

The Fourth Amendment of Chinese Patent Law and Discussion on its Practical Effects

LING FENG* & XIANG YU**

*School of Economics, Management and Law of Hubei Normal University, Huangshi, Hubei Province, China.

**Sino-European Institute for Intellectual Property and School of Management, Huazhong University of Science & Technology, Wuhan, China. Email: yuxiang@hust.edu.cn

Through comparative study, case and data analysis, this article summarizes the key points of the fourth amendment of Chinese Patent Law, and analyses the expected practical significance. Meanwhile, this article also discusses the shortcomings of the new patent law after the fourth amendment, and puts forward some suggestions for further improvement and refinement. The purpose of the fourth amendment of Chinese Patent Law is mainly to make the Chinese patent system more in line with the current technological and economic development in China as well as international cooperative innovation. The core points of the fourth amendment include: (1) strengthening patent enforcement by adopting punitive damages to intentional patent infringement, and increasing the patent protection duration extension for new pharmaceuticals, etc. (2) Promoting patent implementation by adding ‘Open Licence’ rules and improving employees’ invention regulations; (3) Improving design patent protection by expending protection duration and adopting protection for partial designs. (4) Increasing the provisions about the grace period for patent filings of inventions related to public interests. The new Patent Law 2020 will gradually show its significant practical effects. At the same time, however, there are still some regulations that need to be further clarified and refined for ensuring better implementation of the new law.

Introduction

The first draft of the Fourth Revised Chinese Patent Law was submitted to the Chinese State Council for review in January 2014. After multiple rounds of discussion and review, the fourth amended Chinese Patent Law was finally approved and enacted on 17 October 2020 by the Standing Committee of the National People's Congress of China. The newly amended Chinese Patent Law 2020 came into force on 1 June 2021.

The fourth amendment of the Chinese Patent Law mainly focused on some difficult problems that needed to be improved during the implementation of the Patent Law of 2008, to make the Chinese patent system more in line with the current technological and economic development in China as well as international cooperative innovation.

The core points of the fourth amendment include: (1) Strengthening patent enforcement by adopting punitive damages to intentional patent infringement, improving the burden of proof on patent infringement, strengthening patent administrative execution, and increasing the patent protection duration extension for pharmaceuticals. (2) Promoting patent implementation by adding 'Open Licence' rules and improving employees' invention regulations; (3) Improving design patent protection by adopting protection for partial design, extending protection duration of design patent. (4) Expanding patent-related public service by increasing the provisions about the grace period for patent filings of inventions related to public interests, providing a patent information service.

The fourth amendment of Chinese Patent Law will gradually show its significant effects on patent-related practice, including strengthening patent protection, promoting patent implementation, improving patent examination, encouraging earlier disclosure of inventions related to public interests, etc.

At the same time, however, there are still some regulations that need to be further clarified and refined for ensuring better implementation of the new law.

Main Points of the Fourth Amendment of Chinese Patent Law

Strengthening Patent Enforcement

Increased Damages to Serious Intentional Patent Infringement

The former Chinese Patent Law 2008 adopted the principle of compensatory damages for patent infringement. It means that the compensation paid by the infringer(s) shall be limited only to the actual loss due to the infringement act, which made it difficult to curb patent infringement actions.

Therefore, the introduction of the principle of punitive damages into Chinese Patent Law had already been discussed for more than 10 years in China, and was finally realized in the fourth amendment of the patent law. According to the newly amended Article 71(1) of the Chinese Patent Law 2020, for serious intentional patent infringement, the amount of compensation for damage should be one to five times

the amount of ‘the actual loss suffered by the right holder due to the infringement’ or ‘benefits obtained by the infringer from the infringement’ or a reasonable multiple of the royalty for the patent. Meanwhile, according to the newly amended Article 71(2), the ‘statutory compensation’ is also increased from RMB 10,000 to 1 million Yuan to RMB 30,000 to 5 million Yuan.

