Antitrust and Platform Monopoly

Herbert J. Hovenkamp

University of Pennsylvania Carey Law School

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# ANTITRUST AND PLATFORM MONOPOLY

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Herbert Hovenkamp*

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*James G. Dinan University Professor, Univ. of Pennsylvania Carey Law School and The Wharton School. Thanks to Erik Gordon, Erik Hovenkamp, Elizabeth Pollman, Richard Schmalensee, and D. Daniel Sokol for commenting on a draft, and to Nicholas Whetstone for valuable research assistance.
I. INTRODUCTION

Should antitrust policy do more to promote competition in digital platform markets? The claim that antitrust is falling short comes from both left and right, but also provokes strong disagreement. How much of the call for action is a response to real competitive harm and how much to large firm size, personal animus, myopia, perceived political power, or something else is unclear. This is evidenced by the diverse responses\(^1\) to a House Judiciary Committee’s request for recommendations concerning digital platform monopoly in early 2020. Some believe that everything is fine and we should do nothing.\(^2\) Others would drive through the industry with a power mower, breaking up the platforms with very little thought about the impact on output or output.


\(^2\) E.g., Testimony of Conservative Academics, supra note __.
consumers. One question underlying all of this is whether established antitrust economics is sufficient to address competition problems in digital platforms, or are they so unique that we need an entirely different approach?

This paper considers how the antitrust laws can be used effectively to discipline anticompetitive practices by digital platforms, including very large platforms and those that are two-sided. One area that may require new legislation or at least a major change in judicial thinking is platform mergers. Beyond that, there are several things that the courts could do better without new legislation. One novel proposal is that platform competition be induced by restructuring ownership and management rather than by breaking up the platforms themselves. This could enable more competitive performance without the significant losses in productivity and consumer value that are certain to accompany a breakup. Further, existing law provides ample precedent.

The Chicago School of antitrust in particular pushed a mindset that saw markets as all alike. This leaves them toothless when confronted with something that behaves in unexpected ways. Others are more circumspect, appreciating that markets are institutions that can be quite different from one another. As a result, they require more specific fact finding rather than overly broad policy generalizations.

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3E.g., Zephyr Teachout, Break ‘Em Up: Recovering Our Freedom from Big Ag, Big Tech, and Big Money (2020); Sophia Lam, It’s Time to Break Up Big Tech, The Gate (Oct. 20, 2019), http://uchicagogate.com/articles/2019/10/20/its-time-break-big-tech/.

4See discussion infra, text at notes __.

5See discussion infra, text at notes __.

Digital platforms are merely one of the variations. For example, in the AmEx case Justice Breyer in dissent was much more comfortable than the Court’s majority with factual examination of the digital platform before it as a market. The majority spoke mainly in generalities, largely ignored the record, and drew legal conclusions that are inconsistent with fundamental economic principles. Antitrust law needs to treat digital platforms for what they are: markets that have some unique characteristics, but markets nonetheless.

A digital platform is a website, app or other digital venue that interacts commercially with one or more groups of users. Not every website is engaged in commercial activities; however, the antitrust laws apply only to commerce. A “two-sided” digital platform is one that facilitates activities involving at least two different but interdependent groups of users. In some cases (Amazon, eBay, Uber, AmEx) transactions between these groups are negotiated directly on the website and there is a one-to-one correspondence between exchanges on the two sides. In other cases (Google Search, Facebook, Match.com, and most periodicals and electronic video games) users do not make commercial transactions directly with one another, but commercial transactions do support the platform as a profit center.

This paper first considers the extent to which competition is possible or desirable in markets dominated by digital platforms. Then it discusses the overall shape and form that competition rules for platforms should take. Notwithstanding overwhelming evidence to the contrary, digital platforms are often said to be “winner-take-all” markets. For the great majority of them this is not the case, as we

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9See 1B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶260-262 (5th ed. 2020).
show. Even assuming that some platforms are winner-take-all, however, the policy consequences are unclear. Winner-take-all status may entail less antitrust enforcement because the market is a natural monopoly in any event, and thus should be served by a single firm. Several older antitrust decisions embraced this view by recognizing a


See discussion infra, text at notes __.
“natural monopoly defense” to antitrust actions. Under this reasoning, natural monopoly status may indicate a need for regulation, such as we often apply to public utilities, but not antitrust enforcement.

Others believe natural monopoly status augers for increased antitrust enforcement, because the market itself will not discipline dominant platforms. Further, antitrust is superior to regulation, because regulation rarely comes close to mimicking competitive behavior. Further, statutory regulation necessarily generalizes and applies the same rules to several firms in an area, while antitrust requires inquiry into specific facts about each firm.

Antitrust is particularly important when characterization of a platform as a natural monopoly was incorrect or is undergoing technical change. If the market contains room for competition among multiple incumbent firms, regulation is usually a poor alternative. Regulation also entrenches existing technologies, making turnover much less likely. For example, the FCC’s longstanding willingness to protect AT&T’s dominant position from all rivals very likely held back

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innovation in telecommunications for decades. Of course, proper regulatory design might partially mitigate this. But if viable and robust competitive alternatives are available, regulation usually is not the best answer.

The significance of natural monopoly is that if a firm enjoys natural monopoly status it can keep rivals out indefinitely by simply charging a profitable but sufficiently low price. That will not necessarily happen, however. If it becomes greedy and charges too much, entry may occur. Further, changes in technology or innovation by others may change its natural monopoly position. But under constant conditions it need not engage in exclusionary practices in order to maintain its position.

While we often use the term “natural monopoly” to describe a firm or a market, natural monopoly status actually applies to particular inputs or technologies. For example, an electric utility is said to be a natural monopoly because of a particular technology – namely, it transmits power down a network of wires that are installed and operated most efficiently if a single wire goes to each customer. However, the electric company also generates power, and generation can be structured competitively. It may produce its own fuel through coal mines, oil fields or wind farms, all of which can be produced competitively. Even if a digital platform is determined to be a winnertake-all, or natural monopoly, market, it is important to distinguish the particular assets and operations that are in fact natural monopolies from those that are not. For example, whether or not Amazon.com is a natural monopoly, most of the things that it sells are not. A well-designed policy will limit the monopoly characterization to those particular inputs to which it applies, leaving other portions of production to competition. To a considerable extent deregulation has accomplished that in some markets, but it can also apply to platforms.16

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15 See discussion infra, text at notes ___.
The great majority of platforms are not winner-take-all markets, however. Whatever our attitude toward natural monopolies, when markets are not natural monopolies competition is possible and desirable. Further, most often antitrust is preferable to direct regulation for dealing with competition problems.

II. DIGITAL PLATFORMS AS WINNER-TAKE-ALL MARKETS

A winner-take-all market, or natural monopoly, has room for only a single firm at a time if that firm is pricing competitively. The great majority of internet platforms are not natural monopolies. This is true even if the platform is subject to indirect network effects, which is characteristic of two-sided markets.17

Five interrelated factors determine whether a market is a durable natural monopoly, with whatever competition policy choices that entails: 1) lack of stable competition among incumbent firms; single-homing; 2) durability of a dominant position; ability to accommodate or resist technological change 3) declining costs or network effects; 4) lack of significant product differentiation; and 5) lack of interoperability.

The principal policy implication is that if a platform is not a natural monopoly, competition should be both feasible and desirable. It will very likely emerge in the absence of exclusionary practices. This could be inter-platform competition or competition between a platform and a more traditional product.18 On the other hand, so long as a particular platform is a natural monopoly, it will be able to maintain its position simply by charging a lawful price that is above its costs but sufficient to exclude rivals. Even here, however, there are important qualifications. First, competition may exist to be the natural monopolist in a market, and antitrust policy has a role in encouraging such competition. Second, natural monopoly status is not necessarily

17For the definition of direct and indirect network effects, see discussion infra, text at notes ___.
18 See discussion infra, text at notes ___.
permanent. Its duration depends on technology and market size, both of which can change.

A. Stable Competition Among Incumbent Firms; Single- vs. Multi-Homing

Most digital platforms have competitors in at least some of the markets in which they operate. Today online sellers of all sizes appear everywhere, ranging from single outlet restaurants to small grocers to online sellers of flowers and to numerous newspapers, magazines, and other periodicals. Online firms such as Carvana.com compete nationally in the sales of used cars with thousands of small brick-and-mortar dealers, many of whom have an internet presence themselves. Among the largest online sellers, a significant majority also have an even larger brick-and-mortar presence, and typically in highly competitive markets. As of 2020 this was true of seven out of the top ten online sellers of merchandise, including Walmart, Home Depot, Best Buy, Target, and Costco.

Competitive markets change all the time and the market shares of individual firms in them fluctuate. Further, markets for new technologies may go through sometimes lengthy periods in which multiple technologies compete with one another until a single winner emerges. One well known example is recordable analog video tape. Sony’s Betamax format survived in the market for roughly 25 years until it finally lost a standards battle with VHS tape. The competition among high-definition digital optical formats, HD DVD and Blu-Ray, was much briefer, lasting from 2006 to 2008 until Blu-Ray triumphed. For decades there has been a battle between the dominant

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19 Carvana.com (used cars).
22 Ben Drawbaugh, Two Years of Battle Between HD DVD and Blu-Ray: A Retrospective, ENDGADGET (Feb. 20, 2008),
architectures of personal computers, Apple Macintosh OS and Microsoft Windows. But both technologies remain profitable and attract both program writers and customers. For several years Apple’s iPhone operating system has competed with the Android OS for dominance of the smartphone device market.\(^{23}\) It is not obvious that a single winner will ever emerge.

Other markets go from less to more competitive as a result of technological change. One good example is the telephone industry, discussed below.\(^{24}\) Digital computing hardware is another example. During the heyday of mainframe computers in the 1960s IBM was the acknowledged leader, with dominant market shares that were sufficient to provoke a high profile monopolization case.\(^{25}\) IBM’s market share in the overall computer market fell precipitously, however, and the industry became much more diverse and competitive. That was not the result of an antitrust decree. The U.S. case against IBM was dropped.\(^{26}\) Rather it was a consequence of technological


\(^{24}\)See discussion *infra*, text at notes ___.


changes that IBM itself initiated by adopting an open architecture that involved liberal licensing to others.27

Markets that produce a single winner are generally ones where economies of scale, network effects, or the need for interoperability favor a single format and that format is privately controlled by a single entity. That situation is not common. In the video recording standards battles referenced above, a single standard emerged because the costs of maintaining two different formats were too high. However, the technology for those formats came to be widely shared under agreed upon technological standards.28 The same thing is true of the cellphone market, which is also subject to significant network effects. Most of the technology is produced by competing firms operating under shared technological standards.29 As a result, we can speak of a single technology or a single market for both traditional and cellular phones, but the markets contain numerous competitors.

One feature that makes the emergence of a single technology winner less likely is interoperability.30 To a very large extent Android, Apple and other cellular phones interconnect. Owners of devices from multiple systems can engage in a full range of communications with

30On using antitrust to compel interoperability, see discussion infra, text at notes __.
one another, so much that most of the time one user cannot even identify the type of phone that a corresponding user has.\textsuperscript{31} The major wireless carriers all sell and support both Apple and Android phones interchangeably. Most retailers who are not owned by or have exclusive dealing agreements with a particular brand sell both.\textsuperscript{32} In video games, many games are sold in multiple formats that can be played by people with different game consoles.\textsuperscript{33} In sum, whether a winner-take-all standard even exists depends on limitations on the ability of buyers to switch back and forth between standards or sellers to supply goods that satisfy multiple standards.

One reason a single victor might emerge in a standards battle is that the market favors single-homing. Single-homing occurs when users of a certain technology make one personal choice at a time to the exclusion of others. This occurs because the marginal cost of using two different but competing products is greater than the benefits. For example, at any given time most people carry one cellphone but multiple credit cards. Carrying a second working cellphone is costly and the benefits are minor or perhaps even negative. By contrast, the marginal cost to most people of carrying an additional credit card is close to zero, and different cards provide different benefits or are accepted by different stores. Further, multiple cards enable people to

\textsuperscript{31}There are a few exceptions. For example, Apple’s iMessage functionality is available only on Apple devices, such as iPhones, Macs, and Apple Watches. \textit{See Use Messages with your Mac}, \textsc{Apple, Inc.}, https://support.apple.com/en-us/HT202549 (last visited June 25, 2020) (“With Messages for Mac, you can send unlimited messages to any Mac, iPhone, iPad, or iPod touch that uses iMessage, Apple’s secure-messaging service”).

\textsuperscript{32}\textit{See}, e.g., \textit{All Smartphones}, \textsc{Verizon Wireless}, https://www.verizon.com/smartphones/?AID=12513015&SID=1ABB64CC-4D2D-48A9-BE34-754AAE75B390&afsrc=1&vendorid=CJM&pubID=746431&cjevent=4bd08bcab15111ea801501a10a240610 (last visited August 3, 2020) (offering a wide variety of both Apple and Android phones on the same plans).

carry more debt or stagger out their payments. That is, the cards function as complements as well as substitutes. They function as complements when someone can enlarge his credit limit by distributing debt over two or more cards. People might also download apps for both Uber and Lyft, competing ride-hailing services. The marginal cost of installing and maintaining an app on one’s phone is zero, and at any given time a driver may be more readily available on one of them or may have a more favorable price. Alternatively, some cites may have greater availability of one provider than the other. So long as consumers prefer multi-homing the digital platforms in that market are likely to remain competitively structured.

Some customers engage in multi-homing between a digital platform and a traditional market. For example, many people carry multiple credit cards, but when they make a purchase may also use cash or write a check. Or their smartphones might contain apps for both Uber and Lyft, but they will also sometimes hail a traditional cab, depending on the circumstances. That is also true of customers who purchase some groceries on the Amazon/Whole Foods digital platform, but other groceries by visiting a traditional grocery store. The Supreme Court’s conclusion in AmEx, offered with no factual support, that digital platforms and other markets do not compete with one another as a matter of law simply ignored these realities. \(^{34}\)

VHS in analog video media and Blu-Ray in digital ended up as dominant platforms because most users single-homed. They did not want to deal with two different formats simultaneously. That would make playing and recording as well as inventoring tapes far more cumbersome and costly. So a typical consumer would purchase either an HD DVD player or else a Blu-Ray player, but not both. \(^{35}\)

\(^{34}\)Ohio v. Am. Express, Co., 138 S. Ct. 2274, 2287 (2018) (“Only other two-sided platforms can compete with a two-sided platform for transactions.”)

\(^{35}\)See Consumers more aware of HD-DVD over Blu-ray Disc, CHAIN STORE AGE (Sept. 20, 2007), https://chainstoreage.com/news/consumers-more-aware-hd-dvd-over-blu-ray-disc; Ben Drawbaugh, Two years of battle between HD DVD and Blu-ray: a retrospective, ENGADGET (Feb. 20, 2008),
Importantly, single homing does not dictate that competition cannot work in a market, but only that competitors must vie with one another to be a particular user’s exclusive choice. Single-homing can be sequential, as when someone picks a single technology for one time period, but then switches to another later on. For example, when a customer’s iPhone breaks she might switch to an Android phone, or vice-versa. However, within periods of ownership she is likely to use one at a time.

The existence of durable complementary products that have different lifecycles from the primary product also increases switching costs. For example, someone who has an HD DVD player and a large inventory of HD DVD media will be less likely to switch to Blu Ray when the HD DVD player breaks down. Or the customer contemplating switching from an iPhone to Android may have to consider how much data and how many apps she would lose in the process.

Finally, some single-homing may result from contractual restraints that prevent multi-homing. One practice that contributed to the end of the Blu-Ray/HD-DVD standards battle was payments that hardware manufacturers made to studios for movies to be released exclusively in a single format. Both sides made such payments, but Sony was ultimately more successful in buying exclusivity for its Blu-Ray Format. See Brooks Barnes, “Warner Sides with Blu-Ray DVDs, a Clinching Vote for Sony’s Format,” NEW YORK TIMES (Jan. 5, 2008). For a recounting of the battle over exclusivity payments, see Kevin L. Spark, Format War, Antitrust Casualties: The Sherman Act and the Blu-Ray—HD DVD Format War, 85 S.CAL. L. REV. 173, 175-179 (2009).

themselves could be subject to antitrust rules governing exclusive dealing, which condemn anticompetitive agreements that involve the payment of money for exclusive rights. The alternative equilibrium could be more like the one for cell phones, where customers typically single-home but carriers multi-home, permitting and even providing devices from multiple manufacturers.

