JOURNAL
OF
LAW & INNOVATION

© 2024 Journal of Law & Innovation

VOL. 7 MAY 2024 NO. 1

ARTICLE

Structural Antitrust Relief Against Digital Platforms

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Abstract

Structural ("breakup") remedies for monopolization cases under §2 of the Sherman Act are uncommon. When they do occur the courts almost always break firms along the boundary lines that had been formed by an earlier combination or merger. The FTC's current request that Facebook spin off Instagram and WhatsApp are of this kind. The complaints in the government cases against Google Search and Amazon are far more general.

The choice whether to "break up" a violator or use a more focused remedy, such as an injunction against anticompetitive practices, depends significantly on how much faith we have in the market to correct the problem. An injunction opens the path for more competitive choices, but consumers and other users must still take advantage of them. By contrast, a structural remedy such as a breakup often removes choice or severely restricts its domain.

By and large, the antitrust record of monopoly breakup decrees has not been pretty. The courts certainly have the power to ruin a firm, but coming up with a structural remedy that will actually increase output or improve the welfare of consumers or labor is not easy.

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When the market in question is a digital network, different considerations apply that can point in both directions. First, "breaking up" a network is much more difficult and hazardous. On the other hand, sharing obligations that involve data portability or interconnection are often easier to develop and apply. One limitation of a court, as opposed to a legislature, is that the court has jurisdiction over only the parties, not to others who might be needed to make a sharing decree work.

When considering the appropriate remedy for a proven antitrust violation, courts should always look first to injunctions, which can be more effectively targeted at the harm and are likely to do less collateral damage. Then "quasi-structural" relief such as interoperability decrees should be considered, and strictly structural remedies only as a last resort.

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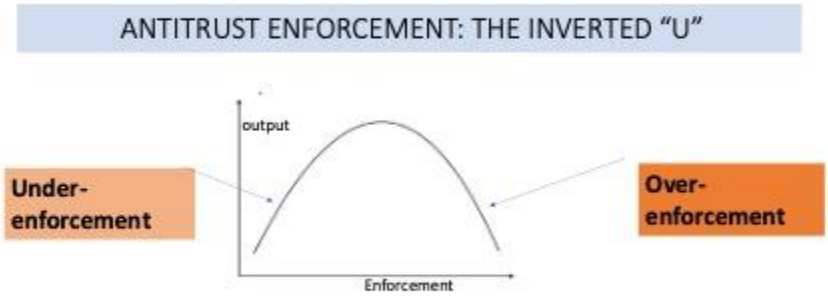
I. INTRODUCTION: THE INVERTED "U" OF ANTITRUST REMEDIES

Effective competition policy requires two things: identifying anticompetitive conduct or structures and settling on a remedy. No one should mount an antitrust challenge without knowing what the harms are and at least some idea about the remedies that will fix them. Remedies are antitrust law's exit strategy: don't go in unless you have a clear eye about

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what you can accomplish when getting out. The enforcer should be able to foresee at least a reasonable likelihood of a remedy that produces lower prices, higher output, less restrained innovation, or some other acceptable evidence of competitive performance. This is especially important when the accused is a large, two-sided digital platform. They produce enormous benefits as well as threats. Conduct on them is more difficult to evaluate. We have less experience with remedies there, and the risks of collateral damage are large.

In antitrust more is not always better. If the social value of antitrust enforcement were plotted on a graph it would reveal as an inverted "U," something like the one that describes the relationship between market structure and innovation.[2] At one extreme, monopolized markets produce less innovation because monopolists lack competitive pressure to do more and tend to become path dependent on their own existing technology. At the other extreme, very tiny firms in atomistic markets do not do much innovation either, because they lack the surplus resources. Rather, most innovation is done in the middle – that is, in moderately concentrated markets with a fairly small number of firms.



[2] See, e.g., RICHARD GILBERT: INNOVATION MATTERS: COMPETITION POLICY FOR THE HIGH-TECHNOLOGY ECONOMY 61-62, 91, 113-116 (2020); Philippe Aghion, Nick Bloom, Richard Blundell, Rachel Griffith, and Peter Howitt, *Competition and Innovation: An Inverted-U Relationship*, 120 Q. J. ECON. 701 (2005).

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Antitrust enforcement has a roughly similar profile. If antitrust's goal is competitive rates of output and prices, such as antitrust has been articulating for more than a century,[3] then the optimum level of enforcement is somewhere in the middle. Too little antitrust leaves too much monopoly unchallenged, and gives us unreasonably high prices, low quality or low innovation, and harm to consumers and labor. Too much antitrust yields surprisingly similar results, although perhaps with smaller firms.

This metric applies not only to substantive liability standards but also to remedies. The courts have sometimes articulated this with the observation that the purpose of an antitrust remedy is to "restore competitive conditions."[4] Underdeterrent remedies leave too much monopoly remaining, but excessive ones can injure competition as well, sometimes even destroying the firm subjected to them. A successful remedy for monopolization is one that results in more competition, reflected in higher output, measured by quantity, quality or innovation, than the market experienced during the violation period.

Writing a half century ago, historian Richard Hofstadter observed that antitrust in the United States has always yielded a great deal of passion accompanied by a "sense of heated exaggeration, suspiciousness, and conspiratorial fantasy."[5] However, the passion did not correlate with accomplishment. When the movement faded, reality set in. From that point "the antitrust enterprise, as an institutional reality, now runs its quiet course without much public attention, and we lose sight of it," but it "became a force of real consequence in influencing the behavior of business."[6]

The irony of movement antitrust is that, while it is sometimes perceptive in seeing problems, its solutions are often overly frenzied, excessively

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[3] *See* Herbert Hovenkamp, *Antitrust's Goals in the Federal Courts* (Upenn Law Working Paper, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4519993

[4] United States v. Microsoft Corp., 243 F.3d 34, 47 (D.C. Cir. 2001).

[5] Richard Hofstadter, *What Happened to the Antitrust Movement*?, *in* THE PARAMPOD SYLE IN AMERICAN POLITICS AND OTHER ESSAYS 188 (1st ed. 1965). The essay is reprinted in THE MAKING OF COMPETITION POLICY: LEGAL AND ECONOMIC SOURCES (Daniel A. Crane & Herbert Hovenkamp eds., 2013). Hofstadter's essay originally appeared in THE BUSINESS ESTABLISHMENT 113 (Earl F. Cheit ed., 1964).

[6] Id. at 188-189.

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political and divisive, or just not very well thought out. It almost always begins with the proposition that more is better.

A case in point is the scapegoating of big tech. For populists, survival has often depended on successfully identifying a scapegoat, whether it be the railroads, Jewish people, immigrants, or big business. Big tech is a poor choice for generalized antitrust aggression, however. Intelligent enforcement policy in any field aims its resources at problem areas – more cops into high crime neighborhoods, or drug enforcement at borders, airports, or other places where illegal drugs are more likely to be imported in large amounts. Antitrust enforcement properly targets sluggish oligopolistic markets exhibiting lock-step pricing, slow growth and innovation, and lack of new entry. Any antitrust policy regarding big tech must avoid the rhetorical trap that has ruined populist movements in the past: scapegoating particular targets precisely because they have succeeded. Indeed, it was their outsize contribution that displaced older and more established interests and provoked populist wrath.

The digital economy has a growth rate roughly three to four times higher than that of the economy as a whole.[7] Overall, it is also highly innovative. The largest patent generators are in tech. Among the top 300 patents holders, Apple, Microsoft, Amazon, and Alphabet (Google) are #11, #12, #15, and #17, respectively, and Meta (Facebook) is #31.[8] If one compares R&D budgets, the five largest firms on Nasdaq are Amazon, Alphabet, Meta, Apple, & Microsoft.[9] All of them spend significant portions of their revenue on innovation.[10]

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[7] For recent data,, *see* Tina Highfill and Christoher Surfield, *New and Revised Statistics of the U.S. Digital Economy*, 2005-2021 (Bur. Econ. Analysis, Nov. 2022), https://www.bea.gov/system/files/2022-11/new-and-revised-statistics-of-the-us-digital-economy-2005-2021.pdf; Zia Hayat, *Digital Trust: how to Unleash the Trillion-Dollar Opportunity for our Global Economy* (World Economic Forum, Aug. 17, 2022), https://www.weforum.org/agenda/2022/08/digital-trust-how-to-unleash-the-trillion-dollar-opportunity-for-our-global-economy/#:~:text=The%20World%20Bank%20estimates%20that,faster%20than%20physical%20world%20GDP.

[8] See HERBERT HOVENKAMP, TECH MONOPOLY (MIT Press, forthcoming).

[9] "Ranked: R&D Spend of the 10 Biggest Companies in Nasdaq" (2022), https://www.visualcapitalist.com/cp/ranked-the-10-biggest-nasdaq-companies-by-rd-investment/.

[10] Id.

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Most growth comes from innovation, not simple exchange under constant technology. Consumers are generally happy with the products that digital technology produces, and its labor force is well educated and relatively highly paid. Targeting big tech might be a good way of generating popular press, but it makes for poor antitrust policy.

That is not to deny that big tech firms are doing anticompetitive things. They also engage in a variety of practices that implicate areas other than antitrust, such as privacy, decency, or national security. But their antitrust violations are nothing in proportion to the vilification that has been aimed at them. Further, nearly all of the problems are best addressed through changes in behavior, not changes in structure. The nonantitrust conduct is addressable through other parts of the legal system, and that is fortunately occurring as well.[11] When they do commit real antitrust violations, more narrowly focused remedies are usually preferable.

The current pursuit of big tech recalls the Government's prolonged antitrust attack on IBM, whose main offense was a series of technological advancements that led to smaller, faster, and more capable computers. Reduced to basics, the Government's claim was that IBM was innovating too quickly, with a succession of faster, cheaper, and smaller products, leaving rivals in the dust. In the late 1960s IBM was riding the crest of astonishing technical advancement in computer technology – much, but not all, the result of its own research. At that time, it was the largest public firm in the United States.[12]

The government had previously brought claims against IBM in 1932 and 1952, but the big one came with its 1969 complaint.[13] IBM was alleged to have harmed competition with aggressive and frequent product redesigns and

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[11] For example, in Oct., 2023, 42 state Attorneys General sued Meta Platforms for violations of COPPA (Children's Online Privacy Protection Act, 15 U.S.C. §§6501-6505), as well as state law violations. https://coag.gov/app/uploads/2023/10/23.10.24-Doc.-1-Complaint-People-v.-Meta-23cv05448.pdf. See Ceilia Kang and Natasha Singer, *Meta Accused by States of Using Features to Lure Children to Instagram and Facebook* (NEW YORK TIMES, Oct. 24, 2023).

[12] See Randal. C. Picker, *The Arc of Monopoly: A Case Study in Computing*, 87 UNIV. CHI. L. REV. 523, 535-536 (2020).

[13] *Id*. at 536-537. See also DOJ, Antitrust Division, United States Memorandum on the 1969 Case (1995), https://www.justice.gov/atr/case-document/united-states-memorandum-1969-case.

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announcements, late reporting of design changes to competitors, giving away software with some of its hardware sales, and bundling of software and hardware, introducing new products with "unreasonably low profit expectations," and even predatory pricing.[14]

The predatory pricing claim relied on a misguided theory of "impact costs." Although IBM's new lines were introduced and sold at profitable prices, the claim was that they were marketed before the previous products had exhausted their commercial usefulness. The lost revenue that IBM might have obtained from the old technology should be counted as a "cost" of the new technology.[15] In other words, a firm had an antitrust duty to wait until existing technology used up its value before it could introduce new technology.[16] A more anti-innovation theory would be hard to devise. It could effectively require a firm to delay the introduction of better technology as long as there was profitable life remaining in the previous technology.

The complaint also alleged that many of the new products were developed simply to exclude a competitor's product, particularly where IBM faced competitive threats.[17] The government sought a breakup, although the details were not specified.[18] In 1980, some five years into trial, the Second Circuit observed that "To the best of our knowledge no litigation has taken so much time and involved such expense."[19] The case was voluntarily dismissed in

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[14] United States Memorandum, Id. at 4-5.

[15]The theory was developed in a follow-on case. Transamerica Computer Co. v. IBM, 459 F. Supp. 626 (N.D. Cal. 1978), *aff'd,* 698 F.2d 1377 (9th Cir.), *cert. denied*, 464 U.S. 955 (1983).

