

No. 19-16122

United States Court of Appeals for the Ninth Circuit

FEDERAL TRADE COMMISSION,
Plaintiff – Appellee,

v.

QUALCOMM INCORPORATED, A DELAWARE CORPORATION,
Defendant – Appellant,

SAMSUNG ELECTRONICS COMPANY, LTD.;
SAMSUNG SEMICONDUCTOR INC.; INTEL CORPORATION; ERICSSON, INC.;
SAMSUNG ELECTRONICS AMERICA, INC.; MEDIATEK INC.,
Intervenors,

NOKIA TECHNOLOGIES OY,
Intervenor.

Appeal from the U.S. District Court
for the Northern District of California
The Honorable Lucy H. Koh (No. 5:17-cv-00220-LHK)

**BRIEF OF *AMICI CURIAE* ANTITRUST AND PATENT LAW
PROFESSORS, ECONOMISTS, AND SCHOLARS
IN SUPPORT OF APPELLANT AND REVERSAL**

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INTEREST OF AMICI CURIAE¹

The *Amici Curiae* are 20 law professors, economists, and scholars who teach and research antitrust law and patent law. They have an interest in promoting continuity in these interrelated doctrines, ensuring progress in new patented inventions that benefit consumer welfare through innovation markets. They have no stake in the parties or in the outcome of this case. The *Amici* are set forth in Appendix A.

SUMMARY OF ARGUMENT

This Court should reverse the district court's decision below. The Appellant and other *amici* address the numerous doctrinal and factual infirmities in the district court's decision, and thus *Amici* here offer additional legal insights to understand the district court's misapplication of antitrust law: In finding a single firm's licensing of its patents to violate the antitrust laws, the district court failed to follow the rule of reason approach required under modern antitrust law and instead applied an approach more akin to now-abrogated per se rules with only

¹ All parties have consented to the filing of this brief. No counsel for any party authored this brief in whole or in part, and no person or entity, other than *amici* or their counsel, made a monetary contribution intended to fund the preparation or submission of this brief.

generalized evidence and theoretical support. *See E.I. du Pont de Nemours & Co. v. FTC*, 729 F.2d 128, 137-139 (2d Cir. 1984) (holding that the FTC must apply clear evidentiary standards beyond mere assertions of “anticompetitive impact” as necessary to avoid “arbitrary and capricious administration of § 5”).

One of the central challenges in modern antitrust law concerns the relationship between cases of per se illegality and rule of reason cases. The per se rules remain critical for dealing with collusive behavior among competitors, but that approach has been abrogated for single-firm conduct where courts have rightly shifted to rule of reason analysis, including cases for intellectual property licensing. *See United States v. Studiengesellschaft Kohle, m.b.H.*, 670 F.2d 1122 (D.C. Cir. 1981) (reversing district court’s per se ruling of illegal monopolization and injunctive order prohibiting patent owner from exclusively licensing; mandating patent owner license to all applicants). The antitrust agencies’ guidelines for licensing intellectual property issued in 1995 and re-issued in 2017 state: “In the vast majority of cases, restraints in intellectual property licensing arrangements are evaluated under the rule of reason.” U.S. DEP’T OF JUSTICE & FEDERAL TRADE COMM’N,

ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 3.4, at 16 (2017) (“2017 ANTITRUST GUIDELINES”). The Department of Justice well understood that antiquated per se rules resulted in “false positives” that wrongfully targeted business practices that were either innocuous or benefitted consumers. Too many courts punished defendants simply by characterizing their commercial practices as anti-competitive, using inappropriate rhetorical flourishes like the district court’s allegation in this case that Qualcomm “strangled” or “hobbled” competition. *FTC v. Qualcomm Corp.*, 2019 WL 2206013, at *122, *130 (N.D. Cal. 2019); *see also E.I. du Pont de Nemours*, 729 F.2d at 138 (“Lessening of competition is not the substantial equivalent of ‘unfair methods’ of competition.”).

The district court’s ruling and its sweeping, worldwide injunctive order have all the indicia of the discredited per se approach under a veneer of what might appear to be a rule of reason analysis in a lengthy opinion. As Timothy Muris, former Chair of the FTC, has explained: “Inferences of competitive injury are, of course, the heart of per se condemnation under the rule of reason. . . . The long, and often sorry, history of [cases of single-firm] monopolization in the courts reveals far

too many mistakes even without truncation.” Timothy J. Muris, *The FTC and the Law of Monopolization*, 67 ANTITRUST L.J. 693, 723 (2002). The district court wholeheartedly endorsed the FTC’s theory of monopolization despite the FTC’s expert witnesses being unable to present any real-world economic evidence concerning the purported anti-competitive effects of Qualcomm’s licensing practices, such as higher prices for consumers. See Frank H. Easterbrook, *The Limits of Antitrust*, 63 TEX. L. REV. 1, 9 (1984) (recognizing that “most anticompetitive explanations predict lower output and higher prices”). Thus, the district court’s decision represents a return back to generalized, per se style analysis unconnected from economic facts or rigorous economic analysis.

