



## Featured Article

# Considerations for Determining Technical Contribution Rate in Patent Infringement Damage Calculation in China

In recent years, the protection of intellectual property rights has been continuously strengthened in Chinese judicial practice, particularly in the fields of next-generation information technology, high-end equipment, biomedicine, new materials, and other strategic industries. The continuous improvement of intellectual property infringement compensation standards and the punitive damages system has provided clearer adjudication standards for precise calculation of tort damage and determination of punitive compensation, leading to a significant increase in awarded compensation amounts in intellectual property infringement cases.

Among the technical intellectual property appeal cases adjudicated by the Intellectual Property Court of the Supreme People's Court, the number and proportion of cases involving strategic emerging industries have increased annually, reaching 1,233 cases in 2024, accounting for 32.3% of the total. Additionally, punitive damages were applied to 460 cases involving severe malicious infringement, marking a 44.2% year-on-year increase. Notably, in the "New Energy Vehicle Chassis" trade secret infringement case, punitive damages of CNY640,000,000 were awarded, setting a record high for domestic intellectual property infringement lawsuit compensation<sup>1</sup>.

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1. 2024 Work Report of the Supreme People's Court, released on March 8, 2025, at the Third Session of the 14<sup>th</sup> National People's Congress.

Chinese intellectual property legal system does not contain explicit provisions regarding the "technical contribution rate." However, with increasing attention in judicial practice to the refinement of damage compensation considerations and the precise calculation of reasonable compensation amounts, the "technical contribution rate" (also referred to as technology contribution, patent contribution, or contribution rate) has gradually become an important reference factor for courts when determining the amount of infringement compensation at their discretion. However, determining the technical contribution rate as objectively and reasonably as possible remains a complex issue in infringement litigation.

This article, starting from two typical cases adjudicated by the Supreme People's Court, aims to further explore how to scientifically incorporate the technical contribution rate into the calculation of tort damages and clarify the primary factors influencing its determination.

## I. General Methods for Calculating Infringement Damage Compensation

According to Article 71<sup>2</sup> of the Patent Law, when determining the amount of compensation for patent infringement, the calculation generally follows this order: the actual losses suffered by the rights holder due to the infringement, the profits

obtained by the infringer from the infringement (hereinafter referred to as "infringement profit"), a reasonable multiple of the licensing fee, and statutory compensation.

In judicial practice, statutory compensation is applied most frequently. In such cases, courts comprehensively consider factors such as the type of patent involved, the price and sales volume of the

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2. Article 71 of the Patent Law prescribes: "The damages for a patent infringement shall be determined according to the actual loss suffered by the right holder due to the infringement or the benefits obtained by the infringer from the infringement; or if it is difficult to determine the loss suffered by the right holder or the benefits obtained by the infringer, the damages shall be reasonably determined by reference to the multiple of the royalty for this patent. In the case of an intentional patent infringement with serious circumstances, the damages may be determined as not less than one nor more than five times the amount determined in the aforesaid method. Where it is difficult to determine the loss suffered by the right holder, the benefits obtained by the infringer, and the patent royalty, the people's court

may, by taking into account factors such as the type of the patent and the nature and circumstances of the infringement, determine the damages as not less than 30,000 yuan nor more than five million yuan. The damages shall also include the reasonable disbursements of the right holder for preventing the infringement. Where the right holder has made best efforts to adduce evidence but the account books and materials relating to the infringement are mainly in the possession of the infringer, in order to determine the damages, the people's court may order the infringer to provide such account books and materials; and if the infringer fails to provide them or provides any false ones, the people's court may award damages by reference to the claims of and the evidence provided by the right holder."

allegedly infringing product, the nature and severity of the infringement, and the reasonable expenses incurred in rights protection to determine the compensation amount. Typically, the technical contribution rate may be briefly mentioned or even disregarded entirely.

Infringement profit is also frequently used for the determination of compensation. According to Article 14, Paragraph 1 of the Several Provisions of the Supreme People's Court on Issues concerning the Application of Law in the Trial of Cases on Patent Disputes, "the actual loss of the patentee due to the infringement as prescribed in Article 65 of the Patent Law may be calculated by multiplying the total amount of the decreased sales of the patentee's patented products due to the infringement by the reasonable profit of each patented product. Where it is difficult to determine the total amount of the decreased sales of the patentee, the product of multiplying the total amount of the infringing products sold on the market by the reasonable profit of each patented product may be deemed as the actual loss of the patentee due to the infringement. The benefits obtained by the infringer from the infringement as prescribed in Article 65 of the Patent Law may be calculated according to the product of multiplying the total amount of that infringing product sold on the market by the reasonable profit of each infringing product. Generally, the benefits obtained by the infringer from the infringement are calculated according to the business profits of the infringer, as to the infringer that

depends on infringement as his or her job, the loss may be calculated according to the sales profits."

