

ESSENTIAL FACILITIES DOCTRINE AND ITS
APPLICATION IN INTELLECTUAL PROPERTY SPACE
UNDER CHINA'S ANTI-MONOPOLY LAW

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INTRODUCTION

Intellectual property rights (“IPRs”)¹ are the cornerstone of the modern economy.² Questions regarding the use of another’s IPRs have long been a part of antitrust and innovation policy in the United States, Europe, and at the World Trade Organization level. With a six-year-old Anti-Monopoly Law (antitrust law) (“AML”), China has been confronting these issues since the AML’s drafting stages. Because of the significant size of China’s economy, Chinese antitrust legal remedies related to IPRs will have global effects.

Recent drafts of the enforcement guidelines and rules for China’s AML with respect to IPRs contain provisions extending the essential facilities doctrine to IPRs. It is unclear, however, whether China’s antitrust community properly understands and applies Western antitrust/intellectual property concepts like the “essential facilities doctrine.” Recently, FTC Commissioner Ohlhausen pointed out that some in China misunderstand the essential facilities doctrine in the United States and its use in a recent FTC decision, and, as a result, have suggested a wide application of compulsory licensing as an antitrust remedy.³ This Article argues that applying the

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¹ References to “IPRs” are to general intellectual property rights such as patents, copyrights, trade secrets, and know-how, unless otherwise specified. Standard essential patents (“SEPs”) can raise some complex competition-related issues, and a detailed appraisal of the antitrust issues related to standard setting and SEPs is beyond the scope of this Article.

² See generally WILLIAM M. LANDES & RICHARD A. POSNER, *THE ECONOMIC STRUCTURE OF INTELLECTUAL PROPERTY LAW* 2-5 (2003).

³ See Maureen K. Ohlhausen, Comm’r, Fed. Trade Comm’n, *A Pragmatist’s Approach to Navigating the Intersection of IP and Antitrust*, Special Address at the 2013 Standards and Patents Conference (Dec. 4, 2013), available at http://www.ftc.gov/sites/default/files/documents/public_statements/pragmatists-approach-navigating-intersection-ip-antitrust/131204ukantitrust.pdf.

essential facilities doctrine to IPRs in China would have a significant chilling impact on innovation and harm consumers in the long run.

The essential facilities doctrine has its roots in decisions issued by the U.S. Supreme Court more than one hundred years ago.⁴ Through extensive debate in case law and through the development of modern economic theories, U.S. legal and economic scholars have since largely rejected this doctrine.⁵ The current consensus maintains that the doctrine should be applied only rarely and with extreme care. Indeed, the leading antitrust treatise argues that “the ‘essential facility’ doctrine is both harmful and unnecessary and should be abandoned.”⁶

Applying the essential facilities doctrine to IPRs is even more highly questioned. In the United States, it is generally accepted that applying essential facilities theories to IPRs would reduce incentives for innovation and cause more harm than benefit to consumers. Indeed, the doctrine has never been successfully applied to IPRs in the United States.⁷

Views of the doctrine are somewhat more tolerant in the UK and the European Union, along with a handful of other countries. Even so, the successful application of the doctrine to IPRs has been scarce and narrowly applied in these countries.⁸ Yet within China, there seems to be greater acceptance of the essential facilities doctrine. Such acceptance is alarming in terms of law, economics, and policy. The fifth draft of the Anti-Monopoly Law Antitrust-IP Guidelines, issued by the State Administration for Industry and Commerce (“SAIC”) in the fall of 2012, was the first draft to include an article that explicitly incorporated the doctrine. The article incorporating the essential facilities doctrine with respect to IPRs remains in the later drafts, including the eighth draft issued in the summer of 2014.⁹

China now stands at a critical crossroads in its move from a planned economy to a market economy.¹⁰ One important component of this transition is in the development of its antitrust regime. In addition, the country is updating its economic structure, finding a sustainable pathway to

⁴ See *infra* note 14 and accompanying text.

⁵ See, e.g., Robert Pitofsky et al., *The Essential Facilities Doctrine Under U.S. Antitrust Law*, 70 ANTITRUST L.J. 443, 443 (2002) (“If U.S. scholarship were the last word on the subject, one would be led to conclude that the essential facilities doctrine should be described narrowly or fully abandoned.”).

⁶ PHILLIP E. AREEDA & HERBERT HOVENKAMP, FUNDAMENTALS OF ANTITRUST LAW § 7.07c (4th ed. 2012).

⁷ See Simon Genevaz, *Against Immunity for Unilateral Refusals to Deal in Intellectual Property: Why Antitrust Law Should Not Distinguish Between IP and Other Property Rights*, 19 BERKELEY TECH. L.J. 741, 760 (2004) (“The essential facilities doctrine has been advanced by parties in intellectual property cases, although never successfully in the sense that it never helped to win the case.”).

⁸ See *infra* note 37 and accompanying text.

⁹ See, e.g., STATE ADMIN. FOR INDUS. & COMMERCE TASK FORCE, GUIDE ON ANTIMONOPOLY LAW ENFORCEMENT IN THE FIELD OF INTELLECTUAL PROPERTY RIGHTS, at art. 17 (drft. 5, 2012); STATE ADMIN. FOR INDUS. & COMMERCE TASK FORCE, RULES ON THE PROHIBITION OF ABUSING INTELLECTUAL PROPERTY RIGHTS TO ELIMINATE OR RESTRICT COMPETITION, at art. 8 (drft. 8, 2014).

¹⁰ See generally Li-Wen Lin & Curtis J. Milhaupt, *We Are the (National) Champions: Understanding the Mechanisms of State Capitalism in China*, 65 STAN. L. REV. 697, 704 (2013).

economic growth. Innovation will be the key driver facilitating this transition. Over the past decade, Chinese individuals and corporations have greatly increased their creation and ownership of IPRs.¹¹ But economic growth and innovation require a careful balance to flourish. In particular, it is important to balance IPR policy and competition policy, which are two elements of governmental oversight that seem, at least in the short term, contradictory. China can benefit from understanding the historical experiences from the West, saving itself from repeating the mistakes of these jurisdictions, and selecting a strategy that promotes innovation and benefits its consumers in the long term. Recognizing the tendency of over-interference rooted in the past experiences with the planned economy, this Article suggests that Chinese regulators should resist the temptation to interfere with market forces, such as in (sometimes messy) licensing negotiations among willing companies to help establish a healthy market mechanism. Together with the development of a robust market economy, policies assuring that domestic as well as foreign firms have adequate incentives to innovate will promote sustainable long-term economic growth and consumer welfare.

This Article explores the development of the essential facilities doctrine and its potential applicability to IPR matters. It begins by explaining the history of, and the economic principles underlying, the essential facilities doctrine, which has typically been applied—and, even then, only in extreme cases—in matters involving refusals to deal in traditional markets for goods and services, rather than in markets for intellectual property. This discussion highlights the impact of government policy on dynamic incentives to invest and innovate, which are the common thread between IPR policy and competition policy. This Article also summarizes the key court cases in the United States involving the essential facilities doctrine. After explaining the doctrine’s foundations, this Article turns to the doctrine’s application to IPRs, beginning with the relevant economic characteristics of IPRs that distinguish them from other goods or services normally traded in the marketplace. Finally, this Article closes its analysis with an evaluation of the unique challenges imposed by China’s economic transition onto the balance of its IPR policy and competition policy.