[16]*See* 459 F.Supp. at 630 (ultimately rejecting plaintiff's claim that "the reduction in anticipated future profits on an existing product line caused by the introduction of a new product line," should be subtracted from the new product's profit in "determining whether the price set was predatory and below cost."). The theory was given some legitimacy when two prominent antitrust economists endorsed it. *See* Janusz A. Ordover & Robert D. Willig, *An Economic Definition of Predation: Pricing and Product Innovation*, 91 YALE L.J. 8, 26 n. 49 (1981).

[17]United States Memorandum, Id. at 3 (allegations that IBM "developed and announced" the specified hardware products "primarily for the purpose or with the effect of discouraging actual and potential customers from acquiring . . . [competing products] . . . in markets . . .where IBM's monopoly position had eroded or threatened to erode.")

[18] Id. at 1.

[19] In re IBM Corp., 618 F2d 923 (2d Cir. 1980):

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1982, and today it is widely regarded as a high point in government ignorance and arrogance about antitrust in innovation-intensive markets.[20]

As the *IBM* litigation story illustrates, the need to get it right – to avoid both under- and over-deterrence – is one of antitrust most vexing problems. It is nowhere more pronounced than in the antitrust law of remedies, and particularly when the issue is structural relief. Calling for a "breakup" of big tech has become a feature of antitrust populism.[21] But unnecessary or badly designed breakups can do a great deal of harm, particularly in highly innovative markets. This is doubly true about the breakup of internally developed as opposed to acquired assets.

Calls to break up big tech at least partially explain why antitrust populists are so adamantly opposed to "consumer welfare" as a goal of antitrust.[22] To the extent that big tech produces more innovation and higher output, lower prices, and more high paying jobs, unjustified breakups can harm consumers, perhaps grievously. That is, a policy of breaking up big tech is difficult to

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> The Government's direct case lasted for almost three years, ending on April 26, 1978. IBM's defense began on that date and it continues as of this writing. Eleven years have elapsed since the filing of the initial complaint, pre-trial depositions commenced some eight years ago, and more than four and one-half years of trial time have been consumed. A mammoth record of trial transcript and exhibits has been assembled. To the best of our knowledge no litigation has taken so much time and involved such expense.

[20] E.g., John E. Lopatka, United States v. IBM: A Monument to Arrogance, 68 Antitrust L.J. 145 (2000); Franklin M Fisher, Folded, Spindled, and Mutilated: Economic Analysis and U.S v. IBM (1983).

[2121] E.g., ZEPHER TEACHOUT AND BERNIE SANDERS, BREAK 'EM UP: RECOVERING OUR FREEDOM FROM BIG AG, BIG TECH, AND BIG MONEY (2020); JOSH HAWLEY, THE TYRANNY OF BIG TECH (2021); Jonathan Taplin, *Is it Time to Break Up Google* (New York Times, Apr. 17, 2017); Dana Mattioli & Ryan Tracy, *House Bills Seek to Break Up Amazon and Other Big Tech Companies* (WALL ST. J., June 11, 2021). More balanced writing includes Eleanor M. Fox and Donald I. Baker, Antitrust and Big Tech Breakups: Piercing the Popular Myths by Cautious Inquiry, CPI Int'l (2021), https://www.competitionpolicyinternational.com/wp-content/uploads/2021/10/2-Antitrust-and-Big-Tech-Breakups-Piercing-the-Popular-Myths-by-Cautious-Inquiry-By-Eleanor-M.-Fox-Donald-I.-Baker.pdf; Aviv Nevo, If Breaking Up is the Answer, Then What is the Question, CPI Int'l (2021), https://www.pymnts.com/cpi_posts/if-breaking-up-is-the-answer-then-what-is-the-question/.

[22] E.g., Mark Glick, Gabriel A. Lozada, & Darren Bush, *Why Economists Should Support Populist Antitrust Goals*, 2023 UTAH L. REV. 769 (2023).

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square with a policy of guaranteeing consumers low prices and high output, competitive rates of innovation, and better wages. Rather, the goals would need to shift more in the direction of protecting older, often smaller firms and their technologies.

One area of possible future difficulty lies in the government's 2023 Horizontal Merger Guidelines. Many of the Guidelines' provision will improve merger review and further its goal of encouraging more competitive markets.[23] That is not true, however, with the Guidelines' novel provision on mergers that involve multi-sided platforms.[24] While providing guidance for mergers involving digital networks was a good idea, this particular provision is notable for its one-sided approach. It speaks at some length about the various harms that can result from mergers that involve competition between platforms, on a platform, or that threatens to displace a platform. The Guideline says nothing about offsetting benefits, however, even though these very likely dominate the harms.

For example, the Guideline notes that network effects (more people on one or both sides of the network) can "create a tendency toward concentration in platform industries."[25] That is factually true, but the Guidelines says nothing of the fact that this usually happens because networks are more valuable as they have more members on each side. They set up the possibility that a prospective merger could be enjoined, or a completed merger unraveled, because it increases market concentration without considering the offsetting benefits that accrue to larger networks. There is every reason for thinking that the economic benefits of larger network scale are as great or greater than the benefits that accrue from production economies of scale.[26]

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[23] *See* Herbert Hovenkamp, *The 2023 Merger Guidelines: Law, Fact, and Method*, __ REV. INDUS. ORG. (2024) (forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4684465.

[24] United States Dept. of Justice and Federal Trade Commission, Merger Guidelines (Dec. 2023), §2.9, Guideline 9, https://www.justice.gov/d9/2023-12/2023%20Merger%20Guidelines.pdf

[25] *Ibid.*

[26] *E.g.*, Gerardo Patacconi and Fabio Russo, *Rethinking Economies of Scale Towards Network Economies*, 58 DEVELOPMENT 521 (2015); Robert E. Litan, *Antitrust and the New Economy*, 62 UNIV. PITT. L. REV. 429 (2001); Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CALIF. L. REV. 479 (1998).

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The question of network "concentration" is also heavily affected by who controls a network. Simply counting up networks assesses concentration only on the premise that each network is a single profit-maximizing entity. To the extent that networks are owned or managed by multiple owners, however, competition within the network counts just as much as competition among networks. The telephone network is a good example. The number of "networks" is one, indicating a monopoly level of concentration. However, the network itself is owned and operated by thousands of participants, many of whom operate in highly competitive environments. Their competition with one another is reachable under the antitrust laws. By contrast, while breaking up the phone system into multiple exclusive networks would reduce market concentration it could only harm performance.

Structural relief against digital platforms is sometimes justified, but not very often. The courts should insist on clear showings, first, that a real competitive injury exists, and second, that it cannot be remedied by a simple injunction or other less invasive decree, including interoperability or other forms of network sharing.

Other than undoing mergers, there have been relatively few instances of structural relief against dominant firms. Even the 1911 *Standard Oil* case, which broke that firm into 33 pieces, did so along the lines of the previous Standard Oil "trust," a union formed in the late nineteenth century among those same individual corporations under a common law trust agreement.[27] The decree then forbad the newly severed constituents from conspiring with one another.[28] The *AT&T* breakup, discussed below, is a qualified exception, and even here it seems clear that the real benefits of the *AT&T* consent decree did not come from the regional breakup but rather from its interconnection obligations.[29]

Outside of naked agreements among competitors, which appear to be uncommon among large platforms, establishing violations requires determinations of power and some kind of anticompetitive conduct. Big tech continues to present important difficulties. Market two-sidedness and high

[27] *See* Standard Oil Co. of N.J. v. United States, 221 U.S. 1, 78-79 (1911) (noting that lower court "directed the transfer by the New Jersey corporation back to the stockholders of the various subsidiary corporations….").

[28] *Id*. at 81.

[29] Making this point, Richard Epstein, *The AT&T Consent Decree: in Praise of Interconnection Only*, 61 FED. COMM. L.J. 149 (2008).

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fixed costs raise difficult problems for assessing power. Their highly innovative character invites extra caution about intervention. While opportunities for harm might be greater, efficiencies and other positive effects are greater as well. If annual economic growth or innovation spending are good metrics for performance, big tech is doing better than the economy as a whole.[30] Consistent with the usual pattern, most of that high growth is coming from innovation, not from increased competition under constant technology.[31]

The antitrust remedial powers of the federal courts are very strong, although they can be triggered only by a finding of an antitrust violation. The Clayton Act's equity provision gives the United States the power to "prevent and restrain" antitrust violations, with no stated limit on the type of relief that the district court believes will accomplish it.[32] Sections 5 and 13(b) of the Federal Trade Commission Act authorize the Commission to petition a district court for temporary or permanent injunctions and other equitable relief, including the possibility of divestiture.[33] The Clayton Act's private equity provision also gives private plaintiffs broad powers, although they need to show causation and threatened harm.[34] Under it, private plaintiffs have been authorized to obtain structural relief in merger cases.[35]

While the court's equitable powers to restructure firms or even markets are broad, they must be tethered to the goals of antitrust policy. In the

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[30] See discussion supra, text at notes __.

[31] *See* RICHARD GILBERT INNOVATION MATTERS: COMPETITION POLICY FOR THE HIGH-TECHNOLOGY ECONOMY 270-285 (2022).

[32] 15 U.S.C. §25 (2018) (authority to "prevent and restrain" violations and request that they be "enjoined or otherwise prohibited"; and authorization of temporary equitable relief "as shall be deemed just.").

[33] 15 U.S.C. §§45g, l, §53(b) (2018). 15 U.S.C. §45(g)(4) refers to divestitures of stock or assets and requires that they be delayed until the Supreme Court has an opportunity to review them, but it does not state when such orders are appropriate.

[34] 15 U.S.C. §26 (2018) (authorizing courts to award "injunctive relief" against "threatened loss or damage" from an antitrust violation, under general equitable principles). On the differences between private and public proof obligations, see Herbert Hovenkamp, Antitrust Harm and Causation, 99 Wash. Univ. L. Rev. 787 (2021).

[35] California v. American Stores Co., 495 U.S. 271 (1990) (permitting a state Attorney General, treated as a private actor for this purpose, to challenge a merger and obtain divestiture); Steves & Sons, Inc. v. JELD-WEN, Inc., 290 F. Supp. 3d 507 (E.D. Va. 2018), aff'd, 988 F.3d 690 (4th Cir. 2021) (permitting divestiture in private merger challenge).

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Microsoft case the D.C. Circuit articulated the goals this way, summarizing several Supreme Court decisions:

> A remedies decree in an antitrust case must seek to [1] "unfetter a market from anticompetitive conduct," to [2] "terminate the illegal monopoly, [3] deny to the defendant the fruits of its statutory violation, and [4] ensure that there remain no practices likely to result in monopolization in the future. . . ."[36]

The balance of this essay discusses problems of imposing structural antitrust remedies on digital platforms, addressing the following points:

1. The nature of digital platform business obscures the difference between property and contract, making terms such as "structure" and "divestiture" more difficult to define.
2. For unilateral practices, market power is a necessary but not a sufficient condition for structural relief.
3. Even with market dominance established, alternatives to structural relief are often superior, and simple injunctions are often best; for any problem, they should be the first place to look.
4. No structural remedy should be considered without careful consideration of its likely effects on output, prices, innovation, or growth, as well as the various constituencies who might be harmed or benefitted; that is, its goal cannot be limited to punishment of a defendant or protection of a particular injured firm.
5. Divestiture limited to undoing a previous acquisition is easier to justify and has a better track record than breaking up internally developed assets.
6. The relationship between mergers and innovation requires further study; in general, horizontal mergers have not been particularly conducive to innovation.[37] The case for innovation-creating mergers of complements is much stronger, including vertical mergers. Challenges to horizontal mergers on the theory that they eliminate a particular instance of competitive innovation between the merging firms ("unilateral" effects) are far more promising than challenges based on general changes in market structure.[38]

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[36] United States v. Microsoft Corp., 253 F.3d 34, 103 (D.C. Cir. 2001).

[37] Gilbert, *supra* note __, Ch. 5.

[38] On this point, see Herbert Hovenkamp, The 2023 Merger Guidelines: Law, Fact, and Method, Rev. Indus. Org. (2024) (forthcoming), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4684465.

