

Antitrust Regulation of SEP Abuse

— Notion, Classification and Suggestions

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Introduction

Over more than a decade, the number of standard-essential patent (SEP) cases has been on the rise globally. In particular, disputes over SEPs in the communications field involve enormous interests, and the antitrust regulation of the SEP abuse has attracted the attention from both theoretical and practical circles. The SEP abuse pertains to a subtype of intellectual property right abuse and demonstrates severer potential harm as “standard”, the factor with strong public attributes, is involved.¹ Hence, the rules for judging SEP abuse are quite complicated. The SEP abuse is subject to regulation mostly under the patent law, contract law, antitrust law, etc. in major jurisdictions. In terms of practical effects, the antitrust law has become an important means to regulate the SEP abuse. Effectively constraining the SEP abuse according to relevant provisions in the antitrust law and better balancing the interests between patent holders and standard implementers are major issues concerning the relationship between private rights and the public interest.

As a standard formulator and implementer in many fields around the world, China has actively participated in the global regulation of the SEP abuse and has accumulated experience in this regard. However, there are still several issues worthy of in-depth discussions as to how to regulate the SEP abuse under the antitrust laws. Based on the theoretical basis of the intervention in the SEP abuse by the antitrust law, this article clarifies the basic notion of regulation of SEP abuse by the antitrust law, probes into the classification of SEP abuse, and offers detailed suggestions on improved regulation of SEP abuse by the antitrust law in China.

I. Basic notion of regulation of SEP abuse by the antitrust law

Although major jurisdictions such as China, U.S. and European Union (EU) all recognize the application of antitrust law in SEP-related cases, different jurisdictions and even different courts within the same jurisdiction differ greatly in terms of the understanding of some crucial issues.² It is still necessary to clarify some basic notions in relation to regulation of SEP abuse by the antitrust law, such as theoretical basis for regulation of SEP abuse by the antitrust law and the relationship between SEP abuse and monopoly.

1. Theoretical basis for regulation of SEP abuse by the antitrust law

Restriction on rights can be divided into two modes: internal restriction and external restriction. The former deems that rights *per se* imply that rights shall be exercised for social purposes. On the premise of recognizing and safeguarding the inviolability of rights and the freedom to exercise rights, the latter restricts the inviolability of rights as appropriate by public law measures, and the freedom to exercise rights by the principles of, e.g., good faith, prohibition of right abuse, and public order and good morals in civil law.³ Accordingly, SEP abuse is restricted by the patent law, the basic principles of the civil law and the antitrust law that serves as a public law.

The legislative intent of the antitrust law is to prevent and prohibit monopoly, and protect fair market competition so as to safeguard consumer interest and the public interest.⁴ The restriction on SEP abuse by the antitrust law belongs to external restriction, that is, the right holders’ abuse of SEPs is regulated by the antitrust law only when it threatens

or disrupts the market competition order. Meanwhile, since the patent law and contract law restrict the SEP abuse from the perspective of private rights and hardly take account of the negative effects of SEP abuse on the market competition order and consumer welfare, the restriction on SEP abuse by the antitrust law is indispensable. Many scholars hold that regulating SEP abuse by the antitrust law is institutionally necessary and superior. Some scholars have adopted economic research methods to delve into patent hold-up⁵ in technology standardization, holding that patent hold-up will have adverse effects, such as distorting the normal market transaction mechanism, giving rise to high social costs, hindering the development of patented technology standardization and impeding the orderly competition in the market for standardized products. The intervention by the antitrust law is extremely necessary for effectively controlling patent hold-up in technology standardization.⁶ Some scholars believe that in comparison with the contract law and patent law, the antitrust law has its special advantages of regulating the pricing of SEPs. First, controversial issues in relation to privity of contract can be avoided. Second, the antitrust law is applicable on a broader scope. The governing law for the contract between the standard-setting organization and SEP holder may be a foreign law. However, foreign law ascertainment is cumbersome, time-consuming and uncertain in judicial procedures, whereas the antitrust law has an extraterritorial jurisdiction, which is an international convention. Third, the enforcement and judiciary of the antitrust law can be carried out simultaneously, and there are a variety of ways to regulate the pricing of SEPs.⁷