Improved Regulation about Burden of Proof on Patent Infringement

According to Article 65 of the Patent Law 2008, the amount of compensation for patent infringement should be determined in the following order of priorities, namely ‘the actual loss suffered by the right holder due to the infringement’, ‘benefits obtained by the infringer from the infringement’, ‘a reasonable multiple of the royalty for such patent’ and ‘statutory compensation’. Since it is usually difficult for the patentees to obtain evidence of the ‘actual loss’ or the ‘illegal benefits’, and there is also no reference amount of royalty for many cases, the ‘statutory compensation’ is therefore the most common legal basis to determine the amount of compensation in patent infringement litigation. In addition, applying the principle of compensatory damages in the judicial practice can easily lead to high protection costs for the patentees and low tort cost for the infringers. ‘Win lawsuit, lose money’ was a common situation for patentees in patent infringement litigation cases in China.

To change the situation of universal application of ‘statutory compensation’ caused by ‘difficult evidence’, Article 71(4) of the Chinese Patent Law 2020 provides that, in order to determine the amount of compensation for the damage, the court may order an infringer to provide the account books and materials related to the infringement, which are mainly in the possession of the infringer, if the rights holder has already made an effort to adduce evidence. Where the infringer refuses to provide or provides false account books and materials, the court may refer to the claims and evidences provided by the right holder to determine the amount of compensation for damage.

Strengthen Patent Administrative Enforcement

Patent administrative protection consists of handling patent infringement disputes as well as investigating and inspecting the suspected acts and products of passing off a patent. It is one of the characteristics of the Chinese patent protection system and plays an important role in protecting the legitimate rights and interests of patentees as well as the order of the market. Compared with judicial protection, higher efficiency is the greatest advantage of the patent administrative protection. Therefore, the demand for administrative protection of patentees is increasing in China. However, lacking the investigating authority limited the administrative departments for patent affairs to handle patent infringement disputes under Patent Law 2008. This issue is resolved to a certain extent by the Patent Law 2020 Article 69(2).

In addition, New Article 70 of the Patent Law 2020 strengthens the authority of the patent administration department under the State Council and the administrative

authorities for patent affairs under local people's governments in handling patent infringement disputes. Article 70(1) regulates that the patent administration department under the State Council may handle a patent infringement dispute which has significant impact nationwide upon the request of a patentee or the interested parties. And Article 70(2) regulates that the administrative authorities for patent affairs under local people's governments can handle local patent infringement disputes for the same patent as a cases group, and may request the administrative department for patent affairs under the local people's government at a higher level to handle cases of trans-regional infringement to the same patent right.

Patent Duration Extension for Pharmaceuticals

The patent duration extension for pharmaceuticals has been implemented in the United States, Japan and many European countries for many years (Fan Una 2015). For better encouraging pharmaceutical innovation, in the newly amended Chinese Patent Law 2020, Article 42(3) provides:

In order to compensate for the duration occupied by the new drug marketing review and approval process, for an invention patent of a new drug which has obtained marketing authorization in China, the patent administration department under the State Council may, upon the request of the patentee, grant a compensation period for the duration of patent right. The compensation period shall not exceed five years, and the total effective duration of the patent right after the marketing of the new drug shall not exceed 14 years.^a

Promoting Patent Implementation

Improving Employees' Invention Regulation

For a long time, how to improve the employees' invention system was an important but controversial issue in China. The key requirement is establishing a system to stimulate the innovation enthusiasm of the inventors for employees' inventions and harmonizing the interests between inventors and their employers or institutions.

For changing the current situation of a low patent implementation rate in universities and research institutes, etc., optimizing employees' patents regulation was a very important issue during the fourth amendment of the Chinese Patent Law.

Property rights incentives are taken as tools in Patent Law 2020 to encourage inventors actively committed to employees' invention patent implementation and transference. Based on the Law on Promoting the Transformation of Scientific and Technological Achievements, which is called the 'Chinese Bayh-dole Act', Article 6(1) of Patent Law 2020 further defines that an institution may dispose its right for applying for a patent for an employees' invention-creation and the patent right thereof in accordance with the laws. Moreover, the newly added regulation in Article 15(2) states that an institution which has been granted a patent right is

encouraged to promote patent implementation by implementing property right incentives measures, such as equity distribution, options, share-out bonuses, etc., to the inventors or designers of the employees' patents.

