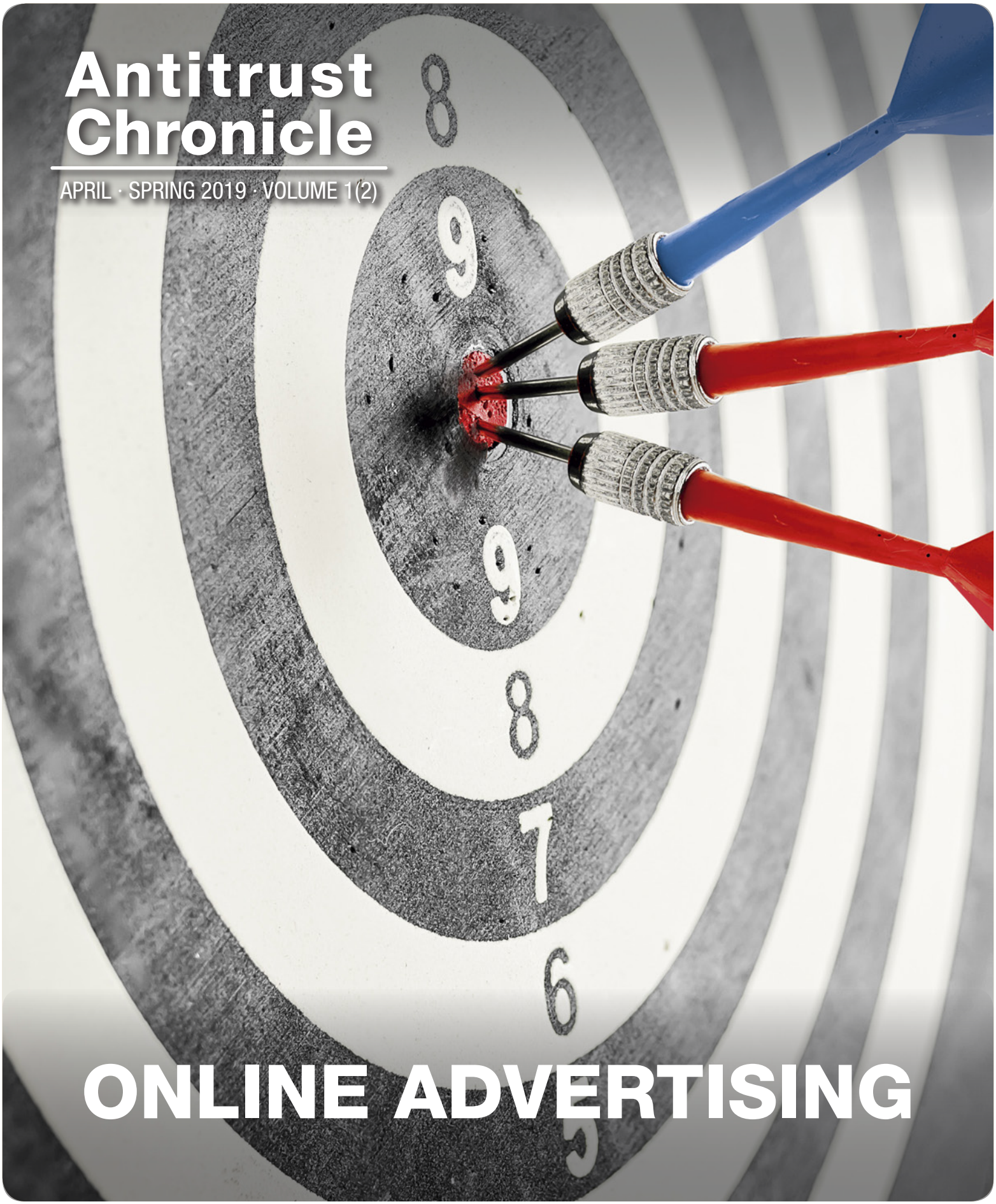

Antitrust Chronicle

APRIL · SPRING 2019 · VOLUME 1(2)

ONLINE ADVERTISING

CPI COMPETITION POLICY INTERNATIONAL

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LETTER FROM THE EDITOR

Dear Readers,

Speaking at the 2005 IAB Engage conference in London, Microsoft Chairman Bill Gates said: "The future of advertising is the internet."

With the advent of the digital economy, and advertising shifting from newspapers, radio, and television to the internet, we have also seen a shift in the regulatory approach of some governments from a focus on protecting consumers from "false advertising," to considering online advertising from an antitrust lens.

The market power of online platforms is a hot, highly debated, topic in competition policy of late. Some argue that the debate about market power in online advertising has a lack of precision. Some authors argue that the complex online advertising ecosystem needs to be demystified and some common misconceptions need to be corrected. Others argue that antitrust enforcers, along with pursuing their consumer and competition protection missions, should consider a per se rule against advertising.

We hope this edition of the CPI Chronicle helps further foster this interesting debate. As always, thank you to our great panel of authors.

Lastly, we want to alert CPI readers to our upcoming conference on Tuesday, April 30, 2019, Dynamic Competition in Dynamic Markets: A Path Forward, co-organized by CPI and the Competition Law and Economics Network at the Melbourne Law School. The conference will lead off with an opening keynote address by Philip Marsden and will feature a fireside chat with ACCC Chairman Rod Sims and Howard Shelanski. Panels throughout the day will include topics such as: Digital Innovation and Competition Policy; Understanding and Analyzing the Competitive Effects of Big Data; and Designing Antitrust Regulatory Models in a Globalized Silicon Valley Culture.

CPI looks forward to your participation in these timely discussions with leading antitrust academics, enforcers, and private practitioners. Register here.

Sincerely,

CPI Team[1]

1 CPI thanks Facebook for their sponsorship of this issue of the Antitrust Chronicle. Sponsoring an issue of the Chronicle entails the suggestion of a specific topic or theme for discussion in a given publication. CPI determines whether the suggestion merits a dedicated conversation, as is the case with the current issue of the Chronicle, and takes steps to ensure that the viewpoints relevant to a balanced debate are invited to participate.

SUMMARIES

Big Data and Online Advertising: Emerging Competition Concerns

By Hon. Katherine B. Forrest (fmr.)

The concept of big data has captured the public's attention primarily in regards to its privacy implications. However, the significance of big data in the competition sphere can no longer be ignored. Europe has been taking an increasingly aggressive stance in the big data realm — with multiple recent antitrust investigations into large technology companies and the passing of the European Union's General Data Protection Regulation in 2018 — but companies in the United States must now pay attention. This article takes a multi-layered approach to analyzing the competition ramifications of big data, asserting that big data itself has developed into a competitive force within firms. Big data has become, for many firms, a product in and of itself, separate from the firms' traditional products or services, and firms often believe that any big data they come to possess they can utilize without consideration.

Public Goods, Private Information: Providing an Interesting Internet

By J. Howard Beales III

Internet content is a public good: It is not used up in consumption. Private market provision of such public goods has generally depended on revenue from advertising, as does internet content today. The value of advertising, however, depends critically on the availability of information about the likely viewer. When information is available, advertising prices are roughly three times higher than when there is no information about the viewer. Impairing the flow of information would significantly reduce the revenues available to support internet content, an impact that would be particularly problematic for smaller publishers. Finally, advertising is actually beneficial to consumers. It leads to more competitive markets, with lower prices and more product improvements, and it narrows the gaps between different demographic groups.

What *Times-Picayune* Tells Us About the Antitrust Analysis of Attention Platforms

By David S. Evans

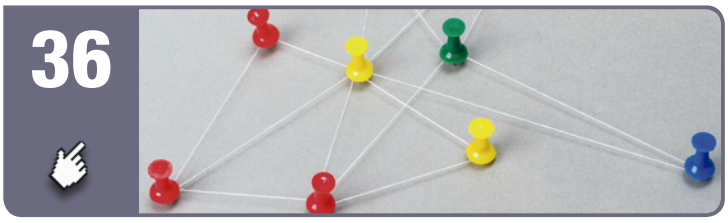
Times-Picayune, a 1953 Supreme Court decision involving newspapers, has gained notoriety from the Court's *American Express* decision concerning credit-card networks. The *Amex* dissent argued that the Court had already decided how to apply the rule-of-reason analysis to two-sided platforms in *Times-Picayune*, and got it right then, but got it wrong in *Amex*. *Times-Picayune* is a shaky foundation for that proposition. In that case, the Government had alleged per se tying involving advertising and monopolization of the dissemination of news and advertising. By the time the case reached the Supreme Court it was mainly about per se tying, and didn't pose the particular two-sided issues that concerned the Court in *Amex*. After dismissing the per se tying claim, the Court provided a short rule-of-reason analysis which is consistent with considering the newspaper platform overall, and not just one side. In particular, the lower court had analyzed the Government's predation claims for the newspaper by considering the platform in its entirety, and the Court relied on its conclusion.

Online Advertising and Antitrust: Network Effects, Switching Costs, and Data as an Essential Facility

By Catherine E. Tucker

In this paper, I discuss some of the traditional sources of market power grounded in economics, and how they apply to online advertising markets. I discuss the idea that digital advertising has evolved technologies that are intended to dismantle many early network effects in online advertising. I then discuss how new digital technologies have evolved to reduce switching costs for advertisers. Last, I discuss briefly the question of whether data can be thought of as an essential facility for advertising.

SUMMARIES



Attention Oligopoly: Comments on the Paper by Prat & Valletti

By David Parker & Federico Bruni

The nature and the extent of online platforms' market power is a hot topic in competition policy. One recent contribution to the debate is a working paper by Andrea Prat (Columbia University) and Tommaso Valletti (Chief Economist at DG Competition). The paper considers situations where online platforms capture consumers' attention through content propositions and sell this attention to advertisers. In this environment, the authors conclude that platforms can exploit their market power and extract profits from upstream monopolies, by threatening to give visibility to potential entrants. While an interesting contribution, this approach doesn't necessarily capture how platforms operate in reality. Moreover, its application to social media platforms alone seems to ignore that upstream suppliers have multiple alternative routes to access customers beyond social media. If this approach were to be applied, therefore, competition authorities would need to take a wider view of advertising markets than the authors suggest.

Competition in Display Ad Technology: A Retrospective Look at *Google/Doubleclick* and *Google/Admob*

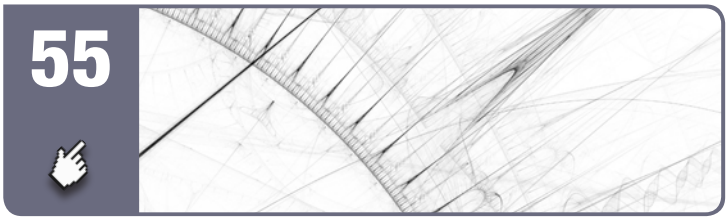
By Dan Bitton, David Pearl, Maurits Dolmans & Henry Mostyn

This article seeks to demystify the complex online advertising ecosystem and correct some common misconceptions about it. It conducts a retrospective analysis of the *Google/DoubleClick* and *Google/AdMob* merger reviews, and concludes that agencies were right to reject complaints that the transactions would lead to anticompetitive effects. To the contrary, a review of competitive indicia available today show that display advertising and ad tech continue to be marked by constant disruptive innovation, growing output, new entry and expansion, and large numbers of players competing with differentiated offerings. If vertically integrated ad tech players attempted to engage in anticompetitive behavior, advertisers and publishers could, and would, take their business elsewhere, whether to other vertically integrated providers or to popular point players.

Advertising as Monopolization in the Information Age

By Ramsi A. Woodcock

Economists have long recognized that advertising has two main functions: To inform and to persuade. In the information age, the information function is obsolete, because consumers can get all the product information they want from a quick Google search. That makes virtually all advertising today purely persuasive in function. The courts have long recognized that purely persuasive advertising is anticompetitive, because it induces consumers to buy products that they do not really prefer, harming consumers and placing sellers of consumers' preferred products at a competitive disadvantage. Antitrust enforcers must respond to the obsolescence of the information function of advertising by treating advertising as a *per se* illegal form of monopolization under the Sherman Act.



A New Digital Social Contract to Encourage Internet Competition

By Dipayan Ghosh

The digital advertising industry has three major players, one of them relatively new to the fold. But the commercial regime that has led to their dominance in their respective markets draws not on the strength of their relationships with advertisers, but rather the extortionate rates that they charge for a perfectly inelastic pricing model for individual consumer privacy. This paper discusses the industry dynamics that have forced this three-pronged hegemony as well as potential remedies in competition policy the government should pursue to ameliorate it.

SUMMARIES

From Demoting To Squashing? Competitive Issues Related to Algorithmic Corrections: An Application to the Search Advertising Sector

By Frédéric Marty

To what extent can algorithmic corrections made by dominant operators expose them to competitive procedures? The opacity of the algorithms used to adjust auction results on keywords for search-related ads can lead to lawsuits based on alleged algorithmic manipulations. Such corrections are necessary to ensure the quality of the advertisements displayed. However, they can be the source of exclusionary or exploitative abuses. In such a context, competition authorities must avoid both false positives and false negatives.

WHAT'S NEXT?

For May 2019, we will feature Chronicles focused on issues related to (1) **Common Ownership**; and (2) **Healthcare**.

ANNOUNCEMENTS

CPI wants to hear from our subscribers. In 2019, we will be reaching out to members of our community for your feedback and ideas. Let us know what you want (or don't want) to see, at: antitrustchronicle@competitionpolicyinternational.com.

CPI ANTITRUST CHRONICLES JUNE 2019

For June 2019, we will feature Chronicles focused on issues related to (1) **A look back at *Amex***; and (2) **Fines & Damages**.

Contributions to the Antitrust Chronicle are about 2,500 – 4,000 words long. They should be lightly cited and not be written as long law-review articles with many in-depth footnotes. As with all CPI publications, articles for the CPI Antitrust Chronicle should be written clearly and with the reader always in mind.

Interested authors should send their contributions to Sam Sadden (ssadden@competitionpolicyinternational.com) with the subject line "Antitrust Chronicle," a short bio and picture(s) of the author(s).

The CPI Editorial Team will evaluate all submissions and will publish the best papers. Authors can submit papers on any topic related to competition and regulation, however, priority will be given to articles addressing the abovementioned topics. Co-authors are always welcome.

BIG DATA AND ONLINE ADVERTISING: EMERGING COMPETITION CONCERNS

BY HON. KATHERINE B. FORREST (FMR.)[1]

1 Katherine B. Forrest is a former U.S. District Judge for the Southern District of New York and former Deputy Assistant Attorney General in the Antitrust Division of the U.S. Department of Justice. She is currently a partner at Cravath, Swaine & Moore LLP. The views expressed herein are solely the personal views of the author and do not represent the views of the Firm or legal advice.

I. INTRODUCTION

The informational capabilities and utility of Big Data — defined as large data sets capturing broad and deep information — are fundamentally altering the theory and practice of competition policy and law. While there is nothing novel about restrictions on inter-firm exchange of competitively sensitive information, Big Data allows for advertent and inadvertent sharing at scales not previously available. We have long known that horizontally competing firms cannot share customer or pricing information with impunity. This has always been so — and has long informed antitrust policy and practice. We also have known that firms in possession of unique or essential inputs may be subject to particular competition law scrutiny; or how firms with what one may characterize as market power may act in certain contexts may also be subject to particular scrutiny. Big Data provides tools and capabilities for firms that enable efficient conduct, but also may disadvantage rivals. The landscape enabled by Big Data has revealed emerging competitive concerns.

It is now clear that Big Data has fundamentally altered the scale and velocity of information acquisition and the analytic capabilities to manipulate it.[2] Firms with vastly expanded informational access have an enhanced ability to use such access to create competitive efficiencies as well as use it for more questionable competitive interactions. The breadth of information now available adds a critical new dimension to our analysis of such interactions: the tried and true frameworks of price and output are inadequate to present a comprehensive understanding of competitive conditions and/or firm conduct. The competitive implications of Big Data are real — and may go unrecognized by firms having particularly deep access. Firms may perceive their access and ability to manipulate vast data sets as simply a fortunate development — the march of technological progress. And, without malice aforethought, such a firm may engage in conduct that runs afoul of basic principles of antitrust law. This is becoming especially clear in the online advertising arena, where Big Data and advanced analytics have had an enormous impact. Indeed, in the fall of 2018, multiple antitrust investigations into Amazon's business practices were opened in Europe, and there has been increased scrutiny of large technology companies in the United States.[3]

Setting policy or advising clients in this emerging competitive environment requires a multi-dimensional approach — one that takes into consideration that informational access allows for firm-specific economic efficiencies, but may also lead to conduct that can have the effect of manipulating market dynamics. This article offers a layered analytical approach that considers how this growth in informational access needs to figure into antitrust considerations, and lays out two basic premises.

The first premise is that a firm's data and its algorithmic ability to analyze such data — including that which it has, but equally importantly, that which it can get — are themselves products, multi-faceted commodities that exist independently of the firm's more traditional products and services. The data which a firm has, or to which it can gain access, may or may not derive from the manufacturing of its special widget or creation of service offerings. This could raise competition concerns, because a firm's possession of Big Data might actually expand its conceived market power, or shift the firm into a different market than it was traditionally in.

The second premise is that most firms today consider all manner of data harvested from their own conduct or acquired from a third party as, so to speak, "born in wedlock," and thus necessarily lawful and unproblematic. That is, firms expect that data they possess may be put to any use; and that includes data that they are able to publicly acquire from firms trading in Big Data sets pertinent to one or more industries or populations. However, this also raises competition concerns, as we have seen — and continue to see — in the increased scrutiny of Big Data.

Data itself has, thus, quietly become a competitive force within all firms, and its usage is capable of causing anything from ripples to waves to tsunamis in market conditions. You might think of it this way: when analyzing a firm's products and its lines of business, it is time to consider not only what comes off the manufacturing line, but the information — the large data sets — that may be generated, available, or used anywhere in or by the firm.

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2 In a 2016 lecture at the Fordham Competition Law Institute, former Federal Trade Commission ("FTC") Chairwoman Edith Ramirez referred to the "three Vs" of Big Data: volume, velocity, and veracity. Edith Ramirez, Chairwoman, Fed. Trade Comm'n, Keynote Remarks at the 43rd Annual Conference on International Antitrust Law and Policy: Deconstructing the Antitrust Implications of Big Data (Sept. 22, 2016) (available at: https://www.ftc.gov/system/files/documents/public_statements/1000913/ramirez_fordham_speech_2016.pdf).

3 In September, 2018, the European Union opened an investigation into Amazon.com, Inc., examining the company's business practices, and specifically, whether "Amazon earned a competitive advantage from the data it collected from merchants and transactions on its platform." Sara Germano, *Germany Opens Amazon Antitrust Probe, Adding to European Scrutiny*, WSJ.com (Nov. 29, 2018, 10:50 AM), https://www.wsj.com/articles/germany-opens-amazon-antitrust-probe-adding-to-european-scrutiny-1543491840. In November, Germany's Federal Cartel Office opened a similar investigation, examining Amazon's effects on the German marketplace. *Id.* In the fall of 2018 into winter 2019, the FTC held a series of hearings ("Hearings on Competition and Consumer Protection in the 21st Century") on the topics of Big Data and competition, consumer protection and privacy and enforcement priorities. Federal Trade Commission, Hearings on Competition and Consumer Protection in the 21st Century, https://www.ftc.gov/policy/hearings-competition-consumer-protection (last visited Feb. 2, 2019).

Today, the digital ability to capture and process such information may have little to do with product characteristics, a firm's unit sales, or customer lists. Instead, a harvestable data set might include whether customers in particular zip codes are sophisticated or unsophisticated purchasers, whether they engaged in meaningful comparison shopping and if so, with which competitors, and whether those competitors offer substitutable widgets to the same customers in the same geographic area, with the same or similar terms and conditions. On the one hand, information can provide an extraordinary opportunity for efficient firm conduct; on the other, it carries known and unrecognized risks: it may be used to disrupt a well-functioning competitive process.

The article will first define "Big Data" and discuss specific areas of competitive concern, including online advertising. Then, it will offer a new definition of consumer welfare that takes information issues into consideration, and suggest redefinitions of product markets and market power. Finally, it will describe potential impacts on competitive effects and exclusionary conduct.

II. DEFINING BIG DATA FOR PURPOSES OF COMPETITIVE IMPACT

Conceptually and practically, Big Data is the digital capture of vast quantities of information capable of algorithmic manipulation. Such information may include details about any firm that interacts with buyers, sellers, or supply chain participants in a digitally-networked manner; it similarly includes any and all information about the digitally-networked conduct of a single person, household, or population segment. It is not only current information, but also historical information converted to or maintained in a digital and algorithmically accessible format. It can include domestic or international data specific to an industry or generalized to the economy. Critically, algorithmic manipulation allows such data sets to be accessed and queried; the days of data "snapshots" or sampling are coming to an end.

The competitive utility of such data has unimaginable breadth. It can render competitive or anticompetitive conduct both easier and harder to detect; and, as much of its value derives from processes occurring within servers and as the result of algorithmic manipulations, it is a machine and not human-driven role. Big meetings in conference rooms are unnecessary and even unhelpful. Informational exchange and usage is rendered incredibly quick, automatic, and nearly self-executing.

Questions may be asked of any data set — and those questions may be the simple ones we imagine: does this industry or set of firms, this population of consumers, this household, this person, acquire, want to acquire, or can he or she be made to acquire, X product? Will that firm or person pay a particular price based on prior purchasing patterns? Do those patterns rely on the customer base of a firm, or the demographic characteristics of consumers? The questions may also be more complex: is this population likely to want, need, or be receptive to a product or service no one has ever heard of? Is there any "must have" data for firms seeking to achieve a significant position in this area? Is exclusionary conduct relating to data access lawful? Let me provide a few examples of the utility of acquired or harvested and analytically manipulated data sets. I'll start with a few that are more obvious and then move to several of a newer vintage.

First, a firm's unparalleled access to data enables targeted advertising at a level that allows the firm to know more about us than many of the people closest to us. This advertising has the potential to create demand through manipulated, perceived need.[4] In addition, a firm's unparalleled access to data can further enable it to obtain an unerring first mover advantage in new product areas based on predictive modeling. It allows a firm to achieve or maintain a competitive advantage, even dominance, by tying other firms or consumers to "sticky" experiences (think Facebook, LinkedIn, Amazon, Apple, Uber, but also other platforms).

Access to data allows a firm to engage in price discrimination at a sophisticated level based on known and predictive buying patterns.[5] Big Data allows consumer-directed price discrimination differentiating between demographics as well as those exhibiting certain buying patterns, or between those with varying digital presences. In short, different prices can be presented simultaneously to different market participants.

4 See generally, Salesforce Research, Digital Advertising 2020 (2018), available at https://c1.sfdcstatic.com/content/dam/web/en_us/www/assets/pdf/datasheets/digital-advertising-2020.pdf.

5 See generally, McKinsey & Company, Marketing & Sales, Big Data, Analytics, and the Future of Marketing and Sales (Mar. 2015), available at https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Marketing%20and%20Sales/Our%20Insights/EBook%20Big%20data%20analytics%20and%20the%20future%20of%20marketing%20sales/Big-Data-eBook.ashx.

Finally, it allows a firm to gain unparalleled insight into purchasing patterns and to the prices a buyer has paid or is likely to consider paying.[6] It allows a firm to create a market opportunity or enter a market early and dominate in areas in which that firm did not traditionally compete (thus rendering firms with data access into all manner of nascent competitors). It allows a firm to observe, analyze, and act on incremental pricing behavior, in a way that is similar to that of flash securities traders. It allows a firm to provide data on an exclusive basis to a firm that may acquire it simply to shelve it. It allows a firm to engage in price fixing through "understandings" gleaned from digital knowledge heretofore unattainable. For instance, a firm may be technically able to observe numerous diverse price elements through machine-related processes and determine or predict prices charged by other market participants through algorithmic processing; conforming pricing under these circumstances could well be problematic.

III. REDEFINING CONSUMER WELFARE

The potential economic utility of Big Data — both good and bad — pushes us to redefine consumer welfare. For the purposes of this article, let me describe consumer welfare as a consumer's ability to acquire goods or services based on market forces free from unreasonable external manipulation. Such an ability provides consumers with fair access to available goods and services that are necessary to and/or enhance their quality of life.

Competition policy and law is premised on a view that maintaining robust competitive conditions between firms, in which exclusionary behavior is discouraged and even penalized and in which dominance is controlled or prevented when possible (and carefully monitored when naturally occurring or nascent), enhances consumer welfare. In an era in which data can heavily influence or even control firm conduct or consumer behavior, observed price and output effects are no longer the only factors by which to analyze competition and consumer welfare.

Observed price alone may obscure an array of behind-the-scenes conduct that is increasingly sophisticated, enabling discrimination at granular levels, and that can be exchanged in non-traditional ways. Thus, using observed price and output effects to define the parameters of conduct that is welfare-enhancing or harmful no longer has the same utility it once did. An additional driver, how firms can and do acquire, collect, use, and trade in vast quantities of information, must also be recognized as directly impacting on consumer welfare.

This article offers a revised definition of consumer welfare that takes into account issues relating to the competition implications of Big Data. What it suggests is that we must understand consumer welfare and the health of the competitive process as including freedom from unreasonable manipulation of captive data sets. Algorithmic data manipulation that reduces free market decision-making reduces overall welfare. To be clear, access to data is often welfare enhancing — we depend on it for well-functioning markets. However, since Big Data has potentially manipulative effects, one must consider whether particular uses of it impact consumer welfare.

Two additional examples of Big Data's potential impact on consumer welfare are instructive. The first is that use of data by a firm that has deep access, inherent network effects, and dominant market position (think Amazon, Facebook, or LinkedIn) may inhibit new entry.[7] Consumer welfare may be harmed when data is harvested, analyzed, and used in a manner intended to or having the effect of precluding competitive choice or creating such networked attachment that consumers no longer have a real ability to engage in freely-chosen purchasing behavior.

Another example of welfare-reducing conduct is, as previewed above, granular and highly sophisticated price discrimination based on a known demographic or a willingness to share data in exchange for price effects. In this regard, consumers with a robust digital presence may have different pricing options than those without — leading to data-driven consumer "leave behind" or "jump ahead."

Current literature touches on some of these issues — framing them differently in important ways — as incursions on consumer privacy. No doubt privacy issues carry impacts on consumers — many negative. But in terms of competition law, the question for right now is how Big Data may manipulate firm and consumer interactions with the marketplace for goods and services.

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6 McKinsey & Company, *supra* note 5.

7 According to one study published in 2018, "by 2019 66% of digital advertising spend will go to Google Search, YouTube, Facebook, and Instagram. Taken together these channels represent 63% of total spend in North America, 67% in the Asia-Pacific region, and 69% in Europe." Louis Columbus, *Analytics Are Defining The Future of Digital Advertising*, Forbes.com (Jan. 18, 2018, 8:34 PM), https://www.forbes.com/sites/louiscolumbus/2018/01/18/analytics-are-defining-the-future-of-digital-advertising/#4e65518d786f. See also Leonid Bershidsky, *The Digital Ad Market Is Overdue for Antitrust Review*, Bloomberg Opinion (Dec. 5, 2018, 1:01 AM), https://www.bloomberg.com/opinion/articles/2018-12-05/amazon-google-facebook-are-ripe-for-a-european-antitrust-review (discussing how a lack of new entry into the digital advertising business may be a symptom of market failure).

