

CHAPTER I: DEFINING “DIGITAL PLATFORMS” AND WHAT CONSTITUTES A “DOMINANT DIGITAL PLATFORM.”

We live in a world rapidly devolving into a set of highly concentrated digital platforms around which major aspects of our economy and our lives revolve. As the CEO of Cloudflare, Matthew Prince, eloquently put it after terminating service to the Nazi organization/publication *Der Stormer*: “In a not-so-distant future, if we're not there already, it may be that if you're going to put content on the internet you'll need to use a company with a giant network like Cloudflare, Google, Microsoft, Facebook, Amazon, or Alibaba.”¹⁵ Or, somewhat more directly: “Literally, I woke up in a bad mood and decided someone shouldn't be allowed on the internet. No one should have that power.”¹⁶

Prince was talking specifically about policing speech, but the same is true about competition and consumer protection. No company should have the power to determine which business models are acceptable and which ones to block as potential competition. People should have confidence that protection of their privacy does not depend on the whims and best efforts of CEOs. Nor is this simply a question of size and market dominance. While the conversation until now has largely focused on the largest platforms, and while there are certainly concerns that apply only to dominant platforms, one of the critical aspects of sector-specific regulation is to identify when a public policy concern needs to apply to all providers regardless of size. For example, Reddit can in no way be considered “dominant,” since as measured by either subscribers or total social media traffic it does not even come close to Facebook's market share (Kallas 2018). But if we are trying to determine the right policy not merely for competition, but to protect consumers, then it doesn't matter whether we're talking about Facebook or Reddit or some fledgling service that doesn't yet exist.

That said, we need to recognize the challenges in figuring out what kind of regulation actually makes sense. Digital platforms combine issues we've dealt with in electronic media (and elsewhere) in novel ways that make applying traditional solutions tricky. As Jean Tirole, the economist who won the Nobel Prize for defining two-sided markets, has observed, unless you know what you're doing and are trying to accomplish, you can't really know if you're addressing your concerns (Schrager 2018). It is therefore necessary to define digital platforms — at least to define them sufficiently to discuss them meaningfully as a class rather than simply as Google, Facebook or other well-known names.

Next, we must recognize that traditional metrics of dominance have proven inadequate to protect competition and consumers (Kahn 2017), and that we need to propose new metrics.¹⁷ Below,

¹⁵ Prince 2017.

¹⁶ Conger 2017.

¹⁷ Others have proposed changing the focus of the antitrust inquiry from the current narrow conception of “consumer welfare” either by changing the antitrust standard to something entirely different (Steinbaum and

I describe how looking at the cost of exclusion (COE) can be used as a metric to determine the ability of digital platforms to exercise market power. This solves the difficult problem of creating precise market definitions when the true strength of digital platforms lies in their combination of versatility and customer size.

Whichever definitions of “digital platform” and “dominance” Congress ultimately adopts, settling this question is a matter of increasing urgency. As digital platforms have become increasingly important in our everyday lives, the need for some sort of regulatory oversight increases. When platforms have become so central to our lives that a change in algorithm can dramatically crash third-party businesses (Oremus 2018), when social media plays such an important role in our lives that entire businesses exist to pump up follower numbers (Confessore *et al.* 2018), and when a multi-billion dollar industry exists for the sole purpose of helping businesses game search engine rankings (DeMers 2016), lawmakers need to stop talking hopefully about self-regulation and “best practices.” The time has come to start putting in place enforceable rights to protect the public interest.

A. Developing Standards to Judge the Behavior of Digital Platforms Requires a Working Definition of Digital Platforms.

Generally, when people say they want increased antitrust scrutiny of, or consumer protection from, “digital platforms” or “edge providers” they have specific platforms in mind. The list usually includes the largest companies such as Google, Facebook, and Amazon, and sometimes smaller but equally well-known platforms such as Twitter. But what about “platforms” that provide infrastructure support invisible to consumers, such as Cloudflare? What about active social networks with a relatively small market share, such as Reddit? What about highly specialized online services that essentially mimic traditional services, such as Netflix? What about applications like the app that only said “Yo”?¹⁸ Did Yo change into a platform once it expanded to let you attach links? Why or why not? Does Walmart’s increasingly online business transform Walmart into a digital platform?

To further complicate the analysis, the mix of functions and markets potentially covered simultaneously by any single platform makes traditional tools inadequate for identifying either markets or unfair and deceptive behavior. When Sen. Lindsey Graham (R-SC) and Mark Zuckerberg sparred over whether or not Facebook had competitors (NBC 2018), each had a point. Zuckerberg argued that what Facebook does overlaps with many different companies, and therefore Facebook

Stucke 2018) or substantially broadening the inquiry to create a more robust concept of consumer welfare. Shapiro, for example, argues that the consumer welfare standard is the appropriate standard but that courts have failed to properly interpret it (Shapiro 2017). The applicability of COE does not depend on the outcome of this debate.

¹⁸ <http://www.justyo.co/>

exists in a “highly competitive environment.” But Graham pointed out that Facebook is unique in offering a service that combines many different functionalities, and unique in terms of its potential reach to billions of users globally.

This question of defining “digital platforms” is not simply important for market definitions in antitrust analysis. It also relates to what constitutes appropriate standards of conduct and consumer protection. Traditionally, we could neatly divide activities into lines of business and determine what sort of behaviors harmed consumers. For example, warnings and disclaimers considered adequate for a line of business where risk is obvious, such as sky diving, might be considered inadequate in other circumstances where the risk is less obvious but just as significant. While many businesses operate multiple vertical or non-related operations, digital platforms are unique in the way they potentially perform multiple diverse functions in diverse markets simultaneously. Comcast owns both Universal Studios the content company and the theme park, but consumers have no trouble distinguishing when they are renting movies from Comcast video on demand as opposed to riding a rollercoaster. By contrast, a middle school student might simultaneously use a combination of Google Docs, YouTube and Google Search to research a homework assignment that traditionally would have been done with a laptop for word processing, books for research and a librarian to help find relevant material.

