## 1AC---Malice in the Palace

### 1AC---FRAND ADV

#### Advantage 1 is FRAND:

#### Standards-Setting Organizations (SSO’s) are industry members who jointly establish standards for information tech defined by the adoption of standard-essential patents (SEP’s), which are licensed to companies who wish to implement the tech in their product, called implementers, on Fair, Reasonable, and Non-Discriminatory (FRAND) terms. Current standards promote price gouging, FRAND enforcement is critical.

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I. Standard Setting and the Competitive Process

The fundamental economics in the information technology sector, driven by network effects, implies that there is enormous value associated with establishing compatibility standards. Popular standards include the mobile broadband standards used in cell phones, which are established by the 3rd Generation Partnership Project (3GPP), and the Wi-Fi technology for wireless local area networks, which is enabled by the 802.11 standard established by the Institute of Electrical and Electronics Engineers (IEEE).4

There are many SSOs, and their rules and procedures differ considerably. In addition to IEEE, leading SSOs include the International Organization for Standardization (ISO), the International Telecommunication Union (ITU), the European Telecommunications Standards Institute (ETSI), the Internet Engineering Task Force (IETF), and the World Wide Web Consortium (W3C).5 SSOs generally establish standards by holding a series of committee meetings among industry participants. These meetings culminate in a vote on a technical specification that describes what features or attributes a product must have in order to comply with the standard. Most SSOs are open to all industry participants and seek to operate on a consensus basis, applying certain voting rules. SSOs do not normally engage in patent licensing, nor do they specify how patent royalties will be divided up among patent holders. They leave that to their members, which in some cases form patent pools to address these issues.6

SSOs adopt specific policies relating to intellectual property rights (IPRs).7 These IPR policies are generally intended to enable the SEP holders to obtain reasonable royalties for licensing their patents, while prohibiting them from charging excessive royalties after other industry participants have committed to the standard. At that point, firms committed to implementing the standard— which we call “implementers”—would find it very costly to avoid using the patented technology. For this purpose, most SSOs require SEP owners to license their SEPs on FRAND terms.8

FRAND policies are especially necessary because negotiations between SEP holders and implementers generally take place only after the implementers have used and infringed the technologies claimed by the SEPs. Standards involving information and communications technology can involve hundreds or even thousands of SEPs, many with uncertain boundaries for infringement. In addition, a time lag exists between patent application and patent issuance. For these and other reasons, it is impractical for implementers to enter into negotiations for patent licenses with all SEP owners prior to the establishment of a standard and to their implementation of it.9

The fact that patent negotiations generally do not take place until after implementers have used and infringed the technologies has several critical implications. First, at the time of negotiation, implementers are locked into the standard and the technologies claimed by the SEPs—that is, the cost to switch to an alternative technology or standard at that point—ex post—is much greater than it was ex ante, before the patented technology was first included in the standard. Ex post, the patent holder is no longer competing to have its technology included in the standard, nor is it competing to have implementers of the standard use its technology. Instead, because the patent holder owns an asset that is essential to the standard, implementers have no choice but to use the patented technology.

If the standard is commercially successful, implementers are willing to pay a much larger royalty for use of the patented technology than they would have paid ex ante, when the SEP holder faced competition from other technologies. In these circumstances, the SEP holder can be said to have obtained monopoly power in the market in which the patented technology is licensed for use in implementing the standard.10

Second, because of lock-in and the implementer’s ongoing infringement, the potential for litigation looms large in licensing negotiations. In effect, the parties are negotiating about how to settle an infringement suit, and that negotiation is heavily influenced by their predictions as to what the court will do if they cannot agree. This situation is not unique to SEPs; it arises frequently when firms are faced with patent infringement claims for products they have independently developed or technologies they have inadvertently infringed. Patent law addresses such instances by specifying that patent holders are entitled to “reasonable royalties,” defined as the royalties that the parties would have negotiated prior to the infringement and thus prior to lock-in.11 Those hypothetical ex ante royalties reflect the market value of the patent license. Notwithstanding the law’s embrace of this principle, however, as a practical matter, patent holders are generally able to recover more than the ex ante value of the patent when litigation occurs after the implementers are locked in. Further, negotiations in the shadow of litigation after lock-in tend to result in royalties in excess of the ex ante or market value of the patented technology.12

Third, the shadow of litigation is particularly problematic in the communications and technology sector, in which products typically include hundreds or thousands of patented technologies. A court-ordered injunction involving such products would deprive the implementer of not only the value of the technology covered by the patent-in-suit, but also the value of the entire product.13 Implementers that are forced to bear the risk of an injunction are thus induced to agree to royalties greater than those that would be appropriate if only the value of the patented technology were at stake. Those royalties systematically provide SEP holders with excessive compensation in comparison with the benchmark of ex ante royalties.

These implications of lock-in and ex post dealings are well-understood: they represent an example of the general concept of lock-in and opportunism developed by Oliver Williamson.14 The Federal Circuit has also recognized the market distortions caused by the inclusion of patented technologies in public standards and the resulting danger of patent holdup involving SEPs.15

For these and other reasons, the SEP holder has ex post monopoly power that, if left unchecked, would enable it to obtain royalties far in excess of the royalties that it could earn in a competitive market.16 To address this common problem and limit ex post opportunism by SEP holders, SSOs typically require participants that own SEPs to make certain FRAND commitments. In particular, by requiring a commitment to license on “fair and reasonable” terms, the FRAND requirement aims to prevent, or at least reduce, the extent of monopoly pricing by SEP holders. And by requiring a commitment to license on “nondiscriminatory” terms, the FRAND requirement can prevent SEP holders from extracting monopoly premiums by selective licensing or, more important, migrating their monopoly power from the FRAND-regulated market to unregulated standard-implementing product markets by licensing to only one or a few implementers or licensing to selected implementers on discriminatorily favorable terms.

#### Patent holdup is accentuated by the Ninth Circuit’s recent decision in *FTC v. Qualcomm* that permits ICT firms to engage in innovation-stifling conduct with antitrust impunity.

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Standards can enhance competition and consumer choice, but they also massively inflate the value of patents deemed essential to the standard, and give their owners the power to sue companies that implement the standard for money damages or injunctions to block them from using their SEPs. When standards cover critical features like wireless connectivity, SEP owners wield a huge amount of “hold-up” power because their patents allow them to effectively block access to the standard altogether. That lets them charge unduly large tolls to anyone who wants to implement the standard.

To minimize that risk, standard-setting organizations typically require companies that want their patented technology incorporated into a standard to promise in advance to license their SEPs to others on fair, reasonable, and non-discriminatory (FRAND) terms. But that promise strikes at a key tension between antitrust and patent law: patent owners have no obligation to let anyone use technology their patent covers, but to get those technologies incorporated into standards, patent owners usually have to promise that they will give permission to anyone who wants to implement the standard as long as they pay a reasonable license fee.

Qualcomm is one of the most important and dominant companies in the history of wireless communication standards. It is a multinational conglomerate that has owned patents on every major wireless communication standard since its first CDMA patent in 1985, and it participates in the standard-setting organizations that define those standards. Qualcomm is somewhat unique in that it not only licenses SEPs, but also supplies the modem chips used by a wide range of devices. These include chips that implement wireless communication standards, which lie at the heart of every mobile computing device.

Although Qualcomm promised to license its SEPs (including patents essential to CDMA, 3G, 4G, and 5G) on FRAND terms, its conduct has to many looked unfair, unreasonable, and highly discriminatory. In particular, Qualcomm has drawn scrutiny for bundling tens of thousands of patents together—including many that are not standard-essential—and offering portfolio-only licenses no matter what licensees actually want or need; refusing to sell modem chips to anyone without a SEP license and threatening to withhold chips from companies trying to negotiate different license terms; refusing to license anyone other than original-equipment manufacturers (OEMs); and insisting on royalties calculated as a percentage of the sale price of a handset sold to end users for hundreds of dollars, despite the minimal contribution of any particular patent to the retail value.

In 2017, the U.S. Federal Trade Commission [sued](https://www.ftc.gov/news-events/press-releases/2017/01/ftc-charges-qualcomm-monopolizing-key-semiconductor-device-used) Qualcomm for violating both sections of the Sherman Antitrust Act by engaging in a number of anticompetitive SEP licensing practices. In May 2019, the U.S. District Court for the Northern District of California agreed with the FTC, identifying numerous instances of Qualcomm’s unlawful, anticompetitive conduct in a comprehensive [233-page opinion](https://www.eff.org/document/ftc-v-qualcomm-district-court-opinion). We were pleased to see the FTC take action and the district court credit the overwhelming evidence that Qualcomm’s conduct is corrosive to market-based competition and threatens to cement Qualcomm’s dominance for years to come.

But this month, a panel of judges from the Court of Appeals for the Ninth Circuit unanimously [overturned](https://www.eff.org/document/ninth-circuit-opinion-ftc-v-qualcomm) the district court’s decision, reasoning that Qualcomm’s conduct was “hypercompetitive” but not “anticompetitive,” and therefore not a violation of antitrust law. To reach that result, the Ninth Circuit made the patent grant more powerful and antitrust law weaker than ever.

According to the Ninth Circuit, patent owners don’t have a duty to let anyone use what their patent covers, and therefore Qualcomm had no duty to license its SEPs to anyone. But that framing requires ignoring the promises Qualcomm made to license its SEPs on reasonable and non-discriminatory terms—promises that courts in this country and around the world have consistently enforced. It also means ignoring antitrust principles like the essential facilities doctrine, which limits the ability of a monopolist with hold-up power over an essential facility (like a port) to shut out rivals. Instead, the Ninth Circuit held rather simplistically that a duty to deal could arise only if the monopolist had provided access, and then reversed its policy.

But even when Qualcomm restricted its licensing policies in critical ways, the Ninth Circuit found reasons to approve those restrictions. For example, Qualcomm stopped licensing its patents to chip manufacturers and started licensing them only to OEMs. This had a major benefit: it let Qualcomm charge a much higher royalty rate based on the high retail price of the end user devices, like smartphones and tablets, that OEMs make and sell. If Qualcomm had continued to license to chip suppliers, its patents would be “exhausted” once the chips were sold to OEMs, extinguishing Qualcomm’s right to assert its patents and control how the chips were used.

Patent exhaustion is a century-old doctrine that protects the rights of consumers to use things they buy without getting the patent owner’s permission again and again. Patent exhaustion is important because it prevents price-gouging, but also because it protects space for innovation by letting people use things they buy freely, including to build innovations of their own. The doctrine thus helps patent law serve its underlying goal—promoting economic growth and innovation. In other words, the doctrine of exhaustion is baked into the patent grant; it is not optional. Nevertheless, the Ninth Circuit wholeheartedly approved of Qualcomm’s efforts to avoid exhaustion—even when that meant cutting off access to previous licensees (chip-makers) in ways that let Qualcomm charge far more in licensing fees than its SEPs could possibly have contributed to the retail value of the final product.

It makes no sense that Qualcomm could contract around a fundamental principle like patent exhaustion, but at the same time did not assume any antitrust duty to deal under these circumstances. Worse, it’s harmful for the economy, innovation, and consumers. Unfortunately, the kind of harm that antitrust law recognizes is limited to harm affecting “competition” or the “competitive process.” Antitrust law, at least as the Ninth Circuit interprets it, doesn’t do nearly enough to address the harm downstream consumers experience when they pay inflated prices for high-tech devices, and miss out on innovation that might have developed from fair, reasonable, and non-discriminatory licensing practices.

We hope the FTC sticks to its guns and asks the Ninth Circuit to go en banc and reconsider this decision. Otherwise, antitrust law will become an even weaker weapon against innovation-stifling conduct in technology markets.

#### Weakened antitrust enforcement emboldens firms to follow Qualcomm’s lead, which collapses FRAND integrity.

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While the FRAND process has been highly productive, it is also fragile. Firms are tempted to make commitments at the beginning when the incentive to join is large, but renege on them later when they can profit by doing so. At least in this particular case, private FRAND enforcement had not worked very well. Qualcomm had been able to violate FRAND commitments in order to exclude rivals and obtain higher royalties than FRAND would permit, largely with impunity. Other firms will very likely follow Qualcomm’s lead. If that happens the FRAND system will fall apart, doing irreparable injury to the modern wireless telecommunications network or, at the very least, diminishing the leadership role of the United States in preserving effective network competition.

While governments can be heavily involved in standard set-ting,9 the implementation of technical standards in information technologies is largely the work of private actors. Government involvement is limited mainly to enforcement of contract, intellectual property, or antitrust law. As private actors, those involved in standard setting or compliance are fully subject to the federal antitrust laws.

This Article addresses one question: when is an SSO participant’s violation of a FRAND commitment an antitrust violation, and if it is, of what kind and what are the implications for remedies? It warns against two extremes. One is thinking that any violation of a FRAND commitment is an antitrust violation as well. In the first instance FRAND obligations are contractual, and most breaches of contract do not violate any antitrust law. The other extreme is thinking that, because a FRAND violation is a breach of contract, it cannot also be an antitrust violation. The question of an antitrust violation does not de-pend on whether the conduct breached a particular agreement but rather on whether it caused competitive harm. This can happen because the conduct restrained trade under section 1 of the Sherman Act, was unreasonably exclusionary under section 2 of the Sherman Act, or amounted to an anticompetitive condition or understanding as defined by section 3 of the Clay-ton Act.10 The end goal is to identify practices that harm com-petition, thereby injuring consumers.

The Ninth Circuit’s Qualcomm decision will make antitrust violations in the context of FRAND licensing much more difficult to prove, even in cases where anticompetitive behavior and consumer harm seem clear.11 Indeed, in this case the court itself acknowledged the harm to consumers but appeared to think that they were not entitled to protection.12 If this decision stands, FRAND obligations will to a larger extent have to be settled through private litigation and the federal antitrust enforcement agencies will have a diminished role. Anticompetitive behavior by one firm that is not effectively disciplined will lead others to do the same thing.

#### Monopoly pricing and selective licensing undermines 5G innovation---FRAND enforcement is key.

Actonline 20, the App Association represents more than 5,000 app companies and information technology firms across the mobile economy; (August 26th, 2020, “Save Our Standards: The Ninth Circuit Court of Appeals Reverses Decision in FTC v. Qualcomm”, <https://actonline.org/2020/08/26/save-our-standards-the-ninth-circuit-court-of-appeals-reverses-decision-in-ftc-v-qualcomm/>)

* Ability edited

Moreover, the FRAND agreement is a critical tool used by standard setting organizations to ensure the process enhances competition and does not run afoul of antitrust laws. Generally, a collaboration between competitors to choose market winners or set prices raises significant questions for competition regulators. Royalty free and FRAND licensing requirements were created by standards bodies to avoid potential antitrust scrutiny by limiting the market power and the potential for abuse by those involved in developing a standard. This is why the American National Standards Institute (ANSI) will not accredit any standards developing organization (SDO) that does not require standard-essential patent holders to provide licensing terms at least as favorable as FRAND.

The most important beneficiary of open interoperability standards and FRAND licensing requirements are the entrepreneurs and small businesses that have long fueled America’s innovation engine. They don’t have giant patent portfolios, market power, or the resources to hire legions of lawyers and spend years battling SEP abusers in civil court. Without some level of certainty about their ability to obtain licenses—let alone what they may cost—entrepreneurs will have trouble justifying the pursuit of any innovation that uses a standard and will certainly struggle to raise money from investors for such innovation. And Qualcomm’s vague and toothless promise simply “not to sue” smaller companies and component makers is no substitute for a license.

The adoption of 5G technology is expected to open unprecedented opportunities for innovation and economic growth as we move toward a world where everything from cars to tractors to buildings will connect to wireless networks. At every stage of the information technology revolution, America has been the undisputed leader because of the unparalleled entrepreneurial innovation ecosystem that we have built. If 5G SEP holders are able to arbitrarily refuse licenses to smaller firms, it would ~~cripple~~ undermine America’s innovation ecosystem at the start of the next big wave of innovation. As economic tensions continue to rise with China, Chinese-based companies could use their 5G SEPs as international economic weapons to thwart U.S. competitors.

The 5G standard is supposed to be a platform for competition, innovation, and entrepreneurship, but if the Ninth Circuit decision is allowed to stand, it will become a chokepoint for snuffing out competitors and demanding monopoly rents. Open standards and FRAND licensing commitments are fundamental to competition in the modern economy, and the idea that they aren’t a subject for antitrust enforcement is patently absurd.

#### The absence of domestic 5G competition cedes leadership in technical standards to China.

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There is little doubt today that American superiority in the next generation of mobile communications, commonly called 5G, is a matter of extraordinary national concern. There is also little doubt that China is a strong competitor, already having outspent the United States by [$24 billion](https://www2.deloitte.com/content/dam/Deloitte/us/Documents/technology-media-telecommunications/us-tmt-5g-deployment-imperative.pdf#page=3) and planning [$411 billion](https://www.scmp.com/tech/china-tech/article/2098948/china-plans-28-trillion-yuan-capital-expenditure-create-worlds) in 5G investment over the next decade. The Chinese government has also laid out multiple national plans for establishing the country as a leader in mobile technology, and the Chinese firm Huawei is poised to be the [top smartphone manufacturer](https://www.cnbc.com/2018/11/16/huawei-aims-to-overtake-samsung-as-no-1-smartphone-player-by-2020.html) by 2020.

And what are United States companies doing about this? Bickering over patents.

For years, the leading American supplier of advanced mobile communications chips has been the San Diego-based Qualcomm. The company has been an innovator of mobile technology, but it has also been a remarkable innovator of convoluted legal strategies. As an ongoing Federal Trade Commission [lawsuit alleges](https://www.ftc.gov/news-events/press-releases/2017/01/ftc-charges-qualcomm-monopolizing-key-semiconductor-device-used), Qualcomm has used its dominant position as a chip supplier and its extensive patent holdings to weave an intricate web of patent licensing across the mobile industry. The effect of that complex licensing scheme, the FTC claims, has been to force competitor chipmakers out of the market and to extract concessions and high patent royalties from smartphone and mobile-device makers.

Qualcomm today faces only one major U.S. competitor—Intel, whose chips Apple recently [started using](https://www.cultofmac.com/484250/intel-reaping-rewards-apples-scrap-qualcomm/) instead of Qualcomm’s. Not surprisingly, Qualcomm has leveraged its patents to force a retaliatory investigation against Apple, the effect of which could be, as an administrative judge [recently determined](http://www.fosspatents.com/2018/10/itc-judge-didnt-buy-testimony-for-which.html), to boot Intel out of the mobile-chip market and leave Qualcomm as a monopoly.

It is hard to imagine that this infighting among Apple, Intel and Qualcomm is getting the United States very far in 5G, and it is harder to imagine that Qualcomm’s desired outcome would do so, either. The best path, instead, is the obvious one: allowing competition and expanding the number of firms working on 5G.

Competition encourages companies to out-innovate each other in order to grab market share. Of particular importance to 5G, competition leads to [better cybersecurity](https://morningconsult.com/opinions/in-the-race-to-5g-monopoly-considered-harmful/) in products, making them less vulnerable to hacking or misuse.

Competition is especially crucial when it comes to the technical standards that define how 5G works. These standards are the work of 3GPP, an international consortium of technology companies in the field. Chinese players such as Huawei and ZTE are major participants in 3GPP. Ensuring that 3GPP’s standards reflect American values requires having as many American companies at the negotiating table as possible—which is harder to achieve when those companies are trying to sue each other out of business.

Certainly patents themselves, as rewards for new inventions, are a driver of innovation in areas such as 5G. The problem, though, is not the existence of a patent system but the ever-expanding power of the patent laws, which encourage companies to pour dollars into complex patent licensing and assertion schemes—as companies like Qualcomm have done—rather than to perform the hard work of building new technologies. When innovation in patent strategy is more profitable than actual innovation, we lose the race to 5G and other technologies.

But don’t take my word for it. [Multiple members of Congress](https://www.patentprogress.org/2019/01/11/congress-weighs-in-on-qualcomm-and-apple-at-the-itc/), from both sides of the aisle, have denounced the use of patents to kick companies like Intel out of 5G development, predicting that such actions would “dampen the 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.”