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7. Structural remedies will fail if they (a) do not break *into* the monopoly but simply transfer it to someone else; or (b) attempt to break up a natural monopoly ("winner-take-all" market); or (c) break up networks in such a way as to impair unduly the value of direct and indirect network effects.
8. "Quasi" structural remedies such as compelled interoperability or reconfiguration of management can often make a firm or network more competitive while preserving its structural advantages.
9. The remaining situations in which a divestiture is necessary are few but not necessarily zero.

II. IDENTIFYING "STRUCTURAL RELIEF" – PROPERTY AND CONTRACT

One characteristic of digital platforms is that they contract a great deal of production out to third parties. Amazon is a good example. While it sells millions of manufactured products it has very little market presence as a manufacturer.[39] Its popular house brands are manufactured by third party suppliers. Its ebook business, in which it has a large market share, involves independent publishers who produce the ebooks in a common digital format and have a licensing arrangement under which Amazon sells them to its customers.[40] As for ebook hardware, Kindle readers are produced by contract with large manufacturers such as Taiwanese firm Foxconn, which also makes iPhones and iPads for Apple.[41] The products are made according to the buyers' detailed specifications.

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[39] See Sarah Emerson, Amazon Finally Reveal Who Makes its Branded Products (Medium, Nov. 26 2019), https://onezero.medium.com/amazon-finally-reveals-who-makes-its-branded-products-13e68913c770. See also Rachel Van Clepper, How to Start an Amazon Private Label Business (Feedvisor, Aug. 16, 2022), (detailed accounting of third-party manufacturing of Amazon's private label products).

[40] See "Penguin Random House SEA releases its books in digital formats, to be available on Amazon" (2020), https://www.penguin.sg/newsroom/penguin-random-house-sea-digital-books-now-available-on-amazon/, which describes the process in the case of one large publisher, Penguin/Random House.

[41] The Company is Hon Hai Precision Industry, which trades under the name Foxconn. See https://www.foxconn.com/en-us/.

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A firm cannot "divest" an asset that it does not own, although the court can control supply contracts, particularly their exclusivity provisions. Looking at pending cases against Google and Amazon,[42] nearly all of the challenged practices involve contracts or licenses. As an antitrust remedy, judicial rewriting of contracts is far more common and certainly less structural sounding than divestiture of assets. Most of these contracts and licenses, if anticompetitive, are more readily remedied by an injunction. One important legal difference between property and contract rights is that property is presumptively exclusive while contracts presumptively are not. In both cases the presumption can easily be reversed. Property can be shared, although not as easily as contract rights. And contract rights can be exclusive, but only if they are so specified.

When the assets in question are pure intellectual property rights, the line between property and contract begins to blur even further. For example, patent rights can be transferred either by "assignment," which is a sale of property, or by exclusive license, which is a form of contract.[43] Economically these interests can be indistinguishable. For example, an exclusive license that extends until a patent expires is economically indistinguishable from an assignment, even though there could be legal differences.

The *Copperweld* antitrust doctrine creates single entity status, and thus relative freedom from Sherman Act §1 challenges, for ownership interests but not for contract interests.[44] Under it, agreements within a corporation, including its employees, divisions, subsidiaries, and other wholly owned assets are regarded as unilateral acts.[45] An agreement between a firm and independently owner franchisees, subcontractors, licensors, or licensees is not, for these arrangements are contractual rather than structural.[46] The latter

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[42] See discussion infra, text at notes __.

[43] See 35 U.S.C. §261 (2018) (authorizing both assignments in writing and exclusive licenses).

[44] Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752 (1984). And see 6 Phillip E. Areeda & Herbert Hovenkamp, Antitrust Law Ch. 14E (5th ed. 2023).

[45] See Herbert Hovenkamp, The Power of Antitrust Personhood, 25 Univ. of Penn. J. Bus. L. 891 (2023).

[46] See, e.g., Arrington v. Burger King Worldwide, Inc., 47 F4th 1247 (11th Cir. 2022) (reversing district court decision that would have treated the Burger King franchise as a single entity; control arrangements between the franchisor and its individual franchisees were contractual). See Paul H. Rubin, *The Theory of the Firm and the Structure of the Franchise Contract*, 21 J. L. & ECON. 223 (1978).

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set are reachable under the more aggressive standards of §1 of the Sherman Act and can even be unlawful per se.[47] Further, for all of these agreements that are not within the firm, the remedy usually takes the form of a simple injunction enjoining or modifying the agreement.

To illustrate, consider the status of Google search defaults on Apple, Chrome, and Android; or Bing search defaults on Microsoft Windows/Edge. On Apple, the Google search default is enforced by an agreement in which Google pays Apple for that privilege – clearly reachable under §1 of the Sherman Act.[48] However, Alphabet owns Google Search, Chrome, and Android as subsidiaries. In the simple case that can mean that Alphabet's decision to make Google Search the default on Chrome is unilateral, just as Microsoft's decision to make Bing the default search engine on Windows and its Edge browser. The Android story is more complex because Android is open source and licensed out to device makers, who must also make Google Search their default if they want access to Google Play. That sounds more like a license agreement.

Or consider a court order "divesting" Amazon of ebooks. Amazon does not own ebooks to begin with. The order would likely take the form of an injunction prohibiting Amazon from licensing and relicensing ebooks, or perhaps placing other contractual limits on its license agreements, such as enjoining any exclusivity provision, assuming that one exists. That sounds less like a divestiture of anything and more like a simple injunction modifying the terms of a contract.

This is an area where the legal structure of the Sherman Act does not track well with the economics of markets and control. In economics the decision to control with a property interest or a contract is often of little or no consequence,[49] but in antitrust it often specifies the difference between

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[47] Deslandes v. McDonald's USA, 81 F.4th 699 (7th Cir 2023) (completely intrafranchise agreement among franchisees to impose worker noncompete agreements reachable under §1 and could be unlawful per se).

[48] See discussion *infra*, text at notes __.

[49] See Ronald H. Coase, *The Problem of Social Cost*, 3 J. L. & ECON. 1 (1960). See also Ronald H. Coase, the Federal Communications Commission, 2 J.L. & Econ. 1, 25 (1959) (who owns a cave determines only whom to bargain with for the cave's use). The exception is when the underlying law prohibits the bargain from occurring. Erik Hovenkamp & Steven C. Salop, Litigation with Inalienable Judgments, 52 J.Leg.Stud. 1 (2023).

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unilateral conduct, reachable only under the restrictive provisions of §2 of the Sherman Act, and multifirm conduct which is reached more readily under §1.

This suggests that we should be less concerned about whether a particular instance of relief is "structural," and thus what legal standard to apply, but pay more attention to how a remedy operates economically. Even though it is not formally a divestiture, a court order prohibiting or rewriting Amazon's license agreements would for many purposes operate in the same way that a divestiture would. In fact, most of Amazon's productive assets are its various agreements with third party manufacturers and other suppliers.

Suppose the remedy question is whether to force Amazon to give up its ebook business. Whether that relief is "structural" matters much less than whether forcing Amazon to get rid of its ebook business is a sound antitrust remedy – that is, would it tend to yield lower prices, higher output, or more innovation in any market? If the answer to that question is no, then that remedy cannot be defended simply by pointing out that this requires no more than an injunction invalidating Amazon's licensing agreements with publishers.

An unexplained feature of the current spate of antitrust cases against big tech is that the Government has relied mainly or exclusively on §2 of the Sherman Act, even though nearly all of the challenges were to agreements that were clearly actionable under §1 as well.[50] Whether limiting the legal theories in that fashion was a mistake remains to be seen. While section 2 reaches both unilateral conduct and agreements, it has higher market share requirements.[51] In the Google Search case the market share is certainly high enough, but in the Facebook and Amazon cases market definition will be

[50] See United States v. Google, LLC, ___ F.Supp.3d ___, 2023 WL 4999901 (D.D.C. Aug. 4, 2023) (partially sustaining challenge to default agreements only under §2 of the Sherman Act); FTC v. Facebook, Inc., 581 F.Supp.3d 34 (D.D.C. 2022) (sustaining claim against Facebook agreements as well as acquisitions of Instagram and WhatsApp, entirely under §2 of the Sherman Act). See also FTC v. Amazon, Inc. CASE NO.: 2:23-cv-01495-JHC (D.W. Wash. Nov. 2, 2023), https://www.ftc.gov/system/files/ftc_gov/pdf/1910134amazonecommercecomplaintrevisedredactions.pdf (complaint under FTC powers respecting §2 of the Sherman Act and FTC Act, but not §1 of the Sherman Act, even though allegations include unlawful tying and most-favored-nation agreements).

[51] E.g. United States v. Dentsply Int'l, 399 F.3d 181 (3d Cir. 2001) (sustaining challenge to exclusive dealing agreements under §2 of the Sherman Act and enjoining agreements as a remedy).

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hotly contested. A better complaint strategy – encouraged by federal procedural rules as well as res judicata -- would be to bring these actions under both §1 and §2 of the Sherman Act, as well as challenging acquisitions under §7 of the Clayton Act.

III. DIGITAL DIVESTITURE

As a starting principle for digital networks, breakup remedies are generally even more difficult than they are for traditional products, but sharing obligations are easier.

Most antitrust divestiture decrees have involved firms that made traditional "tactile" products in physical plants or other production facilities.[52] Further, nearly all of the §2 decrees that required divestiture used it to break off assets that had been acquired rather than internally developed – that is, they reversed previous acquisitions. Indeed, out of 95 monopolization cases that produced structural relief, only three involved immediate breakups of internally developed assets.[53]

When considering remedies for an antitrust violation, digital markets pose some unique problems, although not every divestiture involving a digital platform is necessarily "digital" in this sense. For example, Amazon owns Whole Foods, which is a largely nondigital asset. Apple "manufactures" iPhones, mainly in China and India, but through firms designated as partners rather than subsidiaries. That is Apples does not own them but has supply agreements with them.[54]

Nevertheless many of the assets controlled by large digital firms are digital themselves. This has a number of consequences. First, they are likely to be nonrivalrous and, as a result, more readily subject to sharing. For example, "breaking up" a patent by giving nonexclusive licenses to multiple

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[52] *See generally* RICHARD A. EPSTEIN, ANTITRUST CONSENT DECREES IN THEORY AND PRACTICE: WHY LESS IS MORE (2007).

[53] Robert W. Crandall, *The Failure of Structural Remedies in Sherman Act monopolization Cases*, 80 ORE. L. REV. 109, 121-122 (2001) (identifying cases against IBM, the *Kansas City Star*, and AT&T; also noting that while United Shoe Machinery did not yield an immediate divestiture, that did happen fifteen years later).

[54] For example Foxconn, Inc., Apple's largest manufacturer, does not even list Apple as a major shareholder. See https://simplywall.st/stocks/us/tech/otc-fxco.f/foxconn-technology/ownership (last visited Jan. 14, 2023).

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recipients is inherently easier to manage than breaking up and sharing a physical production plant. The same thing is true of computer code. Second, digital assets are characterized by high fixed costs and low variable costs, making both scale economies and network effects significant.[55] Any breakup that imposes loss of significant scale economies or positive network effects will have to be accompanied by large offsetting benefits somewhere else. By contrast, remedies that require sharing of digital, fixed cost assets can reduce total costs by distributing the fixed costs over more output. This mitigates in favor of remedies that require sharing of a digital asset, rather than breaking it into pieces.

In thinking about remedies, networks should be treated as assets, not as firms. Some firms, such as Alphabet (Google), own or control several networks, including Search, Android, Gmail, YouTube, and Chrome. Structural "breakups" of networks can be even more competitively harmful than breakups of single plants. First, they can deprive a firm of scale economies, just as breaking up a plant. But they can also reduce positive network effects by limiting the number of network participants. With a qualified exception for AT&T, discussed below, structural breakups under §2 of the Sherman Act have involved the spinning off of plants or other discrete assets rather than actually "breaking" them into multiple pieces.[56]

In general, there should be a strong presumption against breaking into a network unless the decree also provides for effective interoperability, as it did in the *AT&T* case. Even then, interoperability decrees may have to be managed. In some cases that may require long-term or permanent oversight or even re-assignment to a regulatory agency, as also happened in the *AT&T* case.[57] Other decisions have proven to be less problematic. For example, the

[55]*See* HERBERT HOVENKAMP, TECH MONOPOLY (MIT Press, 2024, forthcoming).

[56]On the AT&T breakup, *see* discussion *infra*, text at notes __.

[57] *See* discussion *infra*, text at notes __.