**B. Durable Dominant Positions in Digital Platforms: No-Fault Monopoly, Exclusionary Practices, and Barriers to Entry**

There is little empirical support for the proposition that digital platforms as a group are winner-take-all markets. Rather the landscape for digital markets resembles the one for markets generally. Some of them are more conducive to single firm dominance than others, and few are true natural monopolies. Some resemble markets with a dominant firm plus a competitive fringe. Others enjoy competition among more evenly sized rivals.

Antitrust condemnation of monopoly is appropriate when consumer and other benefits from antitrust enforcement exceed the social costs of the monopoly. An important ingredient is duration. The more durable the monopoly, the more costly to society. Most single-firm monopolies that last only a year are probably not worth pursuing, because the cost of antitrust enforcement is high and its wheels turn slowly. As a result, most antitrust cases challenging dominance require a showing of entry barriers, which assesses whether monopoly is likely to be dissipated by new entry and, if so, how long that will take.

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38See 11 Herbert Hovenkamp, Antitrust Law, Ch. 18 (4th ed. 2017).

39For example, Verizon offers 45 Android devices and 20 iPhones from ten different manufacturers. See https://www.verizon.com/shop/.

40On such markets, see Don E. Waldman and Elizabeth Jensen, Industrial Organization: Theory and Practice 190-210 (5th ed. 2019).

The same thing is true of merger enforcement. The 2010 Horizontal Merger Guidelines employed by the antitrust enforcement agencies indicate that a facially anticompetitive merger may not be worth pursing if new entry would be sufficiently rapid so as to make anticompetitive effects from the merger unlikely. This would be so “even though those actions would be profitable until entry takes effect.”\textsuperscript{42} Alternatively, the evidence must show that new entry would keep prices sufficiently low that consumers would not be significantly harmed by the merger.\textsuperscript{43} Older versions of the Merger Guidelines were more explicit about how long this might be. For example, the 1992 Horizontal Merger guidelines concluded that the Agencies would not challenge a merger if new entry sufficient to return prices to pre-merger levels would be likely to occur within two years.\textsuperscript{44}

One should not generalize excessively about entry barriers, even in platform markets. The existence, extent, and relevance of entry barriers in an antitrust case has always been a highly factual inquiry.\textsuperscript{45} In per se cases such as price fixing, entry barriers are largely irrelevant. At the other extreme, in cases involving unilateral pricing conduct, they are usually central. For digital platforms, several factors point in different directions, making categorical treatment impossible. On the one hand, network effects can be a substantial entry barrier. Particularly in markets where significant product differentiation is impossible, a large base on one or both sides of a platform can be a powerful entry deterrent. The same thing can be said of accumulation of large amounts of consumer data or large intellectual property portfolios. Offsetting this, low consumer switching costs and widespread multi-homing, which are common in platform markets, encourage new entry. Product differentiation is also an avenue for new entry, as is high technological turnover.\textsuperscript{46} Which of these various characteristics dominates must be established for each situation.

\textsuperscript{43} Id.
\textsuperscript{45} 2B AREEDA & HOVENKAMP, ANTITRUST LAW, supra note __, ¶420-423.
\textsuperscript{46} Cf. D. Daniel Sokol & Jingyuan (Mary) Ma, Understanding Online Markets and Antitrust Analysis, 15 NORTHWESTERN J. TECH. & INTEL. PROP. 43, 48-
In addition to requiring high entry barriers, United States antitrust law refuses to condemn a dominant firm except on proof of one or more anticompetitive practices. We do not condemn monopoly “without fault.” Writing in 1978, Areeda and Turner concluded that persistent monopoly was a serious problem. They would have permitted the government (but not private parties) to bring equitable challenges to break up a monopoly without proof of fault, provided that the monopoly had persisted for at least five years.\(^{47}\)

One explanation for durable monopoly is that the market is winner-take-all, or a natural monopoly, which means that we would naturally expect it to be controlled by a single firm. As a result, a defense that a market is a natural monopoly would be necessary in a regime that condemned monopoly without fault. Otherwise the

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antitrust laws might needlessly break up dominant firms in markets that are served most efficiently by a single firm. That would lead to costly price wars or collusion, because competition in natural monopoly markets is not sustainable.

By contrast, if a market is not a natural monopoly then the emergence of a dominant firm requires exclusionary practices, superior management, good luck (or bad luck for rivals), or collusion. As the Supreme Court put it more than a century ago in *Standard Oil*, “monopoly would be inevitably prevented if no extraneous or sovereign power imposed it and no right to make unlawful contracts having a monopolistic tendency were permitted.”48

In a stable natural monopoly market a dominant firm need do no more than charge a competitive price in order to exclude rivals, or perhaps occasionally defend itself against an attack from someone else.49 If no exclusionary practices are proven, then the monopolist will be left alone and the market will determine how many firms the market will contain. As a result, a requirement of exclusionary practices makes it unnecessary to decide whether a market is a natural monopoly.

We could take different approaches to the problem of long-held monopoly, and we might want to pursue some administrative shortcuts. First, we could condemn relatively durable monopoly without proof of fault but then permit a defense that the market is in fact a natural monopoly. Or perhaps we could state a presumption that if monopoly has prevailed in a market for a certain number of years, then it warrants condemnation. The defendant could defeat the presumption by showing natural monopoly or other factors that forced the defendant to be a monopolist.50 This was the gist of Judge Wyzanski’s famous mid-twentieth-century discussion of Judge Hand’s

48*Standard Oil Co. v. United States*, 221 U.S. 1, 62 (1911).
49*Union Leader Corp. v. Newspapers of New England, Inc.*, 284 F.2d 582, 587 (1st Cir. 1960) (“We do not think the fact that competition is in a natural monopoly climate can limit a defendant’s right to defend itself.”)
50*See United States v. Alum. Co. of Am.*, 148 F.2d 416, 429 (2d Cir. 1945) (monopoly may have been “thrust upon it”).
position in the Alcoa case. Finally, we could take the approach that we actually do, which is to require proof of exclusionary practices and condemn the monopoly without determining whether the market in question contains room for only one efficient firm.

Our insistence on exclusionary practices rests in part on the fact that often we do not know why a particular market has a dominant firm. Perhaps it naturally gravitates toward natural monopoly, or perhaps dominance is a result of exclusionary practices or some fortuity that is likely to go away. In any event, even natural monopoly status does not excuse exclusionary practices. The telephone industry is a good example of a market that went from natural monopoly to competitively structured as long lines were displaced by wireless alternatives – a technological development that had nothing to do with antitrust law. The breakup occurred when AT&T employed exclusionary practices in order to maintain its monopoly even after competition had become sustainable.

Historically, most firms eventually lose their dominant status. The federal courts confronted the issue of monopoly duration already in the early history of antitrust in the American Can case. The defendant’s market share was already rapidly declining by the time of the decision. That decline appears to have been self-inflicted. Having acquired what it thought to be a dominant position, American Can raised its price so much that it induced large scale new entry, even with obsolete technology.

During the great Depression, the monopoly that captured Congress’ attention and prompted passage of the Robinson-Patman Act was the Great Atlantic & Pacific Tea Co. (“A&P”), a large chain store that put many small grocers out of business. Chain stores

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52See discussion infra, text at notes ___.
53See United States v. American Can Co., 230 F. 859, 879 (1916) (“prices were put up to a point which made it apparently profitable for outsiders to start making cans with any antiquated or crude machinery they could find in old lumber rooms….”).
famously provoked the wrath of Louis Brandeis.55 For decades A&P was the largest grocer in the United States.56 In 1929 it was by far the largest American retailer of any kind, two and a half times larger than Sears, the second largest.57 Today the leader is Wal-Mart, followed by Kroger. A&P went bankrupt in 2015 and sold most of its stores to other grocers. Sears filed for bankruptcy in 2018. None of the top ten firms in the United States in 1929 is in the top ten today,58 and many no longer exist.

Why firms lose dominance is a complex question and there is no single answer. Some losses are the result of nothing more complicated than the expiration of market dominating patents. This was largely the story of Xerox, which came into existence by the acquisition of a patent portfolio that covered plain paper copying, and then gradually lost its position when the patents expired.59 It is also true of many blockbuster pharmaceutical drugs that became generic upon expiration of their patents.60

A few losses of dominance were the result of antitrust decrees. Likely examples are Standard Oil, Alcoa, and United Shoe Machinery

57Id. at 113 (ranking the ten largest in 1929, in descending order, as A&P, Sears, F.W. Woolworth, Montgomery Ward, Kroger, Safeway, J.C. Penney, and S.S. Kresge, American Stores, and Gimbel Brothers).
Corp. The antitrust decree in *Standard Oil* (1911) broke the company up into 34 smaller firms. Alcoa was never broken up, but part of the antitrust decree against it was that the firm was forbidden from bidding on two very large government owned aluminum plants that were sold after World War II. The winning bidders, Kaiser and Reynolds, emerged as significant competitors. In the prolonged *United Shoe Machinery* litigation, which stretched from the 1910s to the 1960s, the district court initially condemned the defendant of monopolization but refused to break it up, largely because it operated out of a single plant. A decade and a half later, however, the Supreme Court concluded that the conduct remedies that the district court had imposed had not done their job, and ordered a partial divestiture. In 1949 USM held roughly 90% of the market for shoe making machinery. Subsequently the shoe machinery industry went into sharp decline, and USM lost more than a third of its market share. Whether that decline should be attributed to the antitrust decree is uncertain. The technology

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63See, e.g., United States v. United Shoe Machinery Co. of N.J., 247 U.S. 32 (1918); United States v. Winslow, 227 U.S. 202 (1913). The earliest decisions were in the state courts. E.g., United Shoe Machinery Co. v. Kimball, 193 Mass. 351 (1907) (enforcing an exclusive dealing contract as a reasonable restraint).


of shoe manufacturing was rapidly changing away from stitched leather shoes for which USM provided equipment, to other methods.  

Durable monopolies are sometimes brought to an end by technological change. One of the saddest examples is Kodak, a storied monopolist for nearly a century. First condemned in the 1910s, it was described by the Second Circuit in 1979 as a “titan in its field.” For the preceding thirty years its market share in the film market had never been less than 82%. Its share of amateur still cameras ranged from 61% in the 1950s to as high as 90% in the mid-sixties. In 2012, however, it declared bankruptcy, and for reasons that had little to do with antitrust law. Rather, the problem was massive technological change and excessive path dependence. The new technology was digital photography, which was radically different from chemical film technology in nearly every way. Ironically, Kodak had been a pioneer developer of digital photography and developed many of the early patents. However, it had far too much invested in the older technology and failed to foresee digital technology’s market shifting promise. As a result, it put too many resources into shoring up film photography, a dying enterprise, and entered the digital era with too little, too late.

The story of Microsoft and the rise of the consumer internet is vaguely similar, although Microsoft managed to prosper. Thanks to IBM’s open source model, most aspects of the hardware market had become competitive, and software was increasingly competitive as well. In the middle, however, was the operating system. Under Bill Gates, Microsoft had developed a computer architecture in which the operating system, Microsoft Windows, resided on each computer and

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69 See Loeb v. Eastman Kodak Co., 183 F. 704 (3d Cir. 1910) (sustaining antitrust complaint); United States v. Eastman Kodak, 226 F. 62 (W.D.N.Y. 1915) (condemning multiple mergers of small firms, as well as quasi-exclusive dealing).
70 Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 271 (2d Cir. 1979).
71 Id. at 270.
73 See United States v. Microsoft, 253 F.3d 34 (D.C. Cir. 2001).
acted as a gateway through which all applications and traffic had to pass. At the same time, however, Microsoft contemplated a model in which processing and data were largely local and communication was merely an add-on.

Netscape’s internet-centric approach was a serious threat to this model. As Gates wrote in a famous email to his employees entitled “The Internet Tidal Wave,” Netscape was in the process of developing a “multi-platform strategy” of moving the operating system into the diverse applications themselves and thus “commoditize[ing] the underlying operating system.” Microsoft then undertook a number of actions intended to suppress Netscape and perpetuate Windows’ dominance.

Gates’ purpose was to protect the Windows operating system, and monopoly maintenance of Windows was the core of the government’s case. But the real threat came from the internet browser. In fact, it was the browser, not the operating system, that subsequently became commoditized. While Microsoft continues to hold a large share of the differentiated OS market, depending on how it is defined, it has largely been relegated to bit player in the browser market. In part that was a result of the Microsoft decree, which enjoined several exclusive agreements that favored Internet Explorer over Netscape. In part it was because the dramatic rise of broadband and the emergence of high quality, free alternatives, including Mozilla and later Chrome.

Overall, the history of digital platform monopolies is not distinctive from that of other industries. While the dataset is smaller, the evidence suggests that the life of an internet digital monopoly is no longer than the life of more traditional manufacturing monopolies and

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76 See discussion infra, text at notes __.
is very likely shorter. Here as in traditional markets the accounts vary from one firm to another. Microsoft, which had been founded in 1975, lost much of a government-brought antitrust challenge to monopoly maintenance in the Windows operating system, where it was dominant.77 At the time Microsoft’s Windows operating system had a market share of approximately 95% for Intel-based (“IBM-compatible”) computers.78 The Apple OS was excluded from that market definition. Today Microsoft’s market share is about 76% in a market that includes the Apple OS.79 One explanation for the change in market definition was that in 2001 Microsoft Windows ran mainly on Intel processing chips or lookalikes, while Apple machines ran on Motorola chips. In 2006 Apple switched to Intel chips as well, giving the two systems a more similar architecture and more readily enabling software to run on both.80 If Apple’s operating system is subtracted, Microsoft’s market share today would be about 97%, roughly the same as it was during the litigation. Microsoft’s operating system business must be counted as one of the most durable of platform technologies. Whether it is actually a monopoly is doubtful. More likely, it is simply one alternative in a product differentiated OS market that includes the Apple OS.

The story for Microsoft’s internet browser is very different. Interestingly, the Microsoft antitrust litigation was aimed at dominance of the operating system market, and the government won the most important claims. While these claims involved Windows as a fulcrum, many involved conduct that was intended by Microsoft to give commercial advantages to its web browser, Internet Explorer. Microsoft “tied” Windows and Internet Explorer by requiring purchasers of Windows to take IE as well.81 A little later it commingled

78Id. at 51.
81Herbert Hovenkamp, IP Ties and Microsoft’s Rule of Reason, 47 ANTITRUST BULLETIN 369 (2002).
internet explorer code into the Windows operating system code, where it resides to this day.\textsuperscript{82} It also imposed various restrictions on both OEMs (computer makers) and applications writers requiring them to favor IE or use it exclusively.\textsuperscript{83} One result of this conduct was that Microsoft’s browser market share during the litigation period rose from about 5% to about 50%, most of it at Netscape’s expense.\textsuperscript{84} That number was too small to support a monopolization claim, but the government did bring a claim of attempt to monopolize the browser market. The D.C. Circuit dismissed the attempt claim, however, after finding that the browser market was too ambiguously defined.\textsuperscript{85}

Today, usage measurements of browser market share indicate that Google Chrome is the clear leader, with some 62% of the market, followed by Safari (Apple), and then Mozilla Firefox. None of these browsers existed at the time of the Microsoft litigation. Firefox did have some precursors, and inherited some code from Netscape.\textsuperscript{86} Microsoft has two browsers in play: Edge, its current browser, and Internet Explorer which runs on some older machines. In the aggregate, however, they account for less than 7% of browser usage.\textsuperscript{87}

\textsuperscript{82}Id. The name of the browser was changed in 2015 to Edge. On the D.C. Circuit’s treatment of the technically complex commingling issue, see Microsoft, 253 F.3d at 65-68.
\textsuperscript{83}Windows 98 launched Internet Explorer in certain situations, even if Netscape Navigator was set as the computer’s default browser. Microsoft prohibited OEMs from modifying the Windows boot sequence, thus making it difficult for OEMs to promote Netscape products over the prominent Internet Explorer features. Microsoft also prevented OEMs from removing programs from the Start menu. See United States v. Microsoft Corp., 84 F. Supp. 2d 9, 62-64 (D.D.C. 1999).
\textsuperscript{85}Microsoft, 253 F.3d at 82-84.
So ironically, Microsoft very largely retained its market position in the operating system market, where it lost the antitrust litigation, but it has been decimated in the browser market where it won. Part of the reason for Microsoft’s browser share loss may have been injunctive relief from the various exclusionary contracts that the Microsoft decision condemned. But very likely the bigger reasons were the expanding availability of broadband and the rapid expansion of free open source alternatives Chrome and Mozilla, as well as Apple’s own entry with Safari. Very likely the most important explanation for these shifts in market share was consumer preference. Browsers are free and new ones can be installed in a matter of minutes. They are also readily susceptible to multi-homing, enabling users to have multiple browsers installed on both computers and smartphones.