Amici initially review some prominent historical examples of antitrust overreach in innovation markets in the high-tech industry to show how the district court’s opinion resurrects the dangerous approach of per se illegality, which led to its imposing sweeping antitrust sanctions based solely on hypothetical examples divorced from all real-world evidence of adverse economic impact.

Amici then show the district court’s opinion reflects an undue reliance on the per se illegal rules applied in past, discredited antitrust

cases. First, the district court makes only *inferences* of competitive injury, without finding harm to consumers from either higher prices or reduced innovation in the smartphone industry—neither of which occurred. *See, e.g.,* Jonathan M. Barnett, *Antitrust Overreach: Undoing Cooperative Standardization in the Digital Economy*, MICH. TECH. L. REV. (forthcoming 2019), at <https://ssrn.com/abstract=3277667> (reviewing empirical evidence on patent holdup and finding that all studies show the smartphone market has maintained increased output, quality-adjusted price declines, robust entry rates, and continuous innovation). Mere theoretical possibilities are not sufficient under the modern rule of reason approach. *See E.I. du Pont de Nemours*, 729 F.2d at 138.

Second, the district court fails to prove the required *causal nexus* by uncritically relying on testimonial statements from Qualcomm’s competitors as FTC witnesses who argued that Qualcomm’s licensing practices led them to forego research and development (R&D) or ultimately leave the market. But the district court does not support these testimonial recitations with any economic analysis of the value chain in the smartphone industry. The district court’s opinion attempts to cover for the lack of economic data and analysis by relying entirely on

documentary evidence, such as emails, PowerPoints, and press releases to merely characterize Qualcomm's licensing business model as anticompetitive.

Modern rule of reason analysis requires far more to reach the conclusions asserted by the district court. *See, e.g., United States v. AT&T, Inc.*, 310 F. Supp.3d 161, 219-27 (D.D.C. 2018), *aff'd*, 916 F.3d 1029 (D.C. Cir. 2019) (rejecting economic model used by government to justify its allegation of anti-competitive effects because it fails to account for or is contradicted by real-world economic facts). This Court should reverse the district court.

ARGUMENT

The intersection of antitrust law and patent law was historically fraught with tension. Enforcers and courts first identified an inherent conflict between the “monopoly” secured by the Patent Act and the “monopoly” sanctioned by the federal antitrust statutes. *See Hartford-Empire Co. v. United States*, 323 U.S. 386, 452 (1944) (Rutledge, J., dissenting in part) (“Basically these [laws] are opposed in policy, the one granting rights of monopoly, the other forbidding monopolistic activities.”); *see also* LAWRENCE A. SULLIVAN, ANTITRUST § 177, at 505

(1977) (“Let there be no pretense that the patent system is not in potential collision with antitrust; it clearly is.”). They thus adopted per se rules and allowed generalized intuitions about patent owners exercising illegal monopoly power to inform their judicial analyses in prohibiting licensing and other commercial practices, such as the infamous and now-discredited “nine no-nos.” See BRUCE WILSON, DEPUTY ASSISTANT ATT’Y GEN., U.S. DEP’T OF JUST., PATENT AND KNOW-HOW LICENSE AGREEMENTS, FIELD OF USE, TERRITORIAL, PRICE AND QUANTITY RESTRICTIONS (Nov. 6, 1970) (setting forth nine types of licensing and other commercial practices by patent owners that would likely be subject to per se liability under the antitrust laws).

In the past several decades, though, courts recognized that both antitrust law and patent law “are aimed at encouraging innovation, industry and competition.” *Atari Games Corp. v. Nintendo of Am., Inc.*, 897 F.2d 1572, 1576 (Fed. Cir. 1990). In 1995, the FTC and DOJ issued new guidelines on intellectual property licensing activities, setting forth that intellectual property no longer would be governed by special antitrust rules distinct from other forms of property. See U.S. DEP’T OF JUSTICE & FEDERAL TRADE COMM’N, ANTITRUST GUIDELINES FOR THE

LICENSING OF INTELLECTUAL PROPERTY § 2.1, at 2 (1995) (“1995 Antitrust Guidelines”). The two agencies reiterated this position in 2017, *see* 2017 Antitrust Guidelines § 2.1, at 3. Courts and enforcers thus shifted away from special *per se* rules that reflexively punished patent owners as illegal monopolists.

Now, they engage in a substantive economic inquiry into market power, anti-competitive effect, or consumer harm. To better secure the “dynamic efficiencies” created by private investment in R&D that create new products and services that benefit everyone, they shifted to a rule of reason approach requiring proof of harm to competition and to consumers on the basis of sound evidence of increased prices, reduced competition, and reduced innovation. *See* 1995 Antitrust Guidelines § 3.4, at 16-17; 2017 Antitrust Guidelines § 3.4, at 16-17. They relegated to the dustbin of history Assistant Attorney General Wilson’s “nine no-nos” of *per se* prohibitions against a litany of unilateral patent licensing practices.