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decrees in the *Terminal Railroad* case (1912)[58] and *Associated Press* (1945)[59] both required participants in a shared network to open it up on nondiscriminatory terms to outsiders. In both cases the decrees appear to have succeeded in their goal of facilitating competition without doing structural damage.

One reason that antitrust remedies rarely require sharing of physical facilities is that production plants are rivalrous. Sharing them is not easy, although the AT&T consent decree and subsequently the 1996 Telecommunications Act compelled exactly that. Their "co-location" requirements obligated the incumbent phone companies to permit third party providers to place switching and routing equipment in the incumbents' physical facilities.[60] Beyond that, requiring a firm to share a plant with a rival would impose significant and often debilitating costs, as well as requirements for ongoing supervision. Other than AT&T, the problem has not yet arisen in cases involving actual §2 divestitures.

Network breakups also have somewhat different effects than the breakup of a plant. First, to the extent that the network itself consists mainly of intellectual property rights, sharing is actually easier than it would be to share a physical plant. This also indicates that interoperability remedies will work

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[58]United States v. Terminal R.R. Assn. of St. Louis, 224 U.S. 383, 409-410 (1912) (rejecting government's request for a dissolution, but ordering a:

> plan of reorganization … for the use of the terminal facilities by any other railroad not electing to become a joint owner, upon such just and reasonable terms and regulations as will, in respect of use, character, and cost of service, place 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.

[59]Associated Press v. United States, 326 U.S. 1, 21 (1945) (requiring wire service news sharing venture owned by multiple newspapers to be shared with others "without discrimination through By-Laws controlling membership, or otherwise…."); id. at 22 (warning of further action if nondiscriminatory operation is not achieved).

[60] *See* 47 U.S.C. §251 (6) (1996 Telecommunications Act, providing for co-location of competitors equipment on property of incumbent exchange carriers). *See, e.g.*, GTE Northwest, Inc. v public Utility Com'n of Oregon, 321 Or. 458 (en banc, 1995) (collocation requirements amounted to a taking); US West Comm'ns v. Am. Tel. Tech., Inc., 2000 WL 35538466 (W. D. Wash. Nov. 20, 2000) (construing collocation requirements narrowly). *Cf.* GTE Serv. Corp. v. FCC, 205 F.3d 416 (D. C. Cir. 2000) (collocation requirement was reasonable for essential interconnection devices, but not for those that were merely convenient).

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for networks where they would not ordinarily work for physical plants.[61] Further, to the extent that interoperability or other sharing increases the number of network participants, user experience and value can increase.

Another problem related to breakups is transitional costs and scale economies. Breaking up a single physical plant often involves the construction of at least one new plant. Further, each of the components would be operating at a lower output level than previously. Assuming that most plants are the size that they are because they have achieved an efficient scale, the breakup could create plants of inefficiently small scale. To be sure, economies of scale may level off at a given range and then remain constant. That might lead to something like a plant producing 50% of market output even though minimum efficient scale is 15%. In that case production might be efficiently divided among multiple plants, but a court would have to have a great deal of confidence in its judgment about scale economies to guarantee the success of such a breakup.

Networks (both digital and nondigital) require different treatment for a number of reasons. They are characterized mainly by economies of scale in consumption rather than production. This means that value increases as the number of users increases, but not necessarily because of declining input costs (although that commonly happens too). To the extent that a network is more valuable as its total number of users is larger (direct network effects) or the number of users on the other side is larger (indirect network effects), a literal breakup of the network would cause a severe and perhaps debilitating loss in value. Imagine a forced breakup of Uber within a single city, making the constituents operate mutually exclusive networks. No one would be better off except perhaps for a competing taxi company, which benefits when Uber becomes less appealing.

In *AT&T*, a §2 case that did involve a breakup of a network itself, the remedy had to be accompanied by elaborate interconnection and patent cross-licensing agreements so that the individual resulting networks could continue operating seamlessly as a single telecommunications network. Indeed, given the coordination costs of interconnection, it is hardly clear that the regional (BOC) portion of the AT&T remedy was beneficial at all. They continued to operate as a single network with the added burden that interconnection among them had to be coordinated. The benefits of the decree, which were

[61] On interoperability, *see* discussion *infra*, text at notes __.

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substantial, accrued mainly from vertical separation and interconnection obligations.

Whatever it did legally, operationally the *AT&T* consent decree did not change the number of networks. Rather, it increased competition within a single network by dividing ownership and operation among a large group of operators.[62] Interconnection remedies are not legally "structural." Rather, they operate as mandatory injunctions and they have been used successfully in this context at least since the *Terminal Railroad* decision in 1912.[63]

One promising "breakup" remedy involving networks is the one contemplated in the FTC's case against Facebook, seeking divestiture of Instagram. For many purposes Facebook holds Instagram as a separate network, with a separate set of users. As a result, the requested remedy is not a division of a single network, but rather separation of two networks that are currently owned by a single firm. To be sure, FB and Instagram accounts can be linked in certain ways,[64] but common ownership is not a precondition to doing that. The reason a Facebook/Instagram breakup might work is that relatively few of Instagram's features have been merged into the parent network. For those that are, the court ordering that remedy will very likely have to consider some mandatory licensing, a form of interoperability, as part of the remedy.

By contrast, breaking *into* the FB network would involve segregating two groups of users, or perhaps peeling off one or more features and placing them into a different and exclusive network. For example, one could break up traditional Facebook by (1) segregating users by location, gender, or some other criterion; or (2) breaking off one or more features, such as video or digital photo posting. These would make FB smaller, but they would almost certainly not add any value. Rather they would likely destroy a great deal of it and might perhaps even ruin it as a platform if it could no longer compete effectively.

While the problems presented by networks are different from those presented by individual plants, both should be governed by a strong

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[62] *See* discussion *infra*, text at notes __.

[63] United States v. Terminal R.R. Assn. of St. Louis, 224 U.S. 383, 409-410 (1912) (requiring the owners of a railroad interconnection, loading, and storage facility to share it with non-owners).

[64] Facebook users have the option of linking their FB and Instagram accounts. See https://help.instagram.com/797182937605779.

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presumption that breaking into them is rarely justified. Further it should be done only after a careful examination of costs vis-à-vis any benefits.

IV. THE RELATION OF MARKET STRUCTURE AND POWER TO REMEDIES

Assessing power on two-sided digital markets is difficult and complex, and this piece does not attempt to contribute to that literature.[65] However, determinations concerning market definition, market share, and market power are essential to proper remedy design. The most important thing a good remedy should *not* do is regulate the price, but rather preserve or leave the way open for market alternatives. This generally requires a reduction in the firm's market power, but not necessarily a breakup of its structure. For example, forcing a dominated network to share ownership or management with others may retain the structure of the network while denying each individual firm the ability to exercise sufficient market power–provided, of course, that there are adequate safeguards against collusion.

Two pending monopolization cases against big tech suggest some of the problems: Google Search and Amazon.

A. Google and the Possibility of Natural Monopoly

The Google Search case indicates that Google's current market share of general consumer search lies in the 90+% range. Even large well-financed rivals such as Microsoft have been unable to break much beyond a 3% market share.[66] At this writing the Google Search antitrust trial is done but we are awaiting a decision from presiding Judge Mehta.[67]

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[65] On this, *see* Lapo Filstrucchi, Damien Geradin, Eric van Damme, and Pauline Affeldt, *Market Definition in Two-Sided Markets: Theory and Practice*, 10 J. COMP. L. & ECON. 293 (2014); RETHINKING ANTITRUST TOOLS FOR MULTI-SIDED PLATFORMS (OECD, 2018), https://www.sipotra.it/old/wp-content/uploads/2018/07/Rethinking-Antitrust-Tools-for-Multi-Sided-Platforms-2018.pdf; Kenneth A. Bamberger & Orly Lobel, *Platform Market Power*, 32 BERKELEY TECH. L.J. 1051 (2017).

[66] As of Dec., 2023, Google Search's market share was 91.61%. Microsoft's Bing, the second largest search engine, had a market share of 3.38%. https://gs.statcounter.com/search-engine-market-share (last visited Jan. 14, 2024).

[67] See United States v. Google, LLC, ___ F.Supp.3d ___, 2023 WL 4999901 (D.D.C. Aug. 4, 2023) (pre-trial; denying summary judgment on many issues).

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Google's market share could be a consequence of data scale or the quality of its search algorithm.[68] It may also be a result of the numerous agreements that Google has entered with device or browser firms to make Google the "default" search engine for their products.[69] On conduct, the trial focused on the legality of very large payments that Google has made to these firms for Google Search default status. A default means that users can change search engines if they wish, and much of the testimony centered on how difficult this process is or behaviorally what were its effects. Even Google's CEO conceded that defaults were a significant contributor to Google Search's market share.[70]

A search engine with a large database of user information has advantages over a small one. What is less clear is whether the advantages to size "top out" at a given usage level or whether they grow continuously until the market is exhausted.[71] If the first, then the industry could have room for multiple digital search firms. For example, if the advantages to search scale level off at a market share of about 20%, then there could be room for 5 efficient firms, and actual market success and shares would depend more on competition in

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[68] How data scale and search algorithm quality weigh into Google Search's market share is a matter of controversy. Cf. Bertin Martens, *What Should Be Done About Google's Quasi-Monopoly in Search Mandatory Data Sharing Versus AI-Driven Technological Competition* (Tilburg L.& Econ. Discussion paper, Aug. 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4550753 (emphasizing data scale); Jay Pil Choi, Doh-Shin Jeon, & Michael D. Whinston, *Tying with Network Effects*, https://www.tse-fr.eu/sites/default/files/TSE/documents/sem2023/eco_platforms/whinston_1.pdf (similar); with Michael L. Katz, *Multisided Platforms, Big Data, and a Little Antitrust Policy*, 54 REV. INDUS. ORG. 695 (2019), https://link.springer.com/article/10.1007/s11151-019-09683-9 (emphasizing search algorithm quality).

[69] See Erik Hovenkamp, *The Competitive Effects of Search Engine Defaults* (USC Gould Working Paper, Nov. 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4647211.

[70]See Cynthia Brumfield, "Google Antitrust Trial: Pichai Concedes that default search boosts market share" (Computerworld, Oct. 31, 2023), https://www.computerworld.com/article/3709452/google-antitrust-trial-pichai-concedes-that-default-search-boosts-market-share.html.

[71]*See* Herbert Hovenkamp, *Fixing Platform Monopoly in the Google Search Case* (Stigler Center, Promarket, Oct. 6, 2023), https://www.promarket.org/2023/10/06/fixing-platform-monopoly-in-the-google-search-case/.

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search algorithm design, defaults, advertising competition and perhaps other factors.

By contrast, if the increasing returns to search database size grow continuously, then the market could be a natural monopoly with an equilibrium of only one firm. In many other cases involving digital networks the availability of significant product differentiation prevents this from happening. For example, newspapers and other periodicals, dating sites, and social networking all exhibit strong network effects, but the market contains room for multiple competitors.[72] Search, by contrast, appears to be more difficult to differentiate, and that tends to steer traffic to a single one that consumers like most.

This leaves three possibilities, any of which would affect determination of the optimal Google Search remedy: 1) database scale dominates and search is a natural monopoly; 2) database scale tops off at a certain percentage, perhaps leaving room for multiple firms and shifting more importance to the quality of the search algorithm, the effects of Google's payments for default status, or other factors that are more open to competition; or 3) we need to make a remedy decision without knowing which of these is true. The most likely scenario in the Google Search case is #3. That is, the court must decide without knowing for sure whether database size or algorithm quality dominates. So, then the question becomes what is the best remedy under uncertainty?

Any attempt to "break up" Google Search would be a scale or operational disaster, even if it were technically feasible. Further, selling a monopoly asset to someone else simply transfers the monopoly, but does nothing to break it up. On the other hand, a simple injunction terminating the pay-for-default practices may not fix the problem if Google has already attained scale that places it out of competitive reach. In sum, the search engine status quo does not provide a very promising menu of competitive alternatives. This may require more creative remedies.

From a welfare standpoint, the optimal remedy in this situation is a choice screen placed on new devices or browsers, permitting each user to select a search engine default.[73] A second best choice would be to permit each device

[72] Herbert Hovenkamp, *Antitrust and Platform Monopoly*, 130 YALE L.J. 1952, 1996-2000 (2021).