Or look to what China itself is doing. The Chinese government is handing out rewards left and right to encourage technology research and development. Indeed, it grants subsidies and financial benefits (ranging from the [ordinary](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2818503) to the [imperfect](https://funginstitute.berkeley.edu/wp-content/uploads/2013/12/patent_subsidy_Zhen.pdf) to the [bizarre](https://www.scmp.com/news/china/article/1681850/how-get-out-jail-early-china-buy-inventors-idea-and-patent-it)) to encourage its citizens to file for patents. But while China specifically encourages filing for patents, it does little to encourage using them: Patent infringement awards in court are peanuts—often only [five figures](https://scholarship.law.berkeley.edu/btlj/vol33/iss2/2/)—and most Chinese patent owners drop their patents [within five years](https://www.bloomberg.com/news/articles/2018-09-26/china-claims-more-patents-than-any-country-most-are-worthless) of getting them. The message in China is clear: You will be rewarded for innovating, but not for quibbling over patents.

The United States should take the same tack if it wants to match China in 5G. Ever-stronger patent rights encourage counterproductive disputes that are a drag on industry, a drag on research and development, and ultimately a drag on domestic competitiveness on the global stage. If America wants to lead in 5G, then it must clear the path for strong competition among leading American technology companies.

#### Standards leadership allows China to export digital authoritarianism.

Drew et al. 21, \*Dr Alexi Drew, Research Associate, The Policy Institute, King’s College London; (May 7th, 2021, “The Critical Geopolitics of Standards Setting”, https://www.transatlantic-dialogue-on-china.rusi.org/article/the-critical-geopolitics-of-standards-setting)

However, this previously ‘western’ domain is challenged by a Chinese bloc of private industry actors with centrally directed, strategic motivations for their efforts who have managed to leverage the flaws of this system for political and economic advantage.  The market-driven self-regulation model of technical standards has proven itself unsustainable given the geopolitical power achievable through the control of these standards. The marketised approach is easily abusable by a technologically developed nation-state with geopolitical intentions firmly in mind.

Obscurity Through Complexity

Technical standards have the immediate appearance of being both apolitical and ethically neutral. This seems to set them apart from the debate over standards of state behaviour in [cyber space concerning espionage and actions below the threshold of armed conflict](https://www.cfr.org/blog/unexpectedly-all-un-countries-agreed-cybersecurity-report-so-what). Yet, technological standards are unequivocally connected to normative practices of international behaviour and ethics. The extremely complex nature of the standards under consideration in bodies such as the International Organization for Standardization, the International Electrotechnical Commission (IEC), the International Telecommunications Union (ITU), and the Third Generation Partnership Project (3GPP) obscures the very tangible real-world impact that the standards they set have. The 3GPP is responsible for standards setting for mobile telecommunications. It covers everything from 5G through to autonomous vehicles and the Internet of Things. These are the bodies defining how the modern world is constructed.

On the one hand they appear quite benign, responsible for such banalities as the use of Universal Serial Bus (USB) connectors versus proprietary standards. This hardly seems a matter of national security importance. But the same process is responsible for what ultimately shape the basic operating parameters of facial recognition technology in closed circuit television systems, the level of centralised state control at the technical foundations of the internet, and the protections of personally identifiable data. These generate profound implications for international policy and ethics.

Internal Competition vs Strategic Direction

Technical standards setting processes have, historically, been dominated by private sector actors who have had both the capacity to develop a particular technology to the point of holding a significant market share, and the ability to use that market share to advocate for the standardisation of the technology in line with their own production. The market led approach has continued to be the prevailing model by which American companies have globalised the technical standards behind US dominated technological innovation. This privatised form of self-regulation for technology companies is only partially influenced by the approach taken within the EU where [some licensing of standards are controlled by state or EU led institutions.](https://www.ui.se/globalassets/ui.se-eng/publications/ui-publications/2019/ui-brief-no.-2-2019.pdf)

In contrast to this approach the Chinese model has involved a high level of state-oriented direction, oversight, and direct engagement on the creation and signing off technical standards. Efforts to harmonise and centralise technical standards domestically have become increasingly internationalised as the CCP takes this centralised, strategic approach to technical standards setting bodies such as the ITU, 3GPP, and IEC. Technical standards have also become an increasingly central component of the Digital Silk Road with the openly expressed goal of increasing uptake of Chinese technical standards in partner countries.

The implications of this clash between a system of technical standardisation that is driven by the market versus one driven by an authoritarian government subsidised model are a direct challenge to the development of free, open, and ethical technology. Standardisation mechanisms have become political, or rather there has been a gradual realisation of the political power to be gained from the control of technical standards. While the PRC might have come to this awareness first, the US and Europe have since had a rude awakening about the missed opportunity. The privatised model of technical standards setting favoured by European and US markets relies upon the dynamics of financial competition to regulate behaviour. This is in stark contrast to the statist Chinese model.

#### Causes global backsliding.

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The risk that technology will usher in a wave of authoritarianism is all the more concerning because our own empirical research has indicated that beyond buttressing autocracies, digital tools are associated with an increased risk of democratic backsliding in fragile democracies. New technologies are particularly dangerous for weak democracies because many of these digital tools are dual use: technology can enhance government efficiency and provide the capacity to address challenges such as crime and terrorism, but no matter the intentions with which governments initially acquire such technology, they can also use these tools to muzzle and restrict the activities of their opponents.

#### Democracy solves a litany of existential threats.

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The most obvious response to the ill winds blowing from the world’s autocracies is to help the winds of freedom blowing in the other direction. The democracies of the West cannot save themselves if they do not stand with democrats around the world. This is truer now than ever, for several reasons. We live in a globalized world, one in which models, trends, and ideas cascade across borders. Any wind of change may gather quickly and blow with gale force. People everywhere form ideas about how to govern—or simply about which forms of government and sources of power may be irresistible—based on what they see happening elsewhere. We are now immersed in a fierce global contest of ideas, information, and norms. In the digital age, that contest is moving at lightning speed, shaping how people think about their political systems and the way the world runs. As doubts about and threats to democracy are mounting in the West, this is not a contest that the democracies can afford to lose. Globalization, with its flows of trade and information, raises the stakes for us in another way. Authoritarian and badly governed regimes increasingly pose a direct threat to popular sovereignty and the rule of law in our own democracies. Covert flows of money and influence are subverting and corrupting our democratic processes and institutions. They will not stop just because Americans and others pretend that we have no stake in the future of freedom in the world. If we want to defend the core principles of self-government, transparency, and accountability in our own democracies, we have no choice but to promote them globally. It is not enough to say that dictatorship is bad and that democracy, however flawed, is still better. Popular enthusiasm for a lesser evil cannot be sustained indefinitely. People need the inspiration of a positive vision. Democracy must demonstrate that it is a just and fair political system that advances humane values and the common good. To make our republics more perfect, established democracies must not only adopt reforms to more fully include and empower their own citizens. They must also support people, groups, and institutions struggling to achieve democratic values elsewhere. The best way to counter Russian rage and Chinese ambition is to show that Moscow and Beijing are on the wrong side of history; that people everywhere yearn to be free; and that they can make freedom work to achieve a more just, sustainable, and prosperous society. In our networked age, both idealism and the harder imperatives of global power and security argue for more democracy, not less. For one thing, if we do not worry about the quality of governance in lower-income countries, we will face more and more troubled and failing states. Famine and genocide are the curse of authoritarian states, not democratic ones. Outright state collapse is the ultimate, bitter fruit of tyranny. When countries like Syria, Libya, and Afghanistan descend into civil war; when poor states in Africa cannot generate jobs and improve their citizens’ lives due to rule by corrupt and callous strongmen; when Central American societies are held hostage by brutal gangs and kleptocratic rulers, people flee—and wash up on the shores of the democracies. Europe and the United States cannot withstand the rising pressures of immigration unless they work to support better, more stable and accountable government in troubled countries. The world has simply grown too small, too flat, and too fast to wall off rotten states and pretend they are on some other planet. Hard security interests are at stake. As even the Trump administration’s 2017 National Security Strategy makes clear, the main threats to U.S. national security all stem from authoritarianism, whether in the form of tyrannies from Russia and China to Iran and North Korea or in the guise of antidemocratic terrorist movements such as ISIS.1 By supporting the development of democracy around the world, we can deny these authoritarian adversaries the geopolitical running room they seek. Just as Russia, China, and Iran are trying to undermine democracies to bend other countries to their will, so too can we contain these autocrats’ ambitions by helping other countries build effective, resilient democracies that can withstand the dictators’ malevolence. Of course, democratically elected governments with open societies will not support the American line on every issue. But no free society wants to mortgage its future to another country. The American national interest would best be secured by a pluralistic world of free countries—one in which autocrats can no longer use corruption and coercion to gobble up resources, alliances, and territory. If you look back over our history to see who has posed a threat to the United States and our allies, it has always been authoritarian regimes and empires. As political scientists have long noted, no two democracies have ever gone to war with each other—ever. It is not the democracies of the world that are supporting international terrorism, proliferating weapons of mass destruction, or threatening the territory of their neighbors.

#### China 5G leadership compromise US military superiority

Borghard et al. 19, \*Erica D. Borghard is an Assistant Professor at the Army Cyber Institute at West Point. Shawn W. \*Lonergan is a U.S. Army Reserve officer assigned to 75th Innovation Command and a Research Scholar at the Army Cyber Institute. (April 25th, 2019, “The Overlooked Military Implications of the 5G Debate”, https://www.cfr.org/blog/overlooked-military-implications-5g-debate)

There are economic implications for which entities can secure the [greatest global market share](https://www.reuters.com/brandfeatures/venture-capital/article?id=61837) of 5G technology. Technological innovation drives economic growth, job creation, and global economic influence. Huawei may have a long-term market advantage over U.S and Western telecoms because the former has been able to offer 5G products at [far cheaper](https://www.nytimes.com/2019/01/26/us/politics/huawei-china-us-5g-technology.html) rates than the latter. Furthermore, there are also concerns that Chinese-built 5G technology is likely to [contain backdoors](https://www.wired.com/story/huawei-case-signals-new-us-china-cold-war-tech/) that could be used to enable [Chinese economic or national security espionage](https://www.cnbc.com/2019/03/05/huawei-would-have-to-give-data-to-china-government-if-asked-experts.html). It is unlikely that Beijing would actively monitor all of the content of the data that comes across Huawei owned or operated infrastructure (although it may collect and analyze metadata). However, it is conceivable that Huawei would get a proverbial “tap on the shoulder” from Beijing to share pertinent information in specific instances. This may include individually targeting senior corporate executives, which is enabled by the millimeter wave frequency that 5G networks employ.

The military applications of 5G technology have vital strategic and battlefield implications for the U.S. Historically, the U.S. military has reaped enormous advantages from employing cutting edge technology on the battlefield. 5G technology holds similar innovative potential. Perhaps most obviously, the next generation of telecommunications infrastructure will have a direct impact on improving military communications. However, it will also produce cascading effects on the development of other kinds of military technologies, such as robotics and artificial intelligence. For instance, artificial intelligence and machine learning capabilities, such as those used in the Department of Defense’s [Project Maven](https://dod.defense.gov/News/Article/Article/1254719/project-maven-to-deploy-computer-algorithms-to-war-zone-by-years-end/), could be greatly enhanced when leveraging the data processing speeds made possible through 5G infrastructure. As an [era of great power competition](https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf) emerges between the United States and China, the United States has a compelling strategic interest in being at the forefront of these new technologies.

The United States and its allies must also consider the tactical and operational implications on the battlefield of conducting conventional or counterinsurgency operations in an area with Chinese owned or operated 5G infrastructure. This concern stems from the nature of the relationship between Huawei, an [ostensibly private company](https://www.itnews.com.au/news/analysis-who-really-owns-huawei-175946), and the Chinese Communist Party (CCP). While Huawei’s founder and CEO, Ren Zhengfei proclaimed in a February 2019 interview on [CBS This Morning](https://www.cbsnews.com/news/ren-zhengfei-huawei-ceo-says-we-will-never-provide-chinese-government-with-any-information/)that the company never has and never would provide information to the Chinese government, many experts are [skeptical](https://www.cnbc.com/2019/03/05/huawei-would-have-to-give-data-to-china-government-if-asked-experts.html). Under China’s [2017 National Intelligence Law](https://www.reuters.com/article/us-china-security-lawmaking-idUSKBN19I1FW), the CCP has the authority to monitor and investigate domestic and international companies as well as direct organizations to assist with government espionage efforts. As such, it is conceivable that Huawei will be required to hand over its data to the Chinese government for collection and analysis.

Due to this reality, the United States must consider and be prepared to conduct overseas contingency or counterterrorism operations in areas where Chinese telecommunications infrastructure is widely proliferated, thus restricting the United States’ ability to rely on indigenous telecoms. As [noted](https://www.africom.mil/media-room/transcript/31604/gen-joseph-votel-gen-thomas-waldhauser-and-acting-asd-for-international-security-affairs-kathryn) by US AFRICOM Commander General Thomas Waldhauser, this has already become an issue in Africa where Chinese telecommunications companies are poised to dominate. The integrity of U.S. military communications systems that rely on 5G networks could be undermined at key phases of an operation. For example, if the United States is conducting a military operation in an area of interest to China, it is plausible that the Chinese government could leverage Huawei to intercept or even deny military communications. Furthermore, Chinese telecom infrastructure dominance in a theater of operations may limit the U.S. military’s ability to conduct precision targeting that leverages signals intelligence collection on 5G telecommunications networks.

The strategic and battlefield implications of who owns and operates 5G infrastructure around the world underscores the national security importance of 5G. The U.S. government and its allies should more systematically assess both the opportunities and risks associated with conducting future military operations in environments that rely on Chinese technology.

To date, the U.S. government has devoted significant energy to persuading its allies and partners to follow the United States in prohibiting Chinese telecoms, particularly Huawei, from building and/or operating 5G infrastructure. However, its diplomatic approach has been met with varying degrees of success. While some countries such as [Australia](https://www.ft.com/content/e90c3800-aad3-11e8-94bd-cba20d67390c) and [Japan](https://www.reuters.com/article/us-usa-china-huawei-japan/japans-top-three-telcos-to-exclude-huawei-zte-network-equipment-kyodo-idUSKBN1O90JW) have fallen in line with the U.S. stance on Huawei, many others have not. The European Commission’s recent 5G [recommendations](https://www.cyberscoop.com/5g-eu-huawei-cybersecurity-recommendations/) for member states dismissed a ban on Chinese telecoms. British intelligence has reportedly maintained that the security risks associated with Huawei can be [sufficiently managed](https://www.ft.com/content/619f9df4-32c2-11e9-bd3a-8b2a211d90d5), and New Zealand, after [initially bandwagoning](https://www.nytimes.com/2018/11/28/business/huawei-new-zealand-papua-new-guinea.html) with the United States in December 2018, abruptly [reversed course](https://www.bloomberg.com/news/articles/2019-02-18/new-zealand-says-china-s-huawei-hasn-t-been-ruled-out-of-5g-role) in February 2019. This is concerning for the United States because New Zealand and the UK are members of the Five Eyes intelligence-sharing alliance. Many allies have refused an outright ban of Huawei because of the company’s ability to offer 5G products at far cheaper rates than Western telecoms.

It is clear that U.S. diplomatic efforts are not working. The reality is that the bottom line is largely driving decision-making. Therefore, rather than take a purely negative approach, the United States should consider using positive inducements to make its 5G products more appealing. While the United States should not strive to mirror China’s top-down approach to innovation, it should work with allies to use market incentives to make U.S.- and Western-developed 5G infrastructure and products more competitive. Furthermore, the U.S. military needs to anticipate that its use of native telecommunications infrastructure in a future operating environment may be compromised, limited, or denied. The U.S. military will inevitably need greater bandwidth on the tactical edge and this should be an imperative that drives investment in research and development to address this challenge.

Technological innovation was at the crux of the United States’ comparative military and economic advantage in the twentieth century. In this contemporary great power competition, U.S. failure to innovate at the scientific and technological frontier will have direct (and deleterious) effects for the United States on the distribution of power in the international system over the long term.

#### Chinese tech superiority upends deterrence and emboldens them to risk conflict over Taiwan---extinction.

Kroenig 18, Deputy Director for Strategy, Scowcroft Center for Strategy and Security Associate Professor of Government and Foreign Service, Georgetown University (Matthew, Nov 12, 2018, “Will disruptive technology cause nuclear war?” *BAS*, <https://thebulletin.org/2018/11/will-disruptive-technology-cause-nuclear-war>)

Rather, we should think more broadly about how new technology might affect global politics, and, for this, it is helpful to turn to scholarly international relations theory. The dominant theory of the causes of war in the academy is the “bargaining model of war.” This theory identifies rapid shifts in the balance of power as a primary cause of conflict.

International politics often presents states with conflicts that they can settle through peaceful bargaining, but when bargaining breaks down, war results. Shifts in the balance of power are problematic because they undermine effective bargaining. After all, why agree to a deal today if your bargaining position will be stronger tomorrow? And, a clear understanding of the military balance of power can contribute to peace. (Why start a war you are likely to lose?) But shifts in the balance of power muddy understandings of which states have the advantage.

You may see where this is going. New technologies threaten to create potentially destabilizing shifts in the balance of power.

For decades, stability in Europe and Asia has been supported by US military power. In recent years, however, the balance of power in Asia has begun to shift, as China has increased its military capabilities. Already, Beijing has become more assertive in the region, claiming contested territory in the South China Sea. And the results of Russia’s military modernization have been on full display in its ongoing intervention in Ukraine.

Moreover, China may have the lead over the United States in emerging technologies that could be decisive for the future of military acquisitions and warfare, including 3D printing, hypersonic missiles, quantum computing, 5G wireless connectivity, and artificial intelligence (AI). And Russian President Vladimir Putin is building new unmanned vehicles while ominously declaring, “Whoever leads in AI will rule the world.”

If China or Russia are able to incorporate new technologies into their militaries before the United States, then this could lead to the kind of rapid shift in the balance of power that often causes war. If Beijing believes emerging technologies provide it with a newfound, local military advantage over the United States, for example, it may be more willing than previously to initiate conflict over Taiwan. And if Putin thinks new tech has strengthened his hand, he may be more tempted to launch a Ukraine-style invasion of a NATO member.

Either scenario could bring these nuclear powers into direct conflict with the United States, and once nuclear armed states are at war, there is an inherent risk of nuclear conflict through limited nuclear war strategies, nuclear brinkmanship, or simple accident or inadvertent escalation.

This framing of the problem leads to a different set of policy implications. The concern is not simply technologies that threaten to undermine nuclear second-strike capabilities directly, but, rather, any technologies that can result in a meaningful shift in the broader balance of power. And the solution is not to preserve second-strike capabilities, but to preserve prevailing power balances more broadly.

When it comes to new technology, this means that the United States should seek to maintain an innovation edge. Washington should also work with other states, including its nuclear-armed rivals, to develop a new set of arms control and nonproliferation agreements and export controls to deny these newer and potentially destabilizing technologies to potentially hostile states.

These are no easy tasks, but the consequences of Washington losing the race for technological superiority to its autocratic challengers just might mean nuclear Armageddon.

#### Emergence of smart cities depends on IoT applications of 5G interoperability standards---absent FRAND, excessive royalties will undermine sustainable development.

Schwartz 18, \*Matt Schwartz, Privacy Fellowship Coordinator at ACT, App Association; (March 2nd, 2018, “It’s Smart to be FRANDly: How the FRAND Commitment Will Determine the Future of Smart Cities”, https://actonline.org/2018/03/02/its-smart-to-be-frandly-how-the-frand-commitment-will-determine-the-future-of-smart-cities/)

In December, we [outlined](https://actonline.org/2017/12/18/smart-cities-connecting-your-community-through-technology/%5d) the emergence of Smart Cities – cities that harness technological innovations like internet of things (IoT) devices and data analytics to improve essential infrastructure in growing urban centers. The technological foundation of Smart Cities aims to improve public safety, better allocate resources, and meet the needs of citizens more quickly.