There are emerging differences as well in how the United States and Europe are approaching Big Data and antitrust issues, as mentioned briefly above. Europe, for example, is moving towards increased data privacy. Approved and adopted by the European Union's parliament in 2016, the General Data Protection Regulation ("GDPR") came into effect in 2018. This regulation requires strict rules on possessing and controlling personal information, and requires stronger conditions for customer consent.[8]

Now, lest this article convey a solely negative picture, let me be clear that Big Data has welfare enhancing aspects. For instance, a positive effect could be identifying product characteristics consumers find most useful, or anticipating and avoiding supply chain bottlenecks that allow smooth maintenance of output levels and price equilibrium. Of course, there are also enormous health impacts that Big Data can have: identifying epidemiological issues, responses and the like.[9] Pharmaceutical companies surely find these of great interest.

IV. REDEFINING PRODUCT MARKETS AND MARKET POWER

Once we redefine consumer welfare, we must carry the implications of that definition through to conceptualizing what constitutes a competitive effect. Traditionally, the existence or impact of competitive effects is correlated to a firm's position in the market: does the firm have sufficient market power to create or enhance a welfare-reducing market condition? In the world we now inhabit, when data sets allow for unseen but real manipulative impact on competition and consumer welfare, the concept of market power also needs redefinition. Is it still appropriate to define market power or dominance in relation to interchangeable products, when a firm's real competitive impact is based instead on how it manipulates data? Firms with the capacity to harvest and utilize Big Data now have two products: their nominal one (for example, the widgets they manufacture), and their data set and related processes for algorithmic analysis. A competitor group therefore encompasses not only those engaged in making or providing substitutable goods or services, but those who have or possess similar data sets or analytic capacities. In this regard, the potential commoditization of a data set works as a proxy to define a competitive universe.

This definition means that what used to be a single-product firm now has another product line: its data and analytic capabilities. Thus, firms that might not traditionally be considered competitors may find themselves in competition with each other.

What does this mean? It means that defining markets based on manufactured products may be insufficient, and therefore that measuring competitive effects based on price and output may similarly be insufficient. An anticompetitive effect thus includes data manipulation that has a defined ability to unreasonably impact market behavior. This article is not suggesting the abandonment of price or output analyses to measure competitive effects. But, in this informationally-driven world, price and output analyses are no longer sufficient measures to define market impact.

In theory as well as practical application, what constitutes economically efficient behavior — what is procompetitive — must also evolve. A firm's decision to follow a path to making more and better widgets, expanding market reach, or improving quality, is only a piece of what will improve that firm's overall competitive prospects and what will create market efficiencies. Modeling firm conduct that is categorized as economically rational or irrational should now include analyses of how a firm's data has been effectively harvested and used.

V. REDEFINING POTENTIAL IMPACTS ON COMPETITIVE EFFECTS AND EXCLUSIONARY CONDUCT

In our redesigned framework, individual or collective firm conduct that seeks to utilize data to reduce independent decision-making, create unparalleled dominance, or preclude timely and effective entry, would be subject to scrutiny and potential redress. Exclusionary conduct that prevents wide access to certain data sets, however, may not be the real problem, and therefore more access may not provide the real solution. I do not view data itself as an essential facility; on the other hand, the algorithm through which it is run, and the mining techniques applied to it, may be. With all of this said, non-exclusive access to algorithms is not necessarily the best solution. In this context, non-exclusivity may act to proliferate rather than reduce market manipulation.

8 See generally EU GDPR.ORG, https://eugdpr.org/ (last visited 2/24/19).

9 See generally Bernard Marr, *How Big Data is Changing Healthcare*, Forbes.com (Apr. 21, 2015, 10:50 AM), https://www.forbes.com/sites/bernardmarr/2015/04/21/how-big-data-is-changing-healthcare/#290e9f302873.

VI. PRACTICAL ISSUES

Let us turn now to certain practical questions: what implications, if any, does all of this have for policy and practitioners? Critically, when regulators, policy makers, and advisors are analyzing firm behavior, the concept of what may harm or help ensure robust competition and best serve consumers, needs to expand. For example, we must ask:

First, in what ways can firms cause anticompetitive price effects through data manipulation? Second, in what ways is price discrimination an acceptable or unacceptable market outcome of data manipulation? Third, what are the competitive implications for firms in one line of business to share non-price, and non-output-related data sets? Fourth, how do we include an analysis of informational access and manipulation in merger analysis? For instance, what role does it play in the merger of firms that previously would have been considered non-horizontal competitors, but that we now recognize as having complementary data sets and strong analytical capabilities?

Let me end with a few final practical points. Firms increasingly and appropriately recognize data as a crown jewel. Elevating data to such status informs strategic decision making in terms of acquisition, harvesting, and use. Regulators need to understand and think through the implications of this, and ensure that regulation does not deprive customers of Big Data's benefits. The speed at which all of this is moving challenges legislative and regulatory processes. Separately, firms may want to consider self-policing in the form of codes of conduct. Such codes could, for instance, recognize, that data manipulation can negatively impact free market competition.

VII. CONCLUSION

In conclusion, we are at an inflection point that requires fundamental alterations in legal theory. This article offers one way of considering the issues arising from unparalleled informational access and usage, but of course there are many ways to think about such issues. More important than the absolute correctness of any emerging views is that we begin the dialogue that recognizes the important changes that are occurring around us.

PUBLIC GOODS, PRIVATE INFORMATION: PROVIDING AN INTERESTING INTERNET

BY J. HOWARD BEALES III[1]

1 Professor of Strategic Management and Public Policy, George Washington School of Business.

I. INTRODUCTION

The growth of the Internet has enriched all of our lives. Some, and perhaps most, of its most interesting content is available without charge. Understanding the crucial role of online advertising in making this possible requires we recognize three fundamental propositions.

First, internet content is a public good: it is not used up in consumption. Private market provision of such public goods has generally depended on revenue from advertising, as does internet content today. Second, the value of advertising depends critically on the availability of information about the likely viewer. When information is available, advertising prices are roughly 3 times higher than when there is no information about the viewer. Impairing the flow of information would significantly reduce the revenues available to support internet content, an impact that would be particularly problematic for smaller publishers. Third, advertising is actually beneficial to consumers. It leads to more competitive markets, with lower prices and more product improvements, and it narrows the gaps between different demographic groups.

II. INTERNET CONTENT IS A PUBLIC GOOD

The Internet has allowed an unprecedented diffusion of information to consumers. Among a nearly infinite variety of possibilities, consumers can now listen to radio broadcasts, watch television programs, read the daily paper, or just hang out with their friends online. Although these activities have considerable value to consumers, they are frequently supplied to consumers free of charge. Instead, Internet content is largely funded by advertisers who pay to have their ads included along with the online content.

From an economic perspective, many types of Internet content are a "public good." Unlike private goods, public goods are not "used up" in consumption, and instead remain available for other consumers to enjoy. A classic example of a public good is free broadcast radio or television. Any number of consumers can enjoy the content, without any additional costs to providing it. News and entertainment online are completely analogous. There may be congestion costs, as there are with a highway, but content viewed by one is still available for viewing by others. Moreover, like many public goods, it can be difficult to exclude consumers from consuming content. Editorial or programming content is easily copied and relayed to family, friends, and others.

There are, of course, internet-based services that are not public goods. Email, for example, requires an arrangement between the consumer and the service provider and excludes others from using the service. An email account can be shared among multiple users, but it cannot be used by the public at large.

Long before the Internet, publishers developed effective mechanisms to finance content that consumers wanted despite the public good nature of their product. Conventional media markets face the same underlying economic issues, and offer valuable insights into successful models for the provision of content.

The most common market mechanism for providing public goods is advertising. In effect, advertising converts the public good of media content into a private good of exposure to advertising. Content becomes a way for the publisher to attract an audience that in turn can be sold to advertisers. Because advertisers ultimately want to reach individual consumers, a larger audience is more valuable than a smaller one – it produces more advertising exposures available for sale.

The business of producing content and selling advertising is a "two-sided" or "platform" market. Content must attract an audience, but the platform must also attract advertisers. The financial support for the content comes from advertising revenue. In some circumstances, such as directories or fashion magazines, advertising may increase the overall value of the product to consumers. In other circumstances, however, advertising is a nuisance: Too much advertising, or advertising that is too intrusive or offensive to consumers, may drive away some of the audience, thereby reducing the number of advertising exposures that can be sold. Nuisance effects from advertising are more likely in media like radio and television where, digital video recorders aside, consumers must wait through that advertising for the programming to resume. They are likely less significant in print media, where consumers can more easily skip over the advertisements and simply ignore them. The publisher must consider both sides of the market in deciding what content to provide and how much advertising to offer.

Throughout history, advertiser support has been a vital revenue source for media companies. Many, such as free broadcast radio or television, depend almost entirely on advertising revenue for survival. Also common are mixed models, such as the typical magazine or newspaper, or cable television programming, where subscription payments from consumers provide some revenue, but advertising revenue remains vital and is frequently the largest source of revenue.

There are, of course, some models that are purely supported by subscription revenues, such as satellite radio, premium cable TV channels, or some "over-the-top" services such as Netflix. Market behavior makes clear, however, that most consumers are not willing most of the time to pay a premium price to avoid advertising content. They would rather avoid the direct costs of a subscription, and suffer the usually minor distraction of advertising intrusions to either subsidize or cover entirely the cost of the content.

There is nothing fundamentally different in the provision of online content from providing similar content in conventional media markets. Publishers, ranging from major media companies to specialty sites that focus on particular niches, must cover the costs of producing the content they provide. Although there are other models, by far the most common business model supporting the provision of Internet content is advertising-based.

Recently, some have argued for a different, subscription-based model of internet content provision. Concerned about the sharing of information that, as discussed below, is a key characteristic of online advertising markets, they have suggested that a subscription model would avoid the privacy problems that online advertising may appear to create.

Given the long history of conventional media markets, however, there is little reason to think that a subscription only, or even a subscription-mostly mode, would be successful. There is nothing different about the economics of providing internet content that would lend support to the notion that a business model that has consistently been eclipsed in the provision of editorial and entertainment content in the real world will suddenly become more successful online. Although examples exist in conventional media, subscription models have generally been rejected by consumers. There is every reason to expect that same result online.

III. THE VALUE OF ADVERTISING DEPENDS ON INFORMATION

In conventional media markets, the price of an advertisement depends on the size of the audience that it reaches: larger audiences, other things being equal, command higher prices. But the price of an advertisement also depends on the characteristics of the audience. Not surprisingly, some audiences are more valuable than others, because more advertisers are interested in reaching them, or they are harder to attract to programming and therefore relatively scarce. Indeed, some programming, such as the original "soap operas," was created specifically to attract a particular audience that advertisers sought. Advertising prices therefore depend on audience demographics, estimated through survey research, as well as the sheer number of viewers.

Online advertising is typically served to one person at a time when they visit a particular website, so audience size is not directly relevant. What advertisers are willing to pay for that slot, however, depends critically on what they know about the viewer. And in turn, what advertisers are willing to pay determines the resources available to support the content of that particular website. Anonymity may appear attractive to an individual viewer, but because it reduces the price of the advertisement, it reduces the revenue available to support the content of the website that the viewer is enjoying. It is, in short, a subtle form of free riding on the contributions of others.

There are two predominant forms of online advertising: search advertising and, broadly speaking, display advertising. Search advertising is purchased based on the keywords that a consumer has just entered in a search engine and is usually sold on a cost per click basis. That is, the web page is paid based on the number of clicks on the advertisement, rather than the number of consumers who see it. Advertisers bid for keywords, and the search engine provider will select which advertisements to include in the results based on the bid price and its own estimate of the likelihood that this consumer will find the advertisement sufficiently interesting to click on it. Information that enables the search provider to make better estimates of the likelihood that a consumer will click on the link will increase the provider's revenue.

The other major category of online advertising is display advertising, which includes display and banner ads, rich media, and digital video ads. Display advertising is generally sold on a cost per thousand ("CPM") basis. Large web publishers maintain their own sales forces, and sell much of their available inventory directly to advertisers, usually at a premium price. Third party intermediaries, including advertising networks and ad exchanges, are key participants in this marketplace. Advertising networks pool inventory from numerous, usually small publishers, along with unsold inventory from larger publishers. Increasingly, however, advertising is sold in real-time auctions, with advertisers bidding for particular advertising availabilities based on what, if anything, they know about the viewer. In the auction, the highest bidder wins the advertisement, at the price offered by the second highest bidder. Information about the viewer is obtained through cookies, which enable advertising networks and others to determine what other websites that particular user has visited and may enable either networks, publishers, potential advertisers to match the consumer with other information they have about that particular person. Cookies also enable "capping" advertising frequency, so that a consumer does not repeatedly see the same advertisement.

In conventional media, advertisers choose to advertise to an audience that the publisher has curated, because of the audience's interest in that publisher's particular content. In online markets, advertisers select their own audience, conveying their message to consumers who meet their criteria, wherever those consumers might be online. Information about the consumer's interests and characteristics is clearly crucial to that effort.

In two separate studies, I have examined the impact of better information on the price of digital advertising. In a 2010 study, I surveyed 12 of the 15 largest advertising networks to determine the impact of behavioral targeting, which uses data based on user browsing behavior across multiple web sites to categorize likely consumer interest in a given advertisement. I compared the price of advertising on a CPM basis when it was sold based on behavioral targeting with the price when the advertisement was sold on a "run of network" basis, meaning that it could appear anywhere on the network with no specification as to the characteristics of the user. I found that the CPM for behaviorally targeted advertising was roughly 3 times higher than the price of run-of-network advertising — a substantial price premium. I also found that the majority of advertising revenue was passed through to the publisher.[2]

A second study, with Jeffrey Eisenach, analyzed 2013 impression-level data from two anonymous operators of automated advertising exchanges to determine the influence of additional information on the auction price. We found that more information led to a price premium that was both statistically and economically significant. If there was a cookie available with the impression, the price was roughly 3 times higher than if there was no cookie. Moreover, the longer the cookie had been in place, the greater the increase in price was. The price of an impression with a cookie that had been in place for 90 days was 3.7 times higher than the price with no cookie on one exchange, and 7.1 times higher on the other.[3]

Eisenach and I also used data from Adomic to assess the importance of third-party advertising, such as that sold through the auction markets, to publishers of different sizes. Adomic examines the source of advertising served on a particular web page to measure the relative prevalence of different advertising sales models across the top 4,000 Internet publishers. Even the largest publishers sold about half of their advertising availabilities through third-party intermediaries, while smaller, "long-tail" publishers relied on these approaches for up to two thirds of their advertising sales.

One might imagine a world in which web sites obtain information about the characteristics of their viewers in the same way that conventional media do, through surveys. That may be a feasible alternative for CNN or the New York Times, but it is hard to imagine a survey sufficiently large to form the basis of a reliable estimate of the demographic characteristics of the audience for a particular "cute kitten" video on YouTube. For smaller publishers in particular, there is little practical alternative to the cookie-based exchange of information to enhance the value of their advertising availabilities, and hence to enhance the revenue available to support their content.

Other studies support the same conclusion: the value of online advertising, and hence the revenue available to support the production and development of online content, depends critically on the availability of information about the likely viewer of the ad. Regulatory requirements that impair the flow of information will significantly reduce the revenue available to online content producers, leading to a less vibrant Internet. The impact will be greatest on the smaller publishers, who are most dependent on third-party technologies for advertising revenue.

It is also vital to recognize that regulatory rules are likely to have very different impacts on different companies. Companies that utilize sign-ins are likely to have the most information, because they can typically observe the consumer's behavior whenever he or she is signed in to the service. Thus, Facebook and Google likely have significant informational advantages over other participants in the online advertising marketplace. Some large publishers with many different content pages will gather information regarding behavior as the consumer moves around their various offerings. Other important participants in the online marketplace, however, are not consumer-facing at all. Instead, they work with publishers or advertisers to observe behavior across independent websites through the use of cookies. There are numerous such companies, most of whom consumers have never heard of — for example, 33across, Accuen, Acuity, and Adara, which happen to be the first four names on the list of members of the Network Advertising Initiative. More elaborate consent requirements could seriously disadvantage these companies, and help protect the market shares of the current leaders in the online advertising market, Facebook and Google. As in many other areas, large players in online advertising markets have incentives to agree to regulatory requirements that they can satisfy more easily than their smaller competitors. And as in any other market, creating regulatory barriers that have the effect of protecting market leaders from competition is bad for consumers.

2 Howard Beales, "The Value of Behavioral Targeting," published online by Network Advertising Initiative, available at http://www.networkadvertising.org/pdfs/Beales_NAI_Study.pdf, March, 2010.

3 J. Howard Beales & Jeffrey A. Eisenach, "An Empirical Analysis of the Value of Information Sharing in the Market for Online Content," published online by Digital Advertising Alliance, available at http://www.aboutads.info/resource/fullvalueinfostudy.pdf, January, 2014.

IV. ADVERTISING PROVIDES IMPORTANT BENEFITS FOR CONSUMERS

Many discussions of online advertising proceed from the premise, often unstated, that advertising is somehow a harm to consumers or to economic performance. Certainly, as individuals, we may think of advertising as a nuisance, and many times it is. The ability to advertise, however, is critical to maintaining effective competition in markets for goods and services.

The competitive benefits of advertising are by now well known. In the words of Nobel Laureate George Stigler, "advertising is an immensely powerful instrument for the elimination of ignorance."[4] Informed consumers drive the competitive process, benefitting all consumers as sellers compete for the informed minority.[5] Numerous economic studies have shown that restrictions on advertising increase prices to consumers, even when advertising does not mention price.[6]

Advertising also stimulates innovation. If sellers cannot advertise innovative products, or if they cannot tell consumers why new product characteristics are important, there is less incentive to make improvements in the first place.[7] One of the best studied examples involves Kellogg's 1984 claims for All Bran cereal, conveying the then novel recommendation of the National Cancer Institute ("NCI") that diets high in fiber may reduce the risk of some cancers.[8] The science, which was based largely on epidemiology rather than human clinical trials, was uncertain. Citing these uncertainties, the FDA threatened to seize All Bran as an unapproved new drug. When the FTC and the NCI defended Kellogg, the FDA changed course.

An FTC Staff Report documented the impact of the Kellogg campaign and its aftermath.[9] Increased advertising about fiber content and its relationship to cancer risks led to significant changes in cereals.[10] Claims about the relationship between diet and disease increased elsewhere as well, with similar marketplace impacts. For example, claims about the relationship between diet and heart disease rose from less than 2 percent of food advertising in 1984 to more than 8 percent in 1989;[11] consumption of fat and saturated fat, the primary dietary risk factors for heart disease, fell far more sharply after 1985.[12] Again, advertising led to beneficial changes in diet.

Advertising is particularly important to less advantaged groups. The FTC Staff Report documented that although fiber consumption increased for all groups, it increased more among racial minorities and single parent households.[13] Another study has shown that the least educated paid the highest increase in prices when eyeglass advertising was restricted.[14]

Online advertising can be expected to have similar effects to any other advertising, and those effects are generally good for consumers. Advertisers choose to advertise online because it is a cheaper way to reach potential customers than conventional media, or to supplement conventional campaigns. Restrictions that impair its effectiveness can only reduce those benefits.

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4 George J. Stigler, "The Economics of Information," 64 J. Pol. Econ. 213, 220 (1961).

5 See, e.g. Alan Schwartz & Louis L. Wilde, "Intervening in Markets on the Basis of Imperfect Information: A Legal and Economic Analysis," 127 U. Pa. L. Rev. 630 (1978-1979).

6 The FTC has summarized the empirical evidence regarding the impact of advertising on prices. See *In re Polygram*, 2003 WL 21770765 (FTC), Docket No. 9298 (July 24, 2003), at note 52.

7 Advertising is an intangible investment, whose value can only be recovered through repeat sales. Sellers invest in and maintain product quality to generate repeat business. See Phillip Nelson, "Advertising as Information," 82 J. Pol. Econ. 729 (1974).

8 The Kellogg incident is discussed in J. Howard Beales, Timothy J. Muris & Robert Pitofsky, "In Defense of the *Pfizer* Factors," in James C. Cooper, Ed., *The Regulatory Revolution at the FTC: A Thirty-Year Perspective on Competition and Consumer Protection* (Oxford University Press, 2013), pp. 83-108.

9 Pauline Ippolito & Alan Mathios, "Health Claims in Advertising and Labeling: A Study of the Cereal Market," FTC Staff Report (1989), available at http://www.ftc.gov/be/econrpt/232187.pdf.

10 For example, the fiber content of new cereals increased 52 percent, and the weighted average content of cereals (reflecting both product changes and changes in consumer choices) increased at a significantly higher rate than before health claim advertising began. Ippolito & Mathios, *supra* note 8.

11 Pauline Ippolito & Janice Pappalardo, "Advertising Nutrition & Health: Evidence from Food Advertising, 1977–1997," FTC Staff Report (2002), available at http://www.ftc.gov/opa/2002/10/advertisingfinal.pdf.

12 Pauline Ippolito & Alan Mathios, "Information and Advertising Policy: A Study of Fat and Cholesterol Consumption in the United States," 1977–1990, FTC Staff Report (1996), available at http://www.ftc.gov/be/consumerbehavior/docs/reports/IppolitoMathios96_fat_long.pdf.

13 Ippolito & Mathios, *supra* note 8.

14 Lee Benham & Alexandra Benham, "Regulating through the Professions: A Perspective on Information Control," 18 J.L. & Econ. 421 (1975).

V. CONCLUSION

Providing public goods is always a challenge in a market economy. For centuries, the most common mechanism for doing so has relied on advertising support for the public good to attract an audience for a private good — advertising messages. That system has worked remarkably well; there is little reason to think that there is significant under-provision of news or entertainment content. Online markets are no different. Advertising support is currently the primary mechanism for funding internet content, and although other models exist, and may even thrive, advertising is likely to remain a critical revenue source for the foreseeable future.

The viability of advertising support, however, likely depends on the ability to share information that enables the identification of viewers most likely to be interested in the message. With such information, prices are substantially higher than when information is not available. In a famous New Yorker cartoon, a dog at a computer announces that the beauty of the internet is that no one knows you are a dog. Unfortunately, however, few advertisers want to reach dogs. Third party advertising intermediaries that collect and use such information are also particularly important to smaller internet publishers.

Like other forms of advertising, online advertising enhances competitive market performance. Free or subsidized content and enhanced product market performance seems a fair trade for anonymized information that helps to predict what advertising might be of greatest interest to consumers.

WHAT *TIMES-PICAYUNE* TELLS US ABOUT THE ANTITRUST ANALYSIS OF ATTENTION PLATFORMS

The Times-Picayune

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I. INTRODUCTION

New Orleans is famous for Mardi Gras, Creole cuisine, Dixieland Jazz, and, of course, *Times-Picayune*.[2] That is a 1953 Supreme Court decision involving the only morning newspaper in the city at the time. It has gained recent fame in the debate over the proper antitrust analysis of two-sided platforms leading up to the *American Express* decision. *Times-Picayune* was featured in the dissent and the majority opinion distinguished it briefly.[3]

The dissent said the Court had already decided the central market definition issue before it — the other way. *Times-Picayune* concluded, it argued, that antitrust analysis of two-sided platforms, like newspapers, should focus narrowly on the service provided by the side of the platform subject to the challenged conduct.[4] The relevant antitrust market pertained to that side, and not the platform overall. There was no need to consider the other side. The majority decision distinguished *Times-Picayune* on the grounds that it was appropriate to analyze newspaper advertising as single-sided because the indirect network effects that connect the groups served by platforms were minor, given that readers did not care about advertising.

This article takes a closer look at the journey of *Times-Picayune* from a complaint filed by the U.S. Department of Justice, to the District Court, and then to the Supreme Court. The majority decision in *Times-Picayune*, and the lower court decision the Court relied on in part, don't provide much support for the notion that an antitrust analysis under the rule-of-reason should consider just one side of a two-sided platform. Even in the case of newspapers.

Times-Picayune is a useful case study of platform competition. The Government's complaint described a plausible strategy for destroying a platform competitor which could be relevant to other cases involving ad-supported platforms. The case provides insights for determining conditions when that strategy could work, and when it is implausible. This old newspaper case remains relevant for the antitrust analysis of other ad-supported media including digital platforms.

II. THE GOVERNMENT'S CASE AGAINST THE PUBLISHER OF THE TIMES-PICAYUNE

The U.S. Department of Justice filed a complaint against the Times-Picayune Publishing Company ("Company") on June 14, 1950.[5] At that time, the Company published the Times-Picayune, the only morning newspaper in New Orleans, the New Orleans States ("States"), an evening newspaper which the Company had purchased in 1933, and a Sunday newspaper ("Times-Picayune & States"). The other significant newspaper in New Orleans, the Item, had evening and Sunday editions. These newspapers earned money from paid circulation and advertising. There were three categories of advertising: local display, general national, and classified.

The Government claimed that the Company engaged in an unlawful tie by offering advertising only as a unit at combined rates in both morning and evening newspapers. The "unit rule," as it was called, applied to classified and general advertising but not to local display advertising.

The Government also alleged that the Company "[u]sed the dominant advantage … of the Times-Picayune to injure and destroy competition" for its evening and Sunday newspapers by (a) engaging in the tie; (b) using profits from the morning paper to subsidize arbitrarily low rates for advertising in the evening paper; and (c) "increasing the number of pages in the evening paper without a corresponding increase in revenue for the purpose of inducing and forcing circulation and advertising from the Item to the States."[6] (There were also a few other claims that are peripheral to the main story and were rejected by the District Court).

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2 *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594 (1953).

3 *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286, 2295 (2018).

4 *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2295 (2018) (Breyer dissenting opinion). The Justice Department and various *amici* in support upholding the District Court decision, based on a merchant-specific market, also cited *Times-Picayune* prominently as having already decided the issue. See "Brief for the United States in Opposition" *State of Ohio, et. al., v. American Express Company, et. al*, (2017) No. 16-1454 (SCOTUS) at pp. 11, 13; "Brief of 28 Professors of Antitrust Law as Amici Curiae Supporting Petitioners" *State of Ohio, et. al., v. American Express Company, et. al*, (2017) No. 16-1454 (SCOTUS) at p. 22; "Brief for Amici Curiae John M. Connor, Martin Gaynor, Daniel McFadden, Roger Noll, Jeffrey M. Perloff, Joseph A. Stiglitz, Lawrence J. White, and Ralph A. Winter in Support of Petitioners" *State of Ohio, et. al., v. American Express Company, et. al*, (2017) No. 16-1454 (SCOTUS) at p. 3.

5 *United States of America v. The Times-Picayune Publishing Company, et al.*, Complaint, No. 2797 (Eastern District of Louisiana, June 14, 1950).

6 *Id.* at pp. 8-9.

These practices, according to the Justice Department, restrained competition in the "dissemination of news and advertising" and were an attempt "[t]o monopolize … the dissemination of news and advertising."[7] Indeed, the Justice Department had described a strategy for ruining competing ad-supported media platforms that could be plausible with the right set of facts.

