

**CASE NOT YET SCHEDULED FOR ORAL ARGUMENT****No. 21-7078**

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IN THE  
**United States Court of Appeals for the  
District of Columbia Circuit**

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STATE OF NEW YORK; DISTRICT OF COLUMBIA; STATE OF CALIFORNIA; STATE OF COLORADO; STATE OF FLORIDA; STATE OF IOWA; STATE OF NEBRASKA; STATE OF NORTH CAROLINA; STATE OF OHIO; STATE OF TENNESSEE; STATE OF ALASKA; STATE OF ARIZONA; STATE OF ARKANSAS; STATE OF CONNECTICUT; STATE OF DELAWARE; TERRITORY OF GUAM; STATE OF HAWAII; STATE OF IDAHO; STATE OF ILLINOIS; STATE OF INDIANA; STATE OF KANSAS; COMMONWEALTH OF KENTUCKY; STATE OF LOUISIANA; STATE OF MAINE; STATE OF MARYLAND; COMMONWEALTH OF MASSACHUSETTS; STATE OF MICHIGAN; STATE OF MINNESOTA; STATE OF MISSISSIPPI; STATE OF MISSOURI; STATE OF MONTANA; STATE OF NEVADA; STATE OF NEW HAMPSHIRE; STATE OF NEW JERSEY; STATE OF NEW MEXICO; STATE OF NORTH DAKOTA; STATE OF OKLAHOMA; STATE OF OREGON; COMMONWEALTH OF PENNSYLVANIA; STATE OF RHODE ISLAND; STATE OF TEXAS; STATE OF UTAH; STATE OF VERMONT; COMMONWEALTH OF VIRGINIA; STATE OF WASHINGTON; STATE OF WEST VIRGINIA; STATE OF WISCONSIN; AND STATE OF WYOMING,

*Plaintiffs-Appellants,*

v.

FACEBOOK, INC.,

*Defendants-Appellees.*

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Appeal from the United States District Court for the  
District of Columbia

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**BRIEF OF ECONOMISTS AS AMICI CURIAE IN SUPPORT OF  
PLAINTIFFS-APPELLANTS AND REVERSAL**

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**STATEMENT REGARDING CONSENT TO FILE, SEPARATE BRIEFING,  
AUTHORSHIP AND MONETARY CONTRIBUTIONS, AND CORPORATE  
DISCLOSURES**

Amici certify that no party or party's counsel authored this brief in whole or in part, or contributed money that was intended to fund the brief's preparation for submission, and further certify that no person, other than amici or their counsel, contributed money intended to prepare or submit this brief. Fed. R. App. P. 29(c)(5).

Pursuant to Fed. R. App. P. 29(a)(2), all parties have consented to the filing of this amicus brief.

Pursuant to D.C. Circuit Rule 29(d), amici certify that this separate amicus brief is necessary because it provides unique insights regarding the application of antitrust and competition principles from the perspective of economists, and because other amici, who are not economists, are not advancing the same arguments from the same perspective.

No corporate disclosure statements are required by Fed. R. Civ. P. 26.1 because amici are individuals filing in their individual capacities.

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## IDENTITY AND INTEREST OF AMICI CURIAE

Amici curiae are economists who have substantial experience in antitrust economics and industrial organization. Amici curiae have an interest in assuring that antitrust jurisprudence is based on sound economic principles.

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## INTRODUCTION AND SUMMARY OF ARGUMENT

When an anticompetitive scheme takes multiple forms and involves a combination of different conduct, analyzing each relevant instance separately as though it were independent of the rest discounts the full context and self-reinforcing harms of the conduct. Instances where the whole of the resulting injury exceeds the sum of its constituent parts require a holistic evaluation of the conduct at issue. It is well established that “legal presumptions that rest on formalistic distinctions rather than actual market realities are generally disfavored in antitrust law.”<sup>2</sup> Amici economists offer perspective on the economic realities present in this case. In particular, they provide supporting economic and legal authority that: (1) explains the effect of Facebook’s exclusionary conduct in preserving the company’s market power; (2) describes the reinforcing and amplifying effects of Facebook’s multiple acquisitions and restraints on industry players; (3) summarizes economic literature regarding strategic entry deterrence, reputational signaling, and “kill zones” that illustrates why Facebook’s conduct should be evaluated holistically; and (4) demonstrates that legal precedent aligns with the economic literature and supports taking a holistic approach to evaluating the course of conduct at issue here.

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<sup>2</sup> *Eastman Kodak Co. v. Image Tech. Servs., Inc.*, 504 U.S. 451, 466–67 (1992).



Plaintiff-Appellant States<sup>3</sup> allege that Facebook engaged in a strategy and inter-related course of conduct whose combination preserved its monopoly power and suppressed competition in the market for personal social networking services. In short, the States allege a “buy or bury” course of conduct that involves two interrelated theories. First, the States allege that Facebook engaged in a series of acquisitions that enhanced its market power and reduced competition (the “buy” component). This includes acquiring well-known applications like Instagram and WhatsApp, potential competitors, lesser-known potential rivals, and firms offering products that could complement and thus enhance Facebook’s offerings to create user stickiness.<sup>4</sup> Second, after using broad interoperability to increase its market power, Facebook used its “bury” strategy to close off or limit interoperability between itself and other applications that it deemed a competitive threat or that rejected its buy-out offers. Facebook thus impeded the innovation that flows from greater competition.<sup>5</sup>

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<sup>3</sup> Plaintiff-Appellant States are listed in Br. of Appellants at Certificate-1, *New York v. Facebook, Inc.*, No. 21-7078 (D.C. Cir. Jan. 14, 2022) (“Br. of Appellants”).

<sup>4</sup> User “stickiness” is a metric that measures how frequently users log into or return to the platform. More frequent use indicates greater “stickiness.”

<sup>5</sup> Amici rely on the facts stated in Plaintiffs’ Complaint and Plaintiff-Appellants’ Brief. Compl., *New York v. Facebook, Inc.*, No. 1:20-cv-03589 (D.D.C. Dec. 9, 2020), ECF No. 4 (“Compl.”); Br. of Appellants.

