

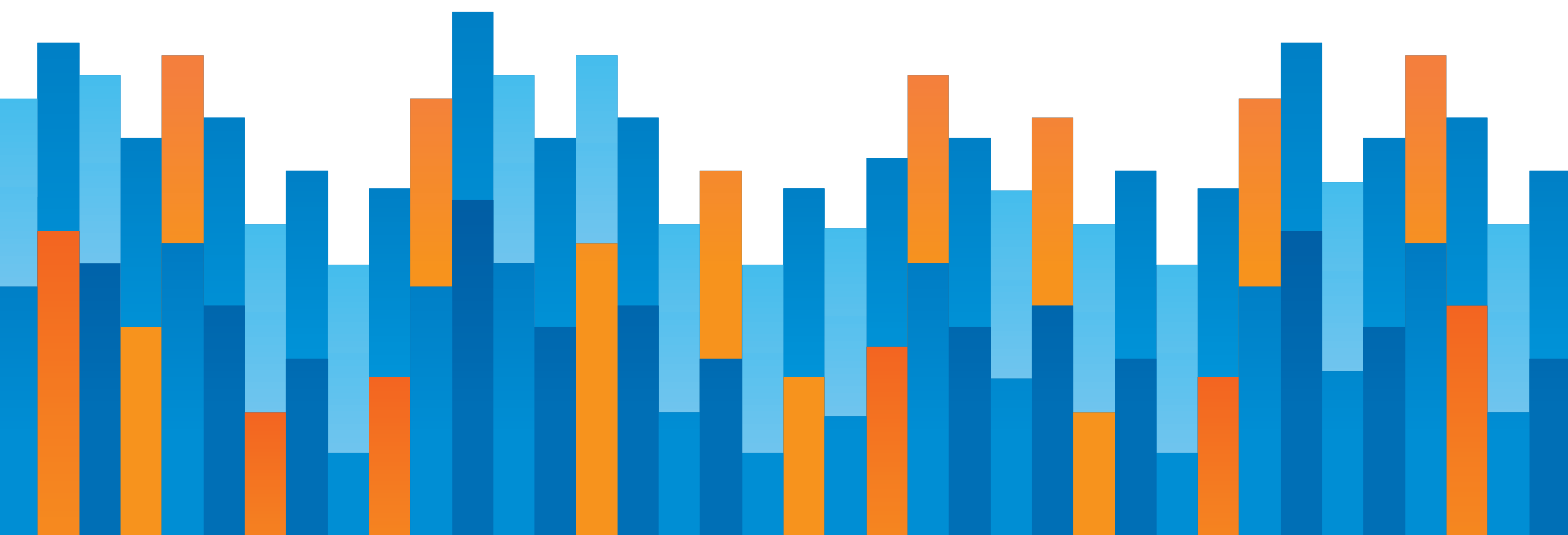


reason
FOUNDATION

ANTITRUST POLICY: THE CHALLENGE OF HIGH-TECH DIGITAL PLATFORMS

by Thomas W. Hazlett
Project Director: Adrian T. Moore

October 2023





Reason Foundation’s mission is to advance a free society by developing, applying, and promoting libertarian principles, including individual liberty, free markets, and the rule of law. We use journalism and public policy research to influence the frameworks and actions of policymakers, journalists, and opinion leaders.

Reason Foundation’s nonpartisan public policy research promotes choice, competition, and a dynamic market economy as the foundation for human dignity and progress. Reason produces rigorous, peer-reviewed research and directly engages the policy process, seeking strategies that emphasize cooperation, flexibility, local knowledge, and results. Through practical and innovative approaches to complex problems, Reason seeks to change the way people think about issues, and promote policies that allow and encourage individuals and voluntary institutions to flourish.

Reason Foundation is a tax-exempt research and education organization as defined under IRS code 501(c)(3). Reason Foundation is supported by voluntary contributions from individuals, foundations, and corporations. The views are those of the author, not necessarily those of Reason Foundation or its trustees.

Copyright Thomas W. Hazlett. This paper is adapted from a study submitted to U.S. Congress per a request by the House Judiciary Committee (April 2020) and the subsequent publication: Thomas W. Hazlett, “U.S. Antitrust Policy in the Age of Amazon, Google, Microsoft, Apple, Netflix and Facebook,” Constitutional Political Economy, Dec. 2022. <https://doi.org/10.1007/s10602-022-09391-9>.

EXECUTIVE SUMMARY

Sweeping changes have disrupted society courtesy of the Information Revolution, presenting great opportunities in radically transformed economic markets, but also great challenges in adapting to new and different forms of organization. Antitrust laws and other elements of competition policy are being re-examined, scrutinizing the impacts of market power, where competitive forces—beneficial in discovering new efficiencies and promoting consumer welfare—may be thwarted. Specifically, the House Judiciary Committee conducted hearings in 2020 in which it asked key questions about the pattern of development in U.S. markets and options for policy reform.

The following questions are salient:

1. How adequate are existing laws that prohibit monopolization and monopolistic conduct, including whether current statutes and case law are suitable to address any potentially anti-competitive conduct?
2. How adequate are existing laws that prohibit anti-competitive transactions, including whether current statutes and case law are sufficient to address potentially anti-competitive vertical and conglomerate mergers, serial acquisitions, data acquisitions, or acquisitions of potential competitors?
3. Is the institutional structure of antitrust enforcement—including the current levels of appropriations to the antitrust agencies, existing antitrust authorities,

congressional oversight of enforcement, and current statutes and case law—adequate to promote the robust enforcement of the antitrust laws?

By examining industrial concentration in the information economy and its impact on U.S. market competition, vertical integration in digital platforms, forces driving innovation in business models and product markets, and the use of competition policy tools in high-tech markets, this study finds that:

1. Relative to practical alternatives that include E.U.-style regulation, digital markets in the U.S. appear robust, generating considerable innovation that benefits consumers.
2. The global internet is dominated by U.S.-developed technologies and business models, discovered and deployed in a process of competitive rivalry. The emergent markets in online services and e-commerce have created enormous efficiencies and valuable new services, rewarding consumers and reconfiguring numerous industries as users adopt preferred ways of working, shopping, learning, and enjoying entertainment media.
3. Every innovation introduces complications as we adjust to change, potentially requiring policy reforms that improve welfare while continuing to facilitate new options.
4. Communications networks and digital services have massively increased information flows and the opportunities for gains from trade. Even given imperfect rules and regulations, U.S. markets have contributed strongly to economic advances embraced around the world.

U.S. policies have managed to incentivize great progress in high-tech markets. Mass market access to the internet became popular first in the U.S., rapidly spreading by competitive forces allowed to flourish, as common carrier obligations for entrants such as AOL were abandoned. Residential broadband markets then emerged in rivalry between (unregulated) cable TV operators and telecommunications carriers. Bringing high-speed data services to the home has opened whole new sectors of the new economy. Wireless mobile networks, first launched in the U.S., have rapidly replaced landline phones in affluent countries, and long ago did so in developing markets, where the vast majority of the population never gained access via the traditional PTTs—state owned monopolies controlling postal, telegraph, and telephone services (infamous for their years-long phone install waiting lists). Americans consume more mobile data per capita than do residents in any large European country. This study finds that rejecting open markets in favor of more highly regulated

systems or pushing antitrust law away from its current focus on consumer welfare will likely cause more harm than good.

Where adjustments in policy may be made to improve competitive outcomes, they ought surely to be implemented. But suppressing incentives for innovation by categorically ratcheting up antitrust enforcement risks errors that weigh decidedly against efficiency and consumer welfare.

TABLE OF CONTENTS

PART 1	INTRODUCTION	1
PART 2	EVOLVING ANTITRUST RULES.....	3
PART 3	HORIZONTAL CONCENTRATION.....	8
	3.1 Efficiency and Scale.....	8
	3.2 Dynamic Innovation in Business Models and Platforms.....	9
	3.3 The Problem of “Starting in the Middle”	12
PART 4	INDUSTRY CONCENTRATION RATIOS	16
PART 5	VERTICAL INTEGRATION	21
PART 6	DIGITAL PLATFORMS	25
PART 7	VERTICAL INTEGRATION IN THE DIGITAL ECONOMY.....	28
	7.1 Apple iTunes	28
	7.2 Amazon’s eCommerce Platform	30
	7.3 AOL	32
PART 8	BROADBAND AND MOBILE NETWORKS	34
	8.1 Broadband	37
	8.2 Mobile.....	43
PART 9	CONCLUSION	46
	ABOUT THE AUTHOR	49

PART 1

INTRODUCTION

Are U.S. digital markets advancing or threatening the American economy? There is keen interest in the answer to this question. Sweeping changes have disrupted society courtesy of the Information Revolution, presenting great opportunities in radically transformed economic markets, but also great challenges in adapting to new and different forms of organization. Great hope accompanies the former, much concern attends the latter. Now important discussions are scrutinizing the impacts of market power, where competitive forces—beneficial in discovering new efficiencies and promoting consumer welfare—may be thwarted. Antitrust laws and other elements of competition policy are being re-examined.

Specifically, the following questions are salient:

1. How adequate are existing laws that prohibit monopolization and monopolistic conduct, including whether current statutes and case law are suitable to address any potentially anti-competitive conduct?
2. How adequate are existing laws that prohibit anti-competitive transactions, including whether current statutes and case law are sufficient to address potentially anti-competitive vertical and conglomerate mergers, serial acquisitions, data acquisitions, or acquisitions of potential competitors?
3. Is the institutional structure of antitrust enforcement—including the current levels of appropriations to the antitrust agencies, existing antitrust authorities,

congressional oversight of enforcement, and current statutes and case law—adequate to promote the robust enforcement of the antitrust laws?

This study addresses these questions by examining industrial concentration in the information economy and its impact on U.S. market competition, vertical integration in digital platforms, forces driving innovation in business models and product markets, and the use of competition policy tools in high-tech markets. These latter include broadband access and mobile phone industries, which have attracted attention as specific examples of areas where the U.S. may be lagging rival economies due to insufficient antitrust enforcement.

PART 2

EVOLVING ANTITRUST RULES

Antitrust rules were established under common law, even prior to the Sherman Antitrust Act in 1890. But with the rise of big business, concern over large industrial enterprises took new legal form. In our time, another economic transformation is credited with sparking a similar policy debate. The rapid evolution of digital technologies has spurred a dramatic rise of communications, social media, and e-commerce platforms, extremely popular with users and prized by financial investors. These have enabled far-reaching business model innovation and disrupted many markets. They present new opportunities and new challenges. As with the printing press, the telegraph, photography, motion pictures, and radio and television, rules governing these new institutions are evolving in response to changing circumstances.

“

The rapid evolution of digital technologies has spurred a dramatic rise of communications, social media, and e-commerce platforms, extremely popular with users and prized by financial investors.

”

Each generation seems to face the challenge. In historical terms, Walmart was only recently the object of policymakers' interest. A store that computerized supply lines and slashed costs with “just in time” inventories, engineering new economies to extend low prices to disadvantaged communities, sparked controversy. Walmart was seen as a giant, integrated

firm that was unfairly competing with smaller, local enterprises. In some sense that was true: the firm was a vehicle of “creative destruction,” the method in which capitalist economies lurch forward to higher levels of productivity.

But the net gains far outweighed alternatives, as Walmart fashioned a middle-class discount experience that one economist branded “a progressive success story.”¹ That was founded on economic research that Walmart’s value proposition, as of 2005, awarded over \$250 billion annually to relatively low-income consumers, dwarfing the Food Stamp program (\$33 billion) and the Earned Income Tax Credit (\$40 billion) combined. As was written of the campaign to stop additional Walmart stores from being built:

Only by summoning up the most naive view of corporate behavior can the critics be shocked—shocked!—by the giant retailer’s machinations.... Wal-Mart aims to enrich shareholders and put rivals out of business! Hello? What business doesn’t do that?

*If critics prevent the firm from opening new branches, they will prevent ordinary families from sharing in those gains. Poor Americans will be chief among the casualties.*²

Walmart offered solutions embraced by millions. Sears, Montgomery Ward, A&P, Safeway and the low-price, national chains have created similar advances via economies of scale generations before—and triggered the same hostilities. Indeed, they inspired antitrust legislation in the 1936 Robinson Patman Act which—as described by another product of global economies of scale, Wikipedia—“was designed to protect small retail shops against competition from chain stores by fixing a minimum price for retail products.”³

The Sherman Act of 1890 did not “outlaw monopolies.” Where outsized firms arise due to superior performance, they benefit consumers, and proper antitrust law has allowed for that. Supreme Court Justice William O. Douglas wrote in 1948 that “large scale buying is not, of course, unlawful *per se*. It may yield price or other lawful advantages to the buyer.”⁴ This is the short answer to why the Department of Justice has not sued to break-up

¹ Jason Furman, *Walmart: A Progressive Success Story* (Nov. 28, 2005).

² Sebastian Mallaby, *Progressive Wal-Mart. Really.* *Washington Post* (Nov. 28, 2005).

³ The assessment is correct, although the magnitude of the damage may be sometimes overstated, as per Kenneth G. Elzinga & Thomas Hogarty, *Utah Pie and the Consequences of Robinson-Patman*, 21 *Journal of Law & Economics* 427 (Oct. 1978).

⁴ *United States v. Griffith*, 34 U.S. 100 (1948), 108.

Amazon, Facebook, Google, or Apple. The reality is that improving upon market outcomes via aggressive antitrust actions is difficult.

“
The reality is that improving upon market outcomes via aggressive actions is difficult.
”

The “error-cost framework” has come to dominate legal thinking due to the reality that mistakes can occur from too much antitrust as well as too little.⁵ “False positives” incorrectly prohibit efficient, or at least benign, market actions. These errors, and the uncertainty they foster among business, undermine the free market’s positive incentives, deterring “the condemned firm from engaging in ... beneficial conduct.”