The story for social networking platforms differs in some respects. MySpace had launched in 2003, and by 2007 writers were expressing concern that MySpace was destined to become a permanent natural monopoly. That literature largely ignored Facebook (“FB”), which had launched in 2004. By 2008 FB had overtaken MySpace in popularity. Today FB occupies some 60% of a highly differentiated and poorly defined market for social media sites. MySpace is no longer counted among the top ten. At this writing, FB is facing

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91J. Clement, U.S. market share of leading social media websites 2020, STATISTA (June 18, 2020),
increasing competition from Tik Tok, whose possible acquisition by Microsoft may give FB a serious rival for many of its functions.  

The digital search engine market is similar. AltaVista was established in 1995 and became a leading search engine until it began losing ground to Google Search. As of 2000, however, AltaVista had a 17.7% market share to Google’s 7%. In 2003 Yahoo purchased AlaVista and incorporated parts of its technology into its own search engine. AlaVista was shut down as an independent search engine in 2013.

While these data give only a partial picture of a complex history, there does not seem to be any evidence that durability of a dominant position is a more prominent feature of digital platform markets than for markets generally. Even among digital markets, entry and exit continuously occur, shares change, and dominance comes and goes. While large IP portfolios can make entry more difficult,
widespread licensing can actually facilitate new entry. IBM, AT&T, and Xerox all initially acquired dominance based in part on extraordinarily large patent portfolios. All subsequently lost their positions, and these industries are now much more competitive. Further, markets subject to widespread multi-homing are very likely easier to enter than markets in which everyone single homes.96

C. Declining Costs, Network Effects, and the Extent of the Market

If a natural monopolist is charging a competitive price no rival with the same costs, product, and technology will be able to compete successfully, even if the monopolist does not engage in any exclusionary practices. This natural monopoly position occurs when a firm’s costs decline continuously to the point that sales are at least one half of the market at the competitive price. At that point, this firm would have lower costs than any rival making the same product with the same technology and costs. The usual explanation for this phenomenon is very high fixed costs, coupled with plant capacity to serve the entire market.

For example, suppose a firm with high fixed costs produces a commodity and experiences declining costs as it increases output. The decline bottoms out at an output level of 1000 units per time period. If it sells that output at the competitive price, which we assume is $1, the market will clear at 1800 units. As a result, any rival producing under the same conditions would be making 800 units or less, so its costs would be higher and it would not be able to earn a profit at the $1.00 price.97 Assuming that the natural monopolist’s costs do not start going back up, the socially optimal outcome would be for it to satisfy the entire market by producing 1800 units and selling them at $1.00 per unit. However, as an unregulated monopolist it will maximize its


96 On the significance of multi-homing, see supra, text at notes __.

profits, which could occur at a price significantly higher than $1.00. Thus the case for price regulation of natural monopolies.

Three qualifiers are important. First, if the firm charges more than its costs there might be room for other firms in the market. Second, the firm must have the capacity to satisfy the entire market. Third, a rival with lower costs might survive and even displace the original firm. For now we ignore the possibility of product differentiation, which throws the entire model into disarray.\(^9\)

First, when a firm charges more than its costs it creates a price umbrella under which rival firms may be able to profit. Historically this has given dominant firms with declining costs a strategic choice: either charge a very low price now, which will keep rivals out; or else charge a higher price which will earn greater immediate profits but enable rivals to enter the market. Which strategy a firm chooses depends on several factors, including the degree of uncertainty about rivals, the need for short-run profits, or fear of antitrust litigation. For example, United States Steel Corp. followed the latter strategy for many years, setting a price that permitted a fringe of firms to operate but limiting their growth.\(^9\)

Second, a firm with continuously declining costs must also be able to meet market demand at its chosen price. The classic situation where this is not true is the passenger airplane flying a designated route. A single plane’s per passenger costs decline as it fills the plane, all the way up to capacity. Most of the costs are fixed over that range. The airplane itself is a fixed cost that does not materially change with the number of passengers. Even the pilot does not cost more money as the plane fills. While fuel costs might be higher as a passenger is added, the amount is small.

\(^9\)See discussion infra, text at notes _._
Nevertheless, the plane will not be a natural monopoly if the number of people who want to fly a particular route at a certain time is greater than the plane’s capacity. In that case a second plane will be necessary, and it could be provided by either the same firm or a different firm. In the latter case we would have competition. Large capacity suggests why many public utilities such as electric companies are natural monopolies, at least at retail. Once the line is in place the incremental cost of additional usage is very small, and a given set of lines is usually adequate to take care of all demand. The story for airline routes is more variable. For large routes, such as Chicago to Los Angeles, many planes will be needed to meet each day’s demand and there will be room for multiple carriers. However, a much smaller route, such as Kalamazoo, Michigan to South Bend, Indiana, is likely to have room for only one plane.

Digital platforms that sell purely digital content do not typically have serious capacity constraints on their products. For example, there is no limit on how many times a YouTube video can be viewed or a Spotify song can be streamed. As a result the problem of capacity to serve the entire market typically does not show up, assuming they have the technical capacity to satisfy demand. Physical products such as those sold by Amazon are another matter, and for them there is no reason to think that the capacity problem is significantly different than it is for any seller.

Third, and finally, even a natural monopoly can be displaced by a different technology or a firm with lower costs. For example, railroads had a natural monopoly advantage in many markets for years, but were displaced by long distance trucking. The AT&T telephone

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100 The market might still be a natural monopoly if there are economies of scale to the operation of multiple planes. That is, the incumbent firm might be able to provide a second flight at a lower cost than a different firm could provide it.

system was very likely a natural monopoly during the many decades in which all calls were hard wired between the calling parties. The rise of wireless communication and the emergence of firms that took advantage of these technologies, such as Sprint and MCI, changed that. Now most parts of the industry are competitively structured.\textsuperscript{102} Newspapers that were thought to be dominant in their service areas had to fight off emergent radio stations for advertising revenue,\textsuperscript{103} and today they are battling against the internet.\textsuperscript{104} In sum, the question whether a market is a natural monopoly is technology dependent. In digital markets in particular, technology can change quickly.

Further, the fact that a platform is digital does not mean that all of its output is digital. At one extreme, platforms such as FB, Spotify, or Netflix produce digital content almost exclusively. FB transacts in messages, digital photos and videos, all of which are digital. Spotify licenses streamed music, podcasts, or other programming which is entirely digital. Netflix does the same thing with movies and TV shows, although it retains a small but shrinking portion of its business for the rental of physical DVD or Blu-Ray discs.\textsuperscript{105}

Amazon, Uber, and Airbnb are all very different. They sell physical and decidedly non-digital products and services – consumer products, rides, and short-term lodging. For most of these, each sale encounters additional variable costs. Further, the goods or services in question are rivalrous, which means that a purchase of one unit


\textsuperscript{102}\textit{See} discussion infra, text at notes __.

\textsuperscript{103}\textit{E.g.}, Lorain Journal Co. v. United States, 342 U.S. 143 (1951) (condemning newspaper for refusing to deal with anyone who was purchasing advertising on a competing radio station).


\textsuperscript{105}\textit{Netflix, Inc., Annual Report} 20 (Form 10-K) (Jan. 29, 2020) (showing DVD subscription revenues declining since 2017).
depletes what is left over and there can be limitations on the number that any firm can produce.

For example, Amazon is a very large digital platform. Among its product offerings are some purely digital content, including Amazon Music, Prime Video, ebooks, and downloadable computer software. But the bulk of Amazon’s sales are for things like toasters, power tools, luggage, food, and so on. Each sale of a Samsonite bag on Amazon displaces a bag, whether made by Samsonite or someone else, that could have been purchased from a different venue. Further, those venues could include other digital platforms, as well as traditional brick and mortar stores of various kinds. A Consumer Reports article from late 2019 found that luggage was being sold by a wide array of both online digital platforms and traditional brick-and-mortar stores, and some sellers who owned both. As of that date two-thirds of buyers purchased their luggage from a physical store rather than online. Among the highest rated online sellers were Luggage Pros, Away, and Amazon. The brick-and-mortar stores included Walmart, Sears, Target, and Costco.106 For a product such as a Samsonite bag, it is not clear that Amazon has a significant advantage over rivals.

Networked technologies such as 4G & 5G cellphones raise other issues. These networks are characterized by very considerable economies of scale in intellectual property rights, network infrastructure, and digital elements such as operating systems. But they are also subject to more conventional economies in the manufacture and distribution of devices. Here, an important factor making natural monopoly less likely is the high degree and quality of interoperability.107 This is simply a later version of the story of AT&T, where changes in technology facilitated the emergence of competition,

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107 On interoperability as a remedy, see discussion infra, text at notes __.
but an antitrust consent decree and later federal legislation were needed to further and protect interoperability. In the case of cellular phones, although the Apple iPhone system is different from the technology used by the numerous Android manufacturers, interconnection is relatively seamless. Indeed, in spite of the need to coordinate many manufacturers, the Android system has grown more rapidly than the unitary Apple system and is now dominant in many parts of the world.\textsuperscript{108}

Both declining costs on the production side and increasing value on the consumer side can favor larger firms. This is where network effects come in. Network effects occur when customer value increases as volume increases. For example, the telephone system is worth more to each user as the number of users increases, whether or not costs decline. As a result, all else equal, a larger network will be more desirable than a smaller one. Indeed, the optimal phone system would be one in which every person can talk to everyone else. In a population of 1000, a single system covering all 1000 would be more valuable than two systems that each served 500 but were unable to interconnect. Standard setting often reflects the force of direct network effects, helping to explain such things as why markets tend to coalesce around a single fuel for automobiles, a single digital format for video discs, and so on.\textsuperscript{109} By contrast, low cost high quality interconnection tends to mitigate these effects.\textsuperscript{110} The reason standards battles over analog or digital video technologies such as VHS or Blu-Ray led to


\textsuperscript{110} \textit{See} discussion infra, text at notes __.
single winners was because, at least at the consumer end, the two technologies were not able to interconnect seamlessly.

Network effects can be either “direct” or “indirect.” A direct network effect occurs when a network becomes more valuable as the number of users or volume of usage on a single side increases, as in the example of the telephone. By contrast, an “indirect” network effect typically applies to complements that operate on the other side of the platform. For example, an increasing number of riders on the Uber App will make it more valuable to drivers, increasing their number as well.\footnote{See Jeffrey Church and Neil Gandal, \textit{Network Effects, Software Provision, and Standardization}, 40 J. INDUS. ECON. 85 (1992) (making the same argument for computers and software); Matthew T. Clements, \textit{Direct and Indirect Network Effects: Are They Equivalent?}, 22 INT’L J. INDUS. ORG. 633 (2004) (discussing many examples).} As the number of drivers increases, so too the number of riders, because availability increases and wait time decreases. These markets are often subject to both direct and indirect network effects. For example, as the number of users of a particular credit card increases, that card becomes more valuable to merchants. At the same time, as the number of merchants who take a card increases, the card becomes more valuable to cardholders.\footnote{Clements, \textit{id.}.}

In a two-sided market, the platform or venue intermediates between the two distinct but interdependent groups of participants in order to yield the optimal mixture of participation and price. In equilibrium this will be the mixture that maximizes the profits of the market’s operator. For example, a printed periodical may deal with subscribers on one side and advertisers on the other side, obtaining revenue from both. Higher revenue from advertisers permits the magazine to charge lower subscription prices, and vice-versa. However, revenue will decline if one side gets out of kilter. Excessive advertising might make the periodical less attractive to customers, thus reducing the value that they place on it. As a result, some will cancel their subscriptions, making the platform less valuable to advertisers.
On the other side, too little advertising revenue will force the publisher to hike subscription prices. The trick for the publisher is to find not only the right price level for each side, but also to find the correct “participation level,” or balance between subscribers and advertisers.\(^\text{113}\) A direct transaction two-sided market such as Uber, where the platform acts as broker or deal maker between the two sides, provides another good example. Higher fares will encourage more drivers but discourage riders; lower fares do the opposite. Further, the relative availability and demand changes throughout the day. The trick for the operator of the platform is to find the price that will optimize participation between the two at any given moment.

Even a two-sided platform with both direct and indirect network effects is not necessarily a natural monopoly, and most probably are not. If competition is possible between two-sided platforms, then antitrust has a role to play in maintaining it. Further, two-sided platforms may also compete with more traditional one sided markets. For example, Uber, which operates on a two-sided platform, competes with Lyft, another two-sided platform; but it also competes with traditional taxicab companies,\(^\text{114}\) and perhaps even with other modes of transportation.

A natural monopoly requires not only a plant that is big enough to serve the market, as the airplane example above illustrates.\(^\text{115}\) It also requires a market that is sufficiently limited in the range of competitive choices. For example, when Amazon sells AmazonBasics carry-on luggage\(^\text{116}\) it presumably does so in competition with other luggage


\(^{114}\)As evidence, see Phila. Taxi Ass’n, Inc. v. Uber Tech., Inc., 886 F.3d 332 (3rd Cir. 2018), cert. denied, 139 S. Ct. 211 (2018).

\(^{115}\)See discussion *supra*, text at notes ___.

\(^{116}\)E.g., https://smile.amazon.com/AmazonBasics-Hardside-Spinner-Luggage-24-Inch/dp/B071VG5HKQ/ref=sr_1_1_sspa?dchild=1&keywords=amazonbasics+suitcase&qid=1587933491&sr=8-1-spons&psc=1&spLa=ZW5jcnlwdGVkUXVhbGlmaWVyPUExTEExTODg5
manufacturers, such as Samsonite or TravelPro, and these sell at least some of their bags through traditional stores. In its *AmEx* decision the Supreme Court incorrectly concluded as a matter of law that “Only other two-sided platforms can compete with a two-sided platform for transactions.” That statement represented a triumph of ideology over science. The question of which firms compete with which other firms is one of market behavior and distinctly a question of fact. Further, as a matter of fact the Court’s statement is clearly wrong.

In any event, the Supreme Court’s statement about lack of competition between two-sided and more traditional markets was dicta. The only relevant competing entities in *AmEx* (Visa, MasterCard, and Discover) were all two-sided platforms. In the *AmEx* case no one denied that AmEx and other two-sided credit card platforms competed with one another. Indeed, there would not have been any point to AmEx’s antisteering rule if they did not compete. The rule was intended to forbid merchants from steering the user of a high priced AmEx card to a less costly credit card rival.

In any event, the *AmEx* Court was unclear about what it meant to say that two-sided platforms and traditional markets cannot compete. Certainly it is not the case that a two-sided platform such as Uber cannot take sales away from a traditional taxicab company, or

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117 *Amex*, 138 S.Ct. at 2287. See also United States v. Sabre Corp., ___ F.Supp.3d ___, 2020 WL 1855433 (D.Del. Apr. 7, 2020), which relied on this statement to conclude that a merger between two computerized airline reservation systems could not be a merger of competitors because one was two-side and the other was not.