III. TWO-SIDED PLATFORMS AND AD-SUPPORTED MEDIA

Two-sided platforms serve two distinct groups of customers who could benefit from interaction. The platform helps them get together through a common meeting place and facilitates interactions between members of the two groups in a way that creates value for the parties to this interaction. Members on one side can typically expect more value when they can interact with more relevant members on the other side; these are what economists call positive indirect network effects.[8]

Platforms set prices recognizing that there is a feedback loop connecting the two sides. That results in their balancing prices between the two sides in a way that ensures that they have enough participants on each side to create value for those on the other side. Commonly, platforms set prices below cost on one side, because they can charge the other side more to get access to those on the subsidized side.

Platforms require a critical mass of customers on both sides to offer a valuable proposition to either side. A ride-sharing platform with few passengers would have trouble attracting drivers, since they would get few pickups, and a platform with few drivers would have trouble attracting passengers, since they would have trouble getting rides. Platforms that can't reach critical mass therefore fail. There's a heap of defunct platform startups for that reason. Platforms that lose enough participants to fall below critical mass fail as well. The dead and dying malls across America are visible demonstrations.

Economists have considered ad-supported media businesses two-sided since the start of the economic literature on platform businesses.[9] An ad-supported media business serves both advertisers and readers. There's a twist compared to other platforms, though. Advertisers appreciate having access to more readers, but readers may not appreciate being exposed to more advertising. In this case, there are positive indirect network effects on one side but not on the other. It turns out, though, that having positive indirect network effects on one side is enough for the economic theories of two-sided platforms to apply, even if the other side has negative indirect network effects.

Indirect network effects aren't the whole story, though. [10] Even if consumers don't like ads, they do like content. And they can't get content, or as much of it, if the media business can't sell advertising, which funds production of that content and is the *raison d'être* for this content. Unfortunately, while they might like to get the content at subsidized prices, without the advertising, they are unlikely to find a willing media business for this proposition. These ad-supported media businesses are also known as attention platforms since they are in the business of trading consumer mindshare.

The basic business model for attention platforms has some similarities to the credit card networks considered in *American Express*. Ad-supported media provide readers with content to get them to come to the platform. They generally charge readers prices that don't nearly cover the cost of producing and distributing content. The content is the reward for coming to the platform and being exposed to advertising. The "content reward" plays a much more important role than "reward points" for payment cards, but they both result in a payment to one side to use the platform. Ad-supported media then sell advertisers access to those readers through ads that are interspersed throughout the content. The details of this vary by medium, but the principles are common.

For ad-supported media and for credit-card networks there are separate prices to two distinct groups of customers; those prices are interdependent and effectively negative to one side, and the businesses must compete for both types of customers. Of course, there are differences as well, most notably that readers may not like being connected to advertisers, unlike cardholders who do value being connected to merchants.

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7 *Id.* at p. 6.

8 Evans, David S. & Richard Schmalensee (2008), "Markets with Two-Sided Platforms," *Issues in Competition Law and Policy*, Vol. 1, American Bar Association.

9 Rochet, Jean-Charles & Jean Tirole (2003), "Platform Competition in Two-Sided Markets," *Journal of the European Economic Association* 1(4), pp. 990-1029 at p. 990; Anderson, Simon & Jean Gabszewicz (2006), "The Media and Advertising: A Tale of Two-Sided Markets," in *Handbook of the Economics of Art and Culture*, V. Ginsburgh & D. Throsby, eds., (Elsevier).

10 See Evans, David S. (2019), "Attention Platforms, the Value of Content, and Public Policy," *Review of Industrial Organization* (Feb. 2019).

So long as there are sufficient entry barriers the Justice Department described a clever and coherent strategy for destroying a competitor and monopolizing a market in its *Times-Picayune* complaint. The morning-evening advertising tie could have deprived the Item from earning enough advertising revenue to fund its content, and with less content it would attract less circulation, which in turn would make it even less attractive to advertisers. Meanwhile, the low advertising prices and an unprofitable expansion of content on the part of the States could have forced the Item to lose advertisers and readers and incur unsustainable loses. The combination of these strategies could have pushed the Item below critical mass and send it into a death spiral.[11]

The Company would have demolished its evening and Sunday competitor. Then it could have exercised anticompetitive market power by raising advertising prices, cutting content, or raising circulation prices. It could also have killed off a potential competitor for its morning newspaper. Since the reader and advertiser sides of the platform are intimately intertwined its strategies would have harmed both customer groups. Of course, the facts would have to support these claims.

IV. THE DISTRICT COURT DECISION ON PREDATION AND TYING

The U.S. District Court for the Eastern District of Louisiana issued a decision on May 27, 1952.

A. Market Definition, Dominance, and Separate Products

The District Court concluded that the three newspapers at issue "are the only significant media of news, advertising and other information disseminated regularly for residents of New Orleans through publication and circulation of newspapers." The Company claimed that its morning, evening, and Sunday newspapers were editions of a single newspaper. The judge rejected this on the ground that the papers had different appearances and content. As we will see, that finding was key.

The trial judge found that the Times-Picayune, the morning paper, was the dominant newspaper. "For at least twenty years," according to the court, "the Times-Picayune has been the largest newspaper in New Orleans in circulation, advertising lineage, and number of pages published." The Company's manager of general advertising had claimed, the judge noted, that the Times-Picayune is "the back-bone of any advertising effort" in New Orleans. "Enjoying as it does a monopoly position in the morning field, and an enormous advantage in circulation, advertising lineage, and number of printed pages," the judge continued, "newspaper advertisers who desire to cover the New Orleans market must, of necessity, use the Times-Picayune as a medium for the advertising." In effect, the trial court found that there was a separate market for morning newspapers since neither readers nor advertisers had substitutes.

The District Court's description of the business is silent on whether readers have any interest in seeing advertising.

B. The Unit Rule and Tying

The District Court examined the advertising contracts for classified and national advertising that had the unit rule. Put in terms of the modern language for analyzing tying, the judge found that the tying product was in a dominant position, that the defendant forced customers to take the tied product, and that the unit applied to a substantial portion of the market. He concluded that,

> The Times-Picayune, because of its monopoly position, has been able to force buyers of advertising space to purchase what they do not want, space in the States, in order to purchase what they require, space in the Times-Picayune. The very fact that the defendant corporation was able successfully to impose the unit rate on general and classified advertising tends to prove the monopoly position which the Times-Picayune enjoys…[12]

In addition to finding an unlawful tie, the trial judge found that the purpose of the unit rule, which was found to violate Section 1 of the Sherman Act, was to harm the Company's only evening rival.

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11 See Whinston, Michael D. (1990), "Tying, Foreclosure and Exclusion," *The American Economic Review* 80(4), pp. 837-859 for the classic discussion of using tying to foreclose competition by preventing traditional scale economies. The two-sided strategy is similar but exploits demand-side scale economies resulting from indirect network effects. In both cases, since the tie imposes a cost on buyers, the strategy is profitable only if it eliminates the competitor. It is not possible to address that issue for a two-sided platform without considering both sides and the interdependencies.

12 *United States v. the Times-Picayune Pub. Co.*, 105 F. Supp. 670, 678 (E.D. La. 1952).

> [I]is apparent from the record that it was also the intention of the [Company] to restrain general and classified advertisers from making untrammeled choice between the afternoon newspapers in purchasing advertising space, and also to substantially diminish the competitive vigor of the Item, the States' only competitor in the afternoon field.[13]

The same findings showed that the unit rule also violated Section 2 of the Act. The District Court found that the Company used the unit rule to attempt to monopolize "that segment of the afternoon newspaper general and classified advertising field which was represented by those advertisers who also required morning newspaper space."

The District Court was silent as to the impact of the unit rule on the dissemination of news and did not conclude that it had prevented the Item from operating a viable newspaper.

C. Tying, Predatory Pricing, and Content Expansion Under Section 2

As the District Court judge put it, "Considerable evidence was offered by the Government to establish that the defendants maintained a rate structure which, considered as a whole, resulted in the operation of the evening States at a loss." The Company's books showed that the States was operating at a profit, but the Government claimed that was the result of questionable allocations.

The judge found, however, "nothing in the evidence which would indicate, much less establish, that the States at any time was operated at a loss." He was persuaded by testimony from the Company's auditor that more careful allocations would not reveal that the States was operating at a loss.

The Justice Department and the District Court agreed on one thing though.

The relevant question was whether the States, which derived income from circulation and advertising, was operating at a loss. They both considered the platform as a whole. The Justice Department did not argue that the advertising rates were below cost for serving an advertising market. Rather, it argued that the combination of expenditures on content, which attracts readers, and advertising and circulation prices resulted in the States operating at loss. And the Item couldn't compete with that. Only a platform level analysis, that considered prices and costs overall, could address that monopolization claim.

Thus, the Government ended up victorious only on the claim that the unit rule was an unlawful tie that restricted competition for afternoon advertising. It was defeated on the claim that the States was operated at a loss to destroy competition.

V. THE SUPREME COURT DECISION ON THE UNIT RULE

The Times-Picayune Publishing Company appealed the decision that the advertising contracts with the unit rule violated Sections 1 and 2 of the Sherman Act. The Court, in a 5-4 decision issued on May 25, 1953, found that they did not.

A. The Newspaper Business

The Court situated the case in the newspaper business in the mid-20th century. "The daily newspaper, though essential to the effective functioning of our political system, has in recent years suffered drastic economic decline." It noted that the number of daily newspapers in 1951 was the lowest it had been since the turn of the 20th century. In fact, daily newspaper competition "has grown nearly extinct."[14]

The Court recognized that "[a]dvertising is the economic mainstay of the newspaper business." After reporting that "more than two-thirds of a newspaper's total revenues flow from the sale of advertising space" it noted that, [o]bviously, newspapers must sell advertising to survive." Competition from other mass media — radio, television, and magazines — had reduced newspapers' share of total national advertising expenditures from 79 percent in 1929 to 35 percent in 1951.

13 *United States v. the Times-Picayune Pub. Co.*, 105 F. Supp. 670, 678 (E.D. La. 1952).

14 *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 602-603 (1953).

B. The Tying Claim

Tying is a *per se* violation of Section 1 of the Sherman Act, according to the Court, when the seller has a monopoly position in the market for the tying product and when it forecloses competitors from "any substantial market."[15] In evaluating the *per se* claim the Court concluded that the key issue was whether the Times-Picayune occupied a dominant market position because it was the sole morning daily in New Orleans.

The Court described the two-sided features of the newspaper business. It noted that "every newspaper is a dual trader in separate though interdependent markets; it sells the paper's news and advertising content to its readers; in effect that readership is in turn sold to the buyers of advertising space."[16] It said that the case only concerned the advertising market which was the subject of the tie and that "dominance in the advertising market" was decisive in determining the legality of the unit rule.[17]

The Court stated it didn't think that the Times-Picayune was dominant in the advertising market. It noted that the morning paper's share of "both general and classified linage over the years hovered around 40%".[18] That conclusion assumed, however, that the relevant market consisted of general and classified advertising in all three papers.

Critical for that assumption, the Court rejected the trial judge's finding that these newspapers were separate products from the standpoint of the advertiser.[19] According to the Court, just because readers may distinguish between the papers, doesn't necessarily mean that advertisers do.[20]

> But that readers consciously distinguished between two publications does not necessarily imply that advertisers bought separate and distinct products when insertions were placed in the Times-Picayune and States. So to conclude here would involve speculation that advertisers bought space motivated by considerations other than customer coverage; that their media selections, in effect, rested on generic qualities differentiating morning and evening readers in New Orleans.

That finding didn't just support the finding of lack of dominance. It defeated the tying claim since, from the standpoint of the advertiser, there was a single product and not two.

> Here, however, two newspapers under single ownership at the same place, time, and terms sell indistinguishable products to advertisers; no dominant 'tying' product exists (in fact, since space in neither the Times-Picayune nor the States can be bought alone, one may be viewed as 'tying' as the other); no leverage in one market excludes sellers in the second, because for present purposes the products are identical and the markets the same…. In short, neither the rationale nor the doctrines evolved by the 'tying' cases can dispose of the Publishing Company's arrangements challenged here.[21]

There was no *per se* violation of Section 1, based on unlawful tying, because there was no separate tied product and there was no dominance once the two alleged tying and tied products were considered together.

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15 *International Salt Co., Inc. v. United States*, 332 U.S. 392, 396 (1947). Of course, the antitrust law on tying has evolved considerably since then including the seminal decision in another case situated in New Orleans. See *Jefferson Parish Hosp. Dist. v. Hyde*, 466 U.S. 2 (1984).

16 *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 610 (1953).

17 *Id.*

18 *Id.* at 612.

19 The Court noted that newspaper advertising might compete with other forms of advertising but lacked evidence on this. *Id.* at 611-612.

20 There doesn't appear to have been any evidence on the extent to which morning and evening readers were substitutes for classified and general advertisers. The morning and evening papers could have tried to differentiate themselves to attract readers with different characteristics that were relevant to advertisers. For example, the morning paper could have skewed towards women and the evening paper towards men

21 *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 614 (1953).

C. The Unreasonable Restraint of Trade Claim

The Court then turned to whether the unit rule was an unreasonable restraint of trade under Section 1. It articulated the rule-of-reason analysis as requiring it to determine the amount of business controlled, the strength of the remaining competition, and "whether the action springs from business requirements or purpose to monopolize". It then eviscerated the District Court's finding that the unit rules were unreasonable restraints of trade.

Earlier the majority decision had reported that local display advertising accounted for 44 percent of total revenue (including circulation), classified 13 percent, and general display 14 percent. The District Court had rejected bundling claims related to local display, leaving only 27 percent for the Court to deal with.

The Court noted that the unit rule for classified ads was adopted in 1935 to compete with the Item. At that time the Item operated a morning and evening newspaper which together carried more classified ads than the Company's. The Item suspended its morning newspaper in 1940. It was also common practice among newspapers with morning and evening editions.

Over the next decade, the Item's share of classified advertising linage declined by three percentage points overall (from 23 percent to 20 percent) and by five percentage points considering only the evening papers (from 37 percent to 32 percent). The unit rule was instituted for general advertising in 1950, by which time it was common in the industry. The Court found that there was no material change in 1951, the only later year for which there was data. It concluded that, taking the effects of classified and general together, the Item's revenue had declined by less than one percent.

Had this effect been larger, the unit rule could have harmed newspaper competition and, with it, the dissemination of news and advertising. However, as an exclamation mark on this analysis, the Court noted that, "The Item, the alleged victim of the Times-Picayune Company's challenged trade practices appeared, in short to be doing well."[22] It flourished in the decade before the trial in terms of expanding advertising, reaching record circulation, and in recent years had made a profit. The Court concluded there was no violation of Section 1.

The Court then turned to the Section 2 attempted monopolization claim. It noted that most of the attempted monopolization case had failed in the District Court, including the claim that "the Company deliberately operated the evening States at a financial loss to the detriment of the competing Item." Only the unit rates remained and, since the Court found that they advanced legitimate business aims, the Court rejected the Section 2 claim as well.

The Court never considered the Government's original claims that the Company had tried to monopolize dissemination of news, or newspapers overall, since they didn't survive the District Court decision. Readers didn't come up except whether they were the source of monopoly power for the morning newspaper over advertisers. And the record is silent on whether readers care about advertising, and therefore whether there's a feedback from advertisers to readers.[23]

VI. *TIMES-PICAYUNE* AND *AMERICAN EXPRESS*

By the time *Times-Picayune* made it to the Supreme Court it was mainly about whether certain advertising contracts were *per se* violations of Section 1. Consumers of news weren't the subject of the dispute. Caution signs thus abound for those seeking to place the weight of all subsequent rule-of-reason analysis for two-sided platform cases, or for ad-supported media, on this foundation.

However, upon a close read, there isn't actually much tension between *American Express* and *Times-Picayune*. To see why, we need to replay the movie, despite having seen its ending.

22 *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 621 (1953).

23 The Item was sold to the Times-Picayune Publishing Company five years after the Supreme Court's decision. It lived on another two decades as the Daily States-Item. The afternoon paper was closed in 1980. The Times-Picayune briefly stopped daily publication in October 2012 making New Orleans one of the few major cities without a daily newspaper. It resumed the next year and folded into a regional newspaper group in 2015.

A. Times-Picayune *and the Rule-of-Reason*

Throughout the case, the courts, and the parties themselves, recognized that the newspaper business was about readers and advertisers. One couldn't be in the newspaper business without providing readers for advertisers, and without securing advertising which was essential for funding the paper. Those business realities, properly, colored everything.

The Government claimed that the Company had engaged in a series of practices, beginning with the purchase of the States in 1933, to establish monopoly control over the daily newspaper business, and the dissemination of news and advertising, in New Orleans. The alleged competitive harm wasn't limited to an advertising market. It was about destroying a competing two-sided platform and thus necessarily harming competition for both readers and advertisers.

The Government's predation case was premised on the newspapers providing a joint product for readers and advertisers. It didn't posit that the Company had lowed advertising prices to monopolize an advertising market. It claimed that the Company was operating the States at a financial loss to drive a competing platform out of business. That harmed newspaper competition and, with it, competition for the dissemination of news and advertising.

The Government, and the trial judge, examined the financials of the newspaper as a whole. That is essentially the two-sided analysis required by *American Express*. It aggregates the revenues received from both sides and costs incurred on both sides to determine whether the challenged conduct restrained competition at the platform level. If the Government could have shown that the States was operating at a financial loss overall, it would have had support for its claim that the Company was monopolizing the dissemination of news and advertising. The trial judge was firm that there no evidence to support these predation claims.

There was another opportunity for the trial judge to consider competitive harm to the dissemination of news. He examined whether the advertising contracts were an unreasonable restraint of trade under Section 1. He found that they were when it came to advertising, but was silent on the impact on the dissemination of news.

Since the Government didn't appeal the District Court's dismissal of their claims, when the case got to the Supreme Court there wasn't much of a rule-of-reason case. Furthermore, harm to newspaper competition overall, or for the dissemination of news, wasn't on the table.

The Court's rule-of-reason analysis of harm to competition in advertising sales, however, at least touches on the impact of the unit rule on newspapers overall. It noted that the Item was profitable and mentioned its circulation, as well as its advertising. It also gave a nod to the District Court's finding that the States was operating profitably overall as well. Most of its analysis concerns showing that the advertising contracts had a negligible effect on newspaper revenue. Since it recognized that advertising revenue was essential to the operation of newspapers these findings demonstrated, though the Court did not say, that the advertising contracts could not have harmed newspaper competition overall, or the dissemination of news. Since there were no claimed feedbacks between advertising and readers, and no meaningful jeopardy to funding content, that one-sided analysis of the importance of advertising revenue was dispositive.

On a different record the Court could have found that the Company had been running the States at a loss as a result of low advertising rates and that this practice would destroy the Company's only newspaper rival. There is nothing in the majority decision that suggests that the Court would have, if this were the case, limited its analysis to harm in the newspaper advertising market that was the subject of the challenged conduct. It had gone out of its way to emphasize that newspapers couldn't survive, and implicitly provide content to readers, without advertising. Nothing in the decision suggests that, just because the challenged conduct related to advertising, the Court would have rejected the Government's claim that the challenged conduct was harming competition in the dissemination of news. It understood well that, without advertising, there would be no newspaper and no dissemination of news for readers.

B. Times-Picayune *and the* Per Se *Tying Analysis*

The Court did say that the case "concerns solely one of the markets" and that "dominance in the advertising market, not in readership, must be decisive in gauging the legality of the Company's unit plan."[24] This language specifically referred to the analysis of whether the unit rule was an unlawful *per se* tie under *International Salt* and the related tying cases. It came between the Court's review of the tying cases and its lengthy analysis of tying in the matter at hand.

24 *Times-Picayune Publishing Co. v. United States*, 345 U.S. 594, 610 (1953).

The issue was whether the morning newspaper had leverage over advertisers. It may be possible to conduct a sound economic analysis of that particular question without defining a single platform market or considering the interrelated pricing and feedback issues raised by *American Express*.[25] It is not possible, however, to conduct a sound economic analysis without considering how two-sided platform businesses operate.

Here the Court recognized that the analysis had to consider the relationship between the two sides to assess whether there was an unlawful tie. It found that advertisers wanted readers. But it didn't have any basis for finding that advertisers cared whether people saw their classified and general ads in the morning or evening papers. And where they might — as with local displays — there was no tie. That demolished the tying case.

The Court could have reached the same conclusion based upon a substantive examination of newspaper competition. Starting with the challenged conduct a court would have had to decide whether the morning and evening newspapers — the two-sided platforms at issue — were in one relevant antitrust market or two. Evidence that advertisers cared about whether readers were morning or evening would have led to separate newspaper markets while evidence that advertisers found readers fungible would have led to a single newspaper market.

As a general matter there are good economic reasons for considering competition among newspapers overall since advertisers may care about who readers are; readers may care about what the type of content that is attracting them as well as the amount and type of advertising. So long as economic analysis can fully account for inter-relationships, it can get to the right answers on substantive questions regardless of whether newspapers are analyzed in a single newspaper market or interdependent advertiser and reader ones.

C. American Express *Discussion of* Times-Picayune

The *American Express* dissent said that the *Times-Picayune* Court held that "an antitrust court should begin its definition of a relevant market by focusing narrowly on the good or service affected by a challenged restraint."[26] This claim is based on the Court's statement that "dominance in the advertising market, not in readership, must be decisive in gauging the legality of the Company's unit plan." The dissent goes on to say that the Government had claimed that the newspaper's advertising policy was unlawful under the rule-of-reason. But, as noted above, the Court's statement about focusing on dominance in the advertising market was made in the middle of its *per se* tying analysis.

The Court's rule-of-reason analysis at least touches on whether the Company had harmed newspaper competition through the unit rule and operating the evening newspaper at loss. The Court didn't need to go further because if newspaper advertiser competition was not harmed, it follows immediately that competition in the dissemination of news wasn't harmed. If the unit rule and low advertising rates had diminished the Item, it is hard to see why the Court would have stopped at the boundaries of an advertising market and not crossed over into newspapers and their readers; or why it should have taken such a restrictive view.

Faced with a different record the *Times-Picayune* Court would have had to grapple with similar issues raised in *American Express*. Suppose consumers value classified advertising. That's likely the case based on common experience and given that people patronize classified ad services such as Craigslist. If this is the case, then the Company could have provided more value to their readers by imposing the unit rule on advertisers. That could have increased the circulation of the Company's newspapers, which could have benefited its advertisers.

Depending on the facts, it is possible in this hypothetical case that the unit rule could have increased newspaper circulation and advertising in the market overall.[27] It is also possible that benefits to readers outweighed any costs to advertisers. It would therefore not have made economic sense to analyze harm solely in an advertising market for the reasons given in *Amex*.

Of course, we can't know what the *Times-Picayune* Court would have done with that hypothetical case. But its brief rule-of-reason discussion does not show, at least not clearly, that it would have focused on an advertising market rather than assessing the overall impact of the challenged practices on newspaper competition.

25 Generally, the courts would have to consider whether there were significant feedback effects between advertisers and readers, but none were claimed here.

26 *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2295 (2018) (Breyer dissenting opinion).

27 If the Court was correct that the unit rule didn't materially reduce classified advertising in the Item, then it is plausible that the unit rule could have resulted in delivering more classified ads that readers valued. Nevertheless, there are certainly other circumstances in which the unit rule could have reduced newspaper competition to the detriment of readers and advertisers.

The *American Express* majority opinion gave newspaper advertising as an example of a platform in which indirect network effects were minor because readers do not value advertising. It said, citing *Times-Picayune*, that "the market for newspaper advertising behaves much like a one-sided market and should be analyzed as such." [28] The economic theory of two-sided platforms, which leads to the pricing and market power issues the *American Express* majority decision was concerned with, does not require positive indirect network effects in both directions. In fact, much of the theoretical and empirical literature concerns two-sided advertising platforms, for which there are possibly negative indirect effects of advertisers on readers. There may well be cases in which the feedback effects between the two-sides are immaterial, or in which they are not relevant to the question at hand. However, there is no economic basis for concluding that is commonly the situation for newspapers or other ad-supported media platforms.

VII. CONCLUSION

The Court's decisions in *American Express* and *Times-Picayune* share common ground. Both recognized the two-sided nature of the businesses under consideration and the interdependence of the two groups of customers. Each adhered to the two-sided business realities for the claims and facts before the Court.

The claimed tension between the two cases is overstated. The lengthy discussion of *per se* tying in *Times-Picayune* was based on the interaction between the two sides of the platform. The Court could then dispense with the *per se* tying claim by showing there was no separate tied product. In analyzing whether the challenged conduct restricted competition, it didn't need to go further than showing the negligible economic effect of the advertising contracts at issue.

The Court did not clearly limit the rule-of-reason analysis of competitive harm to a market restricted to the side of the platform on which the challenged conduct occurred. The very brief discussion in *Times-Picayune* is not inconsistent with looking at harm to platform competition overall.[29] Thus, it is quite a stretch to suggest that *Times-Picayune* established the general rule-of-reason framework for two-sided platforms and concluded that courts should limit their analysis to the side on which the challenged conduct applied.

28 *Ohio v. Am. Express Co.*, 138 S. Ct. 2274, 2286 (2018).

29 Even if it had, the courts have, of course, repeatedly modified their approach to antitrust analysis of conduct under *per se* and rule-of-reason based on economic learning. There has been an explosive growth in the theoretical and empirical learning on two-sided platforms, including credit-card networks and newspapers, in the last 20 years. The Court relied on that learning in developing the fulsome approach towards applying the rule-of-reason to two-sided platforms with significant indirect network effects.

ONLINE ADVERTISING AND ANTITRUST: NETWORK EFFECTS, SWITCHING COSTS, AND DATA AS AN ESSENTIAL FACILITY

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I. INTRODUCTION

One of the most rapid shifts in the digital economy has been a shift in the regulatory approach of many governments, from a focus on protecting consumers from false claims in advertising to considering digital advertising in the context of antitrust discussions and policy.[2]

Given the fact that online advertising companies are in the "crosshairs" of antitrust authorities, it is important to examine where their market power (if any) originates. Critics suggest that a combination of network effects, switching costs, and access to large amounts of data would give economics-based explanations for the rise of digital advertising platforms, and that the combination of these factors means that such markets will not "self-correct."[3] In this essay, I evaluate the extent to which such claims hold up from an economics perspective.

II. NETWORK EFFECTS IN ONLINE ADVERTISING MARKETS

Network effects occur when the value of a product depends on others that are using the product. Network effects can be same-sided; that is, there is a performance benefit for users as more of the same type of users use the network, such as is the case for a social media platform. Network effects can also be cross-sided where the presence of one group of users (such as viewers of content on YouTube) benefits another group of users (such as people who produce content on YouTube).

Network effects are a potential source of market power in online advertising, because they imply that larger firms may have larger network effects and therefore have increasingly attractive services. This could reinforce incumbency and make it difficult for new firms to challenge them.