MIT’s Industrial Productivity Commission reported in 1989 that U.S. innovation, particularly that involving large-scale platforms, “has often, though not always, been inhibited by government antitrust regulation.”⁶ Scholars add:

If innovating firms do not have the necessary capabilities in-house, they may need to engage in various forms of restrictive contracts with providers of inputs and complementary assets. The possibility that antitrust laws could be invoked, particularly by excluded competitors, thus arises. Lying in the weeds to create mischief for unsuspecting firms engaged in socially desirable but poorly understood business practices are plaintiffs’ attorneys and their expert economists entreating the courts to view reality through the lens of monopoly theory and modern variants such as raising rivals [costs].⁷

Some may believe that there was a golden era in antitrust that we might recapture. Yet in a survey of the last century’s largest antitrust cases published in the *Journal of Economic Perspectives*, Brookings Institution regulatory economists describe the pattern: cost-effective remedies remain elusive. The policy options include structural remedies, such as

⁵ Frank H. Easterbrook, *The Limits of Antitrust*, 63 *Texas Law Review* 1 (1984).

⁶ Quoted in Thomas M. Jorde and David J. Teece, *Innovation and Cooperation: Implications for Competition and Antitrust*, 4 *Journal of Economic Perspectives* (Summer 1990), 75.

⁷ *Ibid.*, 78.

divestitures, behavioral rule, commission-type “public interest” regulation, or other court-imposed standards. Even today, 130 years after the Sherman Act created federal rules (and Department of Justice enforcement) for competition policy, and 106 years after the Federal Trade Commission was born to assist in the task, policymakers still debate, for instance, whether behavioral rules should be used at all.⁸

“

Some may believe that there was a golden era in antitrust that we might recapture.

”

Their analysis focuses on six mega monopolization cases, listed in Table 1.⁹ They show that *Standard Oil*, which broke up John D. Rockefeller’s trust, attacked concentration in petroleum refining only when “Standard’s alleged market power had already declined substantially ... from 82 percent in 1899 to 64 percent in 1911.”¹⁰ More ominously, “Retail prices rose with divestiture,” though not significantly. The 1911 divestiture of cigarette makers following *American Tobacco* fared better—no measurable impact on retail prices. Ditto for the 1945 *Alcoa* case.

The *United Shoe* case, decided in 1949, has been assessed by U.S. courts themselves: “the U.S. Supreme Court was not satisfied that sufficient competition had developed in the shoe machinery market, because following a review of the decree, it recommended in 1969 that the lower court consider ‘more definitive means’ to achieve competition.”¹¹

Perhaps the most apt illustration of antitrust policy in action occurs with *U.S. v. AT&T*. The phone monopolist was a regulated common carrier, and U.S. rules under the Federal Communications Commission had pre-empted competitive entry. Despite an ostensible “open platform,” mandating non-discriminatory access by customers and competitors (to AT&T), the FCC had imposed restrictions that protected Ma Bell’s market and flummoxed

⁸ Assistant Attorney General Makan Delrahim Delivers Keynote Address at American Bar Association’s Antitrust Fall Forum, United States Department of Justice (Nov. 16, 2017).

⁹ Robert W. Crandall & Clifford Winston, *Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence*, 17 *Journal of Economic Perspectives* 3 (Fall 2003).

¹⁰ *Ibid.*, 8.

¹¹ *Ibid.*, 12.

upstart rivals. The case did succeed, in some measure, in moving the country to a more competitive environment. But it is the exception that proves the rule.¹² As the researchers conclude: “Thus, antitrust policy did not triumph in this case over restrictive practices by a monopolist to block competition, but instead it overcame anticompetitive policies by a federal regulatory agency.”¹³

TABLE 1: OUTCOMES OF BIGGEST SUCCESSFUL U.S. ANTITRUST CASES

Case	Date	Violation	Remedy	Effect
Standard Oil	1911	predation, monopolization of refined oil	divestiture split into 38 firms	“little effect”; retail prices rose by a statistically insignificant amount; equity share prices unaffected
American Tobacco	1911	predation, monopolization of tobacco	divestiture split into 3 firms	“did little to spur meaningful competition”; advertising up, but no effect on retail prices, farm (wholesale) prices, or industry profits
Alcoa	1945	monopolization of aluminum	divestiture split into 3 firms	“no effect on real aluminum prices”
Paramount	1948	vertical foreclosure of independent theaters	divestiture split movie distributors from theaters	“average real price of a movie ticket rose [for] two decades”
United Shoe Machinery	1954	monopolization by tying*	USM forced to sell, not rent, machines	lower concentration but continuation of United’s dominance and profits; 15 years later Supreme Court imposed divestiture
AT&T	1982	monopolization by tying*	AT&T split into 8 major parts	positive competitive impacts, but unrelated to the divestiture; largest impact was in reducing FCC regulatory barriers

*The FTC defines tying as “a monopolist may use forced buying, or “tie-in” sales, to gain sales in other markets where it is not dominant and to make it more difficult for rivals in those markets to obtain sales. This may limit consumer choice for buyers wanting to purchase one (“tying”) product by forcing them to also buy a second (“tied”) product as well.”

Source: Robert W. Crandall & Clifford Winston, “Does Antitrust Policy Improve Consumer Welfare? Assessing the Evidence,” 17 *Journal of Economic Perspectives* 3 (Fall 2003).

¹² How happy an “exception” is still a matter in dispute. Canada managed to introduce competition in long distance services more rapidly than did the U.S. and yet did not order a divestiture of Bell Canada, a privately owned monopoly network similar in structure and dominance to AT&T. Robert Crandall and Thomas W. Hazlett, Crandall, *Telecommunications Policy Reform in the United States and Canada*, in Martin Cave and Robert W. Crandall, eds., *Telecommunications Liberalization on Two Sides of the Atlantic*. (Washington D.C.: AEI-Brookings Joint Center for Regulatory Studies), 8–38.

¹³ Crandall and Winston (2003), 13.

PART 3

HORIZONTAL CONCENTRATION

3.1

EFFICIENCY AND SCALE

The digital economy experiences disruptive events with some frequency, and it appears commonplace that entrants may destroy established giants.¹⁴ Many of these innovations leverage efficiencies available from the creation of large-scale platforms. This is not a new phenomenon, but dates at least to the Industrial Revolution. Advances in communications and transportation networks, as well as the deployment of increasingly advanced agricultural and factory technologies, fostered distinct economies of scale. These allowed increases in labor productivity and raised living standards spectacularly, leading to “the Great Enrichment,”¹⁵ the history-bending ascent to affluence that society now enjoys.

Efficiencies from scale increases are not automatic, but they can be highly beneficial. Proposing to categorically restrict them—as did the late Supreme Court Justice Louis Brandeis, who opposed low prices and even volume discounts—is a dangerously anti-consumer policy.¹⁶ Brandeis’ antitrust philosophy, a sort of rejection of “bigness,” led to

¹⁴ The classic discussion is in Clayton Christensen, *The Innovator’s Dilemma: When New Technologies Cause Great Firms to Fail* (Harvard Business Review Press; 1997).

¹⁵ McCloskey (2016).

¹⁶ Thomas McCraw, *Prophets of Regulation* (Harvard, 1984). The volume features an illuminating chapter on the regulatory arguments advanced by Louis Brandeis during his career as a lawyer and legal champion.

economic error. “Instead of drawing the correct conclusion—that large size was an advantage to firms in some types of industries and a disadvantage to firms in other types—Brandeis too simply asserted that bigness in general was inefficient.”¹⁷

Nobel Laureate Oliver Williamson contributed a crucial counter argument to Brandeis’ categorical view in 1968, showing that scale economies should be explicitly considered in merger cases. Combinations where enhanced size would unleash productive gains would increase social welfare and yield dynamic gains by giving firms stronger incentives to create more-efficient structures. This view became widely accepted by lawyers, judges, and economists as sound policy.¹⁸ This movement was furthered by empirical analysis showing that markets with high concentration generally resulted from the expansion of relatively efficient firms. This suggested that the positive correlation between concentration and profitability, as in the “Structure-Conduct-Performance” paradigm in industrial organization, was due to the deployment of efficiencies rather than monopolistic restrictions. In other words, the quest for profitable innovation was driving commercial success and simultaneously benefiting consumers.¹⁹

3.2

DYNAMIC INNOVATION IN BUSINESS MODELS AND PLATFORMS

A newsletter popular with digital tech investors offers insights into how high-tech firms pursue various strategies, jockeying for market position and profits.²⁰ An important meme in tech investment, it explains, is the “franchise,” the business idea that:

Brandeis was instrumental in designing the Federal Trade Commission and was later appointed to the U.S. Supreme Court.

¹⁷ Ibid., 99.

¹⁸ This is sometimes claimed to be a “Chicago School” approach specific to the work of Robert Bork (and his influential, *The Antitrust Paradox* [Basic Books; 1978]), but Williamson was not a Chicagoan. Moreover, the Harvard Law School approach to antitrust proceeded on a parallel track, as explained in William E. Kovacic, *The Chicago Obsession in the Interpretation of US Antitrust History*, 87 *University of Chicago Law Review* (2020), 459-494.

¹⁹ Harold Demsetz, *Industry Structure, Market Rivalry, and Public Policy*, 16 *Journal of Law & Economics* (April 1973), 1-9.

²⁰ Stratechery is a subscription newsletter popular with investors in digital markets. The author, Ben Thomson, has been dubbed a “tech guru” by the *Financial Times*, while the *N.Y. Times* references him as “one of the most interesting sources of analysis on any subject.” *Alphaville*, *Financial Times* (Sept. 8, 2018).

- (a) successfully meets a need;
- (b) costs less to provide than what consumers will pay;
- (c) is not easily duplicated by rivals.

This is the simple logic of value creation. In their process, entrepreneurs improve existing opportunities, and they are successful if these changes generate returns in excess of opportunity costs. Better investments are those ideas that create and then sustain these achievements. Incentives of entrepreneurs, investors, and society are well aligned.

“

Incentives of entrepreneurs, investors, and society are well aligned.

”

In the quest to achieve the last of these conditions, sustaining profitability in the face of possible entry by profit-seeking rivals, entrepreneurs seek to create a unique asset that can exert competitive superiority over rivals, perhaps protected by intellectual property rights and/or a “first mover” advantage. Potential investors then evaluate these claims, with market trading revealing an equilibrium among differing opinions and establishing the market value of the firm. The article focuses on the source of sustainability for tech firms, comparing Uber to Amazon, finding a significant problem:

...with contractor-reliant businesses like Uber... is how much time and money they need to spend on the supply side of the equation to acquire and retain drivers. To be fair, this is in large part due to competition: when both riders and drivers can switch freely the former need lower prices and the latter higher incentives, both of which comes at the cost of Uber's finances. Indeed, this may simply be an old-fashioned missing moat problem.²¹

The “moat” is the franchise. While market power critics tend to categorically identify the moat as a barrier to entry that restricts competition, and in some cases it may well be, investors seek innovative growth in a dynamic process to discover the best *value creating*

²¹ *Neither and New Follow-Up, Adam Neumann Forced Out, Peloton IPOs, Stratechery* (Sept. 26, 2019). The Thompson comments quoted in this section are from this article.

activities. To see the profitable outcome of an innovation process as monopolistic, without counting the “creative” side of the “destruction,” is to enter this story in the middle.

There are, of course, countless ways to potentially produce the efficiencies that such market niches aim to realize. Amazon and eBay have successfully launched e-commerce platforms with characteristic similarities and yet deep distinctions. Most obviously, eBay is less vertically integrated, offering an online store where retail sales are made by other parties, whereas Amazon owns not only the wholesale platform but actively participates in retailing, competing with its seller-customers.

When disruptive technologies do perform a valuable service, as determined by the competitive market test, they can generate enormously popular and useful gains at surprisingly low cost (in capital investment and operational expense). Investors look for high leverage opportunities, again consistent with society’s desire to prosper, discovering low outlays might result in the highest returns. In tech market terms, the Thompson article notes:

...the smaller a piece that software plays in a company’s overall offering, the more difficult it is to introduce network effects or ecosystem lock-ins that reduce competition. You’re just selling another widget—as a service, of course. This makes Uber-type services very different than a marketplace like Ebay, which had huge network effects.

The leverage then comes from *economies of scale* that make a given infrastructure—supplied by software, a sales platform, reputational capital (as a “low price” seller or “America’s marketplace”) or all of the above—more advantageous for consumers. The competitive rivalry of firms in digital markets obeys the basic dynamics of firms in previous eras, but the possibilities for large scale economies tend to be richer. Digital platform audiences can be extremely large, given new efficiencies and e-activities produced at great savings per unit. This is a replay of the Industrial Revolution, when emerging communications and transportation networks, combined with progress in science, allowed production from one firm to achieve lower costs by supplying far wider markets. The tension between local businesses and national chains intensified and became political. The basic source of this tension is not inefficiency, or restrictions in output tied to market power, but it’s reverse: lower prices via investments creating larger scale efficiencies than previously available.



The competitive rivalry of firms in digital markets obeys the basic dynamics of firms in previous eras, but the possibilities for large scale economies tend to be richer.



3.3 THE PROBLEM OF “STARTING IN THE MIDDLE”

Harold Demsetz responded to the view of entry barriers that “tends to treat as unproductive the costs that must be incurred to create and to maintain a good reputation, to bear risks of innovation, and to build a scale of operations appropriate to the economical servicing of consumer demands, and it tends to neglect the incentives that will face future decision makers as a result of today’s policy.”²² Policies that fail to understand how efficiencies are created, or what might have occurred absent a firm’s strategic choices, under-appreciates and even deters spontaneous progress—as with categorical limits on size or rules to require divestitures.

