-party websites to plummet. The EU competition authority is also conducting investigations into potentially anticompetitive leveraging tactics Google engaged in through its Android operating system and AdSense. Apple, meanwhile, has previously blocked updates to Spotify from the App Store; Spotify alleges this tactic sought to undermine Spotify as a rival to Apple Music. If gatekeeper power gives platforms the ability to extort, leveraging power gives platforms the incentive to discriminate.

A third form of power is information exploitation. The source of this power is the various forms of data that platforms collect, in multiple markets. Platforms gather enormous amounts of information, ranging from the amount of time you hover your mouse over a particular button and the number of days an item sits in your shopping basket, to every location you've visited with your phone and how you psychologically react to different posts and words.

In some cases, platforms also track user activity on third-party websites and applications. Platforms can use this data in a host of ways, altering what information you see based on your profile. Platforms can also harness this data to engage in first-degree price discrimination, charging each consumer a different price for the same good or service. Uber, for example, has admitted that it engages in personalized price discrimination. The degree to which other platforms are engaging in similar practices has not been publicly documented. Separate from the risks of discrimination, the extent of platforms' data-gathering creates significant privacy threats. Even robust privacy controls would only go so far to protect users, given the security vulnerabilities that inevitably arise when data is concentrated in a single entity.

Platforms also engage in information exploitation against the businesses that use their services to reach markets. Amazon, for example, collects swaths of information on the merchants selling through its Marketplace. It routinely uses this data to inform its own sales and products, exploiting insights generated by third-party retailers and producers to go head-to-head with them, rolling out replica products that it can rank higher in search results or price below-cost. In this way Amazon's platform functions as a petri dish, where independent firms undertake the initial risks of bringing products to market and Amazon gets to reap from their insights, often at their expense. Facebook has similarly developed systematic ability to exploit information. Through acquiring Onavo, a privacy-enhancing technology, Facebook closely tracks which competing applications are diverting attention from Facebook's own app. Using this information, Facebook can either make an aggressive acquisition bid, taming the nascent threat by bringing it in-house, or can introduce an identical app, eating into its business.

The issue here is not that the platforms introduce rival goods—thereby increasing competition—but that their strategies are based on a significant information asymmetry that exists between the platforms and everyone else. The ability to intervene at the very earliest stages of a company's growth means platforms can effectively nip emerging rivals in the bud.

To be sure, platforms exhibit other forms and mechanisms of power. But these three sources—gatekeeper power, leveraging power, and information exploitation power—go far to explain the current dominance these firms enjoy.

## WAYS TO ADDRESS PLATFORM POWER

Breaking down platform power into its specific forms and sources allows us to distill what about platform power, if anything, is actually new. In other words, we can understand which facets of platform power we have grappled with in the past, and which aspects present new issues that require new thinking and/or new policy action.

Two of these forms of power—gatekeeper power and leveraging power—we have tackled in the past. Gatekeeper power can arise any time there is a network monopoly. Indeed, the gatekeeper power of the railroads—and the railroads' abuse of this power—gave rise to the anti-monopoly movement in the late 1800s, ultimately leading to the creation of the Interstate Commerce Commission in 1887 and the passage of the Sherman Antitrust Act in 1890. Determining that breaking up the railroads would hamper our national transportation system, Congress designed a regime to prevent railroads from abusing their power. Most notably, railroads had to abide by common carriage rules, providing equal access on equal terms, and had to publicly list their prices. This helped scale back their power to arbitrarily hike prices and extort the farmers and suppliers reliant on the railroads to get to market.

Indeed, common carriage has been a traditional tool for maintaining the benefits of network monopoly while preventing the private firms who manage this monopoly from exploiting their power. Mandating nondiscriminatory access in the form of common carriage has also been applied to inns, ports, stockyards, and grain elevators, to name a few. Most recently, the Federal Communications Commission under the Obama administration adopted common carriage rules in the form of "network neutrality," prohibiting discrimination by Internet service providers. Introducing common carriage for platforms would be one way to tackle their gatekeeper power. A platform

***The issue here is not that the platforms introduce rival goods—thereby increasing competition—but that their strategies are based on a significant information asymmetry that exists between the platforms and everyone else.***

neutrality regime could require a platform to treat all commerce flowing through its infrastructure equally, preventing a platform from using the threat of discrimination to extract and extort.

A set of tools also exists to tackle leveraging power. Structural separations and prophylactic bans could limit the ability of dominant platforms to enter certain distinct lines of business. This, in turn, would limit the ability of dominant platforms to leverage their platform advantage into other areas. Structural separations preventing platforms from engaging in business activity that places them in direct competition with the firms using their platforms would also help eliminate the conflict of interest that platforms face when they own both the pipes and the products flowing through them. As with common carriage, structural separations have been a mainstay tool for tackling the power of network monopolies and other firms that play an infrastructure-like role in the economy. Structural bans have been applied to railroads, telecommunications carriers, TV networks, and banks. Introducing a separations regime for platforms would help prevent leveraging and eliminate a core conflict of interest currently embedded in the business model of dominant platforms.

Information exploitation power presents more of a challenge. To some extent, we have addressed information exploitation in the past, through disclosure regimes and laws requiring public auditing of privately collected information. But two aspects of platforms' information exploitation power seem new. One is the sheer volume of information that these firms collect, and the security vulnerabilities created when a handful of platforms capture swaths of data. Partly the issue is structural: concentrated data is more vulnerable to security breaches than is that same data dispersed. Partly it comes down to business model: as digital advertising firms, Google and Facebook make money through collecting information. So long as their business models are surveillance-based, they will continue to collect as much information as possible. The other challenge that information exploitation poses is not to privacy but to competition. Gathering data on business activity that relies on the platform gives the platform an information advantage it can use to extort value from those businesses by harvesting their insights, or to thwart nascent rivals in ancillary lines of business.

Tackling information exploitation power is not straightforward. One idea is to regulate their conduct, limiting what information platforms collect and how they use it. This would include introducing privacy regulations like those adopted by Europe in its General Data Protection Regulation (GDPR) and prohibiting platforms from using information collected on their platforms to advantage distinct lines of business. But these forms of regulation risk proving ineffective unless we also address the underlying structure of platforms. Structural reforms would include: structuring competition in platform markets by undoing, for example, Facebook's acquisition of Instagram and WhatsApp, prohibiting future acquisitions, and granting users ownership rights over their data; requiring social networks and search engines to spin off their ad networks, ending their surveillance-based business models; and prohibiting platforms from entering lines of business that depend on their platform (i.e., the kind of separations regime advocated above). By targeting the underlying structure and business model, these measures target the incentive and ability of platforms to collect and harness information.

The discussion around how to tackle platform power is just beginning. As the debate develops, it's worth recalling that certain facets of platform power are not new, and that existing levers and concepts can be retooled to ensure that the platforms are structured to align with—and not undermine—open markets, fair competition, and the free flow of information.


# CHAPTER 4

# TWO VIEWS OF EXCLUSION: WHY THE EUROPEAN UNION AND THE UNITED STATES DIVERGED ON GOOGLE

by **William E. Kovacic**

For the public enforcement of antitrust law against dominant firm misconduct, Brussels is the capital of the world. The US federal antitrust agencies, the Department of Justice (DOJ) Antitrust Division and the Federal Trade Commission (FTC) once ruled this domain. In the past 15 years, the European Commission (EC) and its Competition Directorate (DG Comp) have put the DOJ and FTC in the shade.

Recent antitrust scrutiny of Google by DG Comp and the FTC underscores the European Union's ascent to preeminence. Earlier in this decade, the FTC took no action following an intensive investigation of Google for illegal monopolization. The FTC had assembled a dream team to help develop a case—notable additions included Ed Felton and Tim Wu. The agency's five-member board contained three Democrats (Chairman Jon Leibowitz and Commissioners Julie Brill and Edith Ramirez) who had pledged to press for a more activist application of the Commission's powers. If there was to be a moment ripe for the agency to bring a big case, this was it. Instead, the FTC stood down.

The EU also has devoted great attention to complaints of improper exclusion by Google, with much different results. In 2017, the EC fined Google billions in an abuse of dominance case involving essentially the same issues and facts considered in the FTC inquiry. Today the Commission seems poised to announce still larger sanctions in a second, related matter.

