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# Digital Platforms and Antitrust Law

Keith N. Hylton\*

April 2019

**Abstract:** This is a paper about “big data” and antitrust law. For my purposes, big data refers to digital platforms that enable the discovery and sharing of information by consumers, and the harvesting and analysis of data on those consumers by the platform. The obvious example of such a platform is Google. The big platforms owe their market dominance not to anticompetitive conduct but to economies of scale. I discuss three types of anticompetitive conduct associated with digital platforms: kill zone expropriation, acquisition of nascent rivals, and denial of access to data. There is nothing so unusual about digital platforms that would require a reform of the antitrust laws. Some are described as two-sided markets, but this designation, even after *Ohio v. Amex*, should not present an obstacle to the application of antitrust law.

**Keywords:** digital platform competition, platform acquisitions, big data and antitrust, kill zone competition, data and competition, *Ohio v. Amex*, two sided markets, data monopolies, network effects and competition, data as property

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\* William Fairfield Warren Professor, Boston University, and Professor of Law, Boston University Law School. This paper was prepared for the conference, “Understanding the Visible: The Undisputed Facts and Disputed Law of Platform Antitrust,” February 21 – 23, 2019, New York University School of Law. For helpful comments, I thank conference participants, especially Richard Epstein, Chris Sagers, and Harry First. I also thank Jack Beermann, Wendy Gordon, James Grimmelman, Mike Meurer, and Kathy Zeiler for helpful comments.

This is a paper about big data and antitrust law. The first question I should address is precisely what I have in mind by the term “big data.” A search of the term on the internet reveals amorphous definitions, leaving one with the impression that big data is a conceptual category that includes several different things.

For my purposes, big data refers to digital platforms that enable the discovery and sharing of information by consumers, and the harvesting and analysis of data on those consumers by the platform. Because of the enormous quantities of data, the platforms must use algorithms and often machine learning to process the data. Thus, big data includes, in this definition, a reference to the sophisticated processes by which the data are analyzed.

The obvious example of such a digital platform is Google. Consumers search for information on Google, and Google uses the information from consumer searches to improve its own search algorithms, and to provide information to advertisers on consumer preferences. Google tracks the activities of consumers, as far as possible, to build out its database.

In this paper, I focus on competition issues associated with digital platforms.<sup>1</sup> However, competition is a broad concept itself. There are many non-competition issues associated with digital platforms, such as privacy, which on further inspection are capable of being described as competition issues after all.<sup>2</sup> I will therefore take a broad brush to the topic and sweep in non-competition issues where relevant.

The largest platforms owe their market dominance not to anticompetitive conduct but to economies of scale. I discuss three types of anticompetitive conduct associated with digital platforms: kill zone expropriation, acquisition of nascent rivals, and denial of access to data.<sup>3</sup> There is nothing so unusual about the platforms that would require a reform of the antitrust laws. Some have been described as two-sided markets, but this designation, even after *Ohio v. Amex*,<sup>4</sup> should not present an obstacle to the application of antitrust law.

Part I below discusses the economics of digital platforms and the processes that have generated scale. Scale benefits platform consumers, but it also precipitates injuries to consumers, in the

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<sup>1</sup> For previous contributions to this topic, see D. Daniel Sokol & Roisin Comerford, Antitrust and Regulating Big Data, 23 Geo. Mason L. Rev. 1129 (2016); Wright, Joshua D. and Dorsey, Elyse, Antitrust Analysis of Big Data (December 31, 2016). 4(2) Competition Law & Policy Debate 35 (December 2016). Available at SSRN: <https://ssrn.com/abstract=3165278>, or <http://dx.doi.org/10.2139/ssrn.3165278>; Stucke, Maurice E. and Grunes, Allen P., Debunking the Myths Over Big Data and Antitrust (May 31, 2015). CPI Antitrust Chronicle, May 2015; University of Tennessee Legal Studies Research Paper No. 276, available at SSRN: <https://ssrn.com/abstract=2612562>.

<sup>2</sup> Wright, *supra* note 1, at 38.

<sup>3</sup> The focus on specific anticompetitive theories is probably the feature that distinguishes this paper from previous contributions. Sokol, *supra* note 1, offers a broad survey of the alleged anticompetitive harms and potential competition benefits of big data. Similarly, Wright, *supra* note 1, offers a survey of anticompetitive theories and addresses whether antitrust law should be modified for big data competition claims. Both Sokol and Wright see little need to modify existing antitrust law for big data cases. For a view opposing those of Sokol and Wright, see Stucke and Grunes, *supra* note 1.

<sup>4</sup> *Ohio v. American Express Co.*, 585 U.S. \_\_\_, 138 S. Ct. 2274 (2018).

form of privacy invasions, online harassment, and intellectual property infringement. Part II examines anticompetitive theories likely to be asserted against digital platforms. Part III discusses the antitrust law applicable to these theories.

## I. Platforms

The digital platforms with which most of us are familiar are Google and Facebook. Google has a dominant market share in online search in every country except Russia and China.<sup>5</sup> Facebook has roughly 2 billion users, almost half of the entire population of internet users.<sup>6</sup> These large customer bases enable Google and Facebook to amass large quantities of data on billions of consumers.<sup>7</sup> The data are used to improve services offered on the digital platforms. Google, for example, uses its data on consumers to enable advertisers to target consumers who are most likely to purchase the advertised products. Data also enable Google to continuously improve the quality of its search algorithms.<sup>8</sup>

For digital platforms such as Google and Facebook, size results mostly from economies of scale. As the number of consumers increases, Google can amass more data, and use the data to improve its search experience and the accuracy of advertising matches. In other words, as the platform expands and obtains more data, the cost of providing a given unit of service (e.g., the answer to a search query) falls. Sophisticated data processing methods, such as machine learning and artificial intelligence, further enhance the scale economies effect.

There are two processes giving rise to economies of scale in the digital platform markets. One is fixed costs. Much of the costs of providing Google's services reside in the employment of engineers, and Google has consistently bid for the highest quality of this form of labor. Increasingly, digital platforms are also hiring content moderators to make sure that the material presented to consumers does not unduly tarnish their brands. The costs of engineers are fixed, in the sense that the volume of the search service Google provides is not highly sensitive to the number of engineers the firm hires, after it reaches a sufficient scale to generate the service. In

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<sup>5</sup> Google is permitted to operate in Russia, but is blocked in China. For statistics on Google's share of online search by country, see *Share of desktop search traffic originating from Google in selected countries as of June 2018*, STATISTA, <https://www.statista.com/statistics/220534/googles-share-of-search-market-in-selected-countries/>.

<sup>6</sup> Facebook had 2.32 billion users as of fourth quarter of 2018, see *Facebook: number of monthly active users worldwide 2008-2018*, STATISTICA (Jan. 2019), <https://www.statista.com/statistics/264810/number-of-monthly-active-facebook-users-worldwide/>. Facebook users constitute roughly half of the total number of internet users, see *Two Billion Internet Users are not on Facebook*, OVERGROWN PATH (July 16, 2018), <https://www.overgrownpath.com/2018/07/two-billion-internet-users-are-not-on.html>.