2. Abuse and monopoly of SEPs

The abuse of SEPs pertains to the abuse of private rights, i.e., the exercise of rights beyond the legal boundaries of rights and in violation of the legal purpose of establishing such rights.⁸ The abuse of SEPs can be demonstrated roughly in three forms: first, the refusal of license, or non-implementation or insufficient implementation of patents based on the absoluteness of rights; second, market conducts that eliminate or restrict competition based on the relativity of rights; and third, abuse of rules based on procedural rights.⁹ The most common situation is that the SEP holder deems that the standard implementer has infringed its patent and therefore submitted a request for injunction with the court, whereas the standard implementer believes that the SEP holder forced the standard implementer to accept its unreasonable licensing conditions by abusing its

patent right, which constitutes “abuse of market dominance” in antitrust law.

There is a complete set of constituent elements required for the identification of “abuse of market dominance”, which shall be analyzed on the basis of whether a specific conduct will have an effect of impairing or restricting market competition. The abuse of SEPs and the monopoly of SEPs are not on equal terms, but involved in a cross relation. The key to determine SEP abuse is that the exercise of rights exceeds specific “legal boundaries”, violates the purpose of establishing such rights, and may be detrimental to multiple legal interests. This explains why the SEP abuse is subject to several laws. The SEP abuse is subject to the antitrust law only when the SEP abuse exceeds the “legal boundaries” of the antitrust law and constitutes SEP monopoly. In addition, SEP monopoly includes monopoly status and monopoly conducts; however, SEP abuse falls into the category of “monopoly conducts” and does not involve monopoly status, which means although SEPs which form a structural monopoly under the network effect and lock-in effect may do damage to market competition, it does not lead to the abuse of SEPs.¹⁰ Hence, the regulation of the SEP abuse by the antitrust law mainly focuses on the situations where SEPs may constitute monopoly, especially where SEP holders abuse their market dominance.

II. Classification of SEP abuse under antitrust law

In view of the current antitrust legislation of various countries, the monopolistic conducts regulated by the antitrust law are mainly divided into three types: monopoly agreements among business operators; abuse of market dominance by business operators; and concentration of business operators that eliminates or restricts competition or might be eliminating or restricting competition.¹¹ Monopoly as a result of the SEP abuse does not constitute an independent type of monopolistic conducts. The monopolistic conducts that are commonly seen in practice are monopoly agreements and abuse of market dominance.

1. Monopoly agreements in relation to SEPs

According to the different relationships between business operators, the monopoly agreements in relation to SEPs can be divided into horizontal monopoly agreements, vertical monopoly agreements, and SEP monopolistic pooling agreements.

(1) Horizontal monopoly agreements

Horizontal monopoly agreements in relation to SEPs are formed among SEP holders in a competitive relationship and mainly manifested in the following forms: (a) joint restriction on R&D activities, wherein business operators may mutually restrict their current and subsequent R&D work either done on their own or with a third party, or blockade the R&D market by agreeing, in advance, on the ownership of subsequent R&D achievements in new fields;¹² (b) cross-licensing, which means that business operators mutually license their intellectual property rights, and such licensing restricts competition in downstream markets if it is exclusive or blockades the entry of a third party into the market; and (c) collusion in standard setting, such as jointly excluding other particular business operators or their technical solutions without justifiable reasons and agreeing not to implement other competitive standards.¹³

Since horizontal monopoly agreements are reached among SEP holders in a competitive relationship, directly weakening or eliminating competition among relevant SEP holders, strengthening their market power in relevant markets and meanwhile enhancing their control over downstream commodity or service market are seriously detrimental to market competition. Hence, the antitrust laws in various jurisdictions pay more attention to horizontal monopoly agreements.