Article 16 of the Interpretation of the Supreme People's Court on Several Issues Concerning the Application of Law in the Trial of Patent Infringement Disputes stipulates: "When the people's court determines the benefits which an infringer has acquired from the infringement in accordance with paragraph 1 of Article 65 of the Patent Law, such benefits shall be limited to those acquired by an infringer from the patent infringement; and benefits arising from other rights shall be reasonably deducted. Where a product which infringes an invention or utility model patent is a part or component of another product, the people's court shall reasonably determine the amount of compensation according to the intrinsic value of the component itself and its role in contributing to the profit of the finished product. If the product infringing a design patent right is packaging, the people's court shall reasonably determine the amount of compensation based on factors such as the intrinsic value of the packaging itself and its role in contributing to the profit of the packaged product."

According to the above provisions, the general calculation method of infringement profit is as follows: Infringement Profit = Product Sales Revenue × Profit Margin × Technical Contribution Rate of the Patent Involved<sup>3</sup>.

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3. Ren Peng, Thirty-Six Strategies for Patent Infringement Defense, published on November 4, 2022, on the WeChat

public account "IP Power".

In judicial practice, the "technical contribution rate of the patented technology involved" is generally understood as the proportion of profit attributable to the patented technology in the final product<sup>4</sup>. However, it is not a mandatory factor in determining compensation amounts. Courts usually consider various factors, including the product's function and purpose, the technical or market value of the patent, the impact of other rights or brands associated with the product, and non-technical factors such as goodwill, when assessing the technical contribution rate. In most cases, no explicit calculation method is provided. Therefore, in specific judicial practice, there remains a lack of a clear and standardized approach to determining the "technical contribution rate."

## II. Analysis of Typical Cases

In the following section, the author will further explain how to consider the technical contribution rate in determining the amount of compensation in judicial practice by combining two typical cases of the Supreme People's Court.

### Case I: (2021) Supreme People's Court Civil Final Judgment No. 1009

The accused infringing product is an aseptic state indicator bottle named an

ultra-fast biological indicator, primarily composed of a shell, an ampoule, a culture solution, and a biologically active source. The involved patent relates to a biological sterilization indicator that eliminates air resistance by means of a dual independent fluid path design including a first fluid path and a second fluid path, thereby enhancing the detection efficiency.

The right holder (3M Company) alleged that the accused infringer (a Shandong-based company) had infringed three of its patents, including the involved patent. These three patents cover the entire structure and appearance of the accused infringing product. 3M asserted that the combined technical contribution rate of these patents to the product should be 100%, with the involved patent accounting for 40% of the overall patent value.

After trial, the court of first instance found that the infringement was established; and found that the accused infringer refused to submit financial data without justifiable reasons within the period specified by the court, which constituted an obstacle to evidence, and thus presumed that the claim of the right holder was established, and fully supported his claim to compensate for economic losses of CNY4,000,000.

During the second trial, the accused infringer submitted additional evidence, including outbound warehouse records for

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<sup>4</sup> (2024) Supreme People's Court IP Civil Final Judgment No. 670.

the product shell, an annual report to substantiate its profit margin, and documents related to patent contribution rates. The accused infringer argued that the involved patent contributed less than 8% to the overall value of the product, citing the following reasons: The patent only covered the shell structure of the product, and supply contracts and invoices indicated that the shell accounted for no more than 20% of the total product price; its own patent and the instruction manual for the biological indicator device showed that the product required an additional reading device for operation; three other patents were presented as evidence that the product incorporated multiple patented technologies; a certification from the Trademark Office recognizing one of its trademarks as well-known was submitted to argue that the product's profitability was partially driven by brand management and specialized marketing. Later, the accused infringer proposed a revised method for calculating the patent contribution rate, using cost proportions. It calculated that the manufacturing cost of the shell accounted for an average of 17.6% of the total product cost. Based on this, it argued that this percentage represented the contribution of the patented technology in the final product. By multiplying this 17.6% by the 40% share of the patent's value among the three asserted patents, it concluded that the patent's contribution to the accused infringing product was 7.04%.