A central element to Smart Cities is the comprehensive network of sensors and devices implemented within buildings, roads, traffic signs, and parking meters that allows them to interact with public, and potentially private-owned, infrastructure. These sensors will “speak” to one another, communicating information about energy usage, traffic density, or other elements of city management that have traditionally either been analyzed separately or not tracked at all. The potential of Smart Cities allows data to flow from previously disconnected branches of the city and be processed in real-time, unlocking previously unknown insights.

The powerful interoperability of Smart Cities will rely heavily on standardized technologies developed in organizations like the IEEE, which is responsible for standardizing the wi-fi technology we use every day. Standardized technologies often include standard-essential patents (SEPs), which, like their name suggests, are patents declared essential to an industry standard by a standards-setting organization. In simple terms, one cannot implement the standardized technology without using the patent.

Like regular patents, the users of SEPs must pay royalties or licensing fees to the patent owner before they may use it. For example, if a manufacturing company wants to make an IoT device interoperable with a 5G network, the manufacturer must pay a licensing fee to the owner of the SEP that is essential to the 5G standard. SEPs play a vital role in the new innovations we enjoy and have come to expect, and because of the value of these patents, SEP holders have the ability to demand high license fees from those who wish to implement the standard. To offset this competition issue, many SEP holders voluntarily agree to license their SEPs to any willing licensee under fair, reasonable, and non-discriminatory (FRAND) terms.

While wi-fi and LTE are standards that will be vital to Smart City deployment, countless new standardized technologies are being developed that will be integral to any fully-operational Smart City. With reasonable access to SEPs, assured by the FRAND commitment, innovators can enjoy the legal and business certainty they need to compete. While the meaning of the FRAND commitment continues to be refined – as evidenced by the development of SEP best practices recently launched by the App Association in Europe – its foundations are well-established.

But what happens when SEP holders do not abide by the FRAND licensing commitment, or simply refuse to license at all? Sadly, small and medium-sized companies would be forced to accept untenable licensing terms, but more realistically, they would be priced out of using the standard altogether. As a result, it would impose a barrier to innovation that would result in fewer products offered to consumers or cities eager to implement IoT technologies. For example, many hope the rise of autonomous vehicles will be seamlessly integrated into the Smart City network. But how beneficial would it be if only some autonomous vehicle brands are able to license the technology needed to communicate with traffic lights, simply because of the market power of a chipmaker? The FRAND commitment is an important backstop to that unfortunate possibility.

It is vital for SEP holders to honor FRAND licensing terms, if not for small and medium-sized innovators, then for the sustainability of future Smart Cities. FRAND creates a platform for innovation, providing a floor on which companies can stand, innovate, and compete. If the foundation of the FRAND commitment is reneged, American innovators pay a steep price – not only do they lose a key component of product development and market entry, but they are also left with years of expensive negotiations and litigation if they choose to challenge the licensing practice. What’s more, the confidence developed in the open standards development system is shaken, and Smart Cities have fewer choices in IoT solutions for their future.

To achieve the promise of Smart Cities, a balanced standards ecosystem is essential. We must allow small and medium-sized developers to leverage industry standards for innovation and prevent cost-prohibitive royalty structures and negotiating practices that are detrimental to competition, while also ensuring that SEP owners can protect their intellectual property and be fairly compensated for its use. The FRAND commitment continues to be the best framework to achieve this balance, and adherence to its principles will determine the future and success of Smart Cities.

#### Climate change is anthropogenic and causes extinction---5G-enabled smart cities are critical for mitigation and adaptation.

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Currently, the entire planet is at risk due to continual climate change [1–3]. The recorded increase in average temperature across the world in the past hundred years, and the associated changes attributed to this, are known as global warming. Many scientists are convinced by the published evidence that this change is anthropogenic and resulted from the elevated emission levels of global greenhouse gases (GHGs) [4,5]. Gases such as water vapor, carbon dioxide, methane, nitrous oxide, and ozone are responsible for the absorption and emission of thermal radiation. These changes in the relative quantities of the GHGs induce a proportional change in the amount of preserved solar energy. Presently, the accepted indicator for global warming is the sustained rise in the mean temperature worldwide. This definition is designed to account for the fact that there may be some localized exceptions to this rise. For example, there may be cooling experienced in a region while the global temperature may increase altogether, hence the need for average temperature. A key concern with the GHGs trapping of more heat in the atmosphere is that it affects both climate and short scale weather patterns. Consequently, it results in greater numbers of adverse weather events such as storms, heat waves, cold snaps, droughts, and fires [6]. Climate-related risks to health, livelihoods, food security, water supply, human safety, and economic growth are projected to increase with global warming of 1.5 ◦C [7] and further increase further at 2 ◦C, as shown in Figure 1. In addition, the risks to global aggregated economic growth due to the climate change impacts are projected to be lower at 1.5 ◦C than at 2 ◦C by the end of this century.

Carbon dioxide has the most substantial effect on global warming [8]. Although it was once assumed to have an ~100 year lifespan in the atmosphere, careful studies revealed that the situation is far worse, with three-quarters of the gas expected to remain for a time in the region of up to ~1000 years, with the remainder lasting for an indefinite period of time [9]. It was indicated that the present impacts of humanity on the atmosphere can certainly cause a long term problem [10]. Carbon dioxide is released when oil, coal, and other fossil fuels are burnt for the energy we use to power our homes, cars, and smartphones. By lessening its usage, we can curb our own contribution to climate change while saving money. The first challenge is eliminating the burning of coal, oil, and, eventually, natural gas. Oil is the lubricant of the global economy as it is hidden inside such ubiquitous items as plastic and corn, fundamental to the transportation of both consumers and goods. Coal is the substrate, supplying roughly half of the electricity worldwide, a percentage that is likely to grow according to the International Energy Agency (IEA). In fact, buildings contribute up to 43% of all the greenhouse gas emissions worldwide [11], even though investing in thicker insulation and other cost-effective as well as temperature-regulating strategies can save money in the long run. Investment in new infrastructures, or radical upgradation of the existing highways and transmission lines, may help to reduce greenhouse gas emissions, yielding economic growth in the developing countries.

Nations across the globe have kept very high targets to reducing their GHG discharges [12,13]. In order to meet these goals, considerable reductions in city energy usage is required. At a global scale, urban communities represent over half (55%) of the population, which is predicted to reach 68% by the middle of this century [14]. Urban areas claim ownership of the highest levels of energy use, gas emission, and also the largest local economy. As such, it is crucial for urban areas to reduce their consumption and utilize renewable sources wherever available to reduce their gas discharge levels. Smart cities often utilize digital sensors to measure and transmit data about the levels of GHGs in the city at that moment, as a means of tackling them [15]. The efficacy of such a system is thus reliant on the network used to collate and analyze the data collected as an extant network. The mobile telecommunications networks offer a convenient solution to this desire, as their pre-existence has the clear benefit of reducing costs compared to the design and implementation of a novel system. It is recognized that smart cities will certainly act as the key players meeting these ambitious targets [16,17]. In this study, we focused primarily on the potential applications of 5G network technology to control climate change in Singapore. In addition, a clear overview of the sustainability benefits of introducing 5G technology compatible smart cities, buildings, and farms in all aspects of urbanization is provided. Herein, the main purpose is to tackle the negative outcomes associated with anthropogenic climate change, with a particular focus on the contributions that are best made by the telecoms network operators.

Climate change is one of the most challenging problems that humanity has ever faced. Presently, hundreds of millions of lives, innumerable species, entire ecosystems, health, economy, and the future habitability of this planet are at risk. Fortunately, climate change is solvable, we just need to wisely exploit the existing technologies and sciences. Climate change mitigation is a pressing international need in which many management actions are required. The development of 5G technology has been largely driven by smart mobile devices and advanced communication technologies. It may thus serve as a technical enabler for a whole new range of business opportunities, energy, and facilities management, together with industrial applications. Moreover, it may enable different devices to work together seamlessly. Definitely, the 5G cellular network technology is expected to revolutionize the global industries with profound effects on the savings of energy, waste generation and recycling, and water resources management, thus reducing the climate change impacts.

### 1AC---Cybersecurity ADV

#### Advantage 2 is Cybersecurity:

#### Aggressive patent strategies create structural flaws in 5G standardization that imperils domestic cybersecurity---market competition reduces the incidence of vulnerability and severity of attacks.

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III. COMPETITION AND CYBERSECURITY

In addition to the historical review done so far, another approach to understanding the relationship among patents, competition, and national security is to consider the role of cybersecurity. There is little doubt that computer system vulnerabilities that enable hacking and spread of computer exploits are a threat to the nation’s defenses, so better cybersecurity is a key part of national security strategy.155

Strong competition can thus complement national security by enhancing domestic cybersecurity, and patent assertion that unduly weakens competition detracts from cybersecurity.156 Competition promotes better cybersecurity in at least two ways. First, multiple studies show that competition encourages firms to improve their products on multiple vectors including cybersecurity. Second, competition avoids a situation that security experts call a “monoculture,” which increases vulnerability to severe cyberattacks. As former Secretary of Homeland Security Michael Chertoff wrote recently, “We need competition and multiple providers, not a potentially vulnerable technological monoculture,” to guarantee national security.157 Thus, cybersecurity provides a useful lens for understanding how unfettered patent assertion and licensing can detract from national security.

A. Cybersecurity as Competitive Value-Add

Competition enhances national security by reducing the incidence of technical vulnerabilities. That effect is especially important for security sensitive systems such as mobile telecommunications.

Intuitively, a causal chain from competition to cybersecurity makes logical sense. Computer security is a value-added benefit to consumers, so firms in competitive markets are likely to use security to gain an edge over their competitors.158 In monopolized markets, though, there may be less external impetus to test products for flaws, and the monopolist may choose to focus less on security and more on new product features or increased product quality.

Economic research confirms these hypotheses about competition leading to better cybersecurity. A 2009 empirical study of web browsers considered the impact of market concentration on the amount of time that vendors took to fix security vulnerabilities as they were discovered.159 The study found that the presence of more competitors correlated with faster cybersecurity response—a reduction of 8–10 days in response time per additional market rival.160 Similarly, business researchers in 2005 modeled incentives for firms to engage in sharing of cybersecurity information, and concluded that the “inclination to share information and invest in security technologies increases as the degree of competitiveness in an industry increases.”161 Another study found that, where two software firms are in competition, at least one will be willing to take on some degree of risk and responsibility for cybersecurity, whereas a monopoly software firm will consistently fail to accept such responsibility.162 To be sure, an unpublished study from 2017 found that some market concentration can make firms more responsive to cybersecurity issues, but only to a point: “being in a dominant position reduces the positive effect of having less competitors on the responsiveness of the vendor,” and indeed the “more dominant the firm is, the less rapid it is in releasing security patches.”163 This research confirms that competition is more conducive to cybersecurity.

It is not hard to see how this applies to emerging communication technologies markets. In the absence of competition, the above research suggests that device manufacturers, chip makers, and software developers will lack incentives to respond to vulnerabilities, to share information about cybersecurity practices and issues, and to take responsibility for security matters. Mobile phone chips have had their share of cybersecurity failures already.164 The best way to flush out ongoing and future cybersecurity issues is to maintain competitive pressure at all levels of the supply chain.

B. Vulnerabilities of “Monocultures”

A second reason why monopoly undermines cybersecurity is that monopoly leads to a “monoculture” of single-vendor products, opening the door to massive systemic failure in the case of a cyberattack. Computer researchers developed the theory of software monocultures in the early 2000s, in response to the regular phenomenon of computer viruses and other attacks spreading rapidly by exploiting flaws in the dominant operating system at the time, Microsoft Windows.165 Where a computer system such as Windows has a commanding share of users, a virus that exploits a flaw in that system can quickly spread to infect a whole interconnected ecosystem. An operating system monopoly thus enables fast and easy spread of cyberattacks, and better cybersecurity would be achieved through greater diversity in online systems.166 As one research group posited, “a network architecture that supports a collection of heterogeneous network elements for the same functional capability offers a greater possibility of surviving security attacks as compared to homogeneous networks.”167

There has been considerable study of the theory that computer monocultures are naturally more vulnerable to attacks.168 In one study, computer science researchers reviewed a catalog of 6,340 software vulnerabilities recorded in 2007, to compare whether comparable software would share the same flaws.169 Of the 2,627 vulnerabilities applicable to application software (as opposed to operating systems, web scripts, and other software components), only 29 (1.1%) applied to substitute products from different vendors but providing the same functionality.170 By contrast, different versions of a single software product were found to share vulnerabilities 84.7% of the time.171 Thus, software monocultures share exploitable flaws even when there is some variation in versions across the monoculture; by contrast, diversity in software is almost guaranteed to prevent a single flaw from affecting all users.

In the case of 5G and wireless mobile communications, a monoculture is an especially concerning possibility. To the extent that systems such as smart city sensors or communication networks are widely deployed in a monoculture fashion, a widespread attack could have devastating consequences, potentially blacking out a region and affecting essential services such as 911.172 A monoculture that is vulnerable to so-called “rootkits” or “backdoors”—maliciously installed software that enable bad actors to commandeer systems—could also enable mass surveillance or spying by private hackers or foreign governments.173 The presence of systems from multiple vendors would mitigate these possibilities.

#### Actors have the means and motivations to strike critical infrastructure.

Wintch 21, \*Timothy M. Wintch, an active-duty Major in the United States Air Force. He is currently a graduate student at the Oettinger School of Science & Technology Intelligence, National Intelligence University, in Bethesda, Maryland. Mr. Wintch has over 11 years of experience in command-and-control operations as an Air Battle Manager. He holds a Bachelor of Arts in Politics from the University of California, Santa Cruz, and a Master of Arts in Military Studies from American Military University. (April 20th, 2021, “PERSPECTIVE: Cyber and Physical Threats to the U.S. Power Grid and Keeping the Lights on”, https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/)

Among critical infrastructure sectors in the U.S., energy is perhaps the most crucial of the 16 sectors defined by the Department of Homeland Security. This sector is so vital because it provides the energy necessary to run every other critical infrastructure sector. However, the U.S. power grid, the backbone of the energy sector, is built upon an aging skeleton that is becoming increasingly vulnerable every day. Whether from terrorists or nation-states like Russia and China, the power grid is susceptible to not just physical attacks, but also to cyber intrusion as well. However, much of this threat can be mitigated if the U.S. takes the appropriate steps to safeguard the power grid and avoid a potential catastrophe in the future.

Since Sept. 11, 2001, terrorism on U.S. soil has been at the forefront of American consciousness. Critical infrastructure provides an appealing target because of the disproportionally large impact even a small attack can have on the sectors. In particular, the power grid represents a particularly lucrative target, both in terms of the ease of access and the large impact it can make. The National Research Council stated that the U.S. power grid is “vulnerable to intelligent multi-site attacks by knowledgeable attackers intent on causing maximum physical damage to key components on a wide geographical scale.”[[1]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn1) Additionally, the physical security of transmission and distribution systems is difficult due to the dispersed nature of these key components, which in turn is advantageous to attackers as it reduces the likelihood of their capture.[[2]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn2) From 2002-2012, approximately 2,500 physical attacks occurred against transmission lines and towers worldwide and approximately 500 attacks against transformer substations.[[3]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn3) Terrorists have the motivation to attack the U.S. power grid but the very nature of the grid makes it highly vulnerable. The power grid is not only at risk from physical attacks, but also nation-state cyberattacks.

One nation that has shown both the capability and intent to use attacks against critical energy infrastructure is Russia, as demonstrated in their 2015 annexation of Crimea from Ukraine. A Russian cyber threat group known as Sandworm, which used its BlackEnergy malware, attacked Ukrainian computer systems that provide remote control of the Ukraine power grid.[[4]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn4) This attack, and another in 2016, each left the capital Kiev without power, prompting cyber experts to raise concern about the same malware already existing in NATO and the U.S. power grids.[[5]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn5) In any conflict between Russia and NATO, not only would similar cyberattacks pose a threat, but so would potential physical attacks severing fuel oil and natural gas lines to Western Europe. Russia has both the capability and intent to attack critical infrastructure, particularly power grids, during future conflicts in their “hybrid warfare” approach.

Another nation that has the capability to attack critical energy infrastructure is China, representing a threat to not just the U.S. energy infrastructure but also that of our allies whose support would be vital in a major conflict. A recent NATO report highlighted this threat from China’s Belt and Road Initiative, stating that “[China’s] foreign direct investment in strategic sectors [such as energy generation and distribution] …raises questions about whether access and control over such infrastructure can be maintained, particularly in crisis when it would be required to support the military.”[[6]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn6) Like Russia, China has been active with cyber intrusions in U.S. energy infrastructure. The Mission Support Center at Idaho National Laboratory characterized these as attacks as “multiple intrusions into US ICS/SCADA [Industrial Control Systems/Supervisory Control and Data Acquisition] and smart grid tools [that] may be aimed more at intellectual property theft and gathering intelligence to bolster their own infrastructure, but it is likely that they are also using these intrusions to develop capabilities to attack the [bulk electric system], as well.”[[7]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn7) China, therefore, has both the capability and intent to conduct cyber intrusions and attacks for myriad reasons.

Another arm of this threat is the reliance the U.S. energy industry has on imports from China, especially transformers. In early 2020, federal officials seized a transformer in the port of Houston that had been imported by the Jiangsu Huapeng Transformer Company before sending it to Sandia National Laboratory in Albuquerque. Sandia is contracted by the U.S. Department of Energy for mitigating national security threats.[[8]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn8) The Wall Street Journal reported that “Mike Howard, chief executive of the Electric Power Research Institute, a utility-funded technical organization, said that the diversion of a huge, expensive transformer is so unusual – in his experience, unprecedented – that it suggests officials had significant security concerns.”[[9]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn9) Previously destined for the Washington Area Power Administration’s Ault, Colo., substation, the transformer is believed to have been seized due to “backdoor” exploitable hardware emplaced by the Chinese prior to shipment.[[10]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn10) Shortly after these events, President Trump issued Executive Order 13920, “[Securing the United States Bulk-Power System](https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-securing-united-states-bulk-power-system/),” essentially limiting the import of Chinese-built critical energy infrastructure components due to concerns about cybersecurity.[[11]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn11) Interestingly, Jiangsu Huapeng “boasted that it supported 10 percent of New York City’s electricity load.”[[12]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn12)

Franklin Kramer, the former Assistant Secretary of Defense for International Security Affairs, testified before a U.S. House of Representatives Energy and Commerce subcommittee during an energy and power hearing in 2011 and said that a “highly-coordinated and structured cyber, physical, or blended attack on the bulk power system, however, could result in long-term (irreparable) damage to key system components in multiple simultaneous or near-simultaneous strikes.” He added that “an outage could result with the potential to affect a wide geographic area and cause large population centers to lose power for extended periods.”[[13]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn13) Even the inclusion of features such as smart grids to the overall grid structure poses new vulnerabilities through their connectivity. Kramer stated that “such connectivity means that the distribution system could be a key vector for a national security attack on the grid.”[[14]](https://www.hstoday.us/subject-matter-areas/infrastructure-security/perspective-cyber-and-physical-threats-to-the-u-s-power-grid-and-keeping-the-lights-on/" \l "_ftn14)

#### Those attacks cause accidental nuclear escalation.

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Yet another pathway to escalation could arise from a cascading series of cyberstrikes and counterstrikes against vital national infrastructure rather than on military targets. All major powers, along with Iran and North Korea, have developed and deployed cyberweapons designed to disrupt and destroy major elements of an adversary’s key economic systems, such as power grids, financial systems, and transportation networks. As noted, Russia has infiltrated the U.S. electrical grid, and it is widely believed that the United States has done the same in Russia.[12](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12) The Pentagon has also devised a plan known as “Nitro Zeus,” intended to immobilize the entire Iranian economy and so force it to capitulate to U.S. demands or, if that approach failed, to pave the way for a crippling air and missile attack.[13](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote12)

The danger here is that economic attacks of this sort, if undertaken during a period of tension and crisis, could lead to an escalating series of tit-for-tat attacks against ever more vital elements of an adversary’s critical infrastructure, producing widespread chaos and harm and eventually leading one side to initiate kinetic attacks on critical military targets, risking the slippery slope to nuclear conflict. For example, a Russian cyberattack on the U.S. power grid could trigger U.S. attacks on Russian energy and financial systems, causing widespread disorder in both countries and generating an impulse for even more devastating attacks. At some point, such attacks “could lead to major conflict and possibly nuclear war.”[14](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote14)

These are by no means the only pathways to escalation resulting from the offensive use of cyberweapons. Others include efforts by third parties, such as proxy states or terrorist organizations, to provoke a global nuclear crisis by causing early-warning systems to generate false readings (“spoofing”) of missile launches. Yet, they do provide a clear indication of the severity of the threat. As states’ reliance on cyberspace grows and cyberweapons become more powerful, the dangers of unintended or accidental escalation can only grow more severe.