Why have the EU and US antitrust agencies reached divergent outcomes in investigating claims of improper exclusion by Google? This discussion focuses chiefly on constraints that make the US system less inclined to intervene against dominant firms. In doing so, I depart from the conventional explanation, featured in many modern critiques of US antitrust policy, for why the US enforcement agencies have brought relatively few cases against dominant firms.

***For advocates of a more powerful enforcement, the antidote is straightforward. Appoint officials with a strong taste for intervention and courage to fight, give them generous resources, and back them up with political leadership that resists industry lobbying.***

## DEMANDS FOR MORE AGGRESSIVE US ENFORCEMENT INVOLVING DOMINANT FIRMS

Modern critiques about the weakness of US policy toward dominant firms blame subdued enforcement on acceptance of non-intervention perspectives generated by the Chicago School from the 1950s into the early 1980s. The culprits are academics such as Aaron Director, Robert Bork, Frank Easterbrook, and Richard Posner, whose views imbued the federal enforcement agencies with excessive caution about challenging dominant firm conduct. From this perspective, the Obama era certifies the paralyzing grip of non-intervention biases on DOJ and the FTC. Obama's leadership team had control of the two federal agencies for eight years, but the single-firm conduct agenda proved to be thin. DOJ accepted settlements in a few interesting but lesser order cases. The FTC obtained settlements with Intel and a few other defendants, and the agency gained its first victory before the court of appeals in a monopolization case (*McWane*) since the late 1960s. Yet, in its Google inquiry, the matter the agency's leadership depicted as its signature piece, the FTC closed the file upon receiving a letter from Google that made commitments (not embodied in an enforceable order) to make some adjustments in its practices.

Critics have given a range of explanations for the FTC's retreat in Google and, more generally, the Obama administration's limited enforcement against single-firm misconduct. One theme, noted above, is that even the seemingly pro-enforcement officials and their advisors have been bitten by Chicago School mosquitos so often that they do not realize they have a low-grade form of non-intervention malaria. As a consequence, the enforcement agencies have fallen back on a cramped interpretation of their mandate that focuses myopically on consumer interests to the exclusion of other important values. A less charitable view is that the agencies simply lacked the courage to take tough but necessary cases to court. When the time came to take the big shot against Google, the story goes, the FTC simply choked. A still harsher assessment is that Google and other information technology companies pressured or beguiled Congress and the executive branch to back the enforcement agencies off.

For advocates of a more powerful enforcement toward dominant firms, the antidote to the condition described above is straightforward. Appoint officials with a strong taste for intervention and courage to fight, give them generous resources, and back them up with political leadership that resists industry lobbying. European experience shows how it can be done. Take a broader, more egalitarian vision of competition law that regards the Chicago School with suspicion, add a tough-minded charismatic agency leader, and surround the authority with supportive political institutions, and you get strong intervention against Google and other commercial giants.

## AN ALTERNATIVE EXPLANATION FOR US ENFORCEMENT POLICY

Why haven't the US federal antitrust agencies brought more cases like the European Commission's? In particular, why didn't the US agencies step on the accelerator during the tenure of the Obama administration and bring monopolization cases against Google and other tech luminaries? No vision? Not enough guts? Political capture?

I don't think any of these hypotheses explain why the FTC backed away from a case against Google, or why the Obama leadership at DOJ came away with so little in eight years on the monopolization front. Here's another interpretation based mainly on the perspective of an outsider. I was a member of the FTC when the agency began its Google inquiry, but I was not present during the peak periods of the investigation nor during the agency's decision to close the file. I have no private information about what guided the decisions of the FTC's senior staff or the members themselves. Nor do I know the rationale behind DOJ's decision not to pursue investigations or cases in matters that the trade press reported as possible candidates for scrutiny from 2009 through 2016. Two other explanations, sketched below, deserve closer attention as one contemplates an expansion of the US zone of enforcement.

### *INFLUENCES UPON US DOCTRINE*

What is clear is the nature of the legal doctrine that confronted the agencies in this period and still stands in the path of monopolization prosecutions. As developed over the past 40 years, the Supreme Court and the lower federal courts generally have given dominant firms considerable freedom to decide what prices to charge, what products to develop, and which firms to deal with. The doctrine is not entirely unfavorable for the government and private plaintiffs, and plaintiffs have won cases, such as the DOJ prosecution of Microsoft in the late 1990s, against firms for improper exclusion. For the most part, defendants enjoy a broad range of discretion and face substantially less fear of successful challenge under US antitrust doctrine than they do under the case law of the European Union. The FTC's leadership presumably understood this when they decided to close their Google

inquiry. Had they been working in the framework of EU antitrust doctrine, they might have pressed ahead.

What accounts for the difference in contemporary EU and US doctrine? Brushing aside differences in the underlying statutes, commentators who call for more robust US enforcement policy usually ascribe the constraints in US doctrine to conquest by the Chicago School. By contrast, EU courts have refused to embrace a number of important Chicago School precepts, and EU doctrine tolerates a wider range of enforcement as a result.

There is no doubt that Chicago School ideas have influenced US doctrine, but they are not the sole force that accounts for the permissive quality of rules governing dominant firm conduct. The modern Harvard School of Phillip Areeda and Donald Turner has been no less influential. Beginning in the 1970s, Areeda and Turner developed the idea that the US form of private rights of action—with mandatory treble damages, jury trials, class actions, joint and several liability, and asymmetric fee shifting—posed a serious threat of overdeterrence, especially in monopolization cases. They proposed several measures to counteract the perceived overreach of private rights, including the elevation of liability standards to make it more difficult for plaintiffs to establish an infringement.

The ideas of the modern Harvard School resonate in modern US antitrust jurisprudence, especially in the judicial opinions of Stephen Breyer, who taught with Areeda at Harvard and frequently draws on Areeda's scholarship. In monopolization decisions and in other areas of antitrust law, the Supreme Court's jurisprudence reflects Areeda's views about private rights and overdeterrence. This concern has led the court to establish demanding liability tests (for example, the recoupment requirement in predatory pricing cases) and to raise evidentiary and pleading requirements that plaintiffs must satisfy to establish the fact of concerted action.

Examined closely, the DNA of modern US antitrust doctrine is a double helix, one strand coming from the Chicago School and a second strand from the modern Harvard school. Enforcement initiatives that abandoned Chicago School learning and relied instead on more expansive notions of antitrust liability would still bump into the Supreme Court's concerns about private rights of action. To treat the Chicago School as the source of doctrinal conservatism in the United States is to miss a major obstacle to expansion. Unless these concerns can be assuaged, US doctrine will continue to feature skepticism about broad concepts of liability in monopolization cases. Put another way, were it not for judicial apprehensions about overdeterrence in private cases, US monopolization doctrine would more closely approximate abuse of dominance doctrine in the European Union, and US enforcers would have more success in challenging single-firm conduct.

## THE IMPERFECT FEDERAL PARTNERSHIP

The US federal enforcement regime is the oldest and most important experiment in diversification. Congress placed two institutions—the DOJ and the FTC—in the antitrust enforcement domain. Their powers and jurisdiction are not congruent, but the overlap between them is substantial.

In theory, the two institutions would fuse their complementary capabilities in a well-integrated collaboration—for example, in a common effort to define the appropriate direction of doctrine and policy development, and devising a common plan to achieve that development. An integrated program would consider, for example, when cases might best be pursued through the FTC's administrative adjudication process and which are best suited for litigation in the federal courts. The agencies might formulate a common research plan to exploit the FTC's distinctive information gathering powers. At a minimum, the agencies would cooperate intensively to build a vision of how the United States law and policy should deal with dominant firms.

These seemingly obvious steps are largely missing in the US system. As a system, the DOJ and the FTC operate decidedly inside the production possibilities frontier. The US agencies cooperate effectively from time to time on major projects, such as the refinement of their horizontal merger guidelines.

These episodes are exceptional rather than routine. Senior DOJ officials have recounted to me the negotiations with the FTC to determine which agency would take responsibility for investigating single-firm conduct issues relating to Google. The two agencies agreed that DOJ would review mergers involving Google, and the FTC would address the non-merger matters. Before settling on this division of labor, DOJ carefully weighed the possibilities for bringing a monopolization case and concluded that such a case would be problematic. It did not convey this assessment or the reasoning that supported it to the FTC. Instead, in one telling, a senior manager in the Antitrust Division front office told me, with evident glee, how the FTC had seized the opportunity to pursue a matter that DOJ regarded as a dead end. The spirit of the comment was akin to the delight of a sports franchise that has pulled off a trade that exploits the miscalculation of a rival franchise by gaining a better player for a weaker player.