To present a clear argument, this Article focuses largely on the features and the potential effects of an alleged “essential facility” on competition and incentives to invest and innovate, and assumes that a single firm controls this facility. Additional complexity and entirely different issues may arise if an essential facility is controlled by a group of competitors. For example, a group of firms controlling an essential facility

¹¹ See *Global Intellectual Property Filings Up in 2013, China Drives Patent Application Growth*, WORLD INTELLECTUAL PROP. ORG. (Dec. 16, 2014), http://www.wipo.int/pressroom/en/articles/2014/article_0018.html.

might engage in conduct designed to eliminate competition among themselves. Those multi-firm scenarios, however, are beyond the scope of this Article.

I. THE CHARACTERISTICS OF AN ESSENTIAL FACILITY AND THE INCENTIVE TO PROMOTE ITS USE

A. *Characteristics of an Essential Facility*

What constitutes an “essential facility” and, indeed, whether such facilities even exist, has been the subject of much debate within the antitrust community. In the United States, the doctrine was largely fashioned by lower courts interpreting a small number of ambiguous Supreme Court decisions.¹²

As a general rule, asset holders (including monopolists) are not required to share their assets with others, even for a fee. As Phillip Areeda has noted, “[t]here is no general duty to share. Compulsory access, if it exists at all, is and should be very exceptional.”¹³ This makes economic sense as forcing access to valuable assets destroys incentives to develop those assets in the first instance. The essential facilities doctrine, however, asserts that some assets are so “essential” that forced sharing would serve to enhance consumer welfare by allowing competition to take place. Those special assets are the “essential facilities.”

United States v. Terminal Railroad Ass’n of St. Louis,¹⁴ the first, and arguably most important, of several U.S. Supreme Court cases suggesting the basis for the essential facilities doctrine, provides some insights into the characteristics of what might be considered an essential facility. In this case, a single bridge spanned the Mississippi River to connect eastern and western railroads at the St. Louis hub; other railroad bridges over the Mississippi River are hundreds of miles to the north or south of St. Louis.¹⁵ Terrain around St. Louis combined with the width of the river made it cost prohibitive to build another bridge near St. Louis.¹⁶ The existing bridge had enough capacity to serve all of the combined

¹² Robert Pitofsky et al., *supra* note 5, at 445-46.

¹³ Phillip Areeda, *Essential Facilities: An Epithet in Need of Limiting Principles*, 58 ANTITRUST L.J. 841, 852 (1990).

¹⁴ 224 U.S. 383 (1912). The *Terminal Railroad* case concerned the conduct of a group of railroads that had purchased and obtained control of all the railway bridges and switching yards into and out of St. Louis, a major hub for east-west rail traffic in the United States. *Id.* at 391-92. In essence, *Terminal Railroad* describes a situation where a group of firms obtains control of an asset to which it then deprives access to its rivals. As the case involves actions by a group of firms rather than a unilateral conduct, many aspects of the case are beyond the scope of this Article and will not be addressed in any detail here. The discussion of the case is solely meant to provide an illustration of the types of assets that can give rise to an essential facilities claim.

¹⁵ *Id.* at 391-92.

¹⁶ *Id.* at 395.

railroads' traffic.¹⁷ The few miles of track on the rail bridge were therefore a bottleneck that constituted what many think of as an ideal example of an essential facility. A group of railroad owners recognized the strategic value of this bottleneck, acquired it, and then refused to let competing rail operators access the bridge.¹⁸

As another example, consider the high voltage electric transmission network at issue in *Otter Tail Power Co. v. United States*.¹⁹ Retail electricity providers must access the transmission network to deliver electricity to individual users.²⁰ Like the railroad bridge at St. Louis, the electricity transmission network has the features of a natural monopoly where duplication of the network would be socially wasteful. Moreover, building electricity transmission lines requires permission from government agencies, which approve where the electricity transmission network can be built and who controls the network. Otter Tail, a monopoly-owned local transmission network, refused to sell electricity wholesale or to carry electricity purchased from another generator over its transmission network to local municipalities.²¹ This prevented local municipalities from creating competition against Otter Tail in the downstream market(s).²²

Based on these cases and other research, it appears that to the extent essential facilities exist, a true essential facility would need to have at least the following characteristics as a matter of economic and legal principles in China:

(1) The asset is a gateway or bottleneck to creating a new product or connecting two existing products. Infrastructure such as bridges, highways, and power grids where the state has effectively authorized or created a monopoly situation often have this feature.

(2) The asset is the only gateway available and creating an alternative connection is economically prohibitive.

(3) The product market in which competition is arguably being foreclosed is of significant public interest.²³ Without the ability to open the gateway, other suppliers cannot access the market (i.e., provide the product dependent on access to the asset).

B. *The Owner of an Essential Facility Generally Has Incentives to Promote Its Use*

¹⁷ *Id.* at 392.

¹⁸ *Id.* at 397-99.

¹⁹ 410 U.S. 366 (1973).

²⁰ *Id.* at 370.

²¹ *Id.* at 371.

²² *Id.* at 371-72.

²³ For example, broad news coverage was considered particularly important for public interest in *Associated Press v. United States*, 326 U.S. 1, 20 (1945).

For the sake of argument, assume that at least some genuine examples of essential facilities can be found. Even in such cases, it is important to understand that the owner of an essential facility normally has incentives to let as many customers use that facility as possible, as long as they are willing to pay the monopoly price for that use. For example, prior to its sale to a select group of railroads, the operator of the St. Louis bridge in *Terminal Railroad* willingly sold access to the bridge to all of the railroads desiring connection.²⁴ Doing so maximized the bridge owner's profits. In general, as a monopolist holder of a gateway, the owner of an essential facility can charge a monopoly entrance fee to anyone who wants to open the gate. As the next Part discusses in more detail, there is generally no profit incentive to deny access to the gateway to any particular customer.

In particular, the owner of an essential facility would generally have an incentive to promote the use of its asset for many different kinds of activities. The gateway owner may not be interested nor have the expertise to develop new applications of its assets, but can profit from providing access to those that do. Encouraging others to find more uses will generate more demand for the essential facility and thus will increase its owner's profits.

Under limited circumstances, however, a firm may wish to restrict access by others to its facility for anticompetitive purposes. One such circumstance may be when a firm that controls an essential facility also competes with its customers in a downstream market. The *Terminal Railroad* case illustrates this clearly: it was only when the St. Louis bridge was sold to a group of railroad operators that access to the bridge was restricted.²⁵ By refusing to allow competitors access to the essential facility, a firm may foreclose competition in a downstream market, arguably extending the monopoly power inherent in the asset market itself. This situation is explained in the next Part.

II. ECONOMIC PRINCIPLES ON REFUSAL TO DEAL

The analysis of antitrust harm caused by the essential facilities doctrine falls within a broader framework of conduct labeled "refusals to deal."²⁶ In general, a firm has the freedom to select with whom it conducts its business. Indeed, patents explicitly provide their owners a right to exclude others. Under certain circumstances, "a firm with market power may violate antitrust law by refusing to do business with other firms."²⁷

²⁴ *United States v. Terminal R.R. Ass'n of St. Louis*, 224 U.S. 383, 392 (1912)

²⁵ *Id.* at 397-98.