Same-sided network effects are unlikely to be that important in online advertising markets. Typically, consumers of content do not benefit from the presence of other consumers of content. In the few forums where there are same-sided network effects, such as social media websites, my research suggests that these type of network effects are quite local. This means that they depend only on the user's smaller friend-group and do not depend on the user base of the entire platform.[4]

Cross-sided network effects occur largely when advertisers benefit from the presence of large clusters of eyeballs on the other side of the platform. However, one of the most striking characteristics of the development of digital advertising has been to actually undermine such network effects in the provision of advertising. To understand this, it is useful to revisit an older marketing phenomenon called the "relevance-reach" tradeoff. The relevance-reach tradeoff suggested that, as an advertiser, it was possible to achieve relevance with consumers in advertising or reach, but not both. The underlying idea was that with television advertising an advertiser could achieve reach, but there would be many viewers of the ad for whom the product would not be relevant. On the other hand, with an ad in a specialized periodical such as "Crochet Today,"[5] you could reach viewers for whom your product would be relevant, but you couldn't reach many of them.

The relevance-reach tradeoff is, of course, relevant to network effects. If an advertiser was prioritizing reach then this would suggest the advertiser would be attracted to online platforms with large user bases, which is suggestive of a cross-sided network effect. Indeed, this might explain why in the early days of the internet, popular websites such as *Yahoo!* were so successful at attracting advertisers, as they could offer large audiences in a manner that other websites could not.

Since the heyday of *Yahoo!*, however, a whole new host of consumer tracking and collation technologies have evolved to mean that websites with large audiences such as *Yahoo!* no longer have an advantage. The way these tracking technologies work is that an advertising network collates information from many different publishers (websites) about people who might be interested in a topic from their browsing behavior. It is then possible using cookies to track these consumers as they browse different websites, and show ads to them across the internet. It is no longer necessary to focus an ad campaign on a single website. Furthermore, these technologies mean it

2 "Europe's antitrust cop, Margrethe Vestager, has Facebook and Google in her crosshairs," https://www.washingtonpost.com/world/europe/europes-antitrust-cop-margrethe-vestager-has-facebook-and-google-in-her-crosshairs/2018/05/10/519eb1a0-47cd-11e8-8082-105a446d19b8_story.html.

3 See Maurice E. Stucke, "Here Are All the Reasons It's a Bad Idea to Let a Few Tech Companies Monopolize Our Data," Harvard Business Review, https://hbr.org/2018/03/here-are-all-the-reasons-its-a-bad-idea-to-let-a-few-tech-companies-monopolize-our-data.

4 Catherine Tucker, (2017), Network Stability, Network Externalities, and Technology Adoption, in (ed.) Entrepreneurship, Innovation, and Platforms (Advances in Strategic Management, Volume 37) Emerald Publishing Limited, pp.151 – 175.

5 https://www.librarything.com/series/Crochet+Today+Magazine.

is possible to achieve relevance, even while achieving reach, due to the use of targeting technologies to identify the right audience from users' browsing behavior.

Because these so-called targeted ads no longer require potential consumers to visit a specific website, and instead can be shown on any website, advertisers have gained the ability to achieve reach across the web, without sacrificing relevance. As a result, the services of these data brokers and advertising platforms mean there is no longer a relationship between the viewership of any one website and its attractiveness to advertisers.

Recently, it has been suggested that there might be "data-based" network effects in online advertising, which appear to be similar to what economists refer to as "economies of scope or scale."[6] The basic idea is that as a firm, an online advertising platform could improve its ad performance if it has access to data on what types of ads perform well and could attract more advertisers as a result. This is similar to the idea that a train line could improve its performance if it had access to data on when consumers chose to take trips, and that if the train line improved its performance, it could then attract more consumers. This latter example suggests that such data-based economies of scope or scale are certainly not a phenomenon which would be unique to online advertising, or even to digital markets. The key question, though, is whether this is self-reinforcing as a process and could therefore give rise to a sustainable source of competitive advantage to larger firms. To answer this, it is necessary to understand whether there are increasing returns to data, such that as a firm gets more data it improves its performance proportionally more. Most studies suggest there are, at best, concave returns to data — that is, initially data can indeed provide performance advantages, but these performance advantages quickly decline as the firm obtains more data.[7]

III. SWITCHING COSTS IN ONLINE ADVERTISING MARKETS

Switching costs occur when it is costly or difficult for users of a service to switch to a cheaper alternative. Switching costs can reinforce incumbency by making it more expensive or difficult for new entrants to attract consumers away from existing providers.

In platform markets, such as online advertising, the key question is whether switching costs make it likely that advertisers will not use multiple advertising platforms or will not switch to another advertising platform should it potentially offer higher return on investment. In general, in digital markets, we observe users of platforms incurring switching costs when they would face costs of leaving behind their data (or trying to convert it into a new format). Therefore, often the question becomes whether or not advertiser data that is already integrated into the online advertising platform is itself valuable enough that the advertiser is reluctant to leave. In general, unlike in other markets, there is little value to historic data on advertising performance, simply because advertising tends to be a short-lived and tactical part of firm strategy. This is in contrast to something like health records, where there is large value to patients or a hospital having access to historic data.

Reflecting this fluidity, many technologies, known as cross-channel attribution technologies, have evolved precisely to facilitate advertisers switching between platforms. These platforms provide dashboards which allow advertiser to measure exactly how spending on one particular venue for reaching eyeballs affects conversions and profits. Recently, the advent of digital television and radio and expanded tracking facilities have enabled such services to expand into offline advertising too. Other services also offer the potential for real-time optimization, where the software automatically adjusts ad campaigns to focus on the advertising venue that is delivering the highest return on investment.[8]

As well as data, another potential source of switching costs in digital markets is standards. If an advertiser has invested in a particular standard format for an ad, then there is the risk that it would be difficult to port that creative design to another advertising platform that used a different format. However, online advertising has been characterized by increasing standardization of formats, led by institutions such as the IAB, which mitigate this concern somewhat.[9]

6 Grunes, Allen & Maurice Stucke, Big data and competition policy, Oxford University Press, 2016.

7 See for example, Schaefer, Maximilian, Geza Sapi & Szabolcs Lorincz, "The effect of big data on recommendation quality: The example of internet search," (2018).

8 https://www.adition.com/en/product-solutions/attribution-automation/.

9 Goldfarb, Avi & Catherine E. Tucker, "Standardization and the effectiveness of online advertising," Management Science 61.11 (2014): 2707-2719.

IV. BIG DATA AS AN ESSENTIAL (FACILITY) INPUT INTO ONLINE ADVERTISING MARKETS

Data has revolutionized online advertising by allowing platforms to "target" consumers who are likely to respond well to an ad with the right ad at the right time, and then measure the effectiveness of the ad. Digital data has been credited with transforming the online advertising industry, so a natural question is whether a hoard of digital consumer data could itself become an essential facility in such industries.

Standard economic models of vertical competition suggest three main criteria for evaluating whether data is an essential facility in online advertising markets. First, is it a valuable input in the production process? Second, are there other means by which rivals can gain access to the input? Finally, can a firm actually control who has access to it? Though this is an economist's perspective, it echoes the analysis of Abrahamson in the context of litigation, who suggests that for data to be an essential facility, the following should hold: (1) The monopolist must control and deny access to the data; (2) competition must fail without access to the data; (3) the plaintiff must lack means to duplicate the data; (4) the monopolist – in principle – must be able to share the data; and (5) the essential facility plaintiff must demonstrate the monopolist's power in the market.[10]

A. Is Data Valuable?

Unsurprisingly, the answer to the question of whether data is valuable for the targeting of online advertising is that it depends. Perhaps more surprising, though, is the answer that most of the time, the data that users create when browsing the internet is not that valuable.

Let us take the example of a valuable piece of data, such as evidence that a business person is thinking about chartering a jet. This is valuable because such leads are profitable, but also rare in the sense that not many people can afford to charter a jet, and even then, they only do so occasionally, and there tends to be only a very small window to get charter jet company alternatives before them.

On the other hand, most data that is created online is done so in the pursuit of activities which are inhospitable to advertising. For example, if I am watching movies online, that data is not particularly valuable as it doesn't inform advertisers about any products I am likely to buy in the near term. Furthermore, while I am watching the movie, I am likely to feel unkindly towards any ad that intrudes on my experience.

In the analysis of the value of data in online advertising, perhaps the best general approach is to begin with the baseline assumption that most online advertising is not effective because it is simply ignored by consumers. In my own research I have documented that, even using reasonably low thresholds of effectiveness, over nine out of ten ad campaigns accomplish nothing.[11] As a result, the right data can greatly improve the performance of advertising, but only because of the baseline assumption that online advertising is rather ineffective.

B. Are There Alternative Sources of Data in Advertising Markets?

The key to examining alternatives to consumer data that large advertising platforms have access to is to understand what job that online data does. To understand this, it is useful to think about two potential ways that online advertising affects consumer behavior. The first way it may affect consumer behavior is to activate awareness among consumers. This may be awareness of a brand, or a new type of product that solves a problem a consumer has. The second way advertising may affect consumer behavior among consumer who are already aware of their needs, is to inform them about various alternative suppliers for meeting those needs.

Marketing professionals sometimes distinguish between "outbound advertising," or ads that try and raise awareness of needs, and "inbound advertising," which tries to provide useful information when consumers are seeking sources or vendors to supply products or services to fulfill these needs.

10 Abrahamson, Zachary, "Essential Data," Yale Law Journal 124 (2014): 867.

11 Goldfarb, Avi & Catherine Tucker, "Online display advertising: Targeting and obtrusiveness," Marketing Science 30.3 (2011): 389-404.

For inbound ads, there are usually many potential sources of data regarding a consumer's intent. Indeed, an entire industry has arisen that sells segments to advertisers – for example the segment "auto intenders" uses clues from a consumer's browsing behavior to infer that they may be seeking a new car.[12] These data management platforms allow advertisers to purchase data from a variety of data brokers who collate information from browsing behavior and even offline spending. Economists have found that often, though inbound advertising looks very valuable to advertisers, actually the ads weren't needed, as people would have bought anyway if they had already identified a specific supplier.[13]

For outbound ads, there is slightly more controversy about what data is useful. Indeed, there are significant proponents of the idea that marketers should not target ads using digital data, but instead should purposely avoid using data to isolate out audiences and try and reach everyone.[14] In general, though, there are many ways of trying to establish whether someone might be a good target for an ad trying to raise awareness of a need. For example, I might be unaware of the usefulness of a slow cooker. An advertiser might use many pieces of data to identify whether I would be a good target for an ad: Do I visit cooking websites? Do I visit parenting websites? Do I live in an area where people tend to have hectic schedules?

It is also useful to think of instances where perhaps there are no alternative sources of data. For example, suppose that your house's water pipes sprung a leak and you used a search engine, or a single website such as "Angie's List," in order to quickly find a plumber. In that instance, perhaps only one web property would be aware of your need for a plumber and be able to take advantage of the related advertising opportunities.[15] What is crucial here is that it is the limited interaction with the digital environment which leads to the lack of alternative sources of data. If you were looking for a plumber to do more general work (say for a bathroom remodel) without the same sense of urgency, then you would leave a broader digital footprint — for example browsing review sites to try and assess plumber quality, or browsing websites describing different types of showers and bathtubs. The key thing when approaching competition is to articulate the instances where the natural breadth of a digital consumer footprint is likely not to exist. In these cases, there are less likely to be alternative sources of data, and there are more likely to be areas of concern.

C. Can a Firm Control Who has Access to Data?

In general, the presence of multiple digital footprints limits control over a piece of data that reveals consumer intent. This is because they are generating public information in the process. For example, Twitter cannot restrict access to data on retweets so as to prevent rivals or consumers from accessing these data since, by their nature, they are public. However, there are some forms of digital data which are not necessarily public — such as whether I visited a shopping site and abandoned my cart — that is valuable information that will not necessarily be known to any other firm.

Given that the question of control over access is context-specific, I instead highlight a potential risk in such markets which may lead to entrenched control over consumer data by large digital advertising platforms. In earlier research, I suggested that privacy regulation may help reinforce incumbency if consumers are less likely to consent to the use of their data by a new startup if they have to "opt-in."[16] Since that paper was written, we have seen large increases in privacy regulation in the form of GDPR. One incremental concern in the online advertising space in particular is that privacy regulation will prevent the sharing of data between different firms and players. This sharing of data (such as the information that someone visited a charter jet blog) is essential for promoting competition, and any costs that are implied by privacy regulation which reducing sharing could have consequences for effective competition in this sector.

12 For example, Audience 360 sells access to "to 91,767 Australians in the market for Toyota Corolla vehicles in the last 30 days, along with more than 200,000 Australians intending to travel to the US in the last 30 days, and 197,479 Australians looking to buy a new home over the same time period." https://www.cmo.com.au/article/574667/how-carsales-improving-audience-targeting-data-management-platform/.

13 Blake, Thomas, Chris Nosko, and Steven Tadelis. "Consumer heterogeneity and paid search effectiveness: A large - scale field experiment." Econometrica 83.1 (2015): 155-174.

14 https://www.cmo.com.au/article/618692/dr-sharp-digital-ad-targeting-has-been-oversold/.

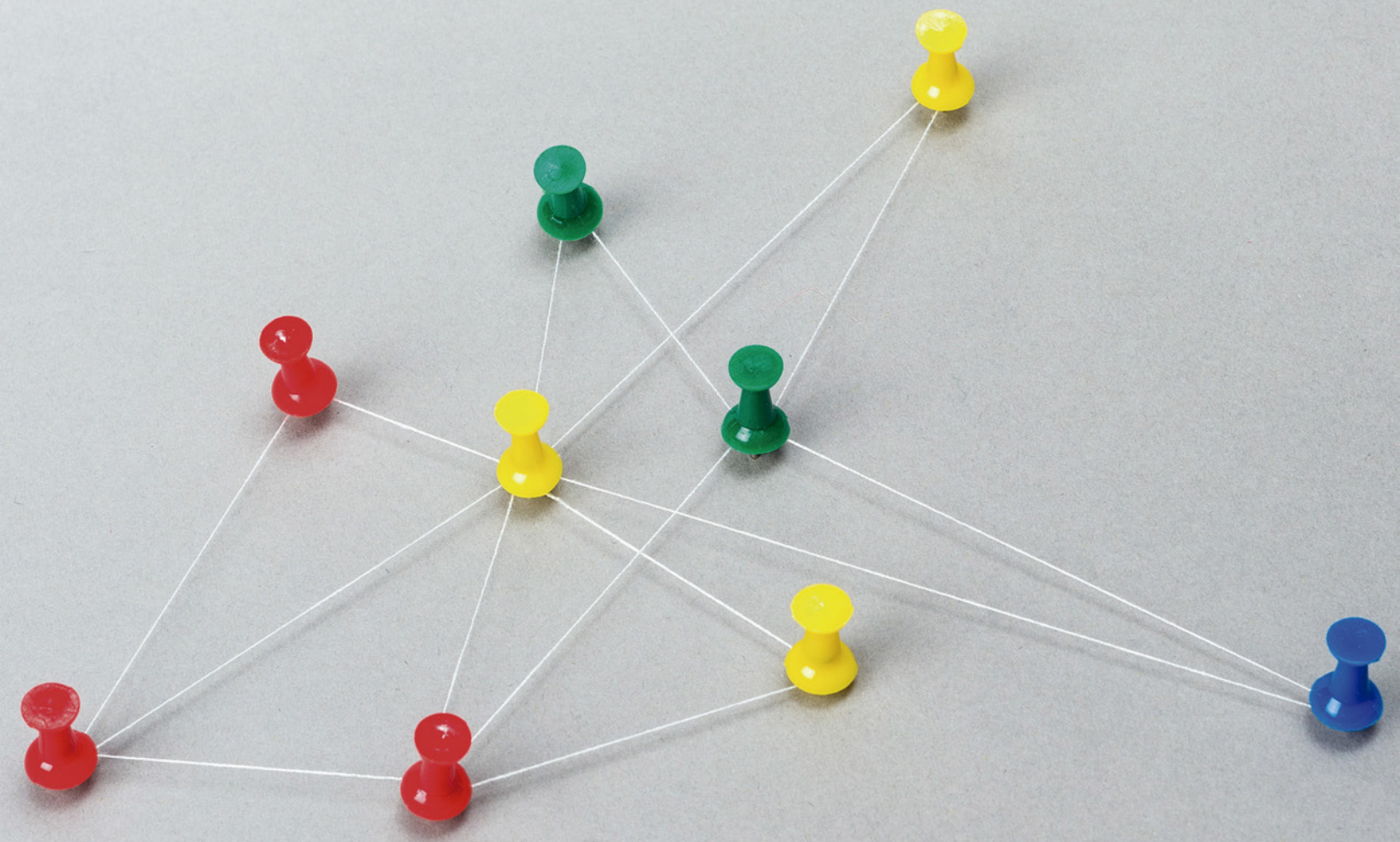
15 I thank an economist at the Australian Competition Commission for providing this example.

16 Campbell, James, Avi Goldfarb & Catherine Tucker, "Privacy regulation and market structure," Journal of Economics & Management Strategy 24.1 (2015): 47-73.

V. FINAL THOUGHTS

In general, the debate about market power in online advertising tends to have a remarkable lack of precision. Commentators talks about network effects without specifying for whom they are envisaging that the network effects apply or why. Commentators talk about how "sticky" online platforms are without being clear about whether they mean they are sticky for advertisers or users. And commentators generally take as given the principle that data is the lifeblood of online advertising, without distinguishing what kind of data they mean, how broadly available it is, or whether such data guarantees the ad's success. However, such precision is necessary in order to have a meaningful discussion about sustainable sources of competitive advantage in online advertising markets.

ATTENTION OLIGOPOLY: COMMENTS ON THE PAPER BY PRAT & VALLETTI



BY DAVID PARKER & FEDERICO BRUNI[1]

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I. INTRODUCTION

In a context of unprecedented public attention on competition in the digital sector, competition policy, law, and enforcement are all being challenged from two sides. Some commentators and academics believe that current competition policy is not fit for purpose to address the concerns arising in these sectors.[2] Others are of the opinion that the digital sector is very competitive, and that disproportionate competition enforcement in the industry will discourage innovation and, ultimately, harm consumers.[3] The technical debate capturing the attention of competition experts and authorities is gaining both political and social momentum.[4]

Competition authorities have developed a strong interest in mergers in online platform markets, and some senior officials have expressed concerns around underenforcement in past merger cases in the sector. This concern has grown most directly around social media platforms, and specifically Facebook's acquisitions of Instagram in 2012 and WhatsApp in 2014. For example, Andrea Coscelli, Chief Executive of the UK's Competition and Markets Authority, has recently claimed that competition authorities failed to anticipate the growth of Instagram when assessing the impact of its merger with Facebook.[5] Similarly, Tommaso Valletti, Chief Economist of the European Commission's Directorate-General for Competition, has publicly questioned (speaking in a personal capacity) whether the decision to clear these acquisitions unconditionally was correct.[6,7]

Together with Andrea Prat of Columbia University, Professor Valletti has published a working paper[8] analyzing the welfare effects of mergers between "attention platforms" (such as social media platforms). The theoretical analysis in the paper is then applied to recent social media platform mergers. Prat & Valletti ("P&V") conclude that, based on the approach set out in the paper, acquisitions such as *Facebook/Instagram* have led to a reduction in consumer welfare.

This article comments on the P&V paper and its application to merger policy in online platforms. Section II summarizes the main economic mechanism explored in the paper. Section III focuses on some limitations and implications of the model. In particular, we question whether characterizing attention platforms as restricting access to advertising to preserve upstream product monopolies captures reality. Casual empiricism – for instance, a Google search – suggests that attention platforms instead seek to sell access to their customers to as many upstream providers as possible. Moreover, the focus of the empirical part of the paper on social media platforms alone is surprising. If the mechanism that drives platform market power is about being the only way that an advertiser can reach a particular consumer, it would not be sensible to restrict the focus of the analysis just to social media platforms. One would need to look instead at all routes by which an advertiser can reach a particular customer — both online and offline. Section IV concludes.

II. PRAT AND VALLETTI'S ATTENTION OLIGOPOLY MODEL

In June 2018, P&V published a working paper titled "Attention Oligopoly." This paper analyzed the situation of online platforms that are an important route to market to access certain consumers. The paper looks at how platforms compete to sell advertising to suppliers wishing to reach those consumers; the paper then draws implications for how competition authorities should analyze mergers between online platforms.

2 See, for example, M. Warner, "Potential Policy Proposals for Regulation of Social Media and Technology Firms," July 30, 2018, available at https://graphics.axios.com/pdf/PlatformPolicyPaper.pdf.

3 See, for example, J. D. Wright, E. Dorsey, J. Rybnicek & J. Klick, "Requiem for a Paradox: The Dubious Rise and Inevitable Fall of Hipster Antitrust," George Mason Law & Economics Research Paper No. 18-29; Arizona State Law Journal, September 14, 2018, available at http://dx.doi.org/10.2139/ssrn.3249524.

4 See for instance the UK's Furman Review on digital markets (https://www.gov.uk/government/publications/digital-competition-expert-panel-terms-of-reference/digital-competition-expert-panel-terms-of-reference), and the DG Competition conference "Shaping competition policy in the era of digitisation," January 17, 2019 (http://ec.europa.eu/competition/scp19/).

5 A. Coscelli, "Regulation and competition enforcement – a combined approach," Keynote speech to the annual Fordham Competition Law Institute conference, September 7, 2018, available at https://www.gov.uk/government/speeches/fordham-competition-law-institute-annual-conference-2018-keynote-speech.

6 https://twitter.com/tomvalletti/status/1022411303053393920?lang=en-gb.

7 A. Prat & T. Valletti, "Merger policy in the age of Facebook," VOX CEPR Policy Portal. July 26, 2018, available at https://voxeu.org/article/merger-policy-age-facebook.

8 A. Prat & T. Valletti, "Attention Oligopoly," working paper, June 19, 2018, available at http://dx.doi.org/10.2139/ssrn.3197930.

A. Key Economic Mechanism

To understand the latter results, it is worth setting out the key mechanism of the P&V model.

- In the upstream suppliers' market, there is an incumbent producer, who is well known to consumers and makes monopoly profits.
- There are also a number of potential upstream entrants who are not known to consumers, and make zero profit prior to entry.
- Entrant suppliers can become known to consumers only by purchasing adverts from online platforms (so for the purposes of this model, online platforms are the only route for advertisers to reach customers).
- Consumers will only purchase a product if they are aware of the supplier.
- If an entrant supplier successfully purchases an advert from the online platform, the supplier market becomes a duopoly, and both the entrant and the incumbent make duopoly profits.

This set-up models a situation in which online platforms hold consumer attention, and so are a key route to market for suppliers wishing to reach those consumers. Online platforms can use their important role as a conduit for attention to charge suppliers for access to consumers through advertising.7

P&V then analyze the incentives for platforms to sell adverts to entrants or incumbents. Platforms are assumed to auction advertising space to both incumbents and entrants using a second price auction.[9] Platforms are able to target adverts to individual consumers, and so an individual auction takes place for each consumer. Only one advert is assumed to be available for each consumer on any platform.

P&V show that under these assumptions, the entrant is prepared to pay up to its share of total duopoly profits for the advertising space, in order to become known by consumers and consequently enter the market. However, the incumbent has an incentive to outbid the entrant. This is because the profits from monopoly are greater than twice duopoly profits.[10] The incumbent can outbid the entrant and pay the entrant's duopoly profits to the platform in order to win the auction for advertising space. This preserves the incumbent's monopoly and keeps consumers unaware of the entrant's products.

P&V then demonstrate that this result is weakened where there are multiple platforms. In this situation, it becomes more expensive for the incumbent to keep out entrants, as the incumbent needs to pay a part of its monopoly profits to each platform to keep the entrant out across the board. With enough platforms, eventually the incumbent will not have any incentive to keep the entrant out, even in an environment where monopoly profits are substantially larger than duopoly profits. In this situation, the incumbent does not bid for advertising space, upstream entry occurs, and the platform is not able to extract any of the incumbent's monopoly profits.

Seen like this, online platforms can be thought of as a competitive bottleneck. Platforms control access to customers, and can threaten upstream incumbent suppliers with greater competition in their market if they don't pay up to keep the entrant out. The existence of multiple platforms makes it more difficult for any individual platform to operate as a bottleneck in this way: entrants can "divide and conquer" amongst platforms to make it more difficult for incumbents to outbid them on each platform.

B. Application of the Model to Merger Policy

P&V apply the results of this model to merger policy. They conclude that attention platform mergers could lead to reduced consumer welfare if there is overlap in the consumer base between platforms. This is because following a merger, the number of potential routes for entrants to access overlapping consumers is reduced. For instance, an individual consumer could have previously used both Platform A and Platform B, and entrants could have tried to access that consumer through either route. Following a merger between A and B, the only route to that consumer for an entrant is through the merged entity, and so it is easier for the incumbent to outbid the entrant.

9 In a second price auction, the highest bidder wins but pays the price of the second-highest bid.

10 Strictly speaking, P&V identify that a necessary condition for the incumbent to outbid the entrant is that monopoly profits are greater than twice duopoly profits. However, it is a common result in economics that this is the case: essentially, any competition in a market reduces the total profitability of that market compared to the monopoly situation.

This process increases platform profits, as incumbents will be more willing to pay part of their monopoly profit to the platform in order to preserve their monopoly. It also reduces consumer welfare, as it makes it more likely that these consumers will face upstream monopolies.

P&V argue that their model demonstrates that the key issue in assessing platform mergers is the overlap between the customer bases that they serve, and demonstrate that under some specific technical assumptions the post-merger price increase from the platform will be a function of this overlap. P&V then apply this logic to historic social media platform mergers, using data on the level of consumer overlap between those platforms, and argue that mergers such as *Facebook/Instagram* led to a reduction in consumer welfare.

III. COMMENTARY

The P&V paper is an interesting contribution to an important current debate. However, in our view, there are two aspects of the P&V paper which limit its applicability to merger policy.

A. Whether the Mechanism Describes Reality

The picture painted by the P&V paper is that platforms are essentially in a symbiotic relationship with upstream incumbent monopoly suppliers. Platforms extract a proportion of the profit made by those suppliers by threatening to allow entrants to advertise on their platforms, and so generate competition for the monopoly incumbents. An important question for whether the paper's predictions for merger policy are valid is whether the economic behavior explored appears to capture how attention platforms operate in practice. This does not seem to be the case, for at least two reasons.

First, the P&V approach describes the situation of an incumbent monopolist in the upstream product market who makes monopoly profits (and so has an incentive to keep consumers unaware of the entrant's products). However, it is hard to imagine many real-world situations, particularly in consumer-facing products, in which this is a realistic assumption. Where there are multiple upstream incumbents, the profit-extraction mechanism P&V outline is substantially weakened.

- Competition between multiple upstream incumbents will lead to considerably lower upstream profits. Depending on how competitive the upstream market is, there will be a lesser incentive — and perhaps no incentive — for any individual incumbent to try to foreclose an entrant through outbidding it for advertising space.