(2) Vertical monopoly agreements

Vertical monopoly agreements in relation to SEPs are concluded between SEP holders and implementers and mainly manifested in the following forms: (a) exclusive and sole grant-back clauses, that is, the licensee of a patent only authorizes the licensor to exploit the improvements which are made on the basis of the patent, in such a way that the new improvements all go to the sole business operator, providing it with stronger market power and affecting the licensee's initiatives to make technological improvement; (b) no-challenge clause, that is, the licensor requires the licensee not to raise any objection or challenge to the validity of its patent in order to maintain its advantageous position in the relevant market; and (c) other collaborative conducts that restrict competition, such as restrictions on licensed areas, sales channels and quantities of goods.

Since vertical monopoly agreements are concluded between SEP holders and implementers, and have no direct bearings on the relevant SEP markets, the "reasonable analysis principle" is usually adopted for such agreements in

practice, that is, the specific conducts of both parties and the anti-competition effect of the agreement are evaluated on a case-by-case basis so as to decide whether such agreements should be regulated by the antitrust law.

(3) SEP monopolistic pooling agreements

SEP holders tend to manage their SEPs by means of patent pools¹⁴. In this mode, patent licensing is uniformly arranged by the patent pool organization after aggregating patents of its members so as to provide "one-stop" licensing service to standard implementers. The advantage of such a licensing mode can not only facilitate implementers' acquisition of licenses from different right holders, but also significantly reduce the patentees' costs for right protection and transaction. However, such a licensing mode boosts a "megamerger" of patent holders, and the members of the patent pool organization can eliminate or restrict competition by making agreements on, e.g., restriction of technology R&D, exchange of product price or output information, and market division.

In comparison with vertical monopoly agreements executed between SEP holders and implementers, the SEP monopolistic pooling agreements may lead to severe consequences of competition elimination and restriction: first, patent pool members themselves have strong market power because of their possession of SEPs, and patent pools collect SEPs for package license, which undoubtedly further enhances the licensor's advantage in negotiations and is likely to result in unfairly high license price; second, in comparison with an independent SEP holder, members of the patent pool have their interests bundled in the patent pool licensing mode, so that SEP holders are more likely to reach agreements that are in line with their common interests, but such agreements exist at the expense of the interests of implementers or consumers; and third, the SEP monopolistic pooling agreements are concealed in nature, members and business operators of the patent pool may hide their competition restricting conducts under the cloak of lawful pooling, such as market division, output restriction, product price restriction, high monopoly price and boycotting by means of patent pooling or patent licensing agreements.¹⁵

2. Abuse of market dominance in relation to SEPs

Due to the irreplaceability of SEPs in standards, there is no controversy over the delimitation of the SEP-related market and the identification of market dominance in practice. Nevertheless, the manifestations of and identifying criteria for the abuse of SEP holders' market dominance are quite

uncertain. This article divides abuse of market dominance into three types: violation of FRAND rules, tying and abuse of reliefs.

(1) Violation of FRAND rules

FRAND rules are commitments made by SEP holders to offer licenses to licensees on fair, reasonable and non-discriminatory (FRAND) terms when joining a standard-setting organization, which is required by the standard-setting organization in a bid to restrict SEP holders' abuse of market dominance.¹⁶ In practice, SEP holders' violation of FRAND commitments mainly includes incompliance of licensing conditions with the FRAND commitments and refusal to license SEPs.

One of the core controversies in SEP cases is whether SEP holders have proposed FRAND licensing conditions, and how to determine a reasonable rate is the hardest challenge. Charging an over-high royalty rate by a right holder by virtue of its advantageous position in negotiations shall constitute "abuse" in the sense of the antitrust law. For instance, in *Huawei v. IDC*, the Shenzhen Intermediate People's Court adopted the "comparable license approach", horizontally comparing the SEP licensing agreements executed between the patentee and Apple or Samsung, and determining that the IDC's royalty rate proposed to Huawei was at least 20 times higher than that to Apple or Samsung according to the product sales and patent royalties. Therefore, IDC's conduct is determined as "overpricing", which constituted abuse.¹⁷ The determination of "an excessively high royalty rate" and "a reasonable rate" involves various complicated factors and is still a hard nut to crack in judicial practice.