²⁶ This Article focuses on unilateral unconditional refusals to deal. There are other types of refusal to deal that are conditional on certain behaviors such as tying or exclusive arrangements. For these cases, the focus of antitrust analysis is not refusal, but the conditions that trigger the refusal.

²⁷ *Refusal to Deal*, FED. TRADE COMM'N, <http://www.ftc.gov/tips-advice/competition-guidance/guide-antitrust-laws/single-firm-conduct/refusal-deal> (last visited Dec. 29, 2014). *See also* Steven C. Salop,

This is known as an anticompetitive refusal to deal. A refusal to deal can involve a customer, a supplier, or a competitor, with the key test for competition law purposes being whether it leads to harm to the competitive process.²⁸ Refusals to deal involving essential facilities are a special case referring to situations in which a monopolist refuses to share its crucial input with potential competitors.

Modern economic theory suggests that in most cases refusals to deal are either competitively neutral or may even be competitively beneficial. For example, the transaction cost of engaging other partners may be too great, or the partners may free ride the monopolist's marketing efforts. Except potentially in industries characterized by significant economies of scale, it is difficult to find a coherent economic foundation for the claim that a refusal to deal in principle harms competition as opposed to simply disadvantaging an individual competitor.²⁹ Only under narrow circumstances might a refusal to deal involving an essential facility result in anticompetitive harm by foreclosing competition.

A. *Refusal to Deal Involving an Input Generally Does Not Cause Antitrust Harm*

It is well recognized in the economic literature that a profit-maximizing monopolist that controls an input generally has an incentive to sell the input to others, including its competitors in the downstream market. Consider the following example, meant to illustrate a general principle that may be applied to products involving essential facilities: Firm 1 is the monopoly provider of a sensor that monitors people's sleep; it also produces a wristband in which the sensor can be embedded to allow people to wear the sensor like a watch. Like many others, Firm 2 also sells the sleep-monitoring wristband, but must rely upon Firm 1 for supplies of the sleep sensor. The sensor costs \$10 to produce and the wristband costs \$5 to produce. Consumers are willing to pay \$100 for the sleep-monitoring wristband, but have little use for the stand-alone sleep sensor. Firm 1, being a monopoly producer of the sensor product, can set the price for the sensor at \$95 and thereby extract all the monopoly rents available for the sleep-monitoring wristband. Firm 1 gains nothing by restricting Firm 2 or any other wrist band supplier from accessing the "essential facility" sleep sensor or by seeking to extend its monopoly power into the downstream market for making wrist bands, since its profit would not be any greater. This logic is

Exclusionary Conduct, Effect on Consumers, and the Flawed Profit-Sacrifice Standard, 73 ANTITRUST L.J. 311, 311-12 (2006).

²⁸ Salop, *supra* note 27, at 312.

²⁹ See, e.g., DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 437 (4th ed. 2005); see also Dennis W. Carlton, *A General Analysis of Exclusionary Conduct and Refusal to Deal—Why Aspen and Kodak Are Misguided*, 68 ANTITRUST L.J. 659, 660 (2001).

known as the “single monopoly profit theorem,” which applies in a vertical relationship where the upstream and downstream components are complements.³⁰

Various reasons unrelated to strategic competition motives can account for situations in which Firm 1 may choose not to supply a critical input to its competitor Firm 2. For example, Firm 1 may be at or near its production capacity and unable to fill the order from Firm 2, or Firm 1 may need to significantly alter its design to be able to sell to Firm 2. Firm 1 might also refuse to deal with Firm 2 if Firm 2 had a reputation for producing faulty products that could harm Firm 1's reputation as a supplier, or because Firm 2 may choose to free ride on Firm 1's marketing efforts and quality reputation by claiming that its inferior products use the same input as Firm 1. While all of these examples involve Firm 1 refusing to supply Firm 2, none would result in anticompetitive harm. In these examples, a competitor, Firm 2, may be harmed for not being able to obtain Firm 1's input. But consumers would benefit from Firm 1's continued ability to offer and to promote high-quality products that otherwise might have been weakened had Firm 2 been allowed to free ride on Firm 1's reputation for quality or its efforts to promote its own product.

B. *Conditions Under Which Refusal to Deal May Cause Anticompetitive Harm*

While many, if not most, refusals to deal likely have procompetitive or competitively neutral effects, there are circumstances in which a refusal to deal can harm competition in downstream markets, often signaled by reduced output and/or increased prices. The single monopoly profit theorem breaks down in certain special cases,³¹ often involving public

³⁰ See, e.g., Christian Ahlborn et al., *The Antitrust Economics of Tying: A Farewell to Per Se Illegality*, 49 ANTITRUST BULL. 287, 323 (2004) (“[A] firm enjoying monopoly power in one market . . . could not increase its profits, and instead could reduce them, by monopolizing the market for another good This idea is commonly referred as the ‘single monopoly profit theorem’”). See also Robert Van Horn & Matthias Klaes, *Intervening in Laissez-Faire Liberalism: Chicago's Shift on Patents*, in BUILDING CHICAGO ECONOMICS: NEW PERSPECTIVES ON THE HISTORY OF AMERICA'S MOST POWERFUL ECONOMICS PROGRAM 180, 183 (Robert Van Horn et al. eds., 2011).

³¹ This Article refers to the “single monopoly profit theorem” in a broad sense. In the narrowest version, the downstream market features perfect competition with the many downstream suppliers using a fixed proportion of the essential input in producing the final product. Given the assumption of perfect competition, none of the downstream suppliers have any market power. The input monopoly supplier sets a price that both maximizes its own profits and maximizes the total profits available to the upstream and downstream producers—the “single monopoly profit.”

The assumption of perfect competition in the downstream market represents a polar case. At the other pole of the competitive landscape, consider the case in which there is again a single monopoly supplier of the essential input, but that supplier now sells the input to a single monopoly firm in the downstream market. In this situation, both the upstream and downstream firms set prices that maximize their separate profits, the two levels of monopoly mark-up result in higher prices and less output in the downstream market than in the case where the downstream market is competitive with a monopoly only in the upstream. This situation is commonly referred to as the “double marginalization” problem. Under some

utilities that reflect natural monopolies and which are subject to government regulation.

For example, when the price of critical input A is regulated (e.g., as in the case of the electricity transmission network), Firm 1 will generally not be able to set the price of A at a level sufficient to extract all the monopoly profit potentially available from its control of the critical input. Indeed, preventing full extraction is generally a major reason for regulating in the first place. In this circumstance, however, Firm 1 has incentives to turn to the unregulated downstream market for good B to obtain additional profit, making up its shortfall in market A. Because Firm 1 is a monopoly that controls a critical input used in the production of good B, it can restrict access or increase the cost of entry for other competitors, allowing Firm 1 to monopolize the market for product B. As a result, Firm 1 exercises its monopoly power in product A through supra-competitive pricing of product B.³²

In summary, as a special type of refusal to deal case, a monopolist who refuses to share access of its essential inputs with rivals may cause antitrust harm only under certain special circumstances. Indeed, in the United States “[t]he essential facilities doctrine has been successfully applied primarily in cases in which the facility in question is a natural monopoly, often regulated, and the owner of that facility uses its monopoly to suppress competition in a downstream market.”³³

III. LEADING CASES ON ESSENTIAL FACILITIES

Thus far this Article has assumed the existence of an essential facility. In practice, however, determining whether the essential facilities doctrine is applicable to a particular case is often far from straightforward. Many firms have significant market power in an input used by others. When does the input become “essential”? In the United States, “[e]ssential facilities claims thus have been rare and are even more rarely successful.”³⁴ Although the concept of an essential facility has been around for almost one hundred years and there are numerous cases in lower courts

general assumptions, it would increase both consumer welfare and producer welfare (total profits available) to have a single monopoly to control both the input and downstream final product markets. In other words, when a monopoly controls an essential input, it can benefit consumers to allow the monopoly producer to vertically integrate and become the sole supplier in the downstream market. When the downstream market shows the characteristics of an oligopoly in which there are a limited number of downstream firms, each exercising a certain degree of market power, the double marginalization problem is less acute than in the situation in which a monopoly firm controls the downstream market. However, under certain assumptions, it is still true that consumers could benefit by having a single monopoly firm control sales of both the essential input and the final product.

³² See Dennis W. Carlton & Ken Heyer, *Extraction vs. Extension: The Basis for Formulating Antitrust Policy Towards Single-Firm Conduct*, 4 COMPETITION POL’Y INT’L 285, 298 (2008).

³³ Herbert Hovenkamp et al., *Unilateral Refusals to License*, 2 J. COMPETITION L. & ECON. 1, 15 (2006).

³⁴ See ANDREW I. GAVIL ET AL., ANTITRUST LAW IN PERSPECTIVE: CASES, CONCEPTS AND PROBLEMS IN COMPETITION POLICY 715 (2d ed. 2008).

applying the doctrine, these cases mainly involve regulated public utilities, where it is infeasible to replicate the facility or where doing so would be cost prohibitive.³⁵ More importantly, this case law has been rendered largely irrelevant: the U.S. Supreme Court has decided the refusal to deal cases before it without the need to either endorse or repudiate the essential facilities doctrine.³⁶ Even in the EU, where the doctrine has been met with somewhat greater acceptance, cases are nonetheless rare and the doctrine is only applied in “exceptional circumstances.”³⁷

A. MCI Communications v. AT&T Co.³⁸

AT&T was the dominant U.S. provider of telephone services, controlling the regulated local franchises that provided home telephone services to the overwhelming majority of U.S. households, as well as almost all of the long distance telephone service within the United States.³⁹ MCI, a relatively new entrant to the long distance market, sought to interconnect its long distance lines with those of the local service providers controlled by AT&T, claiming that it could not meaningfully compete with AT&T in the long distance market without such access.⁴⁰ The U.S. Court of Appeals for the Seventh Circuit, applying the essential facilities doctrine, ruled that AT&T's refusal to allow such interconnection constituted an act of monopolization,⁴¹ the term similar to “abuse of dominance” under the AML.

In its ruling, the Seventh Circuit crafted perhaps the clearest formulation of an essential facilities test, identifying four elements required for invoking the essential facilities doctrine: “(1) control of the essential facility by a monopolist; (2) a competitor's inability practically or reasonably to duplicate the essential facility; (3) the denial of the use of the facility to a competitor; and (4) the feasibility of providing the facility.”⁴² The U.S. Supreme Court refused to take up the case, allowing the Appeals Court's ruling in favor of MCI to stand.⁴³

B. Aspen Skiing Co. v. Aspen Highlands Skiing Corp.⁴⁴

³⁵ See *supra* notes 14-18 and accompanying text.

³⁶ See, e.g., *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 410-11 (2004).

³⁷ See, e.g., Case C-418/01, *IMS Health GmbH & Co. OHG v. NDC Health GmbH & Co KG*, 2004 E.C.R. I-5069, ¶ 35.

³⁸ 708 F.2d 1081 (7th Cir. 1983).

³⁹ *Id.* at 1093.

⁴⁰ *Id.* at 1094.

⁴¹ *Id.* at 1132.

⁴² *Id.* at 1132-33.

⁴³ *AT&T Co. v. MCI Commc'ns Corp.*, 464 U.S. 891 (1983).

⁴⁴ 472 U.S. 585 (1985).

In *Aspen Skiing*, the U.S. Supreme Court considered a situation in which a party to a joint venture had chosen to dissolve the venture and then to refuse to deal with its former partner.⁴⁵ Aspen Skiing controlled three of the four skiing areas located in the winter resort of Aspen, Colorado, and Aspen Highlands controlled the fourth.⁴⁶ For many years the two firms jointly sold and marketed an “All Aspen” ticket that allowed a skier to visit all four ski areas, with the two firms splitting the revenues from sales of the ticket in proportion to the number of visits ticket holders made to each firm’s facilities.⁴⁷ Aspen Skiing sought to reach a new revenue-sharing deal on terms more favorable to itself, and when the two firms were unable to reach a new agreement, Aspen Skiing decided to discontinue the All Aspen ticket and instead sell a ticket usable only at its own three skiing areas.⁴⁸ Aspen Skiing also refused to sell Aspen Highlands any lift tickets to the Aspen Skiing areas, even at retail prices, thus preventing Aspen Highlands from offering its own multi-area skiing package.⁴⁹

Based on the past collaboration, the Court found that because consumers had liked the All Aspen ticket and the joint venture had sold the ticket at certain (apparently profitable) terms before, the joint venture was feasible and beneficial.⁵⁰ The Court ruled that Aspen Skiing’s absolute refusal to deal with Aspen Highlands violated the anti-monopolization provisions of U.S. antitrust laws, although it never characterized the All Aspen ticket as an essential facility.⁵¹ The U.S. Department of Justice subsequently characterized the Aspen Skiing decision as follows:

In reaching [its] conclusion, the Court focused on defendant’s refusal to sell its rival any lift tickets, even at retail prices, and its refusal to accept retail-price coupons for its mountains issued by its rival, even though the coupons would have provided defendant “with immediate benefits and would have satisfied its potential customers.” Characterizing the refusal to continue offering a joint ticket as “a decision by a monopolist to make an important change in the character of the market,” the Court found that the evidence (including, in particular, the cessation of a prior course of voluntary dealing, which the Court presumed to have been profitable) permitted the jury to conclude “that there were no valid business reasons for the refusal.”⁵²

Without establishing any broadly defined affirmative requirement to deal, the Court held that refusals to deal could be illegal in cases in which there are no valid business reasons for the refusal.⁵³ However, the Court’s

⁴⁵ *Id.* at 592-93.

⁴⁶ *Id.* at 589-90.

⁴⁷ *Id.*

⁴⁸ *Id.* at 592-93.

⁴⁹ *Id.* at 593.

⁵⁰ *Aspen Skiing*, 472 U.S. at 605-07.

⁵¹ *Id.* at 610-11.

⁵² U.S. DEP’T OF JUSTICE, COMPETITION AND MONOPOLY: SINGLE-FIRM CONDUCT UNDER SECTION 2 OF THE SHERMAN ACT 120–21 (2008) (footnotes omitted).