B. Digital Platforms Are Online Multi-Sided Markets With At Least One Market Operating As a Mass Market Open to the General Public.

As Public Knowledge noted in a recent white paper (Bergmayer 2017), the term “platform” is ambiguous. People have used “platform” to mean a forum for speech, an operating system for development, or a set of components around which users organize their activities. Looking at commonalities of these uses and at the economics and business models of businesses commonly referred to as “digital platforms,” I propose the following definition for “digital platform”:

1. The service is accessed via the internet;
2. The service operates as a two-sided or multi-sided platform, at least one side of which is open to the public and allows members of the public to produce content, buy and sell goods or services, or otherwise interact in ways that enable them to be more than simply passive consumers of goods and services; and,
3. The service enjoys Reed- or Metcalf-type network effects, not merely economies of scale or even Sarnoff network effects.

These three factors combine to produce entities operating under broadly similar economic incentives and raise issues and concerns that are common to all such platforms (even if the services delivered are radically different). They also give rise to issues and concerns not wholly shared by other services. These three elements have also been identified by the House of Lords in two reports on digital platforms and the digital economy as central to the definition of digital platforms, although these reports simply refer to generalized network effects without specifying the type of network effect (House of Lords 2019, House of Lords 2016). As discussed below, however, the distinction in the power of the network effect is critical in understanding the difference between digital platforms and other online businesses that arguably fit the two-sided market paradigm (Rochette and Tirole 2003).

This definition will exclude some companies that many might expect to find, and group together some companies that others do not see as related. Importantly, this is not an attempt to define an antitrust product market. It is an effort to identify a definable sector of the economy. Target and Amazon both sell groceries and generally compete in the retail market, but the ways in which these businesses operate are radically different. Likewise, it may seem odd to treat YouTube and Amazon as digital platforms yet exclude Netflix. But Netflix is essentially an online version of HBO, creating or licensing content and then making it available to consumers. If simply reselling products defined a two-sided market, then any reseller is a “two-sided market.”

These definitions are not necessarily static. As businesses change models, businesses that were not platforms may become platforms, or may purchase or develop affiliates that are platforms. Alternatively, a business may change how it operates and no longer fit the definition of a digital platform. For example, Walmart is replicating Amazon’s reseller strategy through Walmart.com. It is entirely possible that Walmart, or at least its online business, may become a digital platform by deliberately copying those elements of Amazon’s business model that make it a digital platform while the bulk of Walmart’s business remains traditional brick-and-mortar shopping. Similarly, while Amazon may at some point sufficiently integrate Whole Foods to warrant regulating the supermarket as a digital platform, Whole Foods remains a traditional supermarket and should therefore continue to be regulated as such.

This is not unusual in sector-specific regulation. Google Fiber, for example, is clearly a video and broadband provider even though Google Search is neither of these things. Generally, sector-specific regulation applies only to the portion of the business that meets sector-specific criteria. Just as Walmart’s in-store pharmacy is regulated as a pharmacy while the remainder of the store is not, a

business that combines a bricks-and-mortar operation with a digital platform would only be regulated as a digital platform with regard to its digital-platform operations.¹⁹

Similarly, some will object to excluding broadband providers, operating systems, or other companies considered part of the internet infrastructure from the definition of “digital platform.” Again, what is important here are the actual costs of doing business and the ways in which the economic realities of digital platforms change their incentives. Whether one thinks it is “fair” to apply the same standards of antitrust or consumer protection to internet service providers (ISPs) and “edge providers” is a separate question from recognizing how digital platforms actually operate, and how this reality makes their behavior different from other providers (Del Priore 2018).

C. Why Do These Features Matter More Than Others?

Potentially low marginal cost, network effects (particularly the cost of exclusion), and the ability to scale rapidly to absorb millions of new customers make these platforms distinct from other types of businesses. The digital nature of the platform allows it to rapidly deploy new features and to integrate data across multiple apparently unrelated business lines or sources. These factors allow platforms to avoid many of the traditional costs associated with rapid expansion, both vertically and horizontally. These features distinguish platforms from other traditional two-sided markets and allow them to combine elements of traditional communications networks and mass media, as well as of traditional retail-market networks.

Of particular importance, the fact that the service is distributed through the internet allows the platform to enjoy network effects without the cost of building out the entire physical network. Especially, it eliminates the cost of building out the “last mile” to the consumer. This does not eliminate the costs associated with scalability any more than the building of public roads eliminates costs to UPS (or the availability of UPS and other delivery services eliminates costs to those shipping goods to homes and businesses), but it helps reduce cost significantly. Similarly, distribution via the internet to internet-compatible devices, such as home computers or smart phones the end user already owns, reduces the marginal cost to the digital platform and enhances value to the device owner/broadband subscriber — who values the additional functionality provided. Specialized “equipment” is usually in the form of downloadable software. Even this development cost can be minimized — especially in initial stages — by using readily available developer kits and widely available software platforms.

¹⁹ As discussed extensively below, sector-specific regulation might still govern the relationship between affiliates.