- There is also a free-rider effect. Any incumbent outbidding an entrant would raise profits for all incumbents, but gain only a share of those profits while incurring all the costs. This positive externality means that multiple incumbents will engage in less foreclosing activity than for a simple monopolist, as each firm would prefer another firm to incur the costs of outbidding the entrant. P&V do recognize this free-rider problem: "*The model can also be extended beyond the assumption that there is one incumbent and one entrant. Presumably, the incumbents' incentives to keep out entrants weaken with the number of incumbents.*"[11]

Second, the P&V model is based on the assumption that each platform can sell only one advert per consumer. It seems reasonable that there is a practical limit to the amount of advertising content that can be shown to a consumer on any platform within any particular block of attention.[12] However, it is clearly possible in practice for platforms to sell multiple adverts targeting the same consumer, and this suggests that it would in practice be challenging for an incumbent monopolist — even if one existed — to foreclose an entrant, by outbidding it in every auction for every advert on every attention platform.

As a result, the opportunity to sell multiple adverts substantially (and perhaps fully) undermines the mechanism in the paper as well as the empirical relevance of its conclusions.[13]

11 A. Prat & T. Valletti, "Attention Oligopoly," working paper, June 19, 2018, p. 7, available at http://dx.doi.org/10.2139/ssrn.3197930.

12 An exception might be print media, which can expand their products alongside advertising demand by printing more pages.

13 Word of mouth would also undermine any attempt to foreclose. If a customer that has seen an entrant's advert tells another customer about it, it would be impossible.

These reasons might perhaps explain why the situation explored by P&V — where platforms restrict the amount of advertising they offer to preserve upstream monopoly providers — does not seem to hold in practice. For instance, this does not seem to be the strategy employed by Google, Facebook, or Amazon (to think of only three of the largest attention platforms). In contrast, as any Google search would reveal, these platforms seem to try to sell advertising to as many suppliers as possible.

B. Defining Attention Markets

The theoretical part of the P&V paper looks at attention platforms generically. However, the empirical section and conclusions focus solely on social media platforms. This does not seem naturally to follow.

The mechanism in the paper does not suggest one should restrict attention to social media platforms alone — quite the reverse. Following the logic of P&V, an attention platform will be able to charge higher prices for access to a set of consumers if:

- those consumers use both platforms; *and*
- those consumers do not use any other platforms.

P&V focus on only the first of these conditions. But if consumers receive information about products across a wide variety of online and offline media (e.g. TV, radio, press, outdoor, online search, online display, etc.), then suppliers will be able to access consumers through a variety of different routes, and the ability of social media platforms to act as a competitive bottleneck and allow incumbent suppliers to outbid entrants is substantially weakened. The P&V paper, in fact, likely points to widening advertising markets — perhaps to a broader "attention" market — to take account of all the ways in which consumers give their attention, and so by which suppliers can reach consumers.

An important implication of the paper for merger policy — following this line of logic — would be to look at how the customers of the merging firms behave, outside their behavior on the merging firms' platforms. If there is overlap between the customer bases of the merging firms, but these overlap customers also give attention to many other platforms, then the potential for any anti-competitive outcomes is substantially reduced. One would also want to consider whether there was any reason why the suppliers would not be able to use these alternative routes to reach their target customer base, for instance, whether there is something qualitatively different about advertising through one platform rather than another that cannot be captured through price adjustments. Given that all advertising is essentially about making additional sales, and from an advertiser's perspective there will not necessarily be any reason to distinguish one additional sale from another, there may be limited scope for differentiation between platforms from an advertiser perspective.

IV. CONCLUSION

The P&V paper is a timely contribution to an important debate. It explores an interesting mechanism whereby attention platforms might try to exploit market power by threatening to provide a route to market for entrants and extracting surplus from upstream monopolies. This approach leads to the conclusion that merger authorities should concentrate on exploring overlaps in the customer bases of the merging firms.

By itself, this conclusion seems sensible. However, as set out above, the logic of the paper goes further. Competition authorities should also explore how the customers of the merging parties (particularly the overlapping customers) use other attention platforms, both online and offline. Such an approach would provide a proper understanding of whether the merging parties are the only important route to market for certain customers, or whether there are alternative routes by which advertisers can reach those customers.

COMPETITION IN DISPLAY AD TECHNOLOGY: A RETROSPECTIVE LOOK AT *GOOGLE/DOUBLECLICK* AND *GOOGLE/ADMOB*

BY DANIEL BITTON, MAURITS DOLMANS, HENRY MOSTYN & DAVID PEARL[1]




1 Daniel Bitton and David Pearl, Axinn Veltrop & Harkrider LLP; Maurits Dolmans and Henry Mostyn, Cleary Gottlieb Steen & Hamilton LLP. The authors have worked with Google on the cases discussed in this article and other matters. They thank Tal Elmatad and Stacie Soohyun Cho for their support.

I. INTRODUCTION

As part of sector inquiries into digital platforms or online advertising, some enforcement agencies are considering evaluating competition in online display advertising and display advertising technology or intermediation services ("ad tech"). Recently, some commentators in this industry have also published about it.[2]

This is not the first time enforcement agencies have looked at this sector of the economy. They have scrutinized this space in the review of a number of mergers, each time without seeking enforcement. A careful review of competitive indicia shows that display advertising and ad tech bear all the hallmarks of a highly competitive and innovative space. Technical developments that increase ad conversion rates suggest an increase in efficiency — and an intensification of competition. This disruption affects incumbents, but that is not in itself an indication of a lack of competition. To the contrary, that typically is indicative of increased competition.

In this article, we seek to demystify the complex online advertising ecosystem and to correct some common misconceptions about it. We will also look back at past mergers and acquisitions in the space and review how the market subsequently evolved.

II. OVERVIEW OF ONLINE DISPLAY ADVERTISING AND AD TECH

Many publishers, especially those online, operate as "two-sided" platforms, in that they offer content or services to consumers (e.g. news, sports, photos, many types of search results, or social networking) while selling advertising space to advertisers. Online display advertising is one of many formats that publishers can offer advertisers (i.e. selling advertising space on websites or in mobile applications). The term display advertising is typically used to refer to a category including various forms of online advertising, including text, image, and video ads.

Traditionally, some have characterized display ads and search ads as serving different purposes for advertisers. The idea was that advertisers employed display ads to create brand awareness and search ads to trigger a direct response (e.g. a sale). The rationale for this distinction was as follows: search ads are targeted to users who, by having entered a search query for particular product, have demonstrated an interest in that product and are thus likely candidates to purchase it. Traditional display "banner ads" on a website were less targeted to likely buyers than search ads, since they appeared to all visitors to that website regardless of their interest in the advertised products. These display ads were better suited for building up brand recognition, much like traditional ads in newspapers, in magazines, or on TV.[3]

This distinction, while an understandable shorthand some time ago, is anachronistic and does not hold today. Due to the emergence of advanced targeting technologies,[4] most display ads are now also targeted or personalized to particular users or groups based on the content of the website or mobile app on which the ad is displayed, a user's prior web browsing activity, or information about their interests, location, or demographics. As a result, from an advertiser's perspective, display ads are often interchangeable with search ads and can be even more effectively targeted.[5]

2 See, e.g. D. Geradin & D. Katsifis, *An EU Competition law Analysis of Online Display Advertising in the Programmatic Age*, SSRN (Dec. 12, 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3299931.

3 Matt Schruers, *Infographic: How Ad Dollars Are Spent*, Disruptive Competition Project (Jan. 16, 2018) http://www.project-disco.org/competition/011618-how-ad-dollars-are-spent/#.XEtwmdJKiUk ("Consider today's reality: advertisers compete to reach the same consumers across multiple mediums. Services that deliver ads digitally to an individual's mobile device don't just compete against one another; they compete directly with television, print and outdoor options (e.g. highway billboards, subway stations, Times Square installations)."). According to this source, only 41 percent of a typical company's ad spend is spent on digital advertising.

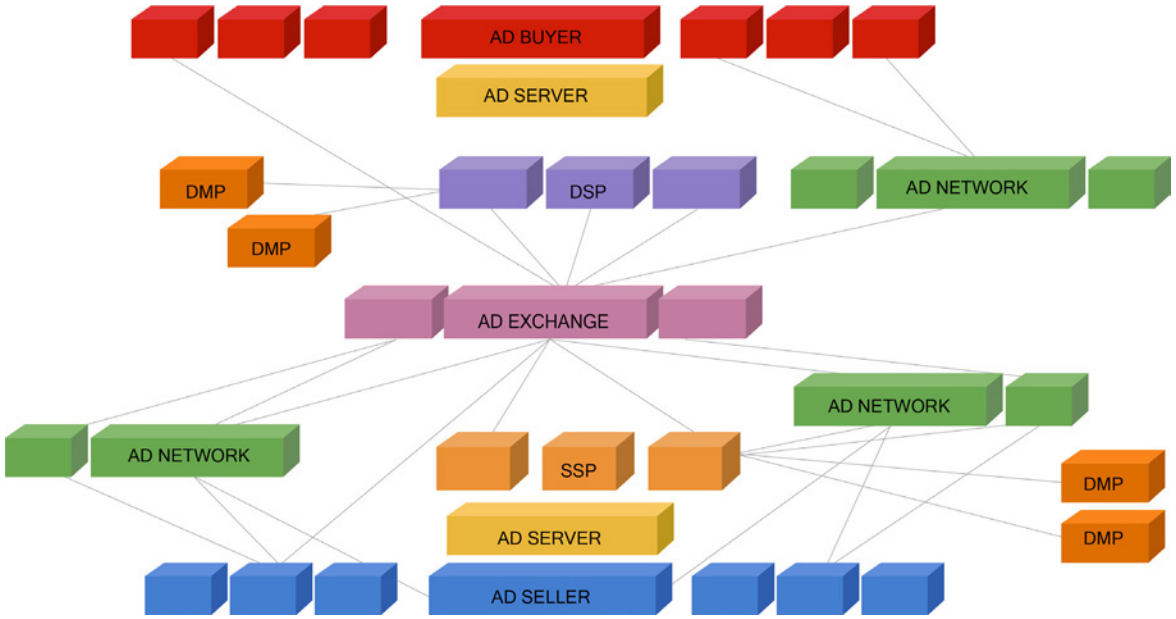
4 *Direct-Response Tactics Take Majority of US Marketers' Budgets*, eMarketer (May 20, 2014), http://www.emarketer.com/Article/Direct-Response-Tactics-Take-Majority-of-US-Marketers-Budgets/1010852 ("As marketers get better at measurement and attribution, the lines between direct-response spending and branding are blurring more than ever. In fact, eMarketer adjusted our methodology [in 2014], no longer defining direct-response and branding-focused advertisements based on specific digital ad formats (search vs. display, for instance).").

5 *Why You Should Bet on Pinterest*, Ad Week (July 25, 2018), https://www.adweek.com/digital/why-you-should-bet-on-pinterest/.

The emergence of marketing mix optimization tools has also contributed to a blurring of the lines between, and competition between, different ad formats. Advertisers use these tools to compare the price and performance of different ad platforms, formats, and channels in real-time and to shift their ad spend among them to optimize their return on ad spend.[6] Notably, marketing mix optimization tools not only enable optimization across different online ad formats and channels but also between online and offline advertising formats. That, combined with the emergence of targeting technologies for offline formats, has further broken down traditional distinctions between different types of advertising. As an example, Amazon's emergence as a major player in online advertising drew advertising spend from other online marketplaces, search advertising platforms, social media, display ads, TV, radio, outdoor advertising, and print.[7]

This all marks a substantial evolution in the ad tech industry. In the early days of online advertising, the placement of ads was largely a manual process. The advertiser would negotiate directly with the web publisher to purchase specific ad space for a particular price and particular duration. The advertiser would then email the ad creative to the publisher and the publisher would manually place the ad on its website.

As the supply of ad inventory on the internet grew exponentially, it was no longer feasible to handle all placements manually. Ad tech first emerged as a means to more efficiently place ads, and then evolved to render the entire process of purchasing and selling of ads more efficient. This creates monetization opportunities for countless small web publishers and unlocked a lot of ad inventory that had previously gone unsold, thereby expanding the pie for all. It also created many more opportunities for advertisers, especially smaller advertisers. While as much as half of online ad revenue today is still generated through direct sales (even these sales often rely on ad tech for the actual placement of the ad), the other half is done through ad tech.[8] We next describe the most common elements in the "ad tech stack," depicted in the chart below.



Ad servers are web servers that facilitate fully automated real-time ad placement through server-to-server communications between advertisers and publishers. Advertiser-side ad servers also help with ad campaign management and performance tracking. Publisher-side ad servers track ad performance and manage a publisher's ad inventory. There are many popular advertiser-side ad servers (e.g. Adform, Adslot,

6 See, e.g. *Adobe Media Optimizer is now Adobe Advertising Cloud*, Adobe, https://www.adobe.com/advertising-cloud/media-optimizer.html ("Our programmatic ad buying solution is evolving to further support your media planning and execution. It unites search, display, social, and TV into a single platform so you can find the best way to consistently deliver audience-relevant content"); Marin Software, https://www.marinsoftware.com/; Kenshoo, https://kenshoo.com/. See also Bain Insights, *The Future of Marketing Mix Optimization is Here*, Forbes (Feb. 28, 2018), https://www.forbes.com/sites/baininsights/2018/02/28/the-future-of-marketing-mix-optimization-is-here/#585a3af71387.

7 See Ginny Marvin, *80% of Amazon advertisers plan to increase budgets in 2019*, Search Engine Land (Oct. 25, 2018), https://marketingland.com/80-of-amazon-advertisers-plan-to-increase-budgets-in-2019-250489.

8 Jacob Rosenzweig et al., *A Guaranteed Opportunity in Programmatic Advertising*, Boston Consulting Group (Feb. 7, 2018), https://www.bcg.com/en-us/publications/2018/guaranteed-opportunity-programmatic-advertising.aspx. According to this study, 51 percent of 2017 global display and video ad spend was sold through traditional direct arrangements as opposed to programmatic processes (which includes programmatic guaranteed). The share of traditional direct deals is expected to decrease but still account for more than 35 percent of display online advertising by 2020.

Google Campaign Manager, Sizmek, Weborama, Innovid, Conversant, and Flashtalking) and publisher-side ad servers (e.g. MoPub (Twitter), Google Ad Manager, AppNexus (AT&T), SAS, and Adform.

Ad networks were introduced to enable the sale and purchase of ad spaces that remained unfilled (generally slots on smaller or lower value websites). Ad networks aggregate such inventory and sell it to advertisers. This reduces search and transaction costs for advertisers and publishers, thereby generating ad revenue for publishers where none previously existed. There are many competitive ad networks including InMobi, AdColony, Facebook Audience Network, Chartboost, Google's Display Network and AdMob, Microsoft Audience Network, Unity Ads, Media.net, Flurry (Verizon), Vungle, AppLovin, and Fyber/HeyZap.

Ad exchanges arose to help manage multiple ad networks competing for the same ad inventory by allowing ad buyers to bid simultaneously on the inventory of multiple publishers. There are many ad exchanges today including AppNexus, Google Ad Manager, PubMatic, Rubicon Project, InMobi, MoPub, OpenX, RTL Group, Smaato, and Oath (Verizon).

As competition increased, advertisers and publishers began to buy and sell ad inventory via multiple ad networks and exchanges simultaneously. Demand-side platforms ("DSPs") and Supply-side platforms ("SSPs") developed to help advertisers and publishers optimize their ad purchases and sales across intermediaries. There are numerous DSP and SSP options that advertisers and publishers can turn to, including MediaMath, Amazon, Google's Display & Video 360 and Ad Manager, The Trade Desk, TubeMogul (Adobe), Dataxu, AppNexus, Singtel's Amobee, Oath, MoPub, InMobi, Rubicon Project, and PubMatic. Many DSPs also offer data management platforms to help advertisers and publishers develop valuable insights into user activity to improve audience targeting and thus ad quality and performance.

Like the lines between different ad formats, the lines between ad tech solutions have blurred over time, such that advertisers and publishers can use some of them interchangeably. Moreover, vendors are increasingly offering multiple ad tech products that work together seamlessly.

This dynamic online advertising ecosystem has been a boon to advertisers, publishers, and consumers alike. Advertisers have reaped enormous benefits from more effective technologies to target the desired audience, which in return enabled them to achieve much greater return on ad spend.[9] Publishers have benefited from new and better ways to optimize monetization of their content and services. Both publishers and advertisers engage in multi-homing (i.e. use of more than one ad tech provider for the same function), facilitating comparisons and switching. This, in turn, has benefited consumers by funding highly innovative, free-of-charge technologies and online content and more personalized and relevant ads.[10]

III. M&A ACTIVITY AND VERTICAL INTEGRATION HAVE INCREASED COMPETITION AND IMPROVED THE QUALITY OF AD TECH

Notwithstanding the highly competitive nature of the online ad ecosystem described above, some suggest that consolidation and vertical integration in display ads and ad tech creates competitive problems,[11] such as opacity in pricing of ad technology solutions and foreclosure of rivals.

Similar concerns were raised about a decade ago during the reviews of the *Google/DoubleClick* and the *Google/AdMob* transactions. There continues to be little evidence to support these theories. To the contrary, competitive indicia in ad tech reveal a dynamic and disruptive space – characterized by many successful and major players, frequent multi-homing and mixing-and-matching (i.e. use of different vendors for different functions) by advertisers and publishers, improved advertising quality and returns and publisher yield, and constant innovation.

A look-back at *Google/DoubleClick* and *Google/AdMob* reveals that vertical integration has promoted rather than undermined the dynamism of the online advertising space as described in the previous section. Competition in online display advertising and ad tech is yet much greater now than it was when those transactions were reviewed.

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9 See, e.g. Ali Parmelee, *How Effective is Facebook Advertising? The Truth About Facebook ROI*, iMPACT (Feb. 28, 2018), https://www.impactbnd.com/blog/how-effective-is-facebook-advertising-the-truth-about-facebook-roi ("A 2015 study found that 52% of consumers were influenced by Facebook when making both online and offline purchases—and rising. Facebook's hyper-targeted Custom Audiences feature lets you advertise so specifically that advertisers have seen their new customer acquisition costs decline by as much as 73%.").

10 *How much would you pay to keep using Google?*, Economist (Apr. 25, 2018), https://www.economist.com/graphic-detail/2018/04/25/how-much-would-you-pay-to-keep-using-google.

11 Geradin & Katsifis, *supra* note 2.

Some have expressed concerns around the general opacity of the sector and allegedly non-transparent fees charged by different providers. While there may be valid concerns around the opacity of pricing, it is difficult to see how this is attributable to a problem of lack of competition or vertical integration.

In particular, the concerns expressed around opacity of pricing are typically attributable to industry fragmentation rather than consolidation or vertical integration.[12] In fact, sources cited for these concerns often complain about lack of transparency due to "too many players," "too many touches," and "too many holes."[13] And they note that smaller players, who cannot reasonably be considered dominant under their theories, are the ones who have levied opaque or excessive fees. Vertical integration and consolidation are actually trends that resolve concerns around lack of transparency and complexity.[14] By its nature, vertical integration eliminates the multiple marginalization that is attributable to having "multiple actors" in the ecosystem, and there is greater pricing transparency when one vendor delivers all services.[15]

In addition to concerns about pricing transparency, some have expressed the concern that vertical integration by digital platforms like Google has foreclosed rival non-integrated ad technology and intermediary service providers. Yet, as discussed above and below, empirical evidence shows that there has been significant entry and innovation in ad tech, including by non-integrated, "point players."[16] In fact, point players have been highly successful in ad tech, showing no signs of foreclosure, by differentiating their solutions and taking advantage of extensive multi-homing,[17] and mixing-and-matching by advertisers and publishers. What is also notable is that the concerns expressed about vertical integration in ad tech often take issue with practices and technological design that are in fact procompetitive, such as the benefit of one-stop-shopping and integrated product offerings that offer advertisers and publishers a seamless experience and fewer errors.

Setting these considerations aside, we briefly examine two merger reviews that are relevant to this discussion — the *Google/DoubleClick* acquisition and the *Google/AdMob* transaction.

A. Google/DoubleClick

Google acquired DoubleClick in April 2007. Prior to the transaction, Google and DoubleClick played different, but complementary, roles in online advertising. Google primarily sold search ads on Google.com and AdSense partner sites. DoubleClick was an ad serving company — it provided the technology to deliver display ads to publishers, measure the ads' performance, and provide publishers and advertisers with the tools to manage their ad inventory and ad campaigns.

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12 Moreover, while transparency in business dealings may be important, an alleged lack of transparency cannot, by itself, establish an exploitative abuse under Article 102(a) TFEU. To establish an exploitative abuse, the dominant company must use its market power to extract disproportionate benefits from its trading partners (CJEU judgment of February 2, 1978, *United Brands*, case 27/76, paras. 248-249; and General Court Judgment of May 24, 2007, Case T-151 *DSD* ECLI:EU:T:2007:154, para. 121 (a company commits an exploitative abuse only where "it charges for its services fees which are disproportionate to the economic value of the service provided"). Lack of transparency alone does not result in any transfer of disproportionate benefit, so cannot constitute an exploitative abuse.

13 L. Handley from Procter and Gamble in comments at a 2017 IAB meeting, cited in Geradin & Katsifis, fn. 118, *supra* note 2.

14 See e.g. Alexandra Bruell, *The Ad Agency of the Future is Coming. Are you Ready? Clients Want One Partner to Simplify the Fragmentation and Data -- and Today's Shops May Not Be Among Them*, AdAge (May 2, 2016), http://adage.com/article/print-edition/agency-future/303798/ ("At the nexus of this confusing and continually evolving mashup of business operations and marketing are clients, who need a partner to help them stave off their own impending winter."); Alison Weissbrot, *Four Reasons Why Agencies Are Working With Fewer DSPs*, Adexchanger (June 19, 2018), https://adexchanger.com/agencies/four-reasons-why-agencies-are-working-with-fewer-dsps/ (Consolidation around fewer DSPs "has allowed teams to master certain platforms and find workflow efficiencies, while creating a more transparent and collaborative relationship with partners.").

15 See e.g. Alexandra Bruell, *The Ad Agency of the Future is Coming. Are you Ready? Clients Want One Partner to Simplify the Fragmentation and Data – and Today's Shops May Not Be Among Them*, AdAge (May 2, 2016), http://adage.com/article/print-edition/agency-future/303798/ ("At the nexus of this confusing and continually evolving mashup of business operations and marketing are clients, who need a partner to help them stave off their own impending winter."); Alison Weissbrot, *Four Reasons Why Agencies Are Working With Fewer DSPs*, Adexchanger (June 19, 2018), https://adexchanger.com/agencies/four-reasons-why-agencies-are-working-with-fewer-dsps/ (Consolidation around fewer DSPs "has allowed teams to master certain platforms and find workflow efficiencies, while creating a more transparent and collaborative relationship with partners.").

16 Examples include The Trade Desk, MediaMath, Dataxu, Sizmek, Amobee, MoPub, Criteo, Telaria, and FreeWheel. See generally § 2.

17 *Average Number of DSPs Used by U.S. Advertisers, Jan 2016-April 2018 (among the largest 100 advertisers on the Pathmatics)*, eMarketer (May 29, 2018), https://www.emarketer.com/Chart/Average-Number-of-DSPs-Used-by-US-Advertisers-Jan-2016-April-2018-among-largest-100-advertisers-on-Pathmatics-platform/219189 (The top 100 U.S. advertisers use an average 4 to 7 DSPs according to a 2016-2018 study); Ross Benes, '*More isn't always better': Publishers cut their SSPs by 20 percent this year*, Digiday (Dec. 13, 2017), https://digiday.com/media/isnt-always-better-publishers-cut-ssps-20-percent-year/ (500 largest U.S. publishers use an average of 6 SSPs).

The transaction was reviewed by the EU Commission[18] and the U.S. FTC.[19] Both agencies unconditionally cleared the merger. This was despite allegations that (i) the merger would increase the cost of display advertising for publishers, (ii) the merger would lead to vertical foreclosure of rival ad networks, and (iii) post-transaction the combined firm's data would have "an overwhelming advantage in the ad intermediation market."[20] A retrospective review of subsequent events show that the authorities were right to reject such complaints.

As to (i), there was no horizontal overlap between the parties. The authorities nonetheless carefully reviewed whether an increase in the price of DoubleClick's ad serving solution would increase the total cost of display advertising. Since display advertising is a substitute for search advertising, complainants argued that an increase in ad serving costs would result in some diversion of demand to Google's search ads, which Google would capture in the form of additional search ad revenue. This, it was argued, would give Google an incentive to increase its price of ad serving, which would then result in an increase in the aggregate cost of display ads.

The authorities dismissed these concerns. First, ad serving represented a small part of the total cost of display advertising, and so an increase in the price of ad serving would hardly affect the total cost of display advertising. Second, DoubleClick faced significant competition in ad serving, and "prices and margins [had] eroded substantially over the past few years."[21] Third, while search advertising is substitutable with display advertising, it is a less close substitute than other display advertising. Accordingly, an increase in the price of DoubleClick's products would in a number of cases trigger switching to rival display advertising, rather than Google's search advertising.

As to (ii), complainants alleged that the merged entity could and would increase the price of its ad serving service when advertisers or publishers would use it in conjunction with competing networks, such that DoubleClick's customers would favor Google's ad network over others, leading to the marginalization of competing ad networks. But the authorities found that to spur switching, large increases in ad serving prices would be necessary, which were constrained by the strong competition in ad serving.

Hindsight shows that the reasoning applied to dismiss this concern was well founded. As described above, display ad serving remains a highly competitive and commoditized space and the supposedly foreclosed ad tech and intermediation market is more competitive and dynamic than ever. Indeed, there are many players, at each level of the ad tech stack, that have thrived since the DoubleClick merger, including ad networks (e.g. AppNexus), ad exchanges (e.g. OpenX), and demand- (e.g. Sizmek), and supply-side platforms (e.g. Pubmatic). Some ad tech point players have been so successful, in fact, that they have conducted initial public offerings.[22] Meanwhile, Amazon has aggressively entered the ad tech value chain, with analysts estimating that its ad business will-grow to $50.6 billion by 2028, up from $10.2 billion in 2018.[23]

These recent success stories indicate that the DoubleClick acquisition did not foreclose competition. And while there has been significant M&A activity, much of that activity has brought in new companies, such as Verizon, AT&T, and News Corp into ad tech[24] and led to major expansion of ad tech capabilities by others like Facebook, Oracle, and Adobe.[25]

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18 Commission Decision, Case No COMP/M.4731 – *Google/DoubleClick* (Mar. 11, 2008), http://ec.europa.eu/competition/mergers/cases/decisions/m4731_20080311_20682_en.pdf.

19 Federal Trade Commission, Statement of Federal Trade Commission Concerning Google/DoubleClick, https://www.ftc.gov/system/files/documents/public_statements/418081/071220googledc-commstmt.pdf.

20 *Id.*

21 *Id.*

22 See e.g. THE TRADE DESK, *The Trade Desk Announces Pricing of Initial Public Offering* (Sept. 20, 2016), http://www.marketwired.com/press-release/the-trade-desk-announces-pricing-of-initial-public-offering-2160187.htm.

23 Tae Kim, *Amazon is Citi's 'top pick' because of its growing advertising business*, CNBC (Jan. 29, 2018), https://www.cnbc.com/2018/01/29/amazon-is-citis-top-pick-because-of-its-growing-advertising-business.html.

