

Breaking Up Bottlenecks in Big Tech and Everywhere Else: Two Remedies That Keep Your Packages Arriving in Two Days

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This article addresses the colossal problem of remedy in antitrust and regulatory cases combatting monopoly “bottlenecks.” A bottleneck monopoly typically lies somewhere along the chain of production and distribution of goods or services. Often both before and after the monopoly, the markets are workably competitive. When a bottleneck owner also participates in those workably competitive markets, the bottleneck owner has the incentive and ability to self-preference, discriminating against other competing products in the markets. As a monopolist, a bottleneck owner will also seek to constrain access to the bottleneck, assuring that the use of the bottleneck is not optimized. Traditional remedies for bottlenecks have not worked. Some rely on savvy regulators to assure open access while keeping the incentive structures in place. Other remedies rely on establishing competing networks, which is a Sisyphean task. None of these remedies address the core problem of the incentive of a monopolist to exploit its monopoly. This article outlines the “condominium” and “cooperative” remedies. By reconfiguring the ownership structures of the bottleneck these remedies directly address the monopoly incentive problem by eliminating or dramatically reducing it. This removes the need for a hypervigilant regulator or a failed competing network. These solutions are not perfect, and the article details the potential risks of deploying such remedies. Finally, the article takes both proposed remedies for a test drive, describing how they could be employed if the Federal Trade Commission wins its case against Amazon.

INTRODUCTION

The Federal Trade Commission’s (FTC’s) antitrust suit against Amazon presents a classic antitrust problem: What remedy should the court impose if the plaintiff wins. There is a risk that any remedy will make matters worse. And what of the particular benefits conferred on consumers that may arise in part because of the same structures that give rise to abuse of monopoly power? In a nutshell: *Can consumers still get two-day delivery if the remedy is that Amazon must be broken up?*

While many proclaim “big-tech” is a unique market, with aspects never-before encountered, we think the opposite. “Bottlenecks,”¹ or as competition law labels them “essential

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¹ While many law review articles have used the term “monopoly bottleneck,” there does not appear to be one that defines it. For our purposes, we shall define monopoly bottleneck as a point of access in a market chain controlled by an entity that possesses monopoly power over that access point. See U.S. v. A.T.&T, 552 F. Supp. 131, n. 187 (D.D.C. 1982)(“ To the extent that the local exchange facilities constitute monopoly bottlenecks, the development of alternative facilities actually furthers the competitive purposes of these laws.”); Howard A. Shelanski, *Justice Breyer, Professor Kahn, and Antitrust Enforcement in Regulated Industries*, 100 CALIF. L. REV. 487, 494-95 (2012)(discussing Justice Breyer’s treatment of monopoly bottlenecks.); Ashutosh Bhagwat, *Unnatural Competition?: Applying the New Antitrust Learning to Foster Competition in the Local Exchange*, 50 HASTINGS L.J. 1479, 1487 (1999)(discussing AT&T and monopoly bottlenecks); Christopher S. Yoo, *Vertical Integration and Media Regulation in the New Economy*, 19 YALE J. ON REG. 171, 269-85 (2002); William P. Rogerson, *The Regulation of Broadband*

facilities,”² have posed, and will continue to pose, dangerous risks to otherwise workably competitive markets, challenging regulators, and antitrust enforcers alike. Concern about the harms that result from abuse of power over essential facilities has found resurging popularity in light of big-tech and the New Brandeisian movement. However, the essential facilities doctrine itself is a theory of harm that allows access to a remedy.³ It is not, by itself, a remedy.

The problem of bottleneck monopolies is a timeless classic; they have existed in various forms for generations. Bottlenecks abound in railroads;⁴ gates and slots at airport terminals;⁵ gas and oil pipelines;⁶ electric transmission;⁷ and telecommunications generally—to name but some of the most conspicuous examples. It is also *not* new to big tech.⁸ The harmfulness of such bottleneck monopolies is, in part a consequent of American antitrust law’s inability to remedy the competitive problems that such bottlenecks cause. Similarly, in “regulated”⁹ industries where the goal is to facilitate workable competition wherever feasible, there remains monopoly (bottleneck) components. Those components are the ones over which regulators exercise control as to access and pricing, but only with limited success and a great deal of administrative complexity. Just as bottlenecks are a recurring problem, so too are unworkable and problematic solutions. One reason for the persistence of the failure to deal effectively with these monopolies is that there has been

Telecommunications, the Principle of Regulating Narrowly Defined Input Bottlenecks, and Incentives for Investment and Innovation, 2000 U. CHI. LEGAL F. 119 (2000).

² See Bret Frischmann and Spencer Waller, *Revitalizing the Essential Facilities Doctrine*, 75 ANTITRUST L.J. 1, 2-3 (2008)(“The essential facilities doctrine holds that dominant firms may incur antitrust liability if they do not provide access to their unique facilities, even to competitors, on a nondiscriminatory basis where sharing is feasible and the competitors cannot obtain or create the facility on their own.”); See also *MCI Communications Corp. v. American Tel. & Tel. Co.*, 708 F.2d 1081, 1132–33 (7th Cir. 1983)(essential facilities requires “(1) control of the essential facility by a monopolist; (2) a competitor's inability practically or reasonably to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility.”).

³ See generally Lina Khan, *The Separation of Platforms and Commerce*, 119 COLUM. L. REV. 973, 1027 (2019) Nikolas Guggenberger, *The Essential Facilities Doctrine in the Digital Economy: Dispelling Persistent Myths* 23 YALE J.L. & TECH. 301 (2021) and Nikolas Guggenberger, *Essential Platforms*, 24 STAN. TECH. L. REV. 237 (2021); Kaleb Byars, *An “Essential” Solution: Reworking the Essential Facilities Doctrine to Address Big Tech’s Harm to the Marketplace of Ideas* 91 MISS. L.J. 263 (2023); Marina Lao, *Networks, Access, and Essential Facilities: From Terminal Railroad to Microsoft*, 62 S.M.U. L. REV. 557 (2009); Norm Hawker, *Open Windows: The Essential Facilities Doctrine and Microsoft*, 25 OHIO N.U. L. REV. 115 (1999).

⁴ *United States v. Terminal R.R. Ass'n of St. Louis*, 224 U.S. 383, 409 (1912).

⁵ See, e.g., *Alaska Airlines, Inc. v. United Airlines, Inc.*, 948 F.2d 536, 543 (9th Cir.1991).

⁶ See *Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation; and Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol*, 57 Fed. Reg. 13,267, 13,281 (Apr. 16, 1992)(commonly known as FERC Order 636).

⁷ See *Otter Tail Power v. United States*, 410 U.S. 366 (1973).

⁸ Teague I. Donahey, *Terminal Railroad Revisited: Using the Essential Facilities Doctrine to Ensure Accessibility to Internet Software Standards*, 25 AIPLA Q.J. 277 (1997).

⁹ See Harry First, *Regulated Deregulation: The New York Experience in Electric Utility Deregulation*, 33 LOY. U. CHI. L.J. 911, 912 (2002) (noting deregulation in New York replaced one regulatory system with another, and new regulatory system more favorable to competitive incentives).

relatively little serious legal-economic-policy analysis of the remedy problem. This article seeks to break that cycle.

This article contributes to the analysis of how to remedy bottleneck monopolies by focusing on the incentive issue. Our basic thesis is that control of the bottleneck should be so configured that the “owners’” incentive to engage in anticompetitive exploitation or exclusion is minimized or eliminated. Instead, the primary incentive becomes the expansion of capacity of the bottleneck where feasible and, when not feasible, the owners seek only to optimize use of the scarce capacity. Thus, remedies that change the underlying ownership of the bottleneck facility should produce incentives to operate such a facility in ways that promote competition in the competitive upstream or downstream markets accessed through that facility.

We identify two ways to revise control over a bottleneck. One, the “cooperative model” entails creating a form of shared ownership of the facility itself. We think of this common ownership as a form of cooperative ownership. The alternative, the “condominium model,” leaves management of the facility in some third party and gives users entitlements to fixed parts of the capacity including the right to sell or lease such rights. The result is a kind of condominium operating the bottleneck. While not all bottlenecks are amendable to the kinds of solutions we propose, many are. Moreover, the basic incentive analysis that we present provides a better starting point for designing regulatory controls over bottleneck monopolies generally.

The article proceeds in six parts. Part I reviews the competitive problems that arise from bottleneck monopolies. The basic structure of a bottleneck is that it blocks pass-through from upstream markets to downstream markets. Both upstream and downstream are usually workably competitive, and the bottleneck creates barriers and higher costs imposed on one or both of those markets. To the extent the bottleneck owner also has a position in one of those markets, it creates incentives for self-preferencing and discrimination.

Part II examines the contemporary antitrust analysis and remedies that have addressed the bottleneck or essential facilities elements of monopoly as well as the ways in which some regulatory agencies have dealt with, or perhaps refused to deal with, the monopoly elements in some industries. This part shows that overall, the remedy strategies have not worked well when they fail to take account of the incentives of the owner(s) of the bottleneck. Instead, regulators have sought to use regulatory oversight and rules in the hope of detecting and punishing anticompetitive behavior. We also explain the manifest competitive harms that arise from antitrust enforcers continually ignoring acquisitions by the bottleneck owner in the affected competitive markets. Thus, increasing the monopolist’s position in such markets ensures that even if a remedy could work at first, it would not work overtime due to the changed incentives of the monopolist.

Part III explains the core insight of this article that control over incentives is essential to reduce or eliminate the harms of bottleneck monopolies. It then describes the cooperative and condominium models for dealing with incentives. The “condominium model” is one in which the users would “own” their specific units, i.e., the right to use some capacity or right, as well as collectively “owning” the entire facility. But the administration of the system rests with a distinct party whose incentive is to maximize the value of the facility to all users. The ‘cooperative model’ is one in which there is shared user ownership, management, and operation of the bottleneck. Either remedy transforms ownership of the bottleneck while retaining its functional characteristic as a monopoly bottleneck. However, the change in ownership should change the incentives governing the operation and potential expansion of the bottleneck. So long as there are many owners, the

individual owner-user stands to gain little by trying to impose a monopoly price on users including itself or by restricting access to the bottleneck by new entrants. Instead, the primary objective would be managing the entity so that it operates efficiently and with as much capacity as possible.

Part IV describes how these models might be used by both antitrust and regulation to better resolve the competitive risks. We provide criteria for selection of the remedy, including identifying the bottleneck, determining which remedy is preferable, creating an administrative structure for the entity, and providing a stable governance framework to assure the entity cannot be manipulated. We then provide exciting (big-tech, music copyrights) and non-exciting but important (refuse dumps) instances of how such remedies could work.

Part V examines the potential downsides of these remedies. These include risks to innovation, potential incentives to collude, and possible limitations of administrability over time. These risks are not insignificant and suggest that, whenever feasible, a remedy that eliminates the bottleneck would be preferable.

Part VI takes *both* of our solutions on a test drive through the world of Amazon, assuming the FTC proves victorious on the merits. In particular, we apply the condo approach to Amazon's market platform and the cooperative model to Amazon's fulfillment services as illustrations of how these remedies might be applied. Our remedy test drive may not address every problem (and is limited by what information is public in the redacted complaint), but it will provide a more concrete way to explain and illustrate how these remedies can work. We do not view our remedies as panacea, but we believe they should prompt more innovative discussions of how to cure the problems of monopoly power in bottlenecks that have been pervasive in the American economy and are proving ubiquitous in big tech in particular.