Trying to determine the extent of anticompetitive harm that would have resulted if Facebook’s “buy” strategy had not been accompanied by its “bury” component misses the forest for the trees. Each part of the strategy reinforces the other. In addition, Facebook incrementally weakened competition *over time* through successive use of the “buy or bury” strategy. The district court erred in analyzing and dismissing the “buy” and “bury” components of Facebook’s conduct separately, thereby disregarding both the temporal progression of Facebook’s conduct and the cumulative anticompetitive effects of the conduct. The effects of Facebook’s acquisitions and the limitations it placed on interoperability between itself and other applications—including targets that declined Facebook’s buy-out offers—should not, and indeed, cannot be decomposed.<sup>6</sup>

Facebook’s holistic “buy or bury” strategy is both mutually reinforcing *and* cumulative. In economic parlance, Facebook’s dual actions serve as endogenous (internally-determined and self-reinforcing) causal factors resulting in harm to competition; by building on each other, the totality of the antitrust injury they are alleged to have caused in concert, exceeds that of the simple aggregation of each independent action. Decomposing the total anticompetitive harm between the buy and the bury components of an overarching anticompetitive scheme ignores the

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<sup>6</sup> In proffering this economic argument, we do not argue that acquisitions or interoperability restraints alone cannot cause anticompetitive injury. Each can result in harm to competition, but together the harm to competition is amplified.

significant synergies and reinforcing effect that Facebook gained from combining the two in a coordinated strategy, and “elevate[s] form over substance.”<sup>7</sup> An orchestral concert offers an apt analogy: each instrument on its own produces a sound, but a symphony represents far more than the sum total of separate instruments. Because the sounds of the instruments reinforce each other to produce the symphony, they cannot be separated into individual sonatas and still produce the same result.

## ARGUMENT

### **I. Facebook’s Market Power Flows from the Exclusionary Conduct Facebook Used to Procure It.**

The district court erred by divorcing Facebook’s market dominance from the process by which it has maintained that same market power.<sup>8</sup> In its current form, Facebook represents the amalgam of various entities acquired over the last approximately twelve years. Indeed, since 2010, Facebook has acquired at least 90 different companies, including firms specializing in the use of artificial intelligence

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<sup>7</sup> Cf. *FTC v. AbbVie Inc.*, 976 F.3d 327, 358 (3d Cir. 2020), *cert. denied*, 141 S. Ct. 2838 (2021) (when two agreements are part of a coordinated strategy, those agreements *should not* be evaluated separately to determine their effect on competition); *O’Bannon v. Nat’l Collegiate Athletic Ass’n*, 802 F. 3d 1049, 1065 (9th Cir., 2015) (“In other words, the substance of the compensation rules matters far more than how they are styled.”).

<sup>8</sup> Mem. Op. at 60, *New York. v. Facebook, Inc.*, No. 1:20-cv-03589-JEB (D.D.C. June 28, 2020), ECF No. 137.

in facial imaging, language processing, and identity verification.<sup>9</sup> How Facebook maintained its market power, and thereby elevated the importance of rival interoperability, plays a critical role in analyzing the antitrust harms that flow from its activities.

Antitrust scholars have distinguished between market power acquired or maintained through superior business acumen, ingenuity, and innovation, on the one hand, and market power obtained or maintained through acquisitions, exclusionary conduct, and/or the ability to evade antitrust scrutiny, on the other.<sup>10</sup> Facebook's harms to competition flow from the latter: the combination of acquisitions and interoperability restraints that reinforced each other. Economic logic teaches that “where a dominant firm is using an exclusionary practice to protect its established investment from an incipient technology, harm to innovation seems the most likely

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<sup>9</sup> *Digital Platforms and Antitrust*, The Thurman Arnold Project at Yale University, <https://som.yale.edu/faculty-research-centers/centers-initiatives/thurman-arnold-project-at-yale/digital-platforms-and-antitrust> (last visited Jan. 26, 2022).

<sup>10</sup> Thomas Krattenmaker, Robert Lande, & Steven Salop, *Monopoly Power and Market Power in Antitrust Law*, 75 *Geo. L.J.* 241, 249–52. The authors distinguish between Stiglerian market power (ability to control price by restraining output) and Bainian market power (ability to control price through exclusionary conduct). *See also United States v. Grinnell Corp.*, 384 U.S. 563, 570–71 (1966) (Under Sherman Act Section 2, “the willful acquisition or maintenance of that power [i]s distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.”).

outcome.”<sup>11</sup> In the current case, Facebook’s exclusionary conduct consists of the aforementioned acquisitions and burying of competitive threats acting in concert, requiring their analysis as a holistic anticompetitive strategy.

## **II. The Economic Effects of Monopolistic Conduct Like Facebook’s Reinforce and Amplify Each Other.**

Interdependence between Facebook’s anticompetitive actions occurs on at least three levels. *First*, as a general economic matter, acquisitions build on and reinforce each other, just as the rooms of a house build on a foundation and the second story builds on the first. A rational firm would acquire others that compete or that offer features complementary to its own in an effort to further its strategic goal. In other words, acquisitions, though they may differ in size, are not random events, but outcomes that build on their precursors. *Second*, having observed how Facebook can erase an application from its ecosystem if its buy-out offer is rejected (the “bury” component), an acquisition target is more likely to submit to Facebook’s overtures than to retain its independence (the “buy” component). In this example, each instance of Facebook’s execution of its “buy or bury” strategy amplifies both its reputation and its strategy over time, resulting in an intertemporal link between

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<sup>11</sup> Herbert Hovenkamp, *Schumpeterian Competition and Antitrust* 9 (Faculty Scholarship at Penn Law, 2008), [https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=2790&context=faculty\\_scholarshipedu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=2790&context=faculty\\_scholarship](https://scholarship.law.upenn.edu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=2790&context=faculty_scholarshipedu/cgi/viewcontent.cgi?referer=&httpsredir=1&article=2790&context=faculty_scholarship).

earlier and later executions of this strategy. *Third*, Facebook’s ability to impose interoperability restraints depends on, and has teeth as a result of, the market power it has accumulated through acquisitions and through applications buried when they did not succumb to its demands.