Future extensions of US doctrine and enforcement will depend upon the ability of the US agencies to move from reluctant, as-needed cooperation toward a truly willing integration of effort. The starting point would be to formulate a common view about the appropriate boundaries of monopolization doctrine and to devise a litigation program to achieve them. A key foundation for this common effort would be a careful analysis of what has worked in the past, and what has not—to appreciate, for example, the role that smaller cases play in creating doctrinal principles that become valuable tools for building larger cases in the future. These would be useful steps in devising an enforcement strategy, to set priorities to implement the strategy, to select helpful cases, and to assess the effects of completed matters as a way of doing the next round more effectively.

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# CHAPTER 5

# SOLUTIONS TO THE THREATS OF DIGITAL MONOPOLIES

by **Sandra Matz**, **Guy Rolnik**, and **Moran Cerf**

Recent tidal waves of scandals and public upheavals have shed light on the potential perils and risks of digital monopolies such as the five Silicon Valley giants: Facebook, Google, Amazon, Apple, and Microsoft. Examples such as the foreign meddling in the US election via large-scale advertising campaigns on Facebook (1), or the alleged abuse of market power by Google resulting in one of the largest antitrust fines ever levied by the European Union (€2.42 billion, [2]), are frequently echoed in mainstream media.

In 2017 alone, the five Silicon Valley giants have added nearly a trillion dollars to their aggregate value, which is now more than double the value of the largest seven banks in the world. In conjunction with the increased popularity of those platforms—the number of users ranges from 310 million for Amazon to 2.2 billion for Facebook and Google—the public discourse focuses not only on the merits of these digital platforms but also on the potential threats they pose to markets, financial institutions, and democratic processes (3).

Some point to the mere size, power, and unregulated conduct of these digital monopolies. Others focus on the unprecedented scale and speed with which personal data is collected and used in the context of prediction algorithms, an omniscient, opaque machinery that threatens to erode the very foundation of privacy (4). Still others highlight the ability of digital monopolies to control much of our attention, which allows them to dictate which content we are exposed to and to influence our behavior. In this "economy of attention," users' eyeballs have become the main commodity traded (5, 6). The price for ads on YouTube or Facebook, for example, ranges from a few cents to several dollars depending on the specificity of the target audience.

An analysis of the academic and public discourse highlights eight key challenges posed by the digital monopolies:

***1. Risk of data breaches.*** A security breach of any of the digital monopolies could result in Exabytes of users' most vulnerable information being publicly exposed (7). Besides the risk of irreparable damage to people's reputation, private lives, and identity (as in, e.g., the "Ashley Madison" case (8)), such a breach could result in unprecedented damage to our economy (as in, e.g., the "Sony Pictures" case (9)) and our political standing (as in, e.g., "Wikileaks Cablegate" (10)). Importantly, a security collapse of that nature might only be the start of a series of follow-up breaches. A hack of Google's Gmail, for example, could allow the perpetrators to obtain a user's bank account password through the "forgot password" functionality, and ultimately lead to a collapse of businesses and industries (e.g. banking, taxation, weapon silos, etc.). Compared to what was deemed a "too big to fail" state when a handful of banks collapsed in 2008, such a crisis could be unparalleled. Although the digital monopolies employ talented security teams to prevent such hacks, the public has no guarantee that a skillfully deployed attack (e.g., by another nation-state, powerful underground organization, or simply a disgruntled employee) would not be successful. Even with the best efforts of the digital monopolies—which often heavily depend on the priorities of high-ranking leaders in the organization—societies should hence operate under the assumption that the data held by the digital monopolies could be leaked at any point in time.

***2. Data control.*** The concentration of unprecedented amounts of behavioral user data may become the most precise and effective tool for targeted marketing. Our digital footprint reveals a lot more about us than first meets the eye: it conveys information about our preferences, our habits, and our psychological traits (4, 11). Recent research, for example, shows that targeting user segments with advertising messages tailored to their psychological profiles (e.g., their extroversion level) significantly increases clicks and purchases (12). While the ability to target individuals of a certain behavioral, sociodemographic, and psychological profile might not pose an immediate threat in the context of advertising consumer goods, there are many other contexts in which overly precise targeting could hurt the most vulnerable members of society. Being able to target "homosexual individuals living in a specific zip code," for example, could turn out to be lethal in a number of countries around the world. The same is true for targeting people with an addictive personality with gambling ads, or an unsuspecting low-income family with a subprime mortgage offering.

***3. Attention as currency.*** The majority of online social networks—be it Facebook, Snapchat, or YouTube—are designed and built to encourage individuals to spend as much time and resources within the platform as possible. While this is no different than other media channels, like TV, online social networks have far advanced their capabilities to manipulate and prey on users' weaknesses, turning "user-oriented" services into addictive, time-wasting traps (13, 14). Recent work in neuroscience and marketing have shown that exposure to content at a rate of as little as three views is sufficient to generate a conscious awareness of a brand (15), whereas ten views can yield unconscious drive or preference for a product (16). Studies in psychology (17) and neuroscience (18) show that one change people's behavior, both short-term and long-term, by influencing their preferences or altering their neural pathways. Beyond behavior changes due to content, works in neuroscience are suggesting that the effects of digital content on our brain is not limited to the time of exposure but also have addictive attributes that resemble chemical addiction to substances (19, 20). Finally, studies in psychology are showing that the adverse effects of the time spent on digital platforms are translated to increases in depression and other negative psychological outcomes (21).

***4. Lack of transparency.*** Currently, the usage of personal user information by corporations suffers from a great deal of obscurity. Users are often unaware of the data being collected, shared, or used by the digital monopolies, preventing them from speaking up publicly and demanding transparency. Moreover, even if users have knowledge of the data usage, they have little power to control it. Essentially, we are limited to a binary choice to either agree to the terms of the digital platforms or not use the services at all.

***5. Political influence.*** Unregulated media giants can involuntarily influence the outcomes of democratic processes, with users being overexposed to certain news due to hyper-personalization in so-called "echo-chambers" (22), foreign countries swaying public opinion via large-scale advertising purchases (1), voter-profiling companies using psychographic profiling techniques to manipulate voter opinion through disinformation and fake news (23), or duopolies such as Google and Facebook effectively controlling the world of online advertising, which can turn them into key political players and severely restrict diversity of thought (24).

Taken together, the aforementioned challenges make the digital monopolies **too big to fail**. The breakdown of any of the digital monopolies is likely to have severe consequences that would harm humanity in unprecedented ways. At the same time, they might also be **too big to manage**. Facebook, for example, only understood in hindsight how their advertising platform had been abused by third parties to breach their data laws and sway the voting intentions of millions of users (23). Together with other threats posed by the digital monopolies—including the decline of trusted media outlets, a growing lack of competition, and a potential waste of talent—the risk of losing control over such companies that are too big to fail requires a rethinking and redesign of the digital economy.

## SOLUTIONS

The digital revolution is not the first time governments and societies had to respond to dramatic dislocations of the economy.

In fact, prior technological shifts such as the Industrial Revolution required substantial changes in regulatory frameworks as well. Yet, history tells us that the responses to structural changes in the economy tend to arrive late due to the resistance of the actors that benefit from the status quo. It took over six decades to regulate the tobacco industry, for example, and the number of casualties of this slow response is unparalleled. Similarly, the breakup of Bell Systems—which ultimately yielded a prosperous tech industry that benefited from the ramifications of regulatory processes—was met with strong initial resistance.

The emergence and rapid growth of digital monopolies suggests the response to the threats posed by these platforms needs to be notably faster. While it seems clear that the direction in which the digital economy is heading needs to change in order to create inclusive growth and shared prosperity, it is less clear how. The enormous power concentrated within current digital monopolies, the complexity of the digital world, the rapid development of new technologies, and a growing political instability make the endeavor to shift directions a difficult task.

Moreover, it is not clear who should lead this change. Below we offer a set of players that we believe should carry the torch in providing solutions (in order of importance). Each of these players has their own incentives for contributing to a resolution, and as such the involvement of each of these players comes with both advantages and disadvantages (see **Table 1**).