119 See *Amex*, 138 S.Ct. at 2283 (indicating there was no issue of competition between Amex and alternatives such as cash because the anti-steering rule did not apply to them).
vice-versa,\textsuperscript{120} or that cash transactions cannot compete with credit card transactions. People switch back and forth between these things all the time.

More technically, we would say that the two compete if one is in a position to force the other’s prices down to its cost. That would be the proper question for market definition under the antitrust laws. For example, a traditional taxicab company would be regarded as a competitor with Uber if competition from the cab company was sufficiently robust to prevent Uber from charging a price significantly higher than its costs.\textsuperscript{121} That is, in the process of setting its price Uber must consider not only demand and participation balancing as between its own drivers and riders, it must also consider competition with Lyft, as well as conventional taxicab companies. Further, all participants engage in multi-homing. Customers can switch among Uber, Lyft, and taxicabs, taking whichever is most favorable at the moment. Some drivers do the same thing.\textsuperscript{122} This makes the competition question intensely factual, and with the likelihood of different outcomes for different situations.

Finally, it is no answer that in a long run equilibrium only the platform will dominate. It may or may not be the case that eventually Uber and Lyft will drive traditional taxis out of the market. More likely, taxicab companies will adopt technologies that make them more competitive with multi-homing customers. But antitrust policy necessarily looks at shorter or middle runs, so what counts is the extent of substitution now and in the near term. In all cases, however, the

\textsuperscript{120}See generally Phila. Taxi Ass’n, Inc. v. Uber Tech., Inc., 886 F.3d 332 (3rd Cir. 2018), cert. denied, 139 S. Ct. 211 (2018).
\textsuperscript{121}See 2B ANTITRUST LAW, supra note __, §§530-531, 536-538.
\textsuperscript{122}See Jason Laughlin, From Cab to Uber to Cab, Drivers Try to Find a Way to Make a Living, PHILADELPHIA INQUIRER (May 17, 2018), https://www.inquirer.com/philly/business/transportation/uber-lyft-cab-drivers-competition-philadelphia-20180517.html (profiling drivers who drive for both Uber and a Philadelphia taxicab company).
question whether a particular two-sided platform competes with a more traditional market is one of fact, not of law.

D. Product Differentiation and Winner-Take-All

Even if costs decline continuously as volume increases or there are significant network effects, a digital platform is still not necessarily a natural monopoly. Another and pervasive reason for inter-platform competition is product differentiation. While a natural monopoly can exclude a rival with an identical product simply by charging a competitive price, the differentiated entrant faces a different demand curve. As a result, there can be room for new entry even against a much larger firm. Often the inroads into monopoly come from entrants whose product is different from that of the incumbent. For example, the railroads encountered significant competition from trucking,123 and AT&T’s competition for its traditional land lines came from wireless technology.124 FB displaced MySpace, not by simply going head-to-head with a substantially identical product, but rather by offering a set of inter-member communication services that MySpace lacked.125

Consider internet dating platforms, which are two-sided markets that have significant indirect network effects and almost exclusively digital output. Dating sites match people who want to pair up with a complementary partner. They become more valuable to one set of participants (say, men on a more traditional platform) as the number of a complementary set of participants (women) is larger; or vice-versa. That logic would lead to the conclusion that the market for dating sites is a natural monopoly, because a site with more participants would always have an advantage over a smaller site.

123See discussion supra, text at notes __.
124See discussion supra, text at notes __.
Seekers would always prefer sites with a larger number of sought, and vice-versa, until the full population of dating site users was exhausted.

So why don’t we have a single dating site that collects all the seekers and the sought into one place? One possibility of course is that the market for dating sites has not yet reached an equilibrium and eventually this will happen. However, online dating platforms have been around for some twenty-five years and their number and revenues are still growing.¹²⁶

The industry has also been subject to a fair amount of consolidation, mainly by merger. Today the industry is best described as a having a dominant firm (Match Group) with a competitive fringe.¹²⁷ Significantly, when large sites such as Match acquire sites such as Tinder or OKCupid they do not blend them all into the same site but maintain them with separate identiﬁes and membership. That also indicates that the sites are not natural monopolies. If they were, then as they came under the control of a single owner they would be blended into one. For example, if the same firm came to acquire two substantially identical telephone networks with five hundred subscribers on each, merging the two would create very considerable value. The ﬁrm would proﬁt by merging them.

¹²⁶See Wikipedia, Timeline of Online Dating Services (last visited Aug. 2, 2020), which notes that Kiss.com, founded in 1994 was a digital predecessor to Match.com, which launched in 1995. Since that time the industry has grown steadily. As of May 2020 there were 2430 ﬁrms, some of whom owned multiple sites, and continuing growth. See Dating Services Industry in the U.S. – Market Research Report (Ibisworld, May 2020), available at https://www.ibisworld.com/united-states/market-research-reports/dating-services-industry/.
¹²⁷Match Group owns Match, Tinder (acquired in 2018), OKCupid (acquired in 2011), and Hinge (acquired in 2018), as well as several smaller sites, and was estimated in 2019 to have a market share of 66%. eHarmony, which also owns some smaller sites, has 10.8%. No other ﬁrm exceeds an 8% Market share. See Evan M. Gilbert, Antitrust and Commitment Issues: Monopolization of the Dating App Industry, 94 NYU L. REV. 862, 876 (2019).
Product differentiation in dating sites results mainly from reduced search costs in a world of diverse user preferences. Dating sites range from the fairly staid and traditional, such as Match.com; to the much more risqué, such as AdultFriendFinder.com, to more focused sites such as Grindr for gays and lesbians, OurTime for older adults, J-Date for Jewish people, Christian Mingle for Christian evangelicals, Shaadi for Indians, EliteSingles for people with higher education levels, PURRsonals for cat lovers, Hotsaucepassions, for lovers of spicy food, and many more. As long as this product differentiation is both durable and desired, dating sites will not be winner-take-all platforms.

The same thing is true of a variety of other two-sided platforms that have significant network externalities, particularly in various types of media. One widely studied example is video games, which operate on two sided platforms but are subject to product differentiation in both hardware formats and in the games themselves. In addition, many periodicals that depend on

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advertising have both readership and advertising rates that become more attractive as numbers rise. But they are also significantly differentiated from one another. Two magazines of roughly the same size, *Teen Vogue* (#74 nationally by circulation) and *Field & Stream* (#73 nationally) are unlikely to merge into one. Nor is one likely to drive the other out of existence and become dominant. Even if the two came to be owned by the same parent, it is unlikely that the owner would blend the two into one. They appeal to very different audiences. This is why any claim that two-sided markets are “winner take all” or even “winner take most” is simply wrong. That statement is very likely true only of undifferentiated products that sellers are unable to distinguish from their competitors.

For some products, such as internet search engines, product differentiation has been less successful. There are in fact differences among search engines in page formats, the way results are displayed, the amount and nature of the information that they preserve, and the algorithms used to produce search results. However, none of these differences has significantly balanced out the competition, even though multi-homing is readily possible and common. Worldwide search data from 2020 shows Google with a market share in the neighborhood of 92%, Bing (Microsoft) with 2.5%, and no one else with greater than 2%. As a result, this market falls closer to the standard IO model of a dominant firm with a competitive fringe. Eventually it may be a monopoly.

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129 See Wikipedia “list of magazines by Circulation, United States”
What accounts for these lopsided numbers in the search engine market is not entirely clear. Decisions such as the EU case against Google Search are based on the premise that Google biases search results to favor paid supporters or else its own assets, such as YouTube.\textsuperscript{131} While search biases might increase Google’s revenue, however, they should serve to decrease rather than increase its share of the search market. As long as switching among search engines is easy, biased results should lead users to substitute away.

A more plausible possibility is that Google obtains an advantage because it is “tied” in some way to other programs. For example, Google search has traditionally been the default search engine on Android smartphones, at least until an EU decision in 2018.\textsuperscript{132} However, the user of an Android device can readily add apps for alternative search engines.\textsuperscript{133}

To the extent searchers are disappointed by search bias they can as a general matter easily switch to a different search engine. Switching costs range from nil to very low. Today anyone with a desktop, laptop, or handheld can have multiple search engines and switch among them on a whim. While search is subject to economies of scale, users do not pay the cost, so there are no cost advantages associated with doing a search on Google or switching to an alternative. Of course, cost advantages might also show up in better results.\textsuperscript{134} Overall, the most

\textsuperscript{132}See discussion infra, text at notes __.
\textsuperscript{133}Other possibilities are explored in Fiona M. Scott Morton & David C. Dinielli, Roadmap for a Digital Advertising Monopolization Case Against Google (Omidyar Network, May 17, 2020), https://www.omidyar.com/insights/roadmap-digital-advertising-monopolization-case-against-google.
compelling explanation for the market share of Google Search is consumer preference.

Finally, the ability of firms to differentiate their products or services at least partly explains the dominant platform strategy of buying up nascent digital firms, discussed later.\(^{135}\) Most of these acquisitions are not purely vertical but rather fall into the category of “product extension” mergers,\(^{136}\) or acquisitions intended to broaden the range of products or services that the acquiring firm offers. They may be an effort either to obtain product differentiation, or more likely, to cut off efforts by others to develop differentiated alternatives. Here, antitrust policy concerning startup acquisitions becomes relevant. Large platforms such as FB, Amazon, or Google may have been able to maintain their positions by buying up all of the prospective challengers before they can ripen into more formidable rivals.\(^{137}\)

III. ANTITRUST REMEDIES AGAINST DOMINANT PLATFORMS

A. Against Platform Exceptionalism

In its AmEx decision the Supreme Court majority did a great deal of violence to the antitrust economics of markets.\(^{138}\) First, it disregarded the most basic of all properties of markets, which is that they consist of close substitutes. Instead, it lumped production complements into the same market, in the process making coherent economic analysis of the problem impossible. Second it ignored an important distinction between fact and law: questions about markets, including identifying who competes with whom, are questions of fact. Rather, the majority held as a matter of law that two-sided platforms compete only with other two-sided platforms, but not with more

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\(^{135}\) See discussion infra, text at notes __.


\(^{137}\) See discussion infra, text at notes __.

\(^{138}\) See Hovenkamp, Looming Crisis, supra note __.
traditional markets. This holding, which was not essential to the outcome, has already produced serious mischief in lower court decisions. It led one court to conclude that a merger between a two-sided online airline reservation system and a more traditional system could not be a merger of competitors.\footnote{United States v. Sabre Corp., 2020 WL 1855433 (D.Del Apr. 7 2020) (“Only other two-sided platforms can compete with a two-sided platform for transactions,” quoting \textit{AmEx}, 138 S.Ct. at 2287).} \textit{Third}, without argument or evidence it required that market power be shown indirectly in a vertical restraints case, by reference to a relevant market, even though superior techniques are available. This is particularly true in digital markets where data can readily be obtained. This was another confusion between fact and law. \textit{Fourth}, the Court’s majority completely butchered the economics of free riding – largely a Chicago School development – by ignoring the fact that when a firm is able to recover the value of its investments through its own transactions free riding is not a problem. \textit{Fifth}, it failed to perform the kind of transaction-specific factual analysis that has become critical to economically responsible antitrust law. Rather, it simply assumed that in a two-sided market losses on one side are inherently offset by gains on the other side, but without examining the actual transactions before it.\footnote{See Erik Hovenkamp, \textit{Platform Antitrust}, 44 J. Corp. L. 713 (2019).} \textit{AmEx}’s anti-steering rule produced immediate losses for \textit{both} the affected cardholder and the affected merchant. The only beneficiary was the operator of a platform able to shelter itself from competition that would have benefitted both cardholders and merchants.

Markets differ from one another.\footnote{See Herbert Hovenkamp, \textit{Regulation and the Marginalist Revolution}, 71 Fla. L. Rev. 455, 492-495 (2019).} This is why we apply mainly antitrust law to some, regulation to others, and some mixture of the two to others. It is also why antitrust is so fact intensive, particularly on issues pertaining to market power or competitive effects. Indeed, the biggest advantage that antitrust has over legislative regulation is its fact sensitive nature. Antitrust courts do and should avoid speaking categorically about market situations that are not immediately before them. Within this framework there is no reason for thinking that digital platforms are a unicorn that should be treated differently from other firms. Every market has its distinct features, but
the ordinary rules of antitrust analysis are adequate to consider them. The AmEx decision is a cautionary tale about what can happen when a Court is so overwhelmed by a market’s idiosyncrasies that it abandons well established rules for analyzing markets.

Most digital platforms are not structural winner-take-all markets.\textsuperscript{142} In most cases dominant platforms cannot maintain a dominant position simply by setting a price at or a little above the competitive level. Just as other dominant firms, if they wish to maintain their power they must behave strategically. Further, the general case for regulating them is weak, at least if the goal of the regulation is the ordinary neoclassical one of approximating competitive rates of output.\textsuperscript{143} Empirically the purposes of regulation are much broader and more diverse, however, than the range of rationales for antitrust.\textsuperscript{144} For example, regulatory goals could be dictated by telecommunications policy, national security, privacy, decency, political balance, equality, protection of particular interest groups, or other concerns. If the goal of regulation is something other than maintaining competitive levels of output, it will have to be implemented by means other than the antitrust laws.

Not only do markets generally differ from one another, digital platforms differ among themselves. One important difference lies in the nature of the products. Some platforms have inputs and outputs that are composed primarily of intellectual property rights or other digital content that is both nonrivalrous and inexhaustible. Others deal in traditional and more tactile goods and services where the power to exclude varies from one situation to another. For some technologies, product differentiation serves to make natural monopoly highly unlikely.\textsuperscript{145} Some platforms compete intensely with more traditional markets, while others do not. The “pure information” platform, such as FB, presents the greatest threat for durable firm dominance, although even here product differentiation or innovation by rivals can blunt its edge.\textsuperscript{146}

\textsuperscript{142} See citations supra, note __.
\textsuperscript{143} For a statement of this view, see ALFRED E. KAHN, THE ECONOMICS OF REGULATION: PRINCIPLES AND INSTITUTIONS (rev. ed. 1988).
\textsuperscript{144} See STEPHEN BREYER, REGULATION AND ITS REFORM 15-25 (1982).
\textsuperscript{145} See discussion supra, text at notes __.
\textsuperscript{146} See discussion supra, text at notes __.
Overly categorical approaches to the control of platform competition are unlikely to work. Rather, antitrust litigation against them will require individualized fact finding, an assessment of competitive harms, and relief appropriately tailored for the circumstances. Under the antitrust laws a properly defined exclusionary practice is one that unreasonably creates or maintains monopoly status. The courts often speak of “monopoly maintenance” as the offense. If such a practice succeeds, it will serve to prolong the duration of the monopoly as market forces might otherwise operate to weaken or destroy it.

B. Appropriate Antitrust Remedies

Unlike command-and-control regulation, antitrust generally begins with the proposition that markets should tend to themselves. It intervenes only when competition is threatened. Antitrust is not simply regulation by other means, certainly not if the term “regulation” refers to a government institution’s ongoing supervision of price or output.

This subsection considers how antitrust tribunals can further digital platform competition without become excessively involved in the ongoing supervision of business conduct. This means that antitrust decision makers must seek to recognize and enjoin practices that reduce overall output and result in higher consumer prices or reduced quality or innovation. Concerns for privacy, political power, or social equality are of course relevant to legal policy generally, but they are not antitrust problems unless they threaten to reduce output, raise price, or restrain innovation.

1. Structural Relief v. Prohibitory Injunctions

For most antitrust problems that do not involve recent acquisitions, structural breakup is not a promising remedy, even if dominance has been established. The history of structural relief in American monopolization cases is not pretty.149 Requiring integrated firms to spin off specific plants or products will simply make them less attractive to consumers but will not obviously dissipate market power in any particular product or service.

This problem is if anything more severe for digital firms, which generally contain high levels of integration. To be sure, a multi-divisional firm such as Alphabet, Inc. (Google’s parent) can probably be broken into separate parts that follow its corporate lines – perhaps one firm for the Android operating system for small telecommunications devices, another for Google Search, another for application services such as Gmail, others for YouTube, Google Nest home products, and Waymo autonomous driving technology.