The Supreme People's Court (as the Court of Second Instance) upheld the damages

calculation based on the infringer's operating profit. Regarding the technical contribution rate, the court adopted a perspective different from that of the accused infringer. It stated that "the determination of the technical contribution rate of the involved patent should primarily consider the role of the patented technology in the overall value of the accused infringing product." Specifically, the court noted that the core inventive concept of the patent lies in improving the efficiency of biological sterilization indicators through the design of two independent fluid channels; the term "ultra-fast" in the product's name aligned with the patent's inventive purpose; compared to the company's similar products that did not feature "ultra-fast" in their names, the accused infringing product had a significantly higher price. Given these factors, the court found no clear reason to dispute the right holder's claim that the patent contributed 40% to the product's value. Ultimately, the court upheld the damages awarded in the first-instance ruling.

#### **Case II: (2022) Supreme People's Court IP Civil Final Judgment No. 1226**

The patent involved in the case relates to a V-BY-ONE signal processing method and device. In the invention patent infringement dispute case, the right holder believed that the SG607S and SG245 product combination manufactured and sold by the alleged infringer infringed its patent right. As for the amount of damages,



the calculation formula claimed by the right holder was the sales volume of the accused infringing product multiplied by the reasonable profit of each patented product, and the total amount of compensation claimed was CNY10,000,000.

The alleged infringer admitted that it had produced and sold a total of 260 sets of SG607 + SG245 (equipped with one or more units). According to the confirmation of both parties, the court of first instance confirmed that the quantity of the alleged infringing products was 260 sets.

According to judicial practice, there were two methods to calculate the "reasonable profit of each patented product": one was to determine it by multiplying the unit price of the smallest salable patented implementation unit by the profit margin and the contribution rate of the patented technology; the other was to determine it by multiplying the price of the entire product carrying the patent right (the total market value) by the profit margin and the contribution ratio of the patented technology to the incremental value of the patented product.

The right holder alleged that the accused infringing product included SG607 and SG245 integrated through the upper computer operation interface, which was integral and constituted a set of module signal detecting system, and the involved patent related to the core technology of the entire signal detecting system and contributed at least 80% to the product's

profit. The accused infringer held that SG607 and SG245 were merely a part of the entire product, contributing approximately 2% to 3% to the price of the entire equipment, the product price of the entire signal detecting system cannot be taken as the unit price of the accused infringing product, and the smallest salable unit was the patented component (i.e., only the unit price of SG245) which should be used as the basis for calculating damages.

The court of first instance held that the technical solution of the involved patent encompassed not only the technical solution of the product device but also the technical solution of the implementation method. Although the directly referred product was merely a part of the entire signal detecting system, the patented technology played a substantial role in the market demand for the entire signal detecting system. Meanwhile, the patented component collaborated with other components, with software and hardware interconnected, to jointly achieve the technical function of image detection. In the absence of contrary evidence submitted by the alleged infringer to prove that the involved patented technology did not make a substantial contribution to the market demand of the entire product, the principle of full market value should be applied, that is, the calculation basis for damages should be the sales unit price of the patented product of the entire signal detection system, and the reasonable profit of each patented product should be

calculated as "unit price of the patented product  $\times$  profit rate of the patented product  $\times$  technical contribution rate of the patented technology".

Regarding the contribution rate of the involved patented technology to the overall product value, the court of first instance determined the contribution rate in two steps: firstly, based on the number of signals supported by the product, the benchmark contribution rate of each signal in achieving the overall product profit was estimated. Both the patented product and the alleged infringing product in this case could support three types of signal detection, including LVDS, V-BY-ONE, and DP (eDP). The patented technology in this case involved the V-BY-ONE signal detecting method among the three signals. Without evaluating the value of each signal detection method, it was presumed that each signal accounts for one-third of the proportion to determine the benchmark contribution rate (33.3%) of a single signal detection method in achieving the overall product profit. Secondly, the comprehensive factor analysis method was applied to correct the benchmark contribution rate estimated in the first step. The patent in this case was an invention patent, including a method and a product, and the remaining patent term was relatively long, the patented technology had a higher degree of innovation, and the patented technology had obvious technical advantages and technical effects compared with the prior art. The whole product had strong

profitability due to the patented technology, and the market demand for LVDS signals among the three signals was very small. The alleged infringer used the patented technology in certain applications. With those considerations taken into account, it could be determined that the contribution of the patented technology involved in the case should be greater in achieving the overall profit of the product, which should be higher than the other two signal detection methods, so the weight of the contribution rate of the patented technology in this case should be increased on the basis of the benchmark contribution rate. Finally, the court of first instance comprehensively measured all elements and determined that the contribution rate of the patented technology involved in the realization of the profit of the patented product was 55%, and the actual loss of the right holder due to the infringement was CNY6,397,000. The court of second instance fully upheld the amount of compensation determined by the judgment of first instance.