⁵³ *See id.* at 121.

reliance on *Aspen Skiing*'s change of conduct has led some observers to question whether the *Aspen Skiing* precedent could be used to support a condemnation of a refusal to deal in the absence of a prior, and presumably profitable, business arrangement between the parties.⁵⁴ Although the essential facility claim was made in the lower courts, the Court did not decide on these grounds.⁵⁵ It is difficult to view ski resorts as essential facilities and that refusals to share would harm competition. While the Court has continued to cite *Aspen Skiing* in subsequent cases, it also noted in its opinion in the *Trinko* case (discussed below) that *Aspen Skiing* stands "at or near the outer boundary of § 2 [U.S. monopolization law] liability."⁵⁶

C. *Verizon Communications v. Law Offices of Curtis V. Trinko, LLP*⁵⁷

Unlike *MCI*, this more recent case involving telecommunications network access was accepted and ruled upon by the U.S. Supreme Court. The case concerned interconnection rights to the facilities owned by local telephone service providers.⁵⁸ During the period between the *MCI* decision and *Trinko*, AT&T's operations had been broken up into multiple independent firms, including several regional firms that were given control over the former AT&T's local telephone service franchises.⁵⁹ Two of these firms later merged to form Verizon. In addition, the United States adopted a new telecommunications law, the Communications Act of 1996, which mandated that firms such as Verizon offer access to their networks to competitors.⁶⁰ The plaintiff in *Trinko* was a customer of one of Verizon's competitors, which he argued had been denied the interconnection rights that Verizon was required to provide.⁶¹ *Trinko* alleged that Verizon's conduct violated both the Communications Act and the U.S. antitrust laws.⁶²

In its decision, the Court unanimously held that *Trinko*'s complaint that Verizon had failed to share its facilities was not an antitrust violation.⁶³ The Court declined to add a new antitrust claim by making an exception to the rule that businesses need not aid competitors.⁶⁴ More importantly, it refused to endorse the essential facilities doctrine as developed by the lower

⁵⁴ *Id.* at 121-22 (citing several commentators).

⁵⁵ See *Aspen Skiing*, 472 U.S. at 610-11.

⁵⁶ *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 409 (2004).

⁵⁷ 540 U.S. 398 (2004).

⁵⁸ *Id.* at 402-05.

⁵⁹ *Id.* at 402-03.

⁶⁰ *Id.*

⁶¹ *Id.* at 404-05.

⁶² *Id.*

⁶³ *Trinko*, 540 U.S. at 415-16.

⁶⁴ *Id.* at 411-12.

courts.⁶⁵ The Court’s opinion also lays out the problems that forcing firms, even monopolists, to deal with potential competitors might create:

Firms may acquire monopoly power by establishing an infrastructure that renders them uniquely suited to serve their customers. Compelling such firms to share the source of their advantage is in some tension with the underlying purpose of antitrust law, since it may lessen the incentive for the monopolist, the rival, or both to invest in those economically beneficial facilities. Enforced sharing also requires antitrust courts to act as central planners, identifying the proper price, quantity, and other terms of dealing—a role for which they are ill suited. Moreover, compelling negotiation between competitors may facilitate the supreme evil of antitrust: collusion. Thus, as a general matter, the Sherman Act “does not restrict the long recognized right of [a] trader or manufacturer engaged in an entirely private business, freely to exercise his own independent discretion as to parties with whom he will deal.”⁶⁶

The Court thus recognized that enforced sharing of assets may lower the incentive for either a monopolist to invest in an “essential facility” or its rival to invest in economically valuable substitute assets. It also recognized that an essential problem with forced sharing is the need for government to play a role in setting the terms of the sharing arrangement, since the legal dispute between the parties began with the monopolist’s unwillingness to share the asset in question at all or at a price acceptable to its rival on an arm’s length basis. Such involvement by the government in setting price and quantity terms of a supply arrangement is rarely practiced or desirable in a market economy, except in cases of regulated natural monopolies such as electricity and natural gas distribution.

The *Trinko* decision questioned the need for the doctrine and noted that, even if it were to exist, its use would be very limited.⁶⁷ Some commentators even argued that the *Trinko* discussion “signal[s] . . . the formal demise” of the essential facilities doctrine.⁶⁸

IV. RISKS OF APPLYING THE ESSENTIAL FACILITIES DOCTRINE TO IPRS

The noted antitrust scholar Professor Herbert Hovenkamp stated that “[r]egardless of the merits of the essential facilities doctrine in general, its application to intellectual property cases is particularly problematic.”⁶⁹ This Part explains why this is true.

A. *IPRs Seldom Create an Essential Facility*

⁶⁵ *Id.* at 410-11.

⁶⁶ *Id.* at 407-08 (alteration in original) (quoting *United States v. Colgate & Co.*, 250 U.S. 300, 307 (1919)).

⁶⁷ *See id.* at 410-11.

⁶⁸ *See* GAVIL ET AL., *supra* note 34, at 716.

⁶⁹ Hovenkamp et al., *supra* note 33, at 12.

Recall from the discussion earlier in this Article that the lack of any viable alternative is a crucial characteristic of an essential facility. IPRs seldom create an essential facility because there are often ways to work around the problem addressed by the IPR.⁷⁰ In the world of physical assets, it is not uncommon to find a critical asset that is economically infeasible to replicate. For example, in the *Terminal Railroad* case terrain considerations made it economically infeasible to build another bridge over the Mississippi River in reasonable proximity to St. Louis.⁷¹ As another example, the need to earn regulatory approval (and the presence of substantial economies of scale) makes it infeasible to build another high-voltage power transmission network like the one at issue in *Otter Tail*.⁷² However, with intellectual property, typically there are few hard constraints preventing people from finding alternative ways to work around the problem that a particular set of IPRs might address.

It is important to note that in general, even patents (the most restrictive type of IPRs), do not block others from offering a product that solves the same problem as one that employs the patented technology. For example, there are more than 3,300 U.S. patents registered for toothbrushes.⁷³ Some apply to the texture of the handle, some concern the shape of the head, others apply to covers, some apply to built-in timers for electric operation, and so on. The fact that there are more than 3,300 patented features that can be used in the design of a product as simple as a toothbrush suggests that none (or almost none) of these patents are likely to be deemed essential to a prospective entrant into the market for toothbrushes.⁷⁴ There is nothing to prevent the entrant from choosing among any number of competing patented features or from designing its own new ways to improve the attractiveness of its toothbrush. Indeed, there are approximately 440 toothbrush manufacturers⁷⁵ around the world, indicating healthy competition in the market.

⁷⁰ SEPs can raise some additional complexities that may warrant conditioning participation in standard-setting processes on agreement by members to certain licensing obligations for their SEPs, as innovation may be enhanced when SEP owners agree to FRAND terms as a condition for participating in standard setting. For example, learning about standards during the development process may allow other participants a head start in designing products that are standards compliant. In most standard-setting organizations, participants in the standard setting process voluntarily adopt FRAND commitments even in the absence of laws explicitly mandating that they share their IP.

⁷¹ *United States v. Terminal R.R. Ass'n of St. Louis*, 224 U.S. 383, 395 (1912).

⁷² *See Otter Tail Power Co. v. United States*, 410 U.S. 366, 380-81 (1973).

⁷³ The search is at the U.S. Patent & Trademark Office website, with "toothbrush" entered as "Term 1" and "Field 1" set to either title or abstract. *USPTO Patent Full-Text and Image Database*, U.S. PAT. & TRADEMARK OFF., <http://patft.uspto.gov/netahtml/PTO/search-bool.html> (last visited Jan. 4, 2015).