Adding 'Open Licence' Rules

For the purpose of better encouraging patent implementation and facilitating the negotiation for patent licensing, the Patent Law 2020 newly added the 'Open licence' approach in Articles 50–52.

Article 50(1) and 50(2) regulate:

A patentee shall, of his/its own free will, submit to the administrative department for patent under the State Council, declare its willingness to license any entity or individual exploiting his/its patent technology with a certain royalty and the payment method and standard. The administrative department will make an announcement to the public for implementing the opening license. Where such a declaration would be made for patent of utility model or patent of design, an evaluation report on the patent right shall be provided.

Where the patentee wants to withdraw his open license declaration, he shall submit a writing application to the administrative department for patent under the State Council and to be announced by the administrative department to the public. The validity of the prior open license(s) shall not be affected by the withdrawal.^b

Article 51 regulates

Where any entity or individual has the intention to implement the patent under an open license, it/he shall notify the patentee in writing, and upon payment of the license fee in accordance with the published method and standards, obtain the license for implementing the patent.

During the implementation of the open license, the annual patent fee paid by the patentee shall be reduced or exempted accordingly. The patentee exercising an open license may, after consultation with the licensee on the patent royalty, grant a non-exclusive license, but may not grant an exclusive or sole license with respect to the patent.^c

Improving Design Patent Protection

Adding Protection for Partial Design

Partial designs have gradually become an important part of the product design, that's why partial product appearance design is protected in many countries, including Japan and Korea. The so-called partial design refers to a design that consists of shapes, patterns and/or positional relationships of one part of a product, but not designs made for the components of a product. Partial design is always taken as

an integral part of a product, such as a design of a mobile phone screen, decorative leathers on a sneaker, or a design of a cup handle.

Under Chinese Patent Law 2008, only a design of overall product appearance or a component of a product as an independent piece can be protected. However, a partial appearance design of a product is also easy to imitate by competitors through simple patchwork or substitution. To encourage the development of design innovation industry, a new design of the whole or part of a product is incorporated into the scope of design patent protection according to the regulation in Article 2(4) of the Patent Law 2020.

Adding Domestic Priority for Design Patents Application

With the increase of the partial design patent protection, design patent applications for associated appearance designs would also increase. Without domestic priority right for domestic design patent application, it may cause unfairness between domestic and foreign applicants who enjoy international priority right. As per Chinese Patent Law 2008, design patent applicants cannot enjoy domestic priority right while invention and utility model patent applicants can. In order to make Article 2(4) of the Patent Law 2020 more feasible, domestic priority right for design of six months for design is added into Article 29(2) accordingly. This amendment balances the content of the rights of a patentee for a design patent with that of a patent for an invention or a utility model and enables applicants of the design patents from domestic or overseas to enjoy the same priority.

Increasing Protection Duration for Design Patent

When the Chinese Patent Law was amended in 1992, the duration of an invention patent was extended from 15 years to 20 years, while a utility model patent and designs patent was extended from 5 years to 10 years.

Actually, suggestions for changing the protection duration of design patents were already proposed during the third amendment of the Chinese Patent Law in 2008. This time, in view of the increasing importance of product design protection and taking the protection period for design in some other countries as references, the duration of design patents was changed in the fourth amendment. According to Article 42(1) of Patent Law 2020, the protection duration of a design patent is extended from 10 years to 15 years.

Expanding Patent-related Public Service

Patent Information Data Publication

It is the essence of the patent system to encourage inventors to disclose their new inventions by providing patent protection to them, so as to promote the scientific and technological progress and development of the whole society. If the patent information cannot be well used, the value of the patent system would be greatly reduced.

In order to further improve the public access to patent information and promote the efficient use of patent information by the whole society, Article 21(2) of the Patent Law 2020 regulates:

The Administrative Department for Patent under the State Council shall strengthen the construction of the public service system for patent information, issue patent information in a complete, accurate and timely manner, provide basic patent data, regularly publish patent bulletins, and promote the dissemination and utilization of patent information.