I. The Competitive Problems Coming from Bottleneck Monopolies

A. General problem with bottleneck monopoly: exclusion and exploitation

Durable monopoly is a problem whenever an economic system seeks to rely on market processes to allocate goods and services. A rational monopolist will charge a monopoly price for its good or service. This has the effect of reducing the quantity produced and raising the price well above the cost of production. However, monopoly profits can also be an incentive for investment in innovation and market development.¹⁰ The implicit assumption, however, is that in a dynamic economy such monopolies will be relatively short lived and yield to the next round of innovation.¹¹

¹⁰ See *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*, 504 U.S. 398, 407 (2004) (“The opportunity to charge monopoly prices-- at least for a short period--is what attracts ‘business acumen’ in the first place; it induces risk taking that produces innovation and economic growth.” See also David J. Teece & Mary Coleman, *The Meaning of Monopoly: Antitrust Analysis in High-Technology Industries*, 18 ANTITRUST BULL. 801, 824 (1998) (“It is the quest for profits that encourages innovation...”); John E. Lopatka, *United States v. IBM: A Monument to Arrogance*, 68 ANTITRUST L.J. 145, 156 (2000) (stating that “periods of ‘monopoly’ profits drive innovation, and it is the innovative process, more so than lower prices, that best serves consumers”).

¹¹ JOSEPH A. SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 106 (3d ed. 1950); see also, *Standard Oil v. United States*, 221 U.S. 1, 62 (1912). The Court stated that the design of the Sherman Act: “indicates a consciousness that the freedom of the individual right to contract, when not unduly or improperly exercised, was the most efficient means for the prevention of monopoly, since the operation of the centrifugal and centripetal forces resulting from the right to freely contract was the means by which monopoly would be inevitably prevented if no extraneous or sovereign

Some monopoly has proven to be much more durable. Indeed, the monopolist has a strong interest in retaining its position and will invest substantially in creating and enforcing barriers to entry.¹² Thus, it will engage in acts and practices that exclude actual or potential competitors. This facilitates the monopolist's ability to exploit its customers and impairs the overall dynamic of market innovation. For these reasons, monopoly, except the purported short-term results for innovation, is a cause of concern.

Bottleneck monopolies are a subset of the broader category of monopoly. These monopolies lie somewhere along the chain of production and distribution of goods or services. Usually both before and after the monopoly the markets are workably competitive. Hence, there may be many producers of basic inputs, processed in another workably competitive market, but then the products must pass through the essential facility to reach the final consumer, e.g., the "final mile" for landline telephone service, or to reach distribution stage, e.g., natural gas pipelines. The monopoly then intervenes in the otherwise workably competitive sequence of markets and confers on its possessor control over access from upstream sources to downstream distribution or consumers. Manifestly such a monopoly can exact a substantial amount of wealth by imposing a monopoly charge on those seeking to use its essential facility.

Two historic examples should suffice. A natural gas pipeline is one example. It transports gas from many producers to buyers including distribution companies and large commercial users. The only means to get the gas from its place of production to its ultimate customer is through the pipeline. This confers on the pipeline operator very substantial market power in the absence of some constraint.¹³ For years, the interstate pipelines purchased gas from producers and then resold it to the downstream buyers. The resulting monopsony power as a buyer and monopoly power as a seller (usually only one pipeline served any community) created strong incentives to exploit both ends of the bottleneck. The Federal Power Commission (FPC), the regulator of the pipelines faced continued disputes over the resulting prices. The Supreme Court made this problem worse by its determination that the FPC had to regulate the wellhead price of gas.¹⁴ That in turn led to an interminable rate setting case involving the Permian Basin, a major source of natural gas.¹⁵ This regulatory framework frustrated the potential for a competitive market for the sale of gas to the ultimate users or distributors. But such a market would require that there was some way to avoid the power of the pipeline bottleneck.

Similarly, as a historic matter, before the development of trucks capable of hauling large quantities of grain, the high cost of transportation from farm to grain elevator meant that severely limited the distance that a farmer could rationally transport grain to an elevator.¹⁶ At the same

power imposed it and no right to make unlawful contracts having a monopolistic tendency were permitted. In other words, that freedom to contract was the essence of freedom from undue restraint on the right to contract." Id.

¹² Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975).

¹³ See Paul Larue, *Antitrust and the Natural Gas Industry*, 11 ENERGY L. J. 37 (1990).

¹⁴ See, *Phillips Petroleum v. Wisconsin*, 347 U.S. 672 (1954) (gas producers are subject to rate regulation).

¹⁵ *Wisconsin v. FPC*, 373 U.S. 294 (1963) (reviewing the FPC's rate regulation decisions); *Permian Basin Area Rate Cases*, 390 U.S. 747 (1968) (another review of the FPC's rate regulation decisions).

¹⁶ See, Peter C. Carstensen, *The Content of the Hollow Core of Antitrust: The Chicago Board of Trade Case and the Meaning of the "Rule of Reason" in Restraint of Trade Analysis*, 15 RSCH. IN L. & ECON. 1, 28 -29 (1992) (hereafter "*Chicago Board of Trade*").

time, grain elevators required a significant capacity to be able to fill grain cars for shipment. As a result, farmers often had only one potential buyer.¹⁷ The owner of an elevator, therefore, had the capacity and incentive to exploit farmers by offering prices well below what their grain would have received in a competitive market. There were many farmers and many ultimate consumers of grain, but the monopoly elevators were the bottleneck.

B. Incentives to expand and to withhold capacity.

The owner of a bottleneck monopoly where the owner is not vertically integrated into either upstream or downstream markets will still have the capacity to determine the scope of constraint imposed on the upstream or downstream enterprises relying on the bottleneck. Thus, when constructing a pipeline or grain elevator, the owner has substantial latitude to determine the scale of the entity. A monopolist intent on exploiting the resulting market power will have little incentive to build the maximum size feasible because that would produce undesirable (from the monopolist's perspective) excess capacity. Thus, in the grain business, rural elevators whether owned by firms that were also vertically integrated downstream or independent operators had smaller capacity than those elevators built by farmer cooperatives.¹⁸ The cooperatives only interest was in having sufficient capacity to handle all the grain their members might supply.¹⁹

Similarly, other bottlenecks, unlike pipelines or grain elevators, have more flexibility and can be expanded or contracted over time. Again, the interest of a monopolist is to control expansion to avoid excess capacity or otherwise undercutting its control. Even when it has available capacity, the monopolist is unlikely to make it available at its cost. The Averch-Johnson hypothesis²⁰ can be revised slightly to suggest that while a regulated monopolist has an incentive to overinvest in facilities to raise its total return, it will not provide any noticeable increase in the volume available to buyers.

C. The vertical incentives to discriminate

A bottleneck monopolist's incentives will depend on the overall nature of its business. A vertically integrated monopolist is one that operates in either the upstream or downstream market where it competes or could compete with other firms as long as those firms also had access to the essential facility. Such a monopolist can use its control over the bottleneck both to exploit its

¹⁷ Id.

¹⁸ Id at 26, 29, citing FTC, REPORT ON THE GRAIN TRADE (1920-23).

¹⁹ See discussion, *infra*, Part III B.

²⁰ Harvey Averch & Leland Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962) (advancing thesis that regulated utilities would over invest in capital projects because that would inflate their total return under rate regulation).

competitors and restrict their competitive capacity.²¹ The *LinkLine*²² case provides an example. LinkLine needed access to the monopoly wire network of the incumbent phone company which also competed with LinkLine to provide services to the ultimate consumers. The phone company raised the prices it charged to LinkLine to a level that made it impossible for LinkLine to compete in the market for the service.²³ Other telecommunications examples include the bottleneck operator degrading the quality or delaying the provision of such services.²⁴

Similar conduct exists in electric transmission where vertically integrated firms own the transmission capacity and also act as wholesalers selling power delivered through their transmission system to local distribution companies. Such vertically integrated firms can restrict or eliminate access to competing sources of power because any such power has to come through that same transmission system.²⁵ When those monopoly transmission companies compete for larger accounts against local distribution companies that are also their customers, they can charge the local utility a price for power such that it cannot compete for such business.²⁶ Even when substantial demand might exist at prices above the costs of production, the fact that there are substantial economies of scale or scope as well as network effects mean that it is unlikely that new entry will occur. This is a very important qualification in the context of many situations. It is often much cheaper for those who want to use a necessary facility to force their way into an existing one rather than developing their own.²⁷ But the public interest in competition is better served when there are multiple facilities whenever that is possible.

D. Economies of scale preclude alternatives to the bottleneck

The *Terminal Railroad* case may illustrate this. The first generally recognized essential facilities case involved a monopoly control over crossing the Mississippi River at St. Louis.²⁸ The Terminal Railroad owned both the bridges and the barges necessary to get rail cars across the river. Moreover, and more importantly, it controlled the terminal rail lines that linked the 12 railroads

²¹ Indeed, in the grain elevator example, the vertically integrated companies that operated rural elevators, major elevators at ports and trading centers, and engaged in marketing grain had incentives to discriminate among sellers of grain to deter entry and compel obedience to their commands. Carstensen, *Chicago Board of Trade*, *supra* note 16, at 28; see generally, *Munn v. Illinois*, 94 U.S. 113 (1877) (upholding state regulation of grain storage services in Chicago despite their being in inter-state commerce because of the compelling need to protect the public interest).

²² *Pac. Bell Tel. Co. v. linkLine Commc'ns, Inc.*, 555 U.S. 438 (2009).

²³ See *Pacific Bell Telephone Co. v. linkLine Communications, Inc.* 555 U.S. 438 (2009) (the Supreme Court rejected the claim that this conduct violated the Sherman Act's prohibition of monopolization).

²⁴ See, e.g., *Verizon Communications, Inc. v. Law Offices of Curtis V. Trinko*, 540 U.S. 398 (2004) (while implicitly acknowledging that the exclusionary conduct was unlawful, the Court rejected the application of antitrust law and instead relied on regulatory agencies to monitor and control such conduct).

²⁵ See, e.g., *Otter Tail Power v. United States*, 410 U.S. 366 (1973)(unlawful refusal to deliver power from any source other than the owner of the transmission system).

²⁶ See, e.g., *Town of Concord v. Boston Electric*, 915 F.2d 17 (1st Cir. 1990) (not unlawful to engage in a price squeeze if it has regulatory approval).

²⁷ See, Donald I. Baker, *Compulsory Access to Network Joint Ventures under the Sherman Act: Rules or Roulette*, 1993 UTAH L. REV. 999.

²⁸ *United States v. Terminal R. Assoc.*, 224 U.S. 383 (1912).

terminating on the east side of the river with the 12 that terminated on the west side. Hence, transfer of freight cars from east to west or the reverse required use of the Terminal Railroad. Fourteen of the 24 railroads serving St. Louis owned the Terminal Company and used it to exclude and exploit the remaining rail lines. Although there had previously been three competing terminal systems crossing the river and providing access to most or all of the rail lines, the Court took the view that the geography of St. Louis was such that the consolidated enterprise was substantially more efficient. Therefore, it ordered that all railroads serving St. Louis should be permitted to join in ownership of the Terminal Railroad.²⁹ In retrospect if the three systems had been recreated, there would have been competition. At the same time, if joint operation or other sharing of some rail lines would have produced significant cost savings, it is likely that the parties would have worked out such deals.³⁰

The result was less than ideal as the parties continued to squabble about the details.³¹ Nevertheless, the concept is clear: changing the ownership of the bottleneck can alter the incentives to exploit or exclude. But the new ownership or control needs to be done in a way that assures the actual transformation of incentives and a workable system of operation. These are not easy tasks.

II. Contemporary Remedies Fail to Address the Incentives of Bottleneck Owners

This section provides examples of the failures of standard remedies for the competitive problems that arise from bottleneck monopolies. The goal is to provide a theme of problems, not to detail every problem that has arisen related to bottlenecks in every industry in which they are present.

A. Self-Preferencing for Fun and Profit (The Problem of Keeping Ownership Stable)

Often, regulators allow ownership structures that create the incentive and ability to wield power over the bottleneck. In stunning Dunning-Kruger fashion,³² regulators believe they have a strong ability to detect such uses of monopoly power and to provide correction when they arise. One

²⁹ Id. at 411.

³⁰ Cf., *Aspen Ski v. Ski Co.*, 472 U.S. 585 (1985)(where multiple destination ski resorts compete with each other, they are likely to develop some kind of a joint ticket arrangement so that visitors can select among the slopes).