But breaking apart noncompeting units does not increase the amount of competition. For example, if a manufacturer makes 80% of the world’s toasters and 75% of the world’s blenders, compelling divestiture of one will yield one firm that makes 80% of the world’s toasters, and a different firm that makes 75% of the world’s blenders. Because the two divisions are not competitors to begin with, we have done nothing to increase the amount of competition. To do that we need to break into each product. We could do that by forcing divestiture of half of the firm’s toaster business and half of its blender business, spinning them off to other firms. This can be a much more difficult thing to accomplish. The more integrated the primary company, the greater the difficulties. For example, if the firm makes its toasters in one plant with an integrated production line and blenders in a different plant, a divesture that actually increases competition would require dismantling or restructuring the plants themselves.

To be sure, a divestiture might eliminate synergies or leverage that operate between different non-competing divisions. For example, the Android operating system has incorporated biases in favor of Google Search (GS).\textsuperscript{150} GS has traditionally been preinstalled as the default search engine on Android devices.\textsuperscript{151} While users are free to add additional search engines, GS has whatever advantages accrue from being the default. These might be eliminated if Android and Search were owned by different firms.

Or we might divest Amazon’s eBook business and give it to a different firm. Currently a user can call up a book title on Amazon and select from available formats, whether hardback, paperback, Kindle (ebook), or audio. Forcing a divestiture of Kindle might require a customer who wanted the ebook version to go to a different firm’s website. The impact on output and prices is uncertain. Currently ebooks are sold by a variety of resellers, including the publishers themselves. The principal impact of such a divestiture might be simply to make it less convenient for readers to select a book format. That would not be a consumer welfare improvement.

Yet another proposal, which received some discussion during the 2019-2020 Presidential campaign, is to force Amazon to separate its third party products from its platform. Under the proposal, Amazon “would be prohibited from owning both the platform utility and any participants on that platform.”\textsuperscript{152} Underlying the proposal is the argument that Amazon sometimes copies third party products that it is selling and develops its own in house version, which it sells cheaper. A frequently given example is a laptop stand that Amazon sold for a small third party seller, Rain Design, at a price of around $40.\textsuperscript{153}

\textsuperscript{152}Elizabeth Warren, \textit{Here’s how we can break up Big Tech}, \textsc{Medium} (Mar. 8, 2019), https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c.
\textsuperscript{153}See Rain Design 10032 Stand Laptop Stand, Silver (Patented), \textsc{Amazon.com, Inc.}, https://smile.amazon.com/Rain-Design-mStand-
Amazon subsequently designed its own competing stand which it sold for about half that price.154

Both the problem and the antitrust remedy raise troublesome issues. Even if the rival laptop stand had been sold on someone else’s website, Amazon or some other seller could still copy it. The story indicates that the Rain Design stand was not effectively protected by intellectual property rights. Otherwise Amazon would have been guilty of infringement. Further, the margins on the Rain Design product were so high that Amazon was able to make and sell a similar product at half the price.155 In fact, a large number of sellers sell competing stands on Amazon, mostly at prices lower than Rain Design’s.156 This particular antitrust remedy appears to be a naked preference for a smaller vendor’s wish for high margins over consumers’ desires for lower prices and variety that competition would offer.

The biggest impact of Amazon’s sales of its own products in competition with third party Amazon sellers, however, does not come from siphoning off niche products such as laptop stands. Rather, Amazon has developed house brands that compete with well-established labels sold by large manufacturers at high margins. For example, AmazonBasics batteries compete with Duracell (owned by Berkshire-Hathaway), Energizer, and Ray-O-Vac. Its AmazonBasics small appliances compete with those produced by Black & Decker, and its AmazonBasic travel luggage competes with Samsonite.157 These are all very large firms. The main thing this proposal would

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155 Or alternatively, Rain Design had extremely high costs.
157 Hovenkamp, Looming Crisis, supra, note __.
accomplish is to segregate aggressively priced low margin house brands from high margin premium brands, and customers would end up paying more. The underlying problem is no different than the one that has caused many larger retailers such as grocers to begin offering house brands, sold in the same stores but at lower margins than the premium brands charge.158

Prima facie, determining harms and benefits from judicially mandated restructuring of firms is difficult. The point is not that structural remedies are categorically bad, but that no divestiture should be compelled without a relatively clear understanding of the likely effects. As with all antitrust remedies, the goal should be to create a situation in which post-divestiture output is higher than it was before. Higher output will be the source of consumer benefit. Far too often well-intended divestitures or structural separations end up doing precisely the opposite.

The 1911 Standard Oil decree divided that company into 34 firms, many of which sold petroleum products in distinct geographic areas. In addition, however, were at least two pipeline companies, a tank car company, a mining company, and several refining and natural gas companies.159 Shortly thereafter the price of gasoline went up sharply, forcing the FTC to write a lengthy report explaining why.160 Whether the price increase was caused by the Standard breakup is hard to say, but the facts give us some pause. One troublesome possibility is that the breakup along regional lines simply left a group of regional monopolies in place. However, the breakup also interrupted production and supply networks, thus increasing input costs. That would not be a favorable outcome. The similarities to a platform breakup are fairly obvious. Divestiture that actually benefits consumers is more easily said than done.

A properly designed injunction against unreasonably exclusionary contract provisions can have more predictable

159See United States v. Standard Oil Co. of New Jersey, 173 F.177, 198-199 (E.D.Mo. 1909). See also Standard Oil co. of New Jersey, 221 U.S. 1, 35 n. 1 (1911) (listing Standard’s assets).
procompetitive effects and sometimes can accomplish more than divestiture would. For example, a remedy against Google’s practice of preinstalling Google Search on Android need not require divesting one of the firms from the other. It could as effectively be remedied by an injunction that simply halted the practice and directly provided purchasers of new Android devices a startup menu to select from competing search engines.\textsuperscript{161} This was the result of the EU’s July, 2018, \textit{Android} decision.\textsuperscript{162} Under that remedy, upon initial startup of a new device the Android screen lists a number of alternative general search engines, and the customer can select one. Placement on the list is determined by competitive bid. Android’s own information page on this process shows a screen giving new users a choice among four search engines: Yahoo, DuckDuckGo, Google, and Bing.\textsuperscript{163}

The mandatory injunction in this case may actually be more effective than divestiture, which in and of itself does not guarantee the desired result but only structural separation of the components. For example, Apple and Google Android are distinct and competing firms. Nevertheless, Google Search has also been the preinstalled default search engine on most Apple devices as well.\textsuperscript{164} In contrast to

\textsuperscript{161}The proposal was made in Herbert Hovenkamp, \textit{Antitrust and Information Technologies}, 68 FLA. L. REV. 419, 436-437 (2016).
\textsuperscript{162}See Commission Decision of July 18, 2018, relating to AT.40099 – Google Android, https://ec.europa.eu/competition/elojade/isef/case_details.cfm?proc_code=1_40099. In particular, see ¶1214, p. 274, noting that pre-installation of competing search engines would have created more competition in search traffic. See also id., noting testimony that installing a single search engine as a default increased that search engine’s traffic by a factor of 2-3, and also that Google was willing to pay large sums in order to be the default search engine on some devices. See Katie Collins, \textit{Google Won’t be Default Search Engine for Android Users in EU Next Year}, CNET (Aug. 2, 2019), https://www.cnet.com/news/google-to-prompt-eu-android-users-to-choose-a-search-engine-within-chrome/.
\textsuperscript{163}See About the choice screen, ANDROID (August 15, 2020), https://www.android.com/choicescreen/.
divestiture, the injunctive remedy can go straight to the practice and give the default choice directly to consumers.

A firm or subsidiary is economically a bundle of contracts operating under state-imposed structural rules of corporate law. One problem with divestiture along firm or divisional lines is that it defers to corporate forms to separate the entire bundle, even though only one or a few contracts in the bundle might be harmful. As the EU remedy in the Android/search case suggests, one can accomplish the segregation of the operating system and search in more focused ways. Divesture is the bluntest way because it segregates all attributes of the two entities, both the harmful and the beneficial. By contrast, the injunction solution is much more limited to the competitive problem at hand.

Antitrust’s rule of reason enables courts to avoid sledgehammer remedies such as breakup and focus more narrowly on the practice that is harming competition. Consider the NCAA case, which was a challenge to an NCAA rule that limited the number of nationally televised games that any single team could have. Once the Supreme Court found that limitation unlawful, it could have dissolved the NCAA. It did exactly that a century earlier in the Trans-Missouri case, breaking up a largely efficient joint venture in order to control its price-fixing. But a breakup of the NCAA would also have brought to an end all of the good things that the NCAA was able to accomplish through joint action. The market for intercollegiate sports

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167United States v. Trans-Missouri Freight Ass’n., 166 U.S. 290 (1897) (granting government’s request to dissolve a joint venture because it fixed freight rates). On the efficiency of the Trans-Missouri venture, which lead both the Interstate Commerce Commission and the Eighth Circuit below to approve it, see Herbert Hovenkamp, Federal Antitrust Policy: The Law of Competition and Its Practice §5.2a1 (6th ed. 2020).
requires someone to organize it. In this case the harm was much more effectively addressed by a focused decree enjoining the limitation on games. After that, the member schools could compete for televised game contracts. The number of annually televised games immediately more than doubled, from 89 to more than 200.\textsuperscript{168}

An advantage traditionally asserted for structural remedies is that they permit competition to emerge without the need for ongoing judicial administration. By contrast, one of the downsides of nonstructural remedies such as injunctions is that they may require ongoing court supervision, and this should be avoided. While this critique is valid for some injunctive remedies, it is not for others. The task for the court is to design injunctive remedies that will permit the market rather than judicial supervision to determine post-relief competition. In a case such as NCAA, this is relatively easy. Given a very large number of colleges in the NCAA plus the fact that televised games can readily be observed (making a surreptitious agreement impossible), a simple injunction should be sufficient to let competition do its work. Each school can then decide for itself how many games to broadcast.

Injunctive remedies for single firm conduct can be more difficult to devise and enforce. For example, a court might attempt to remedy an unlawful refusal to deal by issuing an injunction compelling dealing. However, it would then have to determine the scope and terms of any forced dealing and almost certainly be called on later when disputes arose.\textsuperscript{169} The court would effectively become a regulator. In that case a stronger argument can be made for a structural decree that makes the market more competitive. In sum, while injunctions have the capacity to be more effective and precise antitrust remedies, they must be used with some appreciation of what the post-remedy market


\textsuperscript{169}See 3B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶771b (4th ed. 2018) (developing these objections to dealing orders against essential facilities).
is going to look like. A court should avoid an injunction that will require it to be an ongoing regulator of business conduct.

In other cases an effective mechanism may already be in place for administering duties to deal. The Trinko decision provides one example. An antitrust dealing order was deemed unnecessary in part because dealing orders were already being enforced by regulatory agencies acting under the Telecommunications Act.\(^{170}\) Or in cases involving violations of prior commitments to license patents out on fair, reasonable, and non-discriminatory (FRAND) terms, the district courts either make these determinations or in some cases the FRAND agreement requires the appointment of arbitrators for that purpose.\(^{171}\)

By taking away antitrust law as an enforcement tool, even in cases involving competitive harm and higher prices, the recent Qualcomm decision in the Ninth Circuit threatens this fragile system. Qualcomm, a dominant firm, had reneged on its FRAND obligations in numerous ways that also seemed to be clear antitrust violations, although the court rejected a well reasoned district court’s conclusions which found that.\(^{172}\) Up to now, the private FRAND contract enforcement system has not been adequate for restraining this conduct. Without an antitrust remedy a likely result is that other firms will do the same thing. The system of voluntary innovation sharing that the FRAND network licensing system contemplates will fall apart. If that happens Congress will have to step in, as it did for the traditional telephone system.


\(^{172}\) FTC v. Qualcomm, Inc., 411 F. Supp. 3d 658, 671–72 (N.D. Cal. 2019), rev’d, 2020 WL 4591476 (9th Cir. Aug. 11, 2010). For antitrust analysis, see Hovenkamp, FRAND and Antitrust, supra note __.
2. Alternatives to Asset Breakups

The approaches discussed briefly in this section do not require the divestiture of assets or spinoffs of divisions or subsidiaries. Rather, they alter the nature of ownership, contracts, intellectual property licenses, or control within the existing firm. While the current antitrust statutes grant the courts equitable power sufficient for such remedies,\(^\text{173}\) they are also novel and could provoke resistance.

One warning, however. Antitrust decrees against unwilling defendants become appropriate only after antitrust violations have been proven. Further, the relief must be commensurate with the violation. Occasional uses of unlawful exclusive dealing or most-favored-nation agreements\(^\text{174}\) should justify an injunction against continuation of the practice, but not ordinarily a breakup of the entire firm or fundamental alteration of its management structure. To be sure, defendants do consent to be broken up, as AT&T did.\(^\text{175}\)

However, that was only after important lower court decisions had already found antitrust violations in conduct that resisted attempts to make the industry more competitive.\(^\text{176}\)

\(^{173}\) See 15 U.S.C. §25 (granting the district courts unrestricted power “to prevent and restrain violations” of the antitrust laws and creating a duty for the Attorney General and United States attorneys to do so. The subsequent section, 15 U.S.C. §26, offers equally broad remedies for private parties, although with the additional requirement that they must show “threatened loss or damage” from an antitrust violation.


\(^{176}\) E.g., MCI Commun. Corp. v. AT&T Co., 708 F.2d 1081 (7th Cir. 1983), cert. denied, 464 U.S. 891 (1983) (AT&T’s refusal to interconnect with other carriers violated §2 of the Sherman Act).
The traditional way that antitrust law applies structural relief is to break up firms’ various physical assets, through such devices as forcing sell-offs (divestiture) of plants or subsidiaries. To the extent these breakups interfere with the firm’s production and distribution they can produce harmful results such as increased costs or loss of coordination. This is particularly true of integrated production units such as single digital platforms. Overwhelmingly in the recent past antitrust decrees of this type have been reserved for the undoing of relatively recent mergers. Even merger policy, however, shows a strong preference for avoiding divestiture. For example, under the Hart-Scott-Rodino Act most mergers today are challenged before they occur. It is far less costly to both the firms and society to prevent a merger before it occurs rather than unscramble it later.

In the case of digital platforms, one alternative to divestiture is to leave the firm’s physical assets intact but change the structure of ownership or management so as to make it more competitive. A platform or other organization can itself be a market within which competition can occur.

Ordinarily agreements among subsidiaries or even individual employee agents within the same firm are counted as unilateral and attributed to the firm itself. That rule is a direct consequence of the separation of ownership and control. The all-important premise,

177 For a comprehensive survey of Supreme Court antitrust divestiture decisions, see E. Thomas Sullivan, The Jurisprudence of Antitrust Divestiture: The Path Less Traveled, 86 Minn. L. Rev. 565 (2002).
however, is that the firm’s central management is the only relevant independent decision maker and that shareholders have a sharply attenuated role. When that is not the case, the antitrust game changes, and even agreements among shareholders can be treated as cartels.

There is plenty of precedent. The history of antitrust law is replete with organizations, often legally constituted as corporations, that are owned and managed by distinct and often competing entities. For the most part the courts have applied §1 to them, even to practices that from a corporate perspective appeared to be those of a single firm. If properly managed the result can be to force entities within the same incorporated organization to behave competitively vis-à-vis one another.

Firms whose ownership is reorganized in this fashion can still be very large and retain most of the attributes of large firms. On the one hand, this will satisfy those concerned that breakup of large firms can result in loss of economies or other synergies that generally produce high output and lower prices. On the other hand, it will not satisfy those who believe that bigness is bad for its own sake.

a. Enabling Competitive Ownership and Management

The fact that a firm or market operates most efficiently when a single board or manager controls it does not necessarily entail that the controlling entity must be a single economic actor. It could as easily be a set of independently behaving actors whose members coordinate some activities while competing on others. Such mixed management of unified productive assets has a long and storied history that goes back to the Middle Ages. Farmers, ranchers, and fishermen produced cattle, sheep, and fish on various “commons,” or facilities that were shared among a large number of owners and subjected to management rules.\(^{180}\) Many of these operated on a mixed model that involved

individual production for stationary products such as crops, but a commons for grazing cattle or other livestock.