***Table 1.*** *Pros and Cons for Each Sector's Involvement.*

| Player | Pros | Cons |
|---|---|---|
| Government | • Competition distributes power and decreases political stronghold on lawmakers<br>• Competition encourages innovation.<br>• It works! Prior examples of government pressure targeting companies like AT&T, Microsoft, IBM, etc. has given rise to numerous new technologies and industries in the past.<br>• Antitrust is the most "free market" regulation – it ultimately relies on competition and market forces and not bureaucratic discretion. | • The companies to be regulated have stronghold on the government (and both parties, historically, benefited from the financial backing of those companies during elections).<br>• Other nation-states benefit from regulation within the U.S. (i.e. China).<br>• Digital monopolies bring a lot of money to the economy and breaking them may seem like self-flagellating of 'national treasures'.<br>• The data collected by digital monopolies is also used by the government for national security purposes.<br>• Governments are often inefficient and slow.<br>• Government intervention can be political (i.e., governments can pick and choose winners). |
| Media | • The power and influence of traditional media outlets is shrinking rapidly. Supporting other players in breaking digital monopolies is hence an opportunity to strengthen their own power.<br>• The media is fast and can distribute information almost in real-time and at scale.<br>• Traditional media outlets still constitute a trustworthy source of information. | • The digital monopolies effectively control the media distribution to-date. The current media channels are using those platforms heavily.<br>• Concerted campaigns against the monopolies may compromise the trust of the population in the media as it may be perceived as self-serving act due to the financial competitiveness between the platforms. |
| Large Corporations | • It is in these corporations' self-interest to help mitigate the power of those competitions since the monopolization of data on the behavior of billions of consumers gives the digital monopolies unprecedented advantage in various industries.<br>• Big corporations often have considerable resources (financial, networks) that can be deployed almost instantaneously.<br>• Other corporations can act as role models to demonstrate the value of data transparency to consumers. | • Requires spending money, in the present, for potential future benefits.<br>• Risk of the "tragedy of commons" where one defectors siding with the monopolies will rip the benefits of partnering with those big digital monopolies to eliminate other large corporations. |

| | | |
|---|---|---|
| Digital Monopolies | • The resulting boost in innovation will benefit them.<br>• The public hostility towards them will decrease.<br>• The public will potentially reward them for a noble act.<br>• Better to have self-regulation than the alternative, which is 'government takeover (all the power will go to politicians rather than the public). Simply put, the alternative is not nothing – it is the government running Facebook.<br>• Absence of action effectively leads to a less productive society as a whole, which ultimately affects those companies as well. Helping society be more productive can help increase welfare for everyone (fighting diseases, generating knowledge, etc.) | • No one likes to give up power.<br>• Short-term financial losses.<br>• Potential long-term financial losses and risk of losing out to competitors that do not adhere to such standards.<br>• The uncertainty about how such changes are going to impact the competitiveness and success of the company in the long-run might make it harder to attract and retain the best talent. |
| Hackers | • Aligned with the hackers' etiquette and ideology (Hackers are civilians who typically work for the greater good of the public in fighting big corporations that violate the public trust)<br>• Impartial and unbiased by the power dynamics of digital monopolies<br>• Operating outside of standard regulatory systems, they can act extremely fast and efficiently. | • The tools and techniques used by hackers are potentially reckless and have the potential of having some collateral damages in the way to the optimal solution.<br>• Hackers are difficult to control<br>• Solutions should be agreed upon by more than just one individual or small group of individuals |
| Academics | • Academics are largely unbiased by the power dynamics of digital monopolies.<br>• Academic research is (mostly) impartial. The academic maxim is to generate objective knowledge and truths.<br>• Many of the senior employees of the digital monopolies are former academics, with the same thinking, mentality and ways of solving problems which means that they have better understanding of each other's methods. | • Academic research is typically slow.<br>• Academics usually have far fewer resources (e.g. access to data, power, money, and even talent) than industry leaders, and therefore often lag behind technological developments introduced by digital monopolies.<br>• Solutions provided by academics might not always be fully impartial, because research is increasingly funded by industry leaders. |
| Users | • As the "product" being commoditized the users have the ultimate power over digital monopolies.<br>• Users are the ones affected by current practices of digital monopolies, so they should have a say in what the future looks like<br>• Democratic process in which everybody (not just the political or academic elites) are involved. | • Favoring long-term interests over short-term benefits is challenging, and we know that people often do not act in their best self-interest (e.g. the reward of being connected to our friends, the risk of being excluded from a social circle, the convenience of finding information we need instantly all make the immediate gratification outweigh the problems)<br>• Users might not have good insights and knowledge of what is happening behind the scenes of the digital monopolies (e.g. what data is being collected, and how it is being used). And even if they do so, they are unlikely to have the power and technical capacity to change it. |

## 1. GOVERNMENT

Governments have the most power in regulating and standing up to digital monopolies. Within their arsenal lie the abilities to regulate, fine, breakup, and change the course of monopolies in ways that benefit the public and increase overall prosperity (for a discussion in the context of the tobacco industry and Bell Systems, see 25, 26, 27). Governments can do so by employing the broad array of tools used to combat monopolies in other domains.

First and foremost, the government can employ **antitrust laws** using approaches employed to combat telecom monopolies, Internet and media monopolies, and even consumer-packaged goods cartels in the last few decades. The same ruling that was used in the Bell Labs case (see **Box 1**), for example, could be used to breakup Google into separate corporations that are not allowed to share user base, data, or resources (e.g., "Gmail," "Maps," "DoubleClick," and "YouTube").

Second, the government could actively **encourage competition.** It can do so by forcing digital platforms to give data ownership and control to users, making it easy for them to switch to a competing platform if the current service is unsatisfactory.

Third, **the government could force public hearings with the heads of the monopolies.** This will give the public a chance to transparently review and discuss the strategies employed by those digital monopolies.

Fourth, the government could **mandate the equivalent of a quarterly "financial disclosure" of "data usage."** Companies, in this case, would be obliged to inform every user about their "effective market value to the platform"—that is, the amount the user is worth to the company. This will create higher data transparency for both users and the media, and provide a basis for users to decide whether they would like to continue using the service as is or whether they would like to change their agreement. For example, if a user learns that her value to, say, Facebook is $100 per quarter, she could choose to pay $100 and ask not to have her information shared with anyone.

### BOX 1

As an example of the merits and power of regulation in taming digital and tech monopolies one can look at past cases such as the breakup of Bell Systems and AT&T. The dismantling of those two giants has led to the fostering of innovation that has enriched the tech world and that drove much of Silicon Valley's growth. The involvement of the government in the regulation of those companies has forced them to make many of their patents open to the public (e.g., the TV RCA protocol, which greatly pushed the enhancement of the television market, enabling cables, DVDs, and a variety of additional high-quality protocols) and expanded the television marketing greatly. The two cases have been extensively discussed by scholars in the context of successful antitrust regulation, which led to a flourishing of innovation, as quoted in the following statement from Intel co-founder, Gordon Moore (25):

> "The most important development for the commercial semiconductor industry (...) was the antitrust suit filed against the Bell Systems. (...) This started the growth of 'Silicon Valley'" (26)

Or, in the case of AT&T:

> "[AT&T licensing policy shaped by antitrust policy] remains as one of the most unheralded contribution to economic development—possibly far exceeding the Marshall plan in terms of the wealth generation capability it established abroad and in the United States" (27)

This, in addition to the forceful breakup and the patents licensing gave birth to corporations like Intel, and the development of the Linux system that many of today's technological platforms operate with.

***Governments have the most power in regulating and standing up to digital monopolies. Within their arsenal lie the abilities to regulate, fine, breakup, and change the course of monopolies in ways that benefit the public and increase overall prosperity.***

Fifth, the government could **generate the equivalent of a third-party auditing system for the digital monopolies.** Similar to the way in which the government requires banks to have "penetration tests" conducted by hackers who report the results to a third party, the government could introduce auditing protocols for digital monopolies. Such a mandate is likely to both improve the platforms' security, and alleviate doubts about the handling of personal data. For example, questions such as whether one's data is *actually* deleted when requested, or merely "marked as deleted" in the database will be answered.

## 2. MEDIA

The media play a central role in setting the stage, signaling, and incentivizing the other players discussed herein. The media are responsible for raising awareness about digital monopolies, for exposing the risks they pose to the very fabric of our institutions and democracy, and for covering and explaining the underlying motivations of the different players in a way that makes them accessible to the public. In fact, the media have the power to create social norms that can support and encourage other players (civil servants, regulators, corporates, hackers, etc.) to operate effectively. In addition, media function as a reliable and trustworthy source of investigative information and provide a refuge for whistleblowers who are an essential part of the current checks and balances system.

