
ARE WE NOT TAKING
INNOVATION SERIOUSLY?
A DISCUSSION OF THE 2022 HOWARD
TAFT LECTURE

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A growing body of research papers, speeches, and litigation challenges focused on innovation competition suggests that antitrust practitioners are taking innovation seriously. This paper provides an overview of the innovation debate, with a commentary on a proposed policy framework to promote competition in high-technology or big-technology industries described by Professor David Teece in his 2022 Taft Lecture. Experts agree that conduct involving harm to innovation competition and mergers that focus on an overlap of future products that do not currently exist cannot easily be understood, if at all, with traditional analyses of historical prices, output, and margins for existing products. The hard part is figuring out what to do instead. Recent cases that focus on harm to innovation competition highlight the need to understand business capabilities and the frontier of new technology in the pled markets. Recent decisions demonstrate that courts are not necessarily swayed by structural presumptions involving large firms in highly concentrated markets as measured by today's output; instead, courts understand that large dominant firms can be competitive, because of their desire to maintain their lead position. These cases also provide guidance on how to prove (or disprove) a theory of harm involving potential competition.

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I. INTRODUCTION

By far the largest contribution to economic growth comes from technological innovation, not from population growth, an increase in the labor supply, or growing stocks of equipment.¹ Likely for this reason, some scholars, including Professor Teece in his 2022 William Howard Taft Lecture, suggest that antitrust enforcement places too much emphasis on efficient use of existing resources, including producing at the lowest costs and selling at the lowest prices, and not enough emphasis on dynamic competition—competition that is enabled over time, through innovation.² Other scholars, including the Neo-Brandeisians, suggest that large

¹ UBS, *Robert M. Solow: What Makes Some Economies Grow Faster Than Others*, NOBEL PERSPECTIVES, <https://www.ubs.com/microsites/nobel-perspectives/en/laureates/robert-solow.html> [https://perma.cc/U9TT-MGMR]; *Robert M. Solow - Facts*, NOBEL PRIZE OUTREACH, <https://www.nobelprize.org/prizes/economic-sciences/1987/solow/facts/> [https://perma.cc/8D5X-3XU9] (last visited Aug. 10, 2023).

² David Teece, *The Dynamic Competition Paradigm: Insights and Implications*, 2023 COLUM. BUS. L. REV. 373 (2023).

concentration of private power can be dangerous to the process of competition,³ which includes firms' incentives to lower prices and offer better products and services. By many accounts, high-technology ("high-tech") and big-technology ("big-tech") companies are among the biggest in the world, based on indicia like revenues and market caps, and they are among the big innovators in industry today.⁴ These basic facts together explain the enormous and growing interest in antitrust enforcement surrounding big tech.

The interest in innovation competition, however, is not new. The antitrust community has long recognized the need to protect innovation competition, and it has grappled with the question of how.⁵ But the rise of the big-tech firms has forced us to reassess approaches to antitrust: are we asking the right questions, are the traditional analyses capable of assessing harm to competition, and are we appropriately

³ Lina Khan, Editorial, *The New Brandeis Movement: America's Antimonopoly Debate*, 9 J. EUR. COMPETITION L. & PRAC., 131, 131 (2018).

⁴ In 2022, the top five companies in the world, in order based on market cap, were Apple, Saudi Aramco, Microsoft, Alphabet, and Amazon. *The 100 largest companies in the world by market capitalization in 2022 (in billion U.S. dollars)*, STATISTA (May 2022), <https://www.statista.com/statistics/263264/top-companies-in-the-world-by-market-capitalization/> [<https://perma.cc/8UZ5-2CMF>]; MICHAEL RINGEL, RAMON BAEZA, FLORIAN GRASSL, RAHOOL PANANDIKER & JOHANN HARNOSS, *THE MOST INNOVATIVE COMPANIES 2020: THE SERIAL INNOVATION IMPERATIVE 3* (Bos. Consulting Grp. 2020). According to a PWC study, the top 10 companies by research and development (R&D) expenditures in 2018, in order, were Amazon, Alphabet, Volkswagen, Samsung Electronics, Intel Corporation, Microsoft, Apple, Roche, Johnson & Johnson, and Merck & Co. See *The Global Innovation 1000 Study*, STRATEGY& (2018), <https://www.strategyand.pwc.com/gx/en/insights/innovation1000.html> [<https://perma.cc/XY2B-7KX2>].

⁵ See Franklin Fisher, *Diagnosing Monopoly* (Mass. Inst. of Tech. Dept. of Econ. Working Paper, Paper No. 200, 1978); Jonathan Baker, *Beyond Schumpeter vs. Arrow: How Antitrust Fosters Innovation*, 74 ANTITRUST L.J. 575 (2007); C. Scott Hemphill and Tim Wu, *Nascent Competitors*, 168 U. PENN. L. REV. 1879, 1881, 1889 (2020); Giulio Federico, Fiona Scott Morton, and Carl Shapiro, *Antitrust and Innovation: Welcoming and Protecting Disruption*, in U. CHI. PRESS J. INNOVATION POL'Y & ECON. 125 (2020); Daniel F. Spulber, *Antitrust and Innovation Competition*, 11 J. ANTITRUST ENFORCEMENT 5 (2022).

balancing the costs of enforcement mistakes or are we over-reacting?⁶ Along the way, there has been a proliferation of new terminology, some of which is not yet understood.

This article provides an overview of the innovation debate in antitrust policy, with a focus on Professor Teece's views as expressed in his Taft Lecture. It begins with a description of terminology that is often used to discuss competition policy surrounding big-tech firms. It then provides an overview of the economic debate on innovation, firm size, and the appropriate use of policy to promote innovation competition. The article goes on to describe salient lessons from the string of recent cases: (a) the adjudicated cases involving Qualcomm and the Meta-Within merger; and (b) the pending cases involving the Microsoft-Activision merger and Google involving search distribution. Each of these cases involves, in part, an understanding of dynamic competition and a formulation of potential competition that constrains or, in the future, may constrain incumbent firms. The article concludes with a call for more general research to guide case-specific analyses.