⁷⁴ Admittedly, not all of these 3,300 patented features are substitutes for one another as many may be complementary to certain other features. Nonetheless, the sheer number of patented features covering so many different aspects of a toothbrush's design strongly suggests that none of them are likely to be essential.

⁷⁵ For a listing of toothbrush manufacturers, see *Toothbrush Manufacturer Search*, GLOBAL SOURCES, http://www.globalsources.com/gsol/GeneralManager?point_search=on&search_what=1&product_search=on&supplier_search=off&article_search=off&actio

Even for types of goods for which IPRs play a far larger role in creating a successful product than is the case for toothbrushes, there is usually more than one way to solve a given technical problem. Consider, for example, the pharmaceutical industry, in which IPR protection is recognized to be highly valuable, as it plays an essential role in allowing firms to recover extraordinarily high research and development (“R&D”) costs. Even in this industry, it is not usually the case that IPRs can be used to completely block competitive entry. In most (though not all) cases, there are multiple drugs available to treat any particular disease or symptoms, often in broadly similar ways. In other words, there are usually multiple drugs within any therapeutic class.

Experience teaches that a technology that appears to be the only solution for a given problem today may later be replaced by a better and/or cheaper solution. For example, the local telephone network that connects long distance phone lines to individual households was considered an essential facility to compete in long distance phone services, as in *MCI*.⁷⁶ That characterization ceased to be true, however, once mobile telecommunications were developed. Today, many people (particularly in the younger generation) do not have landlines and rely solely on their cell phones. Skype is yet another alternative to landline long distance calls.

With regard to patented technology that has been incorporated as part of an industry standard, refusals to license the relevant Standard Essential Patents (“SEPs”) may, in some cases, raise antitrust concerns, particularly where denial of access to the SEP is used to foreclose competitors of the SEP holder from competing in the market. While a detailed appraisal of the complex antitrust issues related to standard setting and SEPs is beyond the scope of this Article, it offers some brief observations here. The standard setting process itself generally incorporates checks against attempts by SEP holders to use their IPRs to exclude other parties from access to the patents essential to practice the standard. At the same time, it is often difficult for members and implementers to know whether a patent is indeed essential to practice the standard. Though patents are declared by the patent owners as potentially essential to a standard, to the authors’ knowledge, no standard setting body evaluates the declared patents to determine whether they are, in fact, essential. Second, even patents that arguably become essential after a standard is adopted often have faced a merits-based competition prior to their inclusion in the standard. For example, the Institute of Electrical and Electronics Engineers (“IEEE”), a standard setting organization (“SSO”), considered at least three proposals for wireless networking for data speeds of at least 10 Mb/s before

n=GetPoint&action=DoFreeTextSearch&type=new&page=top/Results&point_id=3000000149681&catalog_id=2000000003844&design=clean&language=en&compare_table=true&supp_list=true&ctryVal=&bustypeVal=Manufacturer&StarRank=&expmktVal=&query=Toothbrush (last visited Jan. 20, 2015).

⁷⁶ *MCI Commc’ns Corp. v. AT&T Co.*, 708 F.2d 1081, 1132-33 (7th Cir. 1983).

it adopted the IEEE 802.11b standard, known as “Wi-Fi,” in 1999.⁷⁷ Third, almost all SSOs have IPR policies in place that require certain commitments by SEP holders that work to mitigate any risks of anticompetitive refusals to deal. In particular, most SSOs request member patent holders to offer to license their SEPs to implementers of the standard on fair, reasonable, and non-discriminatory (“FRAND”) terms.⁷⁸

B. *Applying the Essential Facilities Doctrine to IPRs Would Impair Incentives to Invest*

One crucial argument against applying the essential facilities doctrine to IPRs is that compelling intellectual property owners to deal or to license is usually likely to reduce incentives to invest in creating intellectual property. In other words, such a policy can be expected to chill innovation. Consider that the core right conveyed by an IPR is the legal right to exclude others. Forcing access to its valuable assets is equivalent to a requirement of compulsory licensing, and would undo the very right that the IPR conveys. Such interference would not only reduce the IPR holder's incentive to invest in new inventions, it would also create disincentives for competitors to develop their own competing inventions. Forced sharing of IPRs may appear to increase competition because it initially allows more suppliers to provide the downstream product. However, in the long run, consumers will suffer as both IPR holders and their competitors choose to invest less in innovation. These long-run losses are likely to far outweigh any short-term gains. In fact, leading economists show that compulsory licensing may induce entry of inefficient suppliers and reduce economic efficiency.⁷⁹

Consider the following hypothetical example. Firm 1 is considering whether to invest in the development of an advanced battery to store electricity. The R&D project has a 90 percent chance of failing, in which case the firm will make zero profit from selling an advanced battery and lose its entire investment of RMB ¥5 million. There is a 10 percent chance that the project will succeed, in which case the firm can expect to earn a profit of RMB ¥55 million after incurring the initial RMB ¥5 million research cost. Thus Firm 1's expected profit is RMB ¥0.5 million (calculated as $90\% \times (0 - 5M) + 10\% \times (55M - 5M)$). Because the expected return is positive, the firm decides to invest. The battery technology turns out to be a success and Firm 1 obtains a large share of the storage battery

⁷⁷ Kevin J. Negus & Al Petrick, *History of Wireless Local Area Networks (WLANs) in the Unlicensed Bands*, GEO. MASON UNIV. SCH. OF LAW INFO. ECON. PROJECT 7-8 (Apr. 4, 2008), http://iep.gmu.edu/wp-content/uploads/2009/08/WLAN_History_Paper.pdf.

⁷⁸ FRAND and standard setting issues are highly complex and dynamic. See more detailed discussion in the authors' next paper on antitrust issues related to standard setting.

⁷⁹ See Richard J. Gilbert & Carl Shapiro, *An Economic Analysis of Unilateral Refusals to License Intellectual Property*, 93 PROC. NAT'L ACAD. SCI. 12749, 12754-55 (1996).

market. A group of nine competitors then files a complaint with the antitrust regulator asserting abuse of dominance because Firm 1 refuses to license its new technology to foreclose competition (at least temporarily) in the advanced battery market. The regulator agrees with the complainants and orders Firm 1 to license its technology to each of its competitors at a royalty rate of RMB ¥1 per unit sold. In the competitive conditions that now prevail in the advanced storage batteries market, Firm 1 and its nine competitors each sell two million units at competitive prices that allow the competitors to just break even on their sales of the advanced batteries. Firm 1 collects RMB ¥18 million in royalty revenues from its competitors (calculated as 9 firms*2M units per firm*RMB ¥1 per unit) and earns an additional RMB ¥2 million in profit from producing its own two million units (royalty-free). The inventing firm thus earns RMB ¥20 million in total from its invention.

Had Firm 1 known it would only make profit of RMB ¥20 million in the event its technology was successful, it would not have made the R&D investment. In this case, its expected return would be RMB ¥-3 million (calculated as $90\%*(0-5M) + 10\%*(20M-5M)$), a negative expected return on its investment. Anticipating that regulators would step in and take away some of its profits, Firm 1 (and other companies like Firm 1) would have less incentive to invest in new technologies.