³¹ See, *Terminal Railroad Ass'n v. United States* 266 U.S. 17 (1924 (dispute among the owners of the railroad); see generally, David Reiffen and Andrew N. Kleit, *Terminal Railroad Revisited: Foreclosure of an Essential Facility or Simple Horizontal Monopoly?* 33 J. L. ECON. 419 (1990).

³² David Dunning, *Chapter Five – The Dunning–Kruger Effect: On Being Ignorant of One's Own Ignorance*, 44 *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY*, 247 (2011) (the Dunning–Kruger effect is a cognitive bias in which people with limited competence in a particular domain overestimate their abilities).

classic example is in electricity transmission and generation. In FERC Order 888³³ and 636,³⁴ the Federal Energy Regulatory Commission created a system in which large investor-owned utilities wielded substantial control over the transmission and transportation of electricity and natural gas. At the same time, those same utilities were allowed to own positions (capacity) in the competitive electric generation market. FERC believed it could, through codes of conduct forbidding discussions between the transmission component and the company's generation arm, eliminate or at least mitigate the risks of self-preferencing.

But, as Narasimha Rao and Richard Tabors demonstrate,³⁵ the FERC's belief was misguided. In fact, the holder of transmission had every ability and incentive to manipulate its transmission and demand in order to prefer its own generation.³⁶ By faking congestion on its transmission lines and taking advantage of market structures, those same utilities could foreclose competing generators from being called upon to operate while benefitting its own generation. Moreover, they could do so without much risk of detection at best or a slap on the wrist (disgorgement of profits) at worst. Under such a structure, it will always pay to self-preference.³⁷

B. *"AT&T is the T1000 of Corporations. No Matter How Many Pieces You Break It Into, It Always Comes Back Together."* (*The Problem of Reacquisition Given Stable Incentives*)³⁸

To the extent that breakups of companies have occurred in the past, they have not stuck. A famous example is AT&T, which was broken up into a long-distance phone carrier and several

³³ Order No. 888, Promoting Wholesale Competition Through Open Access Non-Discriminatory Transmission Services by Public Utilities: Recovery of Stranded Costs by Public Utilities and Transmitting Utilities, F.E.R.C. STATS. & REGS. ¶ 31,036 (1996), order on reh'g, Order No. 888-A, F.E.R.C. STATS. & REGS. ¶ 31,048, order on reh'g, Order No.888-B, 81 F.E.R.C. ¶ 61,248 (1997), order on reh'g, Order No. 888-C, 82 F.E.R.C. ¶ 61,046 (1998), aff'd in relevant part sub nom.; Transmission Access Policy Study Grp. v. FERC, 225 F.3d 667 (D.C. Cir. 2000), aff'd sub nom. New York v. FERC, 535 U.S. 1 (2002).

At the same time, FERC required the formation of an "OASIS" system (Open Access Same-Time Information System) rule. Open Access Same-Time Information System and Standards of Conduct, 61 Fed. Reg. 21,737, 21,737 (May 10, 1996) (codified at 18 C.F.R. § 37) [hereinafter FERC Order 889]. Order 889 established standards of conduct for the emerging electricity markets and required public utilities to: 1) obtain information about their transmission system for their own wholesale power transactions, such as available capacity, through the OASIS network, and 2) completely separate their wholesale power marketing and transmission operation functions.

³⁴ Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation; and Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol, 57 Fed. Reg. 13,267, 13,281 (Apr. 16, 1992)

³⁵ See, e.g., Narasimha Rao & Richard D. Tabors, *Transmission Markets: Stretching the Rules for Fun and Profit*, ELECTRICITY J. 20, 21 (June 2000). See also Severin Borenstein, James Bushnell, and Steven Stoft, *The Competitive Effects of Transmission Capacity in a Deregulated Electricity Industry*, 31 THE RAND J. OF ECON. 294 (2000).

³⁶ Rao and Tabors, Id. at 21. "The transmission provider that remains within the vertically integrated structure has (at minimum) an implicit incentive to continue to operate the transmission system so as to complement the profitability of its generation assets."

³⁷ See generally Diana Moss, *Electricity and Market Power: Current Issues for Restructuring Markets (A Survey)*, 1 ENVTL. & ENERGY L. & POL'Y J., 11 (2005); see also Ari Peskoe, *Is the Utility Transmission Syndicate Forever?*, 42 ENERGY L.J. 1 (2021)(describing FERC's concerns about transmission owner self-preferencing of its own generation).

³⁸ Techstaffer, *Colbert Report Briefly Explaining AT&T's History*, available at <https://blog.techstaffer.com/colbert-report-explaining-atts-history> (accessed November 25, 2023).

regional Bell Operating Companies (RBOCS) in the 1980s. However, over time, as the value of the “last mile” monopoly over phone transformed from telephony to data, and long-distance became a non-market due to cellular innovations, AT&T transformed itself, albeit not perfectly successfully.

While this is not an article about AT&T, a few examples of some potential bottleneck issues in AT&T’s thirst for acquisitions should suffice. AT&T had purchased Cingular wireless,³⁹ had then sought to purchase T-Mobile.⁴⁰ Meanwhile, AT&T sought to acquire content, purchasing Time Warner (which it eventually sold off).⁴¹ It also bought Direct TV, which provided consumers with an access point against cable, and eventually sold some of that off, too.⁴²

AT&T’s mismanagement of bottleneck opportunities sends the wrong lesson.⁴³ The lesson should be that acquisition and reacquisition has the potential to create and enhance bottlenecks. And, in most of these instances, antitrust enforcers have been asleep at the wheel, with the notable exception of T-Mobile.⁴⁴ AT&T’s acquisitions could be viewed as a series of attempts to accomplish the goal of positioning itself in upstream or downstream markets of the access point bottleneck, however ineptly.

Perhaps a stronger example may be Facebook. From 2007 to 2024 Facebook acquired or attempted to acquire more than 100 companies in competing and adjacent markets.⁴⁵ Each acquisition perhaps enhanced and expanded Facebooks position, outstripping its competitor, MySpace.⁴⁶ With each acquisition, Facebook expanded its access to key technology and expertise in app development, “instant messaging, photo sharing, location user information and surveillance, and advertising and analytics.”⁴⁷ Many of these acquisitions killed application inter-operability and bound the acquisitions to Facebook exclusively, while others were shuttered.⁴⁸

³⁹ Cingular and AT&T Wireless, FCC Docket Number: WT Docket 04-70 Available at <https://www.fcc.gov/proceedings-actions/mergers-transactions/cingular-and-att-wireless>

⁴⁰ U.S. v. AT&T INC. et al., ATT T-Mobile, Civil Action No. 11-01560 (ESH) D.D.C. 2011 available at <https://www.justice.gov/atr/case/us-and-plaintiff-states-v-att-inc-et-al>.

⁴¹ United States v. AT&T, Inc., 916 F. 3d 1029 (D.C. Cir. 2019); see also, *Time Warner, AT&T and Discovery Close Warner Media Transaction*, April 08, 2022, available at <https://about.att.com/story/2022/close-warnermedia-transaction.html>.

⁴² DIRECTV to Own and Operate Former AT&T Video Operations. AT&T retained a 70% interest. See https://about.att.com/story/2021/att_directv.html.

⁴³ James B. Stewart, *Was This \$100 Billion Deal the Worst Merger Ever?* NEW YORK TIMES, Nov. 19, 2022 available at <https://www.nytimes.com/2022/11/19/business/media/att-time-warner-deal.html#:~:text=Was%20This%20%24100%20Billion%20Deal,unrivaled%20in%20recent%20corporate%20history>.

⁴⁴ See note 40 supra.

⁴⁵ Facebook acquisitions, https://tracxn.com/d/acquisitions/acquisitions-by-facebook/_1_l2C14qkH1t9v5H9RnmrBZILt1tZk1DWHJy38tLV2M.

⁴⁶ My space, <https://myspace.com/>

⁴⁷ See Mark Glick, Catherine Reutschlin and Darren Bush, *Big Tech's Buying Spree and the Failed Ideology of Competition Law*, 72 HASTINGS L.J. 465, 498 (2021)

⁴⁸ Id.

Through acquisition, Facebook dominates:

Today, Facebook is number three on the list of most-trafficked websites in the world. With Instagram, Messenger, Facebook, and WhatsApp, the company now owns four of the most popular mobile apps in the United States. Facebook is responsible for about 10% of the mobile browser market, representing a substantial share of mobile users for whom Facebook is the main point of entry for online content. This remarkable influence over how individuals engage and consume online is the product of over a decade of strategic internal growth, as well as the acquisition of potential competitors and the integration of their user traffic and functionality within the Facebook structure.⁴⁹

Thus, any remedy that seeks to be successful must bar reacquisition or subsequent acquisitions that will disrupt the structure of the remedy in place. There is another lesson for antitrust regulators here. The holder of the bottleneck will always have the incentive to protect the bottleneck and self-preference, absent significant restructuring of ownership.

C. Misguided faith in competing networks (the problem of misunderstanding network effects)

Often times, antitrust enforcers seek to eliminate problems that arise from bottlenecks by attempting to replicate the bottleneck. Two examples demonstrate the folly of this approach. In the world of airlines, the DOJ allowed mergers between large competitors. It did so because of its faith in non-network competition and the hope of entry by easing bottleneck restrictions. For example, in the merger of United and Continental airlines, the DOJ sought the transfer of slots to Southwest airlines, in the hope that Southwest would bring discipline to any increase in fares arising from the transaction.⁵⁰ While dismissing concerns about some overlaps between United and Continental on nonstop routes, the DOJ sought to bring about nonstop competition by spinning off slots to Southwest.

To reinforce the lesson from the previous section, United then sought to acquire additional slots at that airport.⁵¹ In its suit to bar the acquisition, the DOJ's press release shows a telling graph of the problem:

⁴⁹ Glick, et al, *supra* note 47 at 474.

⁵⁰ The government allowed United and Continental to merger after United committed to transferring some landing slots at the Newark Airport to Southwest. See, Press Release, *United Airlines and Continental Airlines Transfer Assets to Southwest Airlines in Response to Department of Justice's Antitrust Concerns*, available at <https://www.justice.gov/opa/pr/united-airlines-and-continental-airlines-transfer-assets-southwest-airlines-response>.

⁵¹ U.S. Dep't. of Justice, Justice Department Files Antitrust Lawsuit to Block United's Monopolization of Takeoff and Landing Slots, available at <https://www.justice.gov/opa/pr/justice-department-files-antitrust-lawsuit-block-uniteds-monopolization-takeoff-and-landing#:~:text=The%20Antitrust%20Division's%20lawsuit%2C%20filed.strengthen%20a%20barrier%20that%20diminishes> (last accessed November 30, 2023).

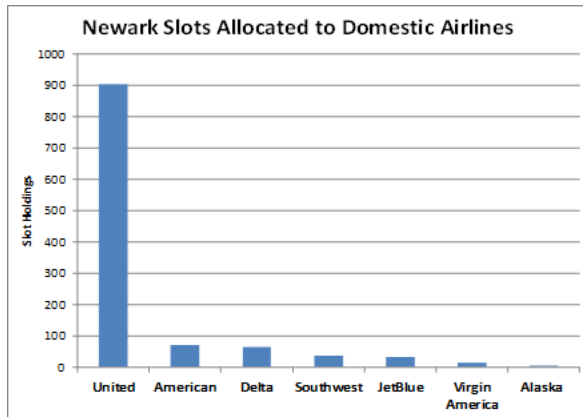


Figure 1: DOJ's Depiction of Slots at Newark

Thus, it is impossible for any airline to achieve the same network effects that United possessed. And to claim so was wishful thinking. Fare increases on a network could not be remedied by some small portion of slots insufficient to recreate that network. Further, Southwest would not optimize its use of those slots for DOJ's purposes. As a rational economic actor, it used them to serve its own economic interests.