A. Facebook’s “Buy” and “Bury” Conduct Reinforce Each Other.

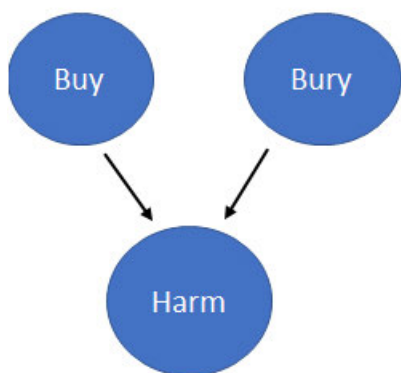
As Facebook has broadened its service offerings by purchasing firms including Instagram, WhatsApp, and dozens of others, interoperability has become the *sine qua non* for edge competitors or entrants offering complementary products. A new entrant in the personal social networking market needs exposure and users to succeed. As Facebook dominates the personal social networking market, this exposure and therefore success is dependent on the ability of rivals and complements to interoperate with Facebook and its platforms (such as Instagram). This reality has in turn granted Facebook leverage in negotiations and the ability to pursue its “buy or bury” strategy. The greater the need for interoperability, the more powerful the “bury” threat and the more likely an acquisition target acquiesces to Facebook’s demands.<sup>12</sup>

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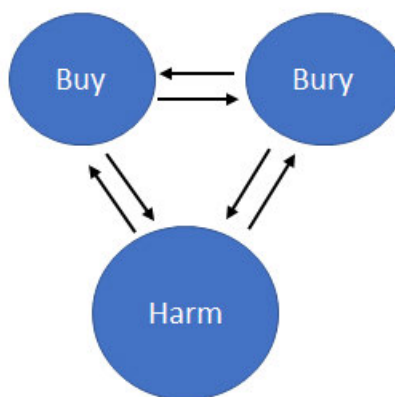
<sup>12</sup> Cf. Michael L. Katz, *Big Tech Mergers*, 54 *Info. Econ. & Policy* 1, 2 (2021). Katz starts from the observation that “[i]n a market in which a large base of users is essential to a firm’s ability to offer an attractive value proposition . . . the only economically viable means of entry may be to build up a base of users in an adjacent market and then provide the new service to that base of users—what is sometimes called a two-stage entry strategy.” He adds that “[s]ome commentators believe that

The simple figure below illustrates this causal relationship. Figure 1a reflects the erroneous interpretation of Facebook’s dual strategies as independent, showing the directional effects flowing from each type of conduct individually toward the harm but ignoring their interdependence. Figure 1b demonstrates the actual relationship between the two anticompetitive strategies and the resulting harm, with the causal arrows flowing in both directions between each and thus rendering it impossible to decompose the harm and assign it to one particular instance of conduct. As shown, the “bury” strategy not only includes the effects of that particular strategy, but also the “buy” harm that preceded it (e.g., reputational predation effects, discussed further *infra*), and vice versa.

*Figure 1a)* Erroneous assumption of the relationship between Facebook anticompetitive strategies under decomposition.



*Figure 1b)* Actual conditional and self-reinforcing relationship between anticompetitive conducts, precluding decomposition of the causes of harm.




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Instagram and WhatsApp would have used two-stage entry to become strong competitors to Facebook in social networking if that firm had not acquired them in 2012 and 2014, respectively.” This supports the notion that conduct that limits an entrant’s ability to grow its customer base, and eventually acquire that base, enables a monopoly to persist.

Equally important, Facebook's conduct represents a longitudinal pattern of acquisitions coupled with leveraging the resulting increased market power to sever the application interoperability that serves as a nascent competitor's lifeline. Recognizing this existential threat, countless of the 90-plus acquisition targets likely succumbed to Facebook's offer *because* of the "bury" component of Facebook's two-part anticompetitive scheme. Companies that resisted risked prompt retaliation by Facebook. The union of these actions augments the harm that each generates separately and precludes disaggregation of the conduct into individual components.

Antitrust law has acknowledged the propriety of this approach. For example, in *United States v. American Telephone and Telegraph Co.*, the court rejected the defendants' proposed "episode-by-episode approach" and instead evaluated the course of conduct that the government alleged as a whole. The court explained:

[T]he theory of the government's case is, basically, that the defendants engaged in a general, overall practice of anticompetitive behavior and that, in implementation of that practice, they resisted competition from weak and strong companies alike. Upon that basis, the government's claim is not defeated by the circumstance that some of [defendant's] competitors may have fallen prey to their own internal difficulties rather than to [defendant's] activities; even if actual injury to a competitor was not caused by the conduct of defendants, proof of that conduct may still be relevant as evidence of their intent to discourage all competitors, large and small.

524 F. Supp. 1336, 1344 (D.D.C. 1981). There, as here, interdependence of the sources of harm precluded disaggregation for the purposes of demonstrating antitrust



harm. Under these circumstances, evaluating each instance of Facebook’s conduct separately “has no basis either in precedent or in logic.” *Id.*<sup>13</sup>

The European Commission’s Google Android decision provides an apt comparison.<sup>14</sup> There, the European Commission concluded that the following conduct by Google constituted a “single and continuous infringement,” that is, that the conduct involved “a series of actions which form[ed] part of an overall plan because their identical objective distorts competition.”<sup>15</sup> After acquiring Android in 2005, Google initially made the Android’s source code available for free, meaning that anyone could access the source code and create modified versions of it.<sup>16</sup> This policy was a “major selling point[.]” in convincing equipment manufacturers and mobile network operators to adapt its new operating system.<sup>17</sup> Later, after using its open source policy to help solidify its dominance, Google shifted course and

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<sup>13</sup> See also *infra* Section III. Cf. *MCI Commc’ns Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1161 (7th Cir. 1983) (“Not requiring strict disaggregation of damages among the various unlawful acts of the defendant serves to prevent a defendant from profiting from his own wrongdoing and makes sense when damages arise from a series of unlawful acts intertwined with one another.”).

<sup>14</sup> The U.S. Department of Justice and several states recently brought an antitrust case against Google for similar conduct. *United States v. Google LLC*, No. 1:20-cv-03010 (D.D.C. Amended Complaint filed Jan. 15, 2021), ECF No. 94.

<sup>15</sup> Commission Decision 1/2003, art. 7, 2018 O.J. 302, [https://ec.europa.eu/competition/antitrust/cases/dec\\_docs/40099/40099\\_9993\\_3.pdf](https://ec.europa.eu/competition/antitrust/cases/dec_docs/40099/40099_9993_3.pdf).

<sup>16</sup> *Id.* at 33.