Regulators may be tempted to believe that prices are excessive in some IPR-heavy fields. Such a conclusion is attractive in the case of a 1,000 percent return (RMB ¥50M realized profit on a RMB ¥5M R&D investment) on the investment, as Firm 1 earned in the above example. However, as the example illustrates, this view ignores a key difference between investing in innovation and investing in traditional manufacturing processes: innovation investments require upfront, sunk R&D investments but face a great deal of uncertainty regarding whether those investments will ever pay off. Innovators often go through many failures before they encounter success. After accounting for risks, however, the expected returns do not appear so high. The risk-adjusted rate of return is 10 percent in this example (calculated as RMB ¥0.5M expected profit on RMB ¥5M R&D investment). In other words, one cannot calculate the return ex post, after success has been achieved, without taking into consideration the risky path required to reach that success.

As explained in the example, imposing a mandatory licensing fee that leads to lower expected profits will dampen the incentives for innovation.

C. *Summary*

In summary, unlike physical assets, intellectual property rarely creates hard obstacles that prevent a competitor from working around an existing solution to find an alternative. With the passage of time and

accumulation of knowledge, in general, new methods will emerge, even for technologies that at some point seem to offer the only solution for a problem. Therefore, it is difficult to classify IPRs as truly essential facilities for which there are no viable alternatives. Even if a particular IPR had no viable alternatives at a given point of time, the substantial risk of reducing incentives to innovate or invest cautions strongly against applying the essential facilities doctrine to IPRs. This seems to be the primary reason why U.S. cases do not treat refusals to deal or license a patent as an antitrust violation.⁸⁰

V. CHINA'S ECONOMIC TRANSITION IMPOSES UNIQUE CHALLENGES FOR IPR AND ANTITRUST POLICY

China now stands at critical crossroads in the development of its antitrust regime. The country is transforming and updating its economic structure, finding a sustainable pathway to economic growth. Innovation will be the key driver facilitating this transition. The proper balance between IPR policy and competition policy will be crucial in creating a climate conducive to innovation. China's highly dynamic economy imposes unique challenges in finding the proper balance, but China has the advantage of being able to benefit from the prior experiences of the West in selecting a strategy that both promotes innovation and benefits Chinese consumers in the long term.

A. *China Is in Transition from Being an IPR User to an IPR Innovator*

Based on the statistics from the China State Administration of Foreign Exchange, in 2012 Chinese individuals and companies paid \$17.7 billion in royalty and licensing payments and received only \$1.0 billion in comparable payments from outside China.⁸¹ Data show that China has been a net IPR user for many years. In response, some protectionists have argued that royalty payments are one method by which Western companies exploit Chinese consumers and manufacturers.

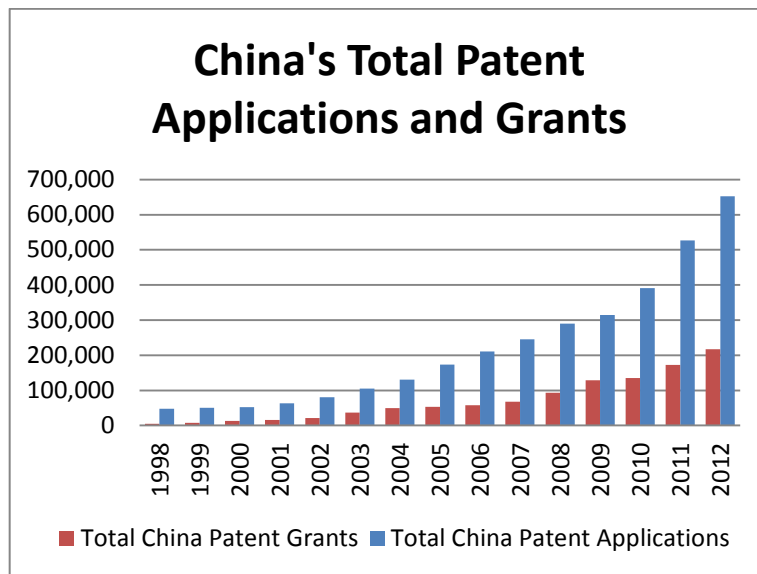
“Made in China,” however, is no longer a key characteristic of China's dynamic economy. As China restructures its economy, its goal is for products to not be merely made in China, but to be also designed and

⁸⁰ The Court of Appeals for the Federal Circuit, which specializes in intellectual property cases, has stated that there is “no reported case in which a court ha[s] imposed antitrust liability for a unilateral refusal to sell or license a patent.” *In re Indep. Serv. Orgs. Antitrust Litig.* CSU, L.L.C., 203 F.3d 1322, 1326 (Fed. Cir. 2000) (alteration in original) (quoting *Intergraph Corp. v. Intel Corp.*, 195 F.3d 1346, 1362 (Fed. Cir. 1999) (internal quotation marks omitted)). *See also* *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 215 (1980) (“Compulsory licensing is a rarity in our patent system . . .”).

⁸¹ To view balance of payment data for a given quarter, see *Balance of Payments*, CHINA STATE ADMIN. OF FOREIGN EXCH., <http://www.safe.gov.cn/wps/portal/english/Data/Payments> (last visited Jan. 4, 2015).

created in China. China has the reputation of being the world's manufacturing center. In the last decade or so, China has experienced tremendous growth in its intellectual property creation and has become a key player in the global IPR arena. Today, China's patent office is among the world's five top patent offices (along with those of the United States, the European Union, Japan, and Korea). These five patent offices process more than 70 percent of the world's patent filings. Between themselves, the United States and China account for approximately half of all patent applications in the world.⁸²

According to data from the World Intellectual Property Office ("WIPO"), China's patent applications grew almost fourteen fold between 1998 and 2012, while its patent grants grew almost forty-five fold over the same period. In 2012, China ranked number one in number of patent applications, and ranked second in number of patent grants.⁸³ The same year, the number of "invention" patents filed in China exceeded those filed in the United States.⁸⁴



Source: WIPO Statistical Country Profiles: China.⁸⁵

⁸² Teresa Stanek Rea, Deputy Under Sec'y of Commerce for IP, U.S. Patent & Trademark Office, Prepared Remarks at Fordham Law School China Event: Intellectual Property Trends and Developments with China (Jan. 28, 2013), available at http://www.uspto.gov/news/speeches/2013/rea_fordham_china.jsp.

⁸³ *Statistical Country Profiles: China*, WORLD INTELLECTUAL PROP. ORG., http://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=CN (last updated Dec. 2014).

⁸⁴ *Id.* There are three broad types of patents in China: invention patents, utility model patents, and design patents.

⁸⁵ *Id.*

Chinese companies are among the world's most active patent applicants. For example, in 2013, the Chinese telecommunications equipment company ZTE filed 2,309 published Patent Cooperation Treaty ("PCT") applications, ranking it second among all of the world's applicants.⁸⁶ Another Chinese company, Huawei, ranked as the third largest PCT applicant, with 2,110 published PCT applications.⁸⁷

In summary, over the past decade, Chinese individuals and corporations have greatly increased their creation and ownership of IPRs. Based on these statistics, it is likely that the pattern in which Chinese companies are predominantly licensees that pay royalties to Western IPR holders will soon change. As Chinese companies increasingly realize their own streams of IPR revenues from foreign companies, China will move from net IPR user to net IPR provider. Hence, while it may arguably have once been true that China could facilitate its own economic development by providing only weak protection for IPRs (which were overwhelmingly held by foreigners), that calculus is now rapidly changing. Chinese companies will soon realize, if they do not already, that failing to respect IPRs will have a chilling effect on domestic R&D and create an obstacle for China's transition from an economy dominated by labor intensive low-technology content industry to one featuring a much larger technologically advanced industrial sector.