#### Cyber-compromised NC3 causes nuclear war.

Klare 19, \*Michael T. Klare is a professor emeritus of peace and world security studies at Hampshire College and senior visiting fellow at the Arms Control Association; (November 19th, “Cyber Battles, Nuclear Outcomes? Dangerous New Pathways to Escalation”, <https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation>)

The Nuclear-Cyber Connection

These links exist because the NC3 systems of the United States and other nuclear-armed states are heavily dependent on computers and other digital processors for virtually every aspect of their operation and because those systems are highly vulnerable to cyberattack. Every nuclear force is composed, most basically, of weapons, early-warning radars, launch facilities, and the top officials, usually presidents or prime ministers, empowered to initiate a nuclear exchange. Connecting them all, however, is an extended network of communications and data-processing systems, all reliant on cyberspace. Warning systems, ground- and space-based, must constantly watch for and analyze possible enemy missile launches. Data on actual threats must rapidly be communicated to decision-makers, who must then weigh possible responses and communicate chosen outcomes to launch facilities, which in turn must provide attack vectors to delivery systems. All of this involves operations in cyberspace, and it is in this domain that great power rivals seek vulnerabilities to exploit in a constant struggle for advantage.

The use of cyberspace to gain an advantage over adversaries takes many forms and is not always aimed at nuclear systems. China has been accused of engaging in widespread cyberespionage to steal technical secrets from U.S. firms for economic and military advantages. Russia has been accused, most extensively in the Robert Mueller report, of exploiting cyberspace to interfere in the 2016 U.S. presidential election. Nonstate actors, including terrorist groups such as al Qaeda and the Islamic State group, have used the internet for recruiting combatants and spreading fear. Criminal groups, including some thought to be allied with state actors, such as North Korea, have used cyberspace to extort money from banks, municipalities, and individuals.[4](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote04) Attacks such as these occupy most of the time and attention of civilian and military cybersecurity organizations that attempt to thwart such attacks. Yet for those who worry about strategic stability and the risks of nuclear escalation, it is the threat of cyberattacks on NC3 systems that provokes the greatest concern.

This concern stems from the fact that, despite the immense effort devoted to protecting NC3 systems from cyberattack, no enterprise that relies so extensively on computers and cyberspace can be made 100 percent invulnerable to attack. This is so because such systems employ many devices and operating systems of various origins and vintages, most incorporating numerous software updates and “patches” over time, offering multiple vectors for attack. Electronic components can also be modified by hostile actors during production, transit, or insertion; and the whole system itself is dependent to a considerable degree on the electrical grid, which itself is vulnerable to cyberattack and is far less protected. Experienced “cyberwarriors” of every major power have been working for years to probe for weaknesses in these systems and in many cases have devised cyberweapons, typically, malicious software (malware) and computer viruses, to exploit those weaknesses for military advantage.[5](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote05)

Although activity in cyberspace is much more difficult to detect and track than conventional military operations, enough information has become public to indicate that the major nuclear powers, notably China, Russia, and the United States, along with such secondary powers as Iran and North Korea, have established extensive cyberwarfare capabilities and engage in offensive cyberoperations on a regular basis, often aimed at critical military infrastructure. “Cyberspace is a contested environment where we are in constant contact with adversaries,” General Paul M. Nakasone, commander of the U.S. Cyber Command (Cybercom), told the Senate Armed Services Committee in February 2019. “We see near-peer competitors [China and Russia] conducting sustained campaigns below the level of armed conflict to erode American strength and gain strategic advantage.”

Although eager to speak of adversary threats to U.S. interests, Nakasone was noticeably but not surprisingly reluctant to say much about U.S. offensive operations in cyberspace. He acknowledged, however, that Cybercom took such action to disrupt possible Russian interference in the 2018 midterm elections. “We created a persistent presence in cyberspace to monitor adversary actions and crafted tools and tactics to frustrate their efforts,” he testified in February. According to press accounts, this included a cyberattack aimed at paralyzing the Internet Research Agency, a “troll farm” in St. Petersburg said to have been deeply involved in generating disruptive propaganda during the 2016 presidential elections.[6](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote06)

Other press investigations have disclosed two other offensive operations undertaken by the United States. One called “Olympic Games” was intended to disrupt Iran’s drive to increase its uranium-enrichment capacity by sabotaging the centrifuges used in the process by infecting them with the so-called Stuxnet virus. Another left of launch effort was intended to cause malfunctions in North Korean missile tests.[7](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote07) Although not aimed at either of the U.S. principal nuclear adversaries, those two attacks demonstrated a willingness and capacity to conduct cyberattacks on the nuclear infrastructure of other states.

Efforts by strategic rivals of the United States to infiltrate and eventually degrade U.S. nuclear infrastructure are far less documented but thought to be no less prevalent. Russia, for example, is believed to have planted malware in the U.S. electrical utility grid, possibly with the intent of cutting off the flow of electricity to critical NC3 facilities in the event of a major crisis.[8](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote08) Indeed, every major power, including the United States, is believed to have crafted cyberweapons aimed at critical NC3 components and to have implanted malware in enemy systems for potential use in some future confrontation.

Pathways to Escalation

Knowing that the NC3 systems of the major powers are constantly being probed for weaknesses and probably infested with malware designed to be activated in a crisis, what does this say about the risks of escalation from a nonkinetic battle, that is, one fought without traditional weaponry, to a kinetic one, at first using conventional weapons and then, potentially, nuclear ones? None of this can be predicted in advance, but those analysts who have studied the subject worry about the emergence of dangerous new pathways for escalation. Indeed, several such scenarios have been identified.[9](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote09)

The first and possibly most dangerous path to escalation would arise from the early use of cyberweapons in a great power crisis to ~~paralyze~~ undermine the vital command, control, and communications capabilities of an adversary, many of which serve nuclear and conventional forces. In the “fog of war” that would naturally ensue from such an encounter, the recipient of such an attack might fear more punishing follow-up kinetic attacks, possibly including the use of nuclear weapons, and, fearing the loss of its own arsenal, launch its weapons immediately. This might occur, for example, in a confrontation between NATO and Russian forces in east and central Europe or between U.S. and Chinese forces in the Asia-Pacific region.

Speaking of a possible confrontation in Europe, for example, James N. Miller Jr. and Richard Fontaine wrote that “both sides would have overwhelming incentives to go early with offensive cyber and counter-space capabilities to negate the other side’s military capabilities or advantages.” If these early attacks succeeded, “it could result in huge military and coercive advantage for the attacker.” This might induce the recipient of such attacks to back down, affording its rival a major victory at very low cost. Alternatively, however, the recipient might view the attacks on its critical command, control, and communications infrastructure as the prelude to a full-scale attack aimed at neutralizing its nuclear capabilities and choose to strike first. “It is worth considering,” Miller and Fontaine concluded, “how even a very limited attack or incident could set both sides on a slippery slope to rapid escalation.”[10](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote10)

What makes the insertion of latent malware in an adversary’s NC3 systems so dangerous is that it may not even need to be activated to increase the risk of nuclear escalation. If a nuclear-armed state comes to believe that its critical systems are infested with enemy malware, its leaders might not trust the information provided by its early-warning systems in a crisis and might misconstrue the nature of an enemy attack, leading them to overreact and possibly launch their nuclear weapons out of fear they are at risk of a preemptive strike.

“The uncertainty caused by the unique character of a cyber threat could jeopardize the credibility of the nuclear deterrent and undermine strategic stability in ways that advances in nuclear and conventional weapons do not,” Page O. Stoutland and Samantha Pitts-Kiefer wrote in 2018 paper for the Nuclear Threat Initiative. “[T]he introduction of a flaw or malicious code into nuclear weapons through the supply chain that compromises the effectiveness of those weapons could lead to a lack of confidence in the nuclear deterrent,” undermining strategic stability.[11](https://www.armscontrol.org/act/2019-11/features/cyber-battles-nuclear-outcomes-dangerous-new-pathways-escalation#endnote11) Without confidence in the reliability of its nuclear weapons infrastructure, a nuclear-armed state may misinterpret confusing signals from its early-warning systems and, fearing the worst, launch its own nuclear weapons rather than lose them to an enemy’s first strike. This makes the scenario proffered in the 2018 NPR report, of a nuclear response to an enemy cyberattack, that much more alarming.

### 1AC---Solvency

#### Plan: The United States federal government should substantially increase prohibitions on private sector conduct that is more restrictive of competition than reasonably necessary to enable creation of information technology standards.

#### The plan requires SSO’s to administer reasonable action to prohibit ex post opportunism---that strengthens FRAND effectiveness while enabling SEP holders to capture appropriate royalties---which is the best competition-innovation balance.

Melamed & Shapiro 18, \*A. Douglas Melamed is Professor of the Practice of Law at Stanford Law School; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (May 2018, “How Antitrust Law Can Make FRAND Commitments More Effective”, https://www-cdn.law.stanford.edu/wp-content/uploads/2018/05/How-Antitrust-Law-Can-Make-FRAND-Commitments-More-Effective.pdf)

3. Application of the Basic Legal Principles

The antitrust principle is straightforward: industry-wide collaboration through SSOs to establish procompetitive standards is permitted only if it is no more restrictive of competition than reasonably necessary to enable creation of the standards. When standard setting predictably creates technology monopolies that, if unrestrained, will enable anticompetitive ex post opportunism that would otherwise not occur, an SSO that does not take effective measures to pre- vent or minimize such ex post opportunism engages in conduct that is more restrictive of competition than necessary. In that case, the SSO and, in appropriate cases, its members, may well violate Section 1 of the Sherman Act.

Under this principle, SSO procedures and FRAND rules should be evaluated based on whether they lead to reasonable SEP royalties, using the competitive ex ante licensing standard discussed above, which has been adopted by the courts in patent law. Put differently, FRAND rules should be evaluated based on their ability to prevent SEP holders from obtaining more than the ex ante value of their technology from implementers.

This limitation would not prevent a SEP holder from proﬁting, perhaps greatly, from participating in the SSO and having its patented technology included in the standard. The SEP holder continues to be rewarded for its technology because the inclusion of its technology in the standard can still greatly increase the volume of licensing opportunities available to the SEP holder.

Whether a particular set of FRAND rules are sufficiently effective in preventing ex post opportunism will depend on the particular circumstances. The procedural unfolding of the case will also depend upon the circumstances. As a general matter, the case would probably be structured as an ordinary Rule of Reason case.82

First, the plaintiff would have to demonstrate harm to competition as a result of the collaboration of the SSO’s members, many of which compete with one another. In this case, the harm to competition would stem from the ability of the SEP holder to exercise monopoly power by obtaining royalties in excess of the competitive, ex ante level. The decision to include patented technologies in the standard would be the allegedly unlawful agreement. Notably, the court need not determine what a FRAND royalty is; it would suffice to determine that market power has been created or exercised, and that existing SSO rules and policies were not adequate to prevent the competitive harm. The defendant, which could be the SSO or perhaps one or more SSO members, would win at this point if the plaintiff failed to show harm to competition. If might fail if the standard faces substantial competition and the court concludes that the SEP holder therefore does not have market power or if the SSO’s rules and policies are found to be effective in preventing ex post opportunism, even if the plaintiff or even the court thinks that other rules and policies would be preferable.

Second, if the plaintiff makes the requisite showing of harm to competition, the defendant(s) would then have to show some procompetitive justiﬁcation— in this case, the beneﬁts of the standard. These two initial steps should be straightforward.

Third, if as is likely the defendant is able to show a procompetitive justiﬁcation, the plaintiff would have to show that the SSO could have used available, reasonable alternatives to realize the efficiency beneﬁts with less or none of the competitive harms. The plaintiff might identify reasonable alternatives that would have led to a different standard, based on including unpatented technology in the standard or perhaps involving fewer SEPs or fewer owners of SEPs, which would be less subject to patent holdup. More likely, the plaintiff could suggest alternative SSO rules that would not change the standard, but would reduce the likelihood or extent of ex post opportunism. For example, the plaintiff might suggest more rigorous FRAND-type rules, such as rules that set forth more precise principles on which FRAND royalties are to be determined and the circumstances under which SEP holders might seek injunctions.

Fourth, the burden would then shift to the defendant(s) to show that the beneﬁts of the standard could not have been realized if the SSO had adopted any of the proffered alternatives or that those alternatives were unrealistic.83 The plaintiff would be entitled to judgment if the court concludes that those beneﬁts could have been realized with less competitive harm if the SSO had adopted the standard with different IPR rules or policies.

Our overall sense, based on experience and the empirical literature, is that the extant FRAND rules are generally useful, but tend to be inadequate because they are imprecise and leave unresolved such critical issues as (a) the meaning of a reasonable royalty, even conceptually; (b) the meaning of “non-discriminatory;” (c) to whom licenses must be offered; and (d) under what circumstances may a SEP holder obtain an injunction.84 These imprecise FRAND commitments are therefore not sufficient to adequately prevent ex post opportunism. The recent revisions to IEEE’s FRAND policy represent a signiﬁcant step in the right direction, but even this advance leaves important questions unanswered.85 If FRAND rules are inadequate in these ways, litigation involving extant FRAND rules would likely be resolved only at the ﬁnal, fourth step. The defendant would be able to demonstrate the beneﬁts created by the standard; the plaintiff would be able to demonstrate the creation of market power and that other reasonable and practical rules or policies would ameliorate the problem. The case would thus turn on whether the defendant is able to demonstrate that signiﬁcant beneﬁts associated with standardization could not have been realized if the SSO had adopted those other rules or policies.

The court would have available a variety of possible remedies if the plaintiff prevails. Implementers that paid supracompetitive royalties or were unlawfully excluded in whole or in part from product markets as a result of the inadequate FRAND policies would be entitled to damages and, in some cases, to treble damages.86 If the unlawful SSO conduct is regarded as the collective action of the SSO and its members, which is likely to be the case in most instances, SSO members would be jointly and severally liable for the damages. Forward-looking injunctive relief aimed at restoring competition would need to be fashioned to the requirements of the individual case. For example, a court could order the SSO to adopt a new rule or policy proposed by the plaintiff. If the court is reluctant to take on that governance role, it might give the SSO a period of time—maybe ninety days—to develop a rule, subject to the court’s ultimate approval, which would adequately ameliorate the competitive problem created by the SSO. Alternatively or in addition, the court might order the parties to attempt to negotiate a rule or policy on which they can agree. And, depending on the circumstances, the court might order SEP holders, including at least those that were defendants in the case, to comply with the new SSO rules and policies.

#### Threatening antitrust liability lures SSO’s into adopting best practices.

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Under our approach, many of these issues should become moot, since the patentee cannot obtain an injunction (or transfer the patent to someone who can) against a willing licensee, and since competitors are not involved in jointly setting the reasonable royalty rate. If SSOs set clear, reasonable rules following the best practices we recommend, and parties follow those rules, there should be little or no need for antitrust to intervene. Indeed, even the risk of non-disclosure of a patent is lessened, since the patentee has committed to license its essential patents whether or not it discloses them. For the most part, the rules we have described are self-executing, meaning that even if a party tries to break the rules set by the SSO there still may be no need for antitrust to intervene. Thus, we suggest that parties who abide by these procedures—patentees, implementers, and the SSOs themselves—should be immune from antitrust liability for activities that merely follow those rules.107 They have entered into an arrangement that is on balance good for competition, one that allows patentees to receive reasonable royalties but prevents holdup and reduces the risk of monopolization by trickery.

The fact that antitrust remains a last resort available when SSOs don’t follow best practices may have two practical benefits, however. First, under our approach the promise of avoiding the risk of antitrust liability will be a powerful incentive for both SSOs and patent owners to adopt the best practices we propose. Second, the risk of antitrust liability may be relevant when an individual patentee wants to adopt best practices but the SSO governing the standard has not yet done so. We propose that a patentee that unilaterally commits to the FRAND procedures we describe here should be immune from antitrust liability for following these procedures.108 A patentee’s unilateral binding commitment to arbitration could be enforced whether or not it was elicited by an SSO. Thus, just as the prospect of antitrust immunity might lure SSOs to adopt best practices, it might also lure patentees to implement those practices even if the SSO has not done so. Given the large number of standard-essential patents based on preexisting standards,109 and given that SSOs tend to update their IP rules rather slowly,110 this is not a small matter.

#### Only antitrust enforcement creates a consumer-action feature that counterbalances SSO’s conspiratorial incentives---private action fails.

Melamed & Shapiro 18, \*A. Douglas Melamed is Professor of the Practice of Law at Stanford Law School; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (May 2018, “How Antitrust Law Can Make FRAND Commitments More Effective”, <https://www-cdn.law.stanford.edu/wp-content/uploads/2018/05/How-Antitrust-Law-Can-Make-FRAND-Commitments-More-Effective.pdf>)

2. Why Antitrust Enforcement Is Necessary

Some SSO members have an interest in ensuring that the SSO takes steps to minimize the potential harms from the SEP holders’ monopoly power, and this undoubtedly explains in part why most SSOs have adopted FRAND policies or similar requirements. But, as shown in the economic model in the Appendix,73 SSOs cannot in general be counted on to adopt effective FRAND policies. The bases for this conclusion, which is central to our argument for the applicability of Section 1 to SSO FRAND rules, can be summarized as follows.74

First, the SSO members collectively have an interest in permitting SEP holders to charge supracompetitive royalties that elevate the downstream price of compliant devices to the monopoly level. Doing so will enable the members in aggregate to collect increased revenues from consumers, and thus to generate increased profits that in theory could be shared by all the members. In other words, supracompetitive royalties can enrich industry participants as a group at the expense of final consumers. This fact alone should serve as a clear and strong signal regarding the dangers of counting on SSOs to implement effective FRAND policies: if the SSO members negotiate efficiently, the outcome will be just as bad for consumers as if the members agreed to fix downstream prices.75 The fundamental problem is that final consumers are not at the table when the SSO rules are negotiated.

Second, SSO members that own SEPs but earn little or no profits as implementers have a powerful self-interest in being able to exercise the ex post monopoly power associated with their SEPs. Because SSO policies are usually determined by a consensus process, these members will likely be able to block the adoption of fully effective FRAND policies. Moreover, these SSO members often have the greatest interest in SSO patent policies. Since much of their income may be attributable to patent licensing, they can be expected to devote substantial resources to block the adoption of FRAND policies that effectively prevent patent holdup.

Third, even SSO members that earn significant profits as implementers may have mixed incentives if they also own SEPs, which can also lead to weak or in-effective FRAND rules. In the Appendix, we show that, if the requisite share of votes in the SSO are cast by firms whose share of SEP royalties is at least as large as their share of downstream profits, and if these firms can coordinate their voting over the FRAND rules, then an SSO unconstrained by antitrust laws will establish FRAND rules leading to an outcome no better for consumers than would result from an integrated monopolist controlling all SEPs and all downstream sales.76

Fourth, even SSO members that are downstream implementers and own few, if any, SEPs may have only a modest interest in promoting effective policies to restrict ex post opportunism. Because all implementers will be subject to the opportunism, all of them will face increased licensing costs, and therefore will likely be able to pass on most or all of the increased costs to their customers.77 Furthermore, these implementers might not be especially active or effective in the standard-setting process for free-riding or public-good reasons, especially if SEP royalties constitute only a relatively small portion of the costs of their standard-implementing products. Public choice theory predicts that the highly motivated SEP holders are likely to have the greatest influence over patent policies.