<sup>7</sup> On google data collection, see Douglas Schmidt's survey following a day in the life of an android user, exploring the ways in which Google collects user data through applications such as YouTube, Google Searches, Google maps, Chrome, and other Google-owned applications. Douglas C. Schmidt, *GOOGLE DATA COLLECTION*, 2, VANDERBILT UNIVERSITY (Aug. 15, 2018); On Facebook data collection, see Avantika Monnappa, *How Facebook is Using Big Data-The Good, the Bad and the Ugly*, SIMPLILEARN (Jul. 6, 2018), <https://www.simplilearn.com/how-facebook-is-using-big-data-article>.

<sup>8</sup> *How Search Algorithms Work*, GOOGLE, <https://www.google.com/search/howsearchworks/algorithms/>

other words, once a given number of engineers produce the search machine, consumers can use the machine anywhere from zero to an uncountable number of times per day, and the cost to Google is largely the same. The cost of content moderators is probably more dependent on the number of users of the service, but even here the elasticity of moderator cost to intensity of consumer use is well below one.

The other source of economies of scale is data. Data enable engineers to improve the quality of the search process at Google. Thus, each consumer, by providing data, lowers the unit cost of servicing the next consumer.<sup>9</sup> The intensity of this effect is magnified by the use of sophisticated data processing methods. Google therefore has an interest in investing resources into the enhancement of data processing methods, such as machine learning and artificial intelligence. The demand for such processes from the digital platforms, in turn, bids up the wages of researchers who specialize in data processing methods, bidding some of them out of their academic positions and into industry.

Google also has an interest in investing resources into the creation and harvesting of more data on its consumers. It is interesting to note that for many years after Google entered the market, observers wondered how the service would become a source of revenue – that is, how search could be monetized.<sup>10</sup> That question has been answered; Google’s annual revenue in 2018 was \$137 billion.<sup>11</sup> Data have proven to be monetizable. Because data are monetizable, Google gathers as much as data as it can on users through their own search inquiries, and through monitoring their activities online. Using the acquired data, Google generates a detailed map of the preferences, personal characteristics, and location of every internet search consumer.

In addition to the scale economies effect, the law provides a subsidy that has aided the expansion of digital platforms. Under Section 230 of the Communications Decency Act,<sup>12</sup> digital platforms such as Google are treated as information intermediaries rather than publishers.<sup>13</sup> This relieves platforms of tort liability for harms caused by their activities. Another safe harbor from liability is provided by Section 512 of the Digital Millennium Copyright Act, which protects Google from copyright liability if it takes down an infringing item after notification.<sup>14</sup> In the absence of

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<sup>9</sup> Economies of scale in data include traditional network effects in addition to the improvements in service quality, on both sides of a platform, driven by data. See, James Currier, *The Network Effects Manual: 13 Different Network Effects (and counting)*, MEDIUM (Jan. 9, 2018), <https://medium.com/@nfx/the-network-effects-manual-13-different-network-effects-and-counting-a3e07b23017d>.

<sup>10</sup>Rory Cellan-Jones and Mark Levene, *The Most Valuable Company in the World*, FORBES, <http://www.bbc.co.uk/guides/z9x6bk7>.

<sup>11</sup> *Alphabet Revenue 2006-2018*, MACROTRENDS, <https://www.macrotrends.net/stocks/charts/GOOG/alphabet/revenue>.

<sup>12</sup> 47 U.S.C. §230. A platform such as Google could be penalized for failing to comply with a takedown order. In this case, the path to a penalty would involve a platform user going to court and seeking a court order requiring the takedown, after which the platform may be punished by the court for failing to comply with the order. Of course, to describe this process is also to note how unlikely it is that a platform actually will be forced to pay a significant penalty.

<sup>13</sup> Alina Selyukh, *The New Clash Between Free speech and Privacy: Section 230: a Key Legal Shield for Facebook, Google is About to Change*, NPR (March 21, 2018 5:11 AM), <https://www.npr.org/sections/alltechconsidered/2018/03/21/591622450/section-230-a-key-legal-shield-for-facebook-google-is-about-to-change>.

<sup>14</sup> 17 U.S.C. §512

these broad immunity shields, platforms such as Google would have to consider their potential liability based on defamation and related tort theories, or copyright law. These costs would be directly related to scale and compel the platform to monitor its information services in order to minimize liability. The cost of monitoring would constrain the platform's incentive to expand. The platforms would have to be much more protective than they are now against harms created by platform speech. They would also have to be more protective of the privacy of consumer data transferred to other entities.

Although this is a paper about competition issues, the foregoing features of digital platforms have generated important problems currently viewed as unrelated to competition – though, that view may be incorrect.<sup>15</sup> One is the matter of harms created by platform communication. Platform expression often results in injuries such as defamation, invasion of privacy, online harassment, and intellectual property infringement. A platform such as Google might direct users to a link with defamatory statements about an individual, without suffering any risk of liability, or the platform may host material in violation of a copyright, again without suffering a risk of liability. The result has been rampant intellectual property theft and the dissemination of harmful speech.<sup>16</sup>

Consider, for example, YouTube, the video platform owned by Google. Google hires platform moderators, and uses artificial intelligence, to monitor and take down videos that are extremely distasteful, or that involve obvious copyright violations. In addition, an individual who thinks he has been defamed can file a form with Google to attempt to persuade it to take down the offending video. Given Section 230 immunity, the key factor that motivates Google in screening content is a concern for its own brand, which may be tarnished by the hosting of offensive material on its search engine or on the YouTube platform. This is a different set of incentives than those created by defamation or by copyright law. It is not at all clear that a concern for brand tarnishment will lead a platform to exercise the same care in monitoring postings than would a concern over the risk of liability. A concern for brand tarnishment might cause a digital platform to be too quick to take down some types of harmful expression and at the same time too slow to take down other types. Platform expression that tends to aggravate or upset the median platform consumer, for example, would be quickly taken down as a result of current incentives to minimize brand tarnishment. Platform expression that does not tend to aggravate the median user, while at the same time imposing concentrated harm on a single individual or firm – copyright violation would be an example – is unlikely to generate incentives for quick action on the part of the platform.

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<sup>15</sup> The view may be incorrect because competition would compel platforms to compete with respect to enhancing consumer privacy protections and minimizing the dissemination of harmful speech. In the absence of both competition and liability, platforms have relatively weak (or distorted) incentives to protect consumers.

<sup>16</sup> For an impassioned presentation of claims of Google's facilitation and participation in intellectual property theft see, Scott Cleland, *The Evidence Google's Systematic Theft is Anti-Competitive*, FORBES ((Jan. 20, 2012), <https://www.forbes.com/sites/scottcleland/2012/01/20/the-evidence-googles-systematic-theft-is-anti-competitive/>). On the dissemination of harmful speech on platforms such as Google see, Lisa Eadicicco, Facebook and Google Are Going To War Against Hate Speech, TIME, May 31, 2016, <http://time.com/4352179/facebook-twitter-google-hate-speech/>; Caitlin Elizabeth Ring, *Hate Speech in Social Media: An Exploration of the Problem and Its Proposed Solutions*, in JOURNALISM & MASS COMMUNICATION GRADUATE THESES & DISSERTATIONS 5-14 (2013).