In this climate, IPR or competition policies that aim to protect domestic Chinese suppliers through forced sharing or price caps for IPRs by applying the essential facilities doctrine will be counterproductive. As explained in the previous sections, these policies will discourage the innovative and successful domestic firms from innovating, primarily protecting inefficient competitors. Such an outcome would ill serve Chinese consumers. Sustainable long-term economic growth and consumer welfare are best served by policies where firms, both foreign and domestic, have adequate incentives to innovate. Furthermore, collaboration between foreign and domestic companies could spur additional innovation and benefits for the Chinese economy.

B. *China Is in Transition from a Planned to Market Economy*

China is also making the transition from a planned economy to a market economy. Market economies use the decentralized signals of market prices to allocate resources, recognizing that, in general, markets rather than regulators are more efficient in allocating scarce resources. As policymakers in Western market economies have recognized, this principle

⁸⁶ *Id.* The PCT is an international-type application that reserves the applicant's right to enter over 140 countries that are members of the treaty.

⁸⁷ *Id.*

holds for both physical resources and for intellectual property. In successful market economies it is exceedingly rare for antitrust or other authorities to interfere in the licensing decisions of IPR holders.

Regulators may be tempted to believe that some particular technology is the only solution for a given problem and that without forced sharing there would be no competition in the downstream product market. Regulators may also be concerned about IPR holders abusing their market dominance by charging excessively high prices for certain IPRs. As explained in the previous section, even if a particular IPR had no viable alternatives, the substantial risk of reducing incentives to innovate or to invest cautions strongly against applying the essential facilities doctrine to IPRs. Regulatory agencies should refrain from the tendency to interfere and instead let the market determine when an IPR should be licensed or shared and at what prices. Such regulatory restraint would be more likely to promote innovation, a key factor in advancing China's economic progress.

C. *The Complex Legislative Background Regarding the Essential Facilities Doctrine in China*

The Chinese government has announced that IPR protection will play a crucial role in transforming the economic structure from "Made in China" to "Created in China." It has made promoting innovation and protecting IPR a national strategy.⁸⁸ In fact, the China State Intellectual Property Office has published an annual white paper on intellectual property, which sets the protection of IPRs as an important measure of government performance.

The debate on the application of the essential facilities doctrine in China goes back to the drafting stage of the AML. This highly controversial doctrine was alternately proposed, removed, and added back over several rounds before it was deleted in the final version of the AML. Originally, this doctrine was borrowed directly from German law. Some U.S. experts raised concerns about the relevance of this doctrine and were particularly worried about the chilling impact on innovation if this doctrine were applied in the IPR field. Some scholars (including an author of this Article) suggested that this doctrine, if ever adopted, should be used with extreme care and mainly for regulating natural monopoly industries and state-owned enterprises. Considering the many different views among Chinese scholars and foreign experts and the potential chilling impact on investment and innovation, the drafting group decided to exclude the essential facilities doctrine in the AML.

⁸⁸ See STATE COUNCIL OF CHINA, OUTLINE OF THE NATIONAL INTELLECTUAL PROPERTY STRATEGY (2008), available at http://www.wipo.int/wipolex/en/text.jsp?file_id=125982.

However, this did not end the debate. Individual enforcement agencies can have their own interpretation of the essential facilities doctrine. For example, when SAIC issued its rules in 2010 interpreting market dominance when conducting its administrative investigations, it listed refusals to allow access to essential facilities as anticompetitive conduct.⁸⁹ The language defining an essential facility is quite broad and vague.⁹⁰ As discussed above, in 2012 SAIC started thinking about broadly extending the application of this doctrine into the IPR field when drafting its rules about abusing dominance in IPR fields. This is a direction that lacks support from either legal or economic perspectives and is inconsistent with China's national strategy to promote innovation.

D. *The Balance Between IPR Policy and Antitrust Policy in China*

In the long run, IPR policies and competition policies share the same ultimate goals: to promote innovation and to improve consumer welfare. IPR policies advance these goals by providing firms and individuals with strengthened incentives to innovate. They do this by granting legally enforceable rights to control and, if their ideas prove to be valuable in the marketplace, profit from their creations. Competition policies advance the same goals by ensuring that companies compete with one another, thereby holding down prices and increasing consumer welfare. One of the most effective ways for a company to compete and earn higher profits is to innovate to make its products better, cheaper, and more desirable to consumers. Thus, while competition policy, which seeks to deter companies from the undue acquisition or exercise of monopoly power, and IPR policies, which grant an IPR owner exclusive rights to control the use of its IPR, may seem to be in conflict, such an argument lacks a long-term vision. Applying the essential facilities doctrine to the IPR field is likely to seriously chill incentives to innovate, and therefore runs counter to China's national strategy of protecting IPR and promoting innovation.

VI. CONCLUSION

The roots of the essential facilities doctrine extend back more than one hundred years. What constitutes an "essential facility" and whether such facilities even exist has been the subject of debate ever since. The current consensus maintains that the essential facilities doctrine should be applied only rarely and with extreme care.

⁸⁹ See STATE ADMIN. FOR INDUS. & COMMERCE OF CHINA, REGULATION CONCERNING PROHIBITION OF ABUSING MARKET DOMINANCE, at art. 4 (2011), available at http://www.saic.gov.cn/zwgk/zyfb/zjl/fld/201101/t20110104_103267.html.

⁹⁰ *Id.*

Modern economic theory suggests that in most cases refusals to deal are either competitively neutral or may even be competitively beneficial. Even when a monopolist refuses to share an essential facility with potential competitors, it is only under certain narrow circumstances that a refusal to deal could foreclose competition and result in anticompetitive harm.

Applying this doctrine to IPRs is particularly problematic. IPRs rarely meet the criteria of an essential facility, most importantly because there are often ways to work around the problem addressed by the IPR. Even if a particular IPR had no viable alternatives, though, the risk of reducing incentives to innovate or invest is substantial, and cautions strongly against applying the essential facilities doctrine to IPRs.

Over the past decade, Chinese individuals and corporations have greatly increased their creation and ownership of IPRs. The pattern in which Chinese companies are predominantly licensees who pay royalties to Western IPR holders is expected to change. Chinese policy should keep pace with these changes. Sustainable long-term economic growth and consumer welfare are best served by policies in which firms, both foreign and domestic, have adequate incentives to innovate. Accustomed to the old planned economy regime, some Chinese regulators may be tempted to foster short-term competition by mandating licensing through appeals to the essential facilities doctrine. For the many reasons discussed in this Article, this would be a dangerous path to take.

Adopting the highly controversial essential facilities doctrine when enforcing China's AML in the IPR field would have a significant chilling impact on innovation, and would create a negative environment for fostering domestic innovation, as well as harm Chinese business and consumers in the long run.