Two points bear emphasis. First, platforms will still incur considerable expense — especially as they strive to maintain a distinct and quality user experience while scaling rapidly.²⁰ The idea that reliance on the internet makes platforms somehow “parasitic” or “freeloading” is as absurd as saying that cable operators are “parasites” because they retransmit broadcast programming and cable network programming developed by others, or that catalog-based businesses are “freeloaders” because they rely on the existence of telephone networks and package-delivery networks such as UPS. By the same logic, internet providers, telephone networks, cable operators, and even mailmen are “parasitic freeloaders” charging subscribers based on the value created by the labor of platforms and users.²¹

The second point further underscores the fallacy of viewing as some sort of morality tale the economic description of digital platforms as relying on internet distribution. Dependence on the presence of ubiquitous outside networks is not unique to either digital platforms or the internet. Credit cards have long relied on the near universal availability of the international telephone network to function effectively. Mail order and telephone catalog businesses rely on the existence of numerous pre-existing networks to cut costs. But it is particularly relevant in the world of network effects, where developers of networks frequently must invest in building physical networks to achieve the same network effects.

As noted by Jean Tirole, today’s dominant platforms began as vendors in niche segments (Schrager 2018). Amazon, for example, began exclusively as an online bookstore. The features described above allowed it to expand relatively rapidly first from books into other products, then into streaming, and finally into manufacturing its own generic brands. Once a sufficiently large customer base began using Amazon for one purpose, it was much easier for Amazon to expand to other diverse products and services than it would have been for a traditional book chain such as Barnes and Noble or Borders.²² Its established distribution network (both the online access and the physical process of moving goods from one place to another) could be readily adapted for other goods, without any need to alter existing physical stores or decide which products to display on

²⁰ As Tim Wu notes, Facebook outpaced pre-existing social media networks Friendster and MySpace by virtue of maintaining a stable, reliable user experience (Wu 2016). This required tremendous expenditure on engineers, equipment, and other significant capital expenditures as Facebook “blitzscaled” past its rivals.

²¹ This argument, sometimes called the “value gap,” is frequently employed by businesses that imagine themselves the primary creators of value for general-purpose digital platforms. For example, traditional news media argue that they are entitled to revenue from Facebook because they imagine they contribute significantly to the value of the platform, when in fact only 4 percent of Facebook content is news from traditional media sources (van Zuylen-Wood 2019). It also ignores any reciprocal benefits received by the parties using the platform. This is not to say that platform practices (particularly practices of dominant platforms) cannot be harmful and unfairly capture value from others. Additionally, we might for reasons of policy wish to redistribute value from one part of the supply chain to another. But the idea that a platform unfairly benefits from bringing parties together for the exchange of goods, services, or information is as inaccurate and misguided as arguing that a retailer’s mark-up automatically represents a “value gap” between the retailer and the wholesaler.

²² This is not to minimize the enormous cash expense needed to expand into new markets. But the expenses associated with such expansion are significantly lower compared to traditional businesses and are especially reduced compared to more conventional physical networks that provide strong network effects.

scarce shelf space. The relationship, recommendation algorithms, and convenience of “one-click” shopping were all readily and seamlessly expandable in ways that would be impossible for comparable brick-and-mortar retailers. Perhaps most telling, cloud storage — one of Amazon’s most profitable offerings — essentially began life as an internal network for Amazon cloud storage (Miller 2016). Amazon transformed this into a product by developing secure interfaces and tapping into the existing internet to receive and send customer data.

As with any of the characteristics described above, other successful (or even dominant) businesses will replicate some of the features described. Walmart, for example, likewise expanded its retail services to include pharmaceuticals, groceries, and even pre-paid cell phone service. It is the combination of being online, multi-sided, and open so as to capture a giant audience that confers unique advantages, shapes incentives, and raises concerns of enduring (rather than merely transitory) market power. In particular, the fact that platform users potentially play multiple roles simultaneously distinguishes digital platforms from other two-sided platforms or internet businesses that have clear distinctions between providers and consumers.

D. A Multi-Role User in a Multi-Sided Market.

Unlike in traditional two-sided markets, a single user may simultaneously engage in multiple roles on a platform. A cable television subscriber is never a provider of programming. By contrast, a subscriber to YouTube is potentially both a producer and a consumer of content — and an input into YouTube’s overall data stockpile. A customer on Amazon may simultaneously be a reviewer, a buyer, and a publisher or retailer. This has several effects on the platform’s ability to extract value, avoid traditional costs, and maximize bargaining power over all platform users regardless of their comparative value or their role in the transaction.²³

Allowing users to play multiple roles simultaneously contributes to greater enhancement of the network effects experienced as part of the digital platform. For a standard network effect, the value of the network increases by N for each new user. (This is sometimes called a “Sarnoff” network, based on the idea that the total number of broadcast affiliates dictates audience reach and therefore the value of the network.)

But networks that allow users to organize themselves experience greater value than the simple increase in value N . For example, in networks that permit users to interact with one another, each new user facilitates an entirely new set of potential pairs with each pre-existing user. As a result, the value of each addition increases the value of the network overall by N^2 . For example, in a

²³ For more on competition within and between two-sided markets generally, see (Rysman 2009).

classic telephone network, any user can call any other user. Users are not limited to being either “call senders” or “call receivers.” As a result, the total number of combinations/possible users includes the value of each user as a sender **and** as a receiver, or N^2 . Where users can form groups of any size, not simply pairings, then the value of the network increases by 2^N (Tongia and Wilson 2011).