II. CLARIFYING TERMINOLOGY

Analysis of innovation competition policy, including by Professor Teece, often invokes specialized terminology that is not in the common vernacular of traditional antitrust practice. This terminology reflects issues that are at the center of antitrust enforcement involving the big-tech firms, but some of the terms are vague, and others are misunderstood and misused.

What is the difference between high-tech and big-tech firms? There is no standard definition of either term, though there is little practical difference between the two. The term

⁶ See Carl Shapiro, *Regulating Big Tech: Factual Foundations and Policy Goals*, NETWORK L. REV. (Fall 2023), <https://www.networklawreview.org/shapiro-big-tech/> [<https://perma.cc/PXG2-PWYU>]; Shun Iwamitsu, *Antitrust Reform, Big Tech, and Innovation: A Word of Caution*, CBLR ONLINE (Feb. 25, 2022), <https://journals.library.columbia.edu/index.php/CBLR/announcement/view/502>. [<https://perma.cc/34Y4-VLUZ>].

“high-tech” is used sometimes to describe a firm’s products, like computers and software, and it is used sometimes to describe a firm’s production process, i.e., the know-how underlying the production technology of the firm. According to the Bureau of Labor Statistics, high-technology industries tend to have higher concentrations of workers in STEM (Science, Technology, Engineering, and Mathematics) fields.⁷ By contrast, the term “big-tech” generally refers to the influential companies in different information technology-heavy industries, like online search and social media.⁸ The five largest American technology companies are Alphabet (Google), Amazon, Apple, Nvidia, and Microsoft.⁹ The five largest companies in the world, based on market capitalization, are all what the BLS would describe as high-tech firms, and these are also what most people would recognize as among the biggest of the big-tech firms.¹⁰

What is the difference between static and dynamic competition? Static competition refers to short-term actions taken by firms, like cutting prices, in response to competition. By contrast, dynamic competition refers to longer-term actions taken by firms, like innovating to develop better

⁷ Michael Wolf & Dalton Terrell, *The High-Tech Industry, What Is It and Why it Matters to our Economic Future*, 5 BEYOND THE NUMBERS, at 1 (May 2016).

⁸ Information technology refers to “the use of any computers, storage, networking and other physical devices, infrastructure and processes to create, process, store, secure and exchange all forms of electronic data.” Unlike “purpose-built machines designed to perform a limited scope of functions,” information technology encompasses “general-purpose computing machines that could be programmed for various tasks.” Rich Castagna & Stephen Bigelow, *Definition: Information Technology (IT)*, TECHTARGET, <https://www.techtargget.com/searchdatacenter/definition/IT> [<https://perma.cc/S2RU-28CS>] (last visited June 10, 2023); Harold J. Leavitt & Thomas L. Whisler, *Management in the 1980’s*, 36(6) HARV. BUS. REV. 41, 41–42 (1958).

⁹ *Largest Tech Companies by Market Cap*, COMPANIESMARKETCAP.COM, <https://companiesmarketcap.com/tech/largest-tech-companies-by-market-cap/> [<https://perma.cc/4WZL-93ZZ>] (last visited August 9, 2023).

¹⁰ *Largest Companies by Market Cap*, COMPANIESMARKETCAP.COM, <https://companiesmarketcap.com/> [<https://perma.cc/7D2E-ERSF>] (last visited August 9, 2023).

products or processes, in response to competition. Innovative actions today often involve competition for future business, rather than current business. When that happens, focusing on traditional indicia of market shares can be misleading.¹¹

What is an ecosystem? A business ecosystem is a collection of firms providing capabilities that may work together to support new products. The article credited with using the term to describe a business ecosystem observed:

[A] company be viewed not as a member of a single industry but as part of a business ecosystem that crosses a variety of industries. In a business ecosystem, companies coevolve capabilities around a new innovation: they work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations.¹²

In other words, an ecosystem can be thought of as a collection of firms with production technologies associated with a given set of products. An ecosystem can be closed or open, depending on whether an input supplier has an exclusive relationship with a downstream producer. By contrast, an antitrust market is a collection of products that are reasonably substitutable;¹³ but the technologies in an

¹¹ Michael Katz & Howard Shelanski, “Schumpeterian” Competition and Antitrust Policy in High-Tech Markets 1, 3 (unpublished manuscript) (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=925707) [<https://perma.cc/8KPZ-5C3L>] (explaining that “[a]t the heart of the Schumpeterian argument is the assertion that, in important instances, competition primarily occurs through cycles of innovation, rather than through static price or output competition,” and that in such instances firms compete “sequentially for the market as a whole”).

¹² James Moore, *Predators and Prey: A New Ecology of Competition*, 71(3) HARV. BUS. REV. 75, 76 (1993) (suggesting that a “company be viewed not as a member of a single industry but as part of a business ecosystem that crosses a variety of industries. In a business ecosystem, companies coevolve capabilities around a new innovation: they work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations.”).

¹³ U.S. Dept. of Just. & Fed. Trade Comm’n, Horizontal Merger Guidelines (2010) [hereinafter 2010 Merger Guidelines], at 7–8.

ecosystem need not be substitutable, and not all substitute products belong to the same ecosystem.