Another conduct in violation of the FRAND rule is the refusal to license SEPs. As required by the FRAND commitments, SEP holders are obliged to license their patents to all the implementers who are willing to accept the FRAND license conditions. If the implementer expresses its willingness to accept the license conditions but the SEP holder refuses to license the patent, the SEP holder's conduct constitutes abuse of rights and may violate the antitrust law. In *Federal Trade Commission (FTC) v. Qualcomm*, the Northern District of California found that Qualcomm's refusal of license or exclusive license violated the antitrust law: (a) Qualcomm refused to license its SEPs to rival chip manufacturers such as MediaTek, Samsung, Intel and HiSilicon unconditionally, which delayed or hindered the entry of those competitors into the relevant market; and (b) Qualcomm

provided Apple with substantial new incentive payments in exchange for Apple's *de facto* exclusive dealing arrangements for modems from Qualcomm, which led to the fact that Qualcomm's rivals like Intel could not cooperate with Apple for about three years.¹⁸ Although the U.S. Court of Appeals for the Ninth Circuit vacated the district court's judgment, its view that Qualcomm's refusal of license did not constitute monopoly has been widely criticized by the academic circle.¹⁹ The competitive harm of refusal of license is mainly reflected in the extent of blockade of markets against rivals and the impact on product price rise, namely, elevating the market access threshold by means of refusing to license a patent, or restricting consumers' right to choose in the form of exclusive transactions so as to increase its own product price.

(2) Tying

Tying may have the anti-competition effect and also the significant efficiency-enhancing and competition-promoting effect. When considering whether to regulate the tying arrangements, the Antitrust Guidelines for the Licensing of Intellectual Property require to take account of the following factors: (a) the seller has market power in the tying product, (b) the arrangement has an adverse effect on competition in the relevant market for the tying product or the tied product, and (c) efficiency justifications for the arrangement do not outweigh the anticompetitive effects.²⁰ One of the disputes over tying in SEP-related cases is related to the global royalty rate or the geographical scope of patent licensing. In *Unwired Planet International Ltd. v. Huawei and another*, it was the first time that the UK High Court has made a ruling on the global royalty rate for the SEP without a consensus reached between both parties,²¹ which provoked huge controversy. Another common SEP tying manner is to license non-SEPs, invalid patents and SEPs together as a package, or to declare the non-SEPs as SEPs for licensing. On account of the great number of SEPs whose information has to be disclosed, the standard-setting organizations do not review the authenticity and necessity of such declarations, and over-declarations will not have a negative impact on SEP holders. SEP holders can obtain extra licensing fees from over-declarations, which exacerbates the occurrence of over-declarations.

(3) Abuse of reliefs

In most SEP-related cases, the right holders request the court to determine the SEP infringement while filing a request for injunctive relief²² that requires the standard imple-

menter to stop manufacturing and selling relevant products. In some cases, to guarantee the effective enforcement of injunction, the SEP holder may also submit a request for an anti-suit injunction with the court to enjoin standard implementers from seeking judicial remedies from courts in other countries.²³ The standard implementers usually make a defense on the grounds that the SEP holder's request for injunction constitutes the abuse of market dominance. In this regard, the European Court of Justice established the "Huawei Rules" in *Huawei v. ZTE*²⁴, providing a set of specific processes that take the conducts of SEP holders and standard implementers during negotiations as the judging criteria.²⁵ The U.S. courts constrain the SEP holders' requests for injunction based on the injunctive relief rules established according to the equity law and the four-factor test for patent holder's permanent injunctive reliefs established in the *eBay* case²⁶. Instead of directly identifying the abuse of injunctive relief as the abuse of market dominance, Chinese courts take account of the potential impact of injunctions on market competition with reference to other factors. For instance, in *Huawei v. IDC*, the court denied Huawei's assertion that IDC's request for injunction was essentially a refusal of transaction, and found that the right holder abused its market dominance from the two aspects of over-high pricing and unreasonable tying, in conjunction of the comprehensive analysis of such factors as the purpose of the right holder for seeking an injunction, licensing conditions, and the impact of injunction on the parties concerned and market competition environment.²⁷

III. Suggestions on how to improve rules for antitrust regulation of the abuse of SEPs in China

From an international perspective, the antitrust regulation of SEP abuse is still under the exploration stage. In view of the domestic and foreign judicial practices and the Antitrust Guidelines in the Standard-Essential Patent Field (Draft for Comments) (hereinafter referred to as the Draft Antitrust Guidelines) released by the State Administration for Market Regulation in June 2023, this article is going to provide suggestions on how to improve rules for antitrust regulation of the abuse of SEPs in China.