Another famous example comes from big tech in the government's second Microsoft case. It appears that the government that claimed Microsoft was a monopoly had not worked out any proposed remedy for the monopoly prior to the judge's decision finding a violation.⁵² The core of the monopoly was the operating system, Windows, which conferred Microsoft the capacity to exclude downstream competition in various application programs including Internet access, word processing,⁵³ and spread sheets. Unfortunately, the prosecutors had not thought through how to deal with a network bottleneck. Their solution was to have the court order that the operating system be separated from the applications, but each bundle of rights would continue to be owned by a single enterprise.⁵⁴ The risks of a bilateral monopoly excluding entry at both levels would have seemed obvious, but the prosecutors held out the hope that the two dominant firms would compete with each other and create two operating systems and competing applications. Again, as in the airline example, the government's wish would require the enterprises to act in economically irrational ways. Because the Court of Appeals questioned the utility of structural relief as well as the procedure used by the trial court in deciding on remedy, it reversed the order.⁵⁵ Moreover, the enforcers on remand (after a change in Administration) entered a consent agreement that preserved Microsoft's entire monopoly and sought to regulate its use but only for a period of years.⁵⁶

⁵² See *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59 (D.D.C. 2000), vacated, 253 F.3d 34 (D.C. Cir. 2001).

⁵³ One of the authors of this article, which is being written in Word, would much prefer to use WordPerfect, which in his view still is technically a better program, but it has been so marginalized by the linking of Word to Windows including various elements of the program that make conversion intractable that we are both forced to use Word.

⁵⁴ See, *Plaintiffs' Proposed Final Judgment : U.S. V. Microsoft Corporation* available at <https://www.justice.gov/atr/plaintiffs-proposed-final-judgment-us-v-microsoft-corporation-state-new-york-ex-rel-v-microsoft>.

⁵⁵ 253 F. 3d at 97-101.

⁵⁶ For an analysis of the case, see Andrew Gavil and Harry First, *THE MICROSOFT ANTITRUST CASES: COMPETITION POLICY FOR THE TWENTY-FIRST CENTURY* (2014); for an evaluation of the choice of restructuring or regulation of

D. *Remedies that do not remedy are...not remedies*

Keeping incentive structures in place will always create a situation where the owner of the bottleneck strives to injure the market in some fashion. A successful remedy requires an ownership structure such that there is no incentive to exploit the monopoly or preference upstream or downstream goods or services owned by the bottleneck owner. Instead, current remedies require a persistent and tenacious regulator with the potential of severe penalties for transgressions affecting the competitive market must oversee the bottleneck. This hypervigilant regulator must also ensure that no subsequent purchases by the bottleneck owner change its incentives towards misuse of the bottleneck. We think this is likely a Sisyphean task for any regulator.

III. **Changing the Incentives by Restructuring Stakes in the Bottleneck**

A. *The general theory: Dispersed ownership or control over monopoly elements creates appropriate incentives*

The kinds of harmful monopolistic incentives identified in Part I are inherent in an owner or very limited group of owners having complete control over a monopoly bottleneck. A monopolist in such a position behaves rationally when it exploits its position, excludes rivals, or discriminates among its users. It is for that reason that the antitrust remedies for bottlenecks have been of limited success and have involved extensive concerns for ongoing supervision.

If the problem is the incentive of the incumbent owner with respect to users/customers, then the answer should be to eliminate the monopolist. If redesigning the ownership/control of the bottleneck would reduce or eliminate the incentives to exclude or discriminate, this changes the goals of the operator or owner of capacity. In this revised world, the owner of capacity that it cannot use has every incentive to sell it to the highest bidder because it can gain little or nothing by withholding a small piece of the capacity. Similarly, if many owners control a bottleneck that is expandable, they will have the incentive to expand its capacity because they gain little or nothing by restricting capacity. Their gains come from lower cost, easier access to their downstream or upstream markets.

Thus, redefining the ownership and control of the bottleneck is central to harnessing the ordinary incentives of the market process to induce conduct that approximates what would have happened in a functionally competitive market. However, it is observable that some bottlenecks involve situations where the users would be best off to have participation in the decisions regarding the structure and operation of the bottleneck itself. These are situations in which shared governance of some kind is important. Such situations call for collective ownership of the facility involved. We have labeled this the “cooperative” model.

In contrast, in other contexts the operation of the bottleneck is relatively distinct from the activity of its users. In these situations, the central incentive rests in the ownership or control of the capacity of the bottleneck itself. If no one owns (controls) very much of that capacity and the rights of use are transferable, then those with initial ownership will have the incentive to sell or

unlawful monopoly, 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).

assign the use right whenever the price (value) exceeds their own value for the right. This will not eliminate “monopoly” prices at times of scarcity, but the use rights will be distributed based on the value to the buyer-user and not for longer run strategic reasons. We label this as the “condominium model” as a solution to the bottleneck problem.

B. *The User (Cooperative) Ownership Model*

If the ownership of a bottleneck facility changes from one of either a monopoly owner or a vertically integrated monopoly owner to one in which all users share in the ownership, that should change the incentives governing the operation and potential expansion of the bottleneck. The premise is that the individual owner-user stands to gain little by trying to impose a monopoly price on users including itself or by restricting access to the bottleneck by new entrants. So long as there are many owners the primary objective should be to manage the entity so that it operates efficiently and with as much capacity as possible. The owner’s gains come from their upstream or downstream commercial activity. The bottleneck is a transaction cost and potential constraint.

Real world examples include grain elevators in the early 1900s and electric transmission systems following the deregulation of wholesale power markets. When it was very costly and time consuming for farmers to move grain very far from the farm to a grain elevator on a railroad line, the potential for actual competition among rural elevators was quite limited. Basically, any region was likely to produce only enough grain on average to support one or maybe two elevators. In only a few areas did farmers have access to as many as three elevators.⁵⁷ This conferred on the elevators, especially when only one or two served the area, considerable power to exploit farmers.⁵⁸ If the farmers could get past the bottleneck and load their grain onto rail cars, they had a workably competitive market available to them. By creating farmer cooperatives that would build and operate a local grain elevator, farmers could avoid the buyer power of either independently owned elevators or those that were vertically integrated into enterprises that also dominated some of the shipping destination markets.⁵⁹

The history is that farmers with help from some grain trading firms did in fact establish cooperative elevators.⁶⁰ These elevators had on average greater storage capacity than either the vertically integrated elevators or the independent elevators.⁶¹ The results were that farmer revenue went up because the monopsonistic buying practices could be circumvented. The cooperative elevator had sufficient grain that it could fill rail cars and ship to a number of alternative markets. Thus, the monopsony bottleneck was eliminated. Moreover, a cooperative elevator had no incentive to underpay its participants since its profits would ultimately be allocated pro rata among those members. Also, the incentives of the cooperative were to build facilities that would have the capacity to deal with as large a quantity of grain as was ever likely to occur. This was a fixed cost in

⁵⁷ See, Carstensen, *Chicago Board of Trade*, *supra* note 16, at 28 citing 1 FTC Report, *supra* note 18, at 33-36 (of 5,896 locations for which there was data, 4920 had three or fewer elevator).

⁵⁸ *Id.* at 29.

⁵⁹ *Id.*

⁶⁰ *Id.*

⁶¹ *Id.*

construction but did not affect the incremental operating costs. Hence, again, the incentives were such that the risks of no access to the market were minimized if not eliminated entirely.

A more contemporary example exists in the American Transmission Company (ATC) in Wisconsin.⁶² Prior to its creation, the vertically integrated power companies owned the high voltage transmission lines that transferred power from their generation to distribution. Local distribution of power might be vertically integrated with the generation and transmission or be provided by an independent local distributor including rural cooperatives and municipal systems.⁶³ Indeed, some of those distributors had stakes in generating facilities.⁶⁴ But the power had to move along transmission lines owned by firms that also had their own generation. As the overall market for electricity moved toward a more market-oriented model in which distributors had more right to buyer power from a variety of sources, these same lines could “wheel” in power from those sources. But the existing transmission system was not well configured to provide access to potential sources of power because historically the primary goal of these systems was to link the integrated systems of the large firms.

General public policy requires that the operators of those transmission systems provide service to any potential user and do so on equal terms. However, this does not give the operators an incentive to modify their systems to make them more compatible with the needs to a market in electric power. Those needs include building additional links and lines to provide access to and egress from the transmission grid so that buyers and sellers can transact efficiently. Owners of existing transmission capacity that are vertically integrated into power generation have no incentive to invest in the changes necessary to facilitate such linkages. The efforts of the FERC to achieve the goal of an open and accessible transmission grid illustrates the challenges and limitations of this approach to resolving the access problem.⁶⁵

In Wisconsin, legislation required the major transmission capacity owners to turn that capacity over to a new corporation, American Transmission Company (“ATC”), which would consolidate ownership and management of the transmission facilities in much of the state.⁶⁶ In return the old owners would get stock in the new enterprise. There are also a number of cooperatives, municipal, and local corporate electric power companies that primarily distribute power purchased from generators. The legislation authorized these enterprises to join ATC by buying stock which provided the necessary capitalization for the overall business.⁶⁷ More

⁶² See American Transmission Company, <http://www.atllc.com>.

⁶³ See map and listing of electric utilities in Wisconsin available at https://www.dochub.com/jsfiller-desk18/?flat_pdf_quality=low&mode=cors&requestHash=ce50365e42d293e1f7da6194233e7bbf28a4d4e.

⁶⁴ Madison (Wisconsin) Gas and Electric owns generation units and purchases electricity through contracts and from the Midcontinent Independent System Operator (MISO) energy market. See, <https://www.mge.com/about-mge/power-plants/power-sourcesATC> projects, proposed, in process, and completed at <https://www.atc-projects.com/atc-projects/>.

⁶⁵ See text at *supra* at note 33.

⁶⁶ See Wis. Stat. § 196.485 (2022).

⁶⁷ See SECURITIES AND EXCHANGE COMMISSION (Release No. 35-27958; 70-10289) April 11, 2005 Order Authorizing Additional Financing; Reserving Jurisdiction American Transmission Company LLC, et al. (70-10289) 3 (at its creation, ATC had 5 members: “. . . (1) Alliant (through its subsidiaries Wisconsin Power and Light Company (“WPL”) and South Beloit Water, Gas and Electric Company (“South Beloit”)),5 (2) Wisconsin Energy Corp. (through its subsidiaries Wisconsin Electric Power Company and Edison Sault Electric Company),6 (3) Madison Gas and Electric Company,7 (4) WPS Resources Corporation (through its subsidiary Wisconsin Public Service Corp.),8 and

importantly, it meant that generators and buyers both had substantial representation in the ownership and governance of the enterprise. ATC's management, therefore, had the incentive to develop the overall electric grid as an efficient delivery system rather than as a system to protect or entrench the interest of a vertically integrated owner of generation and transmission that wanted to keep as much control over its captive buyers as possible. ATC has developed new transmission capacity to bring in lower cost power from more distant regions, eliminated some transmission bottlenecks, and added capacity in key areas to reduce or eliminate the risks of transmission constraints that block the flow of power.

The configuration of an electric transmission system is a complex engineering task with many trade-offs. The direct economic stakeholders—generators and buyers—need to be engaged and have a role in resolving the issues in terms of their often-conflicting economic interests. Of course, environmental, and other stakeholders will also want to have a say.⁶⁸ For that reason, the decisions on new lines and upgrades also require some public oversight. The collective enterprise is not alone able to balance all interests. But it can provide means for the direct economic stakeholders with means to review and resolve their interests in ways that are more likely to serve the interests of a substantial majority. Manifestly, this assumes that the governance stakes held by the buyers are sufficient to allow them an effective negotiating position.