Additionally, this “multi-sided market” maximizes the “long tail” effect, as popularized by Chris Anderson in his book of the same name (Anderson 2008). The idea of the “long tail” is that the value of a platform is derived from aggregating large numbers of niche products (the “tail”) rather than focusing on a few very successful products (the “hits”).²⁴ This is distinct from the more traditional network effect (although platforms also experience network effects). It is also different from economies of scale, which allow businesses to reduce marginal cost per unit due to increased scale (again, sufficiently large platforms may enjoy these as well). Platforms do seek “hits” as well as the “long tail.” But by increasing the number of users in multiple roles, the platform enhances the generation of the long tail (and increases the likelihood of hits) by growing its seller/production base as it grows its buyer/customer base.

Consider, for example, a traditional cable package or an online streaming service such as Netflix. It is easy to divide the platform between subscribers/viewers and programmers. The value to the user derives chiefly from the availability of a suite of programming. If a major programmer withdraws its programming, the video provider may suffer as customers migrate to rival distributors. A package that lacks “must-have” programming (such as local live sports) will prove less able to attract subscribers than rivals who have it. By contrast, Amazon does not particularly worry about any specific streaming content because its streaming service is merely part of its overall bundle. Streaming is one more product, like batteries or self-published novels, that attracts some portion of consumers. It is part of the overall long tail of goods and services Amazon offers.

Alternatively, consider Google and YouTube. There is no single content that attracts all of YouTube’s customers. Even the most popular YouTube channel accounts for a tiny fraction of total

²⁴ Of course, platforms also seek to have “hits” and not just “long-tail” products and services. But while useful to deepening engagement and attracting more revenue, hits are not a critical or even necessarily a significant part of the platform’s revenue. *House of Cards* transformed Netflix, and its subsequent independent video creations give people a reason to subscribe (especially as other content creators such as Disney increasingly pull their content from Netflix to provide programming for their own streaming services). By contrast, *The Marvelous Mrs. Maisel* and *Transparent* boost Prime’s value proposition and deepen engagement with Amazon users, but are not primary drivers of income or even necessarily primary drivers of Prime subscriptions. It is the combination of goods and services accessed via Prime that attracts and holds subscribers, which reflects the multiple roles (shopper, streamer, reviewer) that any user may take on at any time in their engagement with Amazon. This combined value raises the COE to users, which helps to maintain market share, which raises the COE to the other side of the platform. The key (and a reason COE better captures the power of a platform than traditional market analysis) is that these contributions to value are synergistic.

YouTube views. As a result, no single programmer, or even group of programmers, can effectively negotiate with YouTube. Similarly, any website can withdraw its content from Google’s search index. Doing so, however, will have little impact on the value of Google to users and will therefore have *de minimis* impact on Google’s revenue — which derives from targeted ads. It would require some huge portion of the internet to “go dark” to Google Search (but remain accessible to a rival search engine) to significantly affect the value of Google Search to customers — and therefore to advertisers. This is simply not realistic to expect.

Accordingly, digital platforms may begin with much greater marketing power vis-à-vis parties that use the platform to market or otherwise distribute goods and services. This was dramatically illustrated during Amazon’s dispute with Hachette in 2014 (Kellogg 2014). Amazon was able to sustain a months-long negotiating dispute with the fourth-largest book publisher in the United States. As reported by *The New York Times*, “Supporters of Amazon publicly questioned the need for Hachette, the fourth largest publisher, to exist in an era when authors can publish themselves” (Streitfield 2014). Amazon’s enormous revenue from multiple sources and its ability to replace Hachette’s authors with enough independent authors to mitigate the loss of popular Hachette titles gave Amazon enormous power to set terms.²⁵

E. Why These Factors Potentially Create Enduring Market Power in Ways That Challenge Modern Antitrust Analysis.

These features of platforms are not intrinsically anticompetitive in and of themselves. To the contrary, platforms empower consumers and producers to play multiple roles simultaneously, which creates many important benefits. Services like Patreon and Twitter make it easy for anyone to disintermediate traditional gatekeepers and leverage that platform to find other interested parties and engage in whatever joint, community-related activities the platform supports. For example, “Black Twitter” describes how traditionally fragmented and marginalized African American activists and communities can bypass traditional bottlenecks to disseminate news, organize, and otherwise create a distinct cultural identity using the open Twitter platform (Freelon *et al.* 2018). Teachers organizing for higher pay in West Virginia and elsewhere credit Facebook with providing them the tools to communicate and organize (O’Donovan 2018). Millions of people use platforms such as eBay or Etsy to supplement their income or create entirely new businesses without the need to negotiate individually with the platforms. The ability to create content and distribute it through platforms such as YouTube, Amazon, or Facebook gives individuals and organizations freedom to

²⁵ Amazon did not achieve a total victory. But business negotiations are not all or nothing. The point here is simply to illustrate how Amazon’s ability to allow any customer to be an independent author, combined with its vast inventory of products, gave it far greater power than would have been expected.

distribute their work whether or not they can prove to a traditional publisher or retailer that it will be a commercial success.

At the same time, however, both experience and economics demonstrate that digital platforms have a strong, perhaps overwhelming, tendency to concentration. The freedom of distribution created by platforms can be undermined by the harms that flow from concentration. For example, Twitter and Facebook may allow African Americans and others traditionally marginalized by mass media to both communicate within their respective communities and publish their stories in a way accessible to the general public, but it also places control of this ability in the hands of a few corporate gatekeepers where African Americans and other people of color, women, and others are under-represented. Left unchecked, as we have already seen, decisions by platform operators often have disparate impacts on these communities, differences that become particularly important and dramatic as important events unfold (Tufekci 2014; Holcomb 2014). Similarly, whether or not YouTube intends to act in an anticompetitive fashion, changes to its algorithms can have a negative impact on tens of thousands of businesses that rely on YouTube to monetize their content (Alexander 2018).