Empirical evidence bears out these concerns. As a starting point, we find it striking that SSO FRAND rules are almost always quite vague.78 Notably, SSOs in which SEP holders are more prevalent tend to have weaker FRAND rules.79 Further, to our knowledge, SSOs have made almost no effort to enforce their FRAND rules and have, instead, left enforcement efforts to others.80 This evidence raises serious doubts about the effectiveness of the existing FRAND rules in preventing ex post opportunism.

## 2AC

### Frand

#### China’s Huawei is poised to dominate standard-setting.

Clark 21, \*Laurie Clark is a senior reporter at Tech Monitor. Before this, she held reporting positions at NS Tech, Wired UK and IDG. She holds an undergraduate degree in psychology from UCL and a masters in media and journalism from the University of Glasgow; (June 23rd, 2021, “‘Technical standards-setting is shaping up to be the next China-US showdown”, https://techmonitor.ai/technology/technical-standards-setting-shaping-up-next-china-us-showdown)

In China’s Standards 2035 plan, unveiled last year, the country outlined its intentions to dominate the next generation of technologies by taking a pivotal role in setting technical standards. According to Beijing, “third tier” companies make products; “first tier” companies set standards. It wants to be a champion of the latter.

The plan is seen as intrinsic to China’s ambitions for supremacy in emerging fields such as AI, quantum, the internet of things, 5G and 6G. Those ambitions reflect the commonly held belief that we are on the precipice of a fourth industrial revolution, says Richard Ghiasy, senior fellow at the Leiden Asia Centre in The Netherlands. “What we’ve seen in the previous three iterations, is that the nation or nations that lead that revolution generally tend to lead the world and the world economy,” he says.

Unsurprisingly, China’s Standards 2035 plan has attracted pushback from the US, which sees it as a threat to Western dominance of global technology markets. President Joe Biden has said the US should become more involved in standards-setting – casting it as a bulwark to China’s growing influence and power. As such, digital standards-setting is shaping up to be the latest battleground in the geopolitical tussle between the US and China that increasingly focuses on technology.

“For two and a half centuries, international technology standards have been an engine for wealth creation and dominance largely belonging to the West,” [wrote Shawn Kim](https://www.scmp.com/comment/opinion/article/3134216/china-standards-2035-how-china-plans-win-future-its-own), head of the Asia Technology research team at Morgan Stanley, in response to the Standards 2035 plan strategy. “However, this is now changing.”

US vs China: the geopolitics of technical standards

Technical standards allow products to work together across different jurisdictions and manufacturers. A prime example is the USB cable, which replaced multiple different types of cords; another is the plug socket, which takes different forms around the world. If each country or company uses its own standards, technologies are not easily interoperable with those made by other countries or companies.

Usually, standards are set by a consortia of industry-leading companies and international industry associations. Standards can emerge from convention, or the market dominance of a particular supplier, or from formal agreements, depending on the industry and product. China missed the opportunity to participate in the standards-setting of the first wave of technologies, including mobile technologies and internet infrastructure. The current industrial revolution is a chance for the nation to remedy that.

One of the most successful examples of China’s efforts to play a leading role in standards-setting is 5G. China’s influence on global 5G standards is mediated through the world-leading status of Huawei, China’s national telecoms champion. Huawei is more advanced in 5G than its western competitors such as Nokia and Ericsson or eastern counterparts Samsung and Fujitsu.

This has made the company an important actor in setting technical standards for 5G. Huawei holds the largest number of “standards-essential patents” required to make 5G work, followed by Nokia and Samsung, according to research provider IPLytics. The company [also leads](https://www.wsj.com/articles/from-lightbulbs-to-5g-china-battles-west-for-control-of-vital-technology-standards-11612722698) in standards proposals to the 3rd Generation Partnership Project (3GPP), an umbrella group of standards organisations that develop protocols for mobile telecommunications – one-quarter of which have been approved.

Huawei’s indispensability for 5G is reflected in the fact that, although the US has successfully pressured allied countries like the UK and Australia to cut the company’s technology out of their networks, others – including Germany – have hesitated to exclude the company entirely. In another admission of Huawei’s heft, the US allowed American companies [to continue working](https://asia.nikkei.com/Spotlight/Huawei-crackdown/US-to-allow-companies-to-work-with-Huawei-on-5G-standards) with the company on setting 5G standards after it was placed on a US trade blacklist, for fear that US companies would no longer have a place at the table otherwise.

But 5G isn’t the only technology that Beijing aims to be instrumental in setting, or updating, the standards for. Chinese navigation satellite systems company, BeiDou, is increasingly competing with GPS, which is owned and operated by the US government. It is more accurate in some regions than existing satellite technology, says Ghiasy, and countries such as Pakistan have shifted from GPS to BeiDou. Ghiasy's research has highlighted e-commerce systems, primarily through the influence of Chinese online shopping giant Alibaba, fintech, and smart city technologies, as areas where China is also exerting considerable influence over standards-setting.

Another ambitious project approach to rewriting international standards came in the form of a Huawei proposal for [a new internet protocol](https://www.ft.com/content/ba94c2bc-6e27-11ea-9bca-bf503995cd6f). Huawei claims that it is being developed solely to meet the technical requirements of an increasingly digital world, and has not woven in any particular governance model. But critics have warned it could integrate a system of centralised control into the internet. Countries such as Saudi Arabia, Iran and Russia have reportedly shown an interest in such alternative network technologies.

Influencing the standards-setting process

One way China promotes its vision for the technical specifications of the future is by increasing its presence at global standards organisations. Chinese officials now lead four such bodies, including the International Telecommunication Union, a specialised agency of the United Nations responsible for information and communication technologies, and the International Electrotechnical Commission, an industry association that publishes international standards for electrical, electronic and related technologies.

Another means of exerting influence is through China’s Digital Silk Road (DSR) project, a subset of the country’s Belt and Road Initiative (BRI). The DSR focuses on setting up digital or technological infrastructure in partner countries. Smart city infrastructure is particularly popular – [according to](https://www.ft.com/content/188d86df-6e82-47eb-a134-2e1e45c777b6) RWR Advisory, Chinese companies have secured 116 deals to install smart city packages globally since 2013, 70 of which are in BRI countries.

Through the DSR, China can incentivise countries to adopt its technical standards, making it too costly and laborious for them to shift to different standards later. The initiative combines government powers with industry-leading companies such as Tencent and Alibaba, says Ghiasy. "It is very much a whole-of-government plus whole-of-private-sector approach, and there are some subsidies and some policy facilitation. It is a more powerful combination, a more effective one at lower rates, than what we generally can offer [to countries] here in the West."

Both the US and Europe have baulked at China’s recent push to influence global technical standards. “To some extent, history is repeating itself," says Paul Timmers, research associate at the University of Oxford and former European Commission director for Digital Society, Trust and Cyber Security. "In the '90s, the US was upset that it got bypassed by planned action of European companies in telecoms frequency allocation and realised it had not kept its eye on the ball; today it is both the USA and Europe who painfully realise that to have been naïve or sleeping, while China was moving forward."

Even greater than the geopolitical struggle between the US and China is the battle between two economic models: free-market capitalism and state capitalism. The US hugely benefited from its technological dominance over the past half-century, and the ample investment and political weight that came with that. “However, the US has funnelled the profits from that huge global advantage into private bank accounts of a small number of people, perhaps at the expense of reinvesting in next-generation technology,” says Madeline Carr, professor of global politics and cybersecurity at UCL. “And that is most clearly evident in the reality now that the US has no viable player in the 5G market.”

Writing in the South China Morning Post, Morgan Stanley's Kim [observes](https://www.scmp.com/comment/opinion/article/3134216/china-standards-2035-how-china-plans-win-future-its-own) that China's current approach is not a historical aberration. “Most nations that drove industrialisation did so via capital and government support... Industrialisation in Germany and Japan was top-down driven, and the US semiconductor industry was formed by state funding for military and space projects.”

The US appears keen to redress the recent lack of federal tech investment with a massive chunk of funding poised to be signed off under the US Innovation and Competition Act. But sceptics [aren’t certain this will be enough](https://techmonitor.ai/policy/massive-us-tech-bill-needs-aim-more-than-countering-china) to make up ground in key technological areas where China is set to accelerate ahead.

#### The abbott card is an aff card — it says 5G is necessary for everything but also the aff does not undermine IPR rights it strengthens them and the end of the card says we need to change antitrust laws to favor companies

Abbott ’21 [Alden Abbott, Paul Redmond Michel, Adam Mossoff, Kristen Jakobsen Osenga, and Brian O’Shaughnessy; March 10; the Federal Trade Commission’s General Counsel (2018-2021), adjunct professor at George Mason University, J.D. from Harvard Law School, M.A. in economics from Georgetown University; Retired Chief Judge and United States Circuit Judge of the United States Court of Appeals for the Federal Circuit; Law Professor at George Mason University; Law Professor at the University of Richmond; chair of Dinsmore’s IP Transactions and Licensing Group; the Regulatory Transparency Project, “Aligning Intellectual Property, Antitrust, and National Security Policy,” https://regproject.org/wp-content/uploads/Paper-Aligning-Intellectual-Property-Antitrust-and-National-Security-Policy.pdf]

Although much of the excitement about 5G wireless technology focuses on how it will improve every aspect of our lives – from smart homes to smart cities, from healthcare to food to business to entertainment – this technology is also critical for an often-invisible, but even more critical, application: national security. 5G is a vast improvement over existing mobile technology, with massively increased speeds of data transfer and other enhanced capacities. The benefits this unprecedented speed and capacity will have for the United States military include improved surveillance and reconnaissance systems, new and more accurate methods of command and control, and integrated and streamlined logistics systems for increased efficiency.1 On the other hand, the same technological advancements facilitated by 5G technology may also give rise to new cybersecurity vulnerabilities.

Although it is the future of everything, 5G does not pose a potential problem in some far-off future. Today, the U.S. is already depending on a wide array of 5G technology suppliers for its national security system. For example, the national security programs of the Department of Defense (DOD) rely on continued access to telecommunication products made by companies with security clearance on a range of active classified and unclassified prime government contracts.2 Devices that rely on such wireless technology include those used to command troops in combat, control drones, target smart munitions, and perform other vital military functions.3 Allied partnerships with the U.S. also depend on its efforts to address cybersecurity in the next generation of wireless, 5G, and Internet of things.4

To ensure the safety of the systems on which the U.S. military relies and avoid unknown and unexpected cybersecurity vulnerabilities, the U.S. must remain an active and competitive participant in 5G development. Antitrust policies that undermine the intellectual property rights of U.S. innovators will diminish U.S. companies’ ability to invest in research and development (R&D) and to compete in the global 5G ecosystem. Even more important than increased economic growth, new jobs, and enhanced daily lives, these antitrust policies must be changed for the sake of U.S. national security.

### Cyber

#### Patent holdup is real and necessitates intervention, even if it can’t be systemically proven.

Contreras 19, \*Jorge Contreras, Professor, University of Utah S.J. Quinney College of Law; (2019, “MUCH ADO ABOUT HOLD-UP”, <https://www.illinoislawreview.org/wp-content/uploads/2019/08/Contreras.pdf>)

B. Protective Measures May Already Be Working to Reduce Hold-Up

Another important factor that should be considered regarding the purported lack of empirical evidence of systemic hold-up is the effect that existing policy measures have already had in reducing hold-up. As noted above, the threat of patent hold-up was a primary motivating factor for many SDOs to adopt policies requiring the disclosure and licensing of SEPs. These policies have been in place for decades. In the United States, the first such policy was adopted in 1959 by the American Standards Association (the predecessor to today’s American National Standards Institute (ANSI).102 Today, every one of the more than 200 ANSI-accredited developers of American National Standards must adhere to ANSI’s essential requirements, including the adoption of such a licensing policy for SEPs. Similar policies have existed in European and international standards organizations since at least the 1980s.103 These policies, which were developed by SDOs in large part to reduce the likelihood of hold-up within standard-setting systems, have had several decades to work, and it is likely that the lack of observed hold-up in some studies can be attributed to the successful operation of these policies.

Similarly, antitrust and competition enforcement agencies in the U.S. and Europe have been aware of the potential for hold-up connected with standardization for many years. Accordingly, they have brought enforcement actions when it has been alleged that hold-up behavior has resulted in a violation of the antitrust laws. High-profile enforcement actions against patent holders such as Rambus, 104 Google 105 and Qualcomm106 send powerful deterrent signals to the market and warn others not to engage in similar behavior lest they, too, become the subject of agency enforcement. Like SDO policies, it is likely that the general market awareness of agency interest in standard-setting and hold-up has, to a degree, limited the amount of hold-up that is actually attempted in the marketplace, thereby limiting the direct evidence of hold-up as a systemic problem.

But do the deterrent effects of SDO and agency efforts to reduce hold-up signify that hold-up is not a problem? Certainly not. To reach such a conclusion would be perverse: akin to claiming that burglary is not a problem in a neighborhood that experiences reduced burglary rates after it has implemented an active neighborhood watch program and enhanced policing.

C. Indicia of Healthy Markets do not Prove the Absence of Anticompetitive Conduct

As noted above, one of the principal arguments advanced by commentators seeking to refute the “hold-up theory” is that markets for telecommunications products, namely smart phones, are robust – evidenced by increasing product functionality, decreasing consumer prices and rapid innovation -- and that this degree of robustness indicates that hold-up cannot be a problem in these markets.107 If hold-up were a problem in these markets, they reason, we would see product stagnation, stable (but high) prices, and a lack of competition – features associated with classic examples of hold-up in markets for products such as natural resources and agricultural goods.108

But this argument relies on a false syllogism: hold-up results in market dysfunction; if a market functions well, then it cannot be subject to hold-up. The weaknesses in this argument are multifold. First, hold-up may exist in individual instances without sufficient weight to affect overall market characteristics, particularly in a large global market such as mobile telecommunications. Thus hold-up may exist, even in a market that outwardly appears to be functioning well. Second, there is no valid counterfactual to use to compare the health and robustness of the market for mobile telecommunications products.109 Other consumer electronics devices, such as televisions and DVD players, do not compare well with mobile telecommunications devices, which have taken on a unique character in the modern networked economy. Thus, observing the strength of the market fails to answer the critical questions “compared to what?” and how much stronger the market might be (through more product diversity, functionality, price reduction) without hold-up?

A simple historical illustration is useful in this context. During the decade leading up to the enactment of the Sherman Antitrust Act of 1890, several major U.S. commodity markets (e.g., steel, salt, petroleum, coal, sugar, lead, and others) came under intense scrutiny for a variety of allegedly anticompetitive industrial arrangements. One might have argued that these markets, had they been subject to the sorts of anticompetitive collusion that the Sherman Act sought to address, should have seen reductions of output and increases in price. Yet, between 1880 and 1890, U.S. output of salt, petroleum, steel, and coal all increased significantly, and prices of steel, sugar and lead all dropped significantly.110 Do these positive market indicia demonstrate that the subject markets were not subject to anticompetitive collusion, and that the Sherman Act was not necessary? Certainly, investigations of these industries revealed significant cartel behavior. I would suggest that few commentators today would argue that the coal, steel, sugar and other major industrial producers of the late nineteenth century were innocent of collusive and anticompetitive conduct, or that the Sherman Act was not a necessary and beneficial measure for the U.S. economy.111 Yet, had we relied solely on the positive characteristics exhibited by these markets as proof that anticompetitive conduct did not exist, then perhaps the Sherman Act never would have been enacted.

By the same token, the fact that global markets for standardized products such as computers and smart phones appear to be thriving does not itself refute the possibility of hold-up nor the existence of anticompetitive conduct in these markets. Nor does it allow regulators and policy makers to drop their guard or cease to monitor these important industries.

#### Their ev comes is funded by SEP holders with vested interests in falsely debasing the patent holdup theory.

Shapiro & Lemley 20, \*Carl Shapiro is the Transamerica Professor of Business Strategy Emeritus at the Haas School of Business, University of California at Berkeley; \*Lemley is the William H. Neukom Professor at Stanford Law School and a partner at Durie Tangri LLP; (2020, “THE ROLE OF ANTITRUST IN PREVENTING PATENT HOLDUP”, https://faculty.haas.berkeley.edu/shapiro/patentholdup.pdf)

Patent holdup has proven one of the most controversial topics in innovation policy, in part because companies with a vested interest in denying its existence have spent tens of millions of dollars trying to debunk it. Notwithstanding a barrage of political and academic attacks, both the general theory of holdup and its practical application in patent law remain valid and pose significant concerns for patent policy. Patent and antitrust law have made significant strides in the past fifteen years in limiting the problem of patent holdup. But those advances are currently under threat from the Antitrust Division of the Department of Justice, which has reversed prior policies and broken with the Federal Trade Commission to downplay the significance of patent holdup while undermining private efforts to prevent it. Ironically, the effect of the Antitrust Division’s actions is to create a greater role for antitrust law in stopping patent holdup. We offer some suggestions for moving in the right direction.

### Solvency

#### Courts are experienced and competent at calculating fair royalties—make the read specific ev

Cary et al. 08, \*George Cary is a partner in the Washington office of Cleary Gottlieb Steen & Hamilton LLP. He is a former Deputy Director of the Federal Trade Commission's Bureau of Competition and 1976 graduate of the Boalt Hall School of Law at the University of California-Berkeley. \*Larry Work-Dembowski is an associate in the Washington office of Cleary Gottlieb Steen & Hamilton LLP and a 2002 graduate of the Georgetown University Law Center. \*Paul Hayes is an associate in the Washington office of Cleary Gottlieb Steen & Hamilton LLP and a 2001 graduate of the New York University School of Law; (“Antitrust Implications of Abuse of Standard-Setting”, 15 GEO. Mason L. REV. 1241 (2008))

Although evaluation of FRAND commitments and licensing terms can be complex and fact-intensive, there should be no doubt that the courts and enforcement agencies are competent to apply antitrust law to deceptive FRAND commitments. Assessing whether a licensor has complied with its FRAND obligations does not require courts or agencies to make any determinations that they do not already commonly make in antitrust and intellectual property cases. Courts routinely calculate "reasonable royalties" in the patent litigation context 1 ' and compare the "but for" competitive market to the market in which a restraint of competition exists in order to determine damages in the antitrust context. 4 ' In assessing whether a licensor has met its FRAND obligations, a court would engage in similar calculations; it would compare the royalties charged in the ex post market to its assessment of what royalties would have prevailed in the competitive ex ante market.'43 In determining what royalties would have prevailed ex ante, a court would likely consider, among other things, the available alternatives to the technology at issue, the royalties charged to licensees practicing other standards for comparable technologies, and the royalties charged to licensees for comparable technologies in industries where there are no standards or FRAND commitments. Although this may be a demanding task in some cases, it is necessary because the alternative-concluding that FRAND obligations cannot be defined or enforced by the courts-would render FRAND obligations meaningless, would allow unfettered exercise of monopoly power by essential patent holders, and would cause debilitating un- certainty in the standard-setting process.

### Patent CP

#### A---consumer-action deficit. Patent infringers have attenuated incentives to cough up high royalties because SSO’s can profit in aggregate by passing costs onto consumers---that’s Melamed and Shapiro. That means widening the plaintiff pool beyond implementers is key---which the counterplan CANNOT do.

Cary et al. 11, \*Messrs. George Cary and Alex Sistla are members of the California and District of Columbia Bars. Mr. Mark Nelson is a member of the New York and District of Columbia Bars. Mr. Steven Kaiser is a member of the New Jersey and District of Columbia Bars; (2011, “THE CASE FOR ANTITRUST LAW TO POLICE THE PATENT HOLDUP PROBLEM INSTANDARD SETTING”, <https://www.clearygottlieb.com/~/media/organize-archive/cgsh/files/publication-pdfs/the-case-for-antitrust-law-to-police-the-patent-holdup-problem-in-the-standard-setting.pdf>)

One final point about patent remedies concerns standing: it is not just the type of harm that matters to antitrust, but whether anyone has a remedy to address it. Antitrust fills the gap left open by patent law by providing a remedy to those “outsiders”—consumers, competitors and others—who lack standing to seek relief under the patent laws. Consider Qualcomm: The use of equitable estoppel there was only available as a defense asserted by the alleged infringer. The elements of the defense discussed above, moreover, require that the infringer either be involved in the SSO process or have a specific basis for claiming that it was affirmatively misled by the patentee. No consumer injured by the wrongful acquisition of monopoly power in this context would meet these criteria, nor would other firms that have been excluded from the market due to the deception at issue. There is no government enforcement agency to protect such plaintiffs, because patent law has no provision for government enforcement intended to protect consumers from harm to competition.