The rationale seems clear. The economies of scale for growing crops were different from the economies of raising cattle. Production of stationary grains or vegetables functioned very well on small individual parcels, but cattle or fish required something much bigger. The result was that these medieval farmers grew their crops unilaterally but grazed their cattle collaboratively. That is, rather than merging, which is a common approach to achieving scale economies, they collaborated. However, their collaboration was limited to those parts of their business to which these economies applied.

For products such as cattle or fish, the costs of shared management were lower than the cost of creating or maintaining boundaries among individual parcels. That was not the case for radishes or wheat. So rather than cutting a large pasture or bay into 100 fenced off plots, participating property owners operated it as a single economic unit, substituting management costs for fencing costs. Just as for any firm, size and shape are determined by comparing the costs and payoffs of alternative forms of organization. Commons emerged when the administrative costs of operating them as a commons were less than the cost of creating and maintaining boundaries.

So while a commons can be a very large firm, it can be operated by a collaboration of competing entities rather than a single one. Output reductions and price-setting by a single firm are almost always out of reach of the federal antitrust laws. On the other hand, if a market is operated by a joint venture of active business participants their pricing is subject to the laws against collusion. Their exclusions also

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181 See generally Ronald H. Coase, The Nature of the Firm, 4 Economia 386 (1937)
182 For competitive analysis, see CHRISTINA BOHANNAN & HERBERT HOVENKAMP, CREATION WITHOUT RESTRAINT: PROMOTING LIBERTY AND RIVALRY IN INNOVATION 328-338 (2014)
operate under the more aggressive standards that antitrust applies to concerted rather than unilateral refusals to deal.\footnote{183}

Current antitrust law reaches practices under a collaborative structure more effectively than any restructuring that requires the separation of platforms from third-party sales, as previously described.\footnote{184} As noted, one objection to such restructuring is that it segregates low margin house brands from high margin name brands. The result is less competition and higher prices. In addition, relationships between a unitary platform and its various third-party sellers are vertical, and vertical practices generally receive a light touch from the antitrust laws. By contrast, a platform that operates under collaborative management would involve horizontal agreements. Antitrust law treats these more aggressively, particularly if they involve price fixing or naked boycotts.

The classic antitrust example of such a collaborative structure is the 1918 \textit{Chicago Board of Trade} case, which first articulated the modern rule of reason for antitrust cases.\footnote{185} As Justice Holmes had described the Board thirteen years previously,\footnote{186} it was an Illinois state chartered corporation whose 1800 members were themselves traders for their own individual businesses, and with an exclusive right to do

\begin{footnotes}
\footnote{183 PHILLIP E. AREEDA \& HERBERT HOVENKAMP, ANTITRUST LAW ¶¶2220-2224 (4th ed. 2018).}
\footnote{184 See discussion supra, text at notes __.}
\footnote{185 Board of Trade of the City of Chicago v. United States, 246 U.S. 231 (1918).}
\footnote{186 Board of Trade of the City of Chicago v. Christie Grain & Stock Co, 198 U.S. 236, 247 (1905) (describing the Board as “a great market, where, through its eighteen hundred members, is transacted a large part of the grain and provision business of the world.”). Holmes observed that the Board “was incorporated by special charter of the state of Illinois.” Id. at 245. The reference to a special charter means that it was created directly by the state legislature rather than through the operation of a general incorporation statute. In the 1918 decision Justice Brandeis relied on Holmes’s earlier decision to describe the Board’s corporate structure and operations. \textit{Chicago Board}, 246 U.S. at 235.}
\end{footnotes}
business on the Board’s trading floor. The “call rule,” which prevented collaborative price-making among the members except during exchange hours, could not have been challenged under the antitrust laws as unilateral conduct. A single firm may set any nonpredatory price it wishes. Rather, the members were regarded as independent actors for the purposes of trading, and thus the call rule was challenged as price-fixing among competitors.

Not only is the substantive law against such collaborative activity more aggressive than for unilateral actions, the remedial problems are less formidable. If a firm acting unilaterally should set an unlawful price the court must order it to charge a different price, placing it in the position of a utility regulator. By contrast, price fixing by multiple independent actors operating in concert is remedied by a simple order against price-fixing, requiring each participant to set its price individually. In Chicago Board the court ultimately found the call rule price agreement to be lawful. If it had not, however, the remedy would have been an injunction against enforcement of the rule, leaving the members free to set their own price. In fact, the United States’ requested relief was precisely that.

The same thing applies to refusals to deal. If a firm is acting unilaterally, its refusal to deal is governed by a strict standard under which liability is difficult to establish, certainly if there has not been an established history of dealing. Further, in many circumstances the court can enforce a dealing order only by setting the price and other terms. By contrast, if the entity that refuses to deal is operated by a

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187 Id. at 235.
188 See Chicago Board (1918), 246 U.S. at 237 (noting that under the call rule “members were prohibited from purchasing or offering to purchase” during period when the market was closed at any price other than the closing price).
189 Chicago Board (1918), 246 U.S. at 237 (describing the suit “to enjoin the enforcement of the call rule, alleging it to be in violation of the Anti-Trust law….”).
group of active business participants, its collective refusal to deal is
governed by §1 of the Sherman Act. The court usually need do no
more than issue an injunction against the agreement not to deal. This
is true even if the actors have incorporated themselves into a single
business entity for most corporate purposes.

The modern business world provides many analogies to this
structural situation. For example, each of the 1200 member schools of
the NCAA (National Collegiate Athletic Association) operates as a
single entity in the management of education, student housing and
discipline, and financing of its own operations, including athletic
departments. By contrast, the rules for recruiting and maintaining
athletic teams, their compensation, and the scheduling, operation, and
playing rules of games, is controlled through rule making by the group
collectively.191 While the schools compete with one another in
recruiting athletes and coaches, in obtaining both live and television
audiences, and in the licensing of intellectual property, all of these
things are subject to NCAA rule making. Decisions to restrict the
number of televised games,192 to limit the compensation of coaches193
or players194 or to limit licensing of students’ names, images, and
likenesses,195 are all reachable as agreements in restraint of trade under
§1 of the Sherman Act. The typical antitrust remedy in each case is an
injunction permitting each team to determine its choices individually.
By contrast, if the NCAA were a single entity owning all of its various

194O’Bannon v. National Collegiate Athletic Ass’n, 802 F.3d 1049 (9th Cir. 2015), cert. denied, 137 S. Ct. 277 (2016) (condemning restraints on student athlete compensation); Alston v. National Collegiate Athletic Ass’n, 958 F.3d 1239 (9th Cir. 2020) (similar).
195In re NCAA Student-Athlete Name & Likeness Licensing Litig., 37 F.Supp.3d 1126 (N.D. Cal. 2014).
teams and IP rights, these decisions would be unilateral and largely unreachable under the antitrust laws.\textsuperscript{196}

The same analysis drove the \textit{American Needle} litigation, which involved the National Football League.\textsuperscript{197} The NFL is an unincorporated association controlled by the thirty-two individual NFL football teams, each of which is separately owned. NFL properties (NFLP) is a separate, incorporated LLC in New York, controlled by the NFL. The individual teams are members, and they also collectively control the licensing of the teams’ substantial and individually owned intellectual property rights. In this case the team members voted to authorize NFLP to grant an exclusive license to Reebok to sell NFL logoed headwear (helmets and caps) for all thirty-two teams.\textsuperscript{198} The plaintiff, American Needle, was a competing manufacturer whom the agreement excluded.

The issue for the Supreme Court was whether NFLP’s grant of an exclusive license should be addressed as a “unilateral” act of NFLP or as a concerted act by the thirty-two teams acting together, and the Court unanimously decided the latter. As a matter of corporate law, the refusal to deal appeared to be unilateral. NFLP, the licensing party, was an incorporated single entity. The lower court had relied on earlier Seventh Circuit decisions holding that professional sports leagues should be treated as single entities.\textsuperscript{199} The Supreme Court’s decision to the contrary was consistent with earlier cases concerning Sealy.\textsuperscript{200}

\textsuperscript{196}\textit{Cf.} Fraser v. Major League Soccer, 284 F.3d 47 (1st Cir. 2002) (Major League Soccer is owned centrally by a single firm, and its shareholders are merely investors; thus it acts as a single entity for purposes of employee compensation).

\textsuperscript{197} American Needle, Inc. v. NFL, 560 U.S. 183 (2010).

\textsuperscript{198} \textit{Id.} at 187-188.

\textsuperscript{199} Mainly in Chicago Professional Sports, Ltd. v. National Basketball Ass’n, 95 F.3d 593 (7th Cir. 1996).

\textsuperscript{200} United States v. Sealy, Inc., 388 U.S. 350 (1967) (territorial restraints and price fixing in member owned but incorporated joint venture).
and Topco,\textsuperscript{201} which held that even if an entity is incorporated it can be addressed as a collaboration of its competing and actively participating shareholders.

The jurisprudence of \textit{Copperweld}, which precludes claims of an antitrust conspiracy between a corporation and its various subsidiaries, officers, shareholders, or employees, is an essential corollary to the proposition that a corporation is controlled by its board, not by its shareholders.\textsuperscript{202} This is how corporate law preserves the boundary between firms and markets.\textsuperscript{203} Shareholders as shareholders are not managers.

But important exceptions exist. Some markets exist within firms, even as they also trade with those on the outside. The Chicago Board of Trade and NFL Properties, described above, are potent examples. While a corporation is a single entity for most antitrust purposes, if it is operated by its shareholders or members for the benefit of their own separate businesses the conduct is reachable under §1 of the Sherman Act. A cartel is still a cartel even if it organizes itself into a corporation. NFL Properties was a cartel of individual owners of IP rights trying to limit competition in their licensing market by being organized as a single firm. The antitrust fix would be an injunction leaving each team free to make decisions about sales of its own property for itself. That need not require dissolution of the NFL as an entity. Nor would we expect it to require ongoing regulation by the court.

Second to the NCAA, among the most frequently litigated firms whose owner-operators are treated as distinct entities are

\textsuperscript{201} United States v. Topco Assocs., Inc., 405 U.S. 596 (1972) (similar; territorial restraints).
\textsuperscript{202} See \textit{Copperweld Corp. v. Independence Tube Corp.}, 467 U.S. 752 (1984). On the manifold contexts in which \textit{Copperweld} issues arise, see 7 \textsc{Phillip E. Areeda \& Herbert Hovenkamp, Antitrust Law}, Ch. 14E (4\textsuperscript{th} ed. 2018).
\textsuperscript{203} On this point, see Edward B. Rock, \textit{Corporate Law Through an Antitrust Lens}, 92 Col. L. Rev. 497 (1992)
incorporated real estate boards. Acting as a single entity, the board organizes the listing of properties for sale, formulates listing rules, promulgates standardized listing forms and sales agreements, and controls much of the conduct of individual brokers. Acting individually, the shareholder/brokers show these properties to clients and try to obtain commissions from sales. Each real estate office acts as both a shareholder or partner in the overall organization, but also as manager of its own separate business.

In 1950 the Supreme Court held that the fact that a real estate board is a corporation did not bar an antitrust decision condemning commission fixing among its member agents.\(^\text{204}\) A leading subsequent decision involved Realty-Multi-List, a Georgia corporation organized and owned by individual real estate brokers.\(^\text{205}\) Under the arrangement one member could show properties listed by a different member. The court concluded that both agreements among the members fixing commission rates and rules that excluded or disciplined brokers who deviated from these rates were unlawful under §1 of the Sherman Act. In the 2010’s the government and private plaintiffs sued several multiple listing services, challenging their decisions to exclude internet real estate sellers.\(^\text{206}\) The Fourth Circuit eventually applied American Needle, rejecting the contention that concerted action was lacking because those making the decision were acting as “agents of a single corporation”\(^\text{207}\) Several other decisions have reached similar results reaching both price fixing and concerted exclusion.\(^\text{208}\)

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\(^{205}\)United States v. Realty Multi-List, Inc., 629 F.2d 1351 (5th Cir. 1980).


\(^{208}\)Freeman v. San Diego Ass’n of Realtors, 322 F.3d 1133 (9th Cir. 2003) (real estate board’s restrictive rules concerning its listing rules should be treated as concerted conduct); Thompson v. Metropolitan Multi-List, Inc., 934 F.2d 1566 (11th Cir. 1991) (exclusion by incorporated real estate board to be treated as concerted refusal to deal); Park v. El Paso Bd. Of Realtors, 764 F.2d 1052 (5th Cir. 1985) (exclusion of price cutter constituted
Even an incorporated natural monopoly can be subject to §1 of the Sherman Act if it is controlled by its shareholders for their separate business interests. That issue arose already in the 1912 *Terminal Railroad* decision.\textsuperscript{209} The railroad bridge across the Mississippi and adjoining terminal were very likely a natural monopoly, in this case a bottleneck through which all traffic across the river had to pass.\textsuperscript{210} However, the facility was owned by a group of thirty-eight firms organized by railroad financier Jay Gould.\textsuperscript{211} The venture was a single corporation under Missouri law, but it was actively managed by its


\textsuperscript{209}United States v. Terminal R.R. Ass’n of St. Louis, 224 U.S. 383 (1912). For a fuller statement of the facts see the district court’s opinion, 148 F. 486 (E.D. Mo. 1906).

\textsuperscript{210} As the Court stated the facts:

Though twenty-four lines of railway converge at St. Louis, not one of them passes through. About one half of these lines have their termini on the Illinois side of the river. The others, coming from the west and north, have their termini either in the city or on its northern edge. To the river the city owes its origin, and for a century and more its river commerce was predominant. It is now the great obstacle to connection between the termini of lines on opposite sides of the river and any entry into the city by eastern lines. The cost of construction and maintenance of railroad bridges over so great a river makes it impracticable for every road desiring to enter or pass through the city to have its own bridge. The obvious solution is the maintenance of toll bridges open to the use of any and all lines, upon identical terms. 224 U.S. at 395.

\textsuperscript{211} Id. at 391. On Jay Gould’s role in financing railroad associations, see EDWARD J. RENEHAN, JR., DARK GENIUS OF WALL STREET: THE MISUNDERSTOOD LIFE OF JAY GOULD, KING OF THE ROBBER BARONS (2006).
shareholder participants, all of whom had separate businesses. They were mainly individual railroads, a ferry company, the Merchants’ bridge, and a “system of terminals.” The venture thus controlled an extensive collection of railroad transportation, transfer and storage facilities at a point at which all east-west traffic in that part of the country had to cross the Mississippi River.

The Court’s order is interesting. It rejected the government’s request for dissolution. It noted that dissolving the corporation would do nothing to eliminate the bottleneck, given that there was only one bridge. Rather, it ordered the district court to fashion a “plan of reorganization” that permitted all shippers, whether or not they were members of the organization, to have access on fair and reasonable terms, with the goal of “plac[ing] every such company upon as nearly an equal plane as may be with respect to expenses and charges as that occupied by the proprietary companies.”

These decisions suggest a better way to remedy anticompetitive behavior by large digital platforms representing several sellers, such as Amazon or Google-Android. Rather than requiring divestiture of productive assets, which almost always leads to higher prices, we should restructure ownership and management. A large firm such as Amazon can attain economies of scale and scope that rivals cannot match. Further, Amazon benefits consumers, most suppliers, and labor by selling its own house brands and the brands of third party merchants on the same website. This is how a seller of house brands can break down the power of large name brand sellers. The problem is not that selling them on the same site is inherently anticompetitive, because it is not. Rather, it is that Amazon’s ownership and management makes it profitable for Amazon to discriminate in favor of its own products and against those of third-party sellers. Breaking up Amazon or forcing a physical separation of

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212 *Terminal Railroad*, 224 U.S. at 391-391.
213 *Id*. at 411.
214 *Ibid*.
215 See discussion *supra*, text at notes __
own-product and third-party sales would give up a great deal of brand rivalry that benefits consumers.