Another contemporary example worth considering is the operating system for computers. Currently, Microsoft's Windows is the overwhelmingly dominant system which in turn creates a network effect such that most developers of applications focus on fitting the application to the Windows system.⁶⁹ Moreover, Microsoft has the capacity to include its applications in its system thereby diminishing or eliminating competing applications.⁷⁰ If the governance of the operating system were delegated to a cooperative of equipment makers and application providers, the incentives to make access and operation of applications difficult would be removed as all participants would have an incentive to see the operating system be as neutral and transparent as possible.⁷¹

The initial proposed structural remedy of the Justice Department, embraced by the trial court but rejected by the court of appeals, was to create a monopoly owner of the operating system independent of any user.⁷² This remedy would not effectively alter the incentives of the owner to exploit its bottleneck monopoly. The alternative remedy the government choose on remand was to impose to duties to disclose and deal on Microsoft, but otherwise leave it in control of its

(5) WPPI. By December 31, 2003, ATC had 21 additional investors.”) available at <https://www.sec.gov/divisions/investment/opur/filing/35-27958.pdf>.

⁶⁸ See, e.g., *Driftless Area Land Conservancy v. Valcq*, 16 F.4th 508 (7th Cir. 2021) (contest over location of power line proposal in which ATC was a participant).

⁶⁹ As of October 2023, Windows still holds roughly 68% of the desktop operating system market. See <https://gs.statcounter.com/os-market-share/desktop/worldwide>.

⁷⁰ See Harry First and Andrew I. Gavil, *Re-Framing Windows: The Durable Meaning of the Microsoft Antitrust Litigation*, 2006 UTAH L. REV. 641, 661 (2006).

⁷¹ See, Peter C. Carstensen, *Remedying the Microsoft Monopoly: Monopoly, the Rights of Buyers, and the Enclosure Movement in Intellectual Property*, 44 ANTITRUST BUL.577, 610-614 (1999) (suggesting a form of cooperative ownership of the operating system).

⁷² *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59 (D.D.C. 2000), vacated, 253 F.3d 34 (D.C. Cir. 2001).

monopoly.⁷³ This remedy has proven ineffective in reducing the monopoly with respect to operating systems for computers and laptops.⁷⁴ The growth of cellphones into systems able to operate a number of applications as well as the emergence of tablets and other new computer like systems with their own operating systems has diluted the power of the Microsoft monopoly. But Microsoft retains overwhelming dominance in basic operating systems for computers.

All of the forgoing examples involve enterprises that require substantial continued engagement of the participants in the governance of the enterprise. With such shared governance, the enterprise will be developed and operated with the objective of serving the interest of all participants. In addition, as in the case of grain elevators and computer operating systems, changes in other technologies (trucks and highways for grain; iPhones and tablets for computer activity) have reduced or eliminated the bottlenecks that once existed. To some degree, allowing those on either side of a bottleneck to play a larger role in its operation may reduce the incentives to develop alternatives through innovation. This is a potential drawback addressed later in this article.

Two characteristics are highly significant to determining whether a cooperative model for addressing bottleneck power is appropriate. First, when the structure and operation of the bottleneck is complex and interdependent with the users' activities, the users are likely to find it very important to be directly engaged in the decisions about those issues. Second, where the size of the bottleneck can vary substantially from highly restrictive to very open, again the users' interest is to be engaged with the decision about scale and that in turn is best implemented by participating in the governance of the enterprise.

a. Complex operation requiring participant/user involvement.

The more the bottleneck interacts directly with other aspects of the users or suppliers activity the more those parties will benefit from active involvement in the decisions about the nature and scope of the activity.⁷⁵ Whether it is an operating system or an electric transmission system, there are a myriad of choices to be made about design and/or location. Different stakeholders will have different needs and desires. A shared governance model is the most productive way to bring those contending considerations into a forum in which the parties can work out the necessary tradeoffs. So long as no party or group dominates the decision process and all parties recognize their mutual need to make the bottleneck as effective as possible for all users, the basis for a balanced resolution of contending needs exists. Such a situation creates great value for innovative solutions that maximize as many interests as possible and causes negative effects on the fewest. Indeed, the framework provides a means for tradeoffs in which those disadvantaged in one dimension can get some advantage in other dimensions.

⁷³ Final Judgement, United States v. Microsoft c.a. no. 98-1232 (CKK) (D.D.C. 2002) available at <https://www.justice.gov/atr/case-document/final-judgment-133>.

⁷⁴ See Andrew Gavil and Harry First, THE MICROSOFT ANTITRUST CASES: COMPETITION POLICY FOR THE TWENTY-FIRST CENTURY (2014).

⁷⁵ Standard setting organizations can be an example of a cooperative bottleneck manager. In granting special privileges under the antitrust law to such organizations, Congress required that their decision making be based on "consensus" rather than narrow majorities. See, 15 USC § 4301 (a) (8) (defining a standards development organization that will benefit from the modified antitrust liability as one that employs a "consensus" method of decision making).

An external manager of the sort that is the hallmark of a condominium arrangement is not as well positioned to identify and value the potential tradeoffs given the interaction of the bottleneck with the activities of the users. Thus, the more complex the interaction, the more desirable it is to have a cooperative structure in which the users also govern the activity.

b. Flexible Output or Capacity.

The basic insight of this discussion is that the participants gain from largest, efficient, open access to downstream or upstream source outlets. In some cases, grain elevators are an example, a vital question is the scale of the entity. The entity can be larger or smaller. The operating cost differences are not substantial. The key question will be the level of use and the ongoing costs of maintaining a facility that may have unused capacity. Once again, if a large body of users participate in the governance decisions about the scale of such an entity, they are likely to opt for the largest reasonable option. They will expect future growth in demand and desire to be able to serve that demand without bottleneck issues. Hence, they are likely to be willing to sink a larger investment into a facility that, once created, will be difficult to expand exactly because they will want to have that prospect of future use. Of course, if the cost of creating or holding such capacity is substantial, then a more limited scale may be appropriate. But it is users who are best positioned to make that tradeoff and not some third-party administrator.⁷⁶

C. The Condominium Model

The condominium model is one in which a distinct entity administers the “facility” in which the occupants “own” their specific units. Examples of such structures include the current rights to capacity on natural gas pipelines,⁷⁷ rights to space on container ships,⁷⁸ and often the administration for standard essential patents.⁷⁹ These examples all involve situations in which the user has a right to use some capacity or right but the administration of the system rests with a distinct party rather than the kind of cooperative arrangement discussed earlier. In a full condominium analogy, the owners of the units would have the right to terminate the manager and replace it. Thus, if there are a number of potential managers, the market would set the prices of the managerial service.

In real world situations, there are likely to be deviations from this model. For example, the operator of the gas pipeline is also the owner of the overall facility, but users of the pipeline have entitlements to use specific capacity. In the case of gas pipelines, the FERC has imposed rate regulation on the pipeline owner’s charges. Otherwise this operator would have strong incentives to raise prices to the users. Indeed, a recurring problem is that when the manager is also a trader

⁷⁶ For example, third-party administrators might create suboptimal incentives. As one example, Averch and Johnson constructed an explanatory model on how traditional rate regulation could create instances where an investor-owned utility would overinvest in capital because the rate base was a function of tangible assets. See Harvey Averch & Leland L. Johnson, *Behavior of the Firm Under Regulatory Constraint*, 52 AM. ECON. REV. 1052 (1962).

⁷⁷ Pipeline Service Obligations and Revisions to Regulations Governing Self-Implementing Transportation; and Regulation of Natural Gas Pipelines After Partial Wellhead Decontrol, 57 Fed. Reg. 13,267, 13,281 (Apr. 16, 1992).

⁷⁸ See, Fed. Mar. Comm’n, THE IMPACT OF THE OCEAN SHIPPING REFORM ACT OF 1998 (2001).

⁷⁹ See, e.g., Garrard R. Beeney to Joel I. Klein, April 28, 1997, Re: Request for Business Review Letter Regarding the Licensing of Essential Patents for MPEG-2 Technology, available at <https://www.justice.gov/sites/default/files/atr/legacy/2014/02/18/302637.pdf>.

in natural gas, there is an even greater incentive to manipulate access and exploit shortages.⁸⁰ That example illustrates why the better solution is to have the manager of the facility as unrelated to the upstream and downstream uses of the facility. That way the manager is less vulnerable to a conflict of interest.

The central difference between a condominium model and the cooperative one is that the management of the bottleneck is readily separable from the uses being made. Thus, a pipeline manager can operate the pipe while individual rights holders deliver gas to be transported. Such separability between operation and use often involves a facility with fixed capacity such as the pipeline or rail line. The manager can coordinate the use and the owners of access rights are able to use the facility as needed.

The condominium model is also a feature of some other more open-ended bottlenecks, especially those involving patents or copyrights. In the case of standard essential patents, at any point in time, the user is interested in having the right to use the IP. Hence, the management of the licensing process particularly when it involves many potential users is quite distinct. However, those same entities involve a cooperative element when it comes to selecting the IP that will be in the standard. Indeed, Congress explicitly embraced the cooperative model when it granted a partial exception to the antitrust laws for standard setting groups. It specifically required that the standards themselves be the product of a “consensus” decision making process.⁸¹

BMI and ASCAP historically provided examples of a condominium type of organization.⁸² Music copyright holders assigned to one of those organizations the right to collect license fees associated with various uses of their musical compositions. By pooling these rights and bundling their licensing BMI and ASCAP provided administrative services that link licensees to rights owners beyond anything that any pair of users and owners might accomplish. Changes in the underlying distribution of musical performances has created significant problems for the operation of these entities.⁸³ Those problems in turn illustrate the need for a system that allows revising the terms of the condominium’s structure and operation over time.

Another feature of this model is that it implies that when constrained, the rights of use/access will be tradable. Scarcity creates the potential for discriminatory exploitation when a single monopolist holds those rights. For example, when pipeline capacity is in scarce supply, the owner of a modest right is unlikely to gain any economic advantage by not using that right and so minimally decreasing the capacity in use. Instead, such an owner can transfer that right to the

⁸⁰ El Paso manipulated its provision of gas to California and other western states through its control over capacity on its pipelines. This in turn resulted in excessive electric prices as well as higher prices for consumers of natural gas. Ultimately, El Paso made a substantial financial settlement with the states. Press Release, *Attorney General Lockyer Announces Finalization of El Paso Settlement That Gives Ratepayers \$1.45 Billion in Relief and Resolves Market Manipulation Charges* (June 26, 2003) available at <https://oag.ca.gov/news/press-releases/attorney-general-lockyer-announces-finalization-el-paso-settlement-gives>.

⁸¹ See 15 U.S.C. §4302.

⁸² Cf., *C.B.S. v. BMI*, 441 U.S. 1 (1979).

⁸³ See, Press Release, *Justice Department Settles Civil Contempt Claim against ASCAP for Entering into 150 Exclusive Contracts with Songwriters and Music Publishers*, available at <https://www.justice.gov/opa/pr/justice-department-settles-civil-contempt-claim-against-ascap-entering-150-exclusive>; see also, Music Modernization Act, amending 17 U.S.C. 114(i) to facilitate different methods of calculating royalties for song writers.

bidder most willing to pay.⁸⁴ By analogy, a condo owner may elect to rent the condo to someone who values it more. By spreading the right of access to many owners, the incentive for discriminatory or exclusionary conduct is removed, and the owner has only the opportunity to earn rents (high prices) from the lease of its capacity entitlement. Thus, the dispersion of interests results in a clear change in the incentives of the rights holders, and the finite capacity of the bottleneck would be allocated to the highest and best users as measured by their willingness to pay.

When the bottleneck is more open as in the case of rights access, there will not be a secondary market. Instead, the manager of the rights will have the capacity to license each interested user separately at the set price for access. Again, a disinterested administrator has no incentive to deny access and if the compensation for such work is appropriately linked to usage, there will be a positive incentive to make access available to all potential users. The same goal is unlikely if a single entity controls those rights and access to them. Its incentive will be to use such control to advance its interests in upstream and/or downstream markets.

Potential applications of this model in addition to the examples already given include such disparate bottlenecks as trash dumps and airport gates. Dumps provide an interesting example. The barriers to entry into trash collecting itself are low.⁸⁵ But there are very few locations for disposing of trash.⁸⁶ Moreover, creating new facilities is costly and difficult.⁸⁷ As a result, private ownership confers substantial power on those trash haulers that are vertically integrated.⁸⁸ But it would not be hard to require that dumping rights be separated from ownership and operation of the dump. In that case, each rights holder would have the entitlement to deliver a set quantity of trash each year. Provided that such entitlements were sufficiently dispersed no owner would have an incentive to try to exclude competition and should be willing to sell or lease its rights if other potential users were willing to pay a sufficient premium.