What does it mean to be nascent? The term nascent describes a process or entity that is “just coming into existence” or “beginning to display signs of future potential.”¹⁴ Thus, a “nascent competitor” is one that is coming into existence, though there is no established standard about the level of certainty with which the competitor will actually come into existence or the degree to which the competitor will threaten an incumbent in the future.¹⁵ One set of authors uses the term “nascent competitor” to refer to “a firm whose prospective innovation represents a serious threat to an incumbent.”¹⁶ A nascent market is a new, developing market that may embody products with undefined product attributes, no established sellers, and indeterminate customers.¹⁷ Characteristics of nascent markets, therefore, may involve one or more of highly differentiated products, unstable market shares, and the presence of new entrants.¹⁸

What is potential competition? Potential competition refers to a competitive constraint on a firm’s behavior that might potentially arise, but that does not currently exist.¹⁹ There are several related terms: actual potential competition, perceived potential competition, and actual competition. The simplest is the last of these, which refers to actual competition from an existing firm in the antitrust market. “Actual potential competition” refers to competition from entry that is likely to

¹⁴ *Nascent*, OXFORD DICTIONARY OF ENGLISH (Angus Stevenson ed., Oxford University Press 2015).

¹⁵ Order Denying Plaintiff’s Motion for Preliminary Injunction at 4, *FTC v. Meta Platforms, Inc.*, No. 5:22-cv04325-EJD (N.D. Cal. Jan. 31, 2023), p. 37 (explaining that “neither party has presented the Court with a working definition of “nascency”).

¹⁶ Hemphill & Wu, *supra* note 5, at 1879.

¹⁷ Cheng Gao & Rory McDonald, *Shaping Nascent Industries: Innovation Strategy and Regulatory Uncertainty in Personal Genomics*, ADMIN. SCI. Q. 1, 2 (2022).

¹⁸ *Fed. Trade Comm’n v. Meta Platforms Inc.*, No. 5:22-CV-04325-EJD, 2023 WL 2346238, at *19 (N.D. Cal. Feb. 3, 2023), at. 37.

¹⁹ THE CONCEPT OF POTENTIAL COMPETITION, ORG. FOR ECON. COOP. & DEV. 9 (2021).

occur; this competition does not constrain the incumbents' behavior, but it is expected to do so in the future.²⁰ "Perceived potential competition" refers to competition from entry that already provides a competitive constraint to incumbent firms, even though the entry has yet to occur.²¹

III. ECONOMICS OF INNOVATION COMPETITION

Innovation competition is a dynamic process that takes place over time. As Professor Fisher explains,

Faced with the erosion of business and profits caused by the entry of imitators and rival innovators, the original innovator will not be able to maintain the price which brought him the profits in the initial period. If he is to stay in business, he must lower the price on what is now the old innovation and, if he is to make still further profits, must bring out still better products.²²

At its core is the idea that an incumbent's desire to retain its position, or an entrant's desire to displace an incumbent firm, will drive firms to create new technologies to replace the old ones.²³ Thus, innovation competition is about the incentives that drive firms to research, develop, and roll out newer and better products.

There is an old debate in economics about whether monopolists or smaller firms in more competitive markets are more likely to innovate.²⁴ On the one hand is the Schumpeterian view that larger firms may be better at innovating than smaller firms because they have deeper

²⁰ *Id.* at 9; *Meta Platforms Inc.*, 2023 WL 2346238, at *20.

²¹ THE CONCEPT OF POTENTIAL COMPETITION, *supra* note 19, at 9; *Meta Platforms Inc.*, 2023 WL 2346238, at *60–61.

²² Fisher, *supra* note 5, at 8.

²³ Joseph A. Schumpeter, CAPITALISM, SOCIALISM, AND DEMOCRACY 81–107 (1942); Baker, *supra* note 5, at 578 ("This concept of 'creative destruction' . . . refers to the process by which outdated business practices, production methods, and products are replaced with newer, more advanced ones.").

²⁴ Baker, *supra* note 5, at 578.

pockets to fund research and development, and they have a stronger pre-existing market position, which may give them an advantage in the innovation race.²⁵ On the other hand is the Arrow view that small firms (or potential entrants) are more likely to be the innovators because they do not worry about cannibalization of already-profitable lines of business.²⁶

Professor Teece distinguishes between “incentives” and “capabilities.” He does not presume that a firm with an incentive to innovate necessarily has the “capabilities” to do so.²⁷ He explains that capabilities consist of a cluster of activities, driven by the “visible hand” of managers, that include “sensing, seizing, and transforming.”²⁸ Not all of these activities, which include more than access to specialized inputs or know-how that might be covered by a patent, are typically viewed as a barrier to entry or expansion in competition analysis.

IV. THE DEBATE ON THE APPROPRIATE USE OF ANTITRUST POLICY IN COMPETITION ANALYSIS OF BIG-TECH FIRMS

There are divergent views in the antitrust community about whether and when antitrust policy should stop a firm from getting too big. The Neo-Brandeisian view is that excessively centralized private power is bad for the economy and that the enforcement agencies are not doing enough to ensure to “promote competition within open and free markets” and to reduce the ability of big companies to exploit market power.²⁹ Some have interpreted this view to mean that companies, particularly big-tech companies, should be

²⁵ See *supra* note 21.

²⁶ Baker, *supra* note 5, at 578; Kenneth Arrow, *Economic Welfare and the Allocation of Resources for Invention*, in *THE RATE AND DIRECTION OF INVENTIVE ACTIVITY: ECONOMIC AND SOCIAL FACTORS* 619–22 (Princeton University Press, 1962).

²⁷ Teece, *supra* note 1, at 400.

²⁸ *Id.* at 409.

