The Qualcomm Case and U.S. National Security By Joseph Kattan^{*}

I. Introduction

Does an antitrust case brought by the Federal Trade Commission (FTC) against a wireless telecommunications chip company present a grave threat to U.S. national security? That's the story that a horde of lobbyists and consultants for Qualcomm, the defendant in that case, want you to believe. The story that Qualcomm is peddling to anyone who will listen seems to be that requiring the company to comply with U.S. antitrust law will inflict crippling harm upon it and cede leadership in the next generation of wireless telecommunications technology, 5G, to China's Huawei. In the rendering of the FTC's case by Qualcomm's retinue, the case amounts to a gift from the U.S. government to Huawei that will cripple Qualcomm and lead to China's domination in 5G if the FTC succeeds. According to one overblown and remarkably fact-free account, the FTC's case presents nothing short of a threat of "existential harm to an important American technology developer."¹ Nothing could be further from the truth.

The story that Qualcomm is selling is based on fictions upon fictions. According to Qualcomm's partisans, the FTC has sued Qualcomm for charging high prices.² If true, the case would represent a worrisome break with modern antitrust law, which addresses abuses of market power but does not prohibit companies from setting prices at their own will. But this claim is a pure fabrication. The FTC did not sue Qualcomm for charging high prices; it sued Qualcomm to enjoin coercive behavior that U.S. antitrust law has long prohibited, conduct in which Qualcomm's own CEO admitted that no other company engages. Qualcomm also is hawking the fiction that curbing its abusive practices will eviscerate the company's incentive to invest in 5G technology and even put the company in "in short order ... in financial distress."³ But Qualcomm's lobbyists do not even attempt to back up this claim with evidence, because they can't. The company has told investors that it expects its highly profitable chip business, which is unlikely to be affected materially by the FTC's case, to experience even higher profits when the industry adopts 5G technology. And the claim that Qualcomm alone stands in the way of Chinese domination of 5G is similarly at war with the facts. Qualcomm conveniently erases Intel from its depiction of the 5G leadership landscape. This is perhaps fitting, as the FTC case demonstrated that Qualcomm had made a concerted effort over several years to erase Intel from the modem chip market altogether.

The story that Qualcomm is peddling has it exactly backward. Having to compete on the merits will not impede innovation or endanger U.S. national security. Quite the contrary, a race

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¹ David Teece, *What CFIUS Has Done the FTC Might Undo*, Inside Sources, Feb. 4, 2019, available at https://www.insidesources.com/what-cfius-has-done-the-ftc-might-undo/.

² See, e.g., Adam Mossoff, *The FTC Joins Huawei on a Misguided Troll Hunt*, Wall Street Journal, Jan. 27, 2019, (alleging that "[t]he FTC claims Qualcomm violates antitrust laws by overcharging phone makers for using its patented technology like 4G in smartphone.").

³ David Teece and Orville Schell, *The National Costs of Harming Qualcomm*, San Francisco Chronicle, Feb. 7, 2019.

to the top between two American companies will enhance innovation, result in higher performing and more secure technologies, and help to preserve American technological leadership in wireless telecommunications. If Qualcomm has its way, however, only one American company, Qualcomm, will be around to make modem chips when 5G technology achieves mass deployment.

II. The FTC Case Is Based On Sound Antitrust Principles

A. Qualcomm's Anticompetitive "No License No Chips" Regime

In Qualcomm's caricature of the FTC's case, the agency sued Qualcomm for charging high prices. Not so. If one actually reads the FTC's complaint or examines the trial record, it is clear that the antitrust violation at the heart of the case is Qualcomm's coercion of its modem chip customers to take licenses to modem chip patents in which the company has no rights under U.S. patent law. As the Supreme Court explained in its 2017 *Lexmark* decision, a company's rights in its patented inventions are "extinguished" when it sells goods that embody those inventions.⁴ The company is compensated for its patents, the Court explained, by "whatever fee it decides is appropriate" to charge for the patented goods.⁵ In accordance with the Supreme Court's teachings, all other companies that sell patented products obtain compensation for their patented technologies by incorporating the value of their intellectual property into their products' prices. Having paid for the products, customers are then free to use them as they see fit, without having to take a separate patent license. This is true for everything from automobile parts to chemicals to computer chips.