In addition, to ensure the effective implementation of the above-mentioned revised Article 21(2), the newly added Article 48 of Patent Law 2020 regulates that ‘local patent administrative departments are also required to strengthen patent public services and to promote the implementation of patents by taking measures together with relevant departments at the same level’.^d

Grace Period

The COVID-19 pandemic has exposed people all over the world to a huge public health threat. In the early stages of the outbreak COVID-19, as they announced the isolated gene sequence of the new coronavirus to prevent and control the spread of the epidemic at the earliest possible time, Chinese institutions failed to get patents for their relative inventions. The behaviour of these institutions is without doubt worthy of the respect and advocacy of the whole society. However, there should be a better solution in patent law to encourage more inventors to disclose new inventions for a gene sequence of a new coronavirus, or corresponding diagnostic reagents, equipment, as well as vaccines and drugs for preventing and treating it, at the earliest possible time, by amending the exception clause of the grace period, to balance the interests of protecting public health with those of inventors.

Accordingly, to encourage the rapid disclosure and implementation of inventions with public interest, especially in the field of public health, a new paragraph about the grace period is added as Article 24(1) of the Patent Law 2020. This amendment will be further discussed in the third section.

Article 24. An invention-creation for which a patent is applied for does not lose its novelty if, within six months before the filing date, one of the following events occurred:

(1) where the invention creation was first disclosed for the purpose of public interest when a national emergency or extraordinary state of affairs occurs.^e

Expected Practice Effects and Further Discussion

Enhance the Deterrence to Patent Infringement

Stronger Patent Administrative Enforcement Approach

With the implementation of Article 70 of Chinese Patent Law 2020, in addition to filing a lawsuit to a court, a patentee may also request a patent administration

department to deal with the infringements when suffering from patent infringement. The following case can help to explain the effects caused by the new Article 70.

This case happened in 2006. After a new patent application of a company in Zhengzhou was published by the State Intellectual Property Office of China (SIPO), imitations to this new invention emerged in many other provinces, including Guangdong, Shandong, Shanxi, Jiangsu and other places, by many different infringers who were making a large profit. At the time the patentee filed a lawsuit by the court, there were more than ten alleged infringing enterprises well-known in the market.^f According to Patent Law 2008, facing such a group of infringers, the patentee could only protect its patent right by filing a lawsuit to a court. Furthermore, to stop the infringement acts effectively, the patentee had to file lawsuits against all infringing enterprises. A longer litigation period and higher cost were huge pressures to the patentee. After three years' litigation, the patentee lost the lawsuit, and during the litigation period, even more infringement acts have emerged. The implementation of amended new Articles 69 and 70 of the Patent Law 2020 will change the passive situation of patentees. Except for filing a lawsuit before a court, a patentee can also choose the newly reinforced administrative approach to protect his/its patent rights. An administrative authority for patent affairs, according to the newly amended articles, has the rights to investigate and punish the infringement acts upon the request of the patentee or the interested parties. Compared with filing a litigation before a court, the administrative protection can stop an infringement act in a more timely manner, especially for group infringements, and therefore can protect the patentees more effectively.

Increasing Deterrent Power with Increased Damages

The amount of damages for intentional patent infringement is increased dramatically along with the implementation of Article 71 of Patent Law 2020. To compare the changes in the damage amount for patent infringement cases before and after the implementation of Patent Law 2020, the authors counted the patent infringement cases heard by the Guangzhou Intellectual Property Court. Since the implementation of the revised Patent Law 2020, namely since 1 June 2021, a total number of 1140 patent infringement cases were heard, of which 765 were withdrawn, and 70 were ignored.^g By comparing the valid sample of 305 judged cases, including 203 cases judged under Patent Law 2008 and 102 cases judged according to the new Patent Law 2020, this article discovered the different compensation amount as given in Table 1.

From the statistical results in Table 1, it can be found that since the implementation of the Patent Law 2020, the amount of patent infringement damages has increased significantly, the proportion of judged cases with damage more than RMB30,000 yuan has increased from 36.5% to 93%.