### III. Case Insights

Although the technical contribution rate is only one of many factors that courts may consider when determining or assessing damages, its application and quantification standards are expected to become clearer as Chinese courts continue refining the calculation of infringement damages and issuing relevant guiding cases.

In judicial practice, when calculating infringement damages, the determination of the technical contribution rate typically considers the following factors: the type of patent involved; the inherent value of the involved product; the relevance and independence of the infringing product's function in relation to other components of the entire product; the scope of products utilizing the patented technology; non-technical factors such as branding and marketing services; whether the infringing product incorporates other types of rights; and whether the accused infringer has obstructed evidence submission<sup>5</sup>.

Reasonable determination of the technical contribution rate helps align intellectual property protection with the consequences and impact of infringement. Based on relevant judicial cases, particular attention could be paid to the following aspects in practical application:

a. Regarding the contribution rate of the patents involved in generating profits, the right holder or the accused infringer must present sufficient evidence from a market perspective, avoiding mere claims without proof and, more importantly, preventing adverse consequences due to obstruction of evidence. In the above-mentioned Case II, the accused infringer asserted a contribution rate of 2%-3% but failed to submit any supporting evidence, leading the court of first instance to reject his claim. The right holder could demonstrate that

the involved patent pertains to key and core components of the infringing product, involves a high degree of technological innovation, or is irreplaceable. This can be substantiated through patent specifications, sales contracts, audit reports, etc., to establish the patent's critical role in product performance and profitability. The infringer may present evidence from the perspective of the influence of factors other than the involved patent (such as trademarks, other important patents) on the realization of product profits, or from the perspectives of brand premium, sales channels, and supporting technologies, to claim a reduction in the contribution rate of the patent.

b. It is crucial to determine whether compensation should be calculated based on the "smallest salable unit" principle or the "entire market value rule." When the patented technology plays a decisive role in driving market demand for the overall product, the entire market value rule can be applied, ensuring that compensation is calculated based on the full product value rather than underestimating the patent's contribution. In practice, the applicability of the entire market value rule can be assessed with reference to Case II: on the one hand, if the patentee can prove that the patented invention is the primary driver of market demand for the entire product, then even if the patent's technical scope covers only a specific component, the

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5.Cai Wei, "Application of 'Patent Contribution Rate' in Determining the Amount of Compensation for Patent

Infringement", People's Judicature, 2024, vol. 21: 49-52, 72.



patentee may still claim damages based on the entire market value of the product; on the other hand, if the patented invention works together with other key components as a functional unit and is sold as a whole product, then the entire market value rule can still apply, even if the patented part isn't physically connected to the others.

c. The core technological contribution is crucial when determining the contribution rate. If the patented technology plays a decisive role in the product's functionality and directly drives market demand, the court may support a higher contribution rate. When determining the technical contribution rate, it is important to carefully analyze the invention concept of the patent involved and the technological effects it achieves, to clarify whether the patented technology plays a decisive role in the product's functionality. Additionally, the market premium caused by the patented technology is positively correlated with the contribution rate. For example, in Case I, the price of the infringing product (CNY44-80 per unit) was significantly higher than that of similar non-patented products (CNY12-27 per unit). This price difference, resulting from the patent's technological contribution, can

serve as an important basis for determining the contribution rate.

d. The right holder should strengthen the evidence of technological value. The right holder should focus on submitting evidence that demonstrates the patent's contribution to product functionality improvement and enhanced market competitiveness (such as technical comparison analysis, promotional materials, user feedback, etc.), rather than merely relying on the proportion of the components to claim the contribution rate. In practice, industry profit margin reports and similar case precedents can be submitted to assist the court in reasonably quantifying the contribution rate.

In conclusion, determining the technical contribution rate requires balancing the technological substance with market logic. One must avoid the mechanical thinking of determining contributions based solely on physical proportions and remain cautious of overly relying on subjective discretion. It is hoped that in future judicial practice, the recognition of technical contribution rate can be further unified through the improvement of standardized judgment rules and more detailed evidence rule.

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