The district court’s decision violates these important and well-established principles in modern antitrust law by taking a giant step backward to the old days of sweeping prohibitions against a single firm’s patent licensing practices. The district court’s approach also will stifle

the innovation economy, which has flourished under the updated antitrust regime. *See United States v. Microsoft Corp.*, 253 F.3d 34, 91 (D.C. Cir. 2001) (explaining that novel business practices in high-tech markets should not be “‘conclusively presumed to be unreasonable and therefore illegal without elaborate inquiry as to the precise harm they have caused or the business excuse for their use’”) (quoting *Northern Pac. Rwy. Co. v. United States*, 356 U.S. 1, 5 (1958)). If courts reflexively condemn novel intellectual property licensing arrangements without economic evidence proving anti-competitive effect, the patent system will no longer protect long-term investments in innovation because these licensing business models are needed to deploy innovations in the marketplace.

In two key respects, the district court’s opinion violates this Court’s instruction that “[p]er se categories are not to be expanded indiscriminately to new factual situations.” *International Healthcare Mgmt. v. Hawaii Coalition for Health*, 332 F.3d 600, 603 (9th Cir. 2003); *see also American Ad Mgmt. v. GET Corp.*, 92 F.3d 781, 787 (9th Cir. 1996) (noting “Supreme Court’s repeated statements that the per se approach is not to be extended to new factual situations”). First, the

district court adopted the FTC's assertion of single-firm monopolization with respect to Qualcomm's sale of its chipsets and intellectual property licenses, without conducting any economic inquiry as to either the possible benefits or the possible adverse effects of its novel licensing practices. Second, the district court embraced dubious "theory-driven" arguments unsupported by real-world economic evidence. In combination, this resulted in no inquiry by the district court into economic evidence of market behaviors or impacts. *See* Douglas H. Ginsburg & Joshua D. Wright, *Use and abuse of bargaining models in antitrust: AT&T/Time-Warner and FTC v. Qualcomm*, TRUTH ON THE MARKET (Mar. 14, 2019), <https://truthonthemarket.com/2019/03/14/use-and-abuse-of-bargaining-models-in-antitrust/>.

I. The Rule of Reason Analysis Was Adopted by Enforcers and Courts Given Error Costs in Non-Evidence-Based Antitrust Doctrines that Stifled Dynamic Efficiencies in Innovation Markets that Benefitted Consumers

The shift to rule of reason analysis for single-firm monopolization claims arose from legitimate concerns about false positives in enforcement actions and lawsuits, which can discourage efficient conduct that benefits consumers. *See Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 414 (2004) ("Mistaken inferences

and the resulting false condemnations ‘are especially costly, because they chill the very conduct the antitrust laws are designed to protect.’” (quoting *Matsushita Elec. Industrial Co. v. Zenith Radio Corp.*, 475 U.S. 574, 594 (1986)). The risk of false positive errors is especially high in rapidly moving innovation markets. See Geoffrey A. Manne & Joshua D. Wright, *Innovation and the Limits of Antitrust*, 6 J. COMP. L. & ECON. 153, 167 (2010) (“Because innovation involves new products and business practices, courts and economists’ initial understanding of these practices will skew initial likelihoods that innovation is anticompetitive and the proper subject of antitrust scrutiny.”); David S. Evans & Keith N. Hylton, *The Lawful Acquisition and Exercise of Monopoly Power and the Implications for the Objectives of Antitrust*, 4 COMPETITION POLICY INT’L 203, 231-240 (2008) (explaining how antitrust analysis can be biased against dynamic competition and its welfare benefits because this analysis is often based on models of static competition); George R. Hay, *Innovations in Antitrust Enforcement*, 64 ANTITRUST L.J. 7, 12 (1995) (noting that antitrust officials started accounting for the benefits of innovation in patent licensing activities “to undo the damage done by the famous ‘nine no-no’s’ of the early 1970s”).

As former FTC Commissioner Joshua Wright has explained: “Our economic knowledge regarding innovation itself, conduct affecting innovation, and how to assess competitive outcomes involving tradeoffs between product market competition and innovation are far less impressive than our knowledge in a purely static setting. The costs of false positives leading to a chilling of pro-competitive innovation are significant.” Joshua D. Wright, *Antitrust, Multi-Dimensional Competition, and Innovation: Do We Have an Antitrust-Relevant Theory of Competition Now?*, in COMPETITION POLICY AND PATENT LAW UNDER UNCERTAINTY: REGULATING INNOVATION 230 (2011). Apart from cases of horizontal restraints like price-fixing arrangements between firms, to which a per se standard applies, requiring enforcers and courts to base their analyses and conclusions on proven evidence of consumer harm, such as increased prices or decreased output, guards against overbroad application of the antitrust laws.