Airlines face two types of bottlenecks at airports when there is high demand and limited capacity. First are landing rights (slots), and second are access to gates for loading and unloading passengers. Airports in other countries are often operated, including the gates, by companies that are not airline operators.⁸⁹ With several airlines using the facility, the operator has no incentive to

⁸⁴ The transfer would most likely be of the right to use the capacity during some period of time rather than a total sale of that right.

⁸⁵ See *United States v. Waste Management, Inc.* 743 F.2d. 976 (2nd Cir. 1984).

⁸⁶ See Paula C. Murray & David B. Spence, *Fair Weather Federalism and America's Waste Disposal Crisis*, 27 HARV. ENVTL. L. REV. 71 (2003)(noting scarcity of landfills).

⁸⁷ There are detailed regulations and permitting processes. See, 40 CFR Part 258.

⁸⁸ While only about half of all landfills are privately owned, they control between 85 and 90 percent of authorized capacity. See, [Arlene Karidis](https://www.waste360.com/landfill/why-some-landfills-are-becoming-privatized-while-others-remain-public), *Why Some Landfills are Becoming Privatized, While Others Remain Public*, WASTE 360, Sept. 18, 2018, available at <https://www.waste360.com/landfill/why-some-landfills-are-becoming-privatized-while-others-remain-public>. Public authorities own the remaining dumps. Id. There remain, however, risks of undue exploitation of trash haulers. While the public operator should have no reason to discriminate among users, it may still have an incentive to exploit because profits would be available to support other governmental activities.

⁸⁹ See, EU airport regulations. Cf., FAA/OST Task Force Study, AIRPORT BUSINESS PRACTICES AND THEIR IMPACT ON AIRLINE COMPETITION (1999) available at <https://www.faa.gov/sites/faa.gov/files/airports/aip/airport-business-practices-and-their-impact-on-airline-competition.pdf>

exclude or limit use by any airline.⁹⁰ Each airline would have the right to use a given number of gates related to its needs. Those gates could be assigned on a semi-permanent basis or vary depending on what is the most efficient use of the gates at any point in time. Even if the airlines did provide the staff to run their gates, the gates themselves could be treated as fungible commodities so that each airline had a limited quantity of such rights.⁹¹ This would reduce the entry barriers into those markets where gates are constrained.

The same thing might work with landing rights if sufficient numbers of owners were allowed to own such rights. For a number of high-volume airports, there is a limit on the number of flights that can land especially during peak times. Currently those rights are allocated to a limited number of airlines based on historic rights. The FAA acts as the condo manager. If those rights were redistributed again potentially including non-airline investors and were tradable, there would be less capacity in any existing airline to frustrate entry. The market for landing rights would lower the barriers to entry into such airports and would also create cost comparisons when two or more airports serve the same market.⁹² This would not, however, solve all the problems associated with the airport access.⁹³

IV. Antitrust and Regulatory Applications

This part examines the potential use of either condominium or cooperative remedies to address the problem of bottlenecks that impede competition. One major concern is to specify the considerations relevant to the use of either remedy so that it makes a positive contribution to the restoration or creation of workably competitive markets upstream and/or downstream from the bottleneck. The analysis is divided between use of such a remedy in antitrust requiring judicial oversight that is likely to be intermittent and limited and the potentially greater use in regulatory contexts where continuous oversight from the regulator is inherent in the context.

A. Antitrust Remedies

The discussion and analysis of bottlenecks and essential facilities in antitrust case law reflects a failure to recognize that the concept is primarily about remedy and not violation. Thus, antitrust courts have failed to focus on the relevant incentive issues. The law of monopoly since *Standard Oil* and *American Tobacco* is that structural remedies are to be preferred over regulation.⁹⁴ *American Tobacco* involved a decree that restructured the industry in an effort, not

⁹⁰ If a single airline or even a few dominate the flights into an airport, the operator may face more pressure to restrict use of gates. This could take the form of the incumbent offering higher payments if the operator agreed to exclude new entry. This is an example where there is need for additional rules that can limit the discretion of the operator.

⁹¹ Other investors might invest in such rights as well. Then the gate could be leased.

⁹² To land at the favored airport could cost a great deal more than landing at another airport with available landing slots. If this is reflected in ticket prices, some travelers will switch.

⁹³ For example, Delta made a strenuous effort to defeat the building of a second airport to serve the Atlanta area presumably because that would increase the capacity of new entrants to serve that market.

⁹⁴ *Standard Oil v. United States*, 221 U.S. 1, (1911); *United States v. American Tobacco*, 226 U.S. 106 (1911); 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).

entirely successful, to restore competition.⁹⁵ If the incumbent monopolist retains control of the facility, it will also have an incentive to exclude. Thus, in cases of monopolization one potential remedy is to restructure ownership and control of the monopolizing element to limit or eliminate the incentive to abuse control over access. Once unlawful monopolization has occurred the question is remedy. When the remedy is ineffective as many have been, the effort at law enforcement is wasted. Although it is possible that the fact of monopoly law being enforced has served as a powerful deterrent in ways that are not visible in the market.⁹⁶ Certainly, it would be better if the current adverse effects of monopoly were reversed, and the markets freed.

While neither a cooperative nor a condominium solution will work in every bottleneck situation, these are options that ought more frequently to be considered. A focus on eliminating the incentives to abuse a monopoly provides the guidance for considering restructuring control over a monopoly to protect the competitive process. This requires four steps. First, the bottleneck needs to be carefully identified and its durability established. Second, an analysis of the bottleneck should determine whether it is amenable to restructuring. Third, there must be a workable administrative structure that effectively empowers stakeholder participation. Finally, this structure needs to have a stable governance framework that is largely self-operating since courts are not well equipped in general to handle detailed market administration.

1. Identifying and defining the bottleneck and its durability

The first step is to identify the potential bottlenecks that a monopolist may control as part of its unlawful monopolization. Not all bottlenecks are likely to be durable. Those which rest on contractual exclusion such as exclusive supply or exclusive dealing arrangements can often be remedied directly by dissolving the bottleneck and thereby opening the market.

Only when the bottleneck involves a more durable type of control over access to upstream or downstream suppliers or customers is there the kind of situation that requires a more significant and lasting intervention in the market. The *Terminal Railroad* case provides such an example. There were limited routes for rail lines through St. Louis and the Court concluded that there would be significant efficiencies to operate them as a unit so that cars could be moved to all potential locations in the network easily.⁹⁷

Ideally, the process of identifying key durable bottlenecks would occur before the public authorities commenced litigation or, at least, very early in that process. This is helpful because then the litigation can focus not only on proof of violation but also the evidence that justifies the proposed remedy. Ensuring that the production and analysis of evidence is directed at the prospective remedy educates the decision-maker. It appears that in some monopoly cases such as *Microsoft* and *IBM* the question of remedy did not guide or inform the litigation. The result in *Microsoft* was the government had not developed a record that showed how its proposed remedy,

⁹⁵ *American Tobacco*, 226 U.S. 106 (1911); see also *United States v. American Tobacco*, 328 U.S. 781 (1946) (upholding conspiracy to monopolize conviction of the major tobacco producers).

⁹⁶ Professor Thomas C. Arthur has several times made this suggestion to one of the authors.

⁹⁷ *United States v. Terminal R.R. Ass'n of St Louis*, 236 U.S. 194 (1915).

a vertical dissolution of the monopolist, would effectively address the bottleneck character of the operating system monopoly.⁹⁸

2. *Identify a remedy to reorganize the bottleneck*

The central remedy problem, once a durable bottleneck is identified, involves determining the appropriate method of eliminating the exploitative and exclusionary incentives of the monopolist and determining the appropriate level of compensation to which the former owner of the monopoly is entitled. This task requires a detailed understanding of how the bottleneck functions, including how it is managed and how flexible it is with respect to capacity. These considerations all feed into an assessment of the kind of remedy, cooperative or condominium, that is most likely to eliminate the incentives to exploit the power conferred by the bottleneck.

These remedies require a monopoly owner to give up ownership of the facility, if a physical thing, or use rights if the facility is something like a patent or copyright where it confers bottleneck market power in some domain—usually a standard setting context. Because the monopolist has violated antitrust law, there should be no concern that it may lose some of the economic value of its rights. Having violated the law, such a monopolist should not be heard to complain about lost values. At the same time, the former owner has a right to be compensated for the remaining value of the property being transferred to the condominium or cooperative.⁹⁹ This involves both a valuation of the assets when used in the equivalent of a workably competitive market and the development of a method to ensure payment of that obligation. These tasks are not easily performed. Hence, these remedies should be invoked only when the initial analysis has established that the bottleneck is both significant and durable.

The first and most important goal of an incentive-based approach to remedying bottleneck monopoly is that an effective remedy needs to alter the incentives of the entity that controls the bottleneck so that it is not used to exclude or exploit users. Either a cooperative ownership structure or a condominium structure would produce significant changes in those incentives. This would eliminate unilateral capacity to shape the size or access to the facility and should largely eliminate any expected gain from exploitive conduct as the owners would be exploiting themselves.

However, if the condo's facility is the only route available to the downstream or upstream market and price elasticity of demand was low, collective monopoly pricing could result in excessive prices for all downstream customers if only upstream users were participants in the condominium or cooperative. Such owners could then share the gains from excessive prices for access.¹⁰⁰ When such a scenario is likely, either additional constraints would have to be introduced or additional owners added such as the downstream customers.¹⁰¹ The most desirable constraint is to ensure that capacity expands as demand grows. To achieve the goal of eliminating incentives to

⁹⁸ See *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir.), cert. denied, 534 U.S. 952 (2001)(rejecting remedy based on lack of record to support result); cf., Peter C. Carstensen, *Remedying the Microsoft Monopoly: Monopoly, the Rights of Buyers, and the Enclosure Movement in Intellectual Property*, 64 ANTITRUST BULL. 577 (1999).

⁹⁹ The sale to the condominium association or the cooperative should provide the appropriate compensation.

¹⁰⁰ OECD, *Purchasing Power and Buyers' Cartels* (2022), available at <https://www.oecd.org/daf/competition/purchasing-power-and-buyers-cartels-2022.pdf>

¹⁰¹ The Wisconsin legislation creating ATC required the inclusion of both power producers and buyers to ensure that the resulting entity would serve the interests of all market participants. .

exploit or exclude the structure of ownership and governance of a cooperative must be carefully designed.

Distributing usage rights to the facility among many users removes the incentive to discriminate among potential users so long as individual rights owners do not control enough of the capacity to have an incentive to use control to exploit or exclude.¹⁰² But if the capacity itself is constrained, scarcity economic rents will arise whenever there is excess demand. Such rents are not in themselves undesirable or unlawful. The challenge is to ensure that the capacity rights are sufficiently dispersed that no owner or small group of owners have the incentive to try to exploit control over the capacity.

3. Create inclusive administration of the new entity

Both a cooperative and condominium model require some form of self-governance.¹⁰³ To achieve the elimination or limitation of incentives to abuse a dominant position, the self-governance should be inclusive of all relevant stakeholders. The more open participation is in the relevant governance structure, the lower is the potential that it will be used for either exploitive or exclusionary purposes. The OMB CIRCULAR NO. A-119 provides a model for defining inclusiveness in connection with standard setting which is a form of bottleneck creation.¹⁰⁴ The 2003 Antitrust Improvements Act adopted that standard as the basis for limiting liability of standard setting groups.¹⁰⁵ That is if the group's organization and operation conformed to the framework set for in Circular A-119, the organization, if it had violated antitrust law, would only be liable for single, not triple, damages.¹⁰⁶ The decrees that settle the government's challenges to ASCAP and BMI, the two primary methods of licensing copyrights for large scale use, both impose requirements that the entities have governance structures that open and inclusive.¹⁰⁷

Participation will vary depending on the needs of the entity and the role of the stakeholders. In the case of a condominium, a third party will perform basic managerial duties. Still, the owners of the capacity should have the ultimate responsibility to and right to determine who will manage the facility and have the power to review important decisions. In the case of a cooperative, the participants will be much more actively involved in the governance of the entity. Where they are numerous, there will have be workable system for selecting a governing board, communicating

¹⁰² The experience with gas pipelines serving California shows that when a user acquires sufficient capacity control it can use that control to constrain through put and exploit customers.