To get a sharper sense of how brand tarnishment incentives work, consider the demographics of Google users. Search consumers between the ages of 18 and 44 are most likely to use Google, while older consumers are more likely to use Bing.<sup>17</sup> As far as employees, the average at Google is 29 years old.<sup>18</sup> Google is sensitive to the preferences of employees as well as those of users.<sup>19</sup> These demographic differences should generate different incentives with respect to brand tarnishment. Given the demographic data, Google's moderators are likely to be especially sensitive to the preferences of consumers below the age of 40. Yet another stress factor loading on top of the age distribution of users is the tendency of millennial consumers to demand that the brands with which they associate also agree with their political preferences.<sup>20</sup>

Even with all of these issues, one point that should not go unnoticed is that the most popular digital platforms, Google and Facebook, have demonstrated the usefulness of data in advertising. The advertising industry, before the rise of digital platforms, was dominated by firms that claimed to have a special expertise in discerning what pitches should be made to consumers. The new digital platforms are displacing this ancient system based on subjective expertise with one based on data measuring consumer preferences. The consequence has been that advertising based platforms that do not directly measure consumer preferences, such as newspapers, have seen their advertising dollars migrate to Google and Facebook.

## II. Competition Issues

Digital platforms have generated competition complaints in recent years. In this part, I consider three anticompetitive theories related to digital platforms: kill zone expropriation, acquisition of nascent rivals, and denial of access to data.

### A. Kill Zone Expropriation

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<sup>17</sup> See Rebecca Sentence, *What are the differences in how age demographics search the internet?*, USER ZOOM (Dec. 11, 2018), <https://www.userzoom.com/blog/what-are-the-differences-in-how-age-demographics-search-the-internet/> ([U]sers aged anywhere between 18 and 44 were most likely to be using Google to search the web. Users aged between 45 and 64 were most likely to be found using Bing (with usage being most common among the 55-64 age group), while for users aged 65+, Yahoo! was the most popular search engine.)

<sup>18</sup> Max Nisen, *A 64-Year-Old Engineer is Suing Google for Age Discrimination*, QUARTZ (April 24, 2015), <https://qz.com/390835/google-age-discrimination/>.

<sup>19</sup> In 2018, a group of Google Engineers refused to work on technology that would help Google secure a military contract because they opposed, on moral grounds, Google's contribution to the technology. See, Mark Bergen, *Google Engineers Refused to Build Security Tool to Win Military Contracts*, BLOOMBERG (June 21, 2018), <https://www.bloomberg.com/news/articles/2018-06-21/google-engineers-refused-to-build-security-tool-to-win-military-contracts>.

<sup>20</sup> A 2015 Study by Nielson found 81 percent of millennials expect their favorite companies to make public declarations of good corporate citizenship. Sarah Landrum, *Millennials Driving Brands to Practice Socially Responsible Marketing*, FORBES (Ma. 17, 2017), <https://www.forbes.com/sites/sarahlandrum/2017/03/17/millennials-driving-brands-to-practice-socially-responsible-marketing/#723ddfa94990>.



One class of anticompetitive theories alleged against digital platforms falls under the label “kill zone” expropriation.<sup>21</sup> A digital platform provides an ecosystem for new businesses in the form of platform applications. However, the platform owner often has it within its power to destroy applications on its platform. Thus, any application on the platform is within the kill zone of the platform owner.<sup>22</sup>

The classic example of the kill zone problem, as well as current operative antitrust law, is provided by *United States v. Microsoft (Microsoft III)*.<sup>23</sup> The platform in this case was the desktop of the Microsoft operating system. Independent software vendors created software applications that could operate on the Microsoft system. Over the years, the Microsoft operating system had improved in quality by integrating into the operating system numerous software functions that previously had been sold by independent software vendors as applications that could be purchased and installed on the operating system.

*Microsoft III* dealt with Microsoft’s conduct toward Netscape Navigator, an independent web browser that had become a popular application on the Microsoft operating system. In response to Navigator’s popularity, Microsoft integrated its own browser, Internet Explorer, into the operating system. This meant that anyone who purchased the Microsoft operating system did not have to purchase a separate browser. Netscape complained that Microsoft’s integration of Internet Explorer as a component of its operating system effectively killed Navigator.

Here is a version of the kill zone phenomenon involving Google. An innovator creates a new vertical search service (a search “subplatform,” such as Yelp, generating search results under a broad topic or media type) on Google, say comparing restaurants in a given locality. Google, in response, creates a competing vertical search platform replicating that of the innovator. The original vertical search platform loses traffic and therefore advertising revenue as users focus on Google’s service. Google has an inherent advantage in attracting users to its own vertical search subplatforms. After all, Google has an enormous trove of data on user search activity, and can determine which features of a vertical search function are particularly attractive to users. Google can determine the ranking of its own vertical search application. In the competition between the vertical search platform innovator and Google, Google is certain to win. Any innovation that occurs within the Google search domain is inherently within Google’s kill zone.

Here is a version of the kill zone game involving Apple. A software innovator creates a new app for the Apple App Store. Apple notices that the new app sells at a brisk pace and decides to offer its own version of the app as part of the iPhone operating system. Again, Apple is in a position

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<sup>21</sup> On kill zones in the technology sectors, see *Into the danger zone: American tech giants are making life tough for startups*, *ECONOMIST* (June 2, 2018), <https://www.economist.com/business/2018/06/02/american-tech-giants-are-making-life-tough-for-startups>.

<sup>22</sup> Of course, even applications not on the platform can fall within the kill zone of a digital platform. However, such replication is a standard competitive strategy.

<sup>23</sup> *United States v. Microsoft Corporation*, 253 F.3d 34 (D.C. Cir. 2001).



to observe the features the innovator's app that are particularly attractive to consumers, and to replicate and improve upon those features.

An important characteristic of the kill zone phenomenon is that the platform owner has the luxury of sitting back and watching innovation occur on its platform. When it spots an especially productive innovation, the platform owner can leap and swallow it whole. This means that any innovator on the platform knows that there is an upper limit to its profit from innovation, which triggers expropriation by the platform owner.

Replication is not the only route through which the platform owner can expropriate the platform innovator. An alternative strategy, to the same effect, is for the platform owner to approach the innovator with an acquisition offer. In this scenario, the innovator at least has the prospect of receiving a payoff for suffering expropriation. The payoff, however, may be unremunerative. The platform owner has the option to replicate the innovator's application cheaply, or to make an acquisition offer to the innovator. Given that the cost of replication is low, the owner would not have an incentive to offer a buyout that is significantly greater than the cost of replication.

One's first reaction to this tale is probably to think that the kill zone game is harmful to platform innovation. This is not obvious. When the platform owner replicates a particular innovative function and integrates the function into the platform, it enhances the entire platform, which is itself a form of innovation with benefits to consumers. The benefits to consumers are necessarily greater with replication and integration of a productive functionality across the entire platform than with the functionality residing exclusively within a stand-alone application residing on the platform. Integration within the platform motivates or enables other applications to exploit the new functionality, which enhances the utility provided by other applications residing on the platform.