## 3. ACADEMICS

Academics are often considered the torchbearers of knowledge generation and change. As such, they can systematically develop solutions to alleviate and overcome the problems generated by digital monopolies. Academics can provide objective research on the consequences of the digital economy and the economy of attention. Given that the digital economy is both affected by and is in turn affecting many aspects of our lives, the academic response will require a cross-disciplinary approach that includes expertise from areas such as the computer sciences, economics, political science, psychology, sociology, communications, and others.

Importantly, this research will need to be communicated in a way that makes it easily accessible to the other stakeholders discussed in this section (e.g., the general public or policymakers). In order to contribute to an informed public discourse and evidence-based policy, academics are therefore tasked not only with generating knowledge but also with communicating the implications of their findings effectively.

## 4. USERS

The use of most digital devices and services is voluntary. Users are not forced to browse Facebook for hours a day, or to carry smartphones wherever they go. Taking a libertarian view, one can hence argue that a large part of the responsibility lies with the user. In fact, users have many levers to impact the behavior of digital monopolies:

- *Requesting a report of the personal data businesses hold*
- *Implementing parental control features to regulate kids' social media usage*
- *Checking the veracity of information using more than one news source*
- *Updating privacy settings and restricting a company's access and usage of one's data*
- *Engaging in public civil response (e.g., demonstrations, voting) to resist monopolization.*

As a rule of thumb users should realize that, "If you're not paying for it, you are the product being sold to someone else." This will help guide their behavior and potentially navigate the choice of solutions given the complacent attitudes currently prevalent among users (28).

## 5. HACKERS/ANARCHISTS

Given that digital monopolies derive their power from collecting, storing, and processing large amounts of user data, the skills possessed by hackers and anarchists of controlling and accessing data could support regulators in auditing digital monopolies more efficiently. In fact, the domain-specific skills possessed by hackers often surpass those nurtured within the digital monopolies themselves. As such, hackers can identify flaws in the digital monopolies' security and data utilizations, alert the public about dishonest behaviors, and expose misconducts. Additionally, they can create monitoring tools that will allow the public to gain a better understanding of and control

over how their data is being used by the digital monopolies. For example, hackers could develop tools that help parents regain control over the use of digital services by their children, a task that is increasingly difficult to do. In their constant fight for user attention, the digital monopolies currently have no incentive to provide such a tool. Many hackers, on the other hand, follow an ideology that forces businesses to behave responsibly, and thus appear to be ideally suited to develop such aids.

## 6. OTHER CORPORATE GIANTS

While potentially less obvious than the government and the media, big corporations from adjacent industries could turn out to be equally powerful in challenging digital monopolies as they can support the government and other parties in standing up to the digital monopolies. They could do so by financially backing regulatory processes and campaigns, and by also demonstrating the need for transparency through sharing data themselves, making it a real alternative for consumers.

It is in other corporations' own best interest to help mitigate the power of digital monopolies. This is because the monopolization of data on the behavior of billions of consumers gives the digital monopolies an unprecedented advantage in various industries—even ones that currently do not actively compete with the monopolies. For example, while nobody currently perceives Google as a potential competitor in the real estate brokerage market, if Google decided to enter this market in the future the sheer amount of data it holds on individuals from all over the world would make it a leading competitor instantly. Hence, corporate giants across disciplines may want to use traditional market tools to combat the growing power of digital monopolies. This movement is already underway and may prove successful and efficient (29, 30).

Smartphone manufacturers could play a special role in standing up to the digital monopolies since they act both as competitors and as enablers of the platforms. While the smartphone manufacturers might seem to belong to the same business category as the digital monopolies, their business model is not identical. Their income is driven by product purchases rather than advertising, which allows them to side with the public interest. Accordingly, they can provide consumers with better tools to protect themselves from misuse of data on digital platforms, or from excessive/addictive usage. Apple phones, for example, could not only include tools to help users monitor their health (e.g., by counting steps, or measuring heart rate), but also offer tools that allow users to easily quantify their digital addiction (e.g., by visualizing how much time was spent on Facebook, Google, etc.)

## 7. THE DIGITAL MONOPOLIES THEMSELVES

While the incentive for the digital monopolies to sustain their current business model seems reasonable, scholars argue that it is in fact in their own self-interest to become more transparent and to provide open access to their data, while keeping the analytics algorithms as their intellectual property alone. As the digital monopolies originally worked under ethos of audacious social missions such as "do no evil," "connect the world," or "organize the world's information," returning to this ethos and operating under the premise of transparency and user control is likely to increase—rather than decrease—the public usage of and trust in their services. Importantly, by maintaining the algorithms to analyze the data while giving users the control over the data may still retain a strong business model that creates a positive feedback loop between consumer interest/trust and profitability (e.g., 31).

## SUMMARY

The technological advances introduced by the digital monopolies allow billions of people around the world to connect with one another and have therefore been crucial in driving access to information (32, 33), increasing economic productivity and contributing to political stability (34). As such they have the potential both to promote and to undermine societal well-being. In order to reap the benefits of the technological advances provided by the digital monopolies while reducing their adverse effects on individuals and society, it is necessary to develop and employ solutions that mitigate the dangers of unregulated digital monopolies.

It has not escaped our notice that whereas it took many decades to respond to the threats posed by industries like the

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tobacco industry, the speed with which technology develops now calls for a much faster and coordinated response by all the aforementioned players. It is difficult to anticipate which solution is going to be most effective. In fact, the best solution for smoking turned out not to be taxes, regulations, or any of the big solutions, but rather the simple campaign against "secondhand smoke" (that *your* smoking is hurting *me*). Similar secondhand effects could be claimed for the attention economy. One person's time focused on watching marketing content is not well spent in an active society. We might not always notice, but we all suffer from it. A call to action by any of the parties could hence be a key driver of the change.

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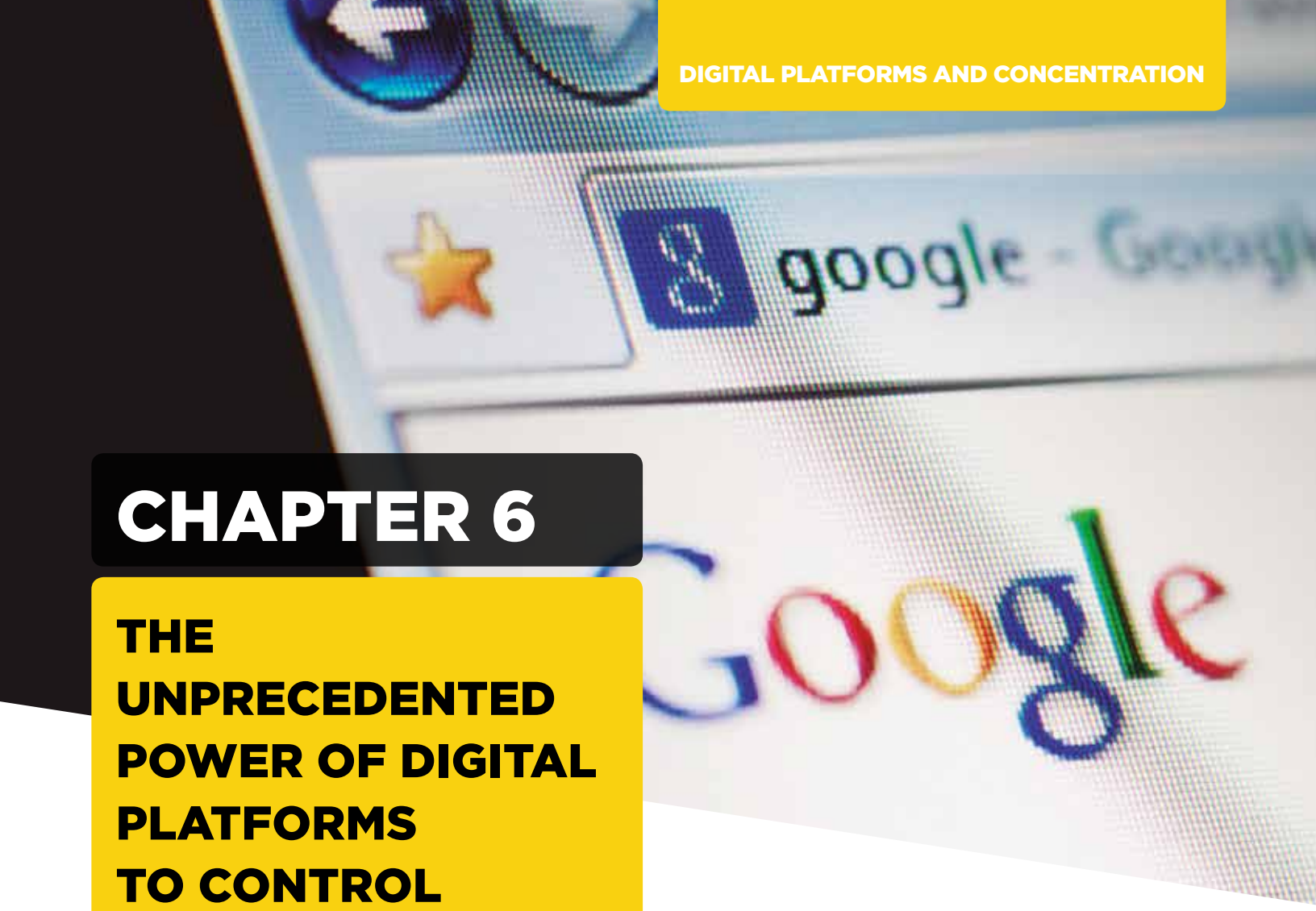