²⁹ Lina Khan, *The New Brandeis Movement: America’s Antimonopoly Debate*, 9 J. EUR. COMPETITION L. & PRAC. 131, 131–32 (2018)

regulated solely on the basis of their size, rather than their behavior.³⁰

In the context of digital industries, Professor Teece suggests there is too much emphasis on the “bigness” of big-tech firms and not enough on factors that facilitate innovation. Highlights of Professor Teece’s thesis of innovation competition are as follows:

- Both big and small companies can deliver disruptive innovation.³¹
- Bigness may have little to do with scale and network effects, and more to do with the nature of technological opportunities and how those opportunities are addressed by management.³²
- Competition authorities need to focus more on the possibility that innovation enables competition, not the other way around.³³
- The 2010 Merger Guidelines are too dismissive of the possibility of entry, which can be swift in the digital economy.³⁴

Professor Teece explains that at the heart of dynamic competition is a mix of managerial, technological, and organizational expertise that is focused on key behaviors like innovation, enterprise formation, learning, capability acquisition, enterprise growth, and disruption.³⁵ To succeed in its mission, he advocates that antitrust policy should promote these key behaviors and be less dismissive of

³⁰ Elizabeth Warren, *Here’s How We Can Break Up Big Tech*, MEDIUM (March 8, 2019), <https://medium.com/@teamwarren/heres-how-we-can-break-up-big-tech-9ad9e0da324c> (“America has a long tradition of breaking up companies when they have become too big and dominant — even if they are generally providing good service at a reasonable price.”); Jeffrey Westling, *Big is a Bad Metric for Antitrust Reform*, AM. ACTION F. (Nov. 29, 2022), <https://www.americanactionforum.org/insight/big-is-a-bad-metric-for-antitrust-reform/> [<https://perma.cc/AGE5-WG34>].

³¹ Teece, *supra* note 1, at 377.

³² *Id.* at 401.

³³ *Id.* at 453.

³⁴ *Id.* at 422.

³⁵ *Id.* at Table 1.

potential entry, which “rarely announces itself in advance of its occurrence,” to address competition concerns.³⁶

A. Limitations of Traditional Merger Analysis to Assess Harm to Dynamic Competition Like that Found in the Digital Industries

The 2010 Merger Guidelines describe a three-part framework that is widely used to guide assessments of harm to actual or perceived potential competition arising in both merger and competition cases.³⁷ This framework involves defining an antitrust market, assessing market power, and assessing competitive effects, though not necessarily in that order.³⁸ A typical market definition analysis involves studying information about buyer substitution, including sellers’ perspectives on the products against which they compete;³⁹ for this purpose, merger analysis naturally begins by identifying the overlap between the merging parties.⁴⁰ A typical market power analysis begins with share calculations in an antitrust market.⁴¹ A typical competitive effects analysis in conduct

³⁶ *Id.* at 429.

³⁷ Potentially unlawful business practices are typically divided into merger and non-merger (or conduct) cases: (a) mergers involve the combination of firms, either through merger, acquisition, or joint venture; (b) conduct cases involve other business practices, including unilateral practices (like raising a rival’s costs or tying) and coordinated practices (like price fixing or market allocation among competitors). Merger control seeks to prevent distortions to competition before they occur, while non-merger competition enforcement (including post-merger challenges) seeks to stop behaviors that distort competition after they have already occurred or may still be occurring and/or remedy their effects. *See The Antitrust Laws*, FED. TRADE COMM’N, <https://www.ftc.gov/advice-guidance/competition-guidance/guide-antitrust-laws/antitrust-laws> (last visited June 10, 2023); EUR. CT. OF AUDITORS, ENFORCEMENT OF EU COMPETITION POLICY 6–7 (2018).

³⁸ 2010 Merger Guidelines, at 7.

³⁹ 2010 Merger Guidelines, § 4.

⁴⁰ 2010 Merger Guidelines, at § 4.1; *see also* OECD, MERGER CONTROL IN DYNAMIC MARKETS 16 (2020) (“The starting point of a competition assessment is to identify the overlapping products and geographical areas where the merging firms compete.”).

⁴¹ Dep’t of Just., *Department of Justice, Competition and Monopoly: Single-Firm Conduct Under Section 2 of the Sherman Act, Chapter 2*, DEP’T

cases involves studying the impact of the challenged conduct on historical prices or output;⁴² in merger cases, it can involve both structural analysis looking at concentration and the change in concentration that would result from the proposed transaction and analysis of direct effects, of things like discounting behavior in response to competition from the merging partner.⁴³

Professor Teece observes rightly that, because they are primarily focused on things like existing products, firm size, and historical prices, traditional antitrust analyses are not well suited for forward looking assessments that may be required in merger cases involving dynamic competition in antitrust markets.⁴⁴ As a practical matter, the transaction data needed to calculate the traditional metrics (like shares, concentration, and discounting behavior) do not exist for future products or services that may not yet exist, let alone be sold. In cases involving an acquisition of a nascent competitor, Professor Teece advocates forward-looking assessments of firms' capabilities and plans. Specifically, he suggests evaluating: (a) the nascent firm's medium-term plans,⁴⁵ and (b) whether the technology is "competency" enhancing or destroying to the acquiring firm.⁴⁶ The FTC's recent challenge of the Meta-Within merger provides an example of such an analysis. There, the FTC raised concerns of harm to actual potential competition and perceived potential competition, and the court evaluated evidence of the likelihood that, absent

OF JUST. (Mar. 18, 2022), <https://www.justice.gov/archives/atr/competition-and-monopoly-single-firm-conduct-under-section-2-sherman-act-chapter-2> [<https://perma.cc/6LFR-HPJ5>] ("Market power is a seller's ability to exercise some control over the price it charges In determining whether a competitor possesses monopoly power in a relevant market, courts typically begin by looking at the firm's market share."); 2010 Merger Guidelines, § 2.1.3.

⁴² Dep't of Just., *supra* note 41.

⁴³ 2010 Merger Guidelines, § 5, 6.1.

⁴⁴ Teece, *supra* note 1, at 389.

⁴⁵ *Id.* at 451.