¹⁰³ In the analogous area of governing rights to commons, Elinor Ostrom's work has identified a number of a characteristics that can facilitate or frustrate such governance. See, ELINOR OSTROM, GOVERNING THE COMMONS: THE EVOLUTION OF INSTITUTIONS FOR COLLECTIVE ACTION (1990).

¹⁰⁴ OMBA119 CIRCULAR NO. A-119, Revised (Jan. 27, 2016), available at <https://www.nist.gov/standardsgov/omba119>

¹⁰⁵ 15 U.S.C. §§ 4301-04 (2006). See ABA SECTION OF ANTITRUST LAW MONOGRAPH 24, FEDERAL STATUTORY EXEMPTIONS FROM ANTITRUST LAW, 263-76 (2007).

¹⁰⁶ See Id. at § 4303.

¹⁰⁷ The DOJ had engaged in a review of the BMI and ASCAP antitrust decrees. See <https://www.justice.gov/atr/antitrust-consent-decree-review-ascap-and-bmi-2019>.

information to all participants, and a regular renewal process to ensure that the operation is as reflective of the interests and needs of the participants as is feasible.

4. *Develop a stable governance framework not subject to undue risk of manipulation*

Finally, the governance of the bottleneck needs to be both stable and relatively free from the risk of manipulation.¹⁰⁸ This is no easy task. Any allocation of entitlements to control necessarily allocates power and those with power have an unavoidable tendency to advance their own interests in preference to the interests of others. The goal of stable governance may also conflict with limiting the risks of manipulation. Stability may call for a limited set of participants having strong governance rights, but such an allocation of rights creates a significant potential for decisions that favor an in group at the expense of those with little or no rights.

Being aware of these contending interests is an important first step. The process of defining governance then requires a balancing of interests to ensure inclusiveness. This is the best way to limit discriminatory manipulation. Having mechanisms agreed to in advance to resolve disputes and provide for review will also limit the risk of manipulation of access to or costs of the facility. The danger is that such structures may be unwieldy and so result in instability over time as participation flags or some insiders come to control the governance system through seniority or other insider advantage.

Some form of periodic external review to allow for restructuring of governance is another important control. The initial structure is in a real sense an experiment. After a reasonable period, it should be reviewed and revised considering actual experience. Changes in technology or demand in the upstream or downstream market can also significantly alter the role and function of the bottleneck. Such changes may necessitate restructuring governance to ensure that the incentives to exploit the bottleneck remain in check. The challenge is to determine how to implement such a review and provide for a process for adopting any changes in governance that may result. Because any change is likely to result in changes in allocation of authority over governance, it may be difficult to get a new consensus.

Because this process has its root in an antitrust case and its settlement, the best route is to have the decree include a periodic review process including reporting to the court and have the court then listen to any contending views before determine whether and how to modify the decree.¹⁰⁹ Such a process has the additional merit that it would be more open and available to third parties—customers or suppliers that are not themselves direct users of the bottleneck. Those stakeholders could use such a review process to express any concerns that they might have with either existing elements of governance or any proposed change.

The drawback in having such a review mechanism is that a court would have to retain continued jurisdiction over the bottleneck. This is contrary to contemporary policy in American antitrust generally.¹¹⁰ However, the ASCAP and BMI decrees are both perpetual ones and the courts have played an important continuing role overseeing the governance systems for those two

¹⁰⁸ See generally, OSTRUM, *supra* note 103.

¹⁰⁹ The ASCAP and BMI decrees have been subject to periodic review and revision. See note 107 *supra*. That process was not nearly as well defined as the suggestion made here.

¹¹⁰ See, U.S. DEP'T OF JUSTICE, ANTITRUST DIVISION MANUAL at III-147 (5th ed. 2008), <https://www.justice.gov/atr/division-manual> (standard policy is to limit decrees to no more than 10 years).

bottleneck entities. A formal requirement for periodic review also allows the court as well as the parties to decide whether continued judicial oversight is necessary. In some cases, oversight may transfer to an administrative agency as occurring in telecommunications with the 1996 amendments to the FCC act.¹¹¹ In other cases, changed circumstances may make continued oversight unnecessary if the facility no longer poses a bottleneck risk or if a form of governance has evolved to the point that there is a high potential that it can operate without the need for continued oversight.

Perhaps most importantly, where subsequent acquisition may jeopardize the stability of the arrangement, the antitrust agencies and regulators should take a jaundiced view of any such transaction. They may disrupt stable incentives to optimize the bottleneck and recreate the self-preferencing incentives that had been eliminated.

5. *Potential Applications*

The foregoing analysis is necessarily general, and so a few examples can illustrate where such remedies might have been employed. Beyond the historic example of the Terminal Railroad. Three examples—two hypothetical and one real will serve to illustrate both the application and difficulties of these remedies in antitrust cases.

a) Microsoft

The operating system for computers monopolized by Microsoft permitted that enterprise to monopolize many applications thereby foreclosing the incentives to develop and improve alternatives.¹¹² The operating system is like the highway along with many vehicles might travel. When the owner also operates vehicles, the potential for exclusion and exploitation of others is substantial. One option would have been to move the ownership of the operating system to a cooperative that would include both hardware producers and applications makers.¹¹³ All participants would have an interest in developing an operating system that would serve as many applications as possible. Given dispersed ownership, no member would gain significant advantage from trying to limit the format or operation of the system. Instead of continuously developing “upgrades” that are marketed as “new” programs as Microsoft has done, the incentive would be provide incremental upgrades that did not require users to buy entirely new systems. The development of the HTML program for the use of the internet provides a good illustration of the alternative way in which a basic network system can develop.¹¹⁴

b) Refuse Dumps

While the big-tech world is exciting, this example should remind the reader that the economy extends beyond big-tech. The greatest barrier to effective competition in trash hauling is

¹¹¹ See, Telecommunications Act of 1996, Public Law 104-104, 110 Stat. 56, amending various parts of 47 U.S.C.

¹¹² *United States v. Microsoft Corp.*, 97 F. Supp. 2d 59 (D.D.C. 2000), vacated, 253 F.3d 34 (D.C. Cir. 2001).

¹¹³ See, Carstensen, *supra* note 56.

¹¹⁴ See generally, *History of HTML* available at <https://www.bu.edu/lernet/artemis/years/2020/projects/FinalPresentations/HTML/historyofhtml.html>.

access to privately owned dumps.¹¹⁵ The cost and administrative complexities involved in establishing a new disposal site confer substantial monopoly power on incumbent owners. By setting high tipping fees, vertically integrated owners can insulate themselves from competition by unintegrated haulers through a classic price squeeze. In various merger cases over the last twenty years, the primary remedy issue has been to shift ownership of dumps among vertically integrated trash.¹¹⁶ If ownership of these facilities were restructured into a condominium organization in which haulers could own some capacity rights and the facility would be operated by an independent entity that would charge for its maintenance services, then competition in trash hauling would be enhanced and the resulting condominium would not have an incentive to exploit its owners.

c) Music copyrights

The music copyright industry employs two essential facilities to manage copyright claims: ASCAP and BMI. Historically, the owners of such rights needed a collective, pooled system to enforce their rights. The two entities although created by private action, are overseen by long term antitrust decrees that regulate the governance of the two entities and provide an external review system for disputes.¹¹⁷ The resulting structure is more condominium than cooperative.

Consolidation of music publishers combined with newer ways of using copyrighted music on the internet has destabilized the system.¹¹⁸ Moreover, the system of external supervision divided between two federal judges in New York further complicates the process of modification and reform. What is evident, however, is that individual copyright owners require an entity such as BMI or ASCAP if they are to benefit from the value created by their compositions.

B. Regulatory Use of Bottleneck Remedies

Regulatory agencies in a number of industries are seeking to replace command and control regulation with more market-oriented systems. Other regulatory systems in fact serve to facilitate and oversee the operation of a market-based systems (air travel, rail, telecommunications). In both regulatory contexts, the agencies often confront elements in the system that are unavoidably monopolistic such as gas pipelines and electric transmission grids. Historically these components were often parts of the structure of vertically integrated enterprises. Imposing duties to deal on incumbent monopolists is a difficult task as the managers of such enterprises are very likely to have a better understanding of how to exploit their power than any regulator. Hence altering the ownership and control structure for the monopoly and bottleneck elements of such systems provides a better option.

¹¹⁵ Another important barrier is the use of “evergreening” contracts—ones that automatically renew unless the client has cancelled well in advance of the termination date. This contractual barrier is amenable to injunctive relief.

¹¹⁶ See, e.g., Press Release, Divestiture Will Preserve Competition in Markets for Small Container Commercial Waste Collection and Municipal Solid Waste Disposal in Over 50 Local Markets in 10 States (October 23, 202) available at <https://www.justice.gov/opa/pr/justice-department-requires-waste-management-divest-assets-order-proceed-advanced-disposal>

¹¹⁷ See *United States v. Am. Soc’y of Composers, Authors & Publishers*, Civ. Action No. 41-1395 (WCC) (S.D.N.Y. Jun. 11, 2001) (Second Amended Final Judgment); *United States v. Broadcast Music, Inc.*, No. 64-Civ-3787 (S.D.N.Y. Nov. 18, 1994) (Amended Final Judgment).

¹¹⁸ See Kriselia A. Garcia, *Facilitating Competition by Remedial Regulation*, 31 BERKELEY TEC. L. J. 175 (2016).

The best example of the use of this system is the alteration in the natural gas pipeline business. Historically, the monopoly pipelines bought gas from the gas producers and resold it to gas distribution companies at the other end of the pipeline. This created significant regulatory challenges because the market for natural gas is a workably competitive one in which prices vary over time. This led to a regulatory nightmare after the Supreme Court decided that the wellhead prices for gas dedicated to interstate sales had to be regulated.¹¹⁹

The FERC with the support of congress revised the status of the pipeline owners and made them condominium managers. The rights to transport gas were sold to users who in turn bought gas on the open market and used the pipeline to get delivery. The FERC retained regulatory control over the price of the pipeline service. The use rights are transferrable so that when demand is high, owners can earn scarcity rents.

The one major problem with the FERC plan was that it did not entirely exclude the owners of pipelines from retaining interests in the use of the line. As a result, El Paso, for example, which owned both capacity rights and gas was able to create an artificial shortage in California where its pipeline provided service. This manipulation underscores the need to have a clear separation between pipeline management and use of the capacity.

V. Potential Problems

The use of a condo or cooperative strategy to remedy a bottleneck monopoly is not free from difficulties and risks. First, the prior discussion has already explained that these remedies are likely to be useful only in some contexts. For some cases dissolution of the monopoly may be a better choice or conduct rules can effectively eliminate the monopolist's incentive to exploit or exclude. Of course, any remedy has the potential to yield unintended consequences both positive and negative. Here we seek to identify some of the less desirable impacts that the condo or cooperative remedies might create.

A. *Loss of innovation incentive*

One potential outcome of consolidating bottleneck users in a condo system is that it will adversely affect their incentives to support innovation. By having a uniform system to deal with a potential monopoly problem, the participants may find it attractive to retain that system as the standard for the industry. This may inhibit innovation both for self-interested reasons and because the incentive to develop alternatives will alter. An exploitive or exclusionary monopolist is more likely to motivate customers and suppliers to look for alternatives. Similarly, because management of the overall "condominium" rests in the hands of a third party, that party may well have incentives to avoid innovation. Moreover, the condo users are not directly involved in management of the facility; hence they may have less awareness of the potentials for innovative reworking of the bottleneck to open it out even more.