In sum, the limitations of patent law would exclude many of the categories of potential plaintiffs suffering antitrust injury as a result of standard-setting abuse. We conclude that equitable estoppel is unequal to the task of policing monopolization through fraudulent conduct in the standard-setting process.

#### B---targeting deficit---faulting the entire SSO is key to curtail monopolization---targeting individual SEP holders fails.

Melamed & Shapiro 18, \*A. Douglas Melamed is Professor of the Practice of Law at Stanford Law School; \*Carl Shapiro is the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley; (May 2018, “How Antitrust Law Can Make FRAND Commitments More Effective”, https://www-cdn.law.stanford.edu/wp-content/uploads/2018/05/How-Antitrust-Law-Can-Make-FRAND-Commitments-More-Effective.pdf)

Antitrust enforcement aimed only at SEP holders is not sufficient to prevent or remedy ex post opportunism. First, as described in Part I, that kind of enforcement must be implemented separately for each patent holder, and for many standards, there are hundreds or even thousands of SEP holders. Second, some of the most common kinds of opportunism are arguably beyond the reach of antitrust claims against SEP holders. 61 Moreover, enforcement aimed at SEP holders is not directed at the basic problem: the failure of the SSOs to take adequate steps to prevent the ex post opportunism that the SSOs’ conduct enabled.

#### C---deterrence deficit---only antitrust law creates a legitimate cost to misconduct---that’s 1AC Melamed and Shaprio---whereas the loss of a private lawsuit wouldn’t change SEP holder’s calculus.

Tsilikas 17, \*Haris Tsilikas is an IP and Antitrust Consultant, a Doctoral Candidate and Visiting Research Fellow at the Max Planck Institute for Innovation and Competition, Munich; (2017, Antitrust Enforcement and Standard Essential Patents: Moving beyond the FRAND Commitment”, https://www.jstor.org/stable/pdf/j.ctv941t01.9.pdf?refreqid=excelsior%3A92dc720d1ebc7088811b40032a60f575)

Antitrust could play a meaningful role.165 The most important contribution of antitrust enforcement against abuses of SEPs is its deterrent effect.166 Although patent law reforms or contractual binding of subsequent SEPs-holders to FRAND licensing would provide to victims of hold-up useful defences in court, they do not sufficiently deter abusive assertion of SEPs in the first place. For instance, the contractual binding to FRAND could raise counterclaims of breach of contract or/and contractual performance; however, the opportunistic SEP-holder will, in case it loses on such grounds, be left no worse than with a licence on FRAND terms. In the end, a patent hold-up is indeed precluded, but contractual constraints can do little to prevent opportunistic assertion of SEPs in the first place. The victims still suffer the costs of uncertain and resource-draining litigation; most importantly, the reliability of the standards-setting process might still be at risk.

Antitrust enforcement on the other hand, in imposing tortfeasors positive monetary losses in the form of fines, alters the profit-cost calculus of opportunistic behaviour in the first place; opportunistic assertion of SEPs will come at a cost. Of course, a too-heavy-handed approach could have a chilling effect on legitimate patent assertions against implementers that are reluctant to pay FRAND royalties, thus leading to false positives. Antitrust enforcement should carefully examine the specificities of each case, such as the particular PAE conduct, the relationship between PAEs and practicing entities, the structure of downstream markets.167 More importantly, an economically informed antitrust analysis focusing on the actual and potential anticompetitive effects of opportunistic SEPs assertion should prohibit behaviour that is truly harmful to consumers. Safeguarding the inclusive and efficient character of the standards-setting process is a competition law problem. Informed antitrust analysis could provide adequate responses to opportunistic PAE behaviour and privateering.

#### Public R&D causes crowd-out and impedes private investment.

Marino et al. 16, \*Marianna Marino and Stephane Lhuillery, ICN Business School, Department of Strategy and Entrepreneurship; \*Pierpaolo Parrotta and [Davide Sala](https://www.sciencedirect.com/science/article/pii/S0048733316300555#!), Aarhus University, Tuborg Research Centre for Globalization and Firms; (June 17th, 2016, “Additionality or crowding-out? An overall evaluation of public R&D subsidy on private R&D expenditure”, https://www.sciencedirect.com/science/article/pii/S0048733316300555)

6. Discussion and conclusions

This paper is an overall evaluation of the public subsidies to R&D, which proposes an assessment of this policy in absence or combination with the R&D tax credit, an equally important policy instrument used to stimulate private R&D investments. Using a dataset of French companies that covers the period 1993–2009, we perform both inter-group and intra-group assessment of the outcome of this policy. The former analysis is directed to investigate a differentiated impact of R&D grants across differently funded firms, and is presented alongside utilization of the categorical matching method. The latter analysis investigates the implications of the current modulation of public intervention for similarly funded firms. Implemented by means of a continuous treatment evaluation method, the intra-group assessment allows us to investigate the likelihood of crowding-in and crowding-out effects within each tercile along the distribution of the public R&D support grant. Both methods are coupled with the DID approach to account for unobserved heterogeneity and results strengthened by a rich dataset featuring comprehensive information on the pre-treatment variables. In addition, exploiting the exogenous variation due to the sharp change in R&D tax [credit policy](https://www.sciencedirect.com/topics/economics-econometrics-and-finance/credit-policy) that occurred in 2004, we compare [treatment effects](https://www.sciencedirect.com/topics/economics-econometrics-and-finance/causality-analysis) on growth of R&D private expenditure between before- and after-reform periods, and therefore we identify the effects of such a policy change introduced by the government.

Our results show that substitution between private and public funds may occur, especially for medium-high levels of public subsidies, and under the regime of R&D tax credit. Recipients of larger doses appear not to outperform or to perform worse than recipients of lower doses or non-recipient firms. Crowding-out seems stronger and more significant in the after-reform period as reported in both the propensity score and exact matching analysis performed by year. In addition, we find evidence of more extensive negative effects for firms employing fewer than 100 employees or operating in low R&D intensive industries. When analyzing the intra-tercile distribution of public funds under R&D tax credit regime, we highlight a considerable reduction in the growth of private R&D expenditure among medium-high subsidy recipients, whereas additionality effects are found for a few top beneficiary companies (above EUR 10 million). In the sample of fully supported recipients, it seems to emerge – on average – that firms receiving subsidies between EUR 145 thousand and 1.8 million exhibit significant lower private contribution with respect to their counterfactual units. Subsidy-only recipients instead show significant substitution of private with public R&D resources for subsidy doses between EUR 20–55 thousand. Interestingly, when dividing the sample in before- and after-reform periods, we find that crowding-out effects seem to persist solely for recipients of subsidies under tax credit incentives after the 2004 reform.

Overall, our findings appear to suggest a substantial re-design of both the modulation and targeting of the public R&D subsidy policy, especially under R&D tax credit regime. Indeed, the substitution effects emerging from the inter-tercile and funded versus unfunded comparisons would motivate a better targeting of the recipient firms, especially among [small and medium size firms](https://www.sciencedirect.com/topics/economics-econometrics-and-finance/sme) and in low R&D intense industries. Concerning the modulation of the public R&D subsidy provision, it appears opportune to move resources from medium-high to top beneficiary recipients to boost the growth of private R&D expenditure and rise the private contribution to R&D in the economy. Furthermore, the distinction between fully funded from subsidy-only recipient firms underlines the importance of accounting for “hidden treatments” that may otherwise affect the policy evaluation and favor misleading implications. In addition, the 2004 reform of R&D tax credit appears to have lowered the effectiveness of public R&D funding. Although this result shed some lights on the effects of the 2004 reform, it also asks for further research to investigate the opportune mix of such R&D policy tools. Finally, it is worth underlining that a potential limitation of our study is due to the fact that we do not observe companies with fewer than 20 employees in the manufacturing industries, a significant proportion of the French firm population.

This overall assessment indicates that an ex-post evaluation of the targets of an R&D policy is desirable, if not necessary in a time of downturns or economic stagnation. In fact, if R&D funding is seen as a valid policy instrument to support companies hit hard by a crisis and facing financial restrictions, it is inevitable that public resources should not be re-directed away from risky and promising research projects toward companies that would likely perform equally well without this funding.

#### Only market competition creates resilience.

Duan 18, \*Charles Duan is a senior fellow and associate director of tech & innovation policy at the R Street Institute, where he focuses his research on intellectual property issues; (December 4th, 2018, “In the Race to 5G, Monopoly Considered Harmful”, https://morningconsult.com/opinions/in-the-race-to-5g-monopoly-considered-harmful/)

To see how a solid monopoly over 5G baseband processors creates cybersecurity issues, recall another technology monopoly: operating systems in the early 2000s. In a famous [series](https://www.schneier.com/essays/archives/2003/09/cyberinsecurity_the.html) of [papers](http://static.usenix.org/legacy/publications/login/2005-12/openpdfs/geer.pdf) (including one titled “[Monopoly Considered Harmful](https://ieeexplore.ieee.org/document/1253563)”), security consultant Dan Geer and his co-authors explained that a “monoculture” of Microsoft Windows created a systemic cybersecurity problem rising to the level of a national security risk. With every computer running Windows and thus subject to the same security vulnerabilities, viruses and attacks could spread quickly across networks, what Geer called a “cascade failure,” rapidly taking down businesses, infrastructure and government. As with [agricultural monoculture s](https://www.britannica.com/event/Great-Famine-Irish-history)wiped out by a single pest, Geer’s proposed solution was greater diversity: Multiple operating systems, each with different vulnerabilities, would be more resilient to cascade failure.

As mobile devices [have overtaken](https://techcrunch.com/2016/11/01/mobile-internet-use-passes-desktop-for-the-first-time-study-finds/) desktop computers, the Microsoft monoculture is being replaced with a Qualcomm monoculture that could have equally bad effects for cybersecurity. Baseband processors are notoriously vulnerable because they run [proprietary software](https://www.extremetech.com/computing/170874-the-secret-second-operating-system-that-could-make-every-mobile-phone-insecure) and are [difficult to study](http://www.osnews.com/story/27416/The_second_operating_system_hiding_in_every_mobile_phone). Researchers who do study them report numerous [potential insecurities](https://www.usenix.org/system/files/conference/woot12/woot12-final24.pdf) to be exploited. Consider that the [IMSI catcher](https://arstechnica.com/information-technology/2015/10/low-cost-imsi-catcher-for-4glte-networks-track-phones-precise-locations/), the device favored by [law enforcement](https://www.aclu.org/issues/privacy-technology/surveillance-technologies/stingray-tracking-devices-whos-got-them) to capture cellphone calls, functions essentially by exploiting a flaw in the baseband processor communication protocols. The ability of governments to conduct mass surveillance because of baseband processor insecurity is a classic example of a cascade failure exploited.

A competitive market between Intel and Qualcomm would be categorically better for cybersecurity, both by avoiding monoculture and also because competition would lead to better products. Qualcomm and Intel would hire security firms to poke holes in each other’s products and would improve their own products to beat out their competitor. And the two companies would likely participate in developing 5G standards; their competing interests would push the standards in better, more secure directions.

### States CP

#### Attempts to impose antitrust liability on SSO’s depends on limitations of patent rights

Martino et al. 20, \*[Matthew M. Martino](https://www.skadden.com/professionals/m/martino-matthew-m) [Tara L. Reinhart](https://www.skadden.com/professionals/r/reinhart-tara-l) [Steven C. Sunshine](https://www.skadden.com/professionals/s/sunshine-steven-c) [Julia K. York](https://www.skadden.com/professionals/y/york-julia-k), works with clients at Skadden, Arps, Slate, Meagher & Flom LLP; (August 14th, 2020, “Ninth Circuit Strikes Down Sweeping Injunction Against Qualcomm and Reins In Expansive Interpretation of Sherman Act”, https://www.skadden.com/insights/publications/2020/08/ninth-circuit-strikes-down-sweeping-injunction)

In its highly anticipated decision, the Ninth Circuit panel unanimously rejected the lower court’s reasoning, vacating the judgment and reversing the worldwide injunction against Qualcomm. The panel concluded that the district court had erroneously imposed the antitrust duty to deal on Qualcomm, had impermissibly looked outside the relevant antitrust market in order to infer an anticompetitive act and had relied on outdated evidence of agreements that were terminated before the suit was filed to justify a broad, forward-looking global injunction. The Ninth Circuit further rejected the argument that a SEP holder’s violation of FRAND commitments could independently create antitrust liability, instead pointing to patent and contract law as sources for potential remedies. The decision reflects a considered effort to rei

n in the district court’s expansive interpretation of general antitrust principles and their specific application to SEP holders, as well as recognition that the antitrust laws aim to preserve companies’ incentives to innovate and compete. Recognizing that while “[a]nticompetitive behavior is illegal under federal antitrust law[,]” the panel was adamant that “[h]ypercompetitive behavior is not.”[7](https://www.skadden.com/insights/publications/2020/08/ninth-circuit-strikes-down-sweeping-injunction" \l "ftn7)

Rejection of District Court’s Expansive Interpretation of Antitrust Laws

The Ninth Circuit decision contains several notable conclusions regarding the scope of Section 2 of the Sherman Act and what constitutes cognizable antitrust harm.

#### That means the patent law preempts state antitrust law

Samp 14, \*Richard A. Samp is the chief counsel for Washington Legal Foundation (WLF), a non-profit, public interest law firm in Washington, D.C. WLF filed an amicus brief in support of Love Terminal Partners. (2014, “The Role of State Antitrust Law in the Aftermath of Actavis”, https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1062&context=mjlst)

V. ACTAVIS’S PREEMPTIVE EFFECT

Application of state antitrust law to reverse payment settlements is not merely a hypothetical possibility. There are a fair number of pending lawsuits that challenge reverse payment settlements on state-law grounds. The California Supreme Court has agreed to review one such suit.74 In seeking affirmance of the appeals court’s dismissal of the suit, the defendants argue inter alia that the suit is preempted by federal law.75

As noted above, there is precedent for a finding that state antitrust law is preempted to the extent that it conflicts with the policy underlying a federal statute.76 Moreover, in the context of patent law, federal courts have not hesitated to preempt state laws that the courts deem to stand as an obstacle to accomplishing Congress’s objectives (i.e., encouraging efforts to develop new and useful products).77 To the extent that any portions of Actavis’s holding can be deemed to reflect the Court’s perception of Congress’s new-product-development objectives, a state law is preempted if it is inconsistent with that holding and seeks to impose a greater degree of antitrust liability on the parties to a reverse payment settlement.

Actavis’s treatment of settlements involving a compromise entry date appears to meet that description. Actavis held that federal antitrust liability could not arise from a settlement in which the generic manufacturer agrees not compete for a number of years and in return is rewarded with an exclusive license to market its product several years in advance of the patent’s expiration date.78 Accordingly, states are not permitted to impose antitrust liability under similar circumstances because doing so would upset the balance that, according to Actavis, Congress sought to achieve between antitrust and patent law.

Other issues left open by Actavis are likely to be answered in the years ahead. For example, the Supreme Court did not specify whether noncash benefits received by a generic manufacturer in connection with a patent settlement can ever serve as the basis for federal antitrust liability. If the Supreme Court eventually answers that question by stating: “No, federal antitrust law will not examine settlement benefits other than cash that flow to the infringing party,” then it is likely that state antitrust law would be required to conform to that rule. The potential grounds for such a ruling (a desire both to promote settlement of patent disputes and to uphold reliance interests in existing patents) are based largely on values embedded in federal patent law.

There is little reason to believe, however, that the Court would prevent application of state antitrust law to patent settlement agreements where state law is fully consistent with federal antitrust law. Even in areas subject to extensive federal regulation, the Supreme Court has upheld the authority of states to engage in parallel regulation that is not inconsistent with the federal regulation.79 Unless the Court were to determine, as in Connell,80 that states could not be trusted to properly accommodate the objectives of the federal statute at issue (here, federal patent law), there is no reason to conclude that Congress would not have wanted states to be permitted to police the same sorts of anticompetitive conduct that is policed by federal antitrust law. Moreover, states are likely free to impose greater penalties on the proscribed conduct than is available under federal law. As the Court explained in California v. ARC America Corp., state antitrust law is not required to adhere to the same set of sanctions imposed by federal antitrust law.81

It seems reasonably clear, however, that Actavis prohibits states from adopting the procedural devices rejected by the U.S. Supreme Court—either a per se condemnation of reverse payment settlements or a presumption of illegality accompanied by “quick look” review. The Supreme Court rejected those approaches because it determined that in many cases there might well be pro-competitive economic justifications for reverse payment settlements and that presuming their illegality could result in the suppression of economically useful conduct.82 State antitrust laws that adopted the FTC’s proposed presumption of illegality would be subject to similar criticism, and thus would likely be impliedly preempted as inconsistent with the careful balance between antitrust and patent law established by Actavis.

CONCLUSION

Because Actavis left so many questions unanswered regarding the application of federal antitrust law to patent settlement agreements, the extent to which federal law preempts the application of state antitrust law to such agreements remains similarly unsettled. One can be reasonably confident that if private plaintiffs become dissatisfied with the results of pending litigation under federal antitrust law, they will turn with increasing frequency to state antitrust law as an alternative remedy. Even if state law ends up doing no more than “parallel” federal antitrust law, defendants are likely to incur substantial litigation costs fending off such state claims in the years to come.

### FTC Tradeoff DA

#### The DOJ is already prepared to engage in more antitrust litigation over SEP’s---tradeoffs inevitable.

Love 21, \*Bruce Love, writer at the National Law Journal; (June 15th, 2021, “As DOJ Confirms a Change in Antitrust Patent   
Policy, Lawyers Prepare for Shifting Demand”, https://www.mckoolsmith.com/assets/htmldocuments/2021%2006%2016%20As%20DOJ%20Confirms%20a%20Change%20in%20Anittrust%20Patent%20Policyk%20Lawyers%20Prepare%20for%20Shifting%20Demand%20-%20The%20National%20Law%20Journal.pdf)

The Justice Department has confirmed it is looking to develop new policies surrounding how standard-essential patents might be used as tools for anticompetitive practices. The change in policy will mean big business for law firms that can combine highly technical IP advice with their antitrust and litigation practices, with one lawyer likening the demanding skill set to “three-dimensional chess.” Standard-essential patents, or SEPs, are a fundamental piece of intellectual property for business and innovation because they are used under license so frequently by manufacturing companies other than the patent owners. The policy change was hinted at during an online event in late May, when Richard Powers, the acting attorney general of DOJ’s antitrust division, gave an indication that the government might be walking back the relaxed approach implemented by the DOJ under the Trump administration. A DOJ spokesperson confirmed in an email Tuesday to Law.com that it will change its policy on SEPs and antitrust behavior, with the agency still working out the details. The new administration, said the DOJ spokesperson, is rethinking what policies at the intersection of IP and anti- trust will best serve competition and consumers. “New Department leadership is working with career staff on developing a more balanced approach,” said the DOJ spokesperson. “The department wants to develop neutral and balanced policies in this area that recognize the importance of both antitrust enforcement and JUNE 15, 2021 As DOJ Confirms a Change in Antitrust Patent Policy, Lawyers Prepare for Shifting Demand BY BRUCE LOVE U.S. law has often shied away from enforcing essential patent obligations. That’s set to change. The result could be “a significant change in the volume and nature of business for IP trial lawyers and their clients,” one lawyer said. Office of the Attorney General at the U.S. Department of Justice in Washington, D.C. June 6, 2020. THE NATIONAL LAW JOURNAL JUNE 15, 2021 intellectual property protection to our economy and that do not favor one set of interests over others.” Such policy changes could result in a swell of business for law firms with deep, technical IP benches and strong experience representing the industry in enforcement actions, lawyers said. Trump’s DOJ had “taken its foot off the gas” when it came to SEPs as the focus of anti-competitive behavior, said one Washington-based lawyer, speaking on the condition of anonym- ity because he currently has active cases that involve both SEP enforcement and defense. “It didn’t mean we weren’t busy as litigators. There was a lot of work enforcing SEPs against infringers and defending against infringement allegations,” he said. “But we weren’t busy in the antitrust arena. A greater focus on SEPs—not just by the DOJ but also other agencies—might mean more litigation, but it will also mean a more transparent field of play. It doesn’t do companies any good for there to be unfettered SEP enforcement.”

#### Turn---the prospect of antitrust intervention deters violations---that’s Melamed and Shapiro---no enforcement necessary.

Cheng 13, \*Thomas Cheng, B.A. (Yale), J.D. (Harvard), B.C.L. (Oxon); Attorney & Counsellor, New York State; Associate Professor, Faculty of Law, The University of Hong Kong; (2013, “Putting Innovation Incentives Back in the Patent-Antitrust Interface”, <https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1195&context=njtip>), ability edited

Imposing a duty to license on opportunistic patentees may solve this problem. If these patentees know that the courts may step in and mandate licensing at a reasonable royalty rate,214 they will be induced to enter into negotiations with follow-on innovators in good faith.215 The threat of compulsory licensing may become a default background legal rule against which negotiations between initial and follow-on innovators take place. The instances in which the courts need to intervene could be few.

#### Biden’s XO solves---he’s devoting all resources on deck to prosecuting antitrust.

Posner 21, professor at the University of Chicago Law School (Eric, 7-21-2021, "The Antitrust War’s Opening Salvo", Project Syndicate, <https://www.project-syndicate.org/commentary/biden-antitrust-executive-order-what-it-does-by-eric-posner-2021-07>. Accessed 7-22-21)

The executive order is ambitious in its scope and style. In strongly worded passages, it accuses businesses of monopolistic and unfair practices in major industries, including technology, agriculture, health care, and telecommunications. It laments the decline of government antitrust enforcement, and identifies numerous harms that have resulted – including economic stagnation and rising inequality.

The order also establishes a new bureaucratic organization in the White House to lead the anti-monopoly effort. Demanding a “whole-of-government” approach, it calls on the vast resources of numerous agencies, and not just the two that traditionally oversee antitrust (the Department of Justice and the Federal Trade Commission).

### Biz Con DA

#### No correlation between economic decline and war.

Walt 20, Robert and Renée Belfer professor of international relations at Harvard University. (Stephen M., 5/13/20, “Will a Global Depression Trigger Another World War?”, *Foreign Policy*, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/)

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”   
Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success.

Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then.

The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term.

#### Business confidence low.

Goll 8/24/21, \*Vince Goll; (August 24th, 2021, “US business confidence slows to an eight month low on supply woes”, https://www.independent.ie/business/world/us-business-confidence-slows-to-an-eight-month-low-on-supply-woes-40780967.html)

US business activity continues to downshift, with growth slowing to an eight-month low in August against a backdrop of materials shortages, a lack of labor and an upswing in coronavirus infections.

The IHS Markit flash August composite index of purchasing managers at services and manufacturers dropped to 55.4 from 59.9 a month earlier, the group reported yesterday. Readings above 50 indicate growth and the gauge has decreased each month since hitting a record 68.7 in May.

The pullback this month underscores the extent to which supply chain disruptions are hammering firms already struggling to meet demand. Service providers and manufacturers continue to face challenges attracting workers and obtaining the supplies they need.

At factories, for instance, an IHS gauge of supplier deliveries showed the longest lead times in records back to 2007.

"Not only have supply chain delays hit a new survey record high, but the August survey saw increasing frustrations in relation to hiring," Chris Williamson, chief business economist at IHS Markit, said.

"Jobs growth waned to the lowest since July of last year as companies either failed to find suitable staff or existing workers switched jobs."

Limited capacity is translating into sustained inflationary pressures as well. The group's composite index of input prices increased in August to the second-highest reading in data back to 2009. A measure of prices received also advanced, indicating companies are having some success passing along higher costs.

The IHS Markit index of services activity declined to show the slowest pace of growth since December, while a measure of new business dropped to a one-year low.

#### Antitrust intervention strengthens business confidence---no evidence supports the DA—their ev is funded by qualcomm

Cary et al. 11, \*Messrs. George Cary and Alex Sistla are members of the California and District of Columbia Bars. Mr. Mark Nelson is a member of the New York and District of Columbia Bars. Mr. Steven Kaiser is a member of the New Jersey and District of Columbia Bars; (2011, “THE CASE FOR ANTITRUST LAW TO POLICE THE PATENT HOLDUP PROBLEM INSTANDARD SETTING”, <https://www.clearygottlieb.com/~/media/organize-archive/cgsh/files/publication-pdfs/the-case-for-antitrust-law-to-police-the-patent-holdup-problem-in-the-standard-setting.pdf>)

Other commentators believe that there are strong policy arguments against employing antitrust law to police the conduct of SSOs because it will undermine the incentives of SSO participants to innovate. For example, David Teece and Edward Sherry have argued that “antitrust intervention” could “re-duce the clarity of [SSO] rules thereby making participation in SSOs more risky and reducing the willingness of firms with valuable IP (and which there-fore presumably have much to contribute to selecting the appropriate standard) to participate.”44 As a result, they contend that there is a “significant risk of slowing down the standards-setting process, thus delaying the adoption of new standards and new products made in accordance with those standards, to the detriment of consumers and of society generally.”45 In effect, Teece and Sherry’s concern is one of delay—antitrust enforcement could delay innovation. In a commentary accompanying Teece and Sherry’s article, Michael Carrier found their claims to be overstated because they failed to engage in any serious antitrust analysis.46 We agree. But more importantly, Teece and Sherry make empirical claims without any evidence. In particular, they do not even offer anecdotal evidence that firms are discouraged from participating in SSOs because of the prospect of antitrust enforcement. Indeed, the opposite could be equally argued: participation in SSOs would be discouraged to the extent that participants could not rely on the commitments of their fellow participants to disclose and abide by other commitments intended to preclude opportunism. Teece and Sherry’s argument sounds a familiar refrain against antitrust: antitrust enforcement discourages procompetitive behavior and therefore should be limited. The conclusion rings hollow without facts.

### IPR DA

#### Antitrust fervor is at an all-time high---thumps.

Zanfagna 9/7/21, \* [Gary Zanfagna](https://www.paulhastings.com/professionals/garyzanfagna) is an antitrust and competition partner at Paul Hastings LLP; (September 7th, 2021, “Antitrust isn't headed to an inflection point; it's already there”, https://thehill.com/opinion/judiciary/571087-antitrust-isnt-headed-to-an-inflection-point-its-already-there)

The truth is most companies have not had to think too much about antitrust regulations. The basic rules are pretty well known. But that is potentially changing quickly as antitrust concerns focus on not only high-tech companies, but businesses across the economy, from startups to global conglomerates.

It means antitrust is at an important inflection point. Changes are occurring at multiple levels — from [rule reform](https://www.klobuchar.senate.gov/public/_cache/files/e/1/e171ac94-edaf-42bc-95ba-85c985a89200/375AF2AEA4F2AF97FB96DBC6A2A839F9.sil21191.pdf) to [new applications](https://www.hawley.senate.gov/senator-hawley-introduces-trust-busting-twenty-first-century-act-plan-bust-anti-competitive-big) of existing rules to [increased enforcement](https://www.klobuchar.senate.gov/public/index.cfm/news-releases?ID=A4EF296B-9072-4244-90AF-54FE43BB0876). Some of these changes are a reflection of the economic upheaval ushered in by the digital economy, which has prompted businesses and governments to look to antitrust rules to solve their problems. Witness [President Biden](https://thehill.com/people/joe-biden)’s [July 9 executive order](https://www.whitehouse.gov/briefing-room/presidential-actions/2021/07/09/executive-order-on-promoting-competition-in-the-american-economy/) whose 72 provisions include requests ranging from asking the FCC to reinstate net neutrality rules to directing the FDA to issue rules to allow more competition in the hearing aid market.

It’s a reflection of a general zeitgeist whose goal is to slow the onslaught of consolidation in technology across industries, from news media to healthcare to agriculture. And it’s gathering momentum as new rules are being proposed from both sides of the aisle.

Many look to the 449-page [“Investigation of Competition in Digital Markets”](https://www.nytimes.com/interactive/2020/10/06/technology/house-antitrust-report-big-tech.html?action=click&module=RelatedLinks&pgtype=Article) report from the judiciary committee on antitrust as the opening salvo. The report took aim at Amazon, Apple, Facebook, and Google, outlining how those once scrappy startups now leverage their market position in ways not seen since “the era of oil barons and railroad tycoons.” The judiciary report’s conclusion: prevent big tech from acquiring smaller tech with tougher policing — and reform antitrust laws.

Both Democrats and Republicans have since voiced their support for such ideas.

Aimed at the seemingly intractable challenges of the digital era, Sen. [Amy Klobuchar](https://thehill.com/people/amy-klobuchar)’s (D-Minn.) “[Antitrust Law Enforcement Reform Act”](https://www.congress.gov/bill/117th-congress/senate-bill/225/text) would create barriers to prevent consolidation across industries, not just in tech, but in any business that might be connected to “dominant digital platforms.” The legislation would have a prescriptive force, creating a presumption against certain mergers, whether they be in biotech or burgers.

Meanwhile, on the Republican side, Sen. [Josh Hawley](https://thehill.com/people/joshua-josh-hawley) (R-Mo.) has rolled out a bill that looks even more severe, blocking some mergers and acquisitions outright. The [“Trust-Busting for the Twenty-First Century Act”](https://www.hawley.senate.gov/senator-hawley-introduces-trust-busting-twenty-first-century-act-plan-bust-anti-competitive-big) would ban any acquisitions by companies with a market cap of more than $100 billion. The act would also make it easier for the FTC to classify a company’s behavior as anti-competitive, and then extract penalties (including profits) based on that behavior.

And it’s not just the Federal government. Several states have proposed their own legislation

to prevent and punish what they see as anti-competitive behavior. Arizona narrowly passed initial legislation that would prevent app store operators, specifically Apple and Google, from forcing developers to use their payment systems.

Meanwhile in New York State, the [Twenty-First Century Anti-Trust Act (S933)](https://www.nysenate.gov/legislation/bills/2019/s8700/amendment/a) includes a first-of-its-kind state merger notification of any deal in which the buyer would end up with more than $8 million in assets of the target. It would also create an “abuse of dominance” offense and give the N.Y. attorney general rulemaking authority — whether or not the company was based in New York.

These proposals have a long way to go before becoming law, but they demonstrate potentially significant antitrust adjustments coming.

Expanding antitrust view

The ripple effects will be profound, affecting transportation, communications, banking and healthcare companies. Incumbents looking to diversify their business are vulnerable, as are startups looking for profitable partners. Unhappy competitors who feel stymied may look to antitrust rules for remediation. And private equity moves to consolidate fledgling, fragmented industries will face tougher questions about overlap and industry concentration.

So, we are going to see antitrust being used in industries and in ways that haven’t been considered in many years, with views about market concentration expanding to encompass what used to be considered diverse or vertical markets. In fact, both Sen. Klobuchar’s and Sen. Hawley’s proposals specifically target consolidation across industries. Sen. Hawley’s $100 billion ban explicitly targets vertical acquisitions. It would certainly prevent deals like Facebook’s acquisition of WhatsApp or Google’s purchase of Fitbit.

#### Specifically, innovation in biopharm is strong

AHE 2/14/17, Avalon Health Economics, "The Value of Biopharmaceutical Innovation in the U.S.", researchcaucus.org/wp-content/uploads/2017/01/The-Value-of-Biopharmaceutical-Innovation-in-the-US-AHE-ISSUE-BRIEF-02-14-2017.pdf

The invention of new products and processes has been shown to be an important determinant of economic growth, especially for the firms and countries fostering the innovation.1 Innovation in the biopharmaceutical industry in the U.S. has been shown to have positive effects on the economy, including direct and indirect employment effects, value-added effects, and efficiency effects associated with medicines that offer treatment substitutes for more expensive interventions. Over the past decade, the U.S. pharmaceutical industry increased its annual spending on research and development (R&D) from $38 billion in 2005 to $56 billion in 2015, an increase of nearly 50 percent (Figure 1). Over the same time period, after relatively flat development of new molecular entities (NMEs) and new therapeutic biologics (NTB) in the first half of the decade, the pace of discovery accelerated and by 2015, 45 new compounds were approved—more than double the number that were approved in 2005.2 In terms of the scale of biopharmaceutical R&D, at $56 billion per year, annual R&D expenditures account for nearly 18% of all U.S. domestic R&D expenditures (based on 2013 data).3 Moreover, the U.S. biopharmaceutical industry devotes nearly 11% of net sales revenue to R&D, which is more than four times the national industry average.4

#### 2---ex ante valuation preserves profit due to mass licensing volume---that’s Melamed and Shapiro and…

Stern 18, \*Richard H. Stern, Professorial Lecturer in Law, The George Washington University Law School. A Washington, D.C. patent and antitrust attorney, Stern was Chief of the Patent Section of the US Justice Department’s Antitrust Division during the Nixon and Ford Administrations; (2018, “Who Should Own the Benefits of Standardization and the Value It Creates?”, https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1439&context=mjlst)

D. INCENTIVIZE ME OR I’LL DEFECT

A highly theoretical argument is often made by SEP owner spokesmen—that lessened compensation to SEP owners will “disincentivize” them from creating technology and contributing it to standardization, stagnating further standardization. For example:

If the SEP holder cannot capture any of the value from standardization that its technology creates for the standard, it will have a dampened incentive to continue contributing its best technologies to SSOs. In the long run, the quality of technologies contributed to a future standard—and the expected value of that new standard—would decrease. The SEP holder’s decision to contribute its technologies to a standard depends on the compensation that an SEP holder expects to obtain from such a contribution, compared with the SEP holder’s alternative option to monetize its invention outside the standard. . . . If the SEP holder expects not to be compensated fully for its contributions, it will not commit its most valuable technologies to the standard.431

But the amount of dampening of incentive (assuming that we do not already have enough or more than enough incentive for smartphones) may well be outweighed in impact by the prospect of nonetheless gaining first-user and head-start advantage from incorporation of one’s technology into a standard, and the opportunity to increase one’s equipment sales (anointed with the imprimatur of the standard),432 even if one cannot also obtain monopoly profits as well, from SEP royalties. In a sense, those advantages are a form of “the compensation that an SEP holder expects to obtain” from such a SEP contribution, but the commentator fails to take those significant incentives into consideration.433 Moreover, the supposed “SEP holder’s alternative option to monetize its invention outside the standard” may be a figment of the SEP holder spokesman’s imagination.434 If an alternative technology becomes standard, the only opportunity to monetize the withheld invention may be to incorporate the technology into unsaleable non-standard products. Defection may be a poor business strategy.

#### 3---under-compensation is empirically denied.

Stern 18, \*Richard H. Stern, Professorial Lecturer in Law, The George Washington University Law School. A Washington, D.C. patent and antitrust attorney, Stern was Chief of the Patent Section of the US Justice Department’s Antitrust Division during the Nixon and Ford Administrations; (2018, “Who Should Own the Benefits of Standardization and the Value It Creates?”, https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1439&context=mjlst)

Furthermore, a considerable amount of standardization activity has been coming from groups that prohibit the participating companies or individuals from collecting SEP royalties—so-called “RF-RAND” (royalty-free RAND)435 and “RAND-Zero” (RAND with zero royalties) groups or groups that rely on promises not to assert essential-patent claims436—as well as from SSOs that permit RAND licensing but whose members in practice collect royalties on few, if any, standards.437 The availability of these important, royalty-free technology sources is a factor in evaluating the threatened “disincentivization” and massive resistance against the policies reflected in the IEEE 2015 Patent Policy update.

Finally, the disincentivization argument is pure ipse dixit, for no analysis of comparative rates of return on alternative investment opportunities is offered. Nor is any empirical support provided.438 The rhetoric of “Incentivize me or I’ll defect” is completely unsupported and therefore not credible.

## 1AR

### Frand

#### The Qualcomm decision has cooling effect on 5G innovation.

Breed et al. 20, \*Logan M. Breed, antitrust partner in the Washington office of Hogan Lovells; \*Edith Ramirez, former Chairwoman of the Federal Trade Commission; \*Suparna S. Reddy, Associate at Hogan Lovells based in Washington; \*Labeat Rrahmani, an Associate at Hogan Lovells; (August 19th, 2020, “Ninth Circuit rules in favor of Qualcomm, distancing antitrust law from FRAND disputes”, https://www.engage.hoganlovells.com/knowledgeservices/news/ninth-circuit-rules-in-favor-of-qualcomm-distancing-antitrust-law-from-frand-disputes)

The practical effects of the Ninth Circuit’s decision are already emerging: other holders of significant wireless SEP portfolios such as [Nokia](https://www.nokia.com/about-us/news/releases/2020/03/24/nokia-announces-over-3000-5g-patent-declarations/) and [Ericsson](https://www.ericsson.com/en/blog/2019/10/5g-patent-leadership) have already begun to use more aggressive patent strategies related to 5G devices. The decision could also have repercussions beyond the technology sector. Companies litigating against the FTC, including in the pharmaceutical sector, have quickly [availed](https://globalcompetitionreview.com/gcr-usa/federal-trade-commission/vyera-claims-qualcomm-reversal-supports-defence-against-ftc) themselves of the ruling to defend themselves. The ruling may also have a cooling effect on innovation if companies are less inclined to participate in standard-setting processes due to limited repercussions for companies that maneuver around their FRAND obligations. If the panel decision stands, it could have far reaching consequences.

#### Creatively highlighted---doesn’t say antitrust causes problems

Gupta ’19 [Kirti; September 23; Economics PhD from the University of California, San Diego; Antitrust Chronicle, “5G and Anticipated Intellectual Property and Antitrust Policy Issues,” Vol. 3, No. 2]

For antitrust economists, the courts, and policy makers to comprehend the full impact of their myopic theories, perhaps it is necessary to map out what might happen if rewards for investing in 5G mobile wireless technology are in fact set too low. The likely consequence is that: (1) R&D on mobile wireless is reduced and invention that relies on the licensing model slows. 5G updates occur less frequently, if at all. (2) Device makers and application developers suffer slowing, even declining, sales. There is little reason to buy new phones and other devices if the new ones don’t do much more than the old ones as technology obsolescence is what causes most customers to upgrade their devices. (3) To combat declining upstream innovation, device makers like Apple facing eroded sales may for the first time start to contemplate subsidizing upstream R&D. But this will be difficult because, in the shadow of FTC v. Qualcomm, the upstream wireless technology developers must provide FRAND licenses to all, subsidizer and free rider alike, at “nondiscriminatory” rates.15 Device makers subsidizing upstream technology developers is a strategy likely to fail, as individual device makers that consider subsidizing upstream R&D will have to compete with other free riding device makers. (4) Because such efforts to patch up open innovation are likely to fail, the large players (e.g. Apple, Google, Samsung, Huawei) are likely to begin to build their own proprietary technology stacks, causing the ETSI/3GPP open innovation model to collapse further. The integrated players will no longer wish to tender their technology to ETSI and be exposed to the FRAND commitment. The open innovation FRAND model will then no longer support sufficient technological development. This might not in the end trouble the big players like Samsung, Apple, and Huawei who can bring the technology in-house and not license it to the other usually smaller players. However, innovation will slow, and concentration in the downstream device markets would likely increase dramatically.

The irony would be that the same antitrust policy makers that might take pride from the breakup of the vertically integrated Bell System (“AT&T”), would have in fact stimulated the emergence of a vertically integrated model in mobile wireless, one that would likely suffocate a good deal of follow-on innovation and squeeze out downstream players. New entry into the device market would be much, much harder. The highly competitive model we have now, with scores if not hundreds of players, would collapse to a few players with proprietary software stacks. Perhaps these stacks would cooperate to achieve some amount of compatibility. Oligopoly would replace the vigorous competition we see today. Lower innovation is a likely corollary

There is not much in this scenario that is appealing from a competition policy perspective. Should this scenario play out, antitrust zealots in the US and the EU should then have on their tombstone the inscription that they “helped destroy the greatest model of technological cooperation and innovation in the history of human civilization” – all because they used too narrow an analytical lens. The poorest members of global society, who have benefited enormously from mobile technology, are likely to suffer disproportionately.

### Cyber

#### Their argument is akin to saying speed limits don’t matter because high ways are safe.

Gilbert 20, \*Richard J. Gilbert is an [American Economist](https://en.wikipedia.org/w/index.php?title=American_Economist&action=edit&redlink=1), professor at [UC Berkeley](https://en.wikipedia.org/wiki/University_of_California,_Berkeley) from 1976 to 2000, and founder of [LECG](https://en.wikipedia.org/wiki/LECG_Corporation) Corp. ([Law and Economics Consulting Group](https://en.wikipedia.org/wiki/LECG_Corporation)). Richard ('Rich') Gilbert served as Deputy Assistant General in the [Antitrust Division](https://en.wikipedia.org/wiki/United_States_Department_of_Justice_Antitrust_Division) of the [U.S. Department of Justice](https://en.wikipedia.org/wiki/United_States_Department_of_Justice) in the White House from 1993 to 1995. He led the development of Joint Department of [Justice and Federal Trade Commission](https://en.wikipedia.org/w/index.php?title=Justice_and_Federal_Trade_Commission&action=edit&redlink=1) [Antitrust](https://en.wikipedia.org/wiki/Competition_law) Guidelines for the Licensing of [Intellectual Property](https://en.wikipedia.org/wiki/Intellectual_property) and is currently [Emeritus Professor](https://en.wikipedia.org/wiki/Emeritus_Professor) of Economics at the [University of California at Berkeley](https://en.wikipedia.org/wiki/University_of_California,_Berkeley); (2020, “Innovation Matters: Competition Policy for the High-Technology Economy”, https://mitpress.mit.edu/books/innovation-matters)

Conduct that enables a patent owner to evade FRAND commitments should not be lawful. High royalties harm consumers and can impede innovation for technologies for which a patent license is necessary. Some have argued that patent holdup is no more than an academic curiosity because innovation and competition for smartphones and other devices have thrived, despite the fact that these devices implement standards covered by hundreds of SEPs.[26](javascript:void(0)) But this argument is flawed. It does not recognize that prices for smartphones and other devices would likely be much higher if the antitrust authorities and the courts stopped policing FRAND licensing obligations.[27](javascript:void(0)) The fact that it is reasonably safe to drive on highways in the US does not mean that speed limits are unnecessary. FRAND limitations are speed limits on the information superhighway.

### Biz Con

#### Apple case thumps---happened a week ago

Albertgotti 9/10/21, \*[Reed Albergotti](https://www.washingtonpost.com/people/reed-albergotti/), Washington Post; (September 10th, 2021, “Judge’s ruling may take a bite out of Apple’s App Store, but falls short of calling the iPhone maker a monopolist”, https://www.washingtonpost.com/technology/2021/09/10/apple-epic-decision-judge-market-monopoly/)

A federal judge fundamentally altered Apple’s App Store business model on Friday in a landmark ruling that accused the iPhone maker of illegal anticompetitive behavior and is likely to have ripple effects across the U.S. antitrust landscape.

In a decision on an antitrust lawsuit brought by Fortnite maker Epic Games, U.S. District Judge Yvonne Gonzalez Rogers ruled that Apple must allow app developers to “steer” customers to alternatives to the tech giant’s payment processing service, which collects a 30 percent fee on most digital transactions. That was previously not allowed by the company, and marks a major victory for developers which have long complained of the tight grip the tech giant holds over its App Store on the roughly one billion iPhones currently in use.

[The blockbuster trial between Apple and the maker of ‘Fortnite’ goes out with a ‘hot tub’ session](https://www.washingtonpost.com/technology/2021/05/24/apple-epic-trial-hot-tubbing/?itid=lk_interstitial_manual_5)

Gonzalez Rogers also found that Apple was in violation of California state competition laws because of the way it forces developers into using Apple’s payment processing service without allowing them to tell customers there are alternatives, which are often cheaper.

She stopped short of ruling in favor of Epic‘s claims that Apple is a monopolist, although she left the door open by suggesting more evidence could have changed her decision.

“The court does not find that it is impossible; only that Epic Games failed in its burden to demonstrate Apple is an illegal monopolist,” she wrote.

Epic spokeswoman Elka Looks said the company plans to appeal the ruling. Tim Sweeney, chief executive of Epic, said in a tweet that, “Today’s ruling isn’t a win for developers or for consumers.”

Apple did not respond to requests for comment.

The ruling, one of the first major legal actions taken against a tech giant in a new era of antitrust scrutiny, is sure to echo loudly both in Washington, where a legislative effort to rein in the power of Big Tech is underway, and in the courts, which are facing the biggest test of existing antitrust laws in decades. Tech giants have come under the microscope in recent years as it became clear that current antitrust law does not effectively address their power, and regulators and lawmakers have been pushing to change that.

#### The administration is toughening its stance on SEP’s---our thumper is more specific than their link

Brumfield 21, \*Noah Brumfield is a partner in White & Case’s Global Competition Practice Group, which is ranked as among the "Global Elite" for antitrust; (May 26th, 2021, “DOJ Antitrust Division quietly walks back prior administration-era support of Standard Essential Patent holders”, https://www.whitecase.com/publications/alert/doj-antitrust-division-quietly-walks-back-prior-administration-era-support)

III. The Saga Signals a Tougher Antitrust Stance from the Biden Administration on Antitrust Issues Involving SEPs

The issuance of the 2020 Supplement, followed by its recent reclassification (and effective restoration of the 2015 BRL), creates uncertainty for patent holders and licensees on a number of fronts. Substantively, it could mark a change in the Division's approach to antitrust issues involving SEPs. And procedurally, it creates uncertainty for businesses seeking assurance through the BRL process because this newly minted potential for "supplementation" and "reclassification" makes the BRL process less definite.

For SEP holders and standards implementers, the original 2015 BRL found that the IEEE's policy would promote efficient adoption and licensing of those patents, particularly since the policy included limits on patent holders seeking injunctions for infringement and other methods to prevent patent holders from holding up the licensing process. The 2020 Supplement starkly reversed this, placing more focus on the potential for licensees, rather than patent holders, to hold out for lower royalty rates.25 The 2020 Supplement also emphasized that licensing issues were contract issues rather than antitrust problems.26 Now, it is not clear whether the reclassification of the 2020 Supplement as "advocacy" formally retracts the previous administration's statement that, for example, SEP holders should be entitled to injunctions.27Acting Assistant Attorney General ("AAG") Richard Powers' statement that the Division is "restoring" the original 2015 BRL may provide further confusion for SEP holders, licensees, and SSOs as to the remedies available for potential infringement and whether the Division may take the view that SEP holders' and SSOs' actions may run afoul of antitrust laws.

The reclassification appears to continue the theme of a tougher antitrust stance from the Biden Administration. President Biden has not yet selected a permanent AAG to lead the Division, so nothing is certain. It is possible, however, that we will see a "balanced position toward bad behavior [from SEP holders]."28 It is also too soon to say whether the reclassification means the Division will take an active role in litigation on these issues like the previous administration. However, if the Division begins to advocate a position in court different from what we have seen over the past five years, there will be even greater uncertainty as the risk of conflicting judicial decisions increases. SEP holders, SSOs, and licensees must all closely watch this space as we expect to see more indication from the Division about how aggressive it will be in advocating its position before the courts, with enforcement priorities and, fundamentally, what its position will be.

#### [2] — Countries turn inward — prefer post-COVID evidence.

Walt 20, Robert and Renée Belfer professor of international relations at Harvard University. (Stephen M., 5/13/20, “Will a Global Depression Trigger Another World War?”, *Foreign Policy*, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/)

One familiar argument is the so-called diversionary (or “scapegoat”) theory of war. It suggests that leaders who are worried about their popularity at home will try to divert attention from their failures by provoking a crisis with a foreign power and maybe even using force against it. Drawing on this logic, some Americans now worry that President Donald Trump will decide to attack a country like Iran or Venezuela in the run-up to the presidential election and especially if he thinks he’s likely to lose.

This outcome strikes me as unlikely, even if one ignores the logical and empirical flaws in the theory itself. War is always a gamble, and should things go badly—even a little bit—it would hammer the last nail in the coffin of Trump’s declining fortunes. Moreover, none of the countries Trump might consider going after pose an imminent threat to U.S. security, and even his staunchest supporters may wonder why he is wasting time and money going after Iran or Venezuela at a moment when thousands of Americans are dying preventable deaths at home. Even a successful military action won’t put Americans back to work, create the sort of testing-and-tracing regime that competent governments around the world have been able to implement already, or hasten the development of a vaccine. The same logic is likely to guide the decisions of other world leaders too.

Another familiar folk theory is “military Keynesianism.” War generates a lot of economic demand, and it can sometimes lift depressed economies out of the doldrums and back toward prosperity and full employment. The obvious case in point here is World War II, which did help the U.S economy finally escape the quicksand of the Great Depression. Those who are convinced that great powers go to war primarily to keep Big Business (or the arms industry) happy are naturally drawn to this sort of argument, and they might worry that governments looking at bleak economic forecasts will try to restart their economies through some sort of military adventure.

I doubt it. It takes a really big war to generate a significant stimulus, and it is hard to imagine any country launching a large-scale war—with all its attendant risks—at a moment when debt levels are already soaring. More importantly, there are lots of easier and more direct ways to stimulate the economy—infrastructure spending, unemployment insurance, even “helicopter payments”—and launching a war has to be one of the least efficient methods available. The threat of war usually spooks investors too, which any politician with their eye on the stock market would be loath to do.

Economic downturns can encourage war in some special circumstances, especially when a war would enable a country facing severe hardships to capture something of immediate and significant value. Saddam Hussein’s decision to seize Kuwait in 1990 fits this model perfectly: The Iraqi economy was in terrible shape after its long war with Iran; unemployment was threatening Saddam’s domestic position; Kuwait’s vast oil riches were a considerable prize; and seizing the lightly armed emirate was exceedingly easy to do. Iraq also owed Kuwait a lot of money, and a hostile takeover by Baghdad would wipe those debts off the books overnight. In this case, Iraq’s parlous economic condition clearly made war more likely. Yet I cannot think of any country in similar circumstances today. Now is hardly the time for Russia to try to grab more of Ukraine—if it even wanted to—or for China to make a play for Taiwan, because the costs of doing so would clearly outweigh the economic benefits. Even conquering an oil-rich country—the sort of greedy acquisitiveness that Trump occasionally hints at—doesn’t look attractive when there’s a vast glut on the market. I might be worried if some weak and defenseless country somehow came to possess the entire global stock of a successful coronavirus vaccine, but that scenario is not even remotely possible.

#### [3] — Empirics prove — downturn causes threat deflation.

Clary 15, PhD, Assistant Professor of Political Science @ the U of Albany. (Christopher, 04/21/15, “Economic Stress and International Cooperation: Evidence from International Rivalries”, *Massachusetts Institute of Technology Political Science Department*, Research Paper No. 2015-8; pg. 4)

Why Might Economic Crisis Cause Rivalry Termination?

Economic crises lead to conciliatory behavior through five primary channels. (1) Economic crises lead to austerity pressures, which in turn incent leaders to search for ways to cut defense expenditures. (2) Economic crises also encourage strategic reassessment, so that leaders can argue to their peers and their publics that defense spending can be arrested without endangering the state. This can lead to threat deflation, where elites attempt to downplay the seriousness of the threat posed by a former rival. (3) If a state faces multiple threats, economic crises provoke elites to consider threat prioritization, a process that is postponed during periods of economic normalcy. (4) Economic crises increase the political and economic benefit from international economic cooperation. Leaders seek foreign aid, enhanced trade, and increased investment from abroad during periods of economic trouble. This search is made easier if tensions are reduced with historic rivals. (5) Finally, during crises, elites are more prone to select leaders who are perceived as capable of resolving economic difficulties, permitting the emergence of leaders who hold heterodox foreign policy views. Collectively, these mechanisms make it much more likely that a leader will prefer conciliatory policies compared to during periods of economic normalcy. This section reviews this causal logic in greater detail, while also providing historical examples that these mechanisms recur in practice.

#### COVID-19, worker shortages, and supply chain disruptions hurt business confidence.

Geehern 9/6/21, \*Chris Geehern; COVID, (September 6th, 2021, “Worker Shortages Dampen Business Confidence”, https://aimnet.org/blog/covid-worker-shortages-dampen-business-confidence/)

Resurgent COVID-19 cases, persistent worker shortages and supply chain disruptions combined to dampen business confidence in Massachusetts during August.

The Associated Industries of Massachusetts Business Confidence Index (BCI) declined 3.6 points to 62.0 after hitting a three-year high during July. The BCI remains 16 points higher than a year ago.

Employers grew less optimistic last month about everything from their own companies to the state and national economies. Confidence among manufacturing companies declined for the first time this year as companies faced the twin challenges of surging prices and shortages of key raw materials.

The report came as hiring nationally slowed sharply during August to 235,000 jobs.

“Business owners and managers remain solidly optimistic overall, but express growing concern as COVID-19 cases increase both in Massachusetts and globally,” said Sara L. Johnson, Chair of the AIM Board of Economic Advisors and Executive Director of Global Economics at IHS Markit.

“Everyone from manufacturers to retailers is struggling to provide product amid renewed pandemic-containment measures and critical shortages of labor and materials.”

Employers say supply chain issues have become a drag on an otherwise solid economy.

“The supply chain lead-times are killing our ability to drive business in the short-term.  Trying to get key supplies on a container is impossible so our costs keep going up due to having to airfreight parts in,” wrote one employer.

The AIM Index, based on a survey of more than 140 Massachusetts employers, has appeared monthly since July 1991. It is calculated on a 100-point scale, with 50 as neutral; a reading above 50 is positive, while below 50 is negative. The Index reached its historic high of 68.5 on two occasions in 1997-98, and its all-time low of 33.3 in February 2009.

Constituent Indicators

The constituent indicators that make up the Business Confidence Index all moved lower during August.

The confidence employers have in their own companies fell 5.0 points to 62.7, leaving it 13.7 points better than it was during the pandemic a year ago.

### IPR DA

#### Biodiversity loss is not existential.

Dr. John Halstead 19, PhD, University of Oxford, researcher at Founders Pledge; citing Dr. Peter Kareiva, PhD in ecology and evolutionary biology, Cornell University, director of UCLA’s Institute of the Environment & Sustainability; also citing Valerie Carranza, PhD student in Kareiva’s lab, 5/1/2019, “Centre for the Study of Existential Risk Six Month Report: November 2018 - April 2019,” <https://forum.effectivealtruism.org/posts/zbZxisJRJBCdtYvh9/centre-for-the-study-of-existential-risk-six-month-report>, pacc

[-]Halstead2y

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Can you explain what the mechanism is whereby biodiversity loss creates existential risk? And if biodiversity loss is an existential risk, how big a risk is it? Should 80k be getting people to go into conservation science or not?

There are independent reasons to think that the risk is negligible. Firstly, according to wikipedia, during the Eocene period ~65m years ago, there were thousands fewer genera than today. We have made ~1% of species extinct, and we would have to continue at current rates of species extinctions for at least 200 years to return to Eocene levels of biodiversity. And yet, even though significantly warmer than today, the Eocene marked the dawn of thousands of new species. So, why would we expect the world 200 years hence to be inhospitable to humans if it wasn't inhospitable for all of the species emerging in the Eocene, who are/were significantly less numerous than humans and significantly less capable of a rational response to problems?

#### Biotech innovation and industry are high because of COVID.

Brennan 20 (Paul, 9-23-2020, "Therapeutics Innovation in the Era of a Pandemic", *Grit Daily News*, https://gritdaily.com/therapeutics-innovation-in-the-era-of-a-pandemic/)

Pharma and biotech companies have demonstrated a rapid and powerful response to the COVID-19 pandemic with biopharmaceutical innovators leading the charge in the fight. A rush of investor money is placing bets on biotech companies with the best odds of making it to the vaccine finish line. What’s the impact on biotech companies researching for cure pathways for other serious diseases, such as cancer, multiple sclerosis, Alzheimer’s disease, and more?

When the pandemic abates, with vaccines and optimal care treatments in place, other diseases will still be robbing lives and diminishing people’s quality of life. How bumpy is the road for biotech companies working on breakthroughs for non-COVID-19 diseases? Here’s what biotech companies are wrestling with during this challenging time:

Access to Capital

Global biotech ventures raised $18.8 billion in 2019, which was up from $17 billion in 2018, according to BioCentury’s BCIQ database. While there’s been a fear of a slowdown in venture financing, according to BioCentury, that fear has been largely unfounded as “fund-raising in 1Q20 is on par with previous quarters, with $5.71 billion raised, compared with the quarterly average of $5.93 billion in 2019, from 160 financings, compared with an average of 162 financings per quarter last year.

While we can estimate that significant capital is being raised for pandemic-related ventures, biotech companies outside of this spectrum are also being funded. However, it must be very difficult for companies that are trying to raise their first round. Connecting with investors over a Zoom call works well if you are already acquainted, but for first-time introductions the ‘virtual’ dynamic makes it very difficult to build trust and relationships.

Trials and Tribulations of Clinical Trials

According to BioPharmaDive, since March 2020, nearly 100 companies and 240 trials have experienced disruptions. As such, the COVID-19 pandemic threatens to set back non-COVID-19 clinical trial research several years which could result in stalled progress on experimental medicines for other diseases.

Phase I studies of a new drug generally involve healthy people and look to find the highest dose of the new treatment that can be given safely without causing severe side effects. Currently, several companies initiating their a Phase 1 non-pandemic related trials in the U.S. are being delayed as the clinics and supporting hospitals that conduct Phase 1 trials are prioritizing treating patients with COVID-19. Fortunately, there are some promising alternatives. Companies engaged in Phase 1 trials are starting to get creative and looking into other countries not as afflicted by the pandemic, such as Canada and Australia. The pandemic highlights the advantage for study decentralization in the face of a crisis.

Phase 2 studies focus test treatments that have been found to be safe in Phase I but now need a larger group of human subjects to assess efficacy and side effects. As Phase 2 trials are coordinated with hospitals and medical centers, many of which are focused on pandemic-related treatments, there have been major delays for biotech companies in this phase of study. The hardest hit category of therapeutics is for non-urgent therapies, but that are still important for quality of life and long-term health. In the current environment, patients are just not visiting hospitals for elective and preventative treatments, and as such the access to these patients for clinical trials is limited.

Discovery Stage Companies are Also Affected

Not all biotech companies have progressed their research to clinical trials, and for these companies most of their research is conducted in labs. For the first couple of months after the lockdown, most lab work was put on hold while the companies or their vendors learned how to manage their social distancing protocols. Whilst many labs are now back to work, many are not yet working to full capacity, and in some cases non-COVID-19 researchers are having a difficult time getting access to their studies when the labs share space with pandemic researchers.

Biotech is Ready for Its Close-up

As people around the world are turning to biotechnology and pharmaceutical companies for solutions for the COVID-19 pandemic, there is renewed respect for the sector. If an effective vaccine becomes available, “the perception of the pharmaceutical and life sciences industry is positioned to shift dramatically from near the bottom of favorability polls currently to much higher. This will impact policymaking, industry communications, and beyond,” reads the State of Possible 2025 Report from MassBio.

COVID-19 is demonstrating the importance of the biotechnology sector to society, as even anti-vaccine protestors are humbled by the advent of an earth-shaking pandemic. A respect for the production of life-saving technologies will translate to our world being more prepared for future new diseases with a renewed focus on cure pathways for uncured diseases.

As countries move toward normalcy, many emerging biotech companies who have not pivoted to focus on the pandemic, are weathering the storm with therapeutic innovations on the horizon. For those of us lucky enough to work in biotech, our work is far more than just a job. We are working on solutions to help humankind live longer and healthier.