24 See, e.g. Vanessa Mitchell, *Oath to fully acquire Yahoo7 from Seven West Media*, CMO (Mar. 28, 2018), https://www.cmo.com.au/article/635464/oath-fully-acquire-yahoo7-from-seven-west-media/; *Investore Relations*, AOL, http://investors.millennialmedia.com/phoenix.zhtml?c=238412&p=irol-irhome; Lara O'Reilly, *AT&T Plots New Marketplace for TV and Digital Video Advertising*, WALL ST. J. (June 25, 2018), https://www.wsj.com/articles/at-t-to-acquire-digital-ad-firm-appnexus-for-1-6-billion-1529929278?mod=e2tw&utm_source=newsletter&utm_medium=email&utm_campaign=newsletter_axiosmediatrends&stream=top; NEWS CORP, *News Corp To Acquire Social Video Ad Platform Unruly* (Sept. 16, 2015), https://newscorp.com/2015/09/16/news-corp-to-acquire-social-video-ad-platform-unruly/.

25 See, e.g. Josh Constine, *Facebook Acquires LiveRail For $400M To $500M To Serve Video Ads Everywhere, Improve Its Own*, Tech Crunch (July 2, 2014) https://techcrunch.com/2014/07/02/facebook-liverail/; *Oracle Buys Moat - Creates the World's Most Comprehensive Cloud Platform for Marketing Data and Analytics*, PR NEWSWIRE (April 18, 2017), https://www.prnewswire.com/news-releases/oracle-buys-moat-300441422.html; *Adobe Unveils Adobe Advertising Cloud*, ADOBE (May 21, 2017), https://news.adobe.com/press-release/marketing-cloud/adobe-unveils-adobe-advertising-cloud.

As to (iii), the entry and success of new players confirmed that the merger did not provide an insurmountable data advantage. Each of these players has proven capable of achieving the same objectives as Google by developing or acquiring their own data sets. Publishers often host tracking elements from as many as 20 ad tech companies simultaneously,[26] so the fact that Google has collected certain data does not preclude its competitors from gathering that data. Large players like Amazon, Oracle, Microsoft, AT&T/AppNexus, Verizon/Oath, and even Wal-Mart, all have vast user data sets derived from their online and offline businesses and are investing billions into online advertising, both organically and through acquisitions.[27] Some smaller companies have built datasets organically or acquired existing datasets through data brokers.

There is, moreover, little evidence of higher prices or a slowdown in innovation. Display ad spend continues to rise year-on-year, and is projected to do so in the future. At the same time, display ad costs fell following the DoubleClick acquisition, with Econsultancy noting four years after the transaction that, "[a]d serving providers increasingly feel more pressure as prices continue to fall and emerging players enter the market."[28] And the space continues to see considerable innovation: new forms of programmatic advertising are constantly emerging; dynamic allocation allows publishers to increase the overall yield on their inventory; the vast majority of firms are adopting header bidding to increase their yields; and firms are rapidly embracing AI technology.[29]

Today, publishers have better yields for their inventory as a result of innovations such as "exchange bidding," which allows publishers and exchanges to optimize their yield management with server-to-server real-time bidding. As to advertisers, display ad technologies are more advanced than ever before, with display advertising allowing for granular targeting based on a broad range of specific criteria (e.g. estimated income, recent interactions with advertiser websites).[30] This has improved advertisers' return on ad spend. For example, industry experts note that Facebook's display ads offer "thousands of possible ad targeting parameters," which allow for "ridiculously powerful ad targeting strategies."[31]

B. Google/AdMob

During Google's 2010 acquisition of AdMob, a mobile display advertising start-up, some expressed a concern that the acquisition would give Google such an advantage over its competitors that the market would "tip" to Google, leading to higher prices and discouraging new entry.[32] After an extensive investigation, the FTC cleared the transaction.[33] The changes that have occurred since then show that the FTC came to the right conclusion, even if it did not necessarily predict exactly how the industry would shake out.

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26 Reports *suggest* that popular websites include an average of 20 different tracking cookies. Steven Englehardt and Arvind Narayanan (Princeton University), Online Tracking: A 1-million-site Measurement and Analysis, ACM Conference on Computer and Communication Security Submission, at 10, Figure 6 (October 2016), http://randomwalker.info/publications/OpenWPM_1_million_site_tracking_measurement.pdf.

27 See, e.g. Jon Brodkin, *Yahoo and AOL are now a Verizon subsidiary called "Oath"*, Ars Technica (June 13, 2017), https://arstechnica.com/information-technology/2017/06/oath-verizon-completes-4-5-billion-buy-of-yahoo-and-merges-it-with-aol/; Lara O'Reilly, *AT&T Plots New Marketplace for TV and Digital Video Advertising*, WALL ST. J. (June 25, 2018), https://www.wsj.com/articles/at-t-to-acquire-digital-ad-firm-appnexus-for-1-6-billion-1529929278; Yuyu Chen, *With Amazon looming, Walmart quietly grows as an advertising force*, Digiday (August 18, 2017), https://digiday.com/marketing/amazon-looming-walmart-quietly-grows-advertising-platform/.

28 Manual Van Lijf, *New Econsultancy Ad Serving Buyer's Guide released*, MarketingFood (Mar. 22, 2011), https://marketingfood.wordpress.com/2011/03/22/new-econsultancy-ad-serving-buyer%E2%80%99s-guide-released/ (discussing Econsultancy publication).

29 *The Digital Advertising Stats You Need for 2018*, AppNexus https://www.appnexus.com/sites/default/files/whitepapers/guide-2018stats_2.pdf.

30 Search Engine Watch, *Facebook Ads: Lessons From the Trenches*, Search Engine Watch (Oct. 22, 2014), https://searchenginewatch.com/sew/how-to/2377005/facebook-ads-lessons-from-the-trenches.

31 Larry Kim, *5 Ridiculously Powerful Facebook Ad Targeting Strategies*, Wordstream (Aug. 23, 2018), https://www.wordstream.com/blog/ws/2015/01/28/facebook-ad-targeting.

32 Simon Buckingham, *Just Say 'No to Google's AdMob Acquisition*, Telecoms (Apr. 8, 2010), http://www.telecoms.com/19516/just-say-no-to-googles-admob-acquisition/. Scott Cleland, *Google-AdMob: An FTC Antitrust Enforcement Watershed*, Precursor Blog (Mar. 2, 2010), http://precursorblog.com/?q=content/google-admob-an-ftc-antitrust-enforcement-watershed-lessons-google-doubleclick-eu; Consumer Watchdog, *Privacy And Consumer Advocacy Groups Cite Privacy, Competition Concerns With Google-AdMob Deal* (Dec. 28, 2009), https://www.consumerwatchdog.org/privacy-and-consumer-advocacy-groups-cite-privacy-competition-concerns-google-admob-deal.

33 Federal Trade Commission, Statement of the Commission Concerning Google/Admob (May 21, 2010), https://www.ftc.gov/sites/default/files/documents/closing_letters/google-inc./admob-inc/100521google-admobstmt.pdf.

According to its closing statement, the FTC ultimately cleared the acquisition in part in light of Apple's acquisition of Quattro Wireless and launch of its iAd mobile ad network in 2010.[34] Although Apple's iAd network ultimately did not turn out to be successful,[35] two other successful and significant players entered with mobile ad networks and have rapidly become highly successful and popular. In 2014, Facebook launched Facebook Audience Network,[36] which, in less than four years, has grown to be one of the most popular mobile ad networks, reaching 1 billion people every month.[37] Amazon entered the space with its Mobile Ad Network in 2013[38] and has shown tremendous growth in the last several years.[39] There are yet many other successful entry stories. Twitter (MoPub) and Verizon (MillenialMedia) have both also entered the space via acquisition.[40] And, recently, Apple has reportedly floated reentering with a new mobile ad network in which it would seek to have Snap and Pinterest participate.[41] Smaller players have also flourished: AirPush works with 150,000 apps;[42] Exponential connects advertisers to 600 million daily users; Tapjoy reaches 800 million monthly users;[43] Chartboost reaches 900 million monthly users;[44] InMobi recently acquired an ad tech subsidiary from Sprint as part of a broader partnership;[45] and IronSource was valued at $1 billion in 2015 and generated nearly $500 million in revenue in 2017.[46]

As occurred with ad tech intermediaries following the *DoubleClick* transaction, dynamic competition in the mobile advertising space since the *AdMob* transaction has driven innovation, and mobile advertising spend is growing rapidly.[47] The space is much more competitive and vibrant than it was in 2010.

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34 Jason Kincaid, *Apple Announces iAd Mobile Advertising Platform*, Tech Crunch (Apr. 8, 2010), https://techcrunch.com/2010/04/08/apple-announces-iad-mobile-advertising-platform/; Federal Trade Commission, Statement of the Commission Concerning Google/Admob (May 21, 2010), https://www.ftc.gov/sites/default/files/documents/closing_letters/google-inc./admob-inc/100521google-admobstmt.pdf.

35 Christopher Heine, *As iAd Shuts Down, Apple May Be About to Get a Shot of Advertising Redemption*, AdWeek (June 30, 2016), https://www.adweek.com/digital/iad-shuts-down-apple-may-be-about-get-shot-advertising-redemption-172319/.

36 Josh Constine, *Facebook Opens Its Mobile Ad "Audience Network" to All Advertisers and Apps*, TechCrunch (Oct. 10, 2014), https://techcrunch.com/2014/10/07/facebook-audience-network-ads/.

37 By the start of 2017, Facebook already had 1 billion people viewing its mobile advertising network every month. Marty Swant, *The Facebook Audience Network Now Serves Ads to 1 Billion People Each Month*, Adweek (Jan. 12, 2017), https://www.adweek.com/digital/facebook-audience-network-now-serves-ads-1-billion-people-each-month-175516/.

38 Jim Edwards, *Amazon's New Mobile Ad Network Is A Huge Threat To Google*, Business Insider (Mar. 6, 2013), https://www.businessinsider.com/amazons-new-mobile-ad-network-is-a-huge-threat-to-google-2013-3.

39 Anne Freier, *Amazon mobile ad revenue to increase 242% in 2018*, Business of Apps (Sept. 21, 2018), http://www.businessofapps.com/news/amazon-mobile-ad-revenue-to-increase-242-in-2018/. Julie Cresswell, *Amazon Sets Its Sights on the $88 Billion Online Ad Market*, New York Times (Sept. 3, 2018), https://www.nytimes.com/2018/09/03/business/media/amazon-digital-ads.html. Note that roughly 80 percent of all U.S. mobile ad dollars are derived from in-app ads (i.e. one potentially served by a mobile ad network). TapJoy, *Part 1 of 2: Best Practices for Buying In-App Ads in 2018*, Medium (Mar. 9, 2018), https://medium.com/tapjoy/part-1-of-2-best-practices-for-buying-in-app-ads-in-2018-1fe6114c7f7e (80 percent of ads being in-app). Tae Kim, *Amazon's advertising profits will surpass its cloud computing income by 2021: Piper Jaffray*, CNBC (Aug. 13, 2018), https://www.cnbc.com/amp/2018/08/13/amazons-advertising-profits-will-surpass-its-aws-income-by-2021-pipe.html.

40 Our history, Mopub, https://www.mopub.com/company/history/; Kate Kaye, Why Purchase of Millenial Media Brings Verizon Closer to its Data Dreams, Adage (Sept. 8, 2015), https://adage.com/article/datadriven-marketing/millennial-buy-brings-verizon-closer-data-dreams/300245/.

41 Malcolm Owen, *Apple floats new App Store ad network concept to Snapchat, Pinterest & others*, AppleInsider (June 1, 2018), https://appleinsider.com/articles/18/06/01/apple-floats-new-app-store-ad-network-concept-to-snapchat-pinterest-others.

42 Eric Siu, *53 Alternative Ad Networks to Open Up New Channels of Growth in 2019*, Single Grain https://www.singlegrain.com/blog-posts/pay-per-click/44-ad-networks-will-help-open-new-channels-growth/.

43 *We Create Maximum Impact*, Tapjoy, https://www.tapjoy.com/about/.

44 *Chartboost*, https://www.chartboost.com/.

45 Ronan Shields, *InMobi Purchases an Ad-Tech Unit From Sprint to Strengthen Its Marketing Cloud*, AdWeek (Oct. 17, 2018), https://www.adweek.com/programmatic/inmobi-purchases-an-ad-tech-unit-from-sprint-to-strengthen-its-marketing-cloud/.

46 Alex Konrad, *Israeli Unicorn IronSource Raises $105 Million To Buy Startups Ahead Of IPO*, Forbes (Feb. 25, 2015), https://www.forbes.com/sites/alexkonrad/2015/02/25/israeli-unicorn-ironsource-raises-105-million-ahead-of-ipo/#7c7d2fa35ddd (IronSource valuation); TheMarker, *TechNation: IronSource to Pay Giant $250 Million Dividend*, Haaretz (Apr. 24, 2018), (https://www.haaretz.com/israel-news/business/technation-ironsource-to-pay-giant-250-million-dividend-1.6026971 (IronSource revenue).

47 Dean Takahashi, *AppsFlyer: App ad market to grow 136% to $64.1 billion from 2017 to 2020*, VentureBeat (Dec. 20, 2018), https://venturebeat.com/2018/12/20/appsflyer-app-ad-market-to-grow-136-to-64-1-billion-from-2017-to-2020/. App Annie, In-App Advertising Spend to Triple, Reach $201 Billion by 2021 (Aug. 9, 2017), https://www.appannie.com/en/insights/market-data/app-advertising-spend-2021/.

IV. CONCLUSION

Agencies rejected complaints that the *DoubleClick* and *AdMob* acquisitions would lead to market foreclosure or higher prices based on a sound review of the available evidence. A close review of competitive indicia in the online advertising industry today validates the agencies' clearance decisions in those and other matters in this space. Display advertising and ad tech continue to be marked by constant disruptive innovation, growing output, new entry and expansion, and large numbers of players competing with differentiated offerings. If large, vertically integrated ad tech players attempted to engage in anticompetitive behavior, advertisers and publishers could, and would, take their business elsewhere, whether to other vertically integrated providers or to popular point players.

ADVERTISING AS MONOPOLIZATION IN THE INFORMATION AGE

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I. THE OBSOLESCENCE OF THE INFORMATION FUNCTION OF ADVERTISING

The great irony of the information age is that it has made advertising not only more effective than ever before, but also obsolete as an economically productive tool.[2] For the principal economic justification for advertising is that it provides consumers with useful product information, helping consumers find the products that best suit their preferences.[3] And Google has permanently changed that.

Since the early 2000s, when substantially all important American businesses had achieved a web presence, consumers have had the power to access all of the useful product information they want, at virtually no cost, just by running a Google search and bringing up product information from manufacturer and retailer websites. Consumers no longer need to have advertising thrust upon them in order to learn about the marketplace. And so the information function of advertising, and with it advertising's principal economic justification, is obsolete. Indeed, Internet search offers two distinct efficiency advantages, relative to advertising, as a source of useful product information. Namely, that Internet search allows consumers to choose when to consume product information by choosing when to search, instead of having advertising thrust upon them at times when they would prefer not to consume it, and that Internet search provides access to online product reviews that paint a richer and less biased picture of product quality than advertising can ever provide.

Given the demise of advertising's information function, one might have expected the advertising industry to wither and disappear. And with respect to that part of advertising that is purely focused on providing information, advertising has in fact met its end. Starting with Craigslist in the early 2000s, and continuing today with Facebook Marketplace, the Internet has decimated the traditional classified advertising business of newspapers.[4] Classified advertising, with its austere black boxes of text, seeks mainly to convey product information. The Internet made posting that information almost costless, and costlessly searchable. Classified advertising became obsolete.

But outside of the limited category of classified advertising, the advertising industry has not withered and disappeared. Because advertising can serve not just to inform, but also to carry out the far less economically salutary, but nevertheless highly profitable, function of persuasion. The Internet has certainly not made persuasion obsolete, and so the advertising industry persists, devoted now exclusively to that other function.

II. PERSUASIVE ADVERTISING AS MANIPULATION

Starting from the inception of modern economics a hundred years ago, economists have questioned the economic value of advertising aimed at persuasion.[5] This economic tradition, which early on was associated with Edward Chamberlin, the father of the theory of monopolistic competition, and later with John Kenneth Galbraith, recognized that persuasive advertising causes consumers to buy products that they do not really prefer.[6] Not through falsehood and deception, but through psychological manipulation.

They argued that brand advertising, for example, manipulates consumers by saturating the lived environment with imagery that creates favorable associations between the brand and the things that consumers care about. Saturating the lived environment with brand imagery encourages consumers to buy products based on familiarity, rather than superiority, and associating the product with emotionally or socially charged imagery, such as Coke with Santa or Louis Vuitton with a celebrity, causes consumers to buy the product because the association, and not necessarily the product, is better than rivals'. This view of advertising as manipulation has received renewed support in recent years from the behavioral economics movement, which has shown that human decision-making is divided between rational and impulsive faculties, making it possible for advertising aimed at exploiting the impulsive faculty to cause consumers to buy products that even consumers themselves would, in

2 This article draws heavily from, and indeed restates, many of the arguments in Ramsi A. Woodcock, *The Obsolescence of Advertising in the Information Age*, 127 Yale L.J. 2270 (2018) [hereinafter Woodcock, *The Obsolescence of Advertising in the Information Age*] and Ramsi Woodcock, *Advertising is obsolete – here's why it's time to end it*, The Conversation, http://theconversation.com/advertising-is-obsolete-heres-why-its-time-to-end-it-101639 [hereinafter Woodcock, *Advertising is obsolete – here's why it's time to end it*]. The reader is invited to consult those sources for a fuller picture of the arguments defended herein, as well as for supporting references.

3 See Phillip Nelson, *Advertising as Information*, 82 J. Pol. Econ. 729, 732 (1974). An alternative economic justification for advertising is that advertising itself is a pleasure-enhancing complement to the advertised good. See Gary S. Becker & Kevin M. Murphy, *A Simple Theory of Advertising as a Good or Bad*, 108 Q. J. Econ. 941, 961–63 (1993). For a critique of this view of advertising as a product complement, see Ramsi A. Woodcock, *The Obsolescence of Advertising in the Information Age, supra* note 2, at 2314–15.

4 See Robert G. Picard, *Shifts in Newspaper Advertising Expenditures and Their Implications for the Future of Newspapers*, 9 Journalism Stud. 704, 705, 713 (2008).

5 See, e.g. Alfred Marshall, Industry and Trade 304–7 (1920).

6 See Edward Hastings Chamberlin, The Theory of Monopolistic Competition: A Re-Orientation of the Theory of Value 119–20 (7th ed. 1956); John Kenneth Galbraith, The Affluent Society 155–56 (1958).

a sober moment, agree that they do not really prefer.[7]

Before Google, even persuasive advertising had an information justification. Some economists argued that all persuasive advertising contains an element of useful product information, namely, the information that the firm believes enough in the appeal of its product to invest money in advertising.[8] The Internet has pulled the rug out from under this information justification as well, however, because firms wishing to use spending to signal enthusiasm for a product can donate to charity and declare the donation on their Google-searchable websites. If consumers do indeed find such expenditure signals useful, they will find them online. No advertising campaign is needed.

III. THE SUPERCHARGING OF PERSUASION IN THE INFORMATION AGE

While the Internet eliminated persuasive advertising's information function, the Internet both supercharged the manipulative power of advertising and simultaneously gave consumers new tools to fight back against manipulation, leading to a fundamental reorganization of the advertising industry, one that is still underway. The vast troves of consumer data released by the Internet made possible a targeting and tailoring of advertising that was unthinkable in the pre-Internet age of billboards and television commercials aimed at large audiences.[9] Now a consumer known to be vulnerable to purchasing a particular product could be shadowed across the Internet by advertising for the product, which now could be made to appear — to that consumer alone — in social network feeds, banner ads on newspaper websites, and even in the paper coupons spewed out by supermarket cash registers at checkout. But the Internet also vastly expanded the size of the community from which the consumer could glean product information via word of mouth, allowing consumers to break the advertising spell by reading product reviews on social media.[10]

The threat posed by online word of mouth to advertising also proved to be an opportunity for advertisers, however, because online word of mouth also exposed to outside influence the social networks that are the most powerful drivers of product adoption, networks that had formerly been discoverable only at the dinner table or the office watercooler.[11] As social media rendered consumers more willing to treat strangers as friends, advertisers started to enter friend and family networks directly by paying social media influencers to generate communities and then promote products to them.[12] The tech giants, which turned the platforms upon which they operated their search, social media, and retail services into surveillance tools, were perfectly placed to gather the consumer data required for these new approaches to advertising, and came to dominate the industry.

IV. PERSUASIVE ADVERTISING AS MONOPOLIZATION

The catch was, again, that the same information superabundance that had transformed the advertising industry had rendered advertising economically useless, if still highly profitable. That is where antitrust comes into the picture, because an advertising that lacks economic justification is an advertising that is anticompetitive. Consider two competitors, one of which offers a better product than the other. In a world in which advertising is informative, the firm that offers the better product will advertise, because the product information provided to consumers will cause consumers to buy that firm's product. In the information age, however, consumers already have access to all relevant product information at their fingertips, and in the absence of manipulation by advertisers, consumers will buy the better product. So the firm that sells the better product no longer has an incentive to advertise.

7 See Cass R. Sunstein, *Fifty Shades of Manipulation*, 1 J. Marketing Behav. 213, 227 (2016).

8 See Nelson, *supra* note 3, at 732.

9 See Anja Lambrecht & Catherine Tucker, *When Does Retargeting Work? Information Specificity in Online Advertising*, 50 J. Marketing Res. 561, 561–62 (2013).

10 See Robert Allen King et al., *What We Know and Don't Know About Online Word-of-Mouth: A Review and Synthesis of the Literature*, 28 J. Interactive Marketing 167, 167–68 (2014).

11 See Arnaud De Bruyn & Gary L. Lilien, *A Multi-Stage Model of Word-of-Mouth Influence Through Viral Marketing*, 25 Int'l J. Res. in Marketing 151, 151–52 (2008).

12 See Marijke De Veirman et al., *Marketing through Instagram Influencers: The Impact of Number of Followers and Product Divergence on Brand Attitude*, 36 Int'l J. Advertising 798, 798 (2017).

But in the information age the firm that sells the inferior product retains an incentive to advertise, so long as the advertising is persuasive in function. The firm that sells the inferior product can mitigate its competitive disadvantage by manipulating consumer purchase decisions, causing consumers to buy the inferior product even though consumers do not really prefer it. If the manipulative advertising campaign is successful, then the seller of the inferior product will come to dominate the marketplace, and the seller of the superior product will fail, to the detriment of both competition and consumers.

Of course, firms selling superior products may now want defensively to engage in persuasive advertising in order to neutralize the persuasive advertising of competitors. But it would be a mistake to infer from this that advertising in the information age can sometimes be procompetitive. Defensive advertising leads to competition based on persuasion, rather than based on the socially useful characteristics of price and quality. The expectation of having to engage in competition along this other dimension reduces the willingness of firms to invest in product improvement in the first place, since advertising and not price or product quality will be necessary anyway to get firms across the finish line. Advertising wars may resemble competition, but in syphoning resources away from innovation and price competition, advertising wars are in fact competition's antithesis.

Advertising in the information age is, in short, necessarily anticompetitive. In an information age in which advertising no longer serves an information function, the only thing advertising adds to markets is advertising's manipulative function, which distorts consumer preferences, rolls back gains associated with consumers' greater access to information in the information age, and places more efficient and innovative competitors at a competitive disadvantage.

V. THE ONCE AND FUTURE FTC CAMPAIGN AGAINST ADVERTISING

Antitrust jurisprudence long ago recognized that persuasive advertising is anticompetitive. In a remarkable series of cases starting in the late 1950s, the U.S. Federal Trade Commission challenged persuasive advertising as a violation of the antitrust laws, successfully rolling back acquisitions of Clorox bleach and S.O.S. scrub pads by Procter & Gamble and General Foods, respectively, on the ground that the deals would give those brands an anticompetitive advertising advantage over rivals, and obtaining a U.S. Supreme Court opinion acknowledging the anticompetitive character of persuasive advertising.[13] In the early 1980s, the FTC even convinced a federal appeals court to affirm a single-firm monopolization case that treated persuasive advertising as anticompetitive.[14] But at about that time, the FTC's campaign against advertising ground to a halt under the weight of the argument that all advertising provides consumers with useful product information.

With the obsolescence of the information function of advertising, the FTC must renew its campaign against advertising, and seek in particular to obtain recognition from the courts of advertising as *per se* illegal monopolization in violation of Section 2 of the Sherman Act. Stripped of its information function, advertising strikes at the heart of the free market, distorting consumer preferences and therefore handicapping the ability of consumers to use their purchase decisions to dictate the socially-optimal mix of products that firms should produce. The purely anticompetitive and consumer-harmful character of advertising in the information age makes advertising a good candidate for *per se* treatment under the Supreme Court's prevailing standard for imposing *per se* rules. That standard makes *per se* unlawful conduct for which "the effect [is] to threaten the proper operation of our predominantly free-market economy — that is, [conduct that] facially appears to . . . always or almost always tend to restrict competition and decrease output."[15] The manipulation of consumer preferences always does that. Indeed, persuasive advertising is like naked price fixing, the quintessential *per se* illegal form of anticompetitive conduct, only more so, because price fixing, when deployed to stave off ruinous competition, can actually benefit consumers.[16] By contrast, advertising that distorts consumer purchase decisions never can benefit consumers, so long as we believe that consumers, unmolested, always choose the products that are best for them.[17]

13 See *FTC v. Procter & Gamble Co.*, 386 U.S. 568, 579 (1967); *General Foods Corporation v. FTC*, 386 F.2d 936, 945, 947 (10th Cir. 1967). The history of this campaign is engagingly recounted in Elizabeth Mensch & Alan Freeman, *Efficiency and Image: Advertising as an Antitrust Issue,* 1990 Duke L.J. 321, 323–53.

14 See *Borden, Inc. v. FTC*, 674 F.2d 498, 511, 515–16 (1982). This opinion was later vacated at the request of the Reagan Administration. See Daniel M. McClure, *Trademarks and Competition: The Recent History*, 59 Law & Contemp. Probs. 13, 19 (1996).

15 *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*, 441 U.S. 1, 19–20 (1979).

16 See Michael D. Whinston, Lectures on Antitrust Economics 16–17 (2008).

17 See Abba P. Lerner, *The Economics and Politics of Consumer Sovereignty*, 62 Am. Econ. Rev. 258, 258 (1972).

VI. FUNDING MEDIA AND SEARCH AFTER ADVERTISING

A renewed FTC campaign against advertising would deprive industries that serve a socially useful purpose, such as newspapers, online search, and social media itself, of an important source of revenue. But that does not counsel against antitrust intervention. The media and online search are public goods, services that confer benefits on society, but for which individual consumers may not be willing to pay the full value of the benefits they receive for these services. Public goods can only ever be funded through taxation, however, and the funding of the media and online search through advertising is no exception, because advertising is actually a covert form of taxation. But a form that is both wasteful and undemocratic. Antitrust intervention to put an end to advertising would force a public reckoning regarding whether and how to tax society to fund these services, and that can only be a good thing.