Historical examples abound of overbroad and mistaken enforcement actions for allegedly monopolistic behavior when in fact the contested business practices were either harmless or beneficial for consumers. One conspicuous example of antitrust overreach was the

DOJ's thirteen-year case against IBM for allegedly exploiting its monopoly power in the 1960s by bundling software and maintenance services with sales of its mainframe computers. *See* Franklin M. Fisher, John J. McGowan and Joen E. Greenwood, FOLDED, SPINDLED AND MUTILATED: ECONOMIC ANALYSIS AND *U.S. v. IBM* (1983); Carol B. Swanson, *Antitrust Excitement in the New Millennium: Microsoft, Mergers, and More*, 54 OKLA. L. REV. 285, 310-311 (2001). The IBM case was brought in the final days of the Johnson administration in January 1969. Thirteen years later, the DOJ dismissed its complaint, admitting it was "without merit." *In re IBM Corp.*, 687 F.2d 591, 594 (2d Cir. 1982). History repeats itself: the FTC's complaint against Qualcomm was filed in the closing days of the Obama Administration in January 2017.

Commentators and judges have been highly critical of the IBM antitrust case. *See, e.g.*, Fisher, *et al.*, FOLDED, SPINDLED AND MUTILATED, *supra*; Swanson, 54 OKLA. L. REV. at 311 (summarizing criticisms from Judge Robert Bork and others). Today, the *IBM* case is often cited as an archetypical example of "arrogance" by enforcers and courts for mistakenly believing they understood the nature of the evolving computer industry in the 1960s. *See* John E. Lopatka, *United States v.*

IBM: *A Monument to Arrogance*, 68 ANTITRUST L.J. 145 (2000); see also Ronald A. Cass, *Antitrust for High-Tech and Low: Regulation, Innovation, and Risk*, 9 J. L. ECON. & POL'Y 169, 178 (2013) (calling the IBM litigation “the paradigmatic case for ill-conceived antitrust enforcement”); William E. Kovacic, *Designing Antitrust Remedies for Dominant Firm Misconduct*, 31 CONN. L. REV. 1285, 1289 (1999) (identifying the IBM case “as a singular example of prosecutorial miscalculation and failure”); Michael Boudin, *Book Review: Forensic Economics*, 97 HARV. L. REV. 835, 835 (1984) (“*United States v. IBM* appears in retrospect to be one of the great misadventures in antitrust litigation”).

The government’s case against IBM suffered from two key errors. First, the government failed to recognize that bundling hardware, software, and maintenance services was common throughout the industry, which strongly suggested that this was an efficient arrangement that was demanded by, and benefited, users. Cass, 9 J. L. ECON. & POL'Y at 178-79. Second, the government was overly hasty in assuming that IBM exercised market power in the computer market. Despite its apparently impregnable position as the leading mainframe

producer in early 1969, IBM soon faced threats from innovators who replicated much of the capacities of a mainframe computer at a lower cost and in a smaller physical package. In the 1970s, IBM mainframes were challenged by “minicomputers” (the size of refrigerators) sold by Digital Equipment Corporation, Data General, and Control Data Corporation. Shortly thereafter, IBM faced stiffer competition from the now-ubiquitous “personal computer,” first pioneered by Apple and IBM and later matched or overtaken by other successful competitors. These rapid changes in market conditions illustrate the dangers of using the antitrust laws to re-engineer fluid technology markets without a sound factual understanding of actual competitive conditions. While backward-looking enforcers presumed that IBM had a lock on the computer industry, it could no more “strangle” competition than Qualcomm could today, as the district court erroneously claimed. See *Qualcomm*, 2019 WL 2206013 at *130.

Yet, even in the mid-1980s, when non-Apple computers were identified as “IBM compatible PCs,” some commentators still wrongly believed that “IBM continues to dominate the computer business and is well on its way to dominating everything that is connected to and/or

operates with these computers. . . . It has such overwhelming political, financial, and technical power that what competition it faces exists at its sufferance.” RICHARD T. DELAMARTER, *BIG BLUE* xv (1986). Several years later, IBM’s seemingly unassailable dominance in the high-tech industry came to end, and the firm nearly went bankrupt in 1993. *See* Steve Denning, *Why Did IBM Survive?*, *FORBES* (July 10, 2011), <https://www.forbes.com/sites/stevedenning/2011/07/10/why-did-ibm-survive/>. Today, IBM no longer makes or sells computers for consumers or business users outside the mainframe market; instead, it focuses on (among other things) novel business activities offering cloud computing services and investing R&D in AI technologies.

The *IBM* case is now a widely-cited example of antitrust gone awry. “The reality is that the government’s case was born of an antitrust tradition in which a leading firm could run afoul of the antitrust laws by competing to maintain its position and reaping the rewards of its efforts.” Lopatka, 68 *ANTITRUST L.J.* at 148. The antitrust case was an extremely costly mistake for IBM, for the U.S. taxpayer, and for society in general. The DOJ’s lawsuit against IBM created an estimated total direct legal costs of \$200 million. *See* Steven Brill, *What to Tell Your Friends About*

IBM, AM. LAW. 1, 11 (Apr. 1982). The DOJ's lawsuit triggered over 40 private antitrust lawsuits for treble damages against IBM, in which IBM prevailed in almost every case. Kovacic, 31 CONN. L. REV. at 1289. This intense level of legal challenges distracted IBM management, discouraged it from competing aggressively, and hobbled IBM's ability to develop and commercialize new high-tech innovations during its pendency in the 1970s. See THOMAS J. WATSON, JR., FATHER, SON & CO.: MY LIFE AT IBM AND BEYOND (1990) (describing how the antitrust case became an all-pervading factor in every business decision by the company); Cass, 9 J. L. ECON. & POL'Y at 180 (noting "the distraction of [IBM's] executives from planning and executing functions necessary to protect IBM's long-term business interests" and "the active discouragement of decisions that would have benefitted the business but might have triggered further antitrust action").