<sup>17</sup> See *id.*

required hardware manufacturers to enter into “anti-fragmentation agreements,” through which Google prevented its partners from distributing *any* modified Android products.<sup>18</sup> At the same time, Google restricted developers that created modified Android products from using its proprietary Application Programming Interfaces, making it more difficult for modified Android products to attract app developers, and effectively excluding them from competing with Google. In reaching its conclusions that Google’s conduct restricted competition, the European Commission evaluated Google’s conduct *as a whole* and noted how aspects of that conduct reinforced the overall anticompetitive scheme.<sup>19</sup>

In the same way, each part of Facebook’s overall course of conduct was mutually reinforcing. Facebook achieved dominance by offering interoperability and then entrenched that dominance and restricted competition by engaging in a “buy or bury” strategy that used that same interoperability as a cudgel, foreclosing entry of rival apps as well as complementary apps that would work with potential Facebook rivals.

Such interdependent and self-reinforcing schemes yield an additional noteworthy outcome: the potential departure of an acquisition’s purchase price from its competitive counterfactual, i.e., the transaction price had Facebook not exercised

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<sup>18</sup> *Id.* at 41.

<sup>19</sup> *See id.* at 233.

its market power to restrain competition. Whether parties consummate a transaction at market value depends on *voluntary* willingness by both the buyer and the seller to enter into the contract: “The fair market value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.”<sup>20</sup>

Facebook’s ability to pressure competitors and entrants offering attractive complementary features into being acquired has the anticompetitive effect of injecting downward pressure and price artificiality into transactions, in addition to creating “kill zones.”<sup>21</sup> Put differently, the acquisition price for many of these targets may have been significantly higher in a counterfactual (i.e., “but-for”) world where Facebook did not engage in the “bury” part of its two-part anticompetitive scheme. In a but-for world in which Facebook did not engage in the anticompetitive conduct alleged, Facebook may not have been willing to pay the requisite competitive price, so it may have been unable to complete many of these acquisitions. And in such a case, rivals would have likely emerged, resulting in more robust competition and greater innovation. At the same time, where Facebook perceived a significant

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<sup>20</sup> *United States v. Cartwright*, 411 U.S. 546, 551 (1973) (quoting Treas. Reg. § 20.2031-1(b)).

<sup>21</sup> Further discussion of “kill zones” appears in *infra* Section II.C.

competitive threat, such as with Instagram and WhatsApp, it was willing to pay a premium to neutralize the threat. *See* Compl. ¶¶ 119, 122.

These principles benefit from strong support in the economic literature. *First*, studies of strategic entry deterrence illustrate how a monopolist's anticompetitive conduct can result in a reputation for predation that builds and reinforces over time, deterring entry by potential competitors. *Second*, recent literature demonstrates that a monopolist's large acquisitions in a market can create a "kill zone" in a market that deters investment and development of competing platforms or applications.

B. The Anticompetitive Effects of Facebook's Reputation for Predation are Amplified Through Repetitive Conduct Over Time.

Economic analysis that models anticompetitive behavior recognizes that "early" manifestations of anticompetitive conduct can weaken competition in a market such that the negative impact of later conduct is amplified and aggravated. These analyses provide a helpful framework for understanding the intertemporal relationship between each instance of Facebook's conduct: actions that a firm engages in early on can weaken competition such that later conduct has even more devastating effects. This type of holistic view of multi-faceted monopolistic conduct aimed at sustaining and/or enhancing market power should inform legal analysis.

Strategic entry deterrence offers an example of monopolistic behavior where repeated instances of predatory conduct successively build upon the anticompetitive effects of their precursors, creating and sustaining a reputation that disincentivizes

entry and thereby stifles competition and entrenches monopoly power. Economists have studied conditions under which a monopolist may engage in predatory practices and profitably deter entry. A seminal study by Paul Milgrom and John Roberts revealed that a monopolist might engage in predatory behavior not to eliminate a particular competitor, but rather to establish a reputation that will “deter future potential entrants.”<sup>22</sup> Milgrom also succinctly summarizes the mechanism by which a predator attempts to influence a potential entrant’s expectations in an effort to dissuade entry. He explains, for example, that a predator firm’s conduct in sharply cutting prices could deter development of new products, dissuade new firms from entering the market, or stifle investment in the industry.<sup>23</sup> But regardless, *any* of these results would inure to the predator’s benefit.<sup>24</sup>

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<sup>22</sup> See generally Paul Milgrom & John Roberts, *Predation, Reputation, and Entry Deterrence*, 27 J. Econ. Theory 280, 281–312 (1982).

<sup>23</sup> Paul Milgrom, *Predatory Pricing*, The New Palgrave Dictionary of Econs. 576.

<sup>24</sup> Specifically, Milgrom explains:

[F]or example, a firm in an industry with rapid product change might cut prices sharply in answer to new entry in order to discourage the new entrant from continuing an active product development programme. Whether the entrant attributes its lack of profitability to its high costs, to weak market demand, to overcapacity in the industry, or to aggressive behaviour by its competitor, it will properly reduce its estimate of its future profits. If its capital has other good uses, this might lead it to withdraw from the industry. If not, it may nevertheless be dissuaded

Under a strategic entry deterrence framework, the monopolist's reputation does not merely reflect one potential rival's direct experience with the monopolist but rather the entirety of the monopolist's past conduct, which creates a reputation for predation. This serial conduct creates the reputation that leads potential entrants to "anticipate that the incumbent firm will behave similarly if they should enter, and, thus, entry appears less attractive to them."<sup>25</sup> The States' Complaint alleges precisely this type of conduct, for example explaining how "Zuckerberg's success in convincing Systrom to sell was based in no small part upon Zuckerberg's growing reputation for wielding Facebook's power as a sword."<sup>26</sup>

Patrick Bolton, Joseph F. Bradley, and Michael H. Riordan detail the economic support for reputational effect predation, the conduct in which Facebook

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from making new investments in and developing new products for the industry. At the same time, other firms may be deterred from entering the industry. If *any* of these things happen, the predator benefits.