Demsetz warns that “deconcentration may have the total effect of promoting inefficiency even though it also may reduce some monopoly-caused inefficiencies.”²³ To impose policies setting market structures is dangerous work. And it misses the point. “[T]he maximization of competition is a meaningless goal. The goal is more accurately described as choosing a preferred mixture of competitive forms. Thus, price competition between existing goods can be intensified by eliminating patent and copyright protection, but this reduces the effectiveness of competition to produce new goods.”²⁴

An appropriate economic inquiry examines competition for the market—perhaps winner-take-all, perhaps not—cycling through changing structures over time. That brings into focus the differentiated strategies of many Amazon rivals (looping back to the discussion in the last section) including eBay, Walmart, Sears, Shopify, Etsy, Google, Yahoo!, America Online, Target, Circuit City, Best Buy, Instacart and others, some living and some dead. Barnes & Noble was an established incumbent in retail book sales when Amazon was created as an

²² Harold Demsetz, *Barriers to Entry*, 72 *American Economic Review* 47 (March 1982), 56.

²³ Demsetz (1973), 4.

²⁴ Harold Demsetz, *How Many Cheers for Antitrust’s 100 Yeqrs?* 30 *Economic Inquiry* 207 (April 1992), 207.

online book vendor in 1995. It threatened to “launch a website soon and crush Amazon” in 1996 when the upstart had \$16 million in sales and the store-based bookseller some \$2 billion.²⁵ The B&N CEO wanted to call the new website “Book Predator” (a suggestion that was internally overruled), but it took months to construct. “[D]uring that time, Bezos’ team accelerated the pace of innovation and expansion.”²⁶ Out of this contest emerged the triumphant upstart, Amazon.²⁷



An appropriate economic inquiry examines competition for the market—perhaps winner-take-all, perhaps not—cycling through changing structures over time.



It was not because Amazon observed rules against pricing below average variable cost. It did, however, make investments in marketing and platform building, communicating a relentless pro-shopper policy like this:

As if to prove his singular obsession with customer experience, Bezos placed an expensive bet... In July [2000], author J.K. Rowling published the fourth book in the series, Harry Potter and the Goblet of Fire. Amazon offered a 40 percent discount on the book and express delivery so customers would get it on Saturday, July 8—the day the book was released—for the cost of regulator delivery. Amazon lost a few dollars on each of about 255,000 orders, just the kind of money-losing gambit that frustrated Wall Street. But Bezos refused to see it as anything other than a move to build customer loyalty.²⁸

²⁵ Brad Stone, *The Everything Store: Jeff Bezos and the Age of Amazon* (Little Brown, 2013), 56.

²⁶ *Ibid.*, 57.

²⁷ Barnes & Noble, after closing most of its stores, was sold for \$638 million to a hedge fund in 2019. Jordan Crucchiola, Barnes & Noble’s Wild Ride: A Timeline, *Vulture* (June 10, 2019).

²⁸ Stone (2013), 111. Lina Khan identifies a much larger investment, in Amazon Prime, as presumptively predatory. “As with its other ventures, Amazon lost money on Prime to gain buy-in. In 2011 it was estimated that each Prime subscriber cost Amazon at least \$90 a year—\$55 in shipping, \$35 in digital video—and that the company therefore took an \$11 loss annually for each customer. One Amazon expert tallies that Amazon has been losing \$1 billion to \$2 billion a year on Prime memberships.” Khan (2017), 750 (footnotes omitted). However, Prime soon became a “huge success,” generating large profits, after initially being very controversial within the company—precisely because it was difficult to create and expensive to build (Stone 2013, 188). Its success did not depend on predation, driving rival eCommerce

Amazon’s strategy of “get big fast” required just such outlays.²⁹ The end of these efforts was to create widely shared facilities: (a) inventories leveraging volume discounts, (b) delivery networks supplying far quicker service than rivals; (c) easy-to-negotiate software interfaces, (d) superior customer service and return policies, (e) “big data” to assist customers in product search and to reduce shipping and handling costs.

Economists have long observed that some firms tend to grow large, and that the industries that host these large firms often exhibit relatively high profits. That led some to posit that the high concentration was causing the high profits, and that a deconcentration—through industrial policy, antitrust, regulation, or some other means—would increase output, lower prices, and improve social efficiency. This, in fact, was the view of the Chicago School in mid-20th century.³⁰



Economists have long observed that some firms tend to grow large, and that the industries that host these large firms often exhibit relatively high profits. That led some to posit that the high concentration was causing the high profits...



Demsetz investigated the causality assumed in the Structure-Conduct-Performance paradigm. The concentration-profits correlation had been shown to often be positive. Champions of the S-C-P model concluded that the higher concentration levels were driving the higher profit ratios, suggesting monopolistic output restrictions. Demsetz allowed that might be the case, but that the causation might be the reverse. That is, the rise of more-efficient firms, with lower costs and/or enhanced products, would logically exhibit higher

platforms from the market, but by attracting customers—achieving scale economies rewarding the upfront investments communicating reliable customer service, low prices, and convenience.

²⁹ Stone 2013, 55.

³⁰ Henry Simons, *A Positive Program for Laissez Faire* (Chicago, 1934); *The Requisites of Free Competition*, 26 *American Economic Review* 68 (1936): 68–76; Henry Simons, *For a Free-Market Liberalism*, 8 *University of Chicago Law Review* (1941): 202-214; George Stigler, *Extent and Bases of Monopoly*, 32 *American Economic Review* (Supp. 1, 1942): 1-22; George Stigler, *The Case Against Big Business*, 45 *Fortune Magazine* 123 (1952).

growth, increasing industry concentration. In that case, the same concentration-profits correlation would be observed, but would best be explained by efficiency, not monopoly.

Examining profit levels across firms of different sizes provided a test. If high concentration were driving high profits through collusion or output restriction, then firms of all sizes would tend to experience high profits. Yet if high concentration was related to economies of scale, then larger firms would exhibit higher returns than smaller rivals.

This latter pattern is what the data tended to show. Demsetz concluded: “If rivals seek better ways to satisfy buyers or to produce a product, and if one or a few succeed in such endeavors, then the reward for their entrepreneurial efforts is likely to be some (short-term) monopoly power and this may be associated with increased industrial concentration. To destroy such power when it arises may very well remove the incentive for progress.”³¹ The evidence was powerful, and the insight held up when tested by others.³² Recent research suggests that these trends are observable in the digital economy.³³ By itself, the concentration-profits correlation began the story in the middle.³⁴

The “reflexive antipathy towards even moderate concentration levels foundered in the 1970s,” write legal scholars, “on the empirical evidence and, in particular, on the highly influential research of Harold Demsetz.”³⁵ By the turn of the century, leading industrial organization texts noted that “the barrage of criticism [of the Structure-Conduct-Performance approach] has caused most research in this area to cease.”³⁶

³¹ Demsetz (1973), 3.

³² Michael Smirlock, Thomas Gilligan & William Marshall, *Tobin's q and the Structure-Performance Relationship*, 74 *American Economic Review* 1051 (Dec. 1984).

³³ Sam Peltzman, *Productivity and Prices in Manufacturing During an Era of Rising Concentration*, University of Chicago & NBER (April 25, 2018).

³⁴ Under the S-C-P approach, economists “accept the data of the momentary situation as if there were no past or future to it and think they have understood what there is to understand if they interpret the behavior of those firms by means of the principle of maximizing profits with reference to those data.” Demsetz (1973), 84.

³⁵ Timothy J. Muris & Jonathan E. Nuechterlein, *Antitrust in the Internet Era: The Legacy of United States v. A&P*, 54 *Review of Industrial Organization* 651 (2019), 677.

³⁶ Dennis W. Carlton & Jeffrey M. Perloff, *Modern Industrial Organization*, 4th Edition (Prentice Hall, 2004), 268. See also Thomas Hazlett, “The ‘Nirvana Fallacy’ in Hipster Antitrust,” 28 *George Mason Law Review*, 1253 (Summer 2021).

PART 4

INDUSTRY CONCENTRATION RATIOS

Much of the current interest in antitrust policy is driven by studies that show certain measures of concentration are increasing in the U.S. economy. But concentration ratios, as given (and widely cited) in a May 2016 report from the President’s Council of Economic Advisers (“Benefits of Competition and Indicators of Market Power”), do not imply this. The analysis simply shows statistical changes that have no clear impact on competitive rivalry or consumer welfare.

“

Much of the current interest in antitrust policy is driven by studies that show certain measures of concentration are increasing in the U.S. economy.

”

In one instance, market shares for the top 50 firms in an industry are increasing over time in the U.S. But this does not inform how competition in the digital economy is progressing. How would totally eliminating—say, through merger—the 10th, 20th, or 30th largest firm in a market impact the robustness of rivalry? Not likely to be noteworthy. If it were, defendants in antitrust suits would be delighted to hear of it: the top two or three firms in the industry

could then claim that a merger they might arrange, for example, would be offset by forty or more key competitors.

In another measure of concentration in the CEA report, some broad industries are shown to be decreasing in fragmentation. This asserted consolidation is of no competitive relevance, given that the scope of a given business market is not necessarily aligned with actual consumer choices. To see the problem, suppose that each of 734 local markets has two cellular telephone operators licensed to serve, one having an “A” license, the other a “B,” and that each cellular carrier serves exactly one market—such that there are 1,468 companies serving the market. Wherever you live you face a choice between two options: a duopoly. But when calculating market concentration on a nationwide basis, however, the market would look highly competitive.³⁷ Now suppose that all of the A licensees merge, forming one national A network; all the B licensees then do the same, producing a rival B network. Two companies would remain. Assuming they are of equal size, concentration would jump to a much less competitive level.³⁸ But consumers have the same number of choices: two. Indeed, the practical matter is that the mergers allowed national networks to emerge, and this would likely reduce certain costs, such as roaming charges or marketing expense, and increase the ease of mobility—a key benefit in mobile services. From the standpoint of consumers, the competitiveness of both the A and B networks has not decreased and, reflecting real-world conditions, likely *increased*. This is roughly what happened after U.S. cellular licenses were distributed in each of 734 markets, two per area, in the 1980s. More to the point, it shows how changes in national measures of market concentration, such as HHIs, may mischaracterize the competitive margins of interest.³⁹

³⁷ The standard metric, the Herfindahl–Hirschman Index, or HHI, is calculated as the sum of the squared market shares (after multiplying percentages by 100 before squaring). So, if ten firms each have equal scale, serving ten percent of the market, the $HHI = (10 \times 10) \times 10 = 1,000$. The minimum value is zero, the maximum is 10,000 (100×100). In the case of 734 local markets, with 1,468 suppliers of (let’s assume) equal size, each firm would have a trivial share of national revenues (less than one), and the sum of the squared shares would itself be trivial.

³⁸ The HHI would rise from ~0 to 5,000 ($= [50^2] \times 2$).

³⁹ Again, defendants in antitrust cases would be delighted for a methodology that allows for nationwide market shares, no matter the local dynamics, as this could mask actual market power. In the cellular example, suppose half of the country saw local mergers between the A and B carriers. The industry would remain populated by hundreds of firms, and the concentration level would still be judged “Highly Competitive.” But half of the country would see their markets go from duopoly to monopoly.

This is why economists have effectively critiqued such reported trends as somewhere between meaningless and misleading.⁴⁰ Where increases in concentration, reasonably measured, are observed, there is no apparent harm. Take the measurements presented in a recent paper by the Brookings Institution.⁴¹ It displays increases in concentration estimated in six categories: Services, Manufacturing, Retailing, Wholesaling, Utilities, and Finance, 1982-2012. By far, the largest industry increase is in Retailing, where concentration estimated was to increase by 416%. The finding should indicate how unconvincing such broad measures of concentration are in flagging problem areas, because retail choice moved decidedly in favor of consumers in the decades studied.

“

Americans have achieved something of a golden age in retail choice.

”

Now, thanks to platforms offering “long tail” selections encompassing truly massive inventories, eCommerce platforms, and Google (or other) search engines to identify purchase options, Americans have achieved something of a golden age in retail choice. Indeed, in considering the pros and cons of recent market developments from a competitiveness standpoint, Tyler Cowen says that the “good news” starts with retailing.⁴² He cites his ability to buy books on Amazon or eBay, or using online searching to find other book sellers. “[M]y options as a book consumer have never been better.”⁴³ Numerous efficiencies have also allowed far more discounters to compete: “Dollar General and Dollar Tree... had 27,465 outlets... more than the total number of CVS, Rite Aid and Walgreens stores combined.”⁴⁴ In short, it is unclear how the steep increase in measured industrial concentration has impacted prices for retail consumers. It is not particularly mysterious,

⁴⁰ Carl Shapiro, *Antitrust in a Time of Populism*, 61 *International Journal of Industrial Organization* (2018), 714-48; Gregory Werden & Luke Froeb, *Don't Panic: A Guide to Claims of Increasing Concentration*, 33 *Antitrust Magazine* 74 (Fall 2018). These issues are also discussed in Timothy J. Muris & Jonathan E. Nuechterlein, *Antitrust in the Internet Era: The Legacy of United States v. A&P*, 54 *Review of Industrial Organization* 651 (2019).

⁴¹ *The State of Competition and Dynamism: Facts about Concentration, Start-Ups, and Related Policies*, Brookings Institution Hamilton Project (June 2018). The source of the analysis here is Autor, David, David Dorn, Lawrence F. Katz, Christina Patterson, and John Van Reenen, *Concentrating on the Fall of the Labor Share*, 107 *American Economic Review: Papers and Proceedings* (2017), 180–85.

⁴² Cowen (2019), 84.

⁴³ *Ibid.*, 84-85.