⁴⁶ *Id.* at 452 ("The technology of the nascent firm is not competency-enhancing (complementary) to the acquiring firm. Rather, it's primarily competency-destroying and, hence, threatening.").

the merger, Meta would enter with a future product that would compete with Within's product.⁴⁷

Professor Teece also observes that the traditional focus of competition analysis on antitrust markets (a collection of substitute products) may be misplaced because non-substitute products within an ecosystem might facilitate future head-to-head competition.⁴⁸ Thus, Professor Teece suggests that an appropriate unit of analysis may be the ecosystem, not a market.⁴⁹

B. Towards a New Competition Policy for Digital Industries

Professor Teece begins to describe a new framework that embodies a more holistic approach to competition policy in digital industries. He advocates a merger policy that puts innovation first.⁵⁰ He suggests the agencies undertake comparative analyses of business capabilities and strategies, as well as assessments of the degree of technological alignment between the merging parties to determine the extent of complementarities that might accelerate innovation.⁵¹ For acquisitions of companies with nascent technologies, he says one should evaluate where they are in their proof of concept and discount the likelihood of success for early-stage companies.⁵² He also advocates for a shift away from demand-side considerations of defining markets, assessing market power, and determining effects towards supply-side considerations that recognize the greater possibility of entry in digital industries and the organizational challenges that limit an incumbent's success.⁵³ Thus, Professor Teece's framework appears to call for a more lenient merger enforcement regime.

⁴⁷ See *infra* Section V.b.

⁴⁸ Teece, *supra* note 1, at 393.

⁴⁹ *Id.*

⁵⁰ *Id.* at 381 n.20.

⁵¹ *Id.* at 425.

⁵² *Id.* at 451.

⁵³ *Id.* at 425–46.

Missing from this policy framework is a sense of time. For example, Professor Teece describes testimony from a Microsoft executive, in the 1998–1999 timeframe, identifying a competitive threat from handheld computing devices, like the iPhone, that could erode Microsoft’s market power in personal computers.⁵⁴ The first iPhone, however, was released in 2007.⁵⁵ How long is too long to wait for future disruptive innovation to discipline competition today?

C. Balancing the Costs of Enforcement Mistakes

In practice, there are risks to both more and less lenient enforcement regimes: (a) finding a problem where there is none might block competition, but (b) ignoring a problem where there is one might also block competition. Finding the balance is somewhat easier in conduct and merger cases involving existing products, where there is historical information—including about prices, output, the path of innovation, and cycles of success and failure—that can be studied to infer applicable lessons. The work is naturally harder in forward-looking cases that involve future products and services that do not currently exist that might compete with existing ones.

It appears that Professor Teece is more worried about bad interventions by the enforcers than the bad things big companies might do. There are tensions, however, between Professor Teece’s policy framework and his thesis on innovation competition.

- The first tension stems from his proposed treatment of mergers of firms currently making non-substitute products within an ecosystem. According to Professor Teece, the merger of complementary capabilities will tend to accelerate introduction and adoption of new products and services.⁵⁶ At the

⁵⁴ *Id.* at 430–32.

⁵⁵ *Press Release: Apple Reinvents the Phone with iPhone*, APPLE (Jan. 9, 2007), <https://www.apple.com/newsroom/2007/01/09Apple-Reinvents-the-Phone-with-iPhone/> [<https://perma.cc/DZ3H-Q5JX>].

⁵⁶ Teece, *supra* note 1, at 449.

same time, he explains that competition can come from both substitute and complementary products and services, through combinations that are may be hard to predict.⁵⁷ If so, could not the innovation objective be better served by stopping certain mergers of firms producing non-substitute products within an ecosystem? As it is, the current regime will tend not to find a problem with a merger of firms producing non-substitute products.

- The second tension stems from his recommendation that enforcers give acquisitions of nascent firms that do not yet have a proven business model or a credible mid-term plan a free pass.⁵⁸ Should not a refreshed merger regime focus on these types of companies that are the incubators for innovation? As it is, the current regime struggles with understanding how to treat firms early in their product lifecycle, particularly when they have no product, sales, or profit history to study, and their acquisitions are more likely to pass under the radar.
- The third tension stems from Professor Teece's view that both big and small companies can deliver disruptive innovation, and that those that thrive today are not necessarily the fittest for tomorrow.⁵⁹ What, then, is the risk of breaking up a big company or preventing a company from getting bigger?

Furthermore, the broad contours of Professor Teece's framework would seem to apply to any industry or ecosystem, which argues against developing a bespoke regulatory approach for digital industries, as some policymakers have argued.⁶⁰ Second, antitrust policy is not the only tool available

⁵⁷ *Id.* at Table 1.

⁵⁸ *Id.* at 451–52.

⁵⁹ *Id.* at 377.

⁶⁰ *See, e.g.*, Dep't for Bus., Energy & Indus. Strategy, *A new pro-competitive regime for digital markets – government response to consultations*, Gov.UK (May 6, 2022), <https://www.gov.uk/government/consultations/a-new-pro-competition->

to promote innovation, and antitrust policy may not be the best tool in circumstances that require the enforcer to predict the winner of an innovation race—something even savvy investors and industry experts get wrong on a regular basis. Third, while I agree with Professor Teece that reliance on certain traditional antitrust analyses can be too simplistic and that practitioners need to develop better ways to assess competition from complementary products and services, it is unwise to a priori rule out or require any particular analysis. The necessary work must be done on a case-by-case basis. In this regard, there are some important lessons about how to frame the issues and how to build the evidence, from a string of recent cases brought by federal and state enforcers, which I describe below.