Unlike the FTC, the DOJ has learned the lesson of the *IBM* fiasco, as evidenced by its repeated filings in this case. It first asked the district court to hold an evidentiary hearing before issuing any remedy, see Dkt. No. 1487, May 2, 2019, Case No. 5:17-cv-00220-LHK (N.D. Cal.), a request the district court ignored. The DOJ has taken the unusual step

of filing papers in support of Qualcomm's motion for a stay of the worldwide injunction ordered by the district court. *See* Dkt. No. 25-1, July 16, 2019, Case No. 19-16122 (9th Cir.). It has now been joined and supported by two other federal agencies, the Department of Defense and the Department of Energy. The message in the second filing is the same: the FTC and district court have ignored key evidence and significant institutional details about the smartphone industry and Qualcomm's contributions to it. *Id.*

The *IBM* debacle was a byproduct of per se rules in antitrust that permitted assumptions of market power without evidence, and these continued to lead courts astray in assessing single-firm conduct in high-tech industries. In *Digidyne Corp. v. Data General Corp.*, 734 F.2d 1336 (9th Cir. 1984), this Court relied on the now-abrogated principle that allowed a court to attribute market power to an intellectual property owner without any specific economic inquiry. This assumption led this Court to hold that Data General had monopoly power with its copyrighted R-DOS operating system, which it allegedly leveraged by tying sales of

R-DOS to its NOVA computer (hardware) system. *Id.* at 1344.² To buttress this assumption of market power with its R-DOS operating system, the *Digidyne* Court noted that some general, non-economic evidence supported the finding of Data General’s illegal market power, such as the company “vigorously” enforcing its intellectual property rights in R-DOS. *Id.* at 1342.

The reflexive attribution of market power to the holder of an intellectual property right relieved the *Digidyne* court from undertaking any economic inquiry to prove the validity of this key assumption. In retrospect, this Court’s assumption of market power would most likely not have survived such an inquiry. In the early 1980s, the R-DOS operating system was just one of many small, proprietary operating systems that never gained traction, as the high-tech industry shifted from mainframes to minicomputers and then personal computers (and, in doing so, unraveled IBM’s dominance in the computing market). Data General, which was a pioneer and leader in the minicomputer market, lost market share to Apple and other personal computer manufacturers,

² The Supreme Court abrogated this assumption in *Illinois Tool Works Inc. v. Independent Ink, Inc.*, 547 U.S. 28 (2006), as did the antitrust agencies in 1995, 1995 ANTITRUST GUIDELINES § 2.0, at 2.

which used the Mac, MS-DOS, and Windows operating systems. In 1984, Apple and Microsoft were the new kids on the block, whose hardware, operating systems, and software components built into the personal computer ultimately doomed minicomputer manufacturers such as Data General and Digital Equipment Corporation. Ironically, the founder and CEO of Digital Equipment Corporation confidently predicted in 1977 that the personal computer would be a market failure, stating that “[t]here is no reason anyone would want a computer in their home.” See Jamie Frater, *Top 30 Failed Technology Predictions*, <http://listverse.com/history/top-30-failed-technology-predictions> (last accessed July 10, 2019).

Today, it seems remarkable that the *Digidyne* court undertook no detailed economic inquiry to support its claim that Data General had monopoly power in R-DOS. Instead, this Court relied on generalized testimonial information about Data General and its alleged market dominance in R-DOS to find the company liable under the antitrust laws. See *Digidyne Corp.*, 734 F.2d at 1347 (stating that “a detailed analysis of competitive conditions in the tied product market is inappropriate in a *per se* case”). It rested liability solely on the fact that Data General was

a massive and well-established high-tech company in 1984, *see Data General*, http://en.wikipedia.org/wiki/Data_General (last modified Oct. 16, 2009) (stating that Data General Corp. had over \$1 billion in sales in 1984). Data General's past commercial successes in the computing industry failed to account for imminent competitive threats from the personal computer in a dynamic market. But testimonial evidence branded Data General as the dominant provider in the operating system market. The conclusion that its market power let it "coerce" computer manufacturers to purchase its NOVA computers rested on just that mistake.

Several years after the *Digidyne* decision, Data General and its business model of making and selling minicomputers were supplanted by new firms supplying cutting-edge personal computers to individuals and business users. Despite an appearance in court of market dominance, based on an assumption of market power and generalized fact findings, Data General's R-DOS operating system and NOVA computer system were in fact insignificant, both technologically and economically. Today, almost no one under the age of 50 has even heard of R-DOS. History will repeat itself if the district court's decision in this case is affirmed on the

basis of its similar assumptions supported by generalized documentary and testimonial evidence.