In short, regulation of digital platforms (and sector-specific regulation generally) is not predicated on the moral character or trustworthiness of individual companies. Government has a responsibility to regulate commerce in a manner that protects and promotes the public interest. This includes prophylactic action to preclude concentrations of power inimical to the marketplace in goods and services or the marketplace of ideas. To borrow an analogy from a lecture by Professor Walter Effross,²⁶ health inspectors come to restaurants prior to their opening to make sure the food is safe and no one gets sick. Critics wait several months before reviewing a restaurant, however, in order to see if the restaurant is worth reviewing and to give it time to work out any problems with the menu or service. Congress and federal regulators need to think of themselves as health inspectors, not restaurant critics.

1. The “Attention Marketplace,” While a Useful Concept in Many Ways, Is Not a Useful Concept for Competition Policy.

The ability of platforms to put all this together creates a combination of user “stickiness” and a flexibility of revenue stream that, once enormous market share is achieved, is likely to become enduring. It creates a common set of incentives among platforms to engage in a strategy of taking long-term losses and cross-subsidizing services in order to defeat new entrants and maintain sufficient dominance across sufficient markets to hold monopsony power across a wide swath of

²⁶ Heard by the author, no written citation.

related industries. It drives innovative startups to seek acquisition by dominant platforms rather than invest in competing services, and it drives dominant platforms to acquire potential competitors not merely because the acquisition of the potential competitor increases this depth of services, but because it neutralizes a potential rival.

This protean “market definition” challenges existing antitrust jurisprudence in several ways, particularly in light of the increasingly procrustean manner in which antitrust requires fitting goods and services into precise market definitions. For example, ease of entry and low switching cost — features associated with platforms because of their digital nature and accessibility online — are usually mitigating factors against a finding of market power under traditional antitrust analysis. This is particularly true where the service does not directly compete in a traditional sense. But in the realm of digital platforms, this may eliminate a potential competitor.

Let us consider two specific examples that illustrate this point. Many advocates argue that Facebook should not have been allowed to acquire Instagram or WhatsApp. But at the time Facebook acquired Instagram, Facebook was a “microblogging” site whereas Instagram was a “photo sharing” application. While the case against allowing Facebook to acquire WhatsApp was stronger, regulators still struggled to place both companies in the same market as traditional competitors given their different business models (microblogging versus messaging). That Instagram or WhatsApp were potential competitors to Facebook was not something regulators found easy to embrace. An even more dramatic example is Google’s acquisition of YouTube. On their face, these businesses are entirely different. But their combination gave Google an enormous advantage in the online advertising market.

By acquiring platforms that are experiencing high growth, even where they do not directly compete in a traditional sense, dominant platforms can dramatically delay or even prevent the emergence of future competitors. The digital and online nature of the dominant platform and the acquired platform reduce the cost of integration and increase the depth of service offered by the dominant platform, making it more difficult for firms to compete.

Finally, the multiple roles and service depth of platforms also stymie traditional antitrust analysis because there is no single, easily definable market. Facebook is not merely a “social network” competing with LinkedIn, Twitter, Reddit, and LiveJournal. Facebook is a unique combination of services that includes a massive network of businesses, political speakers, and other social networks like WhatsApp and Instagram. This goes beyond traditional product and market differentiation, because the value to users on both sides of the platform is in part derived from the *combination of services, not competition among services*.

Again, we can find some analogies in other markets. For example, cable operators argued for decades that individual broadcast television stations, movies, and home-video recordings were all competitors for “eyeballs” and thus part of the same market. Regulators rejected this argument because while each of these replicated some piece of what a cable subscription provided, the unique combination of multiple sources of programming distinguished cable (and, later, other “multichannel video programming distributors,” or MVPDs) from these other providers of video. No matter how many times a given customer might go to the video store rather than pay for a video on demand from the cable operator, the same customer also found value in the additional programming networks and continued to subscribe to the cable operator. Similarly, no matter how much time the cable subscriber spent on broadcast television, the subscriber still paid the same subscription fee on a monthly basis to the cable provider to receive the additional programming services (or superior reception, or both). As a result, the supposed competition for “eyeballs” was meaningless. To get access to all the services a subscriber wanted at any given moment, the subscriber paid the same monthly fee. By contrast, cable operators do compete directly with other MVPDs, because a subscriber to a direct broadcast satellite service does not usually also subscribe to a cable service. MVPDs generally have the same types of programming networks (a mix of live programming, video on demand, and other services) and require a monthly subscription fee.

The effort by some to define multiple platforms into a single “attention economy” and concomitant “attention marketplace” falls short of the way in which this multifaceted combination creates value to the platform (and, to be fair, to users as well) and plays havoc with traditional market definitions.²⁷ Because switching costs are extremely low, and because the applications through which users access these services are generally non-rivalrous, the platform can continue quite nicely as users cycle from low engagement to high engagement. Certainly, the platform’s incentive is to maximize engagement. But market power by dominant platforms proves more enduring than predicted because, in contrast to other markets where consumers buy either one product or another, I can happily continue to consume several competing products with virtually no effort. The ability of these platforms to form joint promotional partnerships further enhances the endurance of market power once established.