⁴⁴ *Ibid.*, 86.

however, that economies of scale—which could well be driving some concentration measures—have become more important in U.S. markets in recent decades. This is the cause and effect that is suggested by Brookings’ observation that “concentration is high in markets with large returns to scale and network effects.”⁴⁵

It is also the observation of the comprehensive 2009 study of “Media Ownership and Concentration in America.”⁴⁶ It concludes that some digital markets show trends toward higher concentration, but there was widespread misinterpretation as to the origins and effects of these changes. “[T]he structure of media are being transformed by broad forces, and concentration is its symptom, not its cause.”⁴⁷ It observes that strong positions have been taken assuming causation the other way, even when no data support the position. It drills down on the popular and influential 2004 text, “Media Monopoly,” as presenting a “shrill” critique “when media concentration was quite low.”⁴⁸

“Media Monopoly” asserted that five top media firms controlled entertainment platforms in the U.S., enjoying “more communications power than was exercised by any despot or dictatorship in history.”⁴⁹ Yet, these firms, whatever their market power then (the 2009 study is skeptical that they exercised such control), constitute but a tiny fraction of the value of the leading digital media firms only a few years later: FAANG (Facebook, Amazon, Apple, Netflix, and Google). Of course, these firms were much smaller in 2004 (Facebook did not exist, Netflix was an upstart DVD online mail-order service, and Google was just going public in 2004). The idea that great power was exercised—that the managers of the conglomerates “constitute a new Private Ministry of Information and Culture”—would prove wishful thinking were it then held by shareholders of the Old Media. By 2019, the total market value of the five firms said to control the situation in 2004 was just 11% of the FAANG firms to surpass them.

⁴⁵ Brookings (2018), 10.

⁴⁶ Eli M. Noam, *Media Ownership and Concentration in America* (Oxford, 2009).

⁴⁷ *Ibid.*, 446.

⁴⁸ *Ibid.*, 437.

⁴⁹ In Noam (2009), 19.

TABLE 2: TOP FIVE MEDIA FIRMS 2004, 2019 (BADIGKIAN 2004, FAANG 2019)

2004 "Cartel" at 2019 value (\$B)		New Digital Firms in 2019 (\$B)		Ratio (2004/2019)
Bertlesmann	\$0.97*	Facebook	\$556.38	
Time Warner	\$113.09	Amazon	\$862.43	
Disney	\$260.61	Apple	\$1,180	
Viacom	\$9.45	Google	\$920.53	
NewsCorp	\$7.70	Netflix	\$129.30	
Total	\$391.82	Total	\$3,648.64	0.11

* Euros translated to USD at Nov. 16, 2019 exchange rate @ \$1.05477 = €1.

PART 5

VERTICAL INTEGRATION

One matter of controversy is how much firms specialize. An automobile producer may decide to produce engines or buy them from other companies. Economists have devoted much study to such decisions since a pioneering paper published in 1937.⁵⁰ General Motors once purchased car bodies from an independent supplier, Fisher Body; it then acquired Fisher Body and made these components internally. This integration has been explained as an efficient coordination of risky, long-term, complementary investments.⁵¹ At the same time, other trends go in the reverse direction, away from vertical integration. GM now reports using scores of independent parts suppliers, for example.⁵²

“
One matter of controversy is how much firms specialize.
”

⁵⁰ R.H. Coase, *The Nature of the Firm*, 4 *Economica* (Nov. 1937), 386-405.

⁵¹ As Benjamin Klein summarizes: “vertical integration is more likely when transactors make relationship-specific investments.” Klein, *The Economic Lessons of Fisher Body–General Motors*, 14 *Int. J. of the Economics of Business* (Feb. 2007), 1–36. This basic insight was developed in Oliver E. Williamson, *The Vertical Integration of Production: Market Failure Considerations*, 61 *American Economic Review* (May 1971), 112–23.

⁵² GM gave 133 firms its Supplier of the Year award in 2018. General Motors, *GM Honors Global Suppliers for Innovation, Quality and Performance*, News Release (May 17, 2019).

Tesla, a more recent industry entrant, produces both electric vehicles and the batteries that power them. This integration is tight and ambitious, with the firm building a massive Gigafactory to dramatically increase its battery production capacity. It partners with Panasonic in this effort, an “integration by contract,” and by merger, having acquired Maxwell Technologies.⁵³ Tesla attempts to exploit complementarities that will allow it to better fund, conduct, and then use the innovative technologies it develops. It has widened this aggregation by purchasing Solar City, a maker of solar panels. Following that merger, Tesla boasted that it had built “the world’s only vertically integrated energy company,” and would supply power to both a consumer’s house and car. Whether this entrepreneurial effort will succeed is a wager reflected in the company’s equity share price. But the competitive rivalry over business models—with Tesla’s rivals typically buying batteries from outside suppliers—is a socially valuable discovery process.



Vertical integration is ubiquitous, even where monopoly is not an issue and efficiency is the obvious outcome.



That conclusion is rendered by observation. Vertical integration is ubiquitous, even where monopoly is not an issue and efficiency is the obvious outcome. The first radio broadcasting station went on the air in Pittsburgh, Pennsylvania, Nov. 2, 1920. Who would invest in such a technology, given that there were no receivers? And, on the other hand, what household would buy a radio when there were no stations to listen to? This chicken-or-egg dilemma was remedied by Westinghouse, which created KDKA and its free-to-listener audio service in order to sell its receivers. This vertical integration was efficient—there was no radio market to monopolize—and the innovation unleashed an entirely new sector.

Research by economists attempts to categorize vertical integration in particular circumstances as efficient or, alternatively, tending to foreclose rivalry, lessening competition. A 2005 study concluded that vertical integration was overwhelmingly associated with lower costs and better outcomes for consumers.⁵⁴ An article in 2007 in the

⁵³ Vitaliy Katsenelson, This could be the next gold mine for Tesla and other electric vehicles, *MarketWatch* (Oct. 5, 2019).

⁵⁴ James C. Cooper et al., *Vertical Antitrust Policy as a Problem of Inference*, 23 *Int’l J. of Ind. Org.* (2005).

Journal of Economic Literature surveyed published academic research, and reached the same conclusion:

*As to what the data reveal in relation to public policy, . . . [w]e are . . . somewhat surprised at what the weight of the evidence is telling us. It says that, under most circumstances, profit-maximizing vertical integration decisions are efficient, not just from the firms' but also from the consumers' points of view. Although there are isolated studies that contradict this claim, the vast majority support it. Moreover, even in industries that are highly concentrated so that horizontal considerations assume substantial importance, the net effect of vertical integration appears to be positive in many instances. We therefore conclude that, faced with a vertical arrangement, the burden of evidence should be placed on competition authorities to demonstrate.*⁵⁵

This conforms to U.S. antitrust law. Vertical integration is not a *per se* violation of the competition statutes. Whereas horizontal collusion (price-fixing among rivals) is considered a “naked restraint” that restricts output without offsetting benefits, trade-offs are inherent in vertical coordination. Practices that include mergers, contracts, and other coordination between producers of complementary factors widely produce benefits. That they may sometimes restrict rivalry, say by increasing barriers to entry or enforcing horizontal price agreements, is recognized by the law. But those instances must be distinguished from the most common case in which efficiency explains the economics using a “rule of reason,” distinct from the “per se” rule governing horizontal collusion.⁵⁶

Moreover, it is disruptive for each and every integration decision by a firm to be subject to regulatory oversight, which would act as a tax on productive activity. Hence, the “Government has the burden of proof to demonstrate that the merger is likely to lessen competition,” wrote Judge Richard J. Leon in his 2018 opinion in *U.S. v. AT&T*.⁵⁷ Therein, the U.S. Department of Justice challenged a vertical combination, with AT&T (a major distributor of cable TV programming, through its telecommunications networks and the satellite distribution grid of its subsidiary, DirecTV) bidding to acquire Time Warner (a major producer of cable TV programming, including CNN, HBO, TNT, TCM, TBS HLN and the Cartoon Channel). A “rule of reason” analysis in the opinion led Judge Leon to rule that the

⁵⁵ Francine Lafontaine & Margaret Slade, *Vertical Integration and Firm Boundaries: The Evidence*, 45 *Journal of Economic Literature* (2007). A recent survey paper from the Global Antitrust Institute reports updated, and similar, findings.

⁵⁶ “[T]he rule of reason now governs all vertical agreements” (footnote omitted). Louis Kaplow, *The Meaning of Vertical Agreement and the Structure of Competition Law*, *Antitrust Law Journal* (2016), 563-630.

⁵⁷ *U.S. v. AT&T*, opinion of D.C. Circuit (June 12, 2018), 3.

government had advanced a plausible theory of vertical foreclosure, but that evidence was needed to support the asserted outcome:

... evidence indicating defendants' recognition that it could be possible to act in accordance with the Government's theories of harm is a far cry from evidence that the merged company is likely to do so (much less succeed in generating anticompetitive harm as a result).⁵⁸

The court ruled that such evidence was not offered, and the transaction was permitted. The legal outcome was not difficult to forecast. Such claims of consumer harm as were made in the vertical merger case are difficult to establish, and legal scholars have noted that similar cases against vertical mergers are rare.⁵⁹ The government's argument was that combining Time Warner's network program ownership with AT&T's retail video subscriber business would allow the merged firm to raise wholesale prices (license fees) on the cable networks sold to other distributors. Should those cable or satellite operators (say Comcast or DISH) resist, AT&T could terminate their program access and reap some benefit in higher DirecTV subscription take-up (as AT&T's subsidiary would have network shows not available on rival systems). Yet Time Warner had previously been integrated with a major cable TV service provider—Time Warner Cable—and had voluntarily chosen to spin the subsidiary off into a separate, stand-alone operator in 2009. This divestiture sacrificed whatever such strategic ploys were available from integration, suggesting that the benefits of “foreclosure” were illusory.⁶⁰

⁵⁸ Ibid. 90.

⁵⁹ “The DOJ's recent challenge of the AT&T-Time Warner acquisition was the first vertical merger challenge that went to court in forty years.” The Global Antitrust Institute (GAI) at the Antonin Scalia Law School, George Mason University, *Comment: The Federal Trade Commission's Hearings on Competition and Consumer Protection in the 21st Century, Vertical Mergers* (Sept. 6, 2018), 11.

⁶⁰ Thomas W. Hazlett, Why the government will lose to AT&T, *Reuters* (March 23, 2018). Indeed, while AT&T won its case and then acquired Time Warner, the combination did not prove profitable let alone produce monopoly profits. AT&T voluntarily divested both DirecTV and Time Warner, at substantial write-downs. Thomas W. Hazlett, *Antitrust Activists Want to Go Full Throttle. Here's a Lesson They Should Consider First*, *Barron's* (July 29, 2021).

PART 6

DIGITAL PLATFORMS

Much interest revolves around the competitive issues now concerning digital platforms. These institutions bring to the fore the conflicts between the two primary ways we tend to think about competitive enterprise:

- #1 as an equilibrium where the state of competition reflects market concentration;
- #2 as a process where rivalry to innovate produces corporate winners and losers.⁶¹

It may seem straightforward that firms with high market shares (as in the competitive model in #1) tend to under-perform from a consumer welfare perspective; that is, with dominance, such companies have lesser incentives to improve prices, customer service, or products. Yet, it is not. A major theme in economic theory for a century or more is that firms compete over time to achieve enhanced market positions, and that this quest encourages (and rewards) risky investments undertaken to innovate. Such competition focuses (as in #2) on discovering superior business models and technologies as the path to profit.⁶²

⁶¹ See David J. Teece, *Big Tech, Dynamic Competition, and Antitrust*, Working Paper, Institute for Business Innovation, Haas School of Business, U.C. Berkeley (Nov. 21, 2019), 9.

⁶² Joseph Schumpeter's famous paradigm of "creative destruction" was posed as an alternative to the view that "perfect competition," with numerous small firms selling at market prices influenced by no single firm, was the best outcome for consumers or society in general. "[I]n capitalist reality as distinguished from its textbook picture, it is not that kind of competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization (the largest-scale unit of control for instance) – competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives. This kind of competition is as much more effective than the other as a bombardment is in comparison with forcing a door.... [it is] the powerful lever that in the long run

Indeed, one of the most important recent topics in business economics is the problem innovative firms confront when they improve products or market structures. An important 1986 article attempted to “explain why innovating firms often fail to obtain significant economic returns from an innovation, while customers, imitators and other industry participants benefit.” The observed approach is “for the innovating firm to establish a prior position in these complementary assets.”⁶³ Where successful, this strategy bridges the gap between risk and return, promoting the creation of socially valuable assets.



...one of the most important recent topics in business economics is the problem innovative firms confront when they improve products or market structures.



Firms tend to diversify at different, key points in an ecosystem. This is a rationality constraint, guided by profit considerations, incentivizing innovation with a feedback loop consistent with social progress: efficient processes are ranked above inefficient ones.

Nested within this general approach is a wide variety of industrial structures and business strategies. Many of the complementary investments that spur platform creation are made via non-profit contributions on “open platforms.” One scholar documents how many firms have literally given away property rights to key technologies in order to help invigorate the cooperation of other firms, known as “strategic forfeiture.” IBM developed and then put valuable UNIX computer code into the public domain, seeking to build complementary assets that would stimulate demand for its mainframe computers. Nokia undertook a similar approach in vesting its Symbian mobile operating system software in a non-profit foundation that was owned by multiple stakeholders in addition to Nokia. This strategy was undertaken to promote Nokia’s own mobile devices.⁶⁴ Google has, similarly, awarded free

expands output and brings down prices...It disciplines before it attacks.” Schumpeter, *Capitalism, Socialism and Democracy* (Harper; 1942), 84-85.

⁶³ David J. Teece, *Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy*, 15 *Research Policy* (1986), 285-305.

⁶⁴ Jonathan Barnett, *The Host’s Dilemma: Strategic Forfeiture in Platform Markets for Informational Goods*, 124 *Harvard Law Review* (2011), 1861-1938.

use of its Android software for mobile phones and computers; the programs embed Google Search and other company apps, advancing the firm's ad sales.

PART 7

VERTICAL INTEGRATION IN THE DIGITAL ECONOMY

This section, through brief description of selected episodes, illustrates how emerging digital platforms have benefited from vertical integration.

7.1

APPLE ITUNES

In the early 2000s, music was being distributed over the internet, but there were fundamental problems respecting standards, safety, and intellectual property. In explaining the issues, one analysis focused on Kazaa, a software application that allowed peer-to-peer file transfers. It was designed to be radically decentralized, in part to defray liability for copyright infringement. But “Kazaa had endless problems policing bad users who fake files, porn ads, and other abusive content on the network.”⁶⁵ Spyware and viruses were endemic, while copyright lawsuits from the Recording Industry Association of America raised piracy liability issues.

The situation was chaotic, what some might call “market failure.” But a solution was soon to emerge. “Instead of going to war with the recording industry,” the authors write, Apple “struck a deal” with them.⁶⁶ The computer company introduced iTunes in April 2003. While some skeptics scoffed at the idea of charging \$0.99 a song (*how can you beat free?*) or the

⁶⁵ Jack Goldsmith & Tim Wu, *Who Controls the Internet* (Oxford; 2005), 116-17.

⁶⁶ *Ibid.*, 119.

relatively small catalogue of iTunes titles at launch (200,000), the new service was overwhelmingly popular. In the first week, one million songs were purchased.⁶⁷ By June 2005, Apple sales were outpacing all the peer-to-peer services, and the company, in financial distress just a few years before,⁶⁸ was on its way to becoming the highest valued firm in the world.



While some skeptics scoffed at the idea of charging \$0.99 a song (how can you beat free?) or the relatively small catalogue of iTunes titles at launch (200,000), the new service was overwhelmingly popular.



The iTunes venture, an integration of Apple’s computer business, was bundled with Apple’s iPod, a digital music player: iTunes was the one place customers could download content. This exclusivity was a key portion of Apple’s strategic effort, extending the company’s long-standing reliance on producing complementary products in-house. This was hugely controversial, prompting none other than Bill Gates to urge Apple to open its ecosystem, taking on computer producing partners. In a 1985 letter, Gates told Apple executives that they needed to “make Macintosh a standard,” but that no company—not even IBM—could do that alone. His interest at Microsoft, not to go public until the following year, was to expand Apple’s software platform where Microsoft’s applications were prominently displayed.⁶⁹

The iPod/iTunes bundle proved wildly popular—and quickly attacked by European antitrust authorities.⁷⁰ That was because “the subscription to iTunes forces a consumer to purchase an iPod to enjoy the downloaded music on a portable music player.”⁷¹ The integrated approach was seen as a threat to competition. It was not. Rival platforms were available from Samsung, Sony, and others, and over the long haul the tight integration has given way

⁶⁷ Brian X. Chen, April 28, 2003: Apple Opens iTunes Store, *Wired* (April 28, 2010).

⁶⁸ Jim Carlton, *Apple: The Inside Story of Intrigue, Egomania, and Business Blunders* (Times Books; 1997).

⁶⁹ *Ibid.*, 40-43.

⁷⁰ Thomas Hazlett, *Antitrust regulators must listen to reason on iPods*, *Financial Times* (July 12, 2006), 15.

⁷¹ Eddy Hsu, *Antitrust Regulation Applied to Problems in Cyberspace: iTunes and iPod* (2005), 117-36, 118.

to alternative arrangements. But the packaging helped create a platform. An entire industry was born.

7.2

AMAZON'S ECOMMERCE PLATFORM

Amazon was launched in 1995 as a project to sell books online. When that went well, it integrated into countless other product markets, becoming “The Everything Store.”⁷² It emerged as the world’s most valuable brand,⁷³ and finished 2019 as one of the top three most valuable companies globally.

One policy expert (turned regulator) argues that Amazon’s platform is enmeshed in “anticompetitive conflicts of interest.”⁷⁴ In hosting third party vendors to sell products on Amazon, for instance, the host monitors product sales and observes prices charged—“the company has used ‘insights gleaned from its vast Web store to build a private-label juggernaut.’”⁷⁵ Overall, “Amazon seeks to cut out the independent seller.”

“

In 1997, the year Amazon issued its Initial Public Offering, 97% of the product sales on the Amazon website were supplied by Amazon itself, 3% by independent sellers. In 2018, just 42% of sales were from Amazon.

”

But the facts are otherwise. In 1997, the year Amazon issued its Initial Public Offering, 97% of the product sales on the Amazon website were supplied by Amazon itself, 3% by independent sellers. In 2018, just 42% of sales were from Amazon. See Figure 1. Rather than stealing lucrative markets from retail vendors, Amazon has grown large by building a platform hosting independent vendors who, in turn, pay for Fulfillment-by-Amazon (services provided to vendors by Amazon) because of the efficient sales platform offered.

⁷² Brad Stone, *The Everything Store: Jeff Bezos and the Age of Amazon* (Little, Brown; 2013).

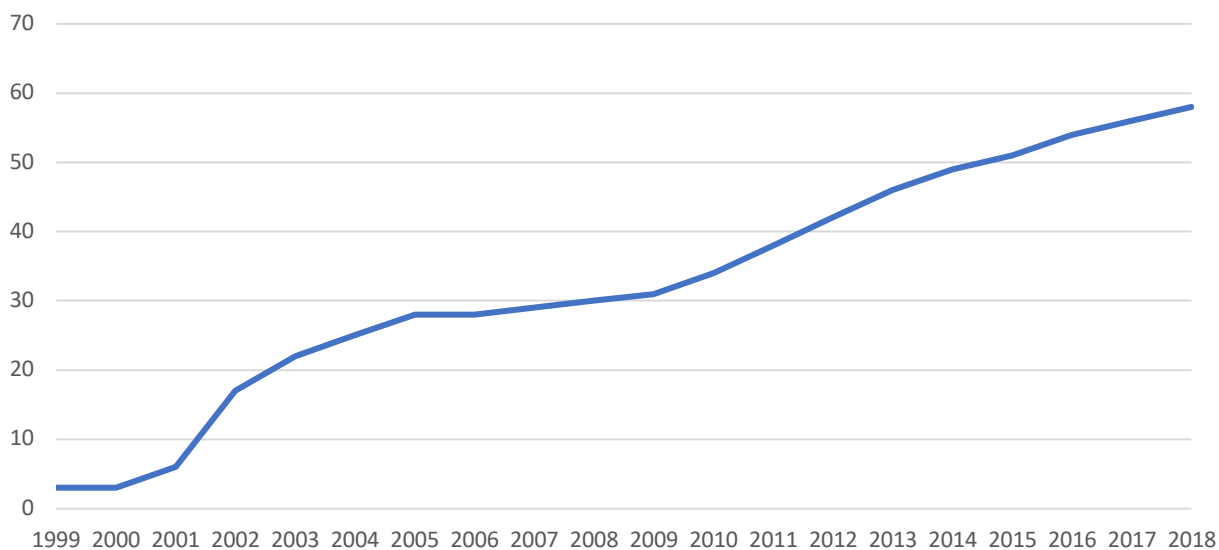
⁷³ *Amazon beats Apple and Google to become the world's most valuable brand*, CNBC.com (June 11, 2019).

⁷⁴ Khan (2017), 717.

⁷⁵ *Ibid.*, 782 (quoting an e-commerce analyst).

Amazon profits from this trade volume, earning about one-quarter of gross third-party sales via commissions and services (including shipping), about \$40 billion in revenues in 2019.⁷⁶

FIGURE 1: PERCENT OF AMAZON GROSS PLATFORM SALES BY NON-AMAZON SELLERS



Source: 3rd-party sellers are thriving on Amazon, BUSINESS INSIDER (May 13, 2019).

Were Amazon appropriating these sellers, it would be curious why Amazon was developing such a popular sales service for third party vendors.⁷⁷ A rival platform has existed in eBay, a firm that in 2005 was three times the market capitalization of Amazon.⁷⁸ eBay is a “pure” reseller, auctioning only merchandise sold by independent firms, and hence avoids the mixed incentive conflicts asserted to undercut Amazon’s platform. Yet, Amazon accounts for nearly twice the gross merchandise volume as eBay, counting only non-Amazon vendors, today.⁷⁹

Vertical integration led Amazon to innovate in markets beyond eCommerce, most notably in launching Amazon Web Services (AWS), also known as “the cloud.” This extension of the platform began in 2006, offering firms and individuals access to high-capacity data storage,

⁷⁶ Amazon Gross Merchandise Volume \$277 Billion in 2018, *Marketplace Pulse* (April 12, 2019).

⁷⁷ Thomas Hazlett, “The ‘Nirvana Fallacy’ in Hipster Antitrust,” 28 *George Mason Law Review*, 1253, (Summer 2021)

⁷⁸ Stone (2013), 194.

⁷⁹ Natalie Gagliardi, eBay beats Q4 expectations, GMV down 5%, eBay said gross merchandise volume was down 5% year over year to \$23.3 billion, *Between the Lines* (Jan. 28, 2020).

retrieval, and processing services. It has proven highly profitable, and AWS is now seen by financial analysts as comprising roughly one-half of total Amazon capital value.⁸⁰ As Amazon CEO Bezos thought, his firm enjoyed “a natural advantage in its cost structure and ability to survive in the thin atmosphere of low-margin businesses.”⁸¹ In 2019, Amazon accounted for 47% of global cloud revenues, with Microsoft Azure at 22%, Alibaba 8% and Google 7%.⁸²

The cloud serves to reduce important barriers to entry in the economy generally, a strategic goal motivating the integration. As described by Bezos:

*The best analogy that I know is the electric grid. You go back in time a hundred years, if you wanted to have electricity, you had to build your own little electric power plant, and a lot of factories did this. As soon as the electric power grid came online, they dumped their electric power generator, and they started buying power off the grid. It just makes more sense. And that’s what is starting to happen with infrastructure computing.*⁸³

7.3

AOL

“
One key contribution enabling the emergence of the mass-market internet involves the promotion of dial-up internet access by America Online in the 1990s.
”

One key contribution enabling the emergence of the mass-market internet involves the promotion of dial-up internet access by America Online in the 1990s. AOL promoted easy-to-use sign-up disks, making access attractive to those without a technical bent. It also created proprietary program services, putting subscribers in a “walled garden” available only to AOL members. This vertically integrated, exclusive environment changed over time, as AOL’s internet service scaled back to supplying simply network access, responding to the

⁸⁰ How Much Is Amazon Web Services Worth On A Standalone Basis?, *Forbes* (Feb. 28 2019).

⁸¹ Stone (2013), 221.

⁸² Katy Stalcup, AWS vs Azure vs Google Cloud Market Share 2019: What the Latest Data Shows, *Park My Cloud* (April 30, 2019).

⁸³ Stone (2013), 221.

growth of non-AOL content and its customers' demands to go straight to the public internet. But the success of the company, which became the largest internet service provider (ISP) by the end of the millennium, was instrumental to the growth of the overall ecosystem.⁸⁴

Another important vertical integration offered by AOL was Instant Messaging. The service became extremely popular, and by the time of the 2001 merger between AOL and Time Warner, had attracted a 140 million users. The government, in initially opposing the merger (the Federal Trade Commission filed its opposition, and then permitted the transaction based on certain conditions), mandated that AOL's IM offer interconnection to rival messaging services. These terms proved irrelevant. AOL's asserted market power, by itself or via a vertical relationship with the country's largest ISP, could not sustain the service against new rivals that were *not* interconnected. Today, computer and mobile device users have a wide variety of messaging services to use; some are integrated with other networks (texting on cellphones, e.g.) some are not inter-connected to their rivals (WhatsApp, e.g.), and yet others offer limited forms of inter-connection (FaceTime, Facebook Messaging, e.g.). Alas, AOL IM pioneered a breakthrough idea, and its vertical strategy was benign.

“
...AOL IM pioneered a breakthrough idea, and its vertical strategy was benign.
”

⁸⁴ See Kara Swisher, *AOL.com aol.com: How Steve Case Beat Bill Gates, Nailed the Netheads, and Made Millions in the War for the Web* (Crown Business, 1998).

PART 8

BROADBAND AND MOBILE NETWORKS

There is long-standing controversy surrounding the competitive position of the U.S. in global broadband services. The policy discussion often concludes that the U.S., from where the internet was launched, has lost its mojo.⁸⁵ In 2004, President George W. Bush opined that the U.S. was then ranked 10th among all countries in terms of broadband subscriptions per capita, and curiously summarized the problem as: “Tenth is ten spots too low.”⁸⁶ A decade later, a law professor calibrated things differently, but evinced the same basic sentiment: “Americans aren’t quite aware of it because we don’t look beyond our borders, but we’re falling way behind in the pack of developed nations when it comes to high-speed internet access, capacity and prices.”⁸⁷

“
There is long-standing controversy surrounding the competitive position of the U.S. in global broadband services.
”

⁸⁵ Thomas W. Hazlett, We’re Number 2? *Commentary* (Dec. 2009).

⁸⁶ Cited in Thomas W. Hazlett, *The Broadband Numbers Racket*, *Financial Times* (Sept. 17, 2009).

⁸⁷ Author: When It Comes To High-Speed Internet, U.S. ‘Falling Way Behind’, NPR (Feb. 6, 2014). The law professor was Susan Crawford, author of *Captive Audience: The Telecom Industry and Monopoly Power in the Gilded Age* (2013).

Tyler Cowen, in his 2019 book, *Big Business: A Love Letter to an American Anti-Hero*, energetically defends American-style capitalism. Yet, he concedes that three sectors of the U.S. economy may be overly concentrated and insufficiently competitive: hospitals, cable television, and mobile services.⁸⁸ Leaving hospitals and their own complex regulatory constraints aside, this section explores the competition in Broadband and Mobile markets, with Cable TV as a subset of the former and increasingly the latter. Even to champions of big business, these may appear problematic under our current policy regime.

“

... the basic question remains: is competition forcing efficiencies or being thwarted? Are there better policies we should be adopting, including those demonstrated as superior in other markets?