Finally, Professor Teece conjectures that “enforcement agencies shun innovation as an important factor in competitive process because they are hired to bring cases, and crediting innovation makes bringing cases more difficult and messy.”⁶¹ I observe, instead, that many enforcement actions, like the ones described below, are motivated by the desire to promote future innovation. In contrast, the reluctance to credit future innovation as resolving a current competition concern may reflect the agencies’ attempt to balance the costs of enforcement mistakes.

V. LESSONS FROM CURRENT U.S. ENFORCEMENT

Recent cases involving high-tech companies provide an opportunity to learn about how enforcers are framing economic issues, what analyses the economists are pursuing, and how the courts are weighing the evidence. A common theme is the concern that conduct may interfere (or have interfered) with competition involving future products that do not exist today, not with competition between existing

regime-for-digital-markets/outcome/a-new-pro-competition-regime-for-digital-markets-government-response-to-consultation [https://perma.cc/QPW9-3AEH].

⁶¹ Teece, *supra* note 1, at 398.

products. The cases focus on harm to innovation competition and require an understanding of business capabilities and the frontier of new technology in the pled markets. The courts in the two adjudicated cases, Qualcomm and Meta Platforms, placed greater importance on business capabilities, entry plans, and innovation initiatives, and lesser importance on market share and concentration analyses. The Qualcomm case shows explicitly the court's understanding that large dominant firms can be competitive, because of their desire to maintain their lead position. These cases also provide guidance on how to prove (or disprove) a theory of harm involving potential competition.

A. Qualcomm

Qualcomm competes with firms like Intel to develop and sell modem chipsets to original equipment manufacturers like Samsung and Apple's contract manufacturers. In 2017, the FTC challenged Qualcomm's use of its chip licensing practices and agreements with Apple that contained a clawback provision that required Apple to pay back incentive funds if Apple sold devices without Qualcomm chips.⁶² According to the FTC, Qualcomm's practices constitute exclusionary conduct that raised rivals' costs and reduced their incentives and ability to innovate, and thus harmed actual competition relevant markets for certain types of modem chips.⁶³ The FTC argued at trial that Qualcomm had market power in two markets for modem chips;⁶⁴ that its licensing arrangements resulted in unreasonably high royalty rates;⁶⁵ and that its agreements with Apple, reinforced by similar agreements with other OEMs, were de facto exclusive deals that raised

⁶² Complaint at 25–26, *FTC v. Qualcomm Inc.*, 969 F.3d 974 (9th Cir. 2020) (No. 1).

⁶³ *Id.* at 2.

⁶⁴ *Fed. Trade Comm'n v. v. Qualcomm Inc.*, 969 F.3d 974, 992 (9th Cir. 2020).

⁶⁵ *Id.* at 998.

rivals' costs and interfered with competition, as evidenced by Intel's inability to compete for modem chips.⁶⁶

In 2020, the Ninth Circuit found in favor of Qualcomm, concluding that the FTC did not meet its burden showing that Qualcomm's licensing practices were anticompetitive. The court observed that the FTC offered no evidence that Qualcomm engaged in predatory pricing, that the FTC's own evidence showed that Qualcomm lowered prices in response to competition, and that Qualcomm's agreement with Apple did not have "the actual or practical effect of substantially foreclosing competition" in the relevant markets.⁶⁷ With respect to the Qualcomm-Apple agreement, the court noted that the record suggested that the only serious competitor Qualcomm faced was Intel, but that Intel was not a viable competitor for much of the period over which the challenged agreements governed.

In reaching its decision, the court explicitly recognized the large social welfare costs of making enforcement mistakes in technology markets where innovation is essential to economic growth.⁶⁸ It said that Qualcomm has played a "powerful and disruptive role in markets for 3G and 4G modem chips where it has exercised what it describes as market dominance," and it described Qualcomm's behavior as hypercompetitive, not anticompetitive.⁶⁹

B. Meta-Within

Meta operates a collection of social networking applications, including Facebook, Instagram, and WhatsApp. It manufactures virtual reality ("VR") devices, such as Quest 2 and the Pro headsets, and it has acquired at last nine virtual

⁶⁶ Fed. Trade Comm'n v. Qualcomm Inc., 411 F. Supp. 3d 658, 690, 763, 766 (N.D. Cal. 2019).

⁶⁷ *Qualcomm Inc.*, 969 F.3d at 1005.

⁶⁸ *Id.* at 990–91.

⁶⁹ *Id.* at 1005.

reality application studios in the past few years.⁷⁰ Within is a VR application studio that develops and provides a subscription VR fitness service called Supernatural, which launched in Meta's Quest store in 2020.⁷¹ In 2022, the FTC challenged Meta's proposed acquisition of Within, pleading that the acquisition would substantially lessen competition in the virtual reality, dedicated fitness app market because it would stop Meta's independent entry into the market.⁷² The FTC pled harm to both: (a) actual potential competition; and (b) perceived potential competition.⁷³ Because Meta was not a market participant in the relevant market, the FTC relied upon estimates of concentration, not change in concentration, to argue that the market was highly concentrated.⁷⁴ The FTC also relied upon ordinary course evidence to suggest that Meta would have entered the market independently and that the possibility of Meta's entry had already constrained Within's behavior.⁷⁵

Actual potential competition refers to a competitive constraint that might potentially arise but has not yet actually done so.⁷⁶ This constraint is different from an actual competitive constraint from a potential competitor or would-be entrant.⁷⁷ The same types of horizontal and vertical conduct (here, the combination of would-be competitors) that can prevent or impede actual competition can also harm actual potential competition.⁷⁸ To assess this harm, the

⁷⁰ Order Denying Plaintiff's Motion for Preliminary Injunction at 4, *FTC v. Meta Platforms, Inc.*, No. 5:22-cv04325-EJD (N.D. Cal. Jan. 31, 2023).

⁷¹ Order Denying Plaintiff's Motion for Preliminary Injunction at 4–5, *FTC v. Meta Platforms, Inc.*, No. 5:22-cv04325-EJD (N.D. Cal. Feb. 3, 2023).