Figure 1 describes the distribution and proportion of the amount of damage for patent infringement cases judged separately according to Patent Laws 2008 and 2020. It can be clearly seen that since the Patent Law 2020 came into force on 1 June 2021, the amount of damages for patent infringement cases has increased

Table 1. Comparison of damages for patent infringement cases under Patent Laws 2008 and 2020 (RMB ‘Yuan’).

Under Patent Law 2008 (203 cases)			Under Patent Law 2020 (102 cases)		
Amount of damages	Number of cases	Percentage	Amount of damages	Number of cases	Percentage
30,000	24	12	30,000	46	45
35,000	3	1.5	35,000	9	9
40,000	13	6	40,000	12	12
45,000	2	1	45,000	1	1
50,000	14	7	50,000	7	7
60,000	3	1.5	60,000	6	6
80,000	4	2	70,000	3	3
90,000	1	0.5	75,000	1	1
95,000	1	0.5	80,000	3	3
100,000	5	2.5	90,000	1	1
110,000	1	0.5	100,000	4	4
200,000	3	1.5	120,000	2	2
			170,000	1	1
More than 30,000	74	36.5	More than 30,000	96	93

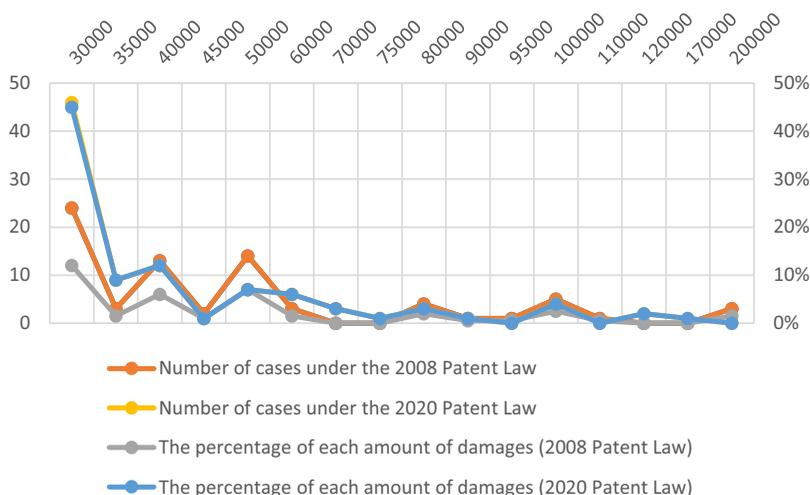


Figure 1. Comparison of damages for patent infringement cases under the Patent Laws 2008 and 2020.

as a whole, and the proportion of cases with higher damages has also increased significantly.

Application Conditions of ‘Punitive Damages’ Need to be Further Clarified

Up to now, however, there is still no case for which punitive damages has been judged according to the statistic of this article. There were four cases in which the plaintiff claimed for punitive damages by the Guangzhou Intellectual Property Court under the Patent Law 2020, but the court did not support these claims because the judges decided that the infringement did not meet the seriousness of the circumstances.

The damage amounts in Table 1 are to some extent supportive of the explanation of the impact caused by the amendment of the regulations on patent infringement compensation. However, it can also be found from the results that the court still basically determines the amount of damages according to ‘statutory damages’, and the newly adopted principle of ‘punitive damages’ was still less applied. For better implementing the ‘punitive damages’ principle of Patent Law 2020, some issues for adopting the principle of punitive damages need to be further clarified. First, the applicable standard for intentional patent infringement needs to be further defined in detail, because the punitive damages principle can only be applied to intentional infringement cases.