”

Both markets are concentrated, relative to most others, but the basic question remains: is competition forcing efficiencies or being thwarted? Are there better policies we should be adopting, including those demonstrated as superior in other markets? More rivalry, including introducing new networks, is better, all else equal. Suppose regulators were to, in a quest for greater rivalry, break up broadband internet service providers into smaller overlapping competitors? Better yet, if spectrum allocators at the Federal Communications Commission could simply set sharp(er) limits on how much wireless bandwidth a mobile carrier could control, forcing there to be, say, 10 or 20 mobile carriers in each market, would that effectively promote competitive market forces?

In fact, no country has done this, and for good reason. Such a pro-deconcentration policy would clearly subvert consumer interests by forcing costlier structures on the market and stifling innovation. In the U.S. market, mobile networks have expanded coverage, upgraded technologies, and consolidated—increasing concentration—even as prices were falling dramatically. Figure 2 shows the pattern in the national concentration ratio with the trend in retail prices for mobile services, Wireless CPI. The HHI (measuring concentration from 0 to 10,000) data are from Bank of America/Merrill Lynch, while the Consumer Price Index

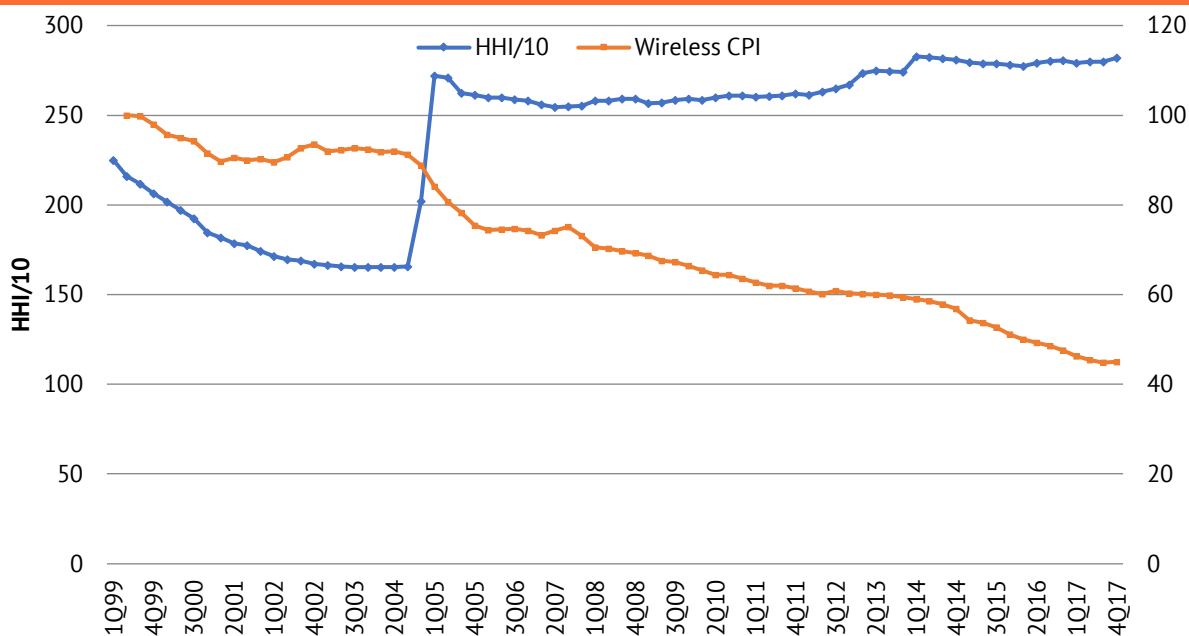
⁸⁸ “OK, so on the negative side of monopoly I’ve already mentioned hospitals, cable TV and cell phone contracts.” Tyler Cowen, *Big Business: A Love Letter to An American Anti-Hero* (St. Martins, 2019), 95-96.

wireless component is collected by the Bureau of Labor Statistics. The time period is 1999 through 2017.

Price reduction throughout the period is pronounced, even as network consolidation occurs. A significant part of the consolidation was between direct competitors. And, indeed, during 2004-2005, two major mergers—Sprint-Nextel and Cingular-AT&T Wireless—reduced the number of major national carriers from six to four. Industry concentration (HHI) jumps accordingly.

The more concentrated market did not result in less competition but more. Not only do prices fall fairly rapidly in the wake of the transactions, the mergers were part and parcel of a move to adopt 3G (third generation) technology. Economies of scale, permitted via merger, paved the way for the introduction of wireless broadband. Some policy analysts (including the author of this report) argued that regulators should open access to much more generous bandwidth, overcoming a decade-long drought in newly auctioned airwave rights. That would also have helped to push 3G into the market, promoting efficiencies. But that was a policy failure. The subsequent consolidation in the marketplace was an imperfect remedy, enabling new wireless technologies, large improvements in network quality, substantial gains in wireless usage (including for texting and data in addition to voice minutes), and falling real prices for subscribers.

FIGURE 2: U.S. MOBILE MARKET HHI/10 AND WIRELESS CPI



This result is not surprising: no country forces “atomistic” competition on broadband or wireless markets. European countries, for instance, generally feature two, three, or four national networks, not 10 or 20. Fixed broadband tends to be more concentrated. While artificial entry barriers should be eliminated, forcing uneconomic deconcentration would deter low-cost supply and, barring state-paid subsidies, low-cost service.

8.1

BROADBAND

Both wired (fixed) and wireless networks serve high-speed data to end users, but broadband is often taken to refer to the former. Accordingly, this section addresses fixed network broadband and the next one examines wireless mobile competition.

The U.S. market produced mass market access to the internet when narrowband internet service providers such as Prodigy, CompuServe and America Online (AOL) entered the market. They were not common carriers, were not licensed, and were not mandated to provide service as regulated telephone companies (with universal service obligations, tariffed prices, and tax levies in the form of access fees). These services took off with privatization of internet transport facilities and the commercialization that followed in the 1990s. The enthusiastic response by subscribers, as well as by content and application developers in creating an ecosystem for online services, led unregulated cable TV systems to launch a competing product, broadband access, in the latter part of the 1990s. The disruptive event was assisted by the 1996 Telecommunications Act, which overturned state monopoly telecommunications franchises. This, in turn, spurred regulated telephone carriers—long technically able to provide faster internet access, but slow to roll-out—into action. A race to wire the market for broadband internet access service ensued.⁸⁹

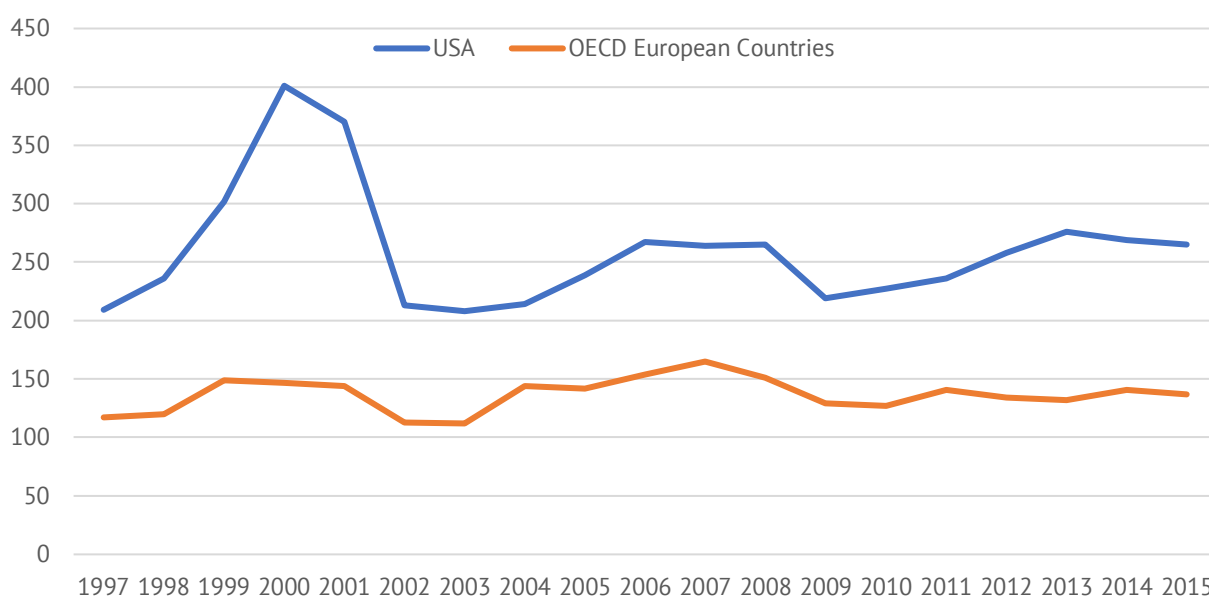
In the U.S., policies have tended to encourage market rivalry between multiple carriers—cable v. telephone, and now fixed v. wireless.⁹⁰ Alternatively, European market economies have been more dependent on monopoly carriers and have sought to promote competition

⁸⁹ On the comparison of regulatory regimes that were applied to cable and phone companies, see Thomas W. Hazlett & Anil Caliskan, *Natural Experiments in Broadband Regulation*, 7 *Review of Network Economics* 460 (Dec. 2008). On market power and competitiveness, see Thomas W. Hazlett & Dennis Weisman, *Market Power in U.S. Broadband Services*, *Review of Industrial Organization* 151 (March 2011).

⁹⁰ This approach was not so clear between the 1996 Telecommunications and 2004; a federal court ruling at that point overturned FCC network sharing rules and the regime became distinctly less regulatory. See Michael A. Heller, *The UNE Anticommons: Why the 1996 Telecom Reforms Blocked Innovation and Investment*, 22 *Yale Journal on Regulation* 275 (2005); Robert S. Pindyck, *Mandatory Unbundling and Irreversible Investment in Telecom Networks*, 6 *Review of Network Economics* (Sept. 2007).

via mandated network sharing rules. These appear to have discouraged competition. A 2012 study found that higher levels of regulatory control undermined investment incentives, reducing information infrastructure across Europe by 23%.⁹¹ These rules have been attempted in the U.S. and largely resisted or repealed, forming the crux of the “under-regulated” thesis. Yet U.S. network investments are higher than in Europe, even accounting for higher U.S. GDP. Over 1997-2015, the U.S. expended 90% more on capital for telecommunications infrastructure, as shown in Figure 3.

FIGURE 3: PER CAPITA TELECOMS INFRASTRUCTURE INVESTMENT, USA V. EUROPE (1997-2015)

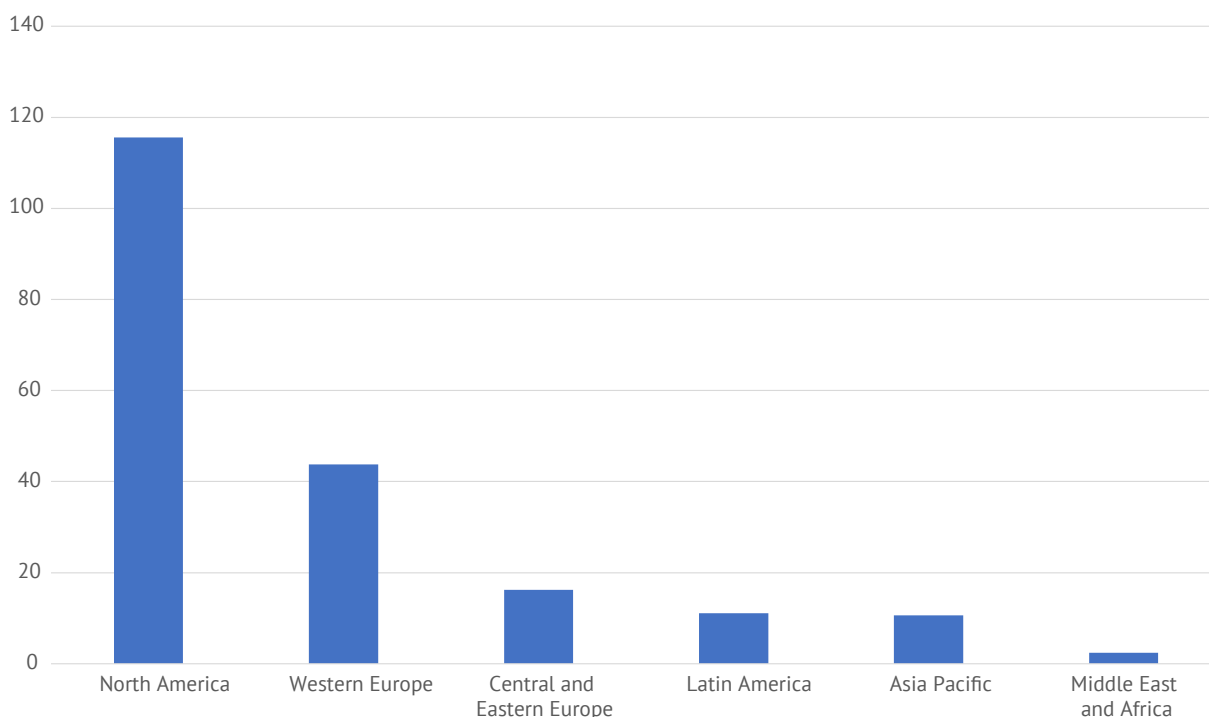


Source: OECD and USTelecoms. European group excludes Latvia, Slovenia, the Slovak Republic and Sweden due to missing data.

This has been a salubrious outcome for U.S. networks, U.S. innovation, and U.S. internet households. U.S. internet users consume considerably more data than do Europeans on a per capita basis. These Cisco data in Figure 4 lump the U.S. and Canada together in the “North America” category (Mexico is in “Latin America”). It has been noted that, during the recent pandemic causing surges in data usage, U.S. networks have survived the “stress test” relatively well, while European networks have undertaken to reduce traffic flows by asking Netflix and YouTube to reduce bandwidth use by lowering the definition of videos.⁹²

⁹¹ Michał Grajek & Lars-Hendrik Röller, Regulation and Investment in Network Industries: Evidence from European Telecoms, 55 *The Journal of Law and Economics* 189 (Feb. 2012): 189-216.