# CHAPTER 6

# THE UNPRECEDENTED POWER OF DIGITAL PLATFORMS TO CONTROL OPINIONS AND VOTES

by **Robert Epstein**

In recent years, my associates and I have quantified the extent to which online digital platforms can shift opinions and votes without people knowing this is occurring and without leaving a paper trail. Randomized, controlled experiments conducted with more than 10,000 people from 39 countries suggest that one company alone—Google LLC, which controls about 90 percent of online search in most countries—has likely been determining the outcomes of upwards of 25 percent of the national elections in the world for several years now, with increasing impact each year as Internet penetration has grown.

## THE SEARCH ENGINE MANIPULATION EFFECT (SEME)

In a study published in the *Proceedings of the National Academy of Sciences USA* (PNAS) in 2015, we reported the discovery of what we called the search engine manipulation effect (SEME), which is one of the largest behavioral effects ever identified. The study showed that when undecided voters conduct online searches in which one candidate is favored in search rankings—that is, when high-ranking search results link to web pages that make that candidate look better than his or her opponent—the preferences of those voters shift dramatically toward the favored candidate after just one search—by up to 80 percent in some demographic groups.

This shift occurs because of the enormous level of trust people have in Google's search results, which people believe are entirely impartial, unlike what they see on television or read in newspapers. Our research also demonstrates that this belief is reinforced by a daily regimen of operant conditioning in which routine searches for simple facts invariably generate the correct result in the highest-ranking search position. The strong trust in high-ranking search results impacts what happens when people

conduct a search on a complex issue on which they are trying to formulate an opinion or make a decision: where to holiday, what kind of car to purchase, or even whom to vote for. When conducting an online search for information about such matters, people put inordinate trust in material that is ranked high in search results; indeed, 50 percent of all clicks go to the top two search results. We have also demonstrated that the shift in opinions and voting preferences increases when people are exposed repeatedly to differing search results favoring one viewpoint.

We have now demonstrated the power of search rankings to shift votes and opinions in the context of four national elections: the 2010 federal election in Australia, the 2014 Lok Sabha election in India, the 2015 general election in the United Kingdom, and the 2016 election for US president. One disturbing finding of such research is that people show little or no awareness that they are viewing biased search rankings—even when those rankings are strongly biased. In the Lok Sabha experiment, conducted with more than 2,000 undecided voters throughout India during the voting process, 99.5 percent of the participants in the study showed no awareness that they were seeing biased rankings. SEME's virtual invisibility makes it an especially disturbing and dangerous form of manipulation, because when people are unaware that they are being influenced, they tend to believe that they are making up their own minds. Because search rankings are ephemeral and, more and more, customized to the tastes of the individual, they also leave no paper trail, making them nearly impossible for authorities to trace. Perhaps even more disturbing, we now know that that the few people who *can* detect bias in search results shift *even farther* in the direction of the bias—possibly because they see that bias as a form of social proof.

## EVIDENCE FOR FAVORITISM IN SEARCH RESULTS

Is there any evidence that Google's search rankings are *actually* biased toward one candidate or another? Early in 2016 my team and I developed and deployed a system for tracking ephemeral search results on Google, Bing, and Yahoo, and we used this system to track election-related searches for nearly six months before the November election. Using this new system, we were able to preserve the results of 13,207 election-related searches, along with the 98,044 web pages to which the search results linked. From this archive we learned, among other things, that pro-Clinton bias was especially evident in Google's search results, that bias appeared in all ten search positions on the first page of search results, and that pro-Clinton bias was greater for some demographic groups than for others.

That Google sometimes favors one cause, candidate, or company in its search results is also indicated by a two-year investigation by the European Commission. In June 2017, the Commission concluded that Google had systematically favored its comparison shopping service in its search results and that such favoritism did great damage to competing services. As a result, the Commission levied a $2.7 billion fine against Google, which Google has since paid. Both Russia and India have also levied fines against Google for displaying search results that favor Google's products and services over those of its competitors. US courts, guided in part by Section 230 of the Communications Decency Act, have meanwhile given Google carte blanche to rank search results any way it pleases—even to demote or remove competing companies from its search results. Some courts have ruled that Google is simply exercising its "free speech" rights by doing so.

## THE SEARCH SUGGESTION EFFECT (SSE) AND OTHER SOURCES OF ONLINE INFLUENCE

In addition to continuing our research on SEME (which has now been replicated by at least two other research groups), we are investigating four similar effects—all of which, like SEME, shift opinions dramatically, invisibly, and without leaving a paper trail.

We will soon (in late April, 2018) be presenting the results of a new series of experiments demonstrating the power of what we are calling the "search suggestion effect" (SSE). The experiments show the power that search engines have to begin shifting opinions from the very first character people type into a search bar. They show, specifically, that search suggestion manipulations can shift a 50/50 split among people who are undecided on an issue to an astounding 90/10 split after just one search—again, with no one being aware that he or she has been manipulated. They also explain, among other things, why Google was apparently suppressing negative search suggestions for Hillary Clinton during the summer of 2016. Our experiments show that a single negative ("low valence") search suggestion can attract 10 to 15 times as many clicks as a neutral or positive suggestion—

***We learned, among other things, that pro-Clinton bias was especially evident in Google's search results, that bias appeared in all ten search positions on the first page of search results, and that pro-Clinton bias was greater for some demographic groups than for others.***

yet another example of what is known in several academic fields as "negativity bias." Differentially suppressing negative search suggestions for one candidate (or one cause, or one company) is, it turns out, an easy way of directing millions of people toward positive information about the candidate you support and toward negative information about the opposing candidate.

## PROTECTING USERS FROM HIGH-TECH MANIPULATION

In late 2017, my associates and I published a study showing how alerts and warnings can be used to suppress SEME to some extent. We do not believe, however, that alerts, warnings, or education of any sort can suppress SEME and similar manipulations completely. We also do not believe that laws, regulations, or antitrust actions will be able to protect users adequately from such manipulations. Legal apparatuses move too slowly, in our view. Driven by recent revelations about the dissemination of fake news stories and Russian-placed ads on digital platforms before the 2016 election, some authorities are now turning their attention toward the corporate policies and algorithms that allowed such things to occur.

But technology moves so quickly, in our view, that regulators and lawmakers will always be years behind the curve. Just as we are now learning about the full power that Google has to control opinions with its search engine, Google is moving away from the search engine model of surveillance and control while rapidly moving toward more powerful tech: encouraging people to place "Home" devices in every room of their domiciles. These new devices record sound 24/7 and give people simple answers to their questions.

We are now in the process of quantifying the impact of giving people those simple answers—an effect we call the "answer bot effect" (ABE). Because Google is now providing all the content that Siri provides to Apple customers, Google's ability to shift opinions, purchases, and voting preferences will continue to expand in coming months and years, even if its search engine becomes regulated to some extent.