It is not within the long-term interests of the platform to expropriate application innovators before they are able to make a return that fully compensates for the costs of innovation. A forward-looking platform owner would give the application innovator some time to earn profits from the innovation before swooping in and killing off the application. Of course, platform owners may not always act within their long-term interests. The short-run profits from expropriation may exceed the perceived long-run costs of discouraging innovators on the platform. If there is competition among platforms, the platform owners who expropriate their innovators too quickly will lose relative to those who wait longer. But where there is no such competition, the only factor standing as an obstacle to premature expropriation, and the consequent discouragement of innovation on the platform, is the ability of the platform owner to correctly evaluate its long-term interests.

Another factor that should be considered is that application innovators are aware of the platform owner's incentives in the kill zone game. Knowing of the risk of expropriation, platform innovators can adopt strategies that enable profitable entry in spite of the risk of future expropriation. One strategy is to enter with a suite of platform applications. The application most likely to be expropriated by the platform owner can serve as a gateway to other applications within the suite. When expropriation occurs, the innovator would lose the profits from the

expropriated application while gaining in profit from the related applications. As the date of expropriation approaches, the innovator would hike the price on the targeted application to squeeze as much money out of it as possible before the expropriation date.

Many observers have noted that venture capital firms will not fund firms within the kill zone of a platform owner.<sup>24</sup> This is important evidence of the negative innovation effect of kill zone expropriation. However, such observations are largely anecdotal. Apple's App Store contains roughly 2 million apps at present. Between 2008 and 2018, the number of apps in Apple's store increased from 500 to 2 million.<sup>25</sup> This huge rate of growth, 4,000 percent over ten years, is hard to square with the assertion that entry is difficult to encourage within a kill zone. Of course, entry could have been greater; perhaps Apple's App Store would have a billion apps in the absence of the threat of kill zone expropriation. Nevertheless, the sheer size of the app store suggests that quite a large number of entrants are not deterred by the threat of expropriation.

The kill zone game can be analogized to patent infringement, where the infringement kills off a patent and makes the market in the particular innovation competitive. Here, the "infringer" is the platform owner and the "patentee" is the application innovator. The analogy is still imperfect, though, because in the kill zone game, expropriation has a positive externality across other applications on the platform. The kill zone game involves infringement with strong spillover benefits to related markets.

From a social welfare perspective, infringement is not always a negative. Patents have limited terms, because at some point the dynamic gain from innovation is outweighed by the static cost of protection.<sup>26</sup> The same social incentives exist within the platform setting. Hence, the mere fact that the platform owner eventually expropriates the platform innovator is not by itself proof of inefficiency. Obviously, the private incentives of the platform owner may diverge from the social incentives for expropriation. This is not apparent, though, because the platform owner, unlike the infringer in the typical case, suffers a cost from being too quick to expropriate. Gaining a reputation for swift expropriation deters innovation on the platform, reducing the platform's long-term value.

The kill zone problem, as I have described it so far, is not primarily an antitrust issue. Indeed, expropriation by the platform owner unambiguously enhances short-run consumer welfare. The sense in which expropriation might be viewed as anticompetitive is that it may discourage innovation on the platform, and such discouragement may reduce consumer welfare in the long run. Traditional antitrust, however, has been reluctant to condemn a transaction that obviously and substantially increases short-term consumer welfare.

One plausible scenario in which kill zone expropriation becomes an antitrust issue is where the expropriated firm has the potential to become a rival to the platform itself. This was the theory underlying *Microsoft III*. The Justice Department argued, successfully, that the Netscape

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<sup>24</sup> *Supra* note 21.

<sup>25</sup> See *App Store (iOS)*, WIKIPEDIA (Jan. 27, 2019, 6:58), [https://en.wikipedia.org/wiki/App\\_Store\\_\(iOS\)](https://en.wikipedia.org/wiki/App_Store_(iOS)).

<sup>26</sup> RONALD A. CASS AND KEITH N. HYLTON, *LAW OF CREATION: PROPERTY RIGHTS IN THE WORLD OF IDEAS*, 52-57 (Harvard University Press 2013).

Navigator browser was a species of software called “middleware.” Middleware, according to the Justice Department, sat functionally between the operating system and applications. In theory, independent software developers could write applications that are integrated with, or capable of being loaded onto, the browser. As more software developers targeted the browser as a launching ground, according to Justice’s theory, the operating system would become unimportant, and a competitive market in operating systems would arise. Thus, expropriating Netscape Navigator through replication and integration, as Microsoft did, prevented a rival platform from arising.

This antitrust theory raises significant questions of proof. How, for example, could one determine if the alleged middleware product would become, within a reasonable period, a rival to the operating system? Almost two decades have passed since *Microsoft III* and still no middleware product has arisen as an alternative to the major desktop operating systems.<sup>27</sup> This experience belies the government’s theory in *Microsoft III*. While, the theory that kill zone expropriation can violate Section 2 of the Sherman Act is plausible, courts should demand considerable evidence in support of the theory to avoid imposing antitrust liability on platforms on the basis of purely conjectural harms to consumers.

A second plausible sense in which kill zone expropriation becomes a potential antitrust issue arises when the platform owner replicates not only the functionality of the innovator but also the informational details to such a level that the application cannot differentiate itself from the platform owner’s clone. Suppose, for example, the platform owner infringes copyrighted material residing in the application or strips out (non-copyrightable) information contributed by users of the application.<sup>28</sup> Such a complete replication would expropriate much of the experience-based value of the application. Although no court in the U.S. has entertained an antitrust claim based on such a theory, this hypothetical describes a species of competitive predation, and should be actionable under the antitrust laws.

## B. Acquisition of nascent rivals

Another competition issue involves the acquisition of nascent rivals. In this case, the platform owner acquires a firm – a fledgling platform – that could grow into a rival. The common example is Facebook’s acquisition of Instagram in 2012.

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<sup>27</sup> James Grimmelman helpfully noted, in an email, that the middleware platform market has indeed expanded rapidly since the *Microsoft III* decision, with the most prominent example being Google’s Chrome OS. However, the desktop PC market remains dominated by Microsoft (Windows) and Apple (macOS). Google’s Android dominates the market in smartphone operating systems. The stasis in the desktop market has resulted probably because the incremental efficiencies provided by browser-based systems such as Chrome OS have not been sufficient to compel desktop users to migrate in large numbers to such middleware platforms.

<sup>28</sup> The scope of copyright liability might be uncertain, and therefore present a disincentive to replicating an application. *Oracle America, Inc. v. Google, Inc.*, 750 F.3d 1339, (2014). If the platform owner is uncertain about liability from replication, it may choose to make an acquisition bid rather than replicate. Still, the acquisition bid will be biased downward by the ease of replication and the low probability of copyright liability.

The difficult question is determining whether the acquisition of a fledging platform by a larger platform constitutes acquisition of a nascent rival. The fledging platform may cater to a different set of consumers. One platform may cater to consumers over the age of 30 while the other platform caters to consumers under the age of 30. This poses the same risk to competition as the acquisition by one engine maker of another engine maker who sells in a different (non-substitutable) market<sup>29</sup> – for example, a manufacturer of car engines acquires a manufacturer of airplane engines. As time passes, and consumers gain access to air taxis and other such modes of travel, the car engine may become obsolete and replaced, for most consumers, by the airplane engine. To the extent that experience in manufacturing car engines can be transferred to manufacturing airplane engines, the acquisition may have efficiency features, with little anticompetitive harm. Similarly, the joining of two digital platforms that are not competing would appear to offer efficiency gains, in the form of consolidation of fixed costs and aggregation of data, with little potential for competitive harm.