⁷² Complaint for Temporary Restraining Order and Preliminary Injunction at 2, 5, *FTC v. Meta Platforms, Inc.*, No. 3:22-cv04325-EJD (N.D. Cal. July 27, 2022).

⁷³ Order Denying Plaintiff's Motion for Preliminary Injunction at 60, *FTC v. Meta Platforms, Inc.*, No. 5:22-cv04325-EJD (N.D. Cal. Feb. 3, 2023).

⁷⁴ *Id.* at 33–34.

⁷⁵ *Id.* at 43–44.

⁷⁶ THE CONCEPT OF POTENTIAL COMPETITION, *supra* note 19, at 9.

⁷⁷ *Id.*

⁷⁸ *Id.* at 10.

Northern District of California applied a two-part framework: (a) first, “consider the effects of future scenarios where the Acquisition occurs and where it is blocked[;]” (b) next, assess whether the blocked would-be acquirer would enter the relevant market independently.⁷⁹ Based on the evidence, the Court concluded it was not “reasonably probable” that Meta would have entered the VR dedicated fitness app market *de novo* if it was unable to acquire Within:⁸⁰

- Capabilities of entry: The Court found that Meta lacked certain capabilities that are necessary to enter and succeed in the VR dedicated fitness app market.⁸¹
- Incentives to enter: The Court found that, though Meta had an interest in the VR fitness space, that fact by itself does not prove that Meta would have entered the market but-for the acquisition. The Court observed that there exists a mutually beneficial relationship between Meta and third-party VR apps, but that Meta already structures its arms-length relationships in ways that allow it to reap those benefits.⁸²
- Hardware integration: The Court concluded that *de novo* entry is not strictly necessary to develop fitness hardware.⁸³
- Plans to enter: The Court concluded that Meta had no actual plans for entry, only plans for acquisition.⁸⁴

Thus, the Court concluded that the FTC had failed to support its theory of actual potential competition.⁸⁵

Perceived potential competition refers to an actual competitive constraint from a firm that incumbents believe

⁷⁹ Order Denying Plaintiff’s Motion for Preliminary Injunction at 41, *FTC v. Meta Platforms Inc.*, No. 5:22-cv04325-EJD (N.D. Cal. Feb. 3, 2023).

⁸⁰ *Id.* at 59.

⁸¹ *Id.* at 43–46.

⁸² *Id.* at 46–47.

⁸³ *Id.* at 48.

⁸⁴ *Id.* at 54.

⁸⁵ *Id.* at 59.

may enter the market.⁸⁶ Perceived potential competition can be harmed by conduct (here, the combination of would-be competitors) that removes an actual competitive constraint from a future competitor.⁸⁷ To assess this harm, the Northern District of California applied another two-part test: (a) first, determine whether Meta possessed the “characteristics, capabilities, and economic incentive to render it a perceived potential de novo entrant”; and (b) second, evaluate whether Meta’s “premerger presence on the fringe of the target market in fact tempered oligopolistic behavior on the part of existing participants in that market.”⁸⁸ The Court concluded it was not reasonably probable that firms in the relevant market perceived Meta as a potential entrant.⁸⁹ Even if it was reasonably probable, the Court found that there is no direct or circumstantial evidence to suggest that Meta’s presence did in fact temper oligopolistic behavior or result in any other procompetitive benefits.⁹⁰

C. Microsoft-Activision

Microsoft manufactures the Xbox, a high-end performance video gaming console.⁹¹ Microsoft also develops and publishes first-party video games, including AAA games⁹² such as Halo.⁹³ Additionally, it sells a leading video game subscription service for consoles or PCs, with clouding gaming

⁸⁶ THE CONCEPT OF POTENTIAL COMPETITION, *supra* note 19, at 11.

⁸⁷ Order Denying Plaintiff’s Motion for Preliminary Injunction at 60, *FTC v. Meta Platforms Inc.*, No. 5:22-cv04325-EJD (N.D. Cal. Feb. 3, 2023).

⁸⁸ *Id.* at 60 (quoting *United States v. Marine Bancorporation, Inc.*, 418 U.S. 602, 625 (1974)).

⁸⁹ *Id.* at 62.

⁹⁰ *Id.*

⁹¹ Complaint at 2, *Microsoft Corp., and Activision Blizzard, Inc.*, FTC Docket No. 9412 (Dec. 8, 2022).

⁹² AAA Games is a term of art in the video gaming industry term referring to high-budget, high-profile games that are typically produced and distributed by large, well-known publishers.” *What Are AAA Games?*, ARM, <https://www.arm.com/glossary/aaa-games> [<https://perma.cc/5R99-BJQW>] (last visited June 13, 2023).

⁹³ *Id.* at 2, 9.

functionality which enables game streaming.⁹⁴ Activision develops and publishes video games, including AAA games such as Call of Duty, for multiple devices, including video game consoles, PCs, and mobile devices.⁹⁵ In 2022, the FTC challenged Microsoft's proposed acquisition of Activision, pleading the acquisition would give Microsoft the ability and incentive to disadvantage rivals by withholding or degrading content in three markets: (a) the market for high-performance consoles in the U.S.; (b) the market for multi-game content library subscription services in the U.S.; and (c) the nascent market for cloud gaming subscription services in the U.S.⁹⁶ At present, the litigation is ongoing.⁹⁷

At the heart of the challenge is a concern about foreclosing current and future competitors in the different markets from access to marquee content.⁹⁸ To assess the merged firm's ability and incentive to engage in the strategy, one will need to compare the profitability of foreclosing against the profitability of making the desirable content broadly available through affiliated and unaffiliated distribution channels.⁹⁹ The profitability of each strategy will depend on various factors. One factor is the share of rivals' customers that would stop buying the rivals product if the desired content, in this case the AAA games, were to be unavailable for the product (the "departure rate").¹⁰⁰ The more "marquee" or "must-have" the content, the higher this departure rate. Another factor is the share of the departing customers that would switch to the merged firm (the "diversion rate").¹⁰¹ All else equal, the bigger the gap between the departure rate and the diversion rate, the

⁹⁴ *Id.* at 2.