We believe that the only effective way of protecting people from the extraordinary manipulations that new technologies are making possible is by establishing a worldwide network of passive monitoring systems—in other words, of scaling up the type of tracking system my team and I developed in 2016. The European Commission recently awarded €10 million to two consulting firms to develop a system for monitoring Google's search results, specifically to track compliance with Commission orders. I am now working with colleagues from Princeton University, UCLA, MIT, King's College London, and elsewhere to implement large-scale systems that will monitor a wide range of online ephemeral stimuli, not just search results. With systems like this in place, it will be possible to detect online threats swiftly, with reports issued as appropriate to journalists, legislators, regulators, law enforcement agencies, and antitrust investigators.

Such systems, I believe, will force online monopolies to be accountable to the general public and, in so doing, will protect human freedom and the democratic system of government. Without such systems in place, I fear that both democracy and human freedom will become little more than illusions. As British economist Kenneth E. Boulding warned in the 1950s, "A world of unseen dictatorship is conceivable, still using the forms of democratic government." Are we already living in such a world?

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# CHAPTER 7

# PLATFORMS AND ADJACENT MARKET COMPETITION: A LOOK AT RECENT HISTORY

by **Randy Picker**

It is rare for antitrust issues to reach public consciousness, but the question of what to do, if anything, about the dominant Internet firms of the day has clearly done so. The GAFA, as they are known in Europe—Google, Apple, Facebook, and Amazon, and let's throw in Microsoft for good measure—have each achieved a remarkable market position in the technologies that seem to define so much of the modern economy, especially the consumer-facing economy. While each of these companies benefits from dynamics of platform economics, these firms are interestingly different and it is important not to lose sight of that as we consider possible regulatory responses to their market positions.

The rules of competition and antitrust are perhaps most important at the point where we have competition in a market adjacent to a market held by a dominant firm, especially where there is the promise that the adjacent market could turn into a springboard for competition back into the original market. Adjacency matters as it is quite difficult to attack a dominant firm in its home market, though even that might be possible if we have a leading firm in one market entering the market of another dominant firm.

Here, I look at the two most developed examples we have of the role of antitrust in adjacent market competition in platform industries. We have an extensive history for Microsoft and a now growing one for Google. Both situations show the difficulty of achieving meaningful remedies even when antitrust violations are found.

## TWO DECADES OF MICROSOFT ANTITRUST

It is interesting that it is the GAFA and not the GAFAM. Inspired by a magazine cover—Popular Electronics, January,

1975— Bill Gates and Paul Allen started Microsoft as a computer languages company to write the BASIC computer programming language for the new Altair 8800 personal computer. Today's average computer user wouldn't give the Altair 8800 even a glance and would probably be stunned to learn that this was the beginning, but it was. That world evolved quickly and reached a turning point on August 12, 1981, when IBM launched its first personal computer. It wasn't obvious then that in doing so IBM would create two monopolies and yet would not end up with either. Intel and Microsoft both were defined by the success of the IBM PC and the clones that would follow from it.

Microsoft's success is even more remarkable as Microsoft originally sent IBM elsewhere when IBM asked Microsoft to provide an operating system for its new computer. And IBM would eventually release its new computer with three different operating systems (bonus points if you can name the other two). But within a decade, Microsoft was an antitrust target. The US Federal Trade Commission started investigating Microsoft in 1991 and was believed to be looking at whether Microsoft was using its market position in operating systems to thwart competition in adjacent markets such as those for word processors.[1] Two years later, the FTC was stalled with an even 2-2 split on whether to bring an action against Microsoft.[2]

But the US has two federal antitrust agencies and with the FTC at a standstill, the US Department of Justice jumped in.[3] By July, 1994, the government announced a settlement with Microsoft that would require it to alter its licensing practices for MS-DOS.[4] The government believed that the settlement would end Microsoft's monopoly in the operating system market, while Microsoft believed that its business would continue forward with minimal changes.[5]

I think the history on that one is fairly clear. The government seemingly envisioned that new operating systems would take root if Microsoft altered its licensing practices. This wasn't a bizarre idea—again IBM released its 1981 PC with three operating systems—but successful direct attacks on a dominant firm in its core market are rare. Successful attacks might be made at points of transition in a market—think the competition in phone OSs with the rise of new touchscreen devices like the iPhone—or in adjacent markets in which the position in the core market is less important—more on that below—but nothing suggests that the government had that idea in mind in settling in 1994.

In 1997, the US government brought an action against Microsoft claiming that Microsoft had breached the terms of the 1994 consent decree by requiring computer makers who wanted Windows 95 to preinstall the current version of Internet Explorer, then IE 3.0.[6] By this point, the government had a clear theory of what Microsoft was doing—Microsoft was acting "to thwart this incipient competition and thereby protect its operating system monopoly"—but the legal issue just turned on what the 1994 consent decree said or didn't say and Microsoft would eventually win 2-1 in a federal appeals court in late June 1998.[7]

But perhaps recognizing the weakness of its position on the language of the consent decree, on May 18, 1998, the US government filed an entirely new antitrust lawsuit against Microsoft. The government could easily have quit at this point. It seems unlikely that the 1994 licensing case was seen within the government as successful. The government might not have known that it would lose the contempt case in June 1998, but after seven years of chasing Microsoft, the government didn't have much to show for its efforts. Of course, the Antitrust Division was used to the long haul: the IBM mainframe case started in January 1969, only to be dismissed by the government in 1982.

The new case focused on Microsoft's response to the emergence of the Internet and in particular the competitive threat posed by Netscape Navigator. Again, the government saw Microsoft as trying to protect its position in operating systems and also attempting to extend its monopoly into the new browser market. Bill Gates had outlined the threat that Netscape posed in his famous Internet Tidal Wave memo of May 26, 1995, and Microsoft had responded aggressively to the upstart—or at least so the government's complaint suggested.

This was clearly a critical juncture in the platform defined by the desktop operating system. Of course, in some ways, Microsoft had stumbled into its monopoly in operating systems. IBM had gone to Microsoft in the first place because of the hard, smart work that Gates and Allen had done in building BASIC for the Altair 8800, but faced with destiny, Microsoft had sent IBM elsewhere. It was only when IBM came back and basically insisted that Microsoft figured out how to cobble together MS-DOS.

1. Lawrence M. Fisher, Microsoft In Inquiry By F.T.C., New York Times, Mar. 13, 1991, pD1.
2. John Markoff, F.T.C. Stays Deadlocked On Microsoft, *New York Times, July 22, 1993, pD4.*
3. John Markoff, Justice Department Considers Inquiry on Microsoft, *New York Times, Aug. 1, 1993, p33.*
4. US v. Microsoft, Civil Action No. 94-1564 (SS), Final Judgment, July 15, 1994.
5. Elizabeth Corcoran, Microsoft Deal Came Down to a Phone Call, *Washington Post, July 18, 1994, pA1.*
6. US v. Microsoft, Petition by the United States for an Order to Show Cause Why Respondent Microsoft Corp. Should Not Be Found in Civil Contempt, Oct. 20, 1997.
7. United States v. Microsoft Corp., 147 F.3d 935 (D.C. Cir. 1998).

But Microsoft had succeeded in the face of the original OS competition and had even successfully navigated from MS-DOS to Windows while IBM had tried to wrest back control of the PC platform with OS2 as OSs moved from characters to graphical user interfaces (GUIs). But the Internet was clearly the future and Netscape Navigator combined with Sun Java—the middleware threat—looked like it might be the next step in computer operating systems.

This was in many ways the best case for competition in platform markets. Netscape's market share in the browser market had roared ahead as the browser offered an entirely new function. Microsoft's OS monopoly just wasn't in the way of Netscape's organic growth. At the same time, with a strong position established in the new market, Netscape might have been able to fold in new functions into Navigator and diminish the importance of OSs generally. That was the threat that Gates had identified in his Internet Tidal Wave memo.

The government won its case in the federal district court and the core theory of its case was upheld on appeal even as the appellate court cut back on some of the government's theories.8 After a decade of pursuing Microsoft, the government was finally vindicated. The theory of the case had changed a little moving from the FTC's 1991 theory on how Microsoft was using its OS monopoly to distort competition in adjacent markets to a theory instead of how Microsoft was using its OS monopoly to protect that monopoly, but it was still a substantial accomplishment.