⁹² “So far, our networks have performed admirably, despite the surge in demand. The U.S. has not experienced either the shut-downs or the need to reduce video quality that other countries have. After the stress test, we’ll need to determine more specifically how the network performed, and if any weak

FIGURE 4: GLOBAL DATA USAGE PER CAPITAL PER MONTH (2017)

Source: Cisco and USTelecoms.

Transforming electronic media markets has been a key driver in this embrace and development of the broadband internet. Broadcast television dominated U.S. video distribution through the 1970s, as federal policies protected licensed broadcasters from competition among themselves (establishing the long-running network triopoly of NBC, CBS, and ABC) and from new media such as satellite⁹³ and cable television. The latter was blocked by FCC rules enacted in 1962, 1965, and 1966 on the reasoning that the “public interest” would be served by stopping an ancillary service that would never provide market-wide service but might detract from the financial viability of TV stations.⁹⁴ The result was that Americans were given little to choose from on the television dial.

links were found.” Blair Levin & Larry Downes, *The Internet After COVID-19: Will We Mind the Gaps?* Aspen Institute (April 15, 2020).

⁹³ The interesting chapter in which competitive satellite TV entry was blocked by the federal government during the Lyndon Johnson Administration is told in Scott Woolley, *The Network: The Battle for the Airwaves and the Birth of the Communications Age* (HarperCollins, 2016).

⁹⁴ This protectionist policy is described in Hazlett (2017), 13-21, 99-101.

That changed dramatically following cable TV deregulation in the late 1970s, which unleashed private investment to wire the U.S. in the 1980s. Dozens, then hundreds, of new program networks materialized. Policies were again imperfect—cable TV franchises imposed by municipalities thwarted progress and resulted in considerable rent-seeking waste⁹⁵—but emerging inter-modal rivalry pitting broadcast against cable left the old (artificial) scarcity behind. When satellite TV finally gained market access in the two nationwide launches of DirecTV (1994) and DISH (1996), the trend solidified.

“

When broadband rivalry erupted between the cable systems and the legacy phone carriers in the early 2000s, of course, yet another new world would soon open for video content...

”

When broadband rivalry erupted between the cable systems and the legacy phone carriers in the early 2000s, of course, yet another new world would soon open for video content: over-the-top. It is important to see this in the long-run context of open market policies. Rivalry between program distributors (cable and phone carriers are identified as Multichannel Video Program Distributors, MVPDs, when they deliver video to subscribers) led these networks to upgrade to expand capacity.⁹⁶

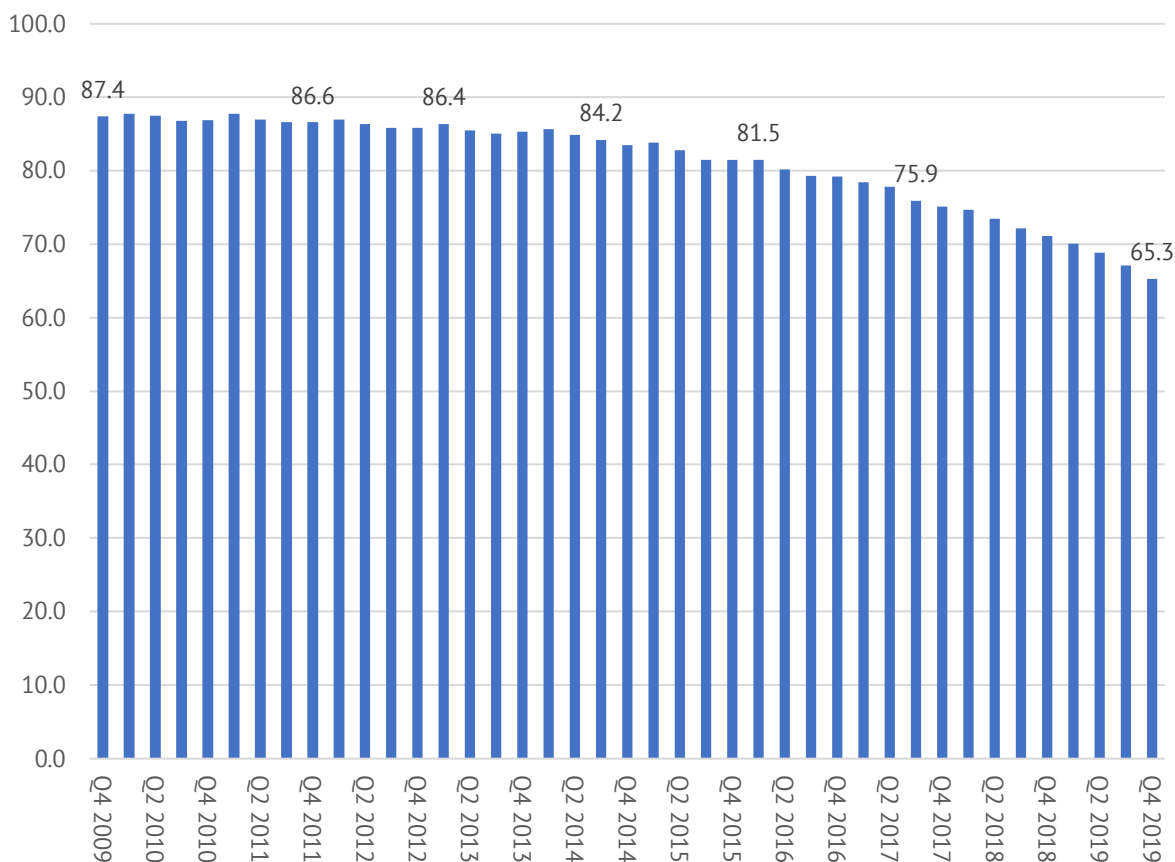
That service is now in the process of consuming its benefactor. The hosts of “over-the-top” media are the underlying broadband networks, cable, and telco operators integrated into the Triple Play: voice, phone, and video. But the capacity brought forth to serve that purpose has unleashed rivalry in additional dimensions. Innovation is pushing customers to next generation video. Traditional “Pay TV” services are rapidly declining. See Figure 5.

⁹⁵ As well as civil liberties violations including abridgments of free speech, as several federal courts found. See *Preferred Communications v. City of Los Angeles* 476 US 488 (1986). On monopoly franchises and rent seeking, see Thomas W. Hazlett, *Private Monopoly and the Public Interest: An Economic Analysis of the Cable Television Franchise*, 134 *University of Pennsylvania Law Review* 1335 (July 1986).

⁹⁶ Indeed, cable TV operators were motivated to invest heavily in the expansion of their distribution networks in the late 1990s in large measure to respond to the entry of satellite TV rivals DirecTV and DISH. The immediate goal was to carry more programming to rival the larger digital channel line-ups of satellite. They discovered economies of scope in their upgrades and rolled out subscription data services as an experiment. It worked.

Over the 2009-2019 decade, the percent of U.S. households not subscribing to basic cable TV service increased from 12.6% to 34.7%.

FIGURE 5: TRADITIONAL PAY TV PENETRATION (% OCCUPIED HOMES)



Source: Moffatt Nathanson, *Cord Cutting: The Great Unwind—Call Deck* (Feb. 26, 2020), 5.

Of course, this “gap” has been nearly obliterated by Netflix—now subscribed to over half of U.S. television households.⁹⁷ This remarkable migration is testimony to the openness of markets to innovative business models, as Netflix was an upstart that entered the DVD rental business, pursuing online sales with delivery through the mail, against an array of vastly larger, well-established enterprises including Blockbuster, Amazon, Apple, Best Buy, Circuit City, and Target, as well as potential competitors Time Warner and Disney, and cable operators such as Comcast (integrated into services like pay-per-view).⁹⁸ Indeed,

⁹⁷ Moffatt Nathanson, *Cord Cutting: The Great Unwind—Call Deck* (Feb. 26, 2020), 11. Netflix is purchased in 51% of U.S. TV households, accounting for sixty million subscriptions. *Ibid.*, 23.

⁹⁸ Famously, it was so unlikely to succeed that the founder, Reed Hastings, persisted in trying to sell the company to Blockbuster for \$50 million in 2000, two years after its founding. Gina Keating, *Netflixd: The*

Blockbuster, with its 9,000 retail outlets and a ubiquitous presence in video rentals (judged to be potentially monopolistic in 2005 when the FTC nixed an attempted merger with Hollywood Video) engaged Netflix in a brutal price war launched in late 2004. The then-tiny Netflix survived; the giant Blockbuster went bankrupt in 2010. For all the power of incumbency, none of the incumbents in this market seized the opportunities that an entrant captured or could block Netflix from profiting. And now the incumbents are racing to catch up.⁹⁹

Netflix is known as an over-the-top (OTT) streaming service, and it is no one-man show, Rival offerings include Disney+, HBO Max, Peacock, Roku, and Paramount+. And slightly different models abound. Sling, YouTube TV, FuboTV, Pluto TV, PlayStation Vue, Apple TV, Amazon Fire and Hulu deliver live TV channels and traditional cable programming OTT, as virtual MVPDs (Multichannel Video Programming Delivery services). The dynamism is a product to the underlying (unregulated) regime. The gains to consumers are duly noted, as well as to the arms manufacturers in this war: Hollywood producers.¹⁰⁰ It is a new golden age for video content, fueled by creative destruction in delivery markets, expanding capacity to serve demands. And the inputs are being frantically supplied, as reported by the *N.Y. Times*:

All of our screens are now TVs, and there is more TV to watch on them than ever. More dramas, more comedies, more thrillers, more fantasy-adventure series, more dating shows, more game shows, more cooking shows, more travel shows, more talk shows, more raunchy comedies, more experimental comedies, more family comedies, more comedy specials, more children's cartoons, more adult cartoons, more limited series, more

Epic Battle for America's Eyeballs (Penguin, 2012), 66-67. As of April 17, 2020, Netflix has a market capitalization of \$187 billion.

⁹⁹ "Since its metamorphosis in 2007 from a mail-based DVD-rental library into a streaming platform, Netflix has become an entertainment hegemon, spending heavily on original shows and movies (a reported 700 of them as of last year); minting new kinds of stars (the Tasmanian meta-comedian Hannah Gadsby, the Japanese home-organizing guru Marie Kondo); and growing its subscriber numbers to 149 million worldwide. Its rise coincides with a trend of major consolidations, including AT&T's purchase of Time Warner and Disney's recent acquisition of Fox's entertainment properties. Each conglomerate is readying a new streaming platform, as is the Comcast-owned NBC Universal." Jonah Weiner, *The Great Race to Rule Streaming TV*, *N.Y. Times* (July 10, 2019).

¹⁰⁰ "In their rush to match Netflix, competitors like HBO, Hulu, and Amazon are ordering a slew of content — ushering out the age of "prestige TV" and ushering in an age of anything goes... HBO's tightly curated cluster of shows, released seasonally and in weekly batches, no longer amounted to a tenable strategy. 'It's not hours a week, and it's not hours a month,' [said an HBO executive]. 'We need hours a day. You are competing with devices that sit in people's hands that capture their attention every 15 minutes.' Ever more hours of overall watch-time were necessary..."

*documentary series, more prestige dramas, more young-adult dramas, more prestige young-adult dramas—more, more, more.*¹⁰¹

8.2

MOBILE

A recent study notes that “If there is a sector where the government can affect the degree of competition, the mobile communication industry is one.”¹⁰² The point is well taken, given that radio spectrum allocations are products of government policy, and these processes heavily influence how wireless markets develop. The authors proceed to argue that U.S. competition policy has been too lax, allowing market concentration to go too far, and that competition policy in Europe has been tougher and more pro-consumer.