Advertising is covert taxation because not advertisers, but the public, acting as consumers, ultimately pays for advertising-funded services through the higher prices and lower product quality that consumers experience as a result of making advertising-influenced purchases. The $300 billion spent annually on advertising is only the lower bound of the amount of the tax paid by consumers to fund the media and online search industries, because to spend $300 billion on advertising, firms must generate more than $300 billion in advertising-driven revenues from consumers.[18] Advertising is an undemocratic tax because consumers do not vote on whether firms should advertise, and indeed advertisers devote huge sums to finding ways to thrust advertising on consumers involuntarily. Indeed, few consumers even realize that the advertising they consume represents a tax, inflicting a cost on them in terms of price and product quality. By contrast, when they elect legislators, consumers exercise some control over the government-sponsored taxes that they pay. The extraordinary waste associated with taxation through advertising is reflected in the fact that the actual operating cost of the media and online search industries does not exceed $100 billion, with the result that of the minimum of $300 billion taxed annually from consumers via advertising, only a maximum of a third is actually spent on the socially valuable services provided by the media and online search. The rest is wasted either on constructing the infrastructure of advertising — the ads themselves, the targeting, and so on — or taken out as profits by advertisers.[19]

Recognition by antitrust of advertising as *per se* illegal would cut the advertising-based funding stream for media and online search, and thereby force the question how to fund these services out into the open, giving the public the opportunity to decide whether and how much to spend through government-sponsored taxation, as opposed to taxation through advertising. If the public were to choose to continue to pay for these services, paying for them through direct taxation, rather than advertising, would bring about huge reductions in the effective taxes paid by the public for these services, by eliminating the hundreds of billions of dollars wasted on advertising infrastructure and profits for advertisers. For an Internal Revenue Service that collects trillions of dollars of tax annually, collecting another $100 billion to fund the media and online search would be almost costless by comparison.[20]

The money saved through no longer funding the online advertising infrastructure, from Google Adwords to paid influencers, needed to run the current system, would also have the incomparable benefit of eliminating an infrastructure of manipulation that could easily be repurposed by our own government — and has already been exploited by the Russian government — for political control.[21] There always has been something profoundly troubling about the use of persuasive advertising to fund public goods such as journalism. Something counterproductive about the strategy of seeking to develop an informed, educated, and independent-minded populace on one side of the proverbial newspaper fold, while selling space to businesses to manipulate that same populace on the other side of the fold. Antitrust can force a reckoning in this regard, and pursue its consumer and competition protection missions at the same time, by recognizing a *per se* rule against advertising. Antitrust can do this because commercial manipulation not only threatens democracy, but, in free markets that require consumer sovereignty to function properly, manipulation is bad for markets and competition too.

18 See Leslie Levesque et al., *Economic Impact of Advertising in the United States*, IHS Market 3 (2015).

19 See Ramsi A. Woodcock, *supra* note 2, at 2340–41 n.345 (concluding that the operating costs of search and social media costs are no greater than $52 billion annually); *Newspapers Fact Sheet*, Pew Research Center, http://www.journalism.org/fact-sheet/newspapers/ (showing that newspaper industry revenue in 2017 was $27.5 billion).

20 See *What is the breakdown of tax revenues among federal, state, and local governments?*, Tax Policy Center, https://www.taxpolicycenter.org/briefing-book/what-breakdown-tax-revenues-among-federal-state-and-local-governments.

21 See Ramsi A. Woodcock, *Advertising is obsolete – here's why it's time to end it*, *supra* note 2.

A NEW DIGITAL SOCIAL CONTRACT TO ENCOURAGE INTERNET COMPETITION

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I. THE NEW TRAJECTORY OF THE DIGITAL ADVERTISING ECOSYSTEM

Over the past year, the common conception that the lion's share of the digital advertising market would securely remain the dominion of Facebook and Google for the foreseeable future was turned on its head with the emergence of an entirely new player: Amazon. The company's emergence in digital advertising has raised the idea that it might present a major challenge to the market power that Facebook and Google have developed in the sector over the past many years.[2]

The numbers seem to illustrate this dynamic: Whereas Amazon's market presence totaled around 6.8 percent a year ago, its share has grown to an estimated 8.8 percent this year, and is expected to increase to 10 percent as the other firms gradually drop.[3] As some experts have noted, this precipitous jump — which affirms Amazon as third in the rankings of internet firms that participate in the digital advertising market — does not appear to have been induced by an artificial blip or an accounting update; rather, it represents a concerted strategy by the firm to engage the digital advertising ecosystem and make itself a major player in that sector to generate high-margin profits into the future. Reports meanwhile suggest that Facebook and Google, which enjoy a collective share totaling nearly 60 percent, are becoming increasingly worried as Amazon's position in the market climbs.

In fact, Amazon's emergence in digital advertising appears to have come quite late; it is a behemoth of a firm that has come to dominate another U.S. consumer market — e-Commerce — and the platform visibility and audience that comes with that market dominance. Amazon last year had revenues of over $230 billion — a sum that is a jaw-dropping one-hundredth of the entire U.S. gross domestic product. The vast majority of those revenues are generated by Amazon's signature shopping service — a presence that trumps that of any other American e-Commerce firm.

And through that platform, Amazon has generated the capacity to collect inordinate amounts of highly valuable data on its users. This practice of data collection likely happens through two primary means. First and foremost is user engagement with Amazon's shopping service, through which customers can search for anything from Apple products to zipper handles. Second, is the user's engagement with Amazon Prime, and particularly Prime Video, through which customers can search for and view many of the latest media offerings, including television series and films. To add a note to this, given the tremendous opacity associated with business practices across the internet sector, we are largely uninformed about the reach and magnitude of other data collection practices in which the firm might engage, including, for example, the purchase of personal information from data brokers, or the use of web cookies on third-party websites — which many have argued damages individual privacy online.[4]

It is this combination of data collection practices that has encouraged Amazon to think more creatively about how it could enter the digital advertising space with force; in one hand, it controls an expansive consumer audience through its dominating shopping search platform and fulfilment system, and in the other, it has knowledge of the personal preferences and desires of each and every individual user of that platform. This is a compelling combination that engenders enormous commercial success for any company that masters the art of effectively setting up a digital advertising platform. Why did Amazon not place its bet on digital advertising years ago? There are multitudes of possible reasons, and the answer is most likely a combination of them: (1) That Amazon was more intently focused on other business areas, including the expansion of its e-Commerce platform or the buildout of its commercial cloud computing offering, Amazon Web Services, which today contributes just 11 percent of the firm's revenues, but accounts for around half its operating margin; (2) That it wanted to give its platform service more time, perhaps after one of its recent marketing pushes, to settle into broad use with the mainstream public; (3) That it was fearful that introducing display advertising alongside its core services, especially for Prime members, could jeopardize its relationships with its customers early in the product cycle; (4) That it saw a more compelling opportunity when it started making larger investments in the space than ever before, perhaps because of the recent policy troubles that some of its competitors had been facing; or (5) That the firm simply did not possess the intellectual ingenuity or technical expertise to construct a robust digital advertising platform that it could integrate into its platform offerings until very recently.

Regardless, the fact is that Amazon is now fully invested in digital advertising, and it is here to stay for the foreseeable future. In addition, it is worth mentioning that some other platform firms have also made notable strategic moves in the digital advertising market. Snapchat's share, for instance, rose by more than 80 percent of its less than one percent of the market, from $600 million to a little over $1 billion. Twitter, Verizon, and AT&T have each also made recent moves in the industry with varying success. But, even collectively, the efforts beyond those of Amazon and the Google-Facebook duopoly appear to be minor, if that.

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2 Suzanne Vranica, "Amazon's Rise in Ad Searches Dents Google's Dominance," *The Wall Street Journal*, April 4, 2019.

3 "US Digital Ad Spending Will Surpass Traditional in 2019," *eMarketer*, February 19, 2019.

4 See e.g. H. Nissenbaum, "A Contextual Approach to Privacy Online," *Daedalus*, Vol. 140, Iss. 4, Fall 2011.

II. NEW COMPETITION FOR THE GOOGLE-FACEBOOK DUOPOLY?

Many have concluded that Amazon's surge in the digital advertising market constitutes real competition to the likes of Facebook and Google. For those two firms, watching Amazon's steep climb to nine percent in such a short space of time will without question have raised eyebrows among internal advertising and business development executives.

But such claims should be discarded out of hand. American competition policy is chiefly concerned with two principal desired market outcomes. The first is the support and maintenance of consumer welfare — which the developing jurisprudence in the United States has over several decades deemed to translate primarily to the prices that consumers perceive or pay in currency in exchange for goods and services. The second is the ongoing protection of dynamic markets whereby those firms that rise to the top of the American industry shall do so due to the merits of their competitive strategy — be it on their pricing or quality of service.

Consider the possibility that Amazon's presence in the market will not challenge Facebook's or Google's principal digital advertising practices; nor will Amazon's emerging digital advertising practice itself be challenged by Facebook or Google. We have already seen the evidence that Amazon's force in the market as illustrated by its precipitous rise in share. Could it be the case that Amazon's emergence will induce Facebook and Google to vastly change their own practices — be it in the ways that they curate content, or target ads, or collect data on individual users? I would contend that it cannot be. As a matter of fact, we could even see the quiet emergence of a new three-pronged hegemony over digital advertising in the United States led by Amazon, Facebook, and Google.

Why will Amazon's growing presence not force Google or Facebook to modify their practices in the market? It is because online advertising is a wholly different sort of market. Yes, it has cash-rich patrons, the most revenue-contributing of them being large and medium-sized businesses, but the money they net from advertisers — indeed, their direct revenue — is a mere byproduct of the actual payment they receive for their core services, whether they are social media firms, or search engines, or e-Commerce platforms: The amalgamation of the aggregate minutes of attention and data of their individual users.

Payment for personalized ad space is only the way in which prices are extracted from the commoditization of attention and data. In other words, for Facebook and Google, the principle arena for competition is not the attention of advertisers. It is the attention of individual users — which, once secured, encourages the uninhibited collection of data on the consumer. That collective attention is something that Facebook and Google — and now, Amazon — will possess for the foreseeable future. Their presence in this way is absolutely secure — as well as the advertising profits that are a byproduct of that hegemony over consumer attention. The fact is that the commodity they are paid and which they forwardly monetize — combined consumer attention and data — is only that. It is both a currency and instrument that these firms implement to operate their respective internet service platforms, which at this stage have established tremendous power over their respective consumer markets — be they internet search, social media, video sharing, email, e-Commerce, or internet-based text messaging. Thus, to claim that Amazon's growing presence in the digital advertising market represents stiff competition is, at best, an inaccurate or incomplete designation. These three firms are pseudo-monopolists in their respective markets that serve individual consumers and, through persistent leverage of their market power, charge monopoly rents as they convert the voluminous currency paid by end-customers (in the form of their aggregate time and data) into large cash outlays made by advertising clients.

It should be noted that one reason that the currency collected from the end customer — which comes in the form of personal data and attention — is so voluminous is because of the nature of the collection of that currency. It is organic, unlike the situation of a customer making a physical or digital monetary payment; and as scholars have noted, consumers do not immediately ascribe a fair market value to their personal information in the moment of its collection.[5] This dynamic results in a situation whereby the consumer lacks sensitivity to the collection of personal information — or as we have put another way, his or her "privacy prices."[6] These prices are in turn perfectly inelastic because of the combination of the average consumer's lack of knowledge or understanding about the fair value of personal information, the use of that information for commercial purposes,[7] and the simultaneous frictionless experience in submitting to such prices, extortionate as they may be.

5 See e.g. Luc Wathieu & Allan A. Friedman, "An Empirical Approach to Understanding Privacy Valuation," *Harvard Business School*, Marketing Research Paper No. 07-075, April 2007.

6 D. Ghosh & B. Scott, "Digital Deceit II: A Policy Agenda to Fight Disinformation on the Internet," *Shorenstein Center for Media, Politics, and Public Policy*, Harvard Kennedy School, September 2018.

7 John Gramlich, "10 Facts about Americans and Facebook," Pew Research Center, February 1, 2019.

This situation has triggered a recent charge by the Federal Cartel Office ("FCO") of Germany, which brought forward a novel case against Facebook earlier this year. The FCO argues that Facebook has monopoly status in the German social media market: the firm has 32 million users in Germany, representing 80 percent of the market share, just over double the threshold that traditionally invites particular scrutiny from European regulators. This presence practically forces the service on many German citizens, the FCO argues, and the fact that the firm additionally forces its users to submit to the unchecked collection of personal information constitutes commercial abuse. The agency noted in February:

> In view of Facebook's superior market power, an obligatory tick on the box to agree to the company's terms of use is not an adequate basis for such intensive data processing. The only choice the user has is either to accept the comprehensive combination of data or to refrain from using the social network. In such a difficult situation the user's choice cannot be referred to as voluntary consent.[8]

It is worth noting that while Mundt's arguments are intellectually honest to the commercial situation at hand, this case represents a new direction for antitrust regulation: It is the first clear and open acknowledgement, backed by the force of the regulatory stick in the air, that the systematic encroachment against the data privacy of the individual and the individual's relative paucity of alternatives for service access are closely intertwined and should be approached together wherever the political opportunity exists. We had not, until this point, witnessed such a clear tying of regulatory powers toward the maintenance of market competition and individual privacy.

While Amazon's increasing market share might appear alarming to companies like Facebook and Google in terms of the numbers, the reality is that the industry overall is expanding rapidly, including the absolute advertising revenues that Facebook and Google appreciate each year. While their aggregate market share has diminished over the past several years, they have both experienced double-digit growth in advertising revenues year over year in the same period. Amazon's growing presence in digital advertising in reality does not threaten Facebook or Google because of their absolute control over the markets about which they are truly concerned; their presence in the markets for the internet services they offer end-consumers is secure, as is the magnitude and value of the currency they extract from their customers through it.

Seen in this light, Amazon is participating in a new three-pronged dominance of the digital advertising market whose respective shares are largely determined by the other side of the two-sided ecosystems operated by these three leading firms — determined, in particular, by the reach and effectiveness of the internet services that these companies develop. This suggests that Amazon's growing presence in the digital advertising market is nominal at best; it does not imply new competition to Facebook and Google — but rather does little to the competitive dynamics in digital advertising overall.

As for the smaller firms that possess some market share, it should be noted that the industry can be cyclical; the leading internet platform firms have had an extended period of low public perception. This takes nothing away from the enterprising nature of firms such as Snap, whose principal social media service Snapchat brings in the vast majority of its advertising revenues. But we must see its near doubling in market share in digital advertising as no more than a result of a vigorous strategy of growth and entrepreneurship with data and novel practices and new offerings for advertisers. Indeed, Snapchat has introduced several new key features for advertisers over the past two years, much of which has likely occurred because the larger internet firms have had a bad year. For instance, Facebook, in the wake of the Cambridge Analytica revelations, was in practice compelled by public sentiment to shutter Partner Categories, the service that enabled data brokers to inject their data into the Facebook advertising platform at the behest of advertisers.[9] This was the tool that allowed, for instance, Audi to target an ad campaign for a new sportscar at persons who had walked into a BMW or Mercedes dealership any time in the past few months. Of the four major American data brokers, it is Oracle that collects this information on the potential sportscar customers. Audi could target walk-ins to the other manufacturers' dealers by selecting that audience through Facebook's Partner Categories interface, and for each dollar spent in disseminating marketing messages to that segment over Facebook's platforms, Oracle would take a cut. On the heels of the revelations shared by the Cambridge Analytica whistleblower, Facebook quietly announced that it would shut the service down in a three-line press release — which they likely did to avoid further scrutiny over the questionable and opaque transfer of millions of people's personal data between various companies at the click of a button, in combination with the fact that Facebook itself could likely recoup much of the lost business by investing more in its own analytical technologies designed to infer consumer behaviors and preferences. Within days, Snap announced that it would commence a very similar targeting capacity with brokered third-party data[10] — which it could do because of the lack of scrutiny over the firm at a time when the public was attuned to the disservices of others in the industry.

8 Elizabeth Schulze, "Germany accuses Facebook of abuse, slaps restrictions on how it can gather data," *CNBC*, February 7, 2019.

9 Shutting Down Partner Categories, Facebook Newsroom, March 28, 2018.

10 Marty Swant, "Snapchat and Nielsen Partner to Integrate Offline Data For Audience Targeting," *Adweek*, July 19, 2018.

III. THE ESTABLISHMENT OF A NEW THREE-WAY HEGEMONY?

It is thus inaccurate and misleading to suggest that competition is stiffening in digital advertising; this false conclusion suggests Facebook, Google, and Amazon five years may suffer in maintaining their trajectories of growth in digital advertising, and more fundamentally, that there is a capacity for other players to enter the market. Neither of these is likely, namely because of the markets in internet services that these firms already control — which predicate their advertising revenues. At their core these firms' collective ad space is only as valuable as the size of the audiences they command in combination with their respective audiences' propensity to spend dollars; the reality is that these three firms have each secured that valuable audience in their own way. As a matter of fact, we could actually see these three firms become more powerful over time should the regulatory community fail to take commensurate action to curb their hegemony.

This argument hinges on an accurate conceptualization of the business model that prevails across the digital advertising sector — and more fundamentally, the consumer internet.

The first pillar of this business model is predicated on the creation and expansion of tremendously compelling platforms like the News Feed, Messenger, Instagram, Amazon, Google Search, or YouTube — platforms that are algorithmically designed to maximize user engagement. These platforms, each of which leverages an established network effect, are so popular and pervasive, even for non-users, that it is hard to entirely avoid them, whether in terms of active use or simply in terms of external surveillance.

The second pillar is the unchecked collection of personal information on the individual through those services — collection that empowers these firms to develop and maintain robust and detailed behavioral profiles on individual users. These profiles are developed based on inferences made in real time about the individual using the amalgamation of data that firms like Amazon, Google, and Facebook collect, including: Search and browsing history on the internet and specifically on the respective platform; connections made with others through the platform and otherwise; precise location information using GPS technology; location information gleaned through wireless network connections, cellular network connections, and IP addresses; biometric and biological information provided by the individual; information purchased or provided by data brokers; information provided by other outside entities including advertisers; and third-party websites that have installed cookies on their websites — among other sources.

The third pillar is the development and ongoing refinement of highly opaque and increasingly intricate artificial intelligence designed to do two things: Curate social feeds and target advertisements at the individual.

All consumer internet firms — by which I mean the firms that participate in and host digital advertising, excluding those business practices or companies that primarily make money from subscription revenues — follow this structure to make money. Notice that a key feature of this business model, consistent across the firms that implement it, is that the only element of it that directly contributes to corporate revenues — the targeting of digital ads — is a relatively small piece of the proposition these firms offer the market. They must practice the other elements with great effectiveness before they can participate in advertising. Correspondingly, this is precisely what we have seen in the case of the three firms we have principally discussed: they have established leadership in various respective consumer internet markets before seriously entering the digital advertising market.

Placing this trajectory of the digital advertising market in juxtaposition against our intent to keep the market free of anticompetitive practices, and analyzing the actions of these players as they have amassed their current market power, a fair argument can be made that Google, Facebook and Amazon have collectively impeded the vibrancy and dynamism of the internet — and tinged the perception of the internet's contemporary impact on the world.

Diminished privacy and autonomy. The aforementioned commercial regime that lies behind the front of digital advertising for direct revenue extraction is wholly dependent on the ongoing consumer usage of the digital platform, the collection of data pertaining to the individual through that usage, and the injection, filtering, and ordering of content for the individual through the platform service and beyond — including such external third party contexts as those promoted by Facebook's Audience Network, Google's Display Network, or Twitter's Audience Platform. This constitutes an economic logic that organically encourages the relegation of consumer privacy as a mere afterthought for the purposes of the firm hosting the advertising platform. As many have commented and researched, this market activity encourages a fundamental erosion of the individual's privacy and autonomy — elements over which rival firms could compete should they be able to overcome the barriers to entry erected by the sector's current dominators.[11]

11 See e.g. Ryan Calo, "Digital Market Manipulation," *George Washington Law Review*, Vol. 82, Iss. 4, August 2014.

Diminished social welfare. The platform firms' dependency on data for content curation and ad-targeting has directly encouraged diverse negative externalities that have shaken the foundations of democracies. At issue is the fact that the business models prevalent in the sector encourage ongoing use of the relevant platforms by predicting the content that algorithms have predicted are likeliest to engage the consumer for the longest period of time — no matter what the nature of that engagement might be. Meanwhile, the platforms have traditionally allowed any third-party advertiser able to pay to initiate ad campaigns to do so, thus instituting an unflinching and vicious dynamic by which the economic incentives of the content disseminators and those of the platform operator are absolutely aligned — even if the content disseminator happens to be a propagandist looking to spread harmful content such as fake news. This economic alignment between the two entities — and the internet firms' singular profit-maximization objective — has directly encouraged damaging negative externalities such as the spread of hate speech, the prevalence of disinformation, and systemic algorithmic discrimination, among others.

Reduced innovation. The leading internet platform firms have leveraged monopoly, likely at the expense of competition in the digital sector and the vibrancy of the internet itself. Perhaps the most crucial illustration of this involves the diminishment of journalism. Firms like Facebook and Google represent journalistic content on platforms such as the Google News and the News Feed, and in so doing, often include snippets of news stories. Up until around a decade ago, the newswriting industry regarded the impact of Facebook and Google as positive, or at least pareto optimal; consumers had for the most part shifted their habits and gravitated toward news readers and social media, and for a time, the internet companies that operated these services rewarded news outlets with increased traffic. Move forward several years and the tides have reversed; platform firms have recognized that instead of linking directly to a news article, they could render it in inbuilt browsers and appreciate any click-through revenues themselves. Journalists, attuned to this strategic policy change, have responded vociferously, including through new demands that they be remunerated for display of their content on third-party platforms, and that the government apply a social media "tax" that would redistribute wealth from the platforms to the creators of the news. Ironically, this would represent a paring down of openness of the internet and free information flow across it. One might say this is the story of the three leading internet firms more broadly; they have holistically diminished vibrancy across the web in manners that appear to have negatively affected end-consumers.

IV. NOVEL POLICY REGIMES FOR CONSIDERATION IN THE WAY FORWARD

Many have argued that, in response to growing competition policy concerns with the leading internet firms, the global regulatory community, particularly in the United States where developing jurisprudence has moved in a staunchly conservative direction, should bring novel forms of antitrust regulation and enforcement to bear against the industry.[12] Others have argued that the consumer harm standard prevalent in the United States exhibits the important virtue of providing antitrust regulators clear guidelines on judicial interpretations — which in turn empowers other parts of the law and other enforcement regimes to act when necessary, and obviates the critical problem of regulatory capture, and offers the business community credible certainty over what business practices are allowed and disallowed respectively.[13] Still other scholars recommend caution in reform movements, noting that novel enforcement cases that might seek to take advantage of progressive interpretation of the still ambiguous Section 5 of the Federal Trade Commission Act should carefully consider the typically long timeline of prosecuting monopoly cases, the tremendous resources required to pursue such prosecution, and the potential deleterious effects of antitrust enforcement in the long run.[14]

When considered according to the constituent markets they serve, Facebook, Google, and Amazon are rational monopolists that leverage monopoly in manners that have harmed the economy in various ways — and have the potential to do further harm should their power go uncurbed. Without some form of intervention, the situation will not change; these firms have protected their status and this will continue into the future absent appropriate governmental interventions. These firms have over time established their strength by cultivating powerful two-sided markets that have leveraged network effects through the collection of data, the development of sophisticated algorithms using that data, and frequent outlays of financing for creation of the infrastructure that supports that scalable activity. The only future perceivable is one in which their lead in their respective markets is untouchable which begets natural monopoly.[15]

12 See e.g. Shahid Buttar & Mitch Stoltz, "Antitrust Enforcement Needs to Evolve for the 21st Century," *Electronic Frontier Foundation*, February 27, 2019.

13 See e.g. Herbert Hovenkamp, "The Warren Campaign's Antitrust Proposals," *The Regulatory Review*, March 25, 2019.

14 See e.g. Phil Verveer, "Platform Accountability and Contemporary Competition Law: Practical Considerations, "*The Shorenstein Center for Media, Politics, and Public Policy*, Harvard Kennedy School, November 2018.

15 See e.g. Patrick Barwise & Leo Watkins, "The evolution of digital dominance: how and why we got to GAFA," in Digital Dominance: The Power of Google, Amazon, Facebook, and Apple, *Oxford University Press*, 2018.

A progressive approach to competition policy is thus necessary to break the market control exhibited by these three firms — the theory being that it is the dominance of these firms in their respective markets that has encouraged the aforementioned negative externalities, including the disinformation problem and the spread of hate speech, because of the security of their positions with end-consumers. Only through the destabilization of their present domination in consumer attention, behavioral profiling, and filtered content dissemination can we break the hegemony that has forced these varied harms on the public — and effectuate market outcomes that would better protect the public interest. Among the many options available to the European and American regulatory community among others are the following.

Antitrust reform and application against monopolistic consumer internet firms. As we have seen in the case of firms such as Facebook, Google, and Amazon, the present mode of antitrust enforcement — characterized by a strict focus on harm to consumers, particularly on price — is likely ill-equipped to assess the damages pushed by the digital advertising giants onto consumers unless, as discussed above, an earnest attempt is made to ascribe a value on the proprietary data that firms maintain on the individual. And even if competition policymakers place such a monetary value on data, this leaves on the table the second-order effects that a lack of competition in markets might have on the individual, be they negative effects on the labor markets or diminishments in product quality. American policymakers should, whether through a reassessment of the Federal Trade Commission's 2015 Statement of Enforcement Principles Regarding "Unfair Methods of Competition" Under Section 5 of the FTC Act, or through broader legislative reform efforts, attempt to reorient the jurisprudence cemented in the courts and commit to giving the U.S. competition regulatory agencies the purview to examine and act against the leveraging of internet monopoly. Such a reassessment could effectively return to competition regulators the ability to bring to bear the appropriate remedies to combat anticompetitive practices, be they the mandate against certain harmful business practices, the imposition of critical break-ups, or the requirement for a duty to deal.

Greater scrutiny concerning mergers and acquisitions. It is clear that certain acquisitions have been permitted that perhaps should have received far greater regulatory scrutiny. Section 7 of the Clayton Act and the additional Hart-Scott-Rodino Antitrust Improvements Act were passed in the United States to proffer the government the authority to review mergers. Regrettably, they have failed in curbing the acquisition of several key businesses in the digital sector, among them DoubleClick, Instagram, Waze, and WhatsApp. Some have claimed that Amazon's acquisition of Whole Foods too represents a significant problem in regard to the forward amalgamation of data in manners that may ultimately lead to consumer harm.[16] The government should consider ways to improve the mechanisms for possible enforcement against such combinations which might eventually result in broad consumer harms. In particular, regulators should be fully equipped to understand and analyze the potential consumer harms associated with data sharing between merged entities. Not only can such combinations result in privacy harm to the individual; they may also damage market competitiveness itself. Data acquired through the purchase of a firm could, for example, be combined with the purchasing firm's data stores and used for competitive advantage in parallel or ancillary markets. And in this context, of special concern to the regulatory community should be vertical integrations of tracking and targeting; such integrations have systemically encouraged the disinformation problem and other negative externalities now prevalent online.