1. To establish general principles for regulating the abuse of SEPs by antitrust law

(1) Principle of equal treatment

The principle of equal treatment means that SEPs and other tangible property rights are treated equally in the determination of whether the abuse of SEPs occurs, and the SEPs should neither be free from the regulation of the antitrust law due to the inherent monopolistic nature of patents, nor be particularly challenged by the antitrust law because the lawful monopoly may bring economic advantages to the right holders.

SEPs and other private property rights, all of which are property rights, are not essentially different and have fundamentally the same impact on competition. If the SEP is regarded as a "lawful monopoly" that is not subject to the antitrust law, it is equal to take a laissez-faire attitude towards the monopolistic consequences resulting from the abuse of SEPs. And, if SEPs are deemed to generate market power on their own and therefore the SEP holders must bear more obligations, the innovation-incentivizing function of the patent system may be weakened. However, in view of the specialties of SEPs and complexity and variability of the licensing market, the principle of equal treatment does not reject the consideration of various factors with respective characteristics in the assessment of the impact of the exercise of SEPs on market competition.

(2) Principle of classified regulation

The principle of classified regulation means that according to the specific manifestations of the abuse of SEPs and the restrictions thereof on competition, the restrictions of the exercise of the SEPs on competition are divided into three types: legal restrictions, illegal restrictions and restrictions examined under certain principles. Legal restrictions are generally exempt from examination and regulation under the antitrust law; illegal restrictions are generally subject to the antitrust law; and the legality of restrictions examined under certain principles should be comprehensively judged according to such factors as market accessibility, market share, degree of competition, and purposes and manners of conduct.

Judging from legislation and judicial practice, the principle of classified regulation has been widely adopted in jurisdictions such as the U.S., the EU and Japan.²⁸ As a legal monopolistic right, a patent restricts competition, which is largely tolerated by the antitrust law. However, where the patent's harm to competition exceeds its positive effect on innovation stimulation, the patent is subject to the antitrust law. The classification of restrictions on competition accord-

ing to different modes of conduct is conducive to determining whether the conduct violates the antitrust law more accurately.

(3) Principle of reasonable analysis

The principle of reasonable analysis means that some conduct, though having the competition-restricting effect, may have both advantages and disadvantages, so the legality of the conduct needs to be judged by considering whether the advantages outweigh the disadvantages, together with relevant factors. The determination of the abuse of SEPs and its harm to competition involves many issues, such as the ways to define a relevant market, the basis for judging market power, the competition between different standards and the specific manifestations of abuse. The SEPs play a vital and positive role in enhancing standards and quality, encouraging technological innovation, promoting consumer welfare, etc. and therefore it is necessary to weigh and reasonably analyze the advantages and disadvantages of SEPs' innovation-incentivizing and competition-restricting effects on a case-by-case basis, in a bid to better balance the interests between patent holders and the public.

2. To clarify the criteria for determining SEP monopoly agreements

(1) Classification of SEP monopoly agreements

Conventional monopoly agreements are divided into horizontal agreements and vertical agreements. In addition to these two types, the SEP monopoly agreements may also include SEP-participating or SEP-leading monopolistic pooling agreements, which should not be regulated by a simple rule, but by a specially formulated rule, as they may involve both horizontal agreements and vertical agreements. Therefore, the SEP monopoly agreements can be divided into three types, i. e., horizontal agreements, vertical agreements, and SEP monopolistic pooling agreements, for which regulatory rules should be established.