NYU economist Thomas Philippon’s *The Great Reversal: How American Gave Up on Free Markets* (2019) continues this line of thought. The book was motivated by his observation that European economies have advanced way past the U.S. in—as his first example—“home internet access.” As evidence, he points to mobile wireless, citing a survey indicating that U.S. households paid about \$66 a month for residential broadband while just \$36 in Germany, he asks, “How did the U.S.... become such a laggard...?”¹⁰³

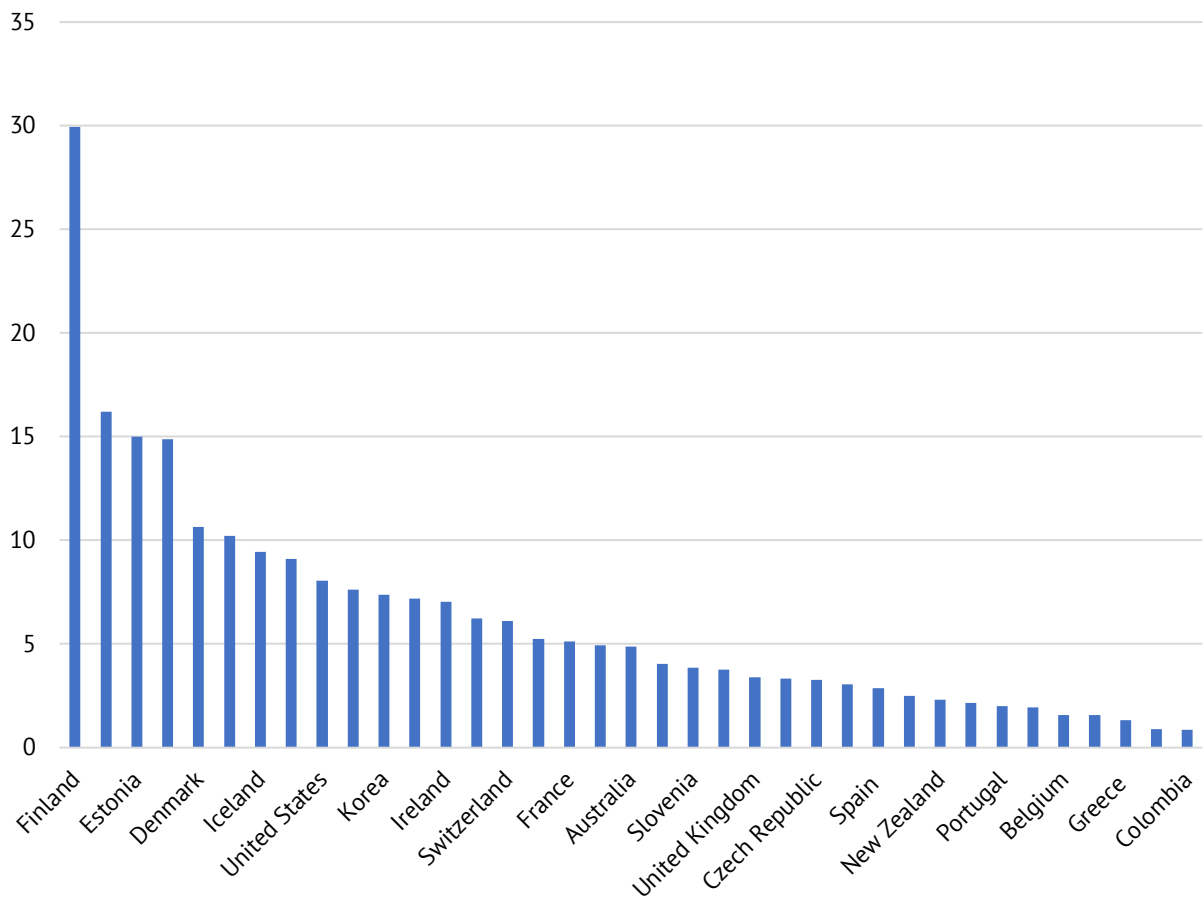
In fact, the U.S. is outperforming peer countries in delivering high speed internet access, dominating content creation and operating networks that transmit vastly higher quantities of data as compared with EU averages. This latter result is a product of higher investment levels and a greater competitive push to upgrade to the latest technologies.

Using the latest OECD data for mobile penetration (what percentage of the population subscribes to wireless service) and usage (how much data each subscription consumes) we can plot average monthly mobile data usage per capita. See Figure 6. This takes account of affordability (higher prices discourage usage), and quality of the network (better technologies and customer service encourage usage). The U.S. exhibits relatively high mobile usage, at over 8 GB per capita per month, compared to, e.g., Germany’s 2.2 GB. There are several small European countries that feature greater levels than the U.S., but no large market. And the U.S. slightly exceeds Japan and South Korea, as well.

¹⁰¹ Id.

¹⁰² Mara Faccio & Luigi Zingales, *Political Determinants of Competition in the Telecommunications Industry*, National Bureau of Economic Research (2017), 1-2.

¹⁰³ Phillippon (2019), 6.

FIGURE 6: PER CAPITA MOBILE DATA CONSUMPTION (GB/MO.)

Source: OECD Dec. 2018 (Mobile Usage), June 2019 (Mobile Penetration).

One important observation is that Finland is a star performer in wireless, and we can learn from its policy experience. The country, operating with three national mobile networks, has been extremely aggressive in allocating more radio spectrum.¹⁰⁴ This liberalization is likely driven by the country's strategic push to advance wireless technologies, given comparative advantage in this sector (home to Nokia), but the message in the outcome is available to all. To stimulate efficiencies leading to productivity gains, remove restrictions and auction more bandwidth rights with technological neutrality.

¹⁰⁴ In March 2019, at an International Telecommunications Society meeting in Ottawa, Canada, Dr. Heidi Himmanen, Chief Advisor for the Finnish Transport and Communications Agency Traficom, stated that the country had allocated some 1,200 MHz of low- and mid-band spectrum for mobile services. That would be about 67% above the U.S. level. See also, Dan Robitzski, Finland is the Mobile Data Capital, *IEEE Spectrum* (Jan. 22, 2018): "[B]ecause Finland is often among the first to allocate certain frequencies for mobile usage, the country has a leg up on others that haven't adopted the new frequencies as quickly or as effectively."

“

Among the top 30 internet-related firms globally, 18 are U.S. based, including the top five (Microsoft, Amazon, Apple, Alphabet, Facebook), and only one is from Europe (Spotify, at Number 30, is Swedish).

”

Replacing U.S. law with the regimes that are visibly less successful in promoting innovation and competitive rivalry does not appear a winning strategy. In fact, the U.S. is overwhelmingly productive in the ecosystem that has built up around broadband infrastructure in the internet. Among the top 30 internet-related firms globally, 18 are U.S. based, including the top five (Microsoft, Amazon, Apple, Alphabet, Facebook), and only one is from Europe (Spotify, at Number 30, is Swedish).¹⁰⁵ Innovation in the wireless space is perhaps even more dramatic as two leading U.S. tech firms have created competing ecosystems—Apple with the iPhone, iTunes, and the App Store; Google with Android mobile operating system and Google Play—that dominate world markets. These innovations overlay mobile carriers, and uprooted previous ways of organizing telephone communications. Nokia, the world’s leading smartphone maker, and RIM Blackberry, an entrepreneurial Canadian firm that pioneered the overlay network concept with its addictive handsets in the 2000s—paid the competitive price. But consumers won. An estimated 3.5 billion people own smartphones, 45% of the world’s population.¹⁰⁶

¹⁰⁵ Mary Meeker, *Internet Trends 2019*, Kleiner Perkins (June 11, 2019), 12. The ranking is by market capitalization.

¹⁰⁶ Smartphone users worldwide 2016-2021, Statista (Feb. 28, 2020).

PART 9

CONCLUSION

Relative to practical alternatives that include E.U.-style regulation, digital markets in the U.S. appear robust, generating considerable innovation. The global internet is dominated by U.S.-developed technologies and business models, discovered and deployed in a process of competitive rivalry. The emergent markets in online services and e-commerce have created enormous efficiencies and valuable new services,¹⁰⁷ rewarding consumers¹⁰⁸ and reconfiguring numerous industries as users adopt preferred ways of working, shopping, learning, and enjoying entertainment media. This has not ended our social problems; every innovation introduces complications as we adjust to change.¹⁰⁹ We will rightfully be aware of the challenges and be alert to policy reforms that improve welfare. These are appropriately addressed in a framework that continues to facilitate new options. Communications networks and digital services have massively increased information flows and the opportunities for gains from trade. Even given imperfect rules and regulations, U.S. markets have contributed strongly to economic advances embraced around the world.

¹⁰⁷ Erik Brynjolfsson & Joo Hee Oh, *The Attention Economy: Measuring the Value of Free Digital Services on the Internet*, 33rd International Conference on Information Systems (Orlando, 2012); Jay R. Corrigan, Saleem Alhabash, Matthew Rousu and Sean B. Cash, *How much is social media worth? Estimating the value of Facebook by paying users to stop using it*, PLoS ONE 13(12) (Dec. 19, 2018).

¹⁰⁸ Austan D. Goolsbee and Peter J. Klenow, *Internet Rising, Prices Falling: Measuring Inflation in a World of E-Commerce*, 108 *AEA Papers and Proceedings* (2018), 488-92; Peter Cohan, *How Amazon Overpowers The Fed*, *Forbes* (Aug 25, 2017).

¹⁰⁹ Social media have, in particular, extended rewards but posed new risks that individuals, families and institutions must deal with. See, e.g., Hunt Allcott, Luca Braghieri, Sarah Eichmeyer, & Matthew Gentzkow, *The Welfare Effects of Social Media*, Working Paper (Nov. 8, 2019).

Antitrust policies govern and have been applied. *U.S. v. AT&T* led to divesting the world's largest corporation in 1984, helping markets overcome anticompetitive barriers (including those established by FCC regulation) in the years to follow.¹¹⁰ On the other hand, the AOL-Time Warner merger, the largest in history (when proposed in 2000 and now), was opposed by the Federal Trade Commission. The remedies the FTC applied to clear the merger proved irrelevant to post-merger markets, as did the market power argument asserted to thwart the combination.¹¹¹ In 2017, the DOJ sued to prevent AT&T's acquisition of Time Warner. The federal courts rejected its argument. The careful analyses performed in the District Court verdict¹¹² and then in the ruling of the D.C. Court of Appeals¹¹³ make good readings to assign in economics courses.¹¹⁴ The record suggests that if the government sometimes fails to bring all the antitrust cases it might, it also errs by in bringing cases it should not.



The global internet is dominated by U.S.-developed technologies and business models, discovered and deployed in a process of competitive rivalry.



U.S. policies have managed to incentivize great progress in high-tech markets. Distributed IP networks were privatized in the early 1990s, and left to develop via market forces,¹¹⁵ an approach distinct to that envisioned by, for instance, France Telecom's Minitel. Mass market access to the internet became popular first in the U.S., rapidly spreading by competitive forces allowed to flourish, as common carrier obligations for entrants such as AOL were

¹¹⁰ Robert Crandall & Thomas W. Hazlett, *Telecommunications Policy Reform in the United States and Canada*, in Martin Cave and Robert Crandall, eds., *Telecommunications Liberalization on Two Sides of the Atlantic* (Washington: AEI-Brookings Joint Center for Regulatory Studies; 2001), 8-38.

¹¹¹ Thomas W. Hazlett, *A Lesson for Today's Trustbusters*, *Wall Street Journal* (Jan. 9, 2020).

¹¹² *United States v. AT&T Inc.*, 310 F. Supp. 3d 161, 254 (D.D.C. 2018).

¹¹³ *United States v. AT&T Inc.*, 916 F.3d 1029 (D.C. Cir. 2019).

¹¹⁴ Joshua D. Wright & Jan M. Rybnicek, *United States v AT&T/Time Warner: a triumph of economic analysis*, 6 *Journal of Antitrust Enforcement* (2018), 469-477. See also, Thomas W. Hazlett, *Why the government will lose to AT&T*, *Reuters* (March 23, 2018).

¹¹⁵ Shane Greenstein, *How the Internet Became Commercial: Innovation, Privatization, and the Birth of a New Network* (Princeton, 2016).

abandoned.¹¹⁶ Residential broadband markets then emerged in rivalry between (unregulated) cable TV operators and telecommunications carriers. Wireless mobile networks, first launched in the U.S., have rapidly replaced landline phones in affluent countries, and long ago did so in developing markets, where the vast majority of the population never gained access via the traditional PTTs—state owned monopolies controlling postal, telegraph, and telephone services (infamous for their years-long phone install waiting lists). U.S. mobile markets have proven competitive from an international perspective. Americans consume more mobile data per capita than do residents in any large European country. There are many public policies that would yet enhance American competitiveness.¹¹⁷ Rejecting open markets in favor of more highly regulated systems or pushing antitrust law away from its current focus on consumer welfare¹¹⁸ are not likely to be among them.



U.S. policies have managed to incentivize great progress in high-tech markets.



Business model competition shapes markets en route to discovering varied and surprising forms of competitive superiority. This experimentation is valuable. Suppressing incentives for innovation by categorically ratcheting up antitrust enforcement risks errors that weigh decidedly against efficiency and consumer welfare. Perhaps Richard Langlois states this more eloquently: “Proponents of anti-tech antitrust [must] explain why consumers [are] being harmed by an incomprehensibly magical information source [with] swift access to virtually all the products of humanity at the touch of a finger [at] quality-adjusted prices that continue to plunge through the floor.”¹¹⁹

¹¹⁶ Jason Oxman, *The FCC and the Unregulation of the Internet*, Office of Plans & Policies Working Paper No. 31, Federal Communications Commission (July 1999).

¹¹⁷ Expanding and liberalizing spectrum allocations would broadly improve wireless (including broadband) competition. Relaxing local barriers to entry, including through franchise requirements and permitting of network access points, would similarly expand competitive forces. See Thomas Hazlett, *The Political Spectrum: The Tumultuous Liberation of Wireless Technologies, from Herbert Hoover to the Smartphone* (Yale, 2017).

¹¹⁸ As suggested in Lina M. Khan, *The Amazon Antitrust Paradox*, 126 *Yale Law Journal* 710 (2017), and Tim Wu, *The Curse of Bigness: Antitrust in the New Gilded Age* (Columbia Global Reports, 2018).

¹¹⁹ Richard Langlois, *Hunting the Big Five*, 23 *Independent Review* (W 2018/19), 411.

ABOUT THE AUTHOR

Thomas Hazlett holds the H.H. Macaulay Endowed Chair in economics at Clemson, conducting research in the fields of law and economics and specializing in the information economy, including the analysis of markets and regulation in telecommunications, media, and the internet. Prof. Hazlett served as chief economist of the Federal Communications Commission, and has held faculty positions at the University of California, Davis, Columbia University, the Wharton School, and George Mason University School of Law. His research has appeared in such academic publications as the *Journal of Law & Economics*, the *Journal of Legal Studies*, the *Journal of Financial Economics* and the *Rand Journal of Economics*, and he has published articles in the *Univ. of Pennsylvania Law Review*, the *Yale Journal on Regulation*, the *Columbia Law Review*, and the *Berkeley Technology Law Journal*. He also writes for popular periodicals including *The Wall Street Journal*, *New York Times*, *Reason*, *The New Republic*, *The Economist*, *Slate*, and the *Financial Times*, where he was a columnist on technology policy issues 2002-2011. Prof. Hazlett also serves as the director of the Information Economy Project at Clemson University and is on the board of directors for Reason Foundation. He has provided expert testimony to federal and state courts, regulatory agencies, committees of Congress, foreign governments, and international organizations. His latest book, *The Political Spectrum: The Tumultuous Liberation of Wireless Technology, From Herbert Hoover to The Smartphone*, was published by Yale University Press in 2017.