At the turn of the twenty-first century, Seventh Circuit Judge Frank Easterbrook found important lessons in both *IBM* and *Digidyne* regarding the application of antitrust law to innovation markets: “Confident conclusions about who is a monopolist, and what is a bottleneck in operating systems, were converted into a source of humor in a few years. As Santayana observed, those who fail to learn from the past are condemned to repeat it. We need to learn from IBM and DG [Digidyne] just how acute are the legal system’s senses in detecting technological monopolies.” Frank H. Easterbrook, *Information and Antitrust*, 2000 U. CHI. LEG. FORUM 1, 10-11 (2000). As Judge Easterbrook suggests, the legal system’s “senses” in ascertaining the existence of a technological monopoly are weak, which counsels caution in branding novel business practices as violations of the antitrust laws even when, contrary to this case, such a conclusion is based on robust economic data and rigorous economic analysis.

These and similar decisions in the same per se vein were later recognized by courts and enforcers, as well as by scholarly commentators,

as imposing higher social costs by their tax on innovators that far exceeded the gain from seeking to ferret out alleged monopolistic behavior in innovation markets. *See* Manne & Wright, 6 J. COMP. L. & ECON. at 167 (“Because innovation involves new products and business practices, courts and economists’ initial understanding of these practices will skew initial likelihoods that innovation is anti-competitive and the proper subject of antitrust scrutiny.”). If a court today applied the rule of reason to the single-firm monopolization claim in *Didigyne*, it would require that the plaintiff demonstrate with firm economic evidence how the defendants’ exercise of market power harms consumers. Generalized models or testimonial statements about the possible evils of monopoly will not do. This simple evidentiary requirement is needed to insulate courts from committing false-positive errors that were once endemic in the now-abandoned “inhospitality tradition of antitrust” in which “judges view each business practice with suspicion, always wondering how firms are using it to harm consumers.” Easterbrook, 63 TEX. L. REV. at 4. As will be explained in Part Two, the district court in this case has revived that unfortunate tradition and, in so doing, committed precisely the type of false positive error that sound antitrust practice today avoids.

II. The District Court Returns Back to an Outdated Doctrinal Approach in Which Courts Sanctioned Firms Solely on the Basis of Theoretical Claims of Single-Firm Monopolization Without Specific Market-Based Data or Economic Analysis

The district court occasionally alludes to the rule of reason standard articulated in *United States v. Grinnell*, 384 U.S. 563 (1966), but it does not follow this approach. One clear indication is that the district court makes no effort to identify any efficiency gains of Qualcomm’s licensing business model. Its opinion is not, in the words of former FTC Chair Timothy Muris, “a careful, fact-based economic analysis grounded in a thorough understanding of the relevant institutions,” Timothy J. Muris, *Improving the Economic Foundations of Competition Policy*, 12 GEO. MASON L. REV. 1, 2 (2003). A “careful, fact-based economic analysis,” is absolutely essential to establish the necessary empirical baselines for legal analysis and factual conclusions, such as what are market-based royalty rates for a patented technology and whether consumer prices have increased. No such evidence of this type is found in the district court’s opinion.

The district court’s opinion returns courts to what Professor Muris has artfully called “per se condemnation under the rule of reason.” Muris, *The FTC and the Law of Monopolization*, *supra*, at 723. That is, a court

engages in a cursory and generalized level of analysis that is functionally equivalent to a per se approach. There are numerous examples in the district court's opinion, both in its findings and its legal analysis. *Amici* will address only several examples here given space constraints in this brief.

First, the heart of the FTC's case was an economic model, see Ginsburg & Wright, *Use and abuse of bargaining models*, TRUTH ON THE MARKET, *supra*, and the creator of this model, Professor Carl Shapiro, was the primary economic expert who testified for the FTC in the trial. Professor Shapiro's model is only a theoretical explanation of bargaining conditions, which means that it does not derive its results from actual economic evidence collected from real-world market conditions. See Douglas H. Ginsburg & Joshua D. Wright, *A Bargaining Model v. Reality in FTC v. Qualcomm: A Reply to Kattan & Muris* (June 5, 2019), at <https://ssrn.com/abstract=3389476>. It was a similar model to the one Professor Shapiro produced for the government in *United States v. AT&T*, and which was rejected wholesale by the district court in that case as entirely theoretical and failing to account for the economic data of the relevant market, see *AT&T, Inc.*, 310 F. Supp.3d at 219-27.

Although the district court neither discusses Professor Shapiro’s model nor quotes from his extensive testimony in its lengthy opinion, its influence in the case is evident in the district court’s reliance on generalized testimonial claims and its forbearing any economic evidence or analysis. The district court concluded that Qualcomm’s licensing business model resulted in “unreasonably high” royalty rates. Yet, neither Professor Shapiro nor the district court calculated the “royalty surcharge” that Qualcomm’s licensing model allegedly generated. Similarly, the district court neither received evidence nor established in its opinion the market-based benchmark for a royalty rate on Qualcomm’s 4G and CDMA patent portfolio to support its conclusion that “Qualcomm’s Royalty Rates Are *Unreasonably High*.” *Qualcomm*, 2019 WL 2206013 at *157 (emphasis added). Without knowing what a reasonable royalty rate is—the royalty rate that would have been negotiated in an arm’s length transaction in the marketplace—the district court cannot identify what qualifies as “unreasonably high.”