Novel data portability for the individual. A final remedy to the problem of competition could be to unlock the resource that these three firms find so vital to their monopoly positions in their respective two-sided markets: The individual's personal information. Fundamentally, Google, Facebook and Amazon treat consumer information as a proprietary creation bound with their intellectual property and competitive proposition to the market. Even if it were to be construed that these firms' amalgamation of consumer personal information to the end of applying a machine learning algorithm to draw out the customer's behavioral profile once constituted an intellectual practice that necessitated real ingenuity, such claims can no longer be true. In fact, it is the case that artificial intelligence accessible for free off the shelf are capable of learning a behavioral profile given the data. Furthermore, many have perhaps rightly pronounced that a customer's personal information — whether it is the raw data a customer has provided the platform through engagement and interaction or the algorithmic inferences the firm has made about the customer — should be that customer's property.[17] A regime of earnest portability whereby the individual can port his or her data to third parties, be they another internet firm or a bank or healthcare provider, is a remedy the government should consider to induce the formation of a plurality of internet platform services.

16 Laura Stevens & Heather Haddon, "Big Prize in Amazon-Whole Foods Deal: Data," *The Wall Street Journal*, June 20, 2017.

17 Editors, "Digital privacy rights require data ownership," *The Financial Times*, March 21, 2018.

V. A NEW DIGITAL SOCIAL CONTRACT

When undertaken in tandem with comprehensive privacy reforms and the institution of transparency into the collection and use of personal information, a robust new competition policy regime will necessarily redistribute the allocation of power between the industry, the government, and the individual. This would not be the first time for a market trajectory to be redirected in such a way by governmen — nor will it be the last. But the harms wrought by the largest firms controlling the digital advertising space have become both clear and public . Now, only progressive regulatory reform and the enforcer's stick can begin to counter such commercial and anticompetitive behaviors in an era in which the United States continues to lack a regulatory regime of any import to respond to this sector. What is most of all necessary in this new age of technology is the formulation of a new "digital social contract" that conclusively recognizes the rights of the individual.

FROM DEMOTING TO SQUASHING? COMPETITIVE ISSUES RELATED TO ALGORITHMIC CORRECTIONS: AN APPLICATION TO THE SEARCH ADVERTISING SECTOR

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I. INTRODUCTION

In April 2018, the European Commission decided not to extend its investigation into a complaint filed by a website publisher, Interactive Lab, alleging that Google was manipulating, to its detriment, keywords auctions for search-related online advertising.[2]

As such, the case may seem very disappointing. The Commission rejected the complaint on the grounds of the absence of any evidence. The lack of evidence supporting the damage theory had already led the French Competition Authority to reject another complaint from the same operator for the same practices last July.[3] However, the Commission's decision can be read in parallel with this decision.

As a matter of fact, this case is particularly interesting. Like the *Google Shopping* decision of June 2017, it raises questions over the risks of competitive disputes related to corrections made to algorithms.[4] In *Shopping*, the question was one of the demoting used to adjust the quality of online search results.[5] Here, Interactive Lab's case also involves a correction to an algorithm used for assigning search-related ads. This is a correction of the auction on keywords results that is based on the consideration of ad expected quality scores.

The complainant considered that Google did not select its bids in the auctions in order to favor less profitable competitors. For the Commission, such an eviction scenario does not make sense in economic terms. Indeed, if Google's business model is the one of an advertising agency, the company "would have no economic interest in applying the method claimed by Interactive Lab because it would produce a lower income" (point 15 of the decision[6]). However, it is possible to show that a squashing strategy can increase the revenues of the entity that implements it, and that the same strategy can also make sense in the logic of a two-sided model. The theory of damage could therefore be, in principle, possible, even if it is not substantiated by evidence in the present case.

In both demoting and squashing practices the correction of natural results may appear legitimate, considering the risks of algorithmic manipulation by the stakeholders themselves. As a consequence, it may be defended on the basis of efficiency through a guarantee of the quality of the service provided to the Internet user. However, in both instances, it can also be the vector for abuse of dominant position strategies, whether it is abuse of eviction or abuse of exploitation.

This article is structured as follows. In the first part, we present the Commission's decision by comparing it with the decision of the French Competition Authority. We then analyze, in the second part, these practices in relation to the economic literature.

II. THE CASE

A. The Business Model of Online Advertising Related to Search

The complaint, filed by Interactive Lab before the European Commission on February 3, 2011, relates to practices implemented by Google. The plaintiff saw in them an abuse of a dominant position. The complaint was based on allegations of manipulation of the search advertising selection algorithm (*AdWords*). Google was accused of implementing audience dispatching procedures that would result in distorted auction outcomes.

A decision of the French Competition Authority, which was issued later but published earlier, helps to clarify the background of the case. The plaintiff in these two cases, Interactive Lab, is a website publisher that has developed a website called *Woxxo* which aims to connect professional customers with website designers. The site functions in the form of advertisements. The customer fills out a free online form characterizing his needs and service providers can submit their quotes to him, against payment of a commission to *Woxxo*. However, despite the use of the services provided by Google through *AdWords*, the number of requests for quotes was not only particularly low but also inexorably declining over time. According to the complainant, this low visibility could not be due to the level of his bids or the low quality of his offer. It could only be carried out through algorithmic manipulations.

2 European Commission Decision, *Interactive Lab*, case AT.39885, April 11, 2018

3 French Competition Authority, Decision n°18-D-13 of July 20, 2018 on practices implemented by Google in the online advertising sector.

4 European Commission, *Google Shopping*, Case AT.39740, June 27, 2017.

5 See for a thorough analysis of this case: Banasevic N., Marques B. & Portuese A., (2018), "The Google Shopping decision," *Concurrences* N° 2-2018, pp. 25-37.

6 Translation by the author.

In practice, the *AdWords* online advertising service automatically assigns locations (in sponsored links) for advertisements based on the former searches performed by Google's users. In the auction process, advertisers select keywords for searches that could generate the presentation of their ads. *AdWords* then sets up a full automatized auction mechanism to determine which ads will be displayed on the results page presented to each user.

Several pricing options are available. A first is based on the number of clicks ("CPC"). A second one depends on the conversion rate; that is, the number of times users access the site, register, or make a purchase.[7] A third modality corresponds to the number of displays on the screens. Advertisers must specify caps (in terms of maximum CPCs for example) when bidding. It should be noted that the bidding system set up by Google corresponds to the optimal *Vickrey style* bidding scheme that is the second price auctions model[8]. The advertiser does not pay the price he specified but the price offered by the competitor who arrived immediately after him. Another modality, implemented for instance by *Yahoo!*, consists in the setting up of a reserve price.[9]

The auction model implemented by Google is therefore based on a particularly thought-out economic approach.[10] It should be noted that the field of auctions for online advertising is one of the sectors in which the dominant Internet firms have made the most intensive use of economic analysis. International microeconomics specialists have been recruited by these firms to develop their auction models: *GoTo*, the pioneer in this field, was advised by Simons Wilkie, a professor at California Tech. His California Tech colleague, Preston McAfee then joined *Yahoo!*. Hal Varian, professor at Berkeley, was in the same period recruited as chief economist at Google, and Susan Athey had the same experience at Microsoft.

In auction procedures for keywords, the winner is not necessarily the highest bidder. The presentation of the results to internet users does not depend exclusively on the value of the bid.[11] It is linked to the number of clicks expected.[12] The platform must not maximize only its own revenues from the auction process.

Indeed, the attractiveness of the search engine for users could be reduced if the ads displayed were of insufficient quality. Google's business model is that of a two-sided market: maximizing profit on one side of the activity (related to auctions on sponsored links associated to keywords) can lead to low relevance results or poor-quality experiences for users on the second side of the activity. This could weaken the attractiveness of the platform itself. The loss of user traffic would weaken the business model twice as much: user disaffection would reduce the data flows that Google can exploit, and a reduction in the number of users would negatively affect the level of auctions.

Therefore, the CPC is weighted by different criteria to decide which ad display has the highest predicted click rate (§15). From the advertiser's historical data the algorithm determines a CTR (Click-Through Rate), or actually its mathematical expectation ("pCTR"). The evaluation of the ad expected quality also takes into account more subjective factors such as the relevance of the ad or the conviviality of its website. The aim is to avoid directing the Internet user to advertisements that are not relevant to him or her.

In other words, ads do not appear according to the value of the auction but according to its combination with its predicted click rate (pCTR). We must keep in mind that the company carrying out the advertising campaign will only pay to the extent that the Internet user actually clicks. In this respect, it seems appropriate to correct the bid price results on the basis of a quality index that takes into account the characteristics and past experiences of each Internet user in order to assess his or her propensity to click.

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7 Such mechanisms are intended to address moral hazard issues. As noted by Athey & Luca (2018): "pay-per-action helps to address the problem of click fraud, in which a site has an incentive to click the ads they host with no intention of buying the product." Athey S. & Luca M., (2018), "Economists (and Economics) in Tech Companies," *Harvard Business School Working Paper*, n° 19-027. For a detailed discussion of this issue, see Agarwal et al (2009). Agarwal N., Athey S. & Yang D., (2009), "Skewed Bidding in Pay-per-action Auctions for Online Advertising," *American Economic Review* volume 99, n°2, pp.441-447.

8 Edelman B. & Schwartz M., (2010), "Optimal Auction Design and Equilibrium Selection in Sponsored Search Auction," *American Economic Review*, volume 100, issue 2.

9 Ostrovsky M. & Schwarz M., (2016), "Reserve Price in Internet Advertising Auctions: A Field Experiment," *Stanford Business School Working Paper*, n°2054.

10 For a literature review see: Varian H.R., (2009), "Online Advertising Markets," *American Economic Review*, Papers and Proceedings 2009, 99(2), pp.430-434. Athey S. & Ellison G., (2011), "Position Auctions with Consumer Search," *Quarterly Journal of Economics*, volume 126, n°3, pp.1213-1270.

11 The first keyword-based auction mechanisms, implemented in 1998, were based only on the value of the bid. They were implemented by *GoTo*, a company, later renamed *Ouverture*, whose algorithm was eventually used by *Yahoo!*.

12 Lahaie S. & McAfee P., (2011), "Efficient Ranking in Sponsored Search," *WINE'11 Proceedings of the 7th international conference on Internet and Network Economics*, pp.254-265.

According to what method is this assessment of the expected quality of the advertisement carried out? It involves the application of a coefficient, γ, which will be combined with the value of auction b and its coefficient c (its CTR). With a $\gamma < 1$, the platform can maximize its revenue: its audience dispatching can, in other words, be explainable in economic terms. The γ coefficient is set according to historical data and/or Bayesian estimates.[13]

Adopting a display rule based solely on the auction result (that is, the level of the bids) would be sub-optimal. Indeed, even if the financial returns of the auction process were maximized for Google, it would be suboptimal in the medium term if internet users were to give up clicking on ads or even turn away from its search engine. The correction of auction results can therefore be justified on an objective ground, as well as the correction of search results in the Google Shopping case.[14]

B. The Complaint and its Analysis

Interactive Lab had filed a complaint on February 3, 2011 concerning practices implemented by Google in its *AdWords* online advertising program. These practices, according to the plaintiff, were likely to infringe Article 102 TFEU.

In its view, the correction of bidding results by the CTR was carried out by Google in an environment devoid of any external scrutiny. In addition, Google also made this unsupervised quality coefficient the determining factor in the ranking. Moreover, according to the plaintiff, Google would calculate this score on the basis of a "historical perception." Google's strategy would, still according to the complainant, correspond to an audience dispatching aimed at "modulating impressions to satisfy the widest possible spectrum of advertisers." These practices would have had the effect of limiting the number of impressions for Interactive Lab's ads despite the level of its bids on keywords associated with searches.

As early as November 16, 2015, the Commission informed the plaintiff of its intention to reject its complaint. With the decision of April 11, 2018, the EU Commission confirmed its position. Firstly, it considers that there is a low probability that the alleged facts will be proven. The Commission implicitly applies a no-economic-sense test: what would be the justification for a decision that would reduce auction revenues? Secondly, the Commission considers that it is possibly unlikely that an in-depth investigation would lead to characterization of an infringement of Article 102.

Indeed, taking into consideration a quality score based on previous search results when deciding how to display advertising is part of Google's commercial prerogatives. Similarly, Google cannot be sued on the basis of competition rules for not disclosing its algorithm for setting quality scores. At worst, this litigation would fall under the scope of the judge of the contract. Thirdly, not only would it be unlikely that an in-depth investigation would characterize anti-competitive behavior, but it would also require disproportionate resources to be invested. The EU Commission therefore considers that there is insufficient evidence to further its investigation. Its decision is in full conformity with the margin of discretion it enjoys in assessing the opportunity to pursue an investigation. Considering the interest of the complaint for the Union and the individual circumstances of the case, the Commission may decide not to pursue its inquiry.

It is well-known that a complainant cannot require the Commission to issue a decision on whether or not an infringement has been committed. In addition, the Commission is not bound to deal with a complaint if it considers that it does not fall within the scope of competition law, but within other fields such as contract law.

Ultimately, the lack of supporting evidence is the main factor leading to the Commission's decision not to prolong the investigation. However, in this decision too there is an important point to discuss. It consists in the assumption that there is no economic interest in setting up an audience dispatching system for the platform. We discuss this hypothesis in our second part.

13 Lahaie S. & Peenock D.M., (2007), "Revenue Analysis of a Family of Ranking Rules for Keyword Auctions," *Proceedings of the 7th conference on electronic commerce*.

14 Buttà A., (2018), "Google Search (Shopping): An Overview of the European Commission's Antitrust Case," *Rivista Italiana di Antitrust/Italian Antitrust Review*, n°1, volume II.

III. A DISCUSSION OF THE COMMISSION'S DECISION FROM AN ECONOMIC PERSPECTIVE

A. Where We Discover that Squashing makes Sense from the Economic Point of View

Interactive Lab claims that Google has implemented a strategy of discrimination against the advertisers who bid the highest. This may seem difficult to justify at first glance: the platform does not maximize its immediate revenues. However, this strategy can make sense in the logic of audience dispatching methods that are equivalent to squashing practices, such as those implemented by *Yahoo!*.

This practice is based on theoretical research in economics on CTR estimation developed in-house at *Yahoo!* by its chief economist, Preston McAfee. In a situation of uncertainty regarding the quality of the ad, the approach is to apply to the bid value a corrective coefficient. While such a correction enhances the effectiveness of the prediction, it does change the ranking and therefore the probability of displaying the ad.[15]

This auction procedure cannot be dissociated from research conducted to tailor the auctions to the specific context of online advertising. Maximizing revenue from the bid value would not be sustainable in the long term as the whole "ecology" of the platform must be considered. As we have already stressed, this implies we take into account a set of constraints such as the possible disaffection of Internet users or the rivalry of other operators.

The quality of the service provided to Internet user is an indispensable condition for the sustainability of the market position of the platform itself.[16] Thus, the platform must not only consider the maximization of its short-term income but also its long-term ones, which are dependent on the interests of its users on the search engine side and of advertisers on the advertising side. The audience dispatching can increase revenues by attracting, or retaining in the auction, one more bidder.[17] Taking into account a quality score and applying a squashing method can therefore make sense from the economic point of view by accommodating the interests of all the players involved in the online ad ecosystem. Indeed, a large amount of research findings confirm that audience dispatching can increase avb platform's revenues.[18]

As we have seen above, this dispatching stems from the insertion of a corrective factor, γ. Its role is well established in the literature. It is a question of displaying less priced ads. Its potential effect is to also allow the platform to maximize its revenues. As noted by Lahaie & McAfee: "The purpose of the exponent is to handicap stronger bidders (with higher advertiser effects), leading to higher competition and increased revenues [...] Efficiency is improved by using $\gamma = 1 - \varepsilon$ rather than $\gamma = 1$, for some $\varepsilon > 0$."[19]

According to the plaintiff, Google would have secretly set up a system to artificially penalize the best placed suppliers. What would be the advantage for Google of shifting traffic to advertisers with lower potential? For Interactive Lab, artificially keeping them on the market would make it possible to maintain incentives for advertisers to make higher bids in the auction process.

Squashing should display ads in an order different from the bid values in a way that would not be explainable by real differences in quality. The manipulation would involve a strategic alteration of the predicted click rate ("pCTR"). The gain produced by this rotation might be that competition on the downstream market could be maintained, pushing good quality operators to bid higher. This strategy would be all the more easily implemented since the algorithm and its corrections are opaque and the platform would be inclined, as the plaintiff claims, to provide distorted statistics to its partners.

Discrimination could therefore be a lever for exploitative abuse to the detriment of efficient suppliers. In this sense, squashing could lead to extracting a higher share of the surplus from downstream operators who are dependent on *AdWords'* auctions. This contrasts with the Commission's statement that "Google would have no economic interest in applying the method claimed by Interactive Lab because it would produce a lower income."

15 Lahaie S. & McAfee P., (2011), *op. cit.*

16 Bachrach Y., Ceppi S., Kash I.A., Key P. & Kurokawa D., (2014), "Optimising Trade-offs Among Stakeholders in Ad Auctions," *EC'14 Conference Proceedings.*

17 Bulow J. & Kemplerer P., (1996), "Auctions versus Negotiations," *American Economic Review*, volume 86, issue 1, pp.180-194.

18 Bachrach Y., Ceppi S., Kash I.A., Key P. & Kurokawa D., (2014), *op. cit.*

19 Lahaie S. & McAfee P., (2011), *op. cit.*

However, the effects of squashing or, more generally, the ones of algorithmic corrections based on quality predictions, have been the subject of many studies. Many of them conclude that these procedures can instead increase the platform's revenues.[20] If the Commission might legitimately question Google's economic opportunity to foreclose one of its downstream customers, it might be possible to envisage that squashing can pertain to an anticompetitive purpose. Nevertheless, if squashing was part of an anti-competitive strategy, it would be analyzed as an exploitative abuse and not as an exclusionary one. Google would implement a discriminatory strategy to generate revenue from suppliers who cannot match the highest bids. This would also indirectly increase the incentives for good quality suppliers to offer higher prices than they would have had to do otherwise.

In any case, a platform has no interest in driving a bidder off the market... If a bidder does not see its ad displayed despite the level of its bids, this can also be explained "naturally" by a low predicted click rate. This can be, for instance, based on historical data collected by Google. The issue is therefore close to that of demoting. To maintain its attractiveness the platform has to correct the results of its algorithms. This correction is essential for a two-sided platform whose revenue is driven by its traffic, which in turn depends on the quality of the services provided to Internet users. In the case of demoting the aim was to correct the results of the effects of manipulations on keywords for online searches. In the case of squashing it is to offset the risk that excessive bids on keywords would lead to displaying ads related to searches that would prove to be of poor quality for Internet users.

A final point of the complaint could be discussed in light of the evolution of the online advertising market: in its complaint, Interactive Lab states that "Google does not guarantee to two competing advertisers on AdWords that their ads will be displayed to audiences with comparable characteristics." This point can be explained by the changes introduced by the diffusion of programmatic advertisements. Adequacy is predicted by algorithms. It can lead to different advertising displays from one consumer to another, despite their similarity according to the knowledge acquired about each consumer from his past actions. The results of these campaigns are much less *ex post* explicable than non-automated programs for which the context of the advertising display or the segmentation of Internet users into broad categories can be easily presented as explanatory factors.

B. Is the Algorithmic Decision Really Accountable in Competition-law Related Terms?

In the present case, there is no evidence to support the plausibility of the anti-competitive scenario. This was already the case in the above-mentioned decision of the French Competition Authority. Whether competitive or not, the audience dispatching strategy has not been established. The argument that the AdWords algorithm gives different results over queries and from one Internet user to another is consubstantial to the way the algorithm works. This fact does not constitute in any way evidence of an algorithmic manipulation.

The Australian competition authority stresses this risk in its December 2018 report on digital platforms:

> The auction based mechanisms used by Google and Facebook do not mean that they have no control over price. For example, Google is able to influence prices by its specification of (i) how many advertisements can appear alongside search results, which affects its supply of advertising, and (ii) how the various inputs to the auction algorithm — such as the bids, Google's assessment of ad relevance and Google's assessment of landing page quality — determine the outcome of the auction.[21]

The difficulties in analyzing the compliance of algorithmic decisions with competition rules are generating growing concerns for the authorities responsible for their application.[22] In our case the issues are related to the field of online advertising, but they can be extended to many areas in which algorithmic decisions are increasingly important.

In this domain, many advertisers are denouncing exploitative abuses resulting from the opacity of the practices of both platforms and intermediaries. This point was emphasized by the statement issued last December by the Australian Competition Authority: "As advertisers have few other attractive alternatives for search advertising, Google is likely to be able to charge prices that are higher than it would if there was a risk it would lose a material level of advertising expenditure to rival platforms."

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20 Thompson D.R. & Leyton-Brown K., (2013), "Revenue Optimization in the Generalized Second-Price Auction," *Proceedings of the EC'13, 14th Conference on electronic commerce*, Philadelphia.

21 Australian Competition & Consumer Commission, (2018), *Digital platforms inquiry*, December.

22 French Competition Authority, Opinion 18-A-03 of March 6, 2018 regarding data usage in the online advertising sector.

These practices would result in additional costs denounced as *ad tech taxes*.[23] However, the revenues generated by online advertising account for a very substantial share of the resources of some major Internet operators. On the basis of information reported to the U.S. financial markets regulator (Form 10-K), Geradin & Katsifils show that advertising represents 98 percent of Facebook's revenues, and 86 percent of both Google's and Twitter's.[24]

If, in online advertising auctions, a correction is necessary to prevent the negative effects of excessively high bids, the problem remains the same as for demoting. How to assess *ex post* the legitimacy and proportionality of an algorithmic correction applied to the results of an algorithmic decision-making process?

The Commission points out in its decision that the "cost" that could result from the search for eventual evidence would be very high, given that it is not even certain it can do so: "assessing more thoroughly the veracity of Interactive Lab's claims would require a systematic analysis of the adequacy of Google's method of calculating the quality score of the applicant ads and their pCTRs. However, the calculation of this type of parameter is part of Google's advanced technical expertise. It uses a detailed analysis of user and merchant behavior based on historical data compiled by Google. Such an analysis would be a complex one and would require a significant amount of resources." (pt.26).

Because of its limited investigative capacities, the Commission is obliged to define priorities. These depend on its assessment of the potential damage to the economy that these practices can potentially cause and the likelihood that an abusive behavior can be characterized. The Commission therefore carries out a proportionality check with regard to the resources to be invested in this purpose.

In such a situation, the costs associated with a decision on the merits deciding on the existence of a breach of EC competition rules could be significantly disproportionate. However, a question remains beyond the present case: if we put into perspective the technical complexity of algorithmic manipulation strategies and the limitation of the authorities' budgetary and technical capacities, is this not likely to lead to an increased risk not of false positives but of false negative decisions? Indeed, there is an increasing probability that the plaintiffs will fail to provide sufficient evidence to support their complaints.

23 Geradin D. & Katsifis D., (2018), "An EU Competition Law Analysis of Online Display Advertising in the Programmatic Age," *Working Paper*, December, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3299931.

24 Geradin D. & Katsifis D., (2018), *Ibid.*

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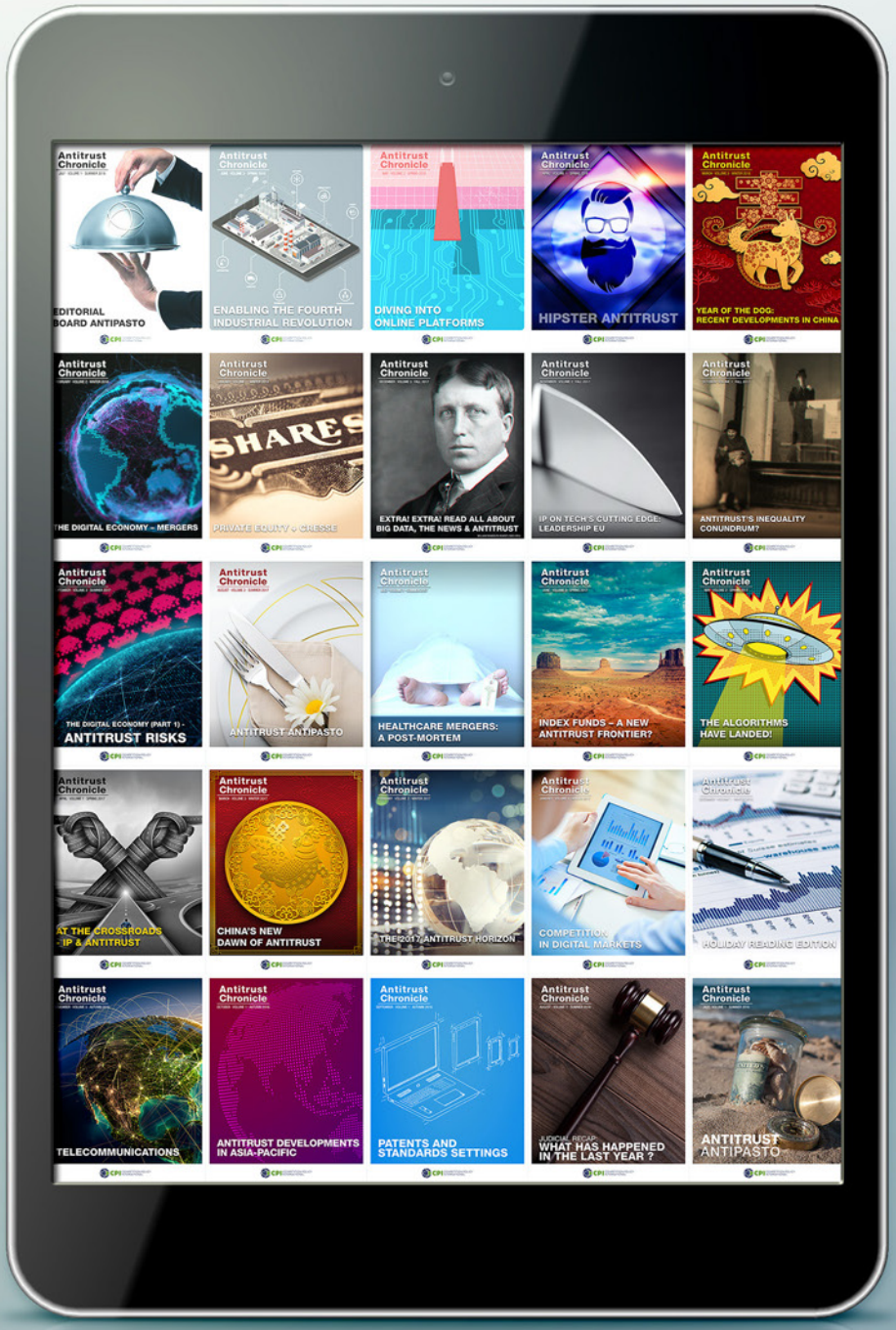

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