Thus, although Twitch and YouTube are competitors in the video streaming market using classic antitrust analysis, my momentary shift in attention from one platform to the other has not deprived either platform of a customer. Each platform still derives value by tracking my personal information, and when my attention shifts back to whichever platform previously lost my attention,

²⁷ Again, the general idea of the “attention market,” like its predecessor “competition for eyeballs,” is an important concept and important to understanding the business model of many platforms. But the concept should not be asked to bear more than it can support by attempting to use it as an antitrust market like grocery stores or office supplies.

that platform will still serve me targeted advertising. A platform may lose me permanently over time, but the competition among platforms in the “attention marketplace” is much more like the competition between cable operators and video rental stores in the 1990s “market for eyeballs” than competition between an incumbent cable operator and a rival MVPD. On any given night I may rent a video and not watch any cable programming, but I am still paying for the entire month and cable has lost none of its attractiveness/importance because I took a night off. Similarly, I am unlikely to completely abandon a platform in the long term simply because my short-term attention turns elsewhere.

2. The Two-Sided Platform Structure Creates Perfect Information Asymmetry.

The combination of features that defines digital platforms puts the platform in a unique position with regard to platform users and control of information. The platform enjoys essentially perfect information with regard to the activities of users on the platform. Importantly, this includes not simply information about consumers, but also information about content producers, advertisers, or anyone else using the platform for any purpose. By contrast, the user will have access only to the information that the platform enables the user to collect. Additionally, the platform can make different levels of information available to different users on an individualized basis — although sophisticated users may also find ways to reverse-engineer data and exploit the platform in potentially harmful or even dangerous ways.

This perfect asymmetry has implications well beyond privacy and surveillance (although these are obviously enormous concerns). It has significant implications for regulating platforms to promote competition and protect consumers. For example, Amazon reportedly uses information about sales by third-party vendors through its platform as market research to develop its own line of competing products, and has been accused of favoring its own products in its recommendations (Cresswell 2018; Ip 2018). Google has been accused of manipulating search results to favor its own products (Luca *et al.* 2015; Duhigg 2018). Facebook has admitted to conducting secret experiments on its users to influence their moods (Goel 2014). Advocates have raised concerns that the ability to understand users and their behavior to an unprecedented degree facilitates “design for addiction” (O’Brien 2018). Even when the platform itself does not manipulate the results, individuals or commercial rivals may discover ways to manipulate the system so as to deceive unwitting consumers or deceive the platform itself into acting against a rival (Nadler, Crane and Donovan 2018; Dzieza 2018; Stevens and Emont 2018).

In particular, the opaque algorithms that platforms use to make recommendations and order the presentation of products, news, or services can create concerns that even the platforms cannot anticipate. Their ability to analyze user behavior and to combine information about specific

individuals with knowledge of how similar users behave to make increasingly accurate predictions, drives the recommendations of Google’s search algorithms, Facebook’s news feeds, and Amazon’s product recommendations. But a user — whether a consumer or a content producer — cannot easily determine the factors driving the recommendations. Even advertisers who specify user attributes for targeted placement have tremendous difficulty confirming independently that their advertisements are being placed appropriately.

To repeat a now familiar caveat, a platform’s ability to control information flow is not, in itself, a good or bad thing. It is a feature of the platform’s digital nature, combined with the integration of the component parts via the internet. Consumers enjoy enormous benefits from recommendations tailored to their needs or tastes. Search tools and tools for organizing the proliferating deluge of information depend on absorbing and processing vast amounts of information, and a platform’s ability to limit dissemination of that information helps protect user privacy. These benefits depend on companies’ ability to prevent third parties from manipulating these algorithms for their own purposes; this strengthens the need to keep secret the information used and how the algorithm operates.

Nevertheless, the fact that near-perfect control of information is both a natural artifact of the platform and in some cases a necessary (or socially desirable) feature of the service does not eliminate concerns. To the contrary, it highlights the need for regulators to analyze carefully both the dangers and the benefits of this naturally occurring information asymmetry, and to arrive at a reasonable trade-off between enabling the positive and mitigating the risk of the negative.

F. Defining “Dominant” Is Generally Tricky, and It’s Especially Difficult in the World of Digital Platforms.

Regulation does not apply solely in cases of dominance. That said, the question of what constitutes “dominance” or “market power” remains relevant to sector-specific regulation. The same actions that may be pro-consumer or pro-competitive when taken by non-dominant firms may be anti-consumer or anticompetitive when taken by a dominant firm. Restrictive contractual terms allowing non-dominant players to serve niche markets, for example, may be abusive when employed by dominant firms to limit consumer choice or avoid liability for negligent conduct.

There is no generally accepted definition of what “dominance” means (Bergmayer 2017). Just as regulators struggled with “how big is too big to fail” after the financial crisis 10 years ago, regulators and antitrust enforcers have repeatedly struggled with the question of what makes a firm “dominant” or “non-dominant.” In the past, regulators and antitrust enforcers have looked to factors like “market share,” “incumbency,” being a “critical buyer,” or some other indicia of the ability to

exert control over the behavior of others contrary to how we might otherwise expect them to behave in a competitive market. Sometimes, as with too-big-to-fail, regulators look to balance the cost of regulation against the potential risk to the sector or economy as a whole.

Even if we could settle on a specific metric, what constitutes “dominant” is subject to considerable debate. At one time, antitrust law established a presumption that any entity with 30 percent market share would be considered “dominant.” (Woodcock 2017) This presumption, called the *Philadelphia National Bank* presumption,²⁸ is still generally used in Europe for creating a rebuttable presumption of market power. However, the 30 percent benchmark is inconsistently applied in the U.S. The Federal Communications Commission declared AT&T a non-dominant long-distance carrier despite a nearly 60 percent market share (FCC 1995). On the other hand, in *FTC v. Toys “R” Us*,²⁹ a federal court affirmed the FTC’s finding that Toys “R” Us had sufficient market power at approximately 20 percent market share to support an antitrust enforcement action. As these limited examples show, what constitutes dominance varies depending on multiple factors.