Qualcomm takes a starkly different approach. Qualcomm not only sells its cellular modem chips for a price, but it forces its customers to take separate licenses for its extinguished patent rights, under which customers must pay exorbitant royalties. Qualcomm stands alone in this regard. As several third party witnesses testified and Qualcomm's own CEO admitted at the trial of the FTC case, Qualcomm is the only company that forces its customers to take a separate patent license to use the products that it sell them.

Why does Qualcomm deviate so sharply from the normal rules by which all other companies live? Qualcomm's insistence that its modem chip customers take patent licenses to maintain access to its modem chips, a practice that the FTC dubs "no license no chips," coerces customers to take licenses to cellular patents at highly inflated rates to which they otherwise would not agree. The evidence showed that customers were vitally dependent on Qualcomm, which dominated two critical markets for cellular modems, including a market for the CDMA chips that are required by the Verizon and Sprint networks, in which Qualcomm at all times had a market share of 92% or higher.⁶ Qualcomm customers repeatedly testified at trial that they gave in to Qualcomm's unreasonable licensing demands because Qualcomm had threatened to cut off the modem chip supplies on which they were critically dependent.

In this important regard, Qualcomm and its customers were in agreement—they agreed that Qualcomm's power over chips forced customers to give in to Qualcomm's licensing demands

⁴ Impression Products, Inc. v. Lexmark Intern., Inc., 137 S. Ct. 1523, 1534 (2017).

⁵ *Id.* at 1537.

⁶ FTC v. Qualcomm, Inc., Case No. 5:17-cv-00220-LHK (N.D. Cal.), trial transcript of Jan. 25, 2019, at 2006.

without even putting up a fight. Qualcomm's former CEO recognized that without this leverage over customers, "more licensees, potential licensees might fight [Qualcomm's] license demand[s]."⁷ It was for this same reason that Qualcomm decided against spinning off its patent license business, having concluded that "companies that are purchasing chipsets from Qualcomm ... would be more likely to challenge their agreements with [Qualcomm] post spin than those same companies would be to challenge their agreements pre spin."⁸ The "no license no chips" regime ensured that customers would not dare challenge Qualcomm's licensing demands, as customers would have to put their mobile phone businesses in jeopardy to contest Qualcomm's licensing demands. The need for Qualcomm's customers to avoid supply curtailment, rather than the merits of Qualcomm's patent claims, drove the outcomes of licensing negotiations. This is how Qualcomm alone among all companies worldwide was able to force customers to take licenses to extinguished patents.

Qualcomm's "no license no chips" regime not only inflated Qualcomm's royalties but it also impaired rivals' ability to compete with Qualcomm by raising the cost of using their modem chips. The licenses that Qualcomm imposed through its "no license no chips" regime forced customers to pay it royalties on products that incorporate competitors' modem chips. This resulted in the imposition of a massive tax on competitors' modem chips, as will be discussed further below. This tax, which continues to this day, diminishes the margins that Qualcomm's competitors can earn on their chips, thus weakening Qualcomm's rivals and, in turn, further deepening customers' dependence on Qualcomm's modem chips. Qualcomm claims that its practices do not injure competitors because Qualcomm's own modem chips are also taxed by the company's licenses, but that tax flows right back into Qualcomm's coffers, and Qualcomm's margins are not hurt by the practice. Qualcomm's rivals, by contrast, must eat into their margins to remain price competitive, reducing both the returns on their past R&D and the expected returns necessary to support future R&D investments.

B. Breach of Commitments to Standards Organizations

Most of this harm would be avoided if Qualcomm honored commitments that it had made to standards organizations to license patents that are incorporated into cellular standards on fair, reasonable, and nondiscriminatory (FRAND) terms. Standards organizations require these commitments from participants in standards development because the incorporation of patented technologies into standards inflates the value of the patents over these technologies and gives their holders the ability to require the payment of inflated royalties as the price of a license. The ability to require inflated royalties arises because, unlike ordinary patents, standard-essential patents (SEPs) must be infringed in order for cellular products to interoperate with those of other manufacturers. Unlike ordinary patents, it is impossible to design around SEPs, as doing so means building products that cannot interoperate with other manufacturers' wireless telecommunications products. Qualcomm made numerous FRAND commitments when it advocated for the use of its technology in cellular standards, and the federal court in the FTC case determined that these commitments unambiguously obligated Qualcomm to license all implementers.⁹ In reaching this decision, the court rejected Qualcomm's risible claim that its contractual commitment to license

⁷ *FTC v. Qualcomm*, Submission of Jan. 4 testimony by deposition at 7.

⁸ FTC v. Qualcomm, trial transcript of Jan. 7, 2019, at 42.

⁹ FTC v. Qualcomm Inc., 2018 WL 5848999 (N.D. Cal. Nov. 6, 2018).

"all applicants" obligated it to license only some applicants (mobile phone manufacturers) but not others (rival chip makers).¹⁰

Despite taking the public posture that it had made no commitment to license competitors, Qualcomm recognized internally that it had committed to do exactly that. As Qualcomm's former president admitted, the company's FRAND commitments "make it difficult to argue that we have the right to refuse to license" competitors.¹¹ So why did Qualcomm renege on its FRAND commitments? As Qualcomm told the Internal Revenue Service, "if we license somebody to make a chip … then we won't be able to collect a royalty on that patent from the guy who makes the cell phone. And that would be a very bad thing, because we collect a royalty on a cell phone that's based on the price of the cell phone, and that's a lot higher than the price of a chip."¹² And licensing the phone manufacturer instead, as Qualcomm told the IRS, is "*humongously* more lucrative."¹³

C. Qualcomm's Anticompetitive Payments to Exclude Competition

How did Qualcomm use its "humongously" inflated SEP royalties? Trial evidence presented by the FTC showed that Qualcomm gave billions of dollars in royalty rebates to Apple to exclude Intel modem chips from its product lineup and to "kill" (as Apple put it) the U.S.-developed WiMAX 4G technology¹⁴ championed by Intel in favor of the older 3G WCDMA technology. The effect of these rebates was to price Qualcomm's modem chips below cost.

The exclusion from Apple's lineup resulting from Qualcomm's rebates resulted in a "neardeath experience" for Intel's modem chip business, and has left Intel's modem chip business in a fragile condition to this day.¹⁵ And the payments to exclude WiMAX contributed to the demise of a competitive 4G technology that would not have been dominated by Qualcomm's licensing model. Qualcomm documents showed that Qualcomm was "far behind" in WiMAX.¹⁶ Instead of competing with WiMAX or investing to catch up, Qualcomm paid Apple "to have them accept, or adopt ... 3G as their next generation product rather than WiMAX,"¹⁷ a 4G technology. Killing WiMAX enabled Qualcomm to maintain customers' dependence on its modem chips, and with it their vulnerability to the "no license no chips" regime. Remember what Qualcomm did to WiMAX the next time you hear Qualcomm profess concern for U.S. technology leadership.

D. Qualcomm's Fallacious "No Injury" Claim

Despite the harm to competition and consumers discussed above, Qualcomm claims that no one has been injured by its conduct. According to Qualcomm, the lack of injury is evidenced

¹⁰ *Id.* at *3, *14.

¹¹ FTC v. Qualcomm, trial transcript of Jan. 7, 2019, at 39.

¹² *FTC v. Qualcomm*, trial exhibit CX6786-R at 26.

¹³ *Id.* at 71 (emphasis added).

¹⁴ FTC v. Qualcomm, trial transcript of Jan. 14, 2019, at 873.

¹⁵ FTC v. Qualcomm, trial transcript of Jan. 8, 2019, at 573, 574.

¹⁶ FTC v. Qualcomm, trial transcript of Jan. 15, 2019, at 1284.

¹⁷ FTC v. Qualcomm, Submission of trial testimony that occurred on Jan. 14 and 15, 2019, at 3.

by the fact that both mobile phone prices and carriers' data charges have declined while it was engaged in the disputed practices.¹⁸ This argument is groundless.

To begin with, the price declines cited by Qualcomm have nothing to do with Qualcomm and everything to do with Moore's Law, which has inexorably driven down the price of electronic products for over 40 years. In the wireless telecommunications and computing industries, the prices of personal computers, tablets, and smartphones—all of which use semiconductors—have been declining for decades because of cost reductions associated with Moore's Law, as well as other input cost reductions that are unrelated to Qualcomm's SEPs.¹⁹ These include reductions in the prices of hardware such as memory, Wi-Fi chips, flat panel displays, and other electronic components. Qualcomm's reliance on declining mobile phone prices arrogates to Qualcomm the credit for reductions in the prices of components produced by others.

Second, the "falling prices" argument is based on decreases in the average smartphone total cost of ownership from reductions in carriers' data charges and lower hardware costs. Decreases in data charges, which reflect more effective use of bandwidth, are the result of contributions of new generations of wireless communications standards as a whole, as opposed to any individual SEP holder's contributions. Qualcomm has never attempted to show that the improvements in spectrum usage would not have been attained without its contributions. Indeed, the evidence suggests that the opposite is true. As the former chair of ETSI's Technical Committee Special Mobile Group has attested, "[i]n nearly all cases, ETSI can choose between alternatives with comparable performance."²⁰ In other words, massive spectrum efficiency improvements would have been achieved without Qualcomm's contributions.

Third, inflated royalties are much more likely to affect the absolute price level than the rate at which prices decline. A simple example exposes Qualcomm's price decline fallacy. Suppose that a SEP holder charges a \$10 royalty for its SEPs, but the FRAND royalty is \$5. If the cost of the other components in a handset is \$90 and the royalty is \$10, the market price for the phone will be \$100. If cost innovations reduce the component costs to \$20 after ten years, adding the \$10 royalty would result in a market price of \$30. This demonstrates how even steep price declines can occur in the face of highly inflated royalties. Declining handset prices or carrier charges are not evidence that there is no royalty overcharge or that competition or consumers are not being injured. They are simply evidence that the prices of components other than the inflated royalty have declined.

¹⁸ See, e.g., Richard J. Stark, Debunking the Smallest Salable Unit Theory, 7 CPI Antitrust Chronicle, no. 2, July 2015.

¹⁹ Moore's Law predicts that the number of transistors per square millimeter of a semiconductor chip will double every two years. *See https://en.wikipedia.org/wiki/Moore%27s*_law. A corollary of that prediction is that the price of semiconductors will decline by approximately 50% every two years.

²⁰ Expert Report of Friedhelm Hillebrand, *Nokia Corp. v. Qualcomm Inc.*, Dkt. No. 359-2, filed in *Nokia Corp. v. Apple Inc.*, Case No. 09-cv-791 (D. Del. May 16, 2011) at ¶11. Another SEP owner that has been active in wireless telecommunications standards development has similarly noted that standard-setting participants "typically" reach a consensus-based decision after considering "multiple proposed solutions to the same technical problem." Ericsson on FRAND and SEP Litigation, submission to the International Telecommunications Union at 1 (Oct. 10, 2012), http://www.itu.int/dms_pub/itu-t/oth/06/5B/T065B0000340007MSWE.docx.

E. Qualcomm's "Humongous" Overcharges

Contrary to the claims made by Qualcomm's backers, inflated royalties are the consequence of Qualcomm's illegal conduct. No one is claiming that charging inflated royalties is the antitrust violation itself. And the extent to which Qualcomm's royalties are inflated is mind boggling. Consider these data points:

- Qualcomm collects more in royalties than all other cellular patent holders combined,²¹ despite owning a low to mid-teens percentage of relevant cellular standard essential patents (SEPs).²² Qualcomm claims that its patents are more significant than those of other SEP holders, but the evidence refutes that.²³
- Even more stunning is the fact that, according to Qualcomm's own documents, Qualcomm collects more than 25% of *all* patent royalties *in the world*.²⁴ This is not 25% of cellular phone royalties or even all telecommunications royalties. This is 25% of all patent royalties in all fields—communications, computers, medical devices, pharmaceuticals, chemicals, materials, aeronautics, automotive, energy, and all other fields in which inventions are patented.

Qualcomm may be an inventive company, but it is not that inventive. The "humongous" royalties that it collects are simply a consequence of the illegal conduct in which Qualcomm has engaged for years.

III. The National Security Canard

Numerous companies testified in support of the FTC at the Qualcomm trial. They included Apple and Intel (U.S.); Blackberry (Canada); LGE and Samsung (Korea); Ericsson (Sweden); MediaTek, Wistron, and Pegatron (Taiwan); and China's Huawei and Lenovo, the latter through its U.S.-based Motorola division. Qualcomm's lobbyists have latched on to the fact that Huawei served as one of the FTC's many witnesses to caricature the FTC's case as an unholy alliance between the FTC and Huawei to hand over 5G leadership to China.

In Qualcomm's version of events, Huawei was the "star witness" in the FTC's case. One pro-Qualcomm column went so far as to argue that the FTC "is working with China's leading tech firm against its U.S. competitors" and asked "[w]hat on Earth is it thinking?"²⁵ This question is easily answered.

²¹ FTC v. Qualcomm, trial transcript of Jan. 14, 2019, at 888.

²² See, e.g., PA Consulting, *LTE Essential IPR* (2014) (estimating that Qualcomm holds 13.36% of 4G LTE SEPs; Marshall Phelps and Cheryl Milone, *LTE Standard Essential Patents Now and in the Future* (2012) (estimating that Qualcomm holds 14.4% of highly essential 4G LTE SEPs and 12.5% of "high novelty" patents); iRunway, *Patent & Landscape Analysis of 4G-LTE technology* (2012) (estimating that Qualcomm holds 5.65% of 4G LTE SEPs and 12.46% of "seminal" 4G LTE SEPs).

²³ See, e.g., the Phelps and Milone and iRunway studies cited in the previous footnote. See also FTC v. Qualcomm, Submission of Jan. 14 and 15 testimony by deposition at 2-3.

²⁴ *FTC v. Qualcomm*, trial transcript of Jan. 29, 2019, at 2125.

²⁵ Josh Rogin, The U.S. government shouldn't partner with Huawei, Washington Post, Jan. 24, 2019.

To begin with, the FTC is thinking that Qualcomm has violated the antitrust laws that are a bulwark of the free market system. As laid out above, Qualcomm's anticompetitive conduct is flagrant and the harm that it inflicted on competition and consumers is vast. Second, the FTC is not working with Huawei, which accounted for only a few minutes of testimony at the FTC trial, against U.S. competitors. The agency is working to create a level playing field, which would benefit not just U.S. consumers but also give Intel, the U.S. competitor that was the main target of Qualcomm's illegal conduct, a chance to compete fairly. Recall that Qualcomm paid Apple to withhold support for the Intel-supported WiMAX technology, a "made in the USA" wireless technology that Qualcomm helped kill in the cradle. Qualcomm also made vast payments to Apple, resulting in below-cost chip prices, to exclude Intel from Apple's product lineup, in an attempt to force Intel out of the market. And Qualcomm's breach of its commitment to license competitors allowed it to impose a tax on Intel chips and impair Intel's ability to compete. In the face of all the evidence of injury to Intel and other competitors that sell their chips to external customers (a category of suppliers from which Huawei is conspicuously absent), it requires breathtaking ignorance of the FTC's case to argue that the case is about helping Huawei.

Qualcomm goes further and claims that an FTC victory will undermine its incentive to invest in 5G technology and cede the next generation of wireless telecommunications technology to Huawei. According to Qualcomm, requiring it to comply with U.S. antitrust laws will result in a national security calamity. One of its serial defenders goes so far as to say that the FTC case poses an "existential harm" to Qualcomm and that an FTC victory would bring about "a monumental calamity for the U.S. economy (consumers and businesses) and national security."²⁶ The evidence that he offers in support of these claims? None, which is understandable given that Qualcomm has plenty of incentive to invest in 5G technology and will continue to have that incentive if the FTC prevails. Let's examine the evidence.

In 2018, Qualcomm's modem chip business earned \$3 billion in pre-tax profits on sales of \$17.3 billion. The modem chip business achieved this enviable level of profitability even though Qualcomm directs its massive licensing royalty revenues and income to a separate licensing subsidiary. In other words, any effect of the FTC case on Qualcomm's royalties will not bear on the company's modem chip business. And Qualcomm expects its chip business to become even more profitable as 5G technology takes hold. Qualcomm's CEO, Steve Mollenkopf, recently told securities analysts that 5G "represent[s] a significant opportunity for Qualcomm to expand revenue and earnings."²⁷ Its president, Cristiano Amon, said that "we expect 5G to be a significant expansion, even on existing units, both in revenue and earnings for QCT [Qualcomm's modem chip business]."²⁸ As is now well known, 5G is expected to transform a host of industries beyond the mobile phone market to create a myriad of new always-connected products and services. These new business opportunities will justify a high level of investment in 5G regardless of what happens in the FTC case.