[73] *See* Erik Hovenkamp, *Search Engine Defaults*, supra note __ (choice screen remedy increases welfare by more than any choice of a single search engine default).

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manufacturer to preselect its own default. This could occur in one likely scenario, which is that Judge Mehta enjoins the large payments Google has been making for default status. That would leave each device maker free to select its own default, or a choice screen as an alternative.

If a supplier choice of default is required, then both the welfare-maximizing choice, and the one ordinarily most profitable for the manufacturer, would be to select the most popular search engine as the default.[74] As a result, device producers who do not have a different financial interest in a different search engine (such as Microsoft's ownership of Bing) would be expected to pick Google Search.[75] This also suggests why the European Union's imposition of a choice screen for Android devices[76] had a relatively small effect on consumer choice: most continued to select Google Search as their choice.[77] At present, it thus seems that the nondisastrous routes to a default search remedy favor giving consumers the choice of a default, or else continuing deployment of Google Search as the default.

Microsoft's selection of Bing as default search engine, given Bing's 3% market share, requires an explanation. Why would a supplier of a browser select a laggard default search engine when its principal effect will be to make its primary product less attractive? One explanation is that this is a promotional effort directed toward increasing Bing usage in the future. Another is that it is nothing more than an instance of path dependence or other inefficient decision making within the firm.

One possible remedy to the Google Search quandary is compelled sharing of the search database, while leaving it operationally intact. Imposing real time sharing will very likely pose some engineering challenges. Nevertheless, perhaps the search market could be made to resemble the market for stockbrokers or travel agents, who compete with one another by making transactions out of a common pool. They still compete on services and advertising rates. For example, the database of schedules and fares for commercial airlines is promulgated from the airlines' own individual postings of this information. Travel agents cannot change it, but they can

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[74] *Ibid*.

[75] *Ibid*.

[76] *See* https://www.android.com/choicescreen/; *and see* Omar Vasquez Duque, *Active Choice vs. Intertia? An Exploratory Assessment of the European Microsoft's Case's Choice Screen*, 19 J. COMP. L. & ECON. 60 (2022).

[77] *See* Erik Hovenkamp, *Search Engine Defaults*, *supra* note __; and

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access this database and engage in "last mile" competition on commission fees and other services that attach to trip planning and ticket sales. Such a remedy could permit multiple search algorithms to compete from a common database of information. Technical feasibility and management of advertising revenues are issues that would have to be resolved. Its worst feature is that it does not address the monopoly problem. If an airline is a monopoly, it continues to be so even if hundreds of agents compete with one another to sell its tickets.

In any event, punishing Alphabet by breaking up its Google Search engine would also punish hundreds of millions of business and personal users as well, and that means that it cannot be an effective antitrust remedy. In that case the cure would be worse than the disease.

B. Amazon: Many Competitive Products in a Single Online Store

Amazon presents a sharp contrast to Google search. The FTC's alleged principal market definition in its Amazon antitrust challenge is "online superstores."[78] That definition appears to violate the norm market power resides in products, not firms as such. That is, we speak of DuPont as having market power in cellophane,[79] or Microsoft as having substantial market power in its Windows operating system.[80] The firms and their stores do not have market power as entities, but rather in the products that they sell, and it can vary from product to product. Microsoft very likely has market power in Windows (73% desktop OS worldwide), but not much in its Bing search engine (3.35% worldwide) or its Edge browser (5% worldwide).[81]

When can you use a firm's "store," whether digital or physical, as an alternative to a product market? One possibility is when the firm makes only one product. In that case its product market share and its store output are likely to be the same. Beyond that, Courts have made such findings in two

[78] Complaint, FTC v. Amazon, Inc. ¶¶117-119, 121-183; the FTC alleged a second market of "Online marketplace services." ¶¶184-208 (W. D. Wash., Case No. 2:23-cv-01495, Sep. 26, 2023).

[79] United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377 (1956).

[80] United States v. Microsoft Corp., 253 F.3d 34, 54-55 (finding greater than 95% market share in a market for desktop operating systems from which the Mac OS was excluded, but noting that its share would be 80% even if it were included).

[81] Market share numbers from *statcounter.com*, and may not represent the same market definitions that would be used in antitrust litigation.

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sets of circumstances: first, when the stores themselves are the product, as in a merger case; second, in the case of cluster markets.

There is some basis for finding a "store" to be a relevant market in merger cases where the acquiring firm is purchasing the acquired firm's entire physical store or stores. That was true in the *Staples* case, in which the court agreed with the FTC that the relevant product market is "the sale of consumable office supplies through office superstores."[82] Because Staples was acquiring the entire Office Depot chain it was eliminating competition between the entire lines sold by these two competing retail discounters. The court then rested its finding of probable lessening of competition on a finding that overall prices were lower in communities that contained both a Staples and an Office Depot. Because the merger involved the entire product line of each store, it was administratively convenient to group all the products together for analysis.

The Supreme Court approved the aggregation of noncompeting products into a single market in its 1962 *Brown Shoe* decision, where Brown acquired Kinney's entire line as well as its stores and production facilities.[83] The defendant objected to the government's allegations that shoes in the aggregate constituted a relevant product market, or "line of commerce" in the language of the statute.[84] It argued that the parties made men's, women's, and children's shoes, and that these were not interchangeable with one another.[85] For example, "a little boy does not wear a little girl's black patent leather pump."[86] Further, the separate types of shoes were manufactured in separate factories.[87] Nevertheless, the district court permitted the three types to be grouped into a single product market. The Supreme Court agreed with the district court that they could be combined, but only upon observing that when shoes were divided into types the merging firms' shares for each type were roughly the same.[88] As a result, addressing them separately would not make

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[82] FTC v. Staples, Inc., 970 F.Supp. 1066, 1073 (D.D.C. 1997).
[83] Brown Shoe Co. v. United States, 370 U.S. 294 (1962).
[84] 15 U.S.C. §18 (2018).
[85] *Brown Shoe*, 370 U.S. at 300-301, 327-328.
[86] *Id*. at 327.
[87] *Id*. at 300.
[88] *See Id*. at 327-328:

> Brown manufactures about the same percentage of the Nation's children's shoes (5.8%) as it does of the Nation's youths' and boys'

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any difference.[89] That would not be true of Amazon, which has widely differing markets shares in its various products.

The *Staples* case went a step further, permitting a much larger variety of products to be aggregated even when there was no showing that the firms' market shares in each product were roughly equal. Nevertheless, administrative convenience still spoke in favor of the group. Because Staples was acquiring Office Depot's entire chain, the merger was necessarily of the entire product lines sold by each store, depriving consumers of a competitive choice between them. In that case, the relevant query was whether the stores themselves were a grouping of sales capable of sustaining an above cost price.

The other situation that justifies grouping diverse products into a single market is the "cluster market," in which noncompeting goods are grouped together, when there are significant advantages to clustering, the goods cannot readily be sold separately, and the situation is difficult to duplicate.[90] For example, hospitals are cluster markets. Anesthesiology does not compete with thoracic surgery, which does not compete with obstetrics, and so on. However, the hospital itself aggregates the services in a way that single-service providers could not readily duplicate, and most of the individual services cannot readily be sold separately. One needs the hospital in order to

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> shoes (6.5%), of the Nation's misses' and children's shoes (6.0%) and of the Nation's infants' and babies' shoes (4.9%). Similarly, Kinney sells about the same percentage of the Nation's children's shoes (2%) as it does of the Nation's youths' and boys' shoes (3.1%), of the Nation's misses' and children's shoes (1.9%), and of the Nation's infants' and babies' shoes (1.5%).

[89] *See Ibid*:

> Appellant can point to no advantage it would enjoy were finer divisions than those chosen by the District Court employed. Brown manufactures significant, comparable quantities of virtually every type of nonrubber men's, women's, and children's shoes, and Kinney sells such quantities of virtually every type of men's, women's, and children's shoes. Thus, whether considered separately or together, the picture of this merger is the same.

[90] E.g., FTC v. Staples, Inc., 190 F.Supp.3d 100 (D.D.C. 2016). See Herbert Hovenkamp, *Digital Cluster Markets*, 2022 Col. Bus. L. Rev. 1.

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get either anesthesiology or thoracic surgery. The 2023 Merger Guidelines recognize and permit the use of cluster markets.[91]

None of this is true of Amazon. Most of the millions of products that Amazon sells[92] do not compete with one another. Further, Amazon's market shares in individual products vary widely, from something in excess of 60% for ebooks, to shares in the 2%-3% range for groceries. Finally, they are generally available to varying degrees in both online and offline stores, and customers are free to purchase them individually. One does not need Amazon in order to buy a toaster, a pair of sneakers, or even an ebook.

Many of the market share numbers posted for Amazon are useless because they simply assume that "e-commerce" is the relevant grouping of sales. That itself is a fact question. Answers vary widely. For example, online sellers do not compete with traditional sellers at all for services such as video streaming, which are available only online. However, online and offline competition is considerable for groceries and other household suppliers, clothing, small appliances, and other types of accessories. At the other extreme, services such as gasoline for automobiles, massages or facials can only be sold in person. For some goods, such as groceries, tires, and try-on clothing, Amazon has a presence but operates at a disadvantage to old economy stores; its market share remains small.

One possibility is that market power could be measured directly, across a large line of Amazon products, by looking at price-cost margins. Perhaps, and that might be a way of getting around the problem of different market shares for individual products. *First*, it would have to be determined that Amazon's margins are high enough to reflect monopoly power and not simply reasonable returns to investment or cost coverage.[93] *Second*, they

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[91] USDOJ and FTC, Merger Guidelines §4.3.D.1, 4 (2023), https://www.justice.gov/d9/2023-12/2023%20Merger%20Guidelines.pdf.

[92] Roughly twelve million. See https://www.bigcommerce.com/blog/amazon-statistics/

[93] See Imaeka Charles & Imoh C. Uford, Comparative Analysis and Evaluation of Business and Financial Performance of Amazon, 11 Eur. J. Bus., Econ. & Accountancy (2023), https://www.idpublications.org/wp-content/uploads/2023/07/Full-Paper-COMPARATIVE-ANALYSIS-AND-EVALUATION-OF-BUSINESS-AND-FINANCIAL-PERFORMANCE-OF-AMAZON.com .pdf (Amazon's profit margins have increased more rapidly then Walmart's since 2019, but attributing most of this to changes in buying and supply behavior resulting from Covid).

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would have to be shown to be approximately the same across the board. If they varied significantly, power would still have to be determined for individual products or categories.

Third, we would need a metric for determining the size of the margin for establishing "monopoly" power, or dominance, which is a specific requirement of §2. To date, using price/cost margins or some variation to establish power has been widely used in merger cases and some §1 cases.[94] Supreme Court case law requires a market definition in monopolization and attempt cases.[95] Using high margins alone may also lead to a fact finding that multiple firms are "monopolizing" the same market. Of course, the more natural inference in such a case is oligopoly, a status that generally does not satisfy §2's monopolization standard, but it is consistent with three or four firms in a market all earning supercompetitive returns. On the other hand, if a single firm in a market had much higher margins than all others, finding dominance on this basis is at least thinkable.

Finally, many of the practices that the Amazon complaint alleges apply only on a product-by-product basis. Consider, for example, most-favored-nation (MFN) clauses, which Amazon used in some form until 2019.[96] One likely litigation issue is whether it continues to use them. These clauses come in many varieties across all sellers. They generally prohibit a merchant who sells on Amazon from offering a lower price for the same product on a different site. MFNs are generally lawful when a retailer lacks a significant market share in the product covered by the MFN.[97] It will want to purchase

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[94] *See* 2B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶516-521 (5th ed. 2022).

[95] Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447 (1993) (overruling previous decisions that did not require a market definition in attempt cases).

[96] *See* Julie Masson, *Amazon Stops Demanding Price Parity in US*, GLOBAL COMPETITION REVIEW (13 March 2019), https://globalcompetitionreview.com/gcr-usa/article/amazon-stops-demanding-price-parity-in-us. Amazon's current pricing party does contain a list of practices that might "harm consumer trust," one of which is "setting a price on a product or service that is significantly higher than recent prices offered on or off Amazon." https://sellercentral.amazon.com/help/hub/reference/external/G5TUVJKZHUVMN77V (last visited Oc. 29, 2023).