The cooperative model can also create similar disincentives. Again, staying with the tried and true as well as the potential conflicts over directions of change that may advance one sub-set of participants more than others can create pressures to resist change. On the other hand because

¹¹⁹ See, e.g., *Wisconsin v. FPC*, 373 U.S. 294 (1963).

the cooperative model assumes that the stakeholders are themselves actively engaged in the management of the facility itself, there is the potential for more willingness to consider and more expertise to evaluate innovative ways to address the bottleneck problem.

Overall, the vested interest of either cooperative participants or condominium owners in the protection of their investment is the underlying source of concern especially when the potential innovation is going to be disruptive of existing expectations. The fact that the bottleneck is in fact a monopoly and so all or almost all market participants must use the facility increases this risk.

B. Collusive incentives

A second concern that would be especially pronounced in the cooperative context is the incentive to coordinate upstream or downstream competition through the collective governance process of the bottleneck facility. The cooperative governance model postulates that all participating users of the bottleneck engage in its management which means they spend time together making decisions about how the bottleneck will operate. If the bottleneck in turn is a significant factor in either upstream or downstream competition, its coordination will create a floor or ceiling on the freedom of action in the related markets. For this reason, by coordinating how the bottleneck facility operates, its controllers can affect a significant element of their competition among themselves.

This coordination risk is greatest when the cost of the use of the bottleneck is a substantial element in the total cost of the good or service involved. This would mean that all competitors would have and would know the full cost of a major component of each other's business. Moreover, there are devices, e.g., inflating the cost of access and rebating to participants that can further lock in a collusive pricing structure. As the number of participants increases or the relative cost of access to the bottleneck declines, these risks also decline. Collective use of the bottleneck to exploit upstream or downstream markets should trigger an antitrust challenge. But the source of the problem is a governance structure put in place to remedy a prior antitrust concern.

The implication is that where these risks are substantial ahead of time or emerge from the facts of operation, further efforts need to be made to find ways to limit the discretion of the owners to coordinate on prices for the service. For example, charges could be moved from a price to a proportionate component of the operating costs. This would reduce the potential to use charges to collect and distribute cartel prices. However, if the costs themselves are a substantial factor in the pricing of the competitive input or output, this would not change the fact that competitors would have potentially significant certainty as to what their competitors' costs would be. This in turn could inhibit price competition.

The condominium structure is exposed to the same risks but because the administration of the facility is in the hands of a third party, this removes the most direct opportunity for coordination. Still, if the costs of access (the condo fees) are a substantial fraction of the total costs of the good or service, the same indirect price and competition stabilizing effects will exist.

The risks of using the bottleneck to facilitate coordination especially when it contributes a substantial part of the total cost of the good or service are real. On the other hand, absent collective ownership or control, the same economic facts would exist. Moreover, collective coordination is more likely to be visible and so more easily challenged. Hence, in many situations it is unlikely

that the risk of coordination will make the resulting competition any less vigorous than it would have been without the remedy.

C. Administrability over time

A final concern is whether the administrative structure created will be both durable and effective over an extended period of time.¹²⁰ Given dynamics of technological change as well as the changing configuration of users, there is a continuing risk that the governance mechanism will become maladapted to the needs of the facility. In theory, the participants as primary stakeholders will appreciate the need for adaptation and will revise governance and participation accordingly. Such an idealized world is all too often at odds with the observed reality of the parochial interests of individual participants and the coalitions that they can create.

As discussed earlier, some ongoing periodic review process with an outside overseer able to force, if necessary, change may be an important element to include in any overall decree. This ensures that the parties are more accountable for the operation of the bottleneck to a reviewer whose concern is how well the governance system is serving the public interest.

VI. An Application to Amazon

A. Application of the Condo Approach: The Amazon Superstore

The FTC antitrust complaint against Amazon¹²¹ suggests skullduggery in the operation of the Amazon Superstore platform. Namely, degrading suggestions via self-preferencing: Amazon further degrades the quality of its search results by burying organic content under recommendation widgets, such as the "expert recommendation" widget, which display Amazon's private label products over other products sold on the platform. Moreover, in a highly redacted area of the complaint, the FTC alleges that Amazon has the ability to "profitably worsen its services."¹²²

The FTC Antitrust Complaint also alleges that Amazon bars merchants using its Superstore from "multihoming:"

[Multihoming is the] simultaneously offering their goods across multiple online sales channels. Multihoming can be an especially critical mechanism of competition in online markets, enabling rivals to overcome the barriers to entry and expansion that scale economies and network effects can create. Multihoming is one way that sellers can reduce their dependence on a single sales channel.¹²³

If the Superstore were a condo, the vendors would be free to decide how much to focus on this platform in comparison to other platforms.

¹²⁰ See, OSTRUM, supra note 103.

¹²¹ FTC et. Al. v. Amazon.com, inc., complaint available at https://www.ftc.gov/system/files/ftc_gov/pdf/1910129AmazonCommerceComplaintPublic.pdf (Hereafter "FTC Antitrust Complaint")

¹²² Id at ¶ 240.

¹²³ Id. at ¶ 28.

Condominiumization of the Amazon Superstore would go a long way to reducing what Cory Doctorow might call the “enshittification” of the Amazon Superstore.¹²⁴ Given its dominance in the store, it would probably also be necessary to divest and rebrand the “Amazon basics” business.¹²⁵ Each participating vendor (retailer or direct selling manufacturer) would share in the ownership of the platform and would have its own place to promote its line of goods or services. The most challenging issue is how to handle product placement on the overall platform. Given the administrator’s role as the agent of the owners, it should offer a range of options. Or leave it to owners themselves to create joint ventures to promote products. Alternatively, specific premium placement could go to those vendors who value the placement the most, rather than based on who owns the platform. The revenue would in turn be shared among the owners of the condo. Thus, the platform administrator would have as its goal maximizing the value of the platform to all stakeholders. This would also potentially resolve some of the advertising issues.

According to the complaint:

Amazon charges sellers for advertising services. While Amazon also charges sellers other fees, these four types constitute over [redacted] % of the revenue Amazon takes in from sellers. As a practical matter, most sellers must pay these four fees to make a significant volume of sales on Amazon.¹²⁶

Condo ownership would also mean that the platform constituents would be able to choose which services they purchase from the platform. Constituents could more efficiently deploy advertising resources because they would not be locked-into or compelled to buy from the platform.

Optimization would include information necessary for customer decision-making. One of the other charges in the complaint was the deliberate concealment of meaningful product reviews:

Rather than competing to secure recommendations based on quality, Amazon intentionally warped its own algorithms to hide helpful, objective, expert reviews from its shoppers. One Amazon executive reportedly said that “[f]or a lot of people on the team, it was not an Amazonian thing to do,” explaining that “[j]ust putting our badges on those products when we didn’t necessarily earn them seemed a little bit against the customer, as well as anti-competitive.”¹²⁷

Making the platform condo does not necessarily mean that all goods are treated equally by customers. That is the nature of competition. However, it would mean that in terms of customer information, a condominiumized platform would enable sellers to have equal and nondiscriminatory access to the platform and to be able to promote themselves based upon their non-compelled expenditures.

¹²⁴ See Cory Doctorow, The ‘Enshittification’ of TikTok, <https://www.wired.com/story/tiktok-platforms-cory-doctorow/>. Doctorow writes: “HERE IS HOW platforms die: First, they are good to their users; then they abuse their users to make things better for their business customers; finally, they abuse those business customers to claw back all the value for themselves. Then, they die....I call this enshittification....”

¹²⁵ See, FTC Antitrust Complaint, supra note 121 at ¶¶ 241-248, discussing algorithmic preferencing of Amazon brands.

¹²⁶ Id. at ¶ 246.

¹²⁷ Id. at ¶ 246.

B. *Application of the Cooperative Approach: Fulfillment Services*

Amazon requires all vendors using its platform to only use its distribution (“fulfillment”) services. The FTC Antitrust Complaint (the part that isn’t redacted) alleges that Amazon has monopoly power in its fulfillment services.¹²⁸ This is a nation-wide complex of specialized warehouses and delivery services. FTC is apparently asserting that this system has such economies of scale and scope that it occupies a monopoly bottleneck for the distribution of many kinds of consumer goods. If a single firm controlled this monopoly, it would have incentives to engage in exploitive and exclusionary conduct. Yet distribution is distinct from online selling., and so, the distribution system could be structurally separated from the online superstore.

Our proposed remedy here is a cooperative model. Then, the goal of the owners would be to minimize the costs of providing the necessary service. Such owner-users would need to be more directly involved in the operation of the distribution system as a whole to ensure its development and operation as an efficient distribution network. Indeed, vendors using the sales platform condo may not wish to participate in the distribution system regardless of access. Conversely, vendors not using the sales platform might value the distributions services for orders received on their own platforms. Still other vendors might find multi-homing distribution to be the best option for delivery of goods. As the complaint points out, multi-homing may give rise to other benefits if not locked into Amazon Distribution:

Sellers could multi-home more cheaply and easily by using an independent fulfillment provider- a provider not tied to any one marketplace to fulfill orders across multiple marketplaces. Permitting independent fulfillment providers to compete for any order on or off Amazon would enable them to gain scale and lower their costs to sellers. That, in turn, would make independent providers even more attractive to sellers seeking a single, universal provider. All of this would make it easier for sellers to offer items across a variety of outlets, fostering competition and reducing sellers' dependence on Amazon.¹²⁹

Like other cooperatives, the proposal is that those who want to use the service could join and then participate in the management of the service. Separating distribution from the selling platform would also enhance competition between sellers who opt to use the cooperative distribution and those that do not. For those that join the distribution cooperative, the ability to engage in the tailoring of those distribution services without the anticompetitive constraints created by its former owner (Amazon) would likely result in reduced delivery costs.

VII. Conclusion

A central problem in dealing with bottleneck or essential facility monopolies is the incentives that the possessor has to exploit that control. Contemporary remedies focused on

¹²⁸ Id at ¶ 251 (“Amazon effectively forces sellers to purchase its fulfillment services to access the full reach of Amazon's marketplace services that Prime eligibility unlocks.”)

¹²⁹ Id. at ¶ 29.

regulation of access but leaving ownership in the hands of a single entity fail effectively to address the incentives that such an entity has to frustrate or constrain the benefits of the remedy. We postulate that where control over the bottleneck itself is dispersed among many stakeholders the incentive to exploit or exclude will be greatly reduced. The gain from either action is likely to be small relative to using the right of access either for direct profit or as a right to be sold. By reducing or eliminating the incentive to engage in anticompetitive exclusion or exploitation, we predict the remedy for bottleneck monopoly will become more effective.

There are two generalized models for altering the ownership and control of the bottleneck. The condominium model in which management of the facility is delegated to a third party and the users each have use right (their condo) that can in some cases be rented to others when the owner does not need to use it. Where there are a limited number of “condo” facilities and there is strong demand, owners will earn scarcity rents, but will not have the capacity to engage in extensive exclusion or discrimination because of the dispersal of ownership rights.

The other model is that of a cooperative where the owners are also more directly involved in the on-going governance of the facility. Here membership gives an entitlement to participate in the use of the facility. In more complex and dynamic bottlenecks, especially when they are not constrained in capacity, this model provides a more workable option. It ensures dispersed participation in governance and should move the capacity of the facility closer to the optimal size that would exist if it were to operate in a competitive market.

These models are not universally applicable. There must be a plenitude of potential users/owners to ensure that the incentives to abuse control of the bottleneck will be constrained. Moreover, not all bottlenecks will lend themselves to these two solutions. However, the broader insight is that to be effective any remedy for a bottleneck monopoly should seek to reduce or eliminate the incentives to abuse the control over the monopoly to exploit or exclude.

No remedy is free from problems and risks. We have tried to identify some of the major ones earlier in this article. No remedy is perfect, and no specific type of remedy will resolve all competitive problems. Hence, we propose here to add to the array of remedy options available to those enforcing competition law as well as those regulating industries where the goal is to rely on market processes as much as possible.