*Id.*

<sup>25</sup> Milgrom & Roberts, *supra* note 22, at 281; *see also id.* at 284 ("Practicing predation now gives one a reputation as a predator which is valuable in deterring entry."). This type of "reputation effect predation" and signaling has also been studied in the predatory pricing context, where a firm may reduce prices in one market to generate a reputation as a price cutter in other markets, thereby deterring entry of rivals. *See* Patrick Bolton, Joseph F. Brodley, & Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, 88 *Geo. L.J.*, 2239, 2248 (2000).

<sup>26</sup> Compl. ¶ 120.

has engaged here.<sup>27</sup> The authors observe that “reputation predation projects the immediate anticompetitive consequences of a main predatory strategy. By linking reputation effect with a main predatory strategy [they] also illustrate that the two strategies combined are even more powerful and plausible than when considered in isolation.”<sup>28</sup> Amici argue this exact point; to uncover the extent of anticompetitive harm that flows from such conduct, the two types of conduct that compose Facebook’s “buy or bury” strategy must be analyzed in combination, not in isolation.

The economic theory detailed above reasonably postulates that new potential entrants have imperfect information about the payoffs to the monopolist of a predation strategy.<sup>29</sup> As a result, this theory applies well to real-world scenarios, where such imperfect information often exists.<sup>30</sup> Potential entrants in a market with an incumbent monopolist face the adverse selection problem; the monopolist benefits from information asymmetries regarding the payoffs from previous

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<sup>27</sup> Patrick Bolton, Joseph F. Brodley, & Michael H. Riordan, *Predatory Pricing: Strategic Theory and Legal Policy*, 88 *Geo. L.J.*, 2239-2330 (2000).

<sup>28</sup> *Id.*

<sup>29</sup> See Milgrom & Roberts, *supra* note 22, at 303; see also David M. Kreps & Robert Wilson, *Reputation and Imperfect Information*, 27 *J. Econ. Theory* 253, 276 (1982) (noting that their model “does nearly as well if there is no uncertainty about players’ payoffs, but there is uncertainty about *whether this is so.*”) (emphasis added).

<sup>30</sup> See Milgrom & Roberts, *supra* note 22, at 303.

iterations of its predatory conduct.<sup>31</sup> Indeed, in a similar study, economists David Kreps and Robert Wilson showed that the effects of even slight informational imbalances can be “dramatic . . . no matter how small the chance that the monopolist benefits from predation, the entrants nearly always avoid challenging the monopolist for fear of the predatory response.”<sup>32</sup> Facebook, the monopolist in this case, achieved its reputational status through a series of acquisitions and exclusionary conduct that entrenched its market power, allowing it to levy the indirect or implicit threat of such a response and reap the benefits of adverse selection.<sup>33</sup>

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<sup>31</sup> *Adverse Selection Definition*, Britannica, <https://www.britannica.com/topic/adverse-selection>, (“[A]dverse selection, also called antiselection, term used in economics and insurance to describe a market process in which buyers or sellers of a product or service are able to use their private knowledge of the risk factors involved in the transaction to maximize their outcomes, at the expense of the other parties to the transaction. Adverse selection is most likely to occur in transactions in which there is an asymmetry of information—where one party has more or better information than the other party.”)

<sup>32</sup> Kreps & Wilson, *supra* note 29, at 254.

<sup>33</sup> A detailed discussion of the adverse selection problem appears in George Akerlof’s seminal paper, “The Market for “Lemons: Quality Uncertainty and the Market Mechanism.” 84 Q. J. of Econ. 488, 493 (1970). Milgrom & Roberts, *supra* note 22, also observe that, “Our game theoretic, equilibrium analysis suggests that if a firm is threatened by several potential entrants, then predation may be rational against early entrants, even if it is costly when viewed in isolation, because it yields a reputation which deters other entrants. *Asymmetric information plays a crucial role in our analysis*, since it provides the rationale for entrants to base their expectations of the firm’s future behavior on its past actions. The analysis also suggests methods to treat general reputational phenomena.” (emphasis added).



A related framework focuses on the ability of a dominant firm to neutralize incentives of potential rivals to enter by gaining an advantage (or denying it to others) thereby reducing the profit competitors may expect from entering the market. Chiara Fumagalli and Massimo Motta's work reflects the general idea that an incumbency advantage may allow a firm with market power to prey on, or deter entry by, a firm that could be more efficient at scale.<sup>34</sup> In this framework, the dominant firm willingly sustains temporary losses, either by reducing its profit in the primary market or by pricing below cost to consumers in the secondary market, in order to prevent, at a later point in time, effective competition in the primary market. Facebook effectuated this same strategy using a bipartite approach.

First, in its relative infancy, Facebook offered consumers greater privacy protections, effectively limiting the platform's ability to monetize user data. In other words, Facebook "charged" consumers a lower price for usage of its platform. That consumers do not pay in dollars to use Facebook should not lead to the erroneous conclusion that Facebook is "free." Consumers pay Facebook "in-kind" by providing information and attention, which Facebook then uses to sell targeted advertisements. Thus, Facebook willingly sacrificed the short-term profits it would have accrued via monetization of user data so that it could expand its market

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<sup>34</sup> Chiara Fumagalli & Massimo Motta, *A Simple Theory of Predation*, 56 J. Law & Econ. 595 (2013).

presence in the primary market where its platform operates. Having thus achieved dominance, Facebook withdrew privacy protections users had come to expect, thereby effectively diluting its product's quality and increasing its in-kind price to users.

Demonstrating the alignment between economic reasoning and judicial precedent, Judge Koh's January 14, 2022, order in *Klein et al. v. Facebook* succinctly and accurately explained how users provide significant value to Facebook:

[U]sers provide significant value to Facebook by giving Facebook their information—which allows Facebook to create targeted advertisements—and by spending time on Facebook—which allows Facebook to show users those targeted advertisements. If users gave Facebook less information or spent less time on Facebook, Facebook would make less money.<sup>35</sup>

Second, the principle remains the same with respect to Facebook's restrictions on or withdrawal of interoperability as with predatory pricing. Facebook again demonstrated a willingness to sustain temporary losses. In other words, in the short-term, it decided to forego the benefits that interoperability would bring to its core

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<sup>35</sup> *Klein v. Facebook, Inc.*, No. 20-cv-08570 (N.D. Cal. Jan. 14, 2022), Order Granting in Part and Denying in Part Motion to Dismiss with Leave to Amend, at 69, ECF No. 214.

platform offering by enhancing consumer satisfaction so that it could entrench its monopoly power. As a result, its actions foreclosed rivals from entering the market.<sup>36</sup>

These reputational signaling frameworks demonstrate the deficiency of a compartmentalized rather than a holistic evaluation of Facebook's conduct. Viewed individually as to each competitor and each action, Facebook's behavior may appear less significant. However, the existence of multiple potential entrants and repeat interactions renders predation such as that in which Facebook engaged profitable because it deters entry of new and potentially more efficient or better-quality competitors.<sup>37</sup> According to the States' Complaint, Facebook's "buy or bury" strategy—acquisitions combined with actions to limit previously available interoperability—formed part of a concerted strategy to deter new rivals from entering the market for personal social networking services and to cabin the economic success of any but the most innocuous offerors of complementary products. This reputation—developed and bolstered by Facebook implementing its strategy over time—stifled competition and innovation in the market.