[97] E.g., Walmart has a much smaller online store called "Walmart Marketplace," which sells goods for third party merchants. Its policy states that "prices listed on

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from suppliers who are not giving other retailers a better deal so that it can grow its own sales.[98] By contrast, when a firm acquires a dominant market share the MFN can be a way of limiting the growth of rivals. This is fundamentally a question about market coverage or foreclosure. As a result, an MFN might be procompetitive for Amazon's sales of, say, tires, where its market share is small, but perhaps not for ebooks.[99] If Amazon applies such a requirement across all of its merchants, it might be lawful for some but not for others. There is no obvious warrant for grouping all of the products together.

In sum, establishing Amazon's market power by some mechanism that is common over its entire product line is conceivable, but it would be difficult and could not be done by reference to market share. Using direct methods to establish monopoly power in a §2 case would be going into new territory, particularly for a firm that possesses widely varying degrees of power in its individual products.[100]

The *Amazon* complaint also alleges that Amazon has durable market power in an "Online Marketplace Services Market."[101] This apparently refers to the aggregation of shopping and distribution services provided on Amazon's website. It references "a significant base of shoppers … who use the online marketplace…."[102] It also includes Amazon's internal search engine,[103] the "ability for sellers to set the prices for their goods…," and to

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Walmart must be the lowest on the market." https://marketplace.walmart.com/why-you-need-automated-repricing-and-multichannel-tools/ (July 1, 2019, last visited Oct. 29, 2023).

[98] *See* 11 HERBERT HOVENKAMP, ANTITRUST LAW ¶1807b1 (5th ed. 2024) (in press).

[99] See Amazon.Com, Inc. eBook Antitrust Litig., 2023 WL 6006525 (S.D.N.Y. July 31, 2023) (dismissing Sherman §1 claim on Amazon's ebook MFNs but sustaining §2 claim based on allegation of 90% market share of "trade ebooks"). See also United States v. Blue Cross Blue Shield of Mich., 809 F.Supp.2d 655 (E.D.Mi. 2011) (use of MFNs requires proof of market power); Biddle v. Walt Disney Co., __ F.Supp.3d __, 2023 WL 6453799 (N.D.Cal. Sep. 30, 2023) (requiring market power for unlawful MFN)

[100] *Cf*. US Airways, Inc. v. Sabre Holdings Corp., 2022 WL 874945, at *10 (S.D.N.Y. Mar. 24, 2022) (permitting §2 claim to proceed based on market shares of 49% to 52%, plus a finding of high margins as well as high switching costs; Sabre was apparently the only firm with the high margins).

[101] Amazon Complaint., *supra* note __, ¶¶184 et seq.

[102] *Id*.

[103] *Ibid* ("an interface for consumer search").

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'maintain product detail pages" on the website and to display customer reviews. Why this aggregation of services constitutes a single "relevant market" is not entirely clear. The complaint then goes on to explain that these services are not reasonably interchangeable with similar offline services or those sold in an ordinary online store. It states that this set of services enable third party merchants to sell on Amazon even though they have no distinctive online presence themselves.[104] Finally, Amazon has access to a uniquely large customer base.[105]

One important question in considering whether fulfillment services is a relevant market is elasticity of supply: can rivals readily duplicate these services?[106] Many multi-product online sellers supply product-search services and many provide the range of bill collecting and shipping services that go into fulfillment. Practices such as permitting merchants to set their own prices or supply their own web pages hardly suggests attributes that are hard to duplicate. The complaint alleges that entry barriers are significant, based on scale economies, switching costs, and network effects.[107] Of course, those claims need to be proven.

In computing market share in this market, the complaint sums up the total value of all sales, including the price of the product.[108] The denominator in this fraction appears to be all sales made by internet firms that have a similar marketplace structure.[109] It does not include offline sales. As noted earlier, however, the extent to which off- and online sales compete with one another presents a fact question, and the answers vary widely from product to product.

The complaint also alleges that Amazon ties its own fulfilment services to Prime eligibility,[110] thus making it more costly for third party sellers who want to be prime eligible to sell on competing websites. That would require

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[104] *Id*. ¶188.

[105] *Id*., ¶189.

[106] E.g., Menasha Corp. v. News Am. Mktg. In-Store, Inc., 354 F.3d 664 (7th Cir. 2004); Blue Cross & Blue Shield United of Wis. v. Marshfield Clinic, 65 F.3d 1406, 1410–11 (7th Cir. 1995); Virtual Maint., Inc. v. Prime Computer, Inc., 11 F.3d 660, 665 (6th Cir. 1993). *See* 2B PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶561 (5th ed. 2022).

[107] Amazon Complaint., ¶206.

[108] *Id*, ¶204.

[109] *See id*. ¶205.

[110] *See id*. ¶¶24, 364.

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the seller to have two or more different sources of fulfillment.[111] It also alleges tying *within* Amazon Prime. Here the allegation is that Amazon offers Prime on an "all or nothing" basis as a combination of the free shipping services, video streaming, music streaming and streamed games.[112] The complaint states that while technically Amazon Prime Video is offered on a standalone basis, Amazon uses "dark patterns and manipulative design techniques" to thwart shoppers who wish to purchase the music alone.[113]

Tying law requires market power in the *tying product*, which in the case of the Prime/Fulfillment tie would be Prime. That is, Prime would be the tying (or desired) product, while Amazon's fulfillment services are the tied product. The complaint does not appear at this stage to have an allegation that Amazon has market power in Prime itself, and it is not clear that Prime is even a "market." On first appearance it appears to function as nothing more than a pricing mechanism.[114] The customer can either pay for these services (or forego them) on an item-by-item basis, or else pay a fixed annual fee that covers the combination. Why the willingness to price this way constitutes a tying market and facilitates the exercise of market power is not clear. With respect to the intra-Prime tie in product choices, the "tying" product is the one that the user wants, while the tied product is the one that she is required to take as a condition of obtaining the tying product.

The complaint reveals the extent to which "tying" claims can generate arbitrary classifications. The claim is that video and music are separate products and that tying them is unlawful. But why should the market be divided into "video" and "music"? Why not enable customers to purchase a version of prime that includes only science fiction movies, or Taylor Swift songs? The fundamental problem here seems to be that Amazon is taking advantage of economies of scope to make a diverse offering of aggregated digital services.[115]

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[111] *Id*, ¶365.

[112] Id.,¶¶218-222.

[113] Id. ¶220.

[114] Cf. U.S. Steel Corp. v. Fortner Enter'p, Inc., 426 U.S. 610, 622 (1977) (*Fortner II*) ("a willingness to provide cheap financing in order to sell expensive houses" is not a tying arrangement).

[115]Cf. BMI, Inc. v. Moor-Law, Inc., 527 F.Supp. 758 (D. Del. 1981), aff'd mem., 691 F.2d 490 (3d Cir. 1982) (rejecting tying claim by country-and-western bar that wanted a reduced-price blanket license limited to country-and-western music)

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Assuming that this aggregation of services can be placed into a single relevant market and a violation is found, what kind of remedy would be appropriate? Finding a violation could make a case for injunctive relief against specific licensing or contract practices or policies found to be unreasonably exclusionary. For example, a court might order Amazon to offer prime music, prime video, and prime games separately, but who would set the price? Even with injunctive relief, software bundling claims such as these place the court into the position of a price regulator, because there is no good way to segregate and price out individual components. At this vantage it is hard to envision any kind of structural relief that would lead to higher output, lower prices, or a better picture overall for consumers.

V. REMEDIES AND ANTICOMPETITIVE CONDUCT

One purpose of an antitrust remedy is to "terminate the illegal monopoly" plus ensure that other practices do not remain that might result in monopoly in the future.[116] The "terminate" phrase is ambiguous. Must the remedy terminate the monopoly, or only the "illegal" monopoly. If the former, then the phrase seems inherently "structural." However, being a monopolist is not unlawful under United States antitrust law, although monopolists do face a stricter standard for anticompetitive conduct. In any event, judges have been reluctant to award structural relief in §2 cases other than the undoing of previous mergers. Indeed, the *Microsoft* decision quoted this very language,[117] but then settled on a remedy that did not include structural relief.

Given that so few monopolization cases result in a breakup, it seems clear that remedies have not been driven so much by a concern to end monopoly itself, but rather to end unlawful conduct that either creates or maintains monopoly. Judges appear to be rightfully worried about the effectiveness and, more importantly, potential excesses of structural relief. Once they have identified specific conduct that has led to monopoly, judges are more strongly inclined to enjoin the conduct than they are to break up the firm. The *Microsoft* decree makes a good case for that,[118] as does the *Dentsply* decision,

[116]*See* discussion *supra*, text at notes __.
[117]United States v. Microsoft Corp., 253 F.3d 34, 103 (D.C. Cir. 2001).
[118]*See* discussion *infra*, text at notes __.

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which condemned exclusive dealing by a monopolist under §2 of the Sherman Act but awarded only injunctive relief.[119]

The quoted statement about terminating the unlawful monopoly was from the 1968 *United Shoe Machinery* (*USM*) case, whose history is its own stern warning about the perils of structural relief in §2 cases, particularly when there is no clear view of consequences.[120] That decision came 14 years after Judge Wyzanski's original district court decision finding that USM had violated §2, mainly in its equipment leasing practices.[121] After finding numerous instances of unlawful conduct he responded with an array of injunctions intended to free up the market for shoe machinery. He rejected the government's request for divestiture, however, observing:

> United conducts all machine manufacture at one plant in Beverly, with one set of jigs and tools, one foundry, one laboratory for machinery problems, one managerial staff, and one labor force. It takes no Solomon to see that this organism cannot be cut into three equal and viable parts.
>
> Nor can the division of United's business be fairly accomplished by dividing the manufacture of machinery into three broad categories, and then issuing an injunction restraining the Beverly plant from manufacturing two broad categories of machine types, and vesting in each of two new companies the right to manufacture one of those categories. Such an order would create for the new companies the most serious type of problems respecting the acquisition of physical equipment, the raising of new capital, the allotment of managerial and labor forces, and so forth. The prospect of creating three factories where one grew before has not been thought through by its proponents.[122]

Judge Wyzanski then schooled the government on the requirements for justifying structural relief:

> A petition for dissolution should reflect greater attention to practical problems and should involve supporting data and prophesies such as are presented in corporate reorganization and public utility dissolution cases. Moreover, the petition should involve a more formal commitment by the Attorney General, than is involved in the divergent proposals that his assistants have made in briefs and in oral arguments addressed to the Court.[123]

The injunction decree that the court adopted required review after ten years. At that time the government renewed its request for structural relief. Judge Wyzanski once again declined, observing that USM's market share had

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[119]United States v. Dentsply Int'l, Inc., 399 F.3d 181 (3d Cir. 2005).

[120]United States v. United Shoe Machinery Corp., 391 U.S. 244, 250 (1968).

[121]United States v. United Shoe Machinery Corp., 110 F.Supp. 295 (D.Mass. 1953), *aff'd*, 347 U.S. 521 (1954).

[122]*Id*., 110 F.Supp. at 348.

[123] *Ibid*.

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been falling since the decree took effect while its rivals were growing.[124] He cited the "unanimous and representative testimony of shoe manufacturers," who were USM's customers, that the shoe machinery market now exhibited "sufficient competition to allow the shoe manufacturers to select machinery as they wish on the merits of the machines available."[125]

That was not enough for the Supreme Court, which reversed in a decision authored by Justice Fortas that broke up the company.[126] In retrospect, that decree was one of the bigger disasters in the history of antitrust decrees. Soon after, the company went into steep decline, and its large facility was shut down and abandoned.[127] As is often true, how much of that resulted from the breakup and how much from other factors is difficult to say.[128]

Also important is the fact that any requirement to "terminate the illegal monopoly" need not mean breaking up the firm, but simply removing its ability to hang on to its monopoly position by means of exclusionary practices. Within ten years following the original structural decree, USM's market share had declined significantly while that of its rivals increased. Nevertheless, the Supreme Court ended up opting for disastrous structural relief rather than an injunctive remedy that did not produce instant results.