Enhance Incentives for Medical Innovation and International Cooperation

International Patent System Coordination

Adopting the regulations of the pharmaceutical patent protection duration extension has been discussed for many years in China; it was finally confirmed in Patent Law

2020. With the emergence of a large number of pharmaceutical innovation enterprises, the Chinese pharmaceutical industry has increased demands for stronger protection of pharmaceutical innovation. In December 2017, the ‘Opinions on Deepening the Reform of the Review and Approval System and Encouraging the Innovation of Pharmaceutical and Medical Devices’ was issued,^h which clearly pointed out that a batch of drugs should be selected in China for the initial pilot implementation of the compensation of the duration of drug patent protection. In January 2019, Article 42 of the draft of Fourth Amendment of Patent Law included provisions on patent protection duration compensation. On 15 January 2020, the two Governments of China and the United States signed a first-phase Economic and Trade Agreement, in which the ‘pharmaceutical patent protection duration compensation’ system was involved. Finally, after the fourth amendment of the Chinese Patent Law, the provisions on the extension of the pharmaceutical patent protection duration in Patent Law 2020 are consistent with Article 1.14 (2) of the China–US Economic and Trade Agreement.

According to the experience of other countries, the patent protection period extension system can effectively compensate for the loss of the actual patent protection period caused by the administrative review and approval processes for a new drug, which is especially important for the pharmaceutical industry (Sukhatme *et al.* 2019). For innovative pharmaceutical R&D companies, pharmaceutical sales may drop rapidly after the expiration of the related patent (Lester and Huan Zhu 2019). In Japan, the pharmaceutical patent protection duration extension system is of great significance to the Japanese pharmaceutical life cycle, which maximizes the profitability of a patented pharmaceutical by establishing a durable and stronger market entry barrier (Yamanaka and Kano 2016). Similarly, after the implementation of the US pharmaceutical patent protection duration extension system, the average effective patent protection period for pharmaceutical patents has increased from 8.8 years to 11.5 years in the US (Cardenas Navia 2014).

Impacts of Pharmaceutical Patent Protection Extension

Considering public interest, appropriate patent duration compensation to new pharmaceuticals may greatly increase the attractiveness of the Chinese market as the preferred location for the marketing of innovative pharmaceuticals. Therefore, Chinese people would have more chances to use new and good pharmaceuticals in a timely manner to satisfy people’s demands for better health care.

From the perspective of pharmaceutical companies, longer patent protection duration means higher profits from pharmaceutical innovation. In the long run, this provision may have an important positive effect on encouraging innovation activities of Chinese pharmaceutical enterprises. However, in the short term, it may increase the cost of medication for patients by postponing market access of generic drugs.

Issues Need to be Further Clarified on Pharmaceutical Patents

During the implementation of the Patent Law 2020, there are two issues that need to be further clarified on the pharmaceutical patent protection duration extension system. The first issue is the definition of the scope of ‘new pharmaceutical’. The development and progress of innovation in Japanese pharmaceutical enterprises largely benefited from improved innovative pharmaceuticals in the me-too method (Yamanaka and Kano 2015). If the new improved chemical pharmaceutical can be included in the category of patent protection duration extension, it is in line with the actual development of the Chinese pharmaceutical industry at the current stage. In addition, Traditional Chinese Medicine (TCM) is a special industry with Chinese characteristics; innovative new TCMs should not be excluded from the system of patent protection duration extension. The second issue is the calculation method of the extended period for pharmaceutical patent protection. Due to the differences in the clinical trials and pharmaceutical marketing licensing procedures for TCMs, chemical drugs and biological products, the patent protection duration extension for various new pharmaceuticals should also be different. In addition, the State Administration for Market Regulation should regularly announce the current average duration of clinical trials for various new pharmaceutical reviews and marketing approvals.

*Promote the Rate of Patent Implementation**Implementation-oriented Right Sharing for Employees’ Inventions*

Articles 6 and 15 of the newly amended Patent Law 2020 clearly entitle the patentees of employees’ inventions (such as universities and research institutes, etc.) to dispose of the property rights of patents for employees’ inventions. Because the lawmakers believed that inventors are the most important persons to promote and realize the implementation of patented technologies, sharing the patent right of the employees’ inventions with inventors, universities and research institutes etc. could encourage inventors to devote themselves to promoting the implementation of patented technologies. According to the author’s opinion, however, it should be more important to cultivate and encourage experts to perform patent licensing and technology transfer. This is because most inