NETWORK LAW REVIEW

ARTICLE

Is the West Giving Away the Game?

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Introduction

Through a historically exceptional combination of political and economic freedom, liberal democracies have over the last century achieved an exceptional record of technological innovation. It is often overlooked that converting technological advances into new products and services, which then delivers tangible economic value, has relied on many fundamental building blocks of the market-driven system. The rule of law has allowed and enabled complex transactions among firms that specialize in various segments of the technology supply chain. Chief among them are contractual agreements that have enabled global markets to construct intricate trade and financial arrangements that facilitate the funding, development, and commercialization of innovation (and the sale of products and services) and intellectual property rights.

Over approximately the past decade and a half, competition regulators in the United States and the European Union (and in a case of strange bedfellows, China) have tampered with elements of the rule of law that have supported innovation in the mobile phone business. Specifically, regulators have pursued a policy trajectory that seeks to limit the patent enforcement and licensing capacities of lead innovators in chip design and production for the wireless industry. In taking these actions, policymakers have acted not on sound empirical grounds but on merely conjectural risks of competitive harm. In the process, policymakers have imprudently placed at risk a critical element of the West's competitive advantage as a technological innovator in its emerging rivalry—as much an economic as a political rivalry—with authoritarian systems. (By "West," we refer to countries that have robust liberal democratic systems of governance, irrespective of geographic location.)

A Fragile Equilibrium in Global Wireless Markets

Policymakers and commentators have recognized the economic and geopolitical importance of semiconductor fabrication facilities in "at-risk" locations. However, little attention has been paid to the chip-design segments that occupy the highest levels of the supply chain and provide the technological foundations for the wireless communications ecosystem, including applications in consumer and business markets. The chip-design market, together with the device markets located at lower segments of the wireless supply chain, rely on a close connection between designers and implementers. Consumers, businesses, and governments enjoy the conveniences of wireless-enabled services such as traffic navigation, video-conferencing, and telemedicine, among many others. A complex supply chain, extending from innovation to production and distribution, enables these services. Embedding design developments in new products and services is a long and winding path involving billions of dollars in investment capital, years of research and development, and a high risk of project failure. These high-stakes undertakings are ultimately anchored in investors' expectations that courts will reliably enforce the intellectual property rights that cover the development of foundational technologies.

In the wireless communications market that acts as the foundational hub for the proliferating spokes in the digital ecosystem, an elite group of R&D-focused companies based in the UK, EU, and the US—specifically, Arm (owned by Softbank), Ericsson, Nokia, and Qualcomm—have developed foundational technologies that support the advanced chip technologies that lie behind the critical leap from 2G communications, which principally offered voice and text transmission, to 3G and 4G/LTE, which enable transmission functionalities involving multiple forms of audio, textual, video and other content. All four firms rely to a significant degree on a licensing-based business model that monetizes research and development by providing technology to a global base of device producers (and, in Arm's case, chip designers). Ericsson, Nokia, and Qualcomm (all of which rely on the ARM chip architecture) remain the key innovators in chip design for the 5G wireless generation. This foundational technology will drive the "Internet of Things," comprising a complex network of transmission pathways among users, enterprises, and devices that will provide the basis for "smart cities," "smart homes," "smart cars," and other novel applications in a broad range of industries.

This global wireless ecosystem is not only a marvel of technological innovation but also a marvel of "private ordering"— the largest cooperative research endeavor the world has ever seen. This "open innovation" system supports the market-driven development of standardized technology that can transform entire industries. Behind each smartphone stands an intricate web of contractual relationships and cooperative arrangements, encompassing standard-setting organizations that

ensure interoperability across devices, together with licensing relationships that provide producers with access to required technologies and remunerate the innovators that incur the costs to develop those technologies. These voluntary arrangements generate value through symbiotic relationships among a diverse range of entities that excel in innovation, production, distribution, and other elements of the supply chain.

Regulatory Misadventures in Wireless Antitrust

This complex system of private ordering relies on a reliable mechanism for enforcing intellectual property rights and the contractual relationships in which those rights are embedded. This property-rights backstop plays a critical function in supporting innovation investments in the semiconductor markets that supply the wireless device communications industry.

It is therefore puzzling that, with the exception of the U.S. Department of Justice Antitrust Division (DOJ Antitrust) during 2017-2020, antitrust regulators (and some courts) in the EU and US have spent much of the past decade and a half taking actions that have eroded this backstop and, in doing so, threaten to undermine the licensing and standard-setting arrangements that rely on it. Without that backstop in place, the small group of firms that have led innovation and standard-setting in this industry can no longer have a reasonable expectation that investments in research and development will be adequately rewarded.

Starting approximately in the mid-2000s, US and EU regulators have repeatedly expressed concern over patent licensing practices in the wireless communications market and patent enforcement actions that seek injunctive relief against alleged infringers. Reports and other statements issued by the Federal Trade Commission (FTC) and DOJ Antitrust starting in the mid-2000s expressed concern that owners of patents over fundamental wireless technologies could "hold up" producers and other users by demanding exorbitant royalty rates. During this same period, EU regulators expressed similar concerns and, on this basis, took action in 2011 and 2012 to limit the ability of Motorola Mobility (acquired by Google) and Samsung, respectively, to seek injunctive relief when enforcing "standard-essential" patents (SEPs) in wireless communications.

In the US, these statements translated into a landmark enforcement action. In 2017, the FTC brought an antitrust suit against Qualcomm (concurrently with an antitrust suit against Qualcomm by Apple) that, if successful, would have deeply compromised the licensing-based business model that has propelled the growth of the wireless communications ecosystem over the past decades. In August 2020, the appellate court overturned in its entirety a trial court ruling in the FTC's favor, finding the ruling to be incompatible with governing antitrust case law.

The FTC's misguided actions reflected the view that patents and patent licensing relationships operate as a "tax" that increases prices, raises entry costs, and slows down innovation in the digital ecosystem. Unsurprisingly, this is the same account of the market advanced by handset producers and, more recently, automotive producers that pay royalties to chip suppliers. Yet this view bears no resemblance to the actual performance of real-world wireless device markets (or consumer electronics markets more generally). During a period of almost three decades, this market has exhibited a virtuous cycle of continuously increasing functionalities and declining quality-equivalent prices, achieving rapid adoption across a broad range of geographic and income segments. (For a quick test: compare what a smartphone can do today compared to what the best phone could do only a decade ago.) Much of this has been enabled by technology suppliers to the smartphone industry, not the device makers themselves.

Notwithstanding the exemplary record of technological progress and consumer access, regulators in the EU and US have persisted in relying on unproven assertions that the smartphone market is purportedly encumbered by a "patent tax," sometimes referring to anecdotal reports of double-digit royalty rates that purportedly inflate prices, impede entry, and deter innovation. Yet empirical studies have consistently demonstrated that the aggregate royalty burden has occupied the modest range of about three to five percent of the average handset sale price over the life of the industry. That is: royalty rates have been relatively modest and consistently so. This finding helps explain why the largest portion of each "smartphone dollar" is captured by branded device producers that occupy the retail end-point on the supply chain, not the innovators that stand at its point of origin.

Contrary to the "sky is falling" claims that continue to predominate in regulatory and scholarly commentary, these empirical findings track the *actual* performance of wireless communications markets. Those markets have grown rapidly in reliance on a licensing infrastructure that has disseminated technology to producers and, in doing so, has lowered dramatically the capital and technological requirements to enter the market. This explains why smartphone devices have exhibited rapid rates of adoption across a broad range of income segments around the world. Far from "burdening" the market, patents and patent licensing have promoted it.

Wireless Antitrust and Innovation Mercantilism

No doubt with considerable delight and amusement, the script written by regulators and courts in the EU and the US has been adopted and put into action by regulators and courts in China. Through competition and patent laws, Chinese regulators and courts have taken actions that almost consistently favor the interests of device producers (usually domestic firms) over the interests of patentees (usually

foreign firms that innovated the technology on which producers rely). Specifically, regulators have taken enforcement actions that have resulted in reduced royalties for patent owners while courts have denied injunctive relief against adjudicated infringers and then adopted damages methodologies that tend to push royalty rates below market levels.

Viewed through the lens of a mercantilist trade policy, these interventions are not surprising. While certain China-based firms have made significant moves up the smartphone supply chain, China as a whole remains a "net IP user" in this industry—measured both by net licensing payments and quality-adjusted patent grants—and therefore has an interest in deploying its legal apparatus (conveniently unconstrained by the principle of separation of powers) to reduce input costs for the benefit of local device producers. This strategy was most clearly illustrated by the enforcement action taken by a Chinese competition regulator against Qualcomm in 2015 for "excessive pricing", which resulted in a settlement that comprised a $975 million fine and a reduction of royalty rates for local device producers.

In the most recent development, multiple courts in China have asserted extraterritorial powers by setting royalty rates that purport to apply on a global basis or issuing "anti-suit" injunctions that prohibit a patent owner from seeking judicial relief outside China if a proceeding in the same matter is ongoing in China. Those injunctions have been enforced through fines as high as $150,000 *per day*. In February 2022, the EU filed a "request for consultations" with the World Trade Organization (WTO) concerning the repeated issuance of anti-suit injunctions by Chinese courts. In March 2022, Canada, Japan, and the United States sought to join the action filed by the EU at the WTO. Also in March 2022, a bipartisan group of U.S. Senators introduced legislation that uses various disincentives to discourage companies from seeking to enforce anti-suit injunctions in U.S. courts.

Back to Anti-Innovation Antitrust

Starting in November 2017, DOJ Antitrust departed from the international regulatory consensus and, relying on a well-developed body of empirical evidence, recognized that patent licensing practices in the wireless communications market generally promote, rather than harm, competitive conditions. In a statement issued jointly by the DOJ, US Patent and Trademark Office (USPTO), and National Institute for Standards and Technology (NIST) in 2019, the agencies withdrew a joint statement previously issued by the agencies in 2013, which had emphasized the hypothetical risks of "holdup" behavior by licensors and had counseled against issuing injunctions to SEP owners. In place of this approach, the 2019 joint statement emphasized the risk that the *absence* of injunctive relief would logically induce opportunistic "holdout" behavior by prospective licensees, especially given the

abundant litigation resources at the disposal of the largest device producers in the market.

Blind to the geopolitical ramifications, policymakers in the White House, DOJ Antitrust, and the FTC have undertaken several actions within approximately the last 12 months that signal a return to the patent-skeptical policies of the 2013 joint policy statement. In July 2021, President Biden issued an Executive Order that instructed the antitrust agencies to review the 2013 joint policy statement in order "to avoid the potential for anticompetitive extension of market power beyond the scope of granted patents." In December 2021, the DOJ, together with acting leadership at the USPTO and NIST, issued a draft policy statement concerning SEPs in wireless communications markets. The statement's key elements: it proposed to retract the 2019 joint policy statement and revert to the view that courts should bar owners of SEPs from seeking an injunction against adjudicated infringers (except in narrowly limited circumstances). A letter opposing the draft statement was submitted by three previous directors of the USPTO, two past heads of DOJ Antitrust, and three previous directors of the NIST. In June 2022, the DOJ announced that the agencies were withdrawing the 2019 joint policy statement but did not issue a new statement in its place, potentially leaving some uncertainty as to the agencies' policy intentions. However, indications as to those intentions had already been provided in May 2022, when FTC Chair Lina Khan and Commissioner Rebecca Slaughter effectively advocated a no-injunction policy for SEP owners in a submission filed in May 2022 with the U.S. International Trade Commission, opposing the issuance of "Section 337" exclusion orders when requested by SEP owners to block the importation of infringing goods. In subsequent remarks, FTC Commissioner Christine Wilson identified the counterproductive implications for competitive markets of the position expressed by Chair Khan and Commissioner Slaughter, pointing out that barring SEP holders from securing injunctive relief would facilitate holdout by "large companies . . . that can fund ongoing litigation [with SEP holders]" and observing further that "favoring implementers in FRAND disputes will help large companies over small competitors."

Given these developments, it appears that US antitrust regulators are intent on reverting to the one-sided licensee-friendly policies of the past and, in particular, seek to implement a *de facto* ban on injunctive relief for SEP owners. This reinvigorated campaign against SEP owners (which encompass all the lead innovators in wireless communications) is apparently being undertaken concurrently by European regulators. Almost concurrently with the release of the draft policy statement in December 2021 by DOJ Antitrust, the European Commission and the UK's Intellectual Property Office issued "calls for evidence" seeking public input on potential changes to the regulatory treatment of SEPs in the wireless industry. Consistent with the entrenched regulatory consensus, the language used in these calls

expresses concerns over the risk of patent holdup by SEP owners as the wireless industry transitions toward the application of 5G technologies in the Internet of Things, but few if any concerns over the risk of patent holdout by SEP implementers.

If regulators in the US and Europe proceed to take action based on a one-sided view of the bargaining relationship between SEP licensors and licensees, and in particular continue to advocate the position that SEP owners cannot pursue injunctions against *adjudicated* infringers, wireless innovators would be virtually powerless to block unconsented usage by device producers, who typically have resources to fund protracted infringement litigation in US and foreign courts. This amplifies the predicament already faced by wireless innovators in current efforts to enforce patents over wireless technologies against recalcitrant producers, especially in the US and Chinese courts where the likelihood of securing an injunction against an infringer is close to zero. (Courts in the UK and the EU have demonstrated greater willingness to grant injunctions when infringers engage in "stalling" tactics.) As a result, a well-resourced producer can now use the litigation process to negotiate licensing terms in a bargaining environment distorted by the fact that the producer can continue to use the technology of issue throughout the litigation. The result is a wealth transfer from firms (and countries) that specialize in innovation to firms (and countries) that specialize in embedding innovations in products and services. More importantly, it is a serious blow to the machinery of upstream innovation that propels innovation in wireless communications—a result that would seem to run counter to regulators' professed interest in using competition law to promote the dynamic efficiency gains generated through innovation.

It may be objected that robust patent protection undeservedly benefits patent owners or countries with stronger innovation capacities at the expense of the rest of the global innovation ecosystem. This poses a false dichotomy between secure property rights and contract enforcement on the one hand and the global public interest in competitive markets on the other hand. Over the medium to long term, a regime of secure property rights and contract enforcement generates "win-win" outcomes that not only incentivize innovation but promote entry by enabling device producers to license, rather than having to develop independently, the technology package required to attempt entry (or avoid exit). These institutional predicates also enable innovators to enter markets at discrete points on a supply chain, rather than having to assemble and maintain end-to-end structures running from lab to market. The simple combination of secure property rights and reliable contract enforcement has supported the exemplary performance of the global wireless ecosystem, which has exhibited both intense innovation among firms that specialize in chip design and intense competition among firms that specialize in device assembly and production.

Innovation Policy in the New World Order

In the aforementioned Executive Order issued in July 2021, the Biden Administration stated its commitment to preserving US competitiveness in the global technology economy. As the world transitions toward a multipolar environment in which liberal democracies must defend their model of democratic governance and a market-driven economy against authoritarian governance and command-and-control economic models, it is imperative that policymakers appreciate the implications of failing to preserve the transactional infrastructure that undergirds chip design and production in the wireless communications ecosystem and the multiple online and offline markets that it supports. Those implications are not only economic but geopolitical.

To date, competition regulators in the West have mostly pursued a "silo-like", and "evidence-lite" approach to regulatory intervention in the wireless communications industry, with little consideration that any such intervention may rest on theoretical assumptions that have no credible basis in fact. This ideologically motivated and empirically uninformed approach can result in dramatic adverse consequences. The trajectory being pursued by EU and US regulators in the wireless communications markets in the absence of compelling evidence of competitive harm is not only imprudent as a matter of competition policy but endangers the innovation capacities that have sustained the West's technological leadership in this vital sector. In the new world of strategic international rivalry, this is not a mistake the West can afford to make.

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