The district court attempts to fill this evidentiary gap in its opinion by quoting press releases from other companies at the turn of the century for then-2G technologies that the cumulative royalty rate should be a 5%

rate, *Id.* at *106, and quoting some statements of other companies' royalty rates for their distinct patent portfolios. *Id.* at *34. Press releases and other testimonial statements are not an economic analysis of a reasonable royalty rate for Qualcomm's patent portfolio. The district court merely asserts a tacit claim that the Qualcomm royalty rate was higher than the cumulative single-digit rate declared in other companies' press releases and the specific royalty rates for their different patents for now-obsolete technologies.

This generalized, non-economic evidence does not support the FTC's allegation of monopolization in premium chips and "unreasonably high" royalty rates for 4G and CDMA. It is an ad hoc amalgam of different facts from different periods, different transmission technologies, and different chips, creating at best a mere appearance of anti-competitive conduct that allegedly harms consumers without economic proof. It is a vivid example of "per se condemnation under the rule of reason," *Muris*, 67 ANTITRUST L.J. at 723, that short-circuits the well-known requirements of a proper rule-of-reason analysis. This approach is flatly inconsistent with modern rule of reason analysis for single-firm monopolization claims under federal antitrust case law today. *See E.I. du*

Pont de Nemours, 729 F.2d at 138-139 (holding that the FTC must apply clear evidentiary standards beyond mere assertions of “anticompetitive impact” as necessary to avoid “arbitrary and capricious administration of § 5”).

The district court attempts to make up for this lack of specific economic evidence supporting its assertion of an “unreasonably high” royalty rate for Qualcomm’s 4G patents by pointing out that Qualcomm’s total contribution of patents to the 4G standard decreased as compared to 2G and 3G. 2019 WL 2206013 at *106. Yet, a key element in setting the royalty rate on a patent portfolio is not the quantity of patents but the *quality* of patents that comprise the standardized technology. Apple Computer, another FTC witness in this case, acknowledged in evidence disclosed in a separate trial that Qualcomm has the highest-quality patent portfolio in the industry. *See* Reed Albergotti, *Apple said Qualcomm’s tech was no good. But in private communications, it was ‘the best,’* WASH. POST (Apr. 19, 2019), <https://www.washingtonpost.com/technology/2019/04/19/apple-said-qualcomms-tech-was-no-good-private-communications-it-was-best/> (quoting internal Apple memos disclosed in another court case saying

that Qualcomm is “widely considered the owner of the strongest patent portfolio for essential and relevant patents for wireless standards” and “Engineering wise, they have been the best”).

Second, the district court neither recites nor describes any economic analysis of prices for smartphones or other mobile devices that show that Qualcomm’s allegedly “unreasonable” royalty rates caused harmful increases in consumer prices. Increased prices for smartphones relative to some (as yet unidentified) efficient benchmark would be the primary evidence of reduced upstream competition, which imposes higher input costs on downstream manufacturers which were then passed on to consumers in the form of higher retail prices. *See Easterbrook*, 63 TEX. L. REV. at 9 (stating that “most anticompetitive explanations predict lower output and higher prices”).

Under a proper rule of reason approach, the district court should have received economic data and analysis confirming in the smartphone market that overall competition has reduced and consumers have been harmed by fewer new products or services and by higher prices relative to a benchmark, established either before the period of allegedly illegal monopolization or by “a careful, fact-based economic analysis grounded

in a thorough understanding of the relevant institutions” in the marketplace. Muris, 12 GEO. MASON L. REV. at 2.

The absence of such data in the district court’s opinion is notable because studies have shown that prices for smartphones have continuously *declined*, once adjusted for their increased functionality over time. See Alexander Galetovic, Stephen Haber, and Ross Levine, *An Empirical Examination of Patent Holdup*, 11 J. COMP. L. & ECON. 549 (2015) (identifying how the patent-intensive smartphone industry outperformed other sectors of the economy with historically unprecedented rates of innovation in new products and services, driven by competition from new entrants); Barnett, *Antitrust Overreach*, *supra* (reviewing studies that show that smartphone market has maintained increased output, quality-adjusted price declines, robust entry rates, and continuous innovation). Additionally, empirical studies have shown continuous entry by producers into the smartphone market, indicating that newcomers are not deterred by supposedly high rates for chipsets or royalty rates. *Id.* In its truncated hearing on liability, the district court never received economic data contradicting these empirical studies, as reflected in the absence of such evidence in its opinion.