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<sup>36</sup> Facebook's willingness to sacrifice its own short-term interests to gain and entrench monopoly power is discussed further in Br. of Appellants at 64-65.

<sup>37</sup> See Milgrom & Roberts, *supra* note 22, at 282; see also *id.* at 304 ("Two factors in our model lead to the emergence of reputations: the informational asymmetries and the repeated actions with the possibility of observing past behavior.").

A proper economic analysis of Facebook's conduct necessitates the recognition of its strategy as repeated and prospective. The conditional dependence of current (and future) actions on past actions precludes separating each into individual components.<sup>38</sup> Ignoring the interdependencies between actions and treating each event independently falls prey to the same logical error as misinterpreting conditional probabilities as simple probabilities. Repetition and the ability to observe the outcomes of previous instances of its conduct allowed Facebook to discipline potential entrants that attempted to compete with its core product or to provide complementary services to rivals.<sup>39</sup>

C. A Course of Conduct like Facebook's Can Result in "Kill Zones" That Stifle Investment and Entry Into the Market.

Recent work on so-called "kill-zones" reflects another strand of economic literature that demonstrates the reinforcing effects of monopolistic conduct. This framework studies the concern that incumbent platforms might acquire potential rivals, dissuading other potential new entrants and preventing innovation from serving as a competitive threat.<sup>40</sup> "In a sense, such dominant platforms create a 'kill

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<sup>38</sup> Lynne Pepall, Dan Richards, & George Norman, *Industrial Organization: Contemporary Theory and Empirical Applications* 355 (5th ed. 2014).

<sup>39</sup> Milgrom & Roberts, *supra* note 22, at 304.

<sup>40</sup> Sai Krishna Kamepalli, Raghuram Rajan & Luigi Zingales, *Kill Zone* (Nat'l Bureau of Econ. Rsch., Working Paper No. 27146, 2021).

zone’ around their areas of activity.”<sup>41</sup> These “kill zones” do not result from any one act of a monopolist, but rather from shaping the *expectations* of potential targets that the monopolist’s course of conduct creates in the market: “If I don’t accept Facebook’s offer,” the acquisition target reasons, “I may not survive.”

In a 2018 paper, Feng Zhu and Qihong Liu show that (1) after Amazon vertically integrated within its platform by using its own brand to compete with third-party sellers, “third-party sellers affected by Amazon’s entry [have been] discouraged from growing their businesses on the platform, a result consistent with previous findings in the literature;”<sup>42</sup> and (2) by controlling the platform and the search results in particular, dominant platform operators can steer users to its clone and away from the independent merchant/developer. A merchant/developer rival, viewing the futility of competition on the merits against an entrenched monopolist, chooses an exit strategy, rather than remain and compete with the dominant platform

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<sup>41</sup> *Id.*

<sup>42</sup> See, e.g., Feng Zhu & Qihong Liu, *Competing with Complementors: An Empirical Look at Amazon.com*, 39 Strategic Mgmt. J. 2618 (2018) (finding that “affected” sellers on Amazon’s platform, against which Amazon competes directly, reduce the number of products offered on Amazon by 24.1 percent relative to unaffected sellers); Wen Wen & Feng Zhu, *Threat of Platform-Owner Entry and Complementor Responses: Evidence from the Mobile App Market*, 40 Strategic Mgmt. J. 1336 (2019). For a review of the early kill-zone literature, see Hal Singer, *Inside Tech’s “Kill Zone”: How to Deal With the Threat to Edge Innovation Posed by Multi-Sided Platforms*, ProMarket, (Nov. 21, 2018), <https://promarket.org/2018/11/21/inside-tech-kill-zone/>.

itself for customers on the merits of their respective products. Accepting this economic logic precludes isolating the two types of conduct when evaluating their anticompetitive effects. Because they reinforce each other, the causal nexus flows between each of them and between them and the resulting harm, as shown in Figure 1b *supra*.

In a recent working paper, economists Sai Krishna Kamepalli, Luigi Zingales, and Raghuram Rajan studied the effect of large acquisitions by Google and Facebook on venture capital investment in start-up software companies that had the potential to “develop into substitutes (or complements . . .) to the incumbent platforms.”<sup>43</sup> To do so, they collected data on the number and dollar amounts of deals invested by venture capitalists in start-up companies operating in the same “space” as the acquired companies around the time Facebook and Google announced major acquisitions.<sup>44</sup> They found that “[i]n the three years following an acquisition by Google and Facebook in a certain industry sector, V[enture] C[apitalist] investments in that sector . . . drop[ped] by over 40% . . . and the number of deals [fell] by over 20%.”<sup>45</sup> Similarly, their theoretical analysis indicates that app

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<sup>43</sup> Kamepalli, Rajan, & Zingales, *supra* note 40.

<sup>44</sup> The paper defines the same “space” using two metrics: (1) a metric based on a machine learning algorithm that measures degree of similarity; and (2) whether the start-up operates in the same primary industry as the acquired company. *Id.* at 8.

<sup>45</sup> *Id.* at 2.

designers are less inclined to adapt their programs to a new platform if they believe it is likely to soon be acquired by the dominant platform.<sup>46</sup> This illustrates how acquisitions of the type Facebook engaged in can have a chilling effect on investment and innovation.