Anticompetitive acquisitions are another matter. For example, the current version of the Facebook complaint, which the district court has sustained, alleges that Facebook's acquisitions of Instagram and WhatsApp were violations of §2 of the Sherman Act. Why the FTC did not challenge them under §7 is unclear. But in that case the unlawful conduct is the acquisition itself,[129] and the most obvious remedy is to undo the acquisition. That applies

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[124]United States v. United Shoe Mach. Corp., 266 F. Supp. 328, 331 (D.Mass. 1967). *See also* Robert W. Crandall, *Failure of Structural Remedies*, 80 ORE.L.REV. at 168-170 (documenting decline in USMs market share and increases by its rivals, mainly Compo and International Shoe.

[125] *Id*. at 332.

[126] United States v. United Shoe Machinery Corp., 391 U.S. 244, 250 (1968).

[127]Ada Louise Huxtable, *Refitting "the Shoe*," WALL ST. J. Oct. 2, 1997, https://www.wsj.com/articles/SB875755506480898000

[128]*See* Scott E. Masten & Edward A. Snyder, *United States v. United Shoe Machinery Corporation: On the Merits*, 36 J.L. & ECON. 33, 67 (1993) (noting the USM's post-breakup decline preceded that of the shoe machinery industry overall).

[129] The merger statute, §7 of the Clayton Act, makes it unlawful to "acquire.…" 15 U.S.C. §18 (2018).

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even though FB Blue, Instagram, and WhatsApp are all networks. In this case, however, the level of integration among them is relatively insubstantial.

VI. "STRUCTURAL" ALTERNATIVES TO BREAKUPS

A remedy is technically "structural" if it breaks into a property relationship, such as requiring a firm to divest a plant or a set of stores that it owns. That happened, for example, when the Supreme Court broke up Standard Oil in 1911 or ordered divestiture of United Shoe Machinery in 1968.[130] By contrast, an injunction typically precludes or modifies the terms of an actual or prospective contract or license agreement.

A. "Quasi-Structural" Relief

Most networks are more valuable as the number of users on each side increases. As a result, "breaking up" an existing network often comes with high social costs, raising difficulties of the sort that Judge Wyzanski observed in the *United Shoe Machinery* case.[131] The alternatives are 1) a breakup of the network that requires the individual pieces to interconnect and operate as a single unit, usually by contract or license agreements; or 2) a decree that leaves the network intact but requires it to interconnect or interoperate with rivals, who then become competitive decision makers within the network.[132]

Interconnection refers to situations in which firms coordinate certain aspects of their behavior in order to achieve a better outcome. The term "interoperability" implies a little more, referring to the ability of firms "to transfer and render useful data and other information" across their respective systems or applications.[133] The relationships that produce interconnection are

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[130] See discussion supra, text at notes __.

[131] See discussion supra, text at notes __.

[132] For further discussion of the issues, *see* Herbert Hovenkamp, Antitrust Interoperability Remedies, 123 Col. L. Rev. Forum 1 (2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4035879.

[133] JOHN PALFREY & URS GASSER, INTEROP: THE PROMISE AND PERILS OF HIGHLY INTERCONNECTED SYSTEMS 5 (2012). *See also* FIONA M. SCOTT MORTON, GREGORY S. CRAWFORD, JACQUES CRÉMER, DAVID DINIELLI, AMELIA FLETCHER, PAUL HEIDHUES, MONICA SCHNITZER & KATJA SEIM, EQUITABLE INTEROPERABILITY: THE "SUPER TOOL" OF DIGITAL PLATFORM GOVERNANCE 1–2 (2021), https://cowles.yale.edu/research/cfp-1848-equitable-interoperability-super-tool-digital-platform-governance.

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contractual, often taking the form of licenses. If they were tighter than that we would be looking at a single firm.

"Interconnection" was not much of an antitrust issue when AT&T was a unitary firm, and the relevant linkages were between subsidiaries or divisions of the same entity. To be sure, there may have been numerous coordination problems that needed to be addressed, but these were agency issues internal to the firm. One vice president would have to give another vice president a call. Once the breakup occurred, however, interconnection among multiple firms became necessary if there was to be a unitary phone network, and the decree provided for it. Further, different firms have different profit centers and motives to self-deal, and these can create coordination problems that a single firm ordinarily does not encounter, certainly not to the same degree.

Questions about the value of interconnection as an alternative to more structural remedies can come up when the challenger seeks to (1) require interconnection; (2) modify the terms of an existing interconnection agreement; or (3) dissolve an existing interconnection agreement. The second and third ones are noteworthy, because just as interconnection can fix a firm dominance problem, sometimes it can also facilitate collusion.[134]

The Supreme Court's very first antitrust decision on the merits confronted some of these issues, although it did not handle them very well. The Court was faced with an interconnection agreement among railroads that standardized track gauges, coordinated schedules, and provided for freight transfers–but also fixed freight classifications and rates. The railroads themselves were state chartered and operated within a single state, but interconnection enabled them to connect end-to-end and operate as an interstate network. Citing only the price-fixing portion of the arrangement, the Supreme Court granted the government's request to dissolve it.[135]

Both the Interstate Commerce Commission and the Eighth Circuit had approved the venture, noting the degree of interconnection that it afforded to the railroad network:

> The fact that the business of railway companies is irretrievably interwoven, that they interchange cars and traffic, that they act as agents for each other in the delivery and receipt of freight and in paying and collecting freight charges, and that commodities received for transportation generally pass

[134] *See, e.g*, Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 591 n. 9 (1985) (noting that the Colorado Attorney General had investigated the joint venture for possibilities of collusion, and ending in a consent decree).

[135] United States v. Trans-Missouri Freight Assn., 166 U.S. 290 (1897).

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> through the hands of several carriers, renders it of vital importance to the public that uniform rules and regulations governing railway traffic should be framed by those who have a practical acquaintance with the subject, and that they should be promulgated and faithfully observed.[136]

A pretty good case even existed for the agreement on freight rates. In the 1890s freight rates had to be computed from paper tables with a pencil.[137] Most of the railroads at the time operated in a single state. For multistate shipments within the Trans-Missouri network, a shipping or receiving agent might have to compute a rate for a package that needed to be shipped across three or four railroads. Without a rate agreement the agent would have to determine miles, freight classifications, and prices for each railroad individually, perhaps from as many freight rate manuals. Agreements on freight classifications and rates made this much easier. Today that system would very likely be addressed under the rule of reason.

Because the relevant relationships are carried out by contract or license agreement, interconnection remedies might not be considered "structural." All that proposition illustrates, however, is the tenuous line between contracts and firms that use different legal structures to describe economically similar relationships.[138] For example, a remedy requiring McDonald's to divest its wholly owned restaurants would be structural. However, a remedy striking down an identical agreement carried out by franchise contracts would not.

Interoperability remedies are often better suited for digital products than for traditional tactile ones and present an important opportunity.[139] First, interoperability frequently requires asset sharing, which is more difficult but hardly impossible for physical assets, as the *Trans-Missouri* freight case illustrates. Several antitrust decisions addressed anticompetitive practices

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[136] United States v. Trans-Missouri Freight Assn., 58 F. 58, 79-80 (9th Cir. 1893), quoting Interstate Commerce Comm'n, Second Annual Report 25 (1888). The ICC advocated for "mutual arrangements" for interconnection and coordination.

[137] *See* Herbert Hovenkamp, *The Rule of Reason,* 70 Fla. L. Rev. 81, 145 (2018). For more detail on the practices, *see* Herbert Hovenkamp, *Regulatory Conflict in the Gilded Age: Federalism and the Railroad Problem*, 97 YALE L.J. 1017, 1040-43 (1988).

[138] See discussion supra, text at notes __.

[139] On some of the pros and cons, see Daniel Rubinfeld, Data Portability and Interoperability: An EU-US Comparison, Eur. J. L. & Econ. (2023), https://link.springer.com/article/10.1007/s10657-023-09781-w.

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within existing joint ventures that required asset sharing.[140] In any event, requiring the owner of a network to open it up to other participants can make a market more competitive without the considerable social costs that would attend breaking up the network. The poster child is the *AT&T* decree discussed below, but there are others.

B. Interconnection and Other Nonexclusivity Alternatives

In most cases the best remedy for digital network monopolization is injunctions that prevent exclusion or reduce switching costs. Removing contractual barriers to customer or supplier switching can be particularly significant in digital markets because the source of monopoly power is less likely to be durable plants and equipment. Purely digital licenses and contracts, once enjoined, can typically be modified more quickly and at less cost. As a result, an injunction that opens up participant choice can serve to diminish monopoly power significantly. This may not happen immediately, but it might happen quite soon.

For example, consider an injunction striking down a Microsoft exclusive licensing agreement that had required an application producer to use Internet Explorer when engaging the internet.[141] With the exclusivity provision removed, the application producer might be able very quickly to reprogram its software to a different browser or insert a browser choice step that the customer could use to select one. On the other hand, if Microsoft owned this particular application, an order compelling it to open up licensing would be a much heavier lift – requiring §2 liability first, and then an injunction mandating dealing and specifying its terms. [142]

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[140] United States v. Trans-Missouri Freight Assn., 166 U.S. 290 (1897) dissolving the venture); United States v. Terminal R.R. Assn., 224 US. 383 (1912) (rejecting Government's request to dissolve the venture, but requiring nondiscriminatory sharing); Associated Press, 326 U.S. 1 (1945) (requiring nondiscriminatory sharing).

[141] *E.g.*, United States v. Microsoft Corp., 253 F.3d 34, 68-74 (D.C. Cir. 2001) (declaring many of Microsoft's various exclusive contracts or licensing restrictions with application or access companies unlawful); and United States v. Microsoft 231 F.Supp.2d 144, 181-183 (D.D.C. 2002) (enjoining those exclusive agreements found to be unlawful).

[142] Francesco Decarolis, Muxin Li, and Filippo Paternollo, *Competition and Defaults in Online Search* (2022), https://www.tse-fr.eu/publications/competition-and-defaults-online-search?lang=en.

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Offsetting this is a concern that injunctions can be whack-a-mole endeavors in which a court enjoins one practice only to have another one emerge in response. In some cases that may be true, but a broadly-worded conduct remedy can dissipate a firm's power, often without undermining its ability to provide goods for its consumers, workers, and other constituents. A good injunction remedy, particularly one that removes exclusivity requirements, should boost the ability of either consumers or input suppliers to switch to alternatives.

The remedy in the *AT&T* case provides an interesting study because it involved structural remedies as well as injunctive relief intended to open up competitive options. The consent decree itself broke up the firm into seven regional monopolies,[143] each of which dominated in its own territory ("Bell Operating Companies" (BOCs), or "Baby Bells").[144] At different times it also segregated off long distance service, which AT&T retained for itself, and more gradually Western Electric, which manufactured instruments.[145] The structural breakups were visually dramatic, and even today people speak of the AT&T "breakup," as if that was the main thing the case was about.[146]

However, the consent decree also mandated interconnection, or interoperability. That was necessary for two reasons. First, the telephone system as it existed prior to the decree could not operate as a single network without it, so there had to be interconnection among the BOCs in order to duplicate the old single network. Second, the interoperability decree contemplated that the network would interconnect with *outsiders*, many of them newcomers. That is, the interconnection obligations extended not only to obligations among the original AT&T constituents to interconnect with one another, but also to each firm's obligation to interconnect with outsiders at every level. Under these provisions of the decree the operating companies were required to provide interconnection services "equal in type, quality, and

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[143] United States v. AT&T Corp., 552 F.Supp. 131 (D.D.C. 1982), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983).

[144] *See Id*. at 141. The seven were Bell Atlantic, Southwestern Bell, US West, Ameritech, BellSouth, Telesis, and NYNEX. See Jennifer L. Rand, The AT&T Consent Decree Revisited: Setting the Stage to Free the Baby Bells, 59 Geo.Wash.L. Rev. 1103, 1103-1104 n. 5 (1991).

[145] *See Id*. at 141.

[146] E.g., STEVE COLL, THE DEAL OF THE CENTURY: THE BREAKUP OF AT&T (2017); FRED W. HENCK & BERNARD STRASSBURG, A SLIPPERY SLOPE: THE LONG ROAD TO THE BREAKUP OF AT&T (1988).