This description may be applicable to Facebook’s acquisition of Instagram. Though many commentators suggest that antitrust authorities would block the acquisition if it were brought for approval today,<sup>30</sup> it is not clear that the acquisition was anticompetitive. Facebook, which initially catered to the young, is on the path to becoming the social network for seniors.<sup>31</sup> Instagram caters to a younger group. Given that a social network consisting of people over the age of 40 may include the parents of most teenagers, the teenagers may prefer to communicate on a social network that caters to younger people. When the teens become parents themselves, their children may prefer to communicate within a new social network for their own generation.

The group that suffers the greatest risk of harm by the merger of two social networks is advertisers. However, advertisers might benefit from the richer information and the efficiencies generated by the aggregation of networks. Facebook’s investments into data processing (for example, artificial intelligence) constitute a large fixed cost that would have to be replicated across independent social networks to match each other in efficiency. The merger enhances the value of investment in such data processing, which has external effects in generating a greater supply of data processing engineers.

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<sup>29</sup> See *U.S. v. Winslow*, 227 U.S. 202, 218 (1913) (“It is as lawful for one corporation to make every part of a steam engine, and to put the machine together, as it would be for one to make the boilers and another to make the wheels. Until the one intent is nearer accomplishment than it is by such a juxtaposition alone, no intent could raise the conduct to the dignity of an attempt.”).

<sup>30</sup> Tim Wu, *The case for breaking up Facebook and Instagram*, WASHINGTON POST (September 28, 2018), [https://www.washingtonpost.com/outlook/2018/09/28/case-breaking-up-facebook-instagram/?utm\\_term=.32da07378665](https://www.washingtonpost.com/outlook/2018/09/28/case-breaking-up-facebook-instagram/?utm_term=.32da07378665); see also Sally Hubbard, *The Case for why Big Tech is Violating Antitrust Laws*, CNN (Jan. 2, 2019 10:34 AM), <https://www.cnn.com/2019/01/02/perspectives/big-tech-facebook-google-amazon-microsoft-antitrust/index.html>.

Robert Reich, *Break up Facebook (and while we're at it, Google, Apple and Amazon)*, THE GUARDIAN (Nov. 20, 2018), <https://www.theguardian.com/commentisfree/2018/nov/20/facebook-google-antitrust-laws-gilded-age>.

<sup>31</sup> Panos Mourdoukoutas, *A Bearish Sign For Facebook – Aging*, FORBES (May 1, 2018), <https://www.forbes.com/sites/panosmourdoukoutas/2018/05/01/a-bearish-sign-for-facebook-aging/#3cbb44772a0d>; Mark Sweney, *Is Facebook for Old People? Over-55s Flock in as the Young Leave*, THE GUARDIAN (Feb. 12, 2018), <https://www.theguardian.com/technology/2018/feb/12/is-facebook-for-old-people-over-55s-flock-in-as-the-young-leave>.

To the extent consumers are harmed, it is by the absence of social networks that pursue different policies with respect to privacy and harmful expression. Mergers among social networks sacrifice the social benefits of diversity in product offerings. The social gain from the merger is in supply-side efficiency. It is unclear whether the welfare loss from reduced differentiation is greater than the gain in efficiency. Ordinarily, such a question is best left to the market. Competition agencies are not well suited to determine whether the social welfare from greater product differentiation is greater than the social welfare from increased efficiency.

A more competitive environment is observed in online search platforms, where Google and Bing dominate the market in the U.S. The efficiency gains from exploiting search data have not been so asymmetrical as to leave Google the only search platform in the U.S. market. Bing, with a smaller share of the market, has been able to exploit data efficiencies sufficiently to remain competitive with Google. Some differentiation has appeared as a result. Bing appears to attract a different set of search consumers. Moreover, competition between Bing and Google has generated some degree of property in data. Bing compensates users for search, through its rewards system. Such compensation effectively recognizes consumer entitlements to data generated by their online activity. Competitive bidding for data would, over time, generate a system of property in data.

### C. Denial of Access to Data

Another set of potential antitrust theories would point to the control of data as a source of unlawful advantage in digital platform markets. Competitors, it follows, should be given access to the data of large digital platforms.

Such claims would fall under the “essential facility” theory of antitrust. Under the theory, it may be a violation of antitrust law to deny access to some facility necessary for competition in a market.

The essential facility theory has been rejected, for the most part, by the Supreme Court. Under *Trinko*,<sup>32</sup> antitrust claims based on a supposed duty, of a dominant firm or a group of firms, to share a facility are governed by a specific intent test. To prove an antitrust violation, the plaintiff has to show that there is no legitimate or procompetitive rationale that might explain the denial of access. The evidence must convincingly support an inference that the dominant firm sought to destroy its rival.

Essential facility theories are unlikely to fare any better in the courts when they involve digital platforms than when they involve physical infrastructure such as access to telecommunications

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<sup>32</sup> Verizon Communications v. Law Offices of Curtis V. Trinko, LLP, 540 U.S. 398 (2004).

networks. In either case, the incentives generated by a duty-to-share rule are complicated and potentially undesirable.<sup>33</sup>

Useful data do not fall out of the sky into the laps of digital platforms. Google must create its data using the search inquiries of consumers. Social welfare probably cannot be enhanced by expropriating data from Google, even if the government or a third party could develop the skills to construct a database and to exploit it. If the government were to expropriate data from Google for the benefit of other firms, it would injure Google's incentives to harvest and process the data. If the government were to attempt to replicate Google by harvesting raw search inquiries, it would raise more serious privacy issues than exist now, and also generate the problem of how the government, within a reasonable budget, could possibly replicate Google's data processing capabilities.

Some have suggested that data should be treated as the labor of the digital platform user.<sup>34</sup> I find this theory dubious. First, labor typically consists of activity engaged in for the purpose of generating a useful product or service sought by some entity or individual. This definition does not fit much of the activity of online consumers, such as watching videos for entertainment on YouTube. To call such activity labor merely because it produces data that are useful to Google is equivalent to calling the act of driving on a toll road labor because it produces revenue for the operators of the toll road. Moreover, the online consumer does not give the data in an immediately useful form to the platform; the platform must create data from the user's activity on the platform. Most of the labor, as the term traditionally is understood, occurs on the side of the platform, not on the consumer's side. Second, much of the activity of consumers on digital platforms should be described as leisure rather than labor. Consider, for example, the numerous consumers of YouTube who enjoy watching videos of cats. Should the activity of watching cat videos be defined as labor, merely because it generates data for Google? If so, many other activities that we associate with leisure may be recharacterized as labor.