If Amazon’s management were restructured into a group of actively participating shareholders who made their own sales on the platform, but served non-owner merchants as well, these problems could be addressed more competitively through internal firm rulemaking. The rules and their application would be subject to antitrust scrutiny under §1 of the Sherman Act, just as the NCAA, the NFL, or the other firms discussed above. The number and diversity of shareholder participants could vary. The Chicago Board of Trade had 1800 trading members in 1918, when most organizational rules and procedures were still being managed with pencil and paper.216 The NCAA has 1200 member schools.217 The Terminal Railroad Association had 38 shareholder members, but the decree contemplated nondiscriminatory sharing with any non-shareholder who wished to participate.218 One large real estate board, the Chicago Association of Realtors, has 15,500 members.219

To the extent that collusion is a concern, shareholder diversity is as important as shareholder number. In a case such as Amazon, they should represent both large and small merchants, and from a variety of product areas. They should then promulgate participation rules that include nondiscriminatory treatment as between shareholders and nonshareholders. If they were challenged as anticompetitive, these rules could be reviewed under §1’s restraint of trade standard.

Such an approach would not address bigness per se. An Amazon with competitively restructured management could be just as large as it is now. Indeed, it could be even larger if the rules induced

216 See supra, note __.
217 NCAA.org.
218 See discussion supra, note __.
more competitive behavior. Amazon would likely retain all of the efficiencies that flow from its size and scope. It still might be in a position to undersell smaller businesses or to exclude products that its members and rules disapprove, provided that they did not do so anticompetitively. If it did so in an anticompetitive manner, however, §1 of the Sherman Act could be applied.

b.  Compelled Interoperability: Promise and Limitations

Restructuring ownership is not necessarily the only way to open a digital platform to more competition. This subsection briefly discusses forced interoperability, which is a different way to weaken dominant positions without giving up the economies that can accrue to a single firm.

“Interoperability” refers to situations where one firm’s output can be aggregated with the output of one or more additional firms. Interoperability is different from multi-homing. With multi-homing and low switching costs a user can switch from one firm to another easily and cheaply, such as switching among ride hailing services or internet search engines. While switching is easy, the user is still using one supplier at a time. With interoperability the user can access every participating firm’s offerings simultaneously, with no need to switch. For example, social networking sites have multi-homing and low switching costs, but not interoperability. A customer can usually switch among several sites on the same device – say, from Facebook to YouTube to LinkedIn to Flickr. But if the customer is searching for videos on, say, YouTube, the search will not turn up hits for Facebook, or vice-versa. By contrast, with interoperability the data for all of them would be aggregated for search on one site. Someone logged in to, say, LinkedIn could search for a person and find results from FB, Flickr, as well as other sites. On ride-hailing services, the app would aggregate all drivers from Uber, Lyft, and perhaps other services.

220 See discussion supra, text at notes __.
One historically strong example of interoperability is the United States telephone system. Structurally the system has very strong direct and indirect network effects. Prior to the advent of wireless technology it was widely regarded as a natural monopoly, in distinction from over-the-air broadcasting, which was not.\textsuperscript{221} Indeed, the system was operated as a regulated monopoly for many decades prior to an antitrust consent order that imposed a massive structural breakup.\textsuperscript{222}

Even though the United States telephone system is now owned and operated by hundreds of firms, it still remains a unitary network. It enjoys all of the network externalities that result from having a single very large network. For example, you can own a Samsung phone on the Verizon Wireless system calling from Oregon, but talk to someone who owns a Vtech phone on a Frontier landline system in North Carolina. The network achieves this result through statutory interoperability requirements that are enforced by either the Federal Communications Commission or state regulators.\textsuperscript{223} In addition, private standard setting organizations have developed technical standards for telecommunications infrastructure and operations, including the FRAND system, which facilitates the sharing of patented technology.\textsuperscript{224} FRAND is a system of private ordering, operating under rules that encourage members to share technology but

\textsuperscript{221}See, e.g., General Tel. Co. of Southwest v. United States, 449 F.2d 846, 856, 859 (5th Cir. 1971) (noting AT&T’s argument that it was a natural monopoly, and also the government position that over-the-air broadcasting was not a natural monopoly); GTE Serv. Corp. v. FCC, 474 F.2d 724, 735 (2d Cir. 1973) (noting FCC’s conclusion that the telephone system is a natural monopoly); Nat’l Assn. of Theatre Owners v. FCC, 420 F.2d 194, 203 (D.C. Cir. 1969) (telephone system a natural monopoly but not commercial broadcasting). See also Stephen R. Barnett, \textit{Cable Television and Media Concentration}, 22 STAN. L. REV. 221, 240 (1970) (making the same distinction, except concluding that cable television, unlike over-the-air broadcasting, is a natural monopoly).


\textsuperscript{223}The system is described in \textit{Trinko}, 540 U.S. at 405-406.

\textsuperscript{224}See Hovenkamp, \textit{FRAND and Antitrust}, supra note __.
forbidding price fixing or other anticompetitive practices.\textsuperscript{225} A recent panel decision by the Ninth Circuit threatens the integrity of that system. Depending on what happens next, Congressional action may be necessary to protect it.\textsuperscript{226}

A 2019 \textit{Report} on Digital Platforms produced by the Stigler Center, a University of Chicago think tank, briefly discussed forced interoperability as a solution to firm dominance problems in networked markets.\textsuperscript{227} The \textit{Report} cites social networking platforms and particularly Facebook (FB) as candidates for such remedies, noting that FB has litigated against at least one firm that was trying to compel interoperability in data sharing networks.\textsuperscript{228} The \textit{Report} also mentions messaging as a market in which compelled interoperability could increase social value by creating global interoperability standards that would unite texting and messaging technologies. Today the system for voice calls permits virtually any device to contact any other device. By contrast, even though the technology is available, text messaging is still tied to multiple incompatible formats.\textsuperscript{229} Others have recommended interoperability as a way of preserving network externalities while injecting more competition into these markets.\textsuperscript{230}

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\textsuperscript{225}Id.
\textsuperscript{226}See FTC v. Qualcomm, Inc., 411 F. Supp. 3d 658, 671–72 (N.D. Cal. 2019), rev’d, 2020 WL 4591476 (9th Cir. Aug. 11, 2010); and the discussion, supra, text at notes __.
\textsuperscript{228}See \textit{Id.} at 16; and see Facebook, Inc. v. Power Ventures, Inc., 2009 WL 1299698 (N.D. Cal. May 11, 2009); and Facebook, Inc. v. Power Ventures, Inc., 844 F.3d 1058 (9th Cir. 2016) (finding violations of Computer Fraud and Abuse Act).
\textsuperscript{230}E.g., Chris Riley, \textit{Unpacking Interoperability in Competition}, 5 J. CYBER POL’Y 94 (2020); Joseph Gratz & Mark A. Lemley, \textit{Platforms and}
Both direct and indirect network effects are valuable features of many digital platforms. Breaking them up will interfere significantly with performance. Forced interoperability promises to preserve these efficiencies while inducing a significant measure of market competition into the operation of the platform itself. Indeed, forced interoperability can increase positive network effects by aggregating output from several platforms into one. For example, a system in which videos were simultaneously available and searchable on both Facebook and YouTube would be more valuable than two separate systems, as we now have.

One difficult question is how to get there. The AT&T breakup was facilitated by an antitrust consent decree upon a threatened finding that AT&T, a unitary firm, was guilty of unlawful monopolization.\(^{231}\) After the breakup, compelled interoperability under that decree was then actively managed by a district judge (the late Harold Greene) for nearly fifteen years.\(^{232}\) Eventually that system was replaced by the

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\(^{232}\)See generally Joseph D. Kearney, From the Fall of the Bell System to the Telecommunications Act: Regulation of Telecommunications under Judge Greene, 50 HASTINGS L.J. 1395 (1999).
1996 Telecommunications Act, which broadly compelled interconnection and enforced it through arbitration supervised by the FCC and state agencies.\textsuperscript{233} That solution was substantially driven by the fact that AT&T was an unquestioned monopolist with a long history of litigating against any firm that wanted to interconnect with its network.

By contrast, the cellular phone market, which was wireless from the onset, evolved much more competitively, although with a few dominant firms such as Motorola and Nokia. The participants recognized that interconnectivity was essential, and they achieved it through largely voluntary standard setting and cross licensing systems leading up to the FRAND system we have today, including the 4G and 5G cellular networks.\textsuperscript{234} The result is a network that takes full advantage of direct and indirect network effects that are aggregated across a large number of firms of varying sizes.

A similar candidate largely within the cellular phone and tablet market is Google Android. Here there is already a great deal of competitive interoperability among multiple device makers, although much of it is on Google’s terms. The EU’s approach in the Android/Google Search case seems to be a step in the right direction. While Android is a highly interoperable system, one limitation on competition is the forced preference for Google Search, discussed above.\textsuperscript{235} Giving device purchasers a neutral list from which to choose a default search engine is a promising solution that is far less damaging to consumer welfare than a mandatory breakup of Android’s inputs. If


\textsuperscript{235} See discussion supra, text at notes __.
future remedies are necessary, they should focus on loosening Google’s control while yet permitting it to monetize its own substantial investment.

Interoperability increases positive network effects even as it permits each user to select and use a single brand. For example, while the phone system has a high degree of interoperability, providers continue to have discrete communications infrastructures and device manufacturers. The network interconnects everybody, but customers still pay a subscription fee to a particular carrier, such as Verizon; and must still select a device, such as Samsung or Apple. A consumer may have many reasons for switching between either carriers or brands of phones, but access to the network is common to all.

A common feature of markets successfully subject to interoperability is that individual providers have at least one asset that is unique to their own customers and through which they can monetize their investment. Verizon makes money by selling carrier subscriptions, and Samsung makes money by selling phones. As a result, substantial competition on the cellphone network exists -- not for interoperability, which is largely universal, but rather for individual subscription plans and devices.

Here, social networks and other internet platforms present a problem. “Social networking” is a highly amorphous and diversified grouping of sales. While Facebook is certainly very large, significant competitors exist for most of the individual services that it offers, including posting and sharing of messages, photographs, and videos. Creating interoperability among these could produce significant benefits from a larger network.

Unlike the cellular phone system, however, neither Facebook nor other social networking sites is specific to a particular carrier or device. They operate on the internet, which is a commons, and users can access them with any computer or smartphone. If FB becomes fully interoperable with other social media platforms, then what is left of it
as a distinct entity and how does it monetize its product? Network value would clearly increase in a regime in which every video posted on FB is accessible on YouTube, every bit of personal information on FB is also available on LinkedIn, or every FB photo on Flickr. But it would also obliterate many of the boundaries between these firms. They would simply become one very large commons. Where interoperability has worked, such as in cellular phones, it has been where each participant has had more-or-less exclusive control over at least one device or service that could be sold and monetized. This gives them an incentive to compete with one another.

Absent such a unique product, perhaps they could pool their revenue and then share it according to a formula. This threatens to create a tragedy of the commons, with its problems of reducing incentives.\textsuperscript{236} The very fact that commons exist and prosper shows that these need not be insurmountable, but they do require effective governance rules.\textsuperscript{237}

Interoperability concerns are also relevant to some vertical exclusion agreements and mergers, particularly in media markets. The principal problems involve IP rights. Consider, for example, commercial video content such as movies and television. The marginal cost of licensing access to a completed movie is very low. Further, digital video content is nonrivalrous, which means that it can be licensed out an indefinite number of times with no depletion of what is left over. That creates a fairly robust strategy for a firm that owns video content and nothing else: license to every customer willing to pay more than the cost of licensing. In that case, access to a popular film does not depend on which cable company or satellite service you subscribe to. There are some qualifications. For example, if a video product enjoys market power, its owner can ration it through a higher price, which will reduce output. Further, a seller with market power

\begin{footnotesize}
\begin{enumerate}
\item Garrett Hardin, \textit{The Tragedy of the Commons}, 162 SCIENCE 1243 (1968)
\item See OSTROM, \textit{supra} note \__. For one proposal for such rules, see Michael Kades and Fiona Scott Morton, \textit{The Facebook Remedy} (manuscript on file with author, July 13, 2020).
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who is able to price discriminate may obtain different prices from different customers. Subject to these limitations, however, the owner of pure video content profits by licensing broadly.

The principal threat to these distribution incentives is vertical exclusivity, which can result from either exclusive dealing agreements or vertical mergers. For example, suppose the video content owner is acquired by (or acquires) a video distribution firm such as a satellite company. Now video content can become a lever that the satellite company, such as DirecTV, uses to attract customers to its network. It may have an incentive to deny access to those who watch the video on a different distributor or else charge higher prices, inducing some of those customers to switch. Here, the best solution is not enforced interoperability but rather an injunction against the anticompetitive exclusive deal or merger.

c. Conclusion: Compelling Network Competition Without Sacrificing Structural Efficiency

Historically, the reason divestiture has performed so poorly as an antitrust remedy is that it has been overly focused on the dismantling of assets. Divesting physical assets inevitably has multiple effects, only a few of which are beneficial, and which are often difficult to foresee. We should be paying more attention to remedies that inject competition into ownership and management, while leaving efficiently structured productive assets intact. For example, an Amazon.com or a Facebook that retains its size and diversity is almost certainly a better...

solution for customers and the economy, provided that their ownership and management can be restructured in ways that force it to behave competitively.

C. Platform Acquisitions

1. Acquisitions of Nascent Firms Generally

Given that most digital platforms are not natural monopolies, the principal antitrust concern is to control exclusionary practices intended to perpetuate market dominance. One of the biggest threats to the major digital platforms is from small firms that resemble the dominant platforms themselves in their earlier years. All of the major platforms started out in someone’s garage. They were all tiny companies with smart and resourceful owners, a good idea and significant but undeveloped growth potential. An all-too-common phenomenon today is that the dominant platform acquires young startups before they have a chance to emerge as competitors.\(^{239}\) One area that may require new legislation is the development of more aggressive rules governing platform acquisitions, even if these are very small and even if they do not sell competing products.

I say that the area “may” require new legislation because the need is not clear from the statutes themselves. The language of §7 of the Clayton Act is very broad, reaching all acquisitions whose effect may be substantially to lessen competition.\(^{240}\) Its coverage is not limited to firms of any particular size or with any particular competitive relationship. It reaches horizontal, vertical, and conglomerate acquisitions. Nor does the statute itself restrict the mechanisms by which competition might be lessened. All can be unlawful if they meet the statute’s requirements that their effect may be substantially to lessen competition. Finally, the courts have repeatedly observed that §7 has a “prophylactic” purpose, which is to police acquisitions when

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\(^{239}\)Wikipedia maintains list of acquisitions by the dominant platforms. E.g., List of mergers and acquisitions by Amazon, etc.

their competitive threats are still in their “incipiency.” However, years of restrictive interpretation have added a judicial gloss that reads the statute much more narrowly.

One problem is that most dominant platform acquisitions of nascent firms do not easily fit the rationales that antitrust policy currently uses to identify competitively harmful mergers. Agency merger enforcement under the Merger Guidelines is directed almost exclusively to the threat of higher prices or reduced innovation in the relatively short run. Of course, these concerns may sometimes emerge in platform acquisitions, warranting challenge on more traditional grounds. One possibility that was eventually approved was Amazon’s acquisition of Whole Foods, with its chain of just under 500 physical stores. If that acquisition had been challenged it would very likely have been on conventional, price-increasing theories of merger harm. That is, it seems unlikely that a well-established organic grocer such as Whole Foods would have merged into a full-fledged internet merchandiser in competition with Amazon. Other possible acquisitions that might be challenged on ordinary price increase grounds might be a merger between Google Search and another significant search engine, or between Google Android’s OS and Apple’s OS for handhelds.

In contrast, the threat raised by systematic platform acquisitions of tech startups is more akin to an exclusionary practice. Most of these acquisitions are not reasonably calculated to produce price increases or innovation reductions in the short run, but rather to prevent the emergence of substantial rivals. There is legal authority for treating mergers as exclusionary practices, but very little recent history.