For reasons discussed above, traditional economic measures of dominance and market power are particularly difficult to apply to digital platforms. It is a characteristic of these firms that they achieve dominance by a breadth and depth of services that make it challenging to use traditional market definition and to identify actual or potential competitors. In addition, because digital platforms have varied and novel business models, economic analysts have struggled to use traditional tools to identify an appropriate approach to digital platforms, let alone create consensus around how to define market power or dominance among online platforms.

1. Cost of Exclusion from the Platform (COE) Is a Useful Proxy for Determining the Ability to Exercise Market Power — Especially When Traditional Market Definition Is Extremely Difficult or Impossible to Determine.

A key element of the “network effect” is that the network becomes more valuable to everyone on it when more people use it. The inverse is equally true. The larger the network, the greater the cost of exclusion from the network, either as a direct cost or as lost-opportunity cost if access to the platform would otherwise confer a significant advantage.

Consider the traditional evolution of unregulated interconnection regimes from the telecommunications and internet transit worlds. Initially, no network is dominant, and so carriers have an incentive to exchange traffic for free. Everyone needs everyone else and derives roughly equal value from interconnection. As some firms grow faster than others, the larger networks

²⁸ See *United States v. Philadelphia National Bank*, 374 U.S. 321 (1963).

²⁹ 221 F.3d 928 (7th Cir. 2000).

become much more valuable. Smaller carriers suffer more from their inability to interconnect with larger carriers than larger carriers suffer from the inability to interconnect with smaller carriers. Larger carriers are therefore able to demand payment from smaller networks for reaching customers on their larger networks. If the cycle continues and the size disparity increases, it becomes increasingly easier for the larger network to offer value to customers without the smaller network, and harder for the smaller network to offer value to customers without the larger network. In an extreme case, such as AT&T's control over the "long lines" (national long-distance lines) at the beginning of the 20th Century, this network dynamic can create a monopoly (Wu 2010).

Tongia and Wilson argue that the advantage of a new network grows exponentially until approximately 50 percent of the applicable population adopts it. At that point, a phase shift occurs and the cost of exclusion becomes far more significant than the advantage of inclusion (Tongia and Wilson 2011). As a general rule, Tongia and Wilson propose that the cost of exclusion increases exponentially at the 50 percent mark. This does not mean that dominance is limited to cases where a network includes 50 percent of the applicable population. As Tongia and Wilson also observe, "Inclusion Framing" (the advantage to the individual conferred by being part of the network) can be as potent as "Exclusion Framing" (the cost to the individual of being excluded from the network), depending on the circumstances. For analyzing potential market power (or other impacts on the individual³⁰), denial of the "Inclusion Value" may be as potent as the direct cost of "Exclusion Value."

2. How to Compute COE.

As Tongia and Wilson explain, network effects have two components. The first is the direct value of the network, its *autarkic* or *intrinsic* value. This measures the direct advantage created by the network. For example, a telephone provides the ability for me to communicate with everyone else on the telephone network in a way that traditional mail and telegraph do not. The second component is the *complementary* value. This describes the increasing value of goods and services associated with the network. For example, fax machines, which create a new use for the telephone network, become more valuable the more people subscribe to the telephone network. At the same time, fax machines also make the network more valuable to each individual connected, since they can now communicate by voice or by transmitting documents to each other.

Tongia and Wilson argue that the cost of exclusion should include the loss of value of the total network value, both exclusion from the intrinsic value and exclusion from the complementary

³⁰ As an example of a non-market value where exclusion or inclusion is potentially highly significant, consider public safety alerts. A user excluded from a network has a diminished likelihood of receiving information (or sending information), even if a public safety authority transmits alerts on multiple networks. Exclusion from Twitter or Facebook may mean a failure to receive vital information not included in a text message alert.

value. This is determined by taking the total network value (as determined by any network law) and dividing it by the total number of excluded participants. This latter value is determined by taking the total potential number of subscribers/network users (what Tongia and Wilson describe as the “applicable population”) less the number of actual users. To express this mathematically: $COE = \frac{\text{Total Network Value Determined by Relevant Network Law}}{\text{Total Number of Excluded Individuals } (=N - n \text{ where } N \text{ is the total applicable population and } n \text{ is the total number of actual users})}$.

In applying these concepts to online platforms, we must keep several caveats in mind. First, to determine COE we must determine the “applicable population.” Factors that may limit this include the nature of the product offered by the platform, the language in which these services are provided, and the general geographic area targeted by the platform. A platform may potentially reach all broadband subscribers, but the applicable population may be far smaller. For example, if the platform offers services in English, only provides service in the United States, and requires reliable broadband speeds of 25 mbps download and 3 mbps upload, then the applicable population is significantly reduced. The applicable population may be further reduced by the limited service offered by the platform. For example, an online auction platform may be open to the public, but the applicable population is limited to those looking to buy or sell products at auction, not the total universe of broadband subscribers.

Tongia and Wilson also note that use of COE does not make the “inclusion framework,” the direct value of the network, irrelevant to considering cost of exclusion. Being excluded from a potentially valuable tool can be quite significant in both competitive terms and overall social-welfare concerns. Accordingly, a network might be considered dominant (that is, able to exert some measure of market power, or some measure of significant social harm on an individual) with less than 50 percent share of the total applicable population. To translate this into a regulatory presumption, a platform can (theoretically, at least) be dominant at any level of penetration if it conveys a sufficiently large advantage. But such a determination requires case-by-case determination. As discussed below, a network that provides unique access to government officials, reporters, or some other particularly valuable population, might be considered dominant for certain purposes despite a comparatively low share of the total applicable population. But once a platform’s share of the applicable population reaches 50 percent, a phase shift occurs so that the cost of exclusion rises exponentially for each individual who remains excluded. At this point, a platform should be *presumed* dominant for all regulatory purposes.