Of course, there are many things we do today that we call labor that might have been viewed as leisure in the past. My activity of writing this piece for this symposium perhaps would have been viewed as a form of leisure two hundred years ago, when most labor involved physically demanding activity. If not leisure, perhaps my writing activity would have been considered a type of sport, engaged in by members of the social elite. In a Veblenesque society, such activity would be consistent with that of a member of the class that engages mostly in adventure and control over government, while a lower class actually worked to produce items and services to meet the immediate consumption needs of the population.<sup>35</sup>

The line between labor and leisure perhaps cannot be drawn easily today by looking at the physical or mental demands of the activity alone. However, one feature of leisure, in contradistinction to labor, is that an individual can quit a leisure activity at any time without

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<sup>33</sup> See, e.g. KEITH HYLTON, *ANTITRUST LAW: ECONOMIC THEORY AND COMMON LAW EVOLUTION* 207-11 (Cambridge University Press 2003).

<sup>34</sup> ERIC A. POSNER & GLEN WEYL, *RADICAL MARKETS UPROOTING CAPITALISM AND DEMOCRACY FOR A JUST SOCIETY*, 208-213 (Princeton University Press 2018).

<sup>35</sup> THORSTEIN VEBLÉN, *THE THEORY OF THE LEISURE CLASS* (1899).

suffering a harm. Someone who watches cat videos can stop and there is no personal loss suffered as a result – other than the loss of the idiosyncratic utility generated by watching cat videos. Someone who stops a labor activity faces the harm that follows failing to produce something with an appropriable market value or that would be of interest for purchase by someone else. Much of the activity of consumers on digital platforms fails to meet this test.

### III. Antitrust Law

Antitrust law has only begun to deal with the issues discussed above. As I noted earlier, *Microsoft III* provides the template for plaintiffs for any kill zone expropriation claim. The difficult part is determining whether a venture “killed off” by a dominant platform’s expropriation had the potential to become a rival to the platform.

Consider, for example, Google’s expropriation of vertical search services. The European Commission found an antitrust violation, but the FTC refused to file an antitrust complaint, based on Section 5 of the FTC Act, against Google for the same conduct.

For an expropriated vertical search subplatform to bring a successful Section 2 claim against Google under *Microsoft III*, the plaintiff would have to persuade a court that Google’s expropriation enabled Google to maintain monopoly power in the general “universal” search market. One obstacle such a plaintiff would find is that Google’s market share in universal search now stands at roughly 63 percent.<sup>36</sup> This is below the numerical threshold of 64 percent that Judge Hand deemed doubtful, in *Alcoa*,<sup>37</sup> as a sign of monopoly status. Market share statistics are by no means determinative of monopoly power, which is generally a function of market share, supply-side substitution possibilities, and demand-side substitution possibilities.<sup>38</sup> Still, Google’s 63 percent market share is well below the market share percentages observed in the major monopolization cases, such as *Alcoa* and *Microsoft III*. Moreover, as Google has often repeated, competition, primarily in the form of Bing, is only one click away. The ease of demand side substitution is notable.

The second difficulty facing an expropriated vertical search service that attempts to sue Google on the theory of *Microsoft III* is that it is highly unlikely that any vertical search subplatform could ever become a rival to Google in universal search. The monopolization theory in *Microsoft III* was accepted as plausible by the trial court because the Justice Department offered a reasonably persuasive theory that Netscape Navigator was one of several middleware products that could eventually displace the Microsoft operating system. Again, experience has not provided support to Justice’s theory. At the time of the lawsuit, however, the theory seemed

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<sup>36</sup> *Market Share of Search Engines in the United States 2008-2018*, STATISTICA (December 2018), <https://www.statista.com/statistics/267161/market-share-of-search-engines-in-the-united-states/>

<sup>37</sup> *United States v. Alcoa*, 148 F.2d 416 (2d Cir. 1945).

<sup>38</sup> *See, e.g.*, HYLTON, ANTITRUST LAW, *supra* note 33, at 230-43.



plausible. In the universal search market, in contrast, there is no reason to believe that a vertical search subplatform will replace Google in the foreseeable future.

Instead of relying on *Microsoft III*, the expropriated vertical service could sue Google on the theory that it has monopolized the vertical search market through replication. But this is obviously an implausible antitrust theory. No court would hold that a dominant firm violates the Sherman Act merely by offering a competing product. However, as suggested earlier, a complete expropriation of not only the functionality of the vertical service but also the accumulated information residing in the service (for example, consumer reviews) would appear to be a type of predation. In this event, it should be a sufficient remedy for the platform owner to stop replicating the information on the application and purge the stolen information from the clone. The advantages of the platform owner over the innovator would remain substantial without the stripped-out information.

The expropriation of vertical search services is admittedly a vexing problem under the law. It seems unfair that Google watches the development of vertical search subplatforms, and when a particularly valuable one appears, Google replicates, and thereby kills or badly injures, the subplatform. However, as I noted earlier in the case of Apple and its App Store, it is not within Google's self-interest to replicate every valuable subplatform before the subplatform innovator can recoup its development costs. Such an aggressive posture would discourage the development of vertical search subplatforms, to Google's long-term detriment. Indeed, if subplatform developers began generally to perceive Google's platform as a hostile environment because of the risk of expropriation, they would flock to Bing's search platform. As more subplatform developers migrated along this path, Bing eventually would gain a reputation as a superior search engine to Google.

*Ohio v. Amex* has gained attention because of its implications for digital platforms,<sup>39</sup> though it is mostly an old economy case. Credit card networks existed long before digital platforms. The case involved an antitrust challenge to Amex's anti-steering provisions, which sought contractually to prevent a merchant from persuading a purchaser to use some other method of payment than the Amex card.

*Amex* treats the credit card market as a two-sided market involving consumers, on one side, and merchants on the other. This is a feature of many digital platforms. Google has search consumers on one side and advertisers on the other. Bing's rewards program is an example of a negative price charged to consumers on one side of the platform while charging a positive price

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<sup>39</sup> See, e.g., Mark MacCarthy, *What 'Ohio v. AMEX' really means for tech*, CIO: TECH POLICY PERSPECTIVES (Mar. 26, 2018), <https://www.cio.com/article/3265454/what-ohio-v-amex-really-means-for-tech.html>; Joyce Jung Min Yeo, *Ohio v. American Express: Should Tech Giants Thank AMEX?*, 2018 Colum. Bus. L. Rev. (Oct. 7, 2018), <https://cblr.columbia.edu/ohio-v-american-express-should-tech-giants-thank-amex/>.

to advertisers on the other. Google does not offer rewards for searching, so it charges a zero price to consumers.<sup>40</sup>

Some would argue that Google consumers “pay” by permitting Google to track their activity and harvest data from it. However, from the consumer’s perspective, Google saves them time and money. Rather than spend hours in the library researching a topic, the consumer can find the answer quickly through Google. In the course of doing so, the consumer gives data to Google. The same phenomenon will arise when most automobiles track driver activity and return the resulting data to the manufacturer. When that day arrives, one will be able to argue that drivers “pay” for the activity of driving by giving data to car manufacturers. But why would a driver “pay” to use his own car? Because it is so much faster than walking.

The foregoing analogy between driving a car and using Google illustrates my concerns over the questionable uses of the terms “labor” and “paying with time” to describe consumer activity on digital platforms. The platform consumer is not paying in the normal sense of the term. He voluntarily puts himself in an environment where the platform can gain from harvesting data from his activity. In a competitive environment, that gain to the platform will translate into lower prices, or perhaps negative prices, to the consumer. Competition is the reason we observe Bing offering rewards to lure search consumers from Google.