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Further, most of the threat from nascent firms is not from head-to-head competitors. Given the significant scale and network economies that the large platforms enjoy, a startup who simply offers the same thing is unlikely to be a significant threat. The more likely threat is from the firm that offers a differentiated version, a complement or some novel innovation that has distinctive consumer appeal. As a result, many of these acquisitions are only partially horizontal or not horizontal at all. Merger law today is heavily focused on horizontal mergers, which get its closest scrutiny. Vertical mergers, between buys and sellers, are challenged far less frequently. So called “conglomerate” mergers, which are between pairs of firms that are neither horizontal nor vertical, are rarely challenged. Unfortunately, this is where the startup acquisition threat is most pronounced.

Small tech firms with good ideas and management can grow very quickly. Nevertheless, antitrust pursuit of acquisitions on these grounds raises formidable obstacles. First, causation as to any particular acquisition is difficult to prove. While a nascent digital firm with a promising technology might turn into a platform juggernaut, at the time of these acquisitions few show more than promise. In fact, many of them have market shares that are zero or at least very modest. Predicting at the time of a contemplated transaction which ones would yield such a threat could be impossible. As a result, a more categorical approach is required.

In general, monopoly maintenance actions fall under §2 of the Sherman Act, which requires proof of dominance. Under current doctrine this requires a large market share of a properly defined relevant market.243 For large internet platforms such as FB or Alphabet (Google), market definition is often untrustworthy. For example, it

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243 Thank to substantial progress in economic measurement tools, a relevant market need not always be defined in merger cases. Rather, we can measure power directly. See 4 Phillip E. Areeda & Herbert Hovenkamp, Antitrust Law ¶¶913-914 (4th ed. 2017). By contrast, §2 cases continue to require a market definition. See Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447 (1993).
requires the answer to questions such as whether online product sales or advertising competes with more traditional alternatives, or whether customer ability to switch undermines any inference of market power drawn from market share. In a few markets, such as search, the answer seems clear. For example, Alphabet (Google Search) has had a relatively stable market share for search that has exceeded 85% for at least ten years. Under the conventional theory that would certainly be sufficient to condemn a horizontal Alphabet acquisition in the search market, but not in many of the other markets where it has made acquisitions. If “digital advertising” is a relevant market, Alphabet (around 36-38%) and FB (around 19%) have significant but not monopolistic market shares. But digital advertising accounts for only about half of all advertising, although its share is growing. While Amazon is very large, in most product markets other than eBooks it lacks a dominant market share. It does control roughly 67% of the eBook market, but eBooks themselves account for a declining or at best level market share of about 20% of the overall book market. In sum, few of the large platform acquisitions of nascent firms would constitute a §2 violation.

New entry ordinarily undermines monopoly. Consumers benefit because the shared returns of the dominant firm plus the new entrant will be less than the monopoly returns of the dominant firm prior to the new entrant’s appearance. In fact, once the new entrant becomes a competitive force, we expect that it will gradually push prices down toward the competitive level. In the case of systematic platform acquisitions, however, the opposite can be true. New firms form and are then acquired at high prices, in the process entrenching the dominant firms who buy them out. Systematic acquisitions of nascent firms thus serve to undermine the traditional argument that new entry breaks down monopoly and thereby promotes competition.244

244 See Kevin A. Bryan and Erik Hovenkamp, Startup acquisitions, Error Costs, and Antitrust Policy, 87 U. CHI. L. REV. 331, 334-338 (2020).
The dominant firm will be willing to pay the expected value of its threatened monopoly position, which could be far greater than the value of the acquired firm as an independent competitor. Ironically, the prospect of acquisition by the large platforms itself acts as an inducement to new entry – not for the purpose of establishing oneself in a more competitive market, but rather in order to profit by selling out to a dominant platform at a price that is much greater than the firm’s value as a competitive presence.

Two firms in a bargaining relationship will move toward their joint maximizing position. In this case the dominant firm’s willingness to pay is driven by the sum of the production value of the acquired assets and their exclusion value to the acquirer. These two values can be quite independent of one another. Indeed, often the acquired firm is valuable to the acquirer even if does not intend to use the acquired assets at all. An acquisition offers the dominant firm the value of integration and improvement of its own product offerings, but also of exclusion because after an acquisition the small firm can neither be acquired by someone else nor grow into a formidable competitor.

Considered by itself, the integration value is almost always a social good. Further, if the firms are not competitors no competition between them is being eliminated. The exclusion value is another story. The threats to the larger firm are, first, that someone else might acquire the young firm; and second, that the young firm would expand into a formidable rival. Both of these are probabilistic but they could be extremely large, particularly the second one.

The task for policy makers is to find ways to manage acquisitions so as to permit or even encourage their integration value but not their exclusion value. The most important acquired assets in most platform merger cases involving nascent digital firms are intellectual property rights. The more typical acquisition is of a relatively young tech firm whose principal assets are intellectual property rights and perhaps

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246 On “killer acquisitions,” *see* discussion *infra*, text at notes __.
some human capital. Growth for these firms could go in many different directions.

One promising remedy is to limit any acquisition to a nonexclusive license. An alternative is to permit the acquisition only on the condition that the acquiring firm license the acquired technology to others on fair and reasonable terms.\(^{247}\) The difference is that the first alternative leaves the smaller firm as a viable alternative on the market. By contrast, requiring compulsory licensing preserves the IP assets to the public, but extinguishes the acquired firm.\(^{248}\) Any growth potential contained in the acquired firm’s IP rights will be available to others.

An important attribute of intellectual property rights is that they can readily be shared in ways that hard assets typically cannot be. For example, it would be unwieldy to say the least to condition a firm’s acquisition of a production plant on its sharing the plant’s space with a third-party competitor. Plants are tangible assets, typically not readily subdivided, and a judicially managed sharing agreement would confront a host of practical problems. Not so, however, with most intellectual property rights. For example, if a firm is permitted to acquire no more than a nonexclusive right in a patent, other firms may be able to practice that patent as well, and generally without any need to coordinate output with the primary owner. Indeed, coordination among licensees of the same patent is usually unlawful unless the licensees are engaged in a common enterprise such as a joint venture.\(^ {249}\)

These limitations will reduce the value of the acquired firm, perhaps considerably. The acquiring firm is obtaining the right to integrate, or use, but not the power to exclude. Depending on the

\(^{247}\)See Kevin Bryan and Erik Hovenkamp, Antitrust Limits on Startup Acquisitions, 56 REV. INDUS. ORG. 615 (2020); Kevin Bryan and Erik Hovenkamp, Startup Acquisitions, Error Costs, and Antitrust Policy, 87 U. CHI. L. REV. 331 (2020).

\(^{248}\)Bryan & Hovenkamp, id., argue for the compulsory licensing alternative.

circumstances, these two rights can have very different values. At one extreme, consider the firm that purchases a firm with a competing patent and then simply shuts that technology down. In that case the value of the integration right is zero. The thing that makes the asset valuable to the acquiring firm is the exclusion right. This was the case in both the Supreme Court’s Paper Bag decision in 1908\(^{250}\) and the Federal Circuit’s much more recent Trebro decision.\(^{251}\) Neither decision raised antitrust issues. As a matter of competition policy, however, both reached the wrong result by approving transactions that facilitated competitor exclusion while doing nothing to promote innovation, and nothing to improve the productive capacity or efficiency of the acquirer.

Indeed, this is one particular use of a patent that actually deters rather than promotes innovation. If no patent had ever issued, others would still be able to develop the technology for themselves. By buying up a patent, shutting it down, and bringing infringement suits against others, however, the acquiring firm is not only obtaining no integration value from the patent, but it is also denying others the right to develop that technology, even if independently.

Limiting the dominant firm’s acquisition to a nonexclusive license or else requiring post-acquisition licensing essentially permits the firm to acquire the integration value of the target, but not the exclusion value. If the acquiring firm actually intends to use the acquired technology the nonexclusive license gives it everything that it needs. For example, if FB wishes to acquire WhatsApp, as it actually did in 2014, it would be permitted to acquire a non-exclusive license in WhatsApp’s technology. This would give FB everything it needs to make the contemplated improvements in its own messaging technology. WhatsApp would then be free to continue to use its technology or to grant nonexclusive rights to others. Alternatively, if

\(^{251}\)Trebro Mfr., Inc. v. FireFly Equip., LLC, 748 F.3d 1159 (Fed. Cir. 2014).
FB were permitted to acquire WhatsApp but compelled to license out any acquired technology it would also be able to capture the full value of any integration that the acquisition facilitated, but not the right to exclude others from the technology.

Both the integration value of a platform acquisition and the exclusion value provide private gains to the nascent firm that is acquired. The social value, however, is very different. The integration value is a social gain that shows up in increased capability or output. By contrast, in most cases the exclusion value represents a social loss, for it equals the value to the dominant firm of being able to exclude rivals from a technology that it has not developed itself.

2. **Killer Acquisitions**

A killer acquisition occurs when a firm buys another firm in order to remove its productive assets from the market, rather than using them itself. The problem is not new. Already in 1916 American Can was condemned of monopolization for buying up rival can making firms and promptly dismantling their assets in order to keep them off the market. Today the problem is more likely to arise in tech or

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252 United States v. American Can Co., 230 F. 859, 875-876 (D. Md. 1916) (noting defendant’s practice of shutting down rivals’ plants almost immediately after acquisition; “two thirds of the plants bought were abandoned within two years of their purchase. Many of them were never operated by the defendant at all….”).
pharmaceuticals. A variation of the same problem is when a firm acquires exclusive rights in a patent and declines to practice it but then sues rivals for infringement. In other cases, a firm acquires a small research firm in an area such as pharmaceuticals with promising research projects in the works, and then shuts them down. Often the acquired firm has a market share of zero because the acquired research projects have not yet been marketed. For example, the assets of an acquired pharmaceutical research firm may include drugs that are in development but not yet tested or brought to market.

Legally, the problem of killer acquisitions should be easy. Any failure of the legal system to take a more aggressive position is largely a result of classification myopia. Rather than treating them like mergers we should be treating them more like cartels.

The reason that we permit most mergers rather than making them unlawful per se is because of their potential to generate efficiencies. But a killer acquisition does not yield efficiencies because the acquiring firm never puts the acquired assets to any use. Economically a merger-plus-shutdown is very little different from the output reduction that attends a cartel. Indeed, the only reason these acquisitions occur is because the alternative of agreeing with a firm to shut down a plant in exchange for a payment of money would very likely be unlawful per se. If a firm purchases a rival for $1m and

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254 See discussion supra, text at notes __.
255 Cunningham, et al., supra note __ at 2 (discussing assets that are still under development and where project success is uncertain).
257 See 4A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶970-976 (4th ed. 2016); Hovenkamp, Appraising Merger Efficiencies, supra note ___.
258 See Jonathan Cave and Stephen W. Salant, Cartel Quotas Under Majority Rule, 85 AM. ECON. REV. 82 (1995) (monopolists tend to shut down least efficient plants in order to reduce output; cartels rarely do).
259 See United States v. Socony-Vacuum Oil co., 310 U.S. 150 (1940) (agreement to reduce output unlawful per se). See Shubha Ghosh, Relaxing Antitrust During Economic Downturns: A Real Options Analysis of
then shuts it down the transaction is treated as a merger. However, if the firm pays a rival $1m to shut down its own plant, the transaction would be treated as a cartel.

Two qualifiers are important. One has to do with the acquiring firm’s intentions at the time of the acquisition. The easy case is the one like American Can, where the purchasing firm acquired rivals for the purpose of removing their productive assets from the market and closed them immediately without even operating them. But other cases are harder to classify. Not all mergers work out. An acquiring firm may make its best efforts to employ an acquired firm’s assets but later determine that the acquisition is a failure. Antitrust policy should not have a per se rule against such shut downs.

Another qualifier is the possibility of partial shut downs. For example, a firm may acquire another firm in order to integrate and use some of its assets but not others. Such cases require an inquiry into relative substantiality under the rule of reason. The assets that are kept in production may be small or may be complements to the acquiring firm’s production, indicating that the merger would not be challengeable if one looked only at those. However, the assets that are

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Appalachian Coals and the Filing Firm Defense, 68 ANTITRUST L.J. 111 (2000). In Europe, see Andre Fiebig, Crisis Cartels and the Triumph of Industrial Policy over Competition Law in Europe, 25 BROOKLYN J. INT’L L. 607 (1999) (speaking of “crisis cartels,” including horizontal agreements to reduce output or even to shut down). Contrast National Ass’n of Window Glass Manufacturers v. United States, 263 U.S. 403 (1923) (upholding agreement to shut down in alternate periods negotiated with labor). The agreements were also unenforceable at common law. See, e.g., Clemons v. Meadows, 123 Ky. 178 (1906) (agreement between two hoteliers that one would shut down).


261 For example, after it acquired Fox Film Enterprises in 2019 Disney closed down Fox 2000, one of the acquired studios, while retaining 20th Century Fox and Fox Searchlight. See https://variety.com/2019/film/news/disney-retiring-fox-2000-label-1203169597/. 
shut down may have posed a significant competitive threat if they were brought to production. Here the usual admonition applies for merger cases that significant harms in one market cannot be offset by benefits in a different market\textsuperscript{262} – and certainly not in cases where the threat is substantial and the efficiencies in the integrated market are not merger specific. Further, enforcers and courts should consider whether a spinoff of the threatening assets is a plausible solution. While research projects typically include a significant intellectual property component, they also include employee talent and perhaps other assets.\textsuperscript{263} As a result a viable transfer may be difficult.

The externally acquired but later unpracticed patent is a variation on the killer acquisition story, which dates back to the Supreme Court’s 1908 \textit{Paper Bag} decision.\textsuperscript{264} The dominant firm purchased a patent on technology that was different from its own, and then shelved the technology rather than practicing it. Subsequently it brought a successful infringement suit against a rival who entered the market with technology that practiced the unused patent. The resolution in that decision, as well as the Federal Circuit’s \textit{Trebro} case, effectively used the patent system to restrain rather than further innovation, using patent law to deprive the market of new technology.\textsuperscript{265}

Once again, limiting the dominant firm to a nonexclusive license solves the killer acquisition problem to the extent that the acquired assets are intellectual property rights. Indeed, if the acquirer

\textsuperscript{262} See 4A AREEDA & HOVENKAMP, supra note __, ¶972.

\textsuperscript{263}Sometimes such acquisitions occur in order to obtain the acquired firm’s employees rather than other productive assets. See John F. Coyle and Gregg D. Polsky, \textit{Acqui-Hiring}, 63 DUKE L.J. 281 (2013). See also Peter Lee, \textit{Innovation and the Firm: A New Synthesis}, 70 STAN. L. REV. 1431 (2018) (arguing that many such acquisitions are efforts to obtain both talented workers and the acquired technologies).


does not intend to use the acquired assets at all, then acquisition of a nonexclusive right has no value in the short run. Of course, the acquisition of a non-exclusive right might be part of a firm’s longer-run plan, and antitrust policy should not stand in the way.

IV. CONCLUSION

Antitrust is a litigation-driven, fact-specific enterprise that requires decision makers to focus on the specific assets and practices before it. Unlike legislative regulation, it does not group classes of industries together for common treatment.

As a result, broad statements of the nature that the big digital platforms must be broken up have no place. It becomes too easy to speak categorically of these markets as dominated by network externalities, as winner-take-all, as having high barriers to entry, or as requiring aggressive breakup remedies. Such assumptions frustrate rather than further reasonable competitive analysis of digital platforms.

Competition problems in digital platforms present some novel challenges, but most are within reach of antitrust law’s capacity to handle them. The courts and other antitrust policy makers should treat digital platforms for what they are, which is business firms that have unique features but not very much that requires us to abandon what we know about competition in high technology, product differentiated markets. Here, much of the two-sided platform literature has done more harm than good by treating two-sided markets as a special set of creatures for whom the ordinary rules of competition do not apply. Finally, for antitrust cases involving platforms just as for all others, there is no substitute for careful fact finding.