(2) Factors to be considered in the identification of SEP monopoly agreements

In addition to the four factors²⁹ of the monopoly agreements that may be formed in the process of standard formulation and implementation listed in the Draft Antitrust Guidelines, it is suggested to add another factor of "incorporating excessive optional competitive technical solutions into the standards for the same technical problem, without justifiable reasons". Standard formulators may collude to incorporate mutually replaceable technical solutions into the

same technical standard, and the standards are considered to be met only when the implementer achieves all the technical solutions. But as a matter of fact, the technical problem can be solved as long as any one of the technical solutions is realized. Resultingly, the implementer has to pay much more unnecessary costs for resolving a technical problem.

Moreover, as for patent monopolistic pooling agreements, in addition to the two circumstances listed in the Draft Antitrust Guidelines,³⁰ it is suggested to add the following two circumstances and make detailed analysis: (a) whether the patent pool operators and the SEP holders participating in the patent pool have actually licensed patents independently and separately, and whether they have colluded to coerce the implementers into accepting the royalty rate, for example, the patent pool operators provide monetary support for the lawsuits initiated by the SEP holders, or require the patent holders to cooperate with them by filing infringement lawsuits against the implementers while proposing license conditions to the implementers; and (b) selecting patent holders that can join the patent pool by setting unreasonable conditions, and enjoining patent holders that have made FRAND commitments from the entry into the patent pool.

3. To refine the methods for assessing the SEP holders' abuse of market dominance

(1) Methods for determining unfairly high royalty rates

It is quite complicated to judge whether the SEP holder's offer is fair and constitutes the abuse of market dominance. This article recommends that the following factors should be taken into comprehensive consideration in the determination of the unfairly high royalty rate: (a) whether the licensing parties have conducted the licensing negotiations in good faith; (b) whether the patent royalty is obviously higher than the comparable past patent royalty or royalty standards; (c) whether the royalty is applied beyond the geographical scope or product scope covered by SEPs, or whether the patentee's exercise of the right to request exceeds the statute of limitations; (d) whether the SEP holder charges the royalty for expired or invalid SEPs or non-SEPs; (e) whether the SEP holder reasonably adjusts the royalty based on such factors as the number of SEPs, the contribution of SEPs to standards, changes in geographical scope thereof, as well as the sales area and number of the implementers' products; (f) whether the SEP holder has charged the royalty repeatedly; and (g) the overall royalties paid on

standard-compliant products and the impact thereof on the normal development of a related industry.

(2) To clarify that SEP holders generally should not refuse to license their patents

In terms of SEP licensing, the SEP holder has made FRAND licensing commitments, and the implementer has invested in the manufacturing of relevant products due to its reliance on the commitments. According to the industry conventions, the value of an SEP will be truly reflected by the market feedback after the launch of the product into the market by the implementer for a period of time, and the patentee and the implementer will negotiate the patent royalty accordingly.³¹ Once the SEP holder refuses to license a patent at this time, the implementer will face extremely high up-front sunk costs and be forced to exit the relevant market, which will significantly impair competition. Thus, except implementers that are not willing to conduct good-faith negotiations, any implementer can obtain an SEP license, that is to say, the patentee should not refuse to license its patent.

Conclusion

The abuse of SEPs is subject to the patent law, contract law and antitrust law at different levels due to its complexity and the breadth of interests involved. Judging from the legislative purpose of the antitrust law and the harms to the society caused by the abuse of SEPs, the antitrust law inevitably regulates the abuse of SEPs. Specifying the notion of regulating the abuse of SEPs by the antitrust law and clarifying the methods for classified regulation of the abuse of SEPs by the antitrust law are of great theoretical significance and practical value in constructing specific rules for antitrust regulation of the abuse of SEPs. This article intends to get the ball rolling, in the hope that the rules for antitrust regulation of the abuse of SEPs will become increasingly mature with the development of practices and the deepening of research. ■

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³¹ SEPs have public characteristics and involve the public interest. Once

a technical standard is widely applied in an industry or becomes a national compulsory standard, products or services that do not meet the standards are not allowed to be launched into the market, which will directly affect the supply of goods or services and the consumer choice.