What was the appropriate remedy? If the concern was that Microsoft had squelched a young possible OS competitor, how to restore that competition? That would seem like the natural goal of an antitrust remedy. The district court had called for Microsoft to be separated into two companies, one focused on the operating system and the other focused on applications like Microsoft Office. Each would have received a copy of Internet Explorer to distribute, though only one of the new firms would have been allowed to develop it further.

This would have been a bold remedy—Microsoft argued, probably correctly, that in the US at least no unitary company had ever been cleaved in two as an antitrust remedy—but there was a more basic conceptual problem. Had the remedy been put in place before the case it seems unlikely that it would have prevented the illegal behavior. MicrosoftOS Co. would have seen the same threat from Netscape Navigator and would have replicated the behavior of the real Microsoft. The divestiture remedy was rejected on appeal and a series of behavioral limits were put in place to limit Microsoft's ability to engage in similar behavior going forward.

8. United States v. Microsoft, 253 F.3d 34 (D.C. Cir. 2001) (en banc).

It seems clear that the remedy did not restore Netscape to the market position it would have been in had Microsoft's illegal behavior not occurred. That natural question is what more aggressive remedies might have accomplished and we can gain some purchase on that question by switching to Europe. At the end of August 2001, the European Commission announced that it believed that Microsoft had impermissibly tied Windows Media Player (WMP) to Windows. The concern here was not really that this was an effort to protect Microsoft's dominant position in operating systems but rather that Microsoft would gain a decisive advantage in the adjacent media markets.[9]

After a three-year investigation, the European Commission concluded that Microsoft had indeed violated European competition law. Microsoft was fined €497 million and ordered to offer to computer makers two versions of Windows, one with WMP and one without it. Microsoft didn't have to charge a different price for the two OSs but giving PC makers a choice would ensure that other media player firms could bid to have their media players distributed instead of WMP. Think of this as a subtraction remedy, as Microsoft was required to create a version of Windows with reduced functionality.

What happened? In April, 2006, Microsoft reported on how the market had embraced the new option. Over the relevant period, roughly 35.5 million copies of the full-blown version of Windows XP were sold in Europe. And the version without WMP? 1787 copies or roughly 0.005 percent of all sales.[10] That doesn't tell us whether there were financial payments made to OEMs, as Microsoft may have been forced to buy distribution of WMP from PC makers and those transfers would be important, but the actual distribution of WMP wasn't altered by the subtraction remedy.

Perhaps we should have forced Microsoft to distribute Netscape Navigator as a remedy in the US browser case. Actually, we tried a version of that in Europe. Think of this as an addition remedy or a must-carry remedy. In January, 2009, the European Commission set out its preliminary conclusion that Microsoft was impermissibly tying Internet Explorer to Windows. Rather than fight that case and possibly disrupt the release of Windows 7 in Europe, Microsoft settled.

In the settlement, Microsoft agreed to distribute something called the browser-choice screen in which a user turning on Windows for the first time in Europe would be presented with a screen of five different browser choices rather than just Microsoft's Internet Explorer. Actually, a careful user would have noted that the screen offered the chance to scroll horizontally and that 14 different browsers were presented.

9. European Commission, Commission initiates additional proceedings against Microsoft, IP/01/1232, 30 Aug 2001.
10. Microsoft News Center, Fact Sheet: Windows XP N Sales, April 2006.

It was subsequently discovered that Microsoft had broken the browser-choice window when it issued the first service pack update for Windows 7 and yet somehow that fact went undiscovered for 17 months.

This is not a pretty picture and it is important to see the full implications. The US government started chasing Microsoft a decade after the IBM PC's 1981 release. Much of that was wheel spinning but the government moved successfully against Microsoft at a key competitive juncture when Netscape posed a possible threat to Microsoft's OS position. But the remedy didn't restore that threat and the subsequent parallel actions in Europe suggest that a broad set of available remedies might not have worked.

Two final points here. Given the theory of the Windows Media Player case in Europe, the fact that the remedy didn't change the distribution of WMP should have suggested that Microsoft should have been able to extend its OS monopoly into the media player space. The fact that that didn't happen—that everyone had Apple iPods and not Microsoft Zunes—suggests the important ways in which even struggling firms—and Apple Computer was that before it morphed into the Apple we know today—can compete outside the scope of dominant incumbents. Apple's new MP3 player gave it a strong market position outside the dominance of Windows.

The second point of course is that Microsoft's relative position has eroded mainly because what was once central, the desktop computer world defined by the IBM PC standard, has now been subsumed into a multi-device world defined by the Internet. The actual remedy implemented in the US case is seen as having slowed down Microsoft making it less aggressive, less nimble and more lawyer-hobbled. And that may have mattered when the next threat emerged.

## GOOGLE AND ANTITRUST NEUTRALITY REMEDIES

Sergey Brin and Larry Page described their Google prototype in a 1998 paper that they prepared for an academic conference in Brisbane, Australia on the World Wide Web.[11] Their new search engine would be launched into a crowded field of search engines—Alta Vista, Lycos, Excite and more if you remember your Internet history—and yet it would come quickly to dominate the search market. The vision behind the Google prototype and what would become the Pagerank patent and algorithm was better use of hyperlinks as a signal of website value. Google's search algorithm has evolved over time to augment that original key insight with the ability to evaluate value based upon the behavior of searchers in clicking on and not clicking on organic search results, the search version of the wisdom of crowds.

But as the 1998 Brin and Page paper made clear, there was a fundamental contradiction at the core of building an advertising-supported search engine. Consumers who would click on high-quality organic search results would have little reason to engage with advertising. Indeed, if the search engine was going to try to get consumers to click on ads, it might have an incentive to degrade the quality of the organic search results. Plus bias for or against particular sites would be very difficult to detect.

It was exactly that concern about bias that led to antitrust investigations against Google in both the US and the EC. The FTC action stalled out, but the EC investigation eventually focused on exactly these issues of bias. On June 27, 2017, the EC announced a fine of €2.42 billion against Google relating to Google's shopping product where the central finding was that Google had preferred its own shopping site to those of its competitors.[12] The EC's decision in the Google shopping case is complex—215 pages single-spaced—but the core of the remedy is to "subject Google's own comparison shopping service to the same underlying processes and methods for the positioning and display in Google's general search results pages as those used for competing comparison shopping services."[13] Comparison shopping service neutrality as it were.

Nondiscrimination duties are quite traditional in regulated industries and common antitrust remedies. Google started implementing its interpretation of the remedy on September 27, 2017. Google is continuing to implement a version of its product shopping unit as an ad on the top of particular search result pages but now outside comparison shopping services can bid against Google for the product slots as part of a standard Google auction.[14]

Google's approach to advertising has evolved over time. Google started with traditional impression based advertising before switching to pay-per-click style advertising. The more to the rich, product slot ads backed by detailed up-to-the-minute product inventories represents something meaningfully different from Google's traditional search market which is based on public information available on the Internet. The EC understandably concluded that this was a separate market—an adjacent market as it were—and acted to attempt to preserve competition in that market. The EC will monitor the remedy and Google's competitors are already complaining about it.[15]

11. S. Brin & L. Page, The Anatomy of a Large-Scale Hypertextual Web Search Engine (online at http://ilpubs.stanford.edu:8090/361/).

12. European Commission Press Release, Antitrust: Commissio fines Google €2.42 billion for abusing dominance as search engine by giving illegal advantage to own comparison shopping service – Factsheet, 27 June 2017 (online at http://europa.eu/rapid/press-release_MEMO-17-1785_en.htm).
13. European Commission, Google Search (Shopping) Case AT.39740, redacted public decision of Dec. 18, 2017, ¶ 700.
14. Google AdWords Blog, Changes to Google Shopping in Europe, Sept. 27, 2017.
15. FairSearch.org, Open letter to Vestager: Google remedies fail to comply with decision, Feb. 28, 2018.

## CONCLUSION

Platform markets are often punctuated equilibria markets: short periods of competition followed by a market characterized by dominance with that cycle to repeat. Schumpeterian competition. The point at which a new cycle might start is critical to healthy competition and the competitive spark to that cycle will often arise in a market near or even adjacent to the market current subject to dominance. Antitrust officials therefore have good reason to act to try to protect that nascent competition in these adjacent markets, as they did repeatedly for Microsoft and have commenced doing for Google. But even when officials have a good theory of liability, they have struggled to come up with successful remedies. Direct regulatory remedies have been ineffective in these examples seen in this paper, while remedies directed at firm culture or internal transaction costs have been perhaps more effective.

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