⁹⁵ *Id.* at 2.

⁹⁶ *Id.* at 11.

⁹⁷ *Id.*

⁹⁸ *Id.* at 11.

⁹⁹ For a more detailed explanation of this intuition, see William P. Rogerson, *Modelling and Predicting the Competitive Effects of Vertical Mergers: The Bargaining Leverage Over Rivals Effect*, 53 CAN. J. ECON. 407, 414–16 (2020).

¹⁰⁰ See *id.* at 414.

¹⁰¹ See *id.*

lower the probability that the foreclosure strategy will be profitable.¹⁰²

The analysis of harm in the markets for high-performance consoles and multi-game content library subscription services is likely to be grounded in more traditional historical data, because both products are relatively mature and have been selling for years. The analysis of harm in the nascent market for cloud gaming subscription services will likely involve analysis of forward-looking entry plans and anticipated responses to actual or perceived potential competition from rivals.¹⁰³

D. Google Search Distribution Cases

Among other things, Google provides a general search service that enables users to query and find information collected by crawling and indexing the web.¹⁰⁴ Google also sells different types of general search advertisements that are presented to general search users in response to specific search queries.¹⁰⁵ In 2020, the DOJ and State Attorney Generals filed related lawsuits alleging that Google's exclusive preinstallation default agreements at search access points have the effect of locking up distribution channels and blocking general search rivals.¹⁰⁶ The States also allege that Google has engaged in two types of companion practices that reinforce Google's ability to enter into and the effects of its preinstallation default agreements.¹⁰⁷ The first involves

¹⁰² *See id.* (describing a formula for an increase in fees after a vertical merger, using departure rate and diversion rate as variables).

¹⁰³ *See id.* at 15–16.

¹⁰⁴ Complaint at 8–9, *United States v. Google LLC*, No. 1:20-cv-03010 (D.D.C. Oct 20, 2020).

¹⁰⁵ *Id.* at 4–5.

¹⁰⁶ *Id.* at 3–4; Complaint at 37, *State of Colorado v. Google LLC*, No. 1:20-cv-03715-APM (D.D.C. Dec. 17, 2020).

¹⁰⁷ Complaint at 7, *State of Colorado v. Google LLC*, No. 1:20-cv-03715-APM (D.D.C. Dec. 17, 2020); Brief of Proposed Amicus Curiae, the American Enterprise Institute in Support of Plaintiff States Opposition to Google's Motion for Summary Judgement (2023), <https://www.AAI-Amicus-Colorado-Google.pdf>.

restricting visibility for certain large specialized vertical providers, like online travel agencies and local service providers, that rely on Google for customer traffic, and that, if stronger, could partner with and strengthen Google's general search rivals by providing them with valuable information that could help them attract search users.¹⁰⁸ The second involves exclusion through Google's general search advertising tool, SA360.¹⁰⁹ According to the States, Google's rivals, absent these exclusionary practices, would be able to attract more search users and more search advertisers.¹¹⁰ The litigation is ongoing.

At the heart of these challenges is a vision of a but-for world with greater competition; where Google's general search rivals may have been more successful; where newer business models might have emerged; and consumers, including both general search users and advertisers, would have had the benefit of lower prices, higher quality, and more choices.¹¹¹ In this but-for world, Google would have had to innovate more to maintain its success against stronger rivals. The analysis will likely involve an assessment of potential competition that could have, but did not, come to fruition because of the challenged conduct.¹¹²

VI. CONCLUSIONS

The antitrust community, including Professor Teece, recognizes that traditional analyses of historical prices, output, and margins for existing products cannot shed light on mergers that focus on an overlap of futures products that do not currently exist. Nor are static analyses of market shares likely to reflect innovation competition in situations

¹⁰⁸ Complaint at 8, *State of Colorado v. Google LLC*, No. 1:20-cv-03715-APM (D.D.C. Dec. 17, 2020).

¹⁰⁹ *Id.* at 7–8.

¹¹⁰ *Id.* at 8.

¹¹¹ Complaint at 54, *United States v. Google LLC*, No. 1:20-cv-03010 (D.D.C. Oct 20, 2020).

¹¹² Complaint at 36, 71–72, *State of Colorado v. Google LLC*, No. 1:20-cv-03715-APM (D.D.C. Dec. 17, 2020).

where a single firm wins the market for the next generation product. The challenge is finding creative ways to define markets, assess market power, and evaluate harm to competition in innovation and for future products that do not exist today.

This work must be done on a case-by-case basis, but a stronger body of research may provide guidance in building meaningful analyses. Examples of research initiatives that may prove useful include: (a) studies of factors that facilitate and slow the evolution of technological progress in specific industries over long periods of time; (b) retrospectives of uncontested mergers of non-substitute products to determine whether they harmed rivals' ability to innovate; (c) more extensive entry analyses, over longer periods of time, to understand the factors that facilitate and hinder successful entry in specific industries; and (d) analyses of innovation races focusing on inputs and outputs, failures and successes, and competitor responses to different initiatives. Each of these types of analysis has the potential to provide insights that may enable more reliable predictions about the likelihood of future competition in the specific markets of interest. Short of building predictive models based on lessons from similarly-situated industries or the same industry in other geographies or time periods, assessments of future entry and the future competitive landscape may rely heavily on analyses found in ordinary-course plans for entry and expansion and opinions of technical experts.