Wang Xiaoye (2015). On the antitrust lawsuits concerning standard essential patents. *China Legal Science*, 6.

² For instance, in *FTC v. Qualcomm* in 2020, the U.S. Court of Appeals for the Ninth Circuit vacated the district court's antitrust judgment and injunction against Qualcomm, holding that Qualcomm had no antitrust obligation to license its SEPs to rivals. *Federal Trade Commission v. Qualcomm Inc.*, 969 F.3d 974 (9th Cir. 2020).

³ Liang Huixing (1996). *General Theory to Civil Law* (pp. 251-252). Law Press·China.

⁴ Article 1 of the Antitrust Law of the People's Republic of China.

⁵ Patent hold-up occurs where an upstream patentee charges a royalty much higher than it could have reasonably obtained from a downstream user in the standard-patent combined context.

Carl Shapiro (2001). Navigating the patent thicket: Cross licenses, patent pools, and standard setting. *Innovation Policy and the Economy*, 1, 125.

⁶ Joseph Farrell, John Hayes, Carl Shapiro, and Theresa Sullivan (2007). Standard setting, patents and hold-up. *Antitrust Law Journal*, vol. 74, no. 3, 603-670, JSTOR. Retrieved from <http://www.jstor.org/stable/27897562>. Accessed 1 Feb. 2023.

⁷ Meng Yanbei and Jiang Zihan (2015). On antitrust regulation of SEP pricing. *Price Theory & Practice*, 2.

⁸ Zheng Yubo (1979). *General Principles of Civil Law* (p. 393). Taipei Sanmin Bookstore.

⁹ Yi Jiming (2013). The application of the principle of the prohibition of abuse of rights in the field of intellectual property. *China Legal Science*, 4.

¹⁰ Lv Mingyu (2009). The intellectual property monopoly calls for institutional innovation in antitrust law — Analysis from the perspective of knowledge economy. *China Legal Science*, 4.

¹¹ In addition to the three traditional monopoly modes, some countries (such as China) regulate the abuse of administrative power to eliminate or restrict competition. Since SEPs do not involve such a monopoly form in practice, it will not be discussed herein.

¹² Lv Mingyu (2013). *Legal Control of Intellectual Property Monopoly* (p. 274). Law Press·China.

¹³ For instance, in the Allied Tube case, a wiring and conduit manufacturer and other new members jointly established the safety standards for manufacturing equipment in a standards-setting conference, thereby rendering the products of their rivals unable to obtain a safety standards certificate.

Allied Tube & Conduit Corp. v. Indian Head, Inc., 486 U.S. 492, 500 (1988).

¹⁴ Patent pool is a combined operation mode or trade mechanism formed between two or more patent holders for sharing their patents or licensing a patent in a unified and centralized manner. For instance, Avanci, a well-known patent pool organization in the automotive field, has rapidly expanded since its establishment in 2016 and has attracted 50 patent holders to join.

¹⁵ Cui Guobin. Research on antitrust issues concerning patent pools. Retrieved from <https://www.ipeconomy.cn/pdf/220418.pdf>.

¹⁶ Kyle L. Greene (2019). Standard essential patents and antitrust law: Balancing innovation and competition. *Columbia Business Law Review*.

¹⁷ The Intellectual Property Tribunal of Guangdong High Court (2020). *Research on Legal Issues Concerning Standard Essential Patents in Communications Field* (p.212). Intellectual Property Publishing House.

¹⁸ *FTC v. Qualcomm, Inc.*, 2019 WL 2206013 (N.D. Cal. 21 May 2019).

¹⁹ The U.S. Court of Appeals for the Ninth Circuit vacated the district court's antitrust judgment. See *Qualcomm, Inc. v. FTC*, 2020 WL 4591476 (9th Cir. 11 Aug. 2020).

Herbert Hovenkamp (2020). FRAND and Antitrust. 105 *Cornell Law Review* 1683.

²⁰ Department of Justice/Federal Trade Commission (12 January 2017). Antitrust Guidelines for the Licensing of Intellectual Property. Retrieved from https://www.ftc.gov/system/files/documents/public_statements/1049793/ip_guidelines_2017.pdf.