3. COE Is Extremely Flexible and Focuses on the Central Reason Why We Care About Dominance.

An advantage of using COE is that it encompasses a wide range of potential costs and potential actors, while avoiding the arbitrary definitions that have plagued traditional efforts to determine market dominance. For example, it is clear that COE includes the loss of a substantial market for producers of goods and services, or loss of an important distribution network. At the same time, however, it takes into account the loss to consumers from being excluded from a specific platform. For example, whether or not we consider Twitter “dominant” in a traditional economic sense, it is clear that a business excluded from Twitter experiences some cost from its inability to communicate with Twitter subscribers. These costs include more than those associated with traditional advertising or direct sales: Companies use Twitter to respond to real-time events such as a blackout during the Super Bowl (Huffington Post 2013) or a tweet from a celebrity (Phillips 2018), and companies monitor social media to address concerns and respond to criticism. These benefits won’t necessarily make or break a business, but loss of access to the platform would certainly carry the significant cost of losing a valuable channel of communication with the public.

We can equally apply this analysis to Twitter subscribers. In a case involving President Trump blocking critics from his Twitter feed, the district court observed that blocking the individuals in question deprived them of the ability to interact directly with the President’s statements, denying them the ability to engage in important and timely political discourse (Cole 2018). Greg Norcie and L. Jean Camp have written an analysis examining the costs of abstaining from social media generally (Norcie and Camp 2015). As they demonstrate, exclusion from social media platforms can impose significant costs on the individual that traditional metrics for measuring dominance do not address.

As an additional benefit, using COE directly addresses the reason we want to distinguish dominant platforms from non-dominant platforms in this context. Where the cost of exclusion is small, we are unlikely to have any particular concern about the practices of the platform distinct from whatever general concerns we may have about platforms more broadly.

COE does not prescribe which regulation to use, but rather what to regulate. Once COE shows us that a firm is dominant, that may indicate a need for some kind of action that only addresses this dominance indirectly. For example, if we determine that a platform such as Google is dominant and that the key to that dominance is high market share in search, the remedy might involve actions to stimulate competition rather than directly regulating how Google manages its search engine. By contrast, if the primary harm in being excluded from Twitter is the more limited harm of losing one of several important conduits for reaching customers, the necessary regulation may be limited to an explanation and right to challenge arbitrary exclusion. Again, context matters

enormously.

While COE measures dominance, it does not mean that exclusion is the only harm. Rather, COE works as a measure of dominance in this context because if the platform imposes some new rule or cost on a take-it-or-leave-it basis, the platform participant must decide whether the cost of acceptance outweighs the cost of abandoning the platform. This is roughly the digital-platform equivalent of the standard test in American antitrust for determining the existence of market power, the “small but significant and non-transitory increase in price” (SSNIP) test. SSNIP operates on the theory that a firm with market power can raise prices above the existing, more competitive rate and therefore increase its profits over the competitive rate. At the same time, even a monopolist cannot raise prices without limit. As the price goes up, customers demand decreases. Even life-saving medications can be priced so high that people who desperately want them cannot afford them.

SSNIP attempts to predict whether a company can raise prices a small but noticeable amount long enough for customers to notice and potentially find alternatives if those alternatives are readily available, without losing so many customers that the price increase actually results in lower rather than higher profits. If the company can impose such a “small but significant and non-transitory increase” in price above the competitive price, then the customers required to bear such a price increase constitute the relevant market of the hypothetical monopolist. COE provides a means of measuring a similar effect in the absence of clear evidence with regard to prices or output (which are largely inapplicable measures when consumers receive the service for free and/or generate the bulk of the content). If a platform can alter the rules of engagement in a way that makes the platform less attractive or can impose new costs on users without any compensatory advantages and without significant loss of customers, the platform clearly has market power.³¹

Finally, simply because exclusion may impose costs — perhaps substantial costs — does not mean that exclusion is *per se* anticompetitive or anti-consumer. Indeed, in some cases it may even be warranted. Even public utilities, services so essential that we consider it the responsibility of government to make them accessible to everyone, may terminate service under certain circumstances. For example, although public utilities generally must provide customers with significant grace periods for late payments and may have lengthy procedures to prevent consumers from being cut off, a utility may ultimately refuse to serve a customer who does not pay. The telephone network is a common carrier network, but it may refuse to allow a customer to connect a device that will do damage to the network.

³¹ To be clear, COE is an additional measure that serves as a proxy for market power — especially in situations that do not meet traditional market definitions, such as the “marketplace of ideas” or direct access to government officials. It is not intended as the sole measure of market power for digital platforms.

Similarly, there may well be circumstances in which dominant platforms or platforms with high cost of exclusion can (or arguably even should) exclude certain kinds of speech or certain types of businesses or products. Again, the point of using COE to measure dominance is not to ensure that users of platforms never experience costs. The point of using COE as a proxy for dominance/market power is to determine when the (potential) behavior of a digital platform might threaten the public interest. Determining what regulation, if any, is needed is an entirely separate exercise.

Now that we have determined what sort of entities we are talking about, and the circumstances under which regulation may be appropriate, we are finally prepared to explore what about these platforms we may need to address to protect the public interest.