Unable to deliver evidence of adverse pricing or output effects, the district court is left with the testimonial claims from Qualcomm's competitors that they were somehow blocked from investing in R&D or were barred from entering the market. *See, e.g., Qualcomm Corp.*, 2019 WL 2206013, at *123. This inference of anti-competitive behavior is similarly flawed insofar as it relies on only testimonial statements by obviously self-interested witnesses, rather than objective effects-based economic evidence. It is also directly contradicted by the empirical studies showing robust entry rates into the smartphone market, *see Barnett, Antitrust Overreach, supra*, as exemplified by the successful entry of the Taiwanese company, MediaTek.

This Court has appropriately stated that “[i]t can’t be said often enough that the antitrust laws protect competition, not competitors.” *United States v. Syufy Enterprises*, 903 F.2d 659, 668 (9th Cir. 1990). This principle is especially salient in this case given the FTC brought its suit against Qualcomm roughly concurrently with a suit that Apple, one of Qualcomm’s largest licensees, brought against Qualcomm. Solely on the basis of testimony by Apple and other firms, the district court concludes Qualcomm “strangled competitors,” *Qualcomm*, 2019 WL 2206013, at

*130, and acted with “anticompetitive malice,” *id.* at *83, but heavy-handed language is neither evidence nor an appropriate substitute for economic evidence of harm to the competitive process and harm to consumers. *See E.I. Du Pont de Nemours*, 729 F.2d at 137 (“A test based solely upon restraint of competition, even if qualified by the requirement that the conduct be ‘analogous’ to an antitrust violation, is so vague as to permit arbitrary or undue government interference with the reasonable freedom of action that has marked our country’s competitive system.”).

If the district court had followed a proper rule of reason approach, it would have received at trial and recited in its opinion objective economic evidence of adverse pricing, reduced output effects, or actual barriers to entry. Instead, the FTC presented theoretical models buttressed by inherently conflicted statements by disappointed competitors about Qualcomm’s alleged anti-competitive intent and by emails and other documentary evidence of Qualcomm’s allegedly anti-competitive intent. The district court adopts all of this in its opinion. This mode of analysis is tantamount to a *de facto* rule of *per se* illegality masquerading as a rule of reason. The district court does not follow well-established principles of antitrust analysis in failing to balance the

defendant's claimed efficiency gains against the alleged economic harms to consumer welfare, in making generalized inferences of anti-competitive behavior, and in asserting hyperbolic rhetoric about the alleged strangling of competitors.

Moreover, even assuming *arguendo* there was reduction of competition or reduced R&D in chipsets, the district court never proves from the testimonial statements by competitors that these alleged adverse effects are *causally connected* to Qualcomm's royalty rates. See Muris, 67 ANTITRUST L.J. at 715 ("When we lack confidence that certain practices are always or almost always anticompetitive, we should not automatically assume that, even if the practice exists and even if the defendant is a monopolist, there is an anticompetitive impact from the practice. Without proof of such impact, the requisite *causal link* between the practice and the monopoly does not exist") (emphasis added).

Neither the FTC nor the district court account for these and other economic and institutional facts in the smartphone market, all of which point to objective quality differentials that explain Qualcomm's strong record of market successes. Professor Shapiro, the FTC's primary economic witness and the one who developed the theoretical model used

by the FTC to assert that Qualcomm is charging “unreasonably high royalties,” could not identify at trial a single real-world example of reduced R&D caused by Qualcomm’s royalty rates for its 4G technology. See January 28, 2019 Transcript at 2073:21-2074:19. Strangely, neither Professor Shapiro nor his theoretical model that comprised the core argument for the FTC’s case are mentioned in the district court’s opinion.

In conclusion, the district court’s constrained findings of fact do not present economic evidence or rigorous empirical analysis proving harm to the competitive process or to consumers. Its recitations of testimonial evidence, emails, PowerPoint slides, and other evidence in inferring harm is in fact contradicted by “[s]everal empirical studies [that] demonstrate that the observed pattern in high-tech industries, especially in the smartphone industry, is one of constant lower quality-adjusted prices, increased entry and competition, and higher performance standards.” Letter from Judges, Former Judges and Government Officials, Legal Academics and Economists to Assistant Attorney Gen. Makan Delrahim (Feb. 13, 2018), at <https://cpip.gmu.edu/wp-content/uploads/sites/31/2018/02/Letter-to-DOJ-Supporting-Evidence-Based-Approach-to-Antitrust-Enforcement-of-IP.pdf>; see also Galetovic,

Haber and Levine, 11 J. COMP. L. & ECON. at 549; Barnett, *Antitrust Overreach*, *supra*. This economic evidence contradicts the predicted marketplace conditions that must necessarily follow from reduced competition and increased prices upstream in the value chain in the chipset market and in patent royalties. Following the truncated hearing on liability and given the limitations of facts to testimonial evidence from FTC witnesses and documentary evidence from Qualcomm and others, this omission is the factual elephant in the room, and powerful confirmation the district court used a discredited per se approach to impose sweeping world-wide sanctions. This Court should reverse the district court's decision.

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Respectfully submitted,

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I hereby certify that I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the Ninth Circuit by using the appellate CM/ECF system on August 30, 2019. All participants in the case are registered CM/ECF users, and service will be accomplished by the appellate CM/ECF system.

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