²¹ *Unwired Planet International Ltd v. Huawei Technologies Co. Ltd & Anor* (Rev 2) [2017] EWHC 2988 (Pat).

²² Injunctive relief is a remedy in the equity law, in which a court prohibits an individual or group from performing a certain conduct by issuing an injunction. A similar concept in the Chinese legal context is the prohibition of infringement, which is generally achieved by applying for behavior preservation.

²³ For instance, in *Conversant v. ZTE* in 2017, Conversant argued that ZTE's lawsuit filed in China to determine the FRAND royalty rate interfered with the litigation efficiency and judgments of the relevant cases in the UK, and therefore filed a request for an anti-suit injunction, which was supported by the court. Eventually, ZTE reached a settlement with Conversant due to the anti-suit injunction.

²⁴ *Huawei v. ZTE*, CJEU, C-170/13, 2015.

²⁵ The "Huawei Rules" stipulate that the SEP holder's request for an injunction will not constitute the abuse of market dominance under the following circumstances: (1) before filing a lawsuit, the right holder sends a warning to the infringer clearly informing the latter of the infringed SEP and specific infringement manners; (2) after the infringer expresses its willingness to sign a FRAND license agreement, the right holder should make a specific FRAND offer in writing, which clearly indicates the royalty rate and the calculation methods; (3) after receiving the offer, the infringer makes no diligent response according to industry conventions and the principle of good faith (or especially adopts a delay tactic), but continues to commit infringement; and (4)

during negotiations, the standard implementer can reserve the right to raise objections to the validity of the SEP, necessity and whether infringement occurs, which will not affect the determination of the abuse of market dominance.

Wei Lizhou (2015). Regulation of injunctive relief in disputes related to standard essential patents under antitrust law: CJEU's preliminary ruling on *Huawei v. ZTE* and beyond. *Global Law Review*, 6.

²⁶ The four-factor test in the *eBay* case requires a plaintiff to demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law are inadequate to compensate for that injury; (3) that considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction. See *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 126 S. Ct. 1837, 164 L. Ed. 2d 641 (2006).

²⁷ See supra note 17, p. 208.

²⁸ For example, the U.S. divides intellectual property licenses into three categories: *per se* illegality, judgment on legality under a rule-of-reason analysis and safety zone (legality); Japan divides the competition-restricting clauses in the technology license agreements into "black list", "grey list" and "white list"; and the EU divides the technology transfer agreements into three categories based on their different effects on competition: exemption subject to special restrictions, individual exemption, batch exemption.

Lv Mingyu (2015). *Competition Law Textbook* (p.185). China Renmin University Press.

²⁹ The four factors in the Draft Antitrust Guidelines are enumerated as follows: whether the other specific operator is excluded from participating in standard setting without justifiable reasons; whether the relevant solution of the other specific operator is excluded without justifiable reasons; whether there is an agreement to not implement other competitive standards without justifiable reasons; and whether the specific standard implementer is restricted from performing standard-implementing activities such as testing or certifying based on standards without justifiable reasons. See Article 8 of the Draft Antitrust Guidelines.

³⁰ Article 9 of the Draft Antitrust Guidelines stipulates that: "generally speaking, patent pool can reduce licensing and other transaction costs, improve licensing efficiency and stability of standard implementation, and have the effect of promoting competition. However, different SEP holders may make use of patent pools to reach monopoly agreements so as to exclude or restrict competition. The following circumstances may be considered for specific analysis: (1) whether patent pool is utilized to exchange sensitive information in relation to competition such as price, output and market division; and (2) whether the SEP royalty rate is fixed or changed".

³¹ In practice concerning SEP licensing, the approach of "use before negotiations" is usually adopted in order to expand the influence of the standard and determine the FRAND rate according to market feedback. Wei Lizhou (2015). Regulation of injunctive relief in disputes related to standard essential patents under antitrust law: CJEU's preliminary ruling on *Huawei v. ZTE* and beyond. *Global Law Review*, 6, 98.