*Amex* holds that both sides of a two-sided market must be taken into account in an assessment of the relevant market and market power. Evidence that merchants are being charged high prices is insufficient to generate an inference of market power, or abuse, without some analysis of the benefits accruing to consumers on the other side of the credit card network. In a two-sided market, such as the Amex credit card network, the provider may find that its optimal strategy is to charge a negative price on one side and a positive price on the other of the platform. The observation of a positive or monopolist-seeming price on one side of the market is not necessarily a sign of monopoly power. Indeed, in the credit card network, every transaction involves both a theoretical price charged by the platform to the consumer and a price charged by the platform charged to the merchant. The actual price charged by the platform for every transaction is the sum of the two prices. Since the consumer’s price is negative, the sum of the two prices is less than the price charged to the merchant.

Although *Amex* is about market power, it is also about the scope and usefulness of efficiency defenses. Consider the efficiency case for Amex’s restrictions.

If merchants regularly assert to consumers that they accept the Amex card, and then persuade consumers who shop in their stores to use a different card for purchase, then they gain the benefit of attracting Amex cardholders while avoiding the fee of servicing their card. The merchant fee, however, is what funds the rewards Amex gives to cardholders, and thereby retains their loyalty to the Amex card. Thus, when Amex seeks to restrict merchants from steering consumers away from the Amex card, it is seeking to block a type of competition among cards at the till, in order

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<sup>40</sup> Of course, the zero price on Google could be interpreted as a negative price because it fails to cover some imputation of incremental cost to the consumer. But this interpretation would greatly complicate any attempt to use prices as a method of inferring monopoly power.

to promote competition among cards. Amex cannot fund its promotional efforts in the market for cards if merchants pretend to accept the card without really accepting it.

At first blush, *Amex* seems to be a case about honest dealing. As a preliminary matter, it seems doubtful that firm A should be prevented by the law from entering into contracts with merchants in which it asks those merchants not to both pretend that customers can use a certain service of firm A at their store, and at the same time dissuade customers from doing so. One should have a strong argument not to permit such a contract. After all, the merchant is entirely free to reject the contract and go without the services of firm A. But antitrust often rejects freedom of contract principles, and so it is worthwhile to consider the economic argument in more depth.

If the Amex card network were no different from any other card network other than the rewards, then it would be difficult to see a strong efficiency case. This would be no different from a large purchaser demanding a rebate. If a large purchaser demands a rebate, then the result is procompetitive in a sense, but the efficiency case is ambiguous. The large purchaser's rebate might force prices higher for other consumers.

The analogy between the Amex network and a large purchaser demanding a rebate illustrates an interesting feature of the vocal *Amex* critique. Critics of *Amex* have in essence taken the position that a large purchaser should not be permitted to demand a discount from a seller. This position may or may not be consistent with enhancing consumer welfare. It is, however, advocating a restriction on a facet of competition. Moreover, to remain consistent with the anti-*Amex* position, one should also support efforts on the part of retailers to resist demands for rebates or discounts by large purchasers. A most favored nation contract, for example, would facilitate the resistance by sellers of demands for discounts from buyers. Also consistent with the position would be support to retailers when they combine to resist demands for discounts, say by forming an agreement to refuse to discount. Note that these arguments run ineluctably into the position of supporting collusive conduct.

However, *Amex* is not clearly the same scenario as that of a large purchaser demanding a rebate. Amex cardholders constitute a desirable portion of the market of retail consumers, both because they are wealthier than the average and are more likely to make a purchase. If a merchant advertises that he accepts the Amex card, then he attracts those consumers to his store. Since the consumers tend to be wealthier with a higher propensity to spend, the merchant is more likely to offer a range of products and services catering to this type of consumer. Merchants who accept the Amex card also gain access to informational services provided by Amex to its merchant customers.<sup>41</sup> Thus, the Amex card serves as a coordinating device, attracting consumers with a propensity to spend and signaling to those consumers that the merchant offers products and services of their liking. Providing notice that the card is accepted suggests to those consumers that the merchant will offer a higher level of service (attributable in part to the informational services of Amex) to the consumer than does the average retailer. Just as retail price

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<sup>41</sup> On merchant analytics services, see Mary Hurn, *AmEx Debuts Consulting and Analytics Arm for Business Customers*, DATA STRATEGY TECHNOLOGY (Nov. 19, 2009), <https://www.dmnews.com/data/news/13062182/amex-debuts-consulting-and-analytics-arm-for-business-customers>. Amex also provided fraud protection services to merchants.

maintenance may be a method of ensuring brand promotion, customer service, and loyalty on the part of the retailer, the Amex card may serve to support a similar commitment between the retailer and the Amex consumer.

To the extent merchants compete to attract the Amex consumer, they will attempt to take on the features of outlets that cater to such consumers, and this competition generates positive externalities for consumers who do not carry the Amex card but who also shop in the same stores. For example, Amex claims to offer superior fraud protection services, which benefit both consumer and merchant. To the extent those services deter fraud and identity theft, or enable merchants to better detect credit-card fraud generally, there is a benefit to non-card consumers.

Merchants who accept the Amex card will tend to be different from the merchants who do not accept it. Generally, small businesses and those catering to consumers of average wealth and propensity to spend do not accept the Amex card.<sup>42</sup>

The efficiencies associated with Amex's conduct are recognized in the *Sylvania* doctrine,<sup>43</sup> which prescribes rule of reason analysis where intrabrand competition is restricted to enhance interbrand competition. However, *Sylvania*, if read in a narrow sense, applies only to vertical, supply-chain relationships. The Supreme Court has never clarified the degree to which *Sylvania* applies in the horizontal setting, though it has given hints. The Court cited *Sylvania* to justify the application of rule of reason analysis in the horizontal setting in both *NCAA v. University of Oklahoma*<sup>44</sup> and *Indiana Federation of Dentists*.<sup>45</sup> *Amex* can be understood as providing additional clarification on the scope of the *Sylvania* doctrine. *Amex* indicates that *Sylvania* should not be read narrowly as a rule that applies only in vertical relationships between upstream and downstream parties in a supply chain.

Among digital platforms, the combination of negative and positive prices is most obvious in the case of Bing. Every search inquiry is a transaction. For each such inquiry, the advertiser pays a positive price and the Bing user (if he has signed up for rewards) pays a negative price. In the case of Google, the price for every search consumer is zero, while the advertiser pays a positive price for every search. *Amex* clearly presents a hurdle for litigants who attempt to argue that Bing has monopoly power in the market for advertisers, since they would have to show that the net price has increased in a manner consistent with monopoly power.

There are two implications of *Amex* here. First, in many cases, the benefits to consumers on the other side of the platform will not be as significant as in *Amex*.<sup>46</sup> Return to the example of Bing's rewards program. The rewards to search consumers offered by Bing are quite small on

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<sup>42</sup> Lindsay Konsko, *Why Don't More Retailers Accept American Express*, NERDWALLET (March 8, 2019), <https://www.nerdwallet.com/blog/credit-cards/retailers-accept-american-express/>.

<sup>43</sup> *Continental Television v. GTE Sylvania*, 433 U.S. 36 (1977).

<sup>44</sup> *NCAA v. Board of Regents of the University of Oklahoma*, 468 U.S. 85 (1984).

<sup>45</sup> *FTC v. Indiana Federation of Dentists*, 476 U.S. 447 (1986).

<sup>46</sup> On the value of Amex points: *Maximize Monday: What Do 50,000 Amex Points Get You?*, THE POINTS GUY (Apr. 22, 2013), <https://thepointsguy.com/2013/04/maximize-monday-what-do-50000-amex-points-get-you/>.

per-transaction basis in comparison to the prices charged to advertisers.<sup>47</sup> The fact that Bing is a two-sided market does not lead immediately to the implication that proof of monopoly power is nearly impossible after *Amex* because of the difficulty of calculating the net price of the platform service. In most cases, the rewards to consumers on the other side of the platform are too trivial to substantially affect the net price calculation.

Second, *Amex* can be met by a rough assessment of the magnitude of benefits, or the negative price on the other side of the market. Where the benefits on the other side of the platform are substantial, the difficulty of showing monopoly power, under the “direct evidence” hypothetical monopoly approach,<sup>48</sup> will be difficult given *Amex*.

However, the direct evidence approach is only one of two common methods of inferring monopoly power. The more traditional approach, the “indirect evidence” structural approach, involves inferring monopoly power through evidence of a large market share and the existence of entry barriers. This was the approach followed in *Microsoft III*. This common approach to inferring monopoly power is unaffected by *Amex*. Moreover, in the background, one should keep in mind that monopoly power is difficult to define clearly in any event, and even more difficult to measure. In many applications by courts, the monopoly power test serves functionally as a screen against intrusive antitrust in settings where efficiencies are plausible but unlikely to be demonstrated.<sup>49</sup> *Amex* is probably one of those cases.

The Bing example shows why focusing on one side of the market could lead one astray. Bing does not have monopoly power in the search market. However, suppose Bing catered to a subset of search consumers that advertisers prefer to target. For example, Bing users are a bit older than Google users, and this difference may affect the prices Bing charges to advertisers. Suppose also that Bing’s rewards program grew to the point where it offered substantial payoffs to search consumers. In this scenario, Bing might adopt a strategy of charging high prices to advertisers coupled with substantial prizes to consumers.<sup>50</sup> An antitrust claim focusing on Bing’s charges to advertisers might propose that the charges should be accepted as evidence of market power. A court might be persuaded that Bing has market power after being presented evidence that advertisers remained with Bing even after significant price hikes coupled with reward expansions

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<sup>47</sup> On the value of Bing rewards, see Miranda Miller, *The Complete Guide to Bing Rewards: What Are Bing Rewards & How Can You Use Them?*, WORDSTREAM (Oct. 12, 2018), <https://www.wordstream.com/blog/ws/2015/01/08/bing-rewards>.

<sup>48</sup> By the “direct evidence” approach, I refer to the use of evidence of supracompetitive prices coupled with the reluctance of consumers to substitute other products in response to those prices. This approach has become a powerful method of proof in the last two decades. For an example of the direct evidence method, see *FTC v. Staples Inc.*, 970 F. Supp. 1066 (DDC 1997). The trial court’s decision finding monopoly power in the merchant market in *Amex* was based largely on “direct evidence” proof submitted by plaintiffs’ expert.

<sup>49</sup> Keith N. Hylton, *Brown Shoe and the Horizontal Merger Guidelines*, *Review of Industrial Organization*, 39 REV. INDUSTRIAL ORG. 95, 97-106 (2011). On the difficulties of measuring market power, see HYLTON, ANTITRUST LAW, 230-243, *supra* note 33.

<sup>50</sup> One byproduct of such a strategy is that it would hasten the development of property rights in data. As Bing is observed offering rewards to consumers in exchange for their data, other platforms would feel competitive pressure to do the same. Such competitive rewards eventually would generate a system of property in data.

to consumers. Such an inference would be false, because it would confuse a competitive strategy with evidence of monopoly power.

As another application of *Amex* to digital platforms, consider Apple and its App Store. Apple charges a commission of 30 percent to the app developer. An app might have a price of \$0.99 to the consumer, meaning that Apple takes almost \$0.30 from the transaction. The App Store is a two-sided market, like the credit-card network.

For simplicity, let's treat the app price as \$1.00. The revenue to the app developer who prices at \$1.00 is \$0.70, so it as if the developer sells to the consumer at full price of \$1.00, and then pays Apple \$.30. An alternative way to think of the transaction is that the consumer pays \$.30 to Apple and \$0.70 to the developer. These are equivalent ways of describing the transaction.

The revenue to the Apple platform is, theoretically, based on a price charged to both app developer and consumer. The developer pays a positive price to the platform and the consumer pays nothing to the platform. However, it would be equally valid to describe the transaction as one where the developer pays nothing and the consumer pays the commission. Indeed, Apple could easily change the model to one where the consumer pays a percentage fee directly to the platform for each transaction. Instead of taking 30 percent of the price set by the app developer, Apple could directly charge the consumer 43 percent of the price charged by the developer. Assuming the current price of the app is optimal from the developer's perspective, altering the allocation of Apple's charge would not affect the price of the app to the consumer.

Although Apple's App Store seems initially to have the features of a two-sided market, as in *Amex*, it is different. In *Amex*, the charge to the merchant cannot simply be passed on to the Amex consumer. In the App Store, a charge to the merchant can easily be shifted to the consumer with no material effect (other than relabeling). This suggests that *Amex* may not be applicable to the App Store. The App Store is seemingly a two-sided market, but not of the sort observed in *Amex*, because the optimal allocation of the App Store platform charge is indeterminate.

Moreover, there is a similarity between the territorial restriction upheld in *Sylvania* on rule of reason grounds, and the anti-steering restriction challenged in *Amex*. Because of this, I have suggested, *Amex* should be viewed as a clarification or amplification of *Sylvania*. The App Store has restrictions too, but they are not similar in function to the restriction in *Sylvania*.

Apple prohibits its app developers from selling apps developed for the App Store outside of the store, and prohibits consumers from purchasing apps outside of the store. These restrictions are challenged in a case now before the Supreme Court, *Apple v. Pepper*.<sup>51</sup> Apple's restrictions are designed to protect the quality of products in the App Store, and to enable Apple to engage in price discrimination in the sale of iPhones. If Apple were prevented from enforcing these restrictions, it would have to raise the price of the iPhone. This would shrink the iPhone platform, and result in users with low demand for apps subsidizing users with high demand for

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<sup>51</sup> *In re Apple iPhone Antitrust Litig.*, 846 F.3d 313 (9th Cir. 2017), cert. granted sub. nom. *Apple, Inc. v. Pepper*, 138 S. Ct. 2647 (2018).

apps. This suggests that the efficiencies associated with Apple's restrictions on the App Store are quite different from those associated with the Amex anti-steering policy.

#### IV. Conclusion

Digital platforms raise antitrust complaints because the best known, Google and Facebook, appear to be monopolists in many of the markets in which they operate. The platform monopolies that have appeared have resulted because of economies of scale, not from anticompetitive practices. As digital markets mature, digital platforms are likely to differentiate and specialize to some degree, easing some of the current concerns over competition. In the meantime, the business strategies of digital platforms do not present a clear justification for reforming the antitrust laws.