Given the opportunity for profit expansion in what is already a highly profitable modem chip business, it is implausible that Qualcomm will scale back investments in 5G technology if it

²⁶ David Teece, *What CFIUS Has Done the FTC Might Undo*, Inside Sources, Feb. 4, 2019.

²⁷ *QUALCOMM (QCOM) Q4 2018 Results - Earnings Call Transcript*, https://seekingalpha.com/article/4219588qualcomm-qcom-q4-2018-results-earnings-call-transcript?part=single.

²⁸ Id.

is required to play by the same rules as all other companies and stop forcing customers to take licenses to extinguished patents. Qualcomm's modem chip business alone will generate sufficient profits to maintain the incentive to invest in R&D even if Qualcomm earns zero licensing revenues, and no one is contemplating a world in which Qualcomm's licensing business will go away. In the past three fiscal years, this business has averaged over \$5 billion per year in pre-tax profits.²⁹

One need look no further than at the other leading U.S. 5G innovator to see the specious nature of Qualcomm's claims. Intel has invested in 5G for a number of years even though it earns no royalty revenues whatsoever and its modem chip sales have been, and are expected to remain, a small fraction of Qualcomm's. Intel has achieved a number of firsts in the 5G race, including the first 5G interoperable device, the first live 5G public network, the first global 5G modem, and the first 5G mm-wave call.

Rather than impairing Qualcomm's incentives to innovate, having to compete on the merits will sharpen them. Indeed, it was competition from Intel that led to the adoption of the most innovative aspect of 5G technology. Over Qualcomm's objections, Intel successfully promoted the adoption of millimeter-wave technology in 5G. Millimeter-wave technology is what makes 5G revolutionary. It is this technology that is bringing about the phenomenal speeds and low latency of 5G communications that will proliferate 5G technology beyond the mobile phone space. We would not be enjoying the benefits of this technology had Qualcomm had its way, either when it tried to expel Intel from the market or when it fought to exclude millimeter wave technology from the 5G standards.

The notion that Qualcomm needs to rake in 25% of all intellectual property royalties on all of the products on the planet to justify investing in 5G or even merely to survive, as its more overwrought advocates allege, is self-evidently absurd. It is no wonder then that its claims of threats to the national security of the United States, or even merely to Qualcomm's own incentives to invest in R&D, are not accompanied by any relevant financial facts or analysis. Similarly, the claim that Qualcomm is all that stands between U.S. leadership and Chinese domination in 5G is equally bereft of factual support.

There is no threat to national security in requiring that Qualcomm comply with U.S. antitrust laws. Quite the contrary. As International Trade Commission administrative law judge Thomas Pender stated in an opinion late last year that rejected Qualcomm's request for an order banning importation of iPhones with Intel modem chips into the United States, "competition is necessary for quality, innovation, competitive pricing, and, in this case, the preservation of a strong U.S. presence in the development of 5G and thus the national security of the United States."³⁰ Judge Pender found "a real and palpable likelihood the National Security interests will be jeopardized" if Intel exits the modem chip business.³¹ The real risk to national security comes from the threat that Qualcomm will continue to prevent Intel and other companies from competing on the merits, not the possibility that Qualcomm at long last will have to comply with antitrust law just like every other U.S. technology company.

²⁹ See Qualcomm Inc., Form 10-K for fiscal year ended Sep. 30, 2018, at 49.

³⁰ In The Matter of Certain Mobile Electronic Devices and Radio Frequency and Processing Components Thereof, Inv. No. 337-TA-1065, Initial Determination and Recommended Determination at 195.

³¹ *Id.* at 196.

IV. Concluding Thoughts

Any debate about the FTC case must be based on the facts—the evidence adduced at trial and not on the fantasies that the FTC is suing Qualcomm for charging high prices or that the FTC is in cahoots with Huawei to bring down an American technology icon. As a free-market conservative, I would readily side with Qualcomm if Qualcomm's depiction of the FTC case had a basis in fact. But that depiction has little in common with the actual FTC case. The hard facts that ultimately count are reposed in the FTC trial record and in the financial reports that knock out Qualcomm's claims.

It should be self-evident that a technology company can be profitable, and even fabulously so, without engaging in coercive practices in which no other company on the planet engages. If you believe that a company that collects 25% of all patent royalties across all industries across the globe will face a mortal threat if is forced to negotiate the patent licenses that it now imposes by fiat, please call Qualcomm right away. It has a very nice bridge to sell you.