Importantly, an acquisition not only affects the behavior of the buyer and the target, but also that of other, non-acquired firms in the same sector. Recent empirical work by economists Pauline Affeldt and Reinhold Kesler considered app acquisitions made by Google, Apple, Facebook, Amazon, and Microsoft. The authors found that competing apps tended to innovate less following these acquisitions.<sup>47</sup> They also found that affected markets experienced less entry post-acquisition.<sup>48</sup>

These studies further illustrate why Facebook's anticompetitive scheme should be considered as a whole for purposes of an antitrust inquiry. The States allege that Facebook's "buy or bury" strategy, including its acquisitions and its retraction of interoperability for potential competitors and for app developers that sought to interoperate with actual or prospective rivals, deterred competition in the market as a whole, chilled innovation, and worsened the user experience. These

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<sup>46</sup> *Id.*

<sup>47</sup> Pauline Affeldt & Reinhold Kesler, *Competitors' Reactions to Big Tech Acquisitions: Evidence from Mobile Apps*, Discussion Paper (2021).

<sup>48</sup> *Id.*

effects do not flow from single acts of monopolistic behavior; they result from a course of monopolistic conduct over time. By breaking apart each aspect of Facebook's conduct, the district court's analysis overlooks this important interaction.

### **III. Legal Precedent Also Supports Considering Monopolistic Conduct as a Whole.**

The economic principles discussed here accord with decades of legal precedents. It is well established that courts should not “tightly compartmentaliz[e]” anticompetitive conduct into its “various factual components and wip[e] the slate clean after scrutiny of each.” *Cont'l Ore Co. v. Union Carbide & Carbon Corp.*, 370 U.S. 690, 699 (1962). Put differently:

In a monopolization case conduct must always be analyzed ‘as a whole.’ A monopolist bent on preserving its dominant position is likely to engage in repeated and varied exclusionary practices. Each one viewed in isolation might be viewed as de minimis or an error in judgment, but the pattern gives increased plausibility to the claim.

Phillip E. Areeda & Herbert Hovenkamp, *Antitrust Law* ¶ 310c7 (4th ed. 2013-2018); *see also Swift & Co. v. United States*, 196 U.S. 375, 396 (1905) (“[W]hatever we may think of them [the ‘constituent elements’ of the scheme] separately when we take them up as distinct charges, they are alleged sufficiently as elements of the



scheme. . . . [T]hey are bound together as the parts of a single plan. The plan may make the parts unlawful.”).<sup>49</sup>

As both economic reasoning reflected in the literature and legal precedent demonstrate, decomposing Facebook’s monopolistic course of conduct into its parts and evaluating each individually misses the context and the full harm of the conduct at issue. Amici respectfully submit that as a matter of sound economics and law, the district court erred by disaggregating Facebook’s course of conduct in this manner.

### CONCLUSION

For the foregoing reasons, the district court’s decision should be reversed.

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<sup>49</sup> See also *In re Nat’l Football League’s Sunday Ticket Antitrust Litig.*, 933 F.3d 1136, 1153 (9th Cir. 2019) (“Looking holistically at the alleged conduct, we conclude that the complaint adequately pleads that the vertical NFL-DirecTV Agreement works in tandem with the Teams-NFL agreement to restrain competition . . . . Accordingly, we reject the defendants’ argument that we cannot view the effects of both the horizontal and vertical agreements working together.”); *Caribbean Broad. Sys., Ltd. v. Cable & Wireless PLC*, 148 F.3d 1080, 1087 (D.C. Cir. 1998) (“‘Anticompetitive conduct’ can come in too many different forms, and is too dependent upon context, for any court or commentator ever to have enumerated all the varieties.”); *Viamedia, Inc. v. Comcast Corp.*, 951 F.3d 429, 453 (7th Cir. 2020), *cert. denied*, 141 S. Ct. 2877, 210 L. Ed. 2d 974 (2021) (“Conduct that can harm competition may fit into more than one . . . court-devised categor[y]. After all, the ‘means of illicit exclusion, like the means of legitimate competition, are myriad.’”) (quoting *Verizon Commc’ns, Inc. v. Law Offs. of Curtis v. Trinko, LLP*, 540 U.S. 398 (2004)).

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Respectfully submitted,

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**CERTIFICATE OF COMPLIANCE**

Pursuant to Federal Rule of Appellate Procedure 32(g)(1), I certify that this brief complies with the type-volume limitations of Federal Rule of Appellate Procedure 29(a)(5) and D.C. Circuit Rule 32(e)(3) because it contains 6216 words, excluding the portions of the brief exempted by Federal Rule of Appellate Procedure 32(f) and Circuit Rule 32(e)(1). This brief complies with the typeface and type style requirements of Federal Rules of Appellate Procedure 32(a)(5) and 32(a)(6) because it has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman and 14- point font.

Dated: January 28, 2022

/s/ Sharon Robertson

**CERTIFICATE OF SERVICE**

I certify that on January 28, 2022, I caused the foregoing to be filed through this Court's CM/ECF system, which will serve a notice of electronic filing on all registered users.

/s/ Sharon Robertson

# ADDENDUM

## ADDENDUM

**Daron Acemoglu** is an Institute Professor at MIT. His academic work covers a wide range of areas, including political economy, economic development, economic growth, technological change, inequality, labor economics, and economics of networks. Dr. Acemoglu is an elected fellow of the National Academy of Sciences, the American Academy of Arts and Sciences, the Econometric Society, and the European Economic Association, among others. He is also a member of the Group of Thirty. Dr. Acemoglu has received numerous honors for his work, including the inaugural T. W. Shultz Prize from the University of Chicago in 2004, the John Bates Clark Medal in 2005, the Erwin Plein Nemmers Prize in 2012, the 2016 BBVA Frontiers of Knowledge Award, the Carnegie Fellowship in 2017, the Jean-Jacques Laffont Prize in 2018, the Global Economy Prize in 2019, and the CME Mathematical and Statistical Research Institute prize in 2021. He is also the author of five books, including New York Times bestseller *Why Nations Fail: Power, Prosperity, and Poverty* (joint with James A. Robinson).

**Cristina Caffarra** is an expert in competition economics who has directed economic analyses in multiple competition investigations on landmark mergers and antitrust matters over the past 20 years, before the European Commission and the competition agencies of the United Kingdom, multiple European Union Member States, and several other agencies across the world. She has provided expert

economic evidence in litigated cases before the courts (from the General Court in Luxembourg to the High Court and the Competition Appeal Tribunal in London, and several others). Dr. Caffarra is a contributor to the global discussion on regulation of the digital economy, advising government agencies as well as companies, writing and regularly speaking on competition, regulation, and digital policy. Dr. Caffarra is an Honorary Professor at University College London and Co-Director of the CEPR Research Policy Network on Competition.