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price to the services provided to AT&T…."[147] The operating companies were also forbidden from manufacturing products or providing collateral services outside of those "inherent" ones assigned to them, including any services that were not regulated natural monopolies.[148]

For over a decade these obligations were administered by a single Judge, Harold Greene, acting under the AT&T consent decree. Then Congress passed the 1996 Telecommunications Act, modifying but also codifying the interconnection obligations,[149] and requiring interconnection "at any technically feasible point within the carrier's network."[150] Today, thousands of firms have interconnection agreements with AT&T.[151] On the other hand, nothing in the original decree forbad the breakup constituents from merging back together, and several of them subsequently did.[152]

In retrospect, the interconnection obligations did more to bring competition to the telephone network than did the horizontal breakup. Whether the horizontal breakup into the regional bells was ever needed is debatable, and the subsequent reunification of many of them suggests it was not. The system still operated as a single network, but with the higher cost of managing and sometimes litigating interconnection. The vertical spinoffs upstream of long lines and downstream of instruments were more valuable

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[147] *AT&T*, 552 F.Supp. at 142.

[148] *Id*. at 143.

[149] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (codified as amended in scattered sections of 47 U.S.C.). See 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).

[150] 47 U.S.C. §251(c) (2) (3) (B) (2018). (providing for interconnection "on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just reasonable, and nondiscriminatory ….").

[151] See https://clec.att.com/clec_cms/clec/clec.html.

[152] Bell Atlantic, NYNEX and later GTE formed Verizon; SBC and Pacific Telesis merged in 1997, and SBC and Ameritech merged in 1999; SBC acquired ATT&T; and US West was acquired by Qwest in 2000. *See Jim Chen, The Magnificent Seven: American Telephony's Deregulatory Shootout*, 50 HASTINGS L.J. 1503, 1540-47 (1999); Ken Belson, *SBC Agrees to Acquire AT&T for $16 Billion*, N.Y. Times (Jan. 31, 2005), https://www.nytimes.com/2005/01/31/business/sbc-agrees-to-acquire-att-for-16-billion.html; US West, Telecomms. Hist. Grp., https://www.telcomhistory.org/resources/online-exhibits/telephone-company-histories/us-west/; Bell Atlantic, Verizon, https://www.verizon.com/about/sites/default/files/bellatlantic/index.html.

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because they facilitated nondiscriminatory interconnection in those two vertically related portions of the market. Indeed, long distance quickly became flooded with new entrants seeking to provide long distance service in competition with AT&T itself. Very largely the same thing happened in the market for instruments. Interconnection into the local parts of the market was a longer time coming.

So, while the *AT&T* decree included both a structural (breakup) remedy and injunctions mandating interconnection, the latter were much more effective in bringing competition to the phone system than were the physical divestitures. In the realm of digital networks AT&T provides a useful template and some suggestions about remedy design.

In cases involving dominant networks, injunctions should be the first place to look for remedies, with interconnection among them. Not only are they less disruptive in most cases than structural separation, but they are also more likely to be effective in promoting competition.

Interconnection remedies do have one similarity to unilateral dealing orders that makes them more complex: the terms must be set or else a mechanism provided for determining them. That includes both the scope of interconnection and the price that will be charged. The Telecommunications Act and the FRAND system for licensing standard-essential patents have approached this problem by creating a path for the parties to bargain on "interconnection," which here means technology sharing, with either judicial review or arbitration to step in if bargaining fails.[153]

The *Microsoft* decree is also a good illustration of the proposition that properly executed injunctive remedies can accomplish nearly everything that structural remedies can, and with much less risk of harm to the various constituencies that a large digital platform serves, including its consumers. By freeing up firms to make substitute choices, an injunction can increase the range of competitive alternatives to a firm. In a digital market it can also

[153] On the Telecom Act, see Verizon Comm'ns v. Trinko, 540 U.S. 398, 402 (2004) (describing arbitration to settle interconnection terms in that case); AT&T Corp. v. Iowa Utilities Board, 525 U.S. 366, 384-386 (1999) (describing alternative dispute resolution procedures, including arbitration, to settle interconnection disputes). On FRAND, see HTC Corp. v. Telefonaktiebolaget LM Ericsson, 12 F.4th 476 (5th Cir. 2021) (describing process under FRAND); and see Herbert Hovenkamp, FRAND and Antitrust, 105 Corn. L. Rev. 1683 (2020).

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accomplish this more quickly to the extent that product and transactional redesign can be accomplished more readily.

The main thing accomplished by the injunctions issued in the *Microsoft* case was the freeing up of both customers and suppliers to select alternatives to Microsoft's own Internet Explorer browser. The court agreed with the Government that Microsoft had unlawfully maintained its dominant position in the Windows operating system by seeking to exclude or restrain Netscape's internet browser. It did this mainly by a number of licensing restrictions and product adjustments intended to favor Microsoft's own Internet Explorer browser.[154] According to the court, Microsoft feared that to the extent the Netscape browser enabled access to applications "regardless of the operating system," a user could "select an operating system other than Windows based solely upon its quality and price. In other words, the market for operating systems would be competitive." Microsoft's response to these possibilities was to prevent alternative browsers from attaining the "critical mass" of users needed "to attract developer attention away from Windows as the platform for software development."[155]

Some of the restrictive license practices that Microsoft employed effectively "prevented many OEMs [original equipment computer manufacturers] from distributing browsers other than IE."[156] The court also enjoined a restriction that forbad license restrictions that prevented OEMs from using startup features that enabled anything other than Microsoft's own desktop to launch when a user turned on the computer.[157] In addition, Microsoft attempted to limit the launch of alternative browsers by imposing "technological shackles" that tied Internet Explorer and Windows.[158] It did

[154] Earlier litigation had focused on Microsoft's attempt to limit alternative operating systems by charging computer makers a "per process" license fee attached to every computer it made, whether or not that computer included Windows. *See* United States v. Microsoft Corp., 56 F.3d 1448, 1451 (D.C. Cir. 1995). That litigation ended in a consent decree. United States v. Microsoft Corp., 147 F.3d 935 (D.C. Cir. 1998).

[155] *Microsoft*, 253 F.3d at 60.

[156] *Ibid*., citing conclusions of law, 87 F.Supp.2d at 39-40.

[157] *Id*. at 61-62, citing 84 F.Supp.2d at 9, and Findings of Fact, ¶¶159, 203, 210, 213, 217.

[158] 253 F.3d at 64-65, quoting 87 F.Supp.2d at 39.

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this initially by a license agreement, but later on by "commingling" the Windows and Internet Explorer code.[159]

Looking back at the *Microsoft* injunctions, would the court have done better to grant a structural remedy?[160] First, Microsoft has retained control of its Windows operating system, which continues to hold a dominant but declining market share of the personal computer OS market. That market has itself become more competitive with a variety of non-Windows systems.

A quasi-structural decree requiring multiple nonexclusive licenses to Windows itself might have provided more immediate competition, although it would still need to be managed in order to ensure continued compatibility, perhaps by Microsoft itself. "Breaking up" the Windows OS is not possible, but it is possible for the owner of an operating system to grant nonexclusive licenses to the OS itself to one or more other firms who could then license out their own versions. Compatibility would have to be maintained. While that might seem quite feasible today, there were serious doubts at the time.[161]

Today, Google's subsequent experience with Android's numerous device implementers indicates that compatibility concerns can be managed acceptably, if not perfectly. Further, licensing the OS among multiple

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[159] *See* 87 F.Supp.2d at 35.

[160] *See* HERBERT HOVENKAMP, TECH MONOPOLY, ch. 4 (2024). For a generally contrary view, *see* Peter C. Carstensen, *Remedies for Monopolization from Standard Oil to Microsoft and Intel: the Changing Nature of Monopoly Law from Elimination of Market Power to Regulation of its Use*, 85 S. CAL. L. REV. 815 (2012).

[161] Among the most skeptical were John E. Lopatka and William H. Page, *Devising a Microsoft Remedy that Serves Consumers*, 9 GEO. MASON. L. REV. 691, 709 (2001):

> … [T]he existence of multiple purveyors of Windows would threaten to destroy the substantial efficiencies of a dominant operating system standard. If multiple incompatible operating systems replaced Windows, incremental porting costs could be immense, and consumers might incur substantial costs in additional training, confusion, and file incompatibility." Indeed, the court implicitly acknowledged that Microsoft achieved its monopoly in part because of the efficiencies inherent in a common standard….

See also Christian H. Nadan, *Open Source Licensing: Virus or Virtue*, 10 TEX. INTELL. PROP. L.J. 349 (2002). The state Attorneys General proposed a remedy that would permit Windows licensees to make individual alterations in the code, while requiring Microsoft itself to maintain the integrity of the OS overall. *See* Robert W. Hahn, *The Litigating States' Proposed Remedy for Microsoft: Antitrust as a Substitute for Competition* (Brookings, 2002), https://core.ac.uk/download/pdf/6716752.pdf.

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manufacturers might stimulate secondary competition among the licensees in device production as well as browser and search engine development.[162] In twenty years of hindsight, at least a possibility exists that the Windows market could have been made to be competitively structured. That would be accomplished, however, not by breaking up any Microsoft physical asset, but rather by the transfer of nonexclusive licenses.

The browser story is entirely different, with Internet Explorer's successor Edge owning a roughly 5.3% market share in 2023, against shares of 63.5% for Google' Chrome, and 20% for Apple's Safari browser.[163] Of course, an important part of this story is Google, an infant firm at the time of the *Microsoft* decision, but later to become a powerhouse with its search engine, its Chrome browser, and its Android operating system for smartphones, as well as several other technologies.

VII. CONCLUSION

The antitrust rhetoric of "breakups" has always produced exaggerated expectations that far exceed the reality. Rhetorically, "break 'em up" sounds like the right solution to any problem related to large firms doing bad things. Both the economics of remedies and the courts' track records suggest differently. Injunctions can be pointed, and also sufficiently broad if well designed. They can target the problem directly without causing excessive collateral damage. In a small number of cases, they may not be enough.

Breakups, by contrast, move the courts into more hazardous territory, particularly in highly innovative markets where the costs of doing it wrong can be significant. In some cases, they might solve the problem, but the collateral damage causes even greater harm. Further, courts are not good at identifying the fault lines along which breakups should occur. In addition to

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[162]*See* Liam Tung, *Android Fragmentation: There are Now 24000 Devices from 1300 Brands* (Aug 2015), https://www.zdnet.com/article/android-fragmentation-there-are-now-24000-devices-from-1300-brands/ (indicating a high degree of competition among Android device makers). *See also* Top Manufacturers of Android Phones (Oct. 26, 2023), https://www.appbrain.com/stats/top-manufacturers (real time counts indicating that Samsung is the largest Android manufacturer, with a 34.1% share, but listing 19 manufacturers overall).

[163]See https://gs.statcounter.com/browser-market-share (showing these numbers worldwide. Limited to the United States, the numbers are Edge=7.9%, Chrome=53.2%, and 29.6% for Safari.

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the *United Shoe Machinery* disaster,[164] consider *Grinnell*. The Supreme Court considered a firm that owned network monopolies in hard-wired phone-monitored security protection in several cities. Its remedy, which included forcing the defendant to divest some cities,[165] preserved the local monopolies but distributed many of them to different owners. That is not a solution to a monopoly problem, however, if all it provides is several firms each of whom owns a local monopoly. The court did impose other requirements, including one that the defendant sell equipment that it was currently leasing, and also urged the district court to consider "visitation rights," or a requirement that the defendant's operations be made available to the Justice Department for inspection.[166]

Understandably, when courts do apply structural relief to monopolies, they almost always break them along the lines of previous acquisitions.[167] That is least likely to cause collateral harm, and in cases such as Facebook assets Instagram and WhatsApp, may be completely appropriate. The thing about acquired assets, however, is that their "separateness" from the parent firm exists along a continuum. At one extreme they are simply separately owned assets that are not integrated operationally with the parent firm. At the other extreme, they are so fully submerged into the parent company that they lose their original identity. Divestiture is much more suitable in the first set of cases than the second.

Once a court has found a structural violation by a digital platform it should look first at available injunctive remedies that can be expected to address the problem. It should be accompanied by the recognition that market changes in response to injunctions may take a longer time than a breakup would do but are likely to be less disruptive.

Failing an adequate injunction remedy, it should go to "quasi-structural" relief, which typically requires more open licensing and compelled interoperability, but not fundamental structural changes. Then and only then should it consider more aggressive forms of relief that involve the breaking up or separation of physical assets.

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[164]See discussion supra, text at notes __.
[165]United States v. Grinnell Corp., 384 U.S. 563, 578 (1966).
[166]*Id*. at 579.
[167]*See* discussion *supra*, text at notes __.

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