**Gregory S. Crawford** is a Professor of Economics at the University of Zurich and co-founder with Cristina Caffarra of the Centre for Economic Policy Research (CEPR) Competition Policy network. In 2007-2008, he was the Chief Economist at the U.S. Federal Communication Commission (FCC).

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**Florian Ederer** is an Associate Professor in Economics at the Yale School of Management, an affiliated faculty member of the Department of Economics, and a research staff member of the Cowles Foundation. His research focuses on what drives and hinders innovation, both in and outside organizations, with a particular focus on antitrust-related issues.

**Massimo Motta** is Research Professor at ICREA-Universitat Pompeu Fabra and at the Barcelona School of Economics (BSE). He served as Chief Competition Economist of the European Commission from 2013 to 2016, and he has extensive experience in advising competition and regulatory agencies. Massimo is the President of the European Association of Researchers in Industrial Economics, and his research has been published in the main international economic journals. His book on *Competition Policy: Theory and Practice* (Cambridge U.P., 2004) is the standard reference on the economics of antitrust. He also co-authored *Exclusionary practices: The Economics of Monopolisation and Abuse of Dominance* (Cambridge U.P., 2018).

**Martin Peitz** is Professor of Economics at the University of Mannheim, Germany, and a director of the Mannheim Centre for Competition and Innovation - MaCCI. He co-authored the leading graduate textbook *Industrial Organization: Markets and Strategies*, and the monograph *The Economics of Platforms: Concepts*



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**Thomas Philippon** is the Max L. Heine Professor of Finance at New York University, Stern School of Business. Philippon was named one of the “top 25 economists under 45” by the IMF in 2014. He has won the 2013 Bernácer Prize for Best European Economist under 40, the 2010 Michael Brennan & BlackRock Award, the 2009 Prize for Best Young French Economist, and the 2008 Brattle Prize for the best paper in Corporate Finance. Philippon has studied various topics in macroeconomics and finance: systemic risk and financial crisis, the dynamics of corporate investment and household debt, financial innovation and financial regulation, Eurozone crisis. His recent book “The Great Reversal” (Harvard Press, 2019) focuses on the increasing market power of large firms. He currently serves as an academic advisor to the Financial Stability Board and to the Hong Kong Institute for Monetary and Financial Research. He was previously an advisor to the New York Federal Reserve Bank, a board member of the French prudential regulatory authority from 2014 to 2019, and the senior economic advisor to the French finance minister in 2012-2013. Philippon graduated from Ecole Polytechnique, received a PhD in Economics from MIT and joined New York University in 2003.

**Nancy L. Rose** is the Charles P. Kindleberger Professor of Applied Economics and past department head in the MIT Economics Department, where her

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**Robert Seamans** (Ph.D., UC Berkeley) is an Associate Professor at New York University's Stern School of Business and Director of the Center for the Future of Management. Professor Seamans' research focuses on how firms use technology in their strategic interactions with each other, and also focuses on the economic consequences of AI, robotics and other advanced technologies. His research has been published in leading academic journals and been cited in numerous outlets including The Atlantic, Forbes, Harvard Business Review, The New York Times, The Wall Street Journal and others. In 2015, Professor Seamans was appointed as

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**Hal Singer** is an expert in antitrust, consumer protection, and regulation. He has researched, published, and testified on competition-related issues in a wide variety of industries, including media, pharmaceuticals, sports, and finance. He has extensive experience providing expert economic and policy advice to regulatory agencies in the United States and Canada, as well as before congressional committees. Dr. Singer is also an Adjunct Professor at Georgetown University, McDonough School of Business, where he teaches advanced pricing to MBA candidates. In 2018, the American Antitrust Institute honored Dr. Singer with an antitrust enforcement award for his work in the Lidoderm antitrust litigation.

**Marshall Steinbaum** is an Assistant Professor of Economics at the University of Utah. His research focuses on detecting market power in labor markets and online platforms and documenting its effects, with a specific focus on antitrust applications.

**Joseph E. Stiglitz** is University Professor at Columbia University, where he teaches in the Economics Department and Business School. Professor Stiglitz was the recipient of the Nobel Memorial Prize in Economic Sciences in 2001 and the John Bates Clark Medal winner in 1979. He was chairman of the Council of Economic Advisers, where he coordinated antitrust policy with the Justice

Department and its effects on the economy. He also was senior vice president and chief economist of the World Bank. Known for his pioneering work on asymmetric information, Professor Stiglitz has written seminal articles and books across virtually every field of economics, including industrial organization.

**Ted Tatos** is the Associate Economics editor of the Antitrust Bulletin journal, where he has also edited two special symposia. He is currently affiliated with EconONE Research and has served as an expert in multiple antitrust litigation matters. He has testified in both federal and state court and has presented before the Chief Economist's Team (CET) at the European Commission's Director General of Competition (DG-COMP) with regard to consumer lock-in present in the market for mainframes. He has been an adjunct professor at the University of Utah, where he taught graduate-level econometrics.

**Tommaso Valletti** is Professor of Economics at Imperial College London, and also Professor of Economics at the University of Rome. He is currently the Head of the Department of Economics & Public Policy at Imperial College Business School. He is a Non-Executive Director to the board of the Financial Conduct Authority. He was the Chief Competition Economist of the European Commission (Directorate General for Competition) between 2016 and 2019, when he led the economic analysis on many large mergers and antitrust cases (e.g. Google Shopping,

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**Luigi Zingales** is the Robert C. McCormack Professor of Entrepreneurship and Finance at the Booth School of Business, University of Chicago. He is the director of the Stigler Center at the University of Chicago. He is also a research fellow for the National Bureau of Economic Research, for the Center for Economic Policy Research, and for the European Governance Institute. In 2014 he was the President of the American Finance Association. His research earned the 2003 Bernácer Prize for the best young European financial economist. His book, *Saving Capitalism from Capitalists*, coauthored with Raghuram G. Rajan, has been acclaimed as “one of the most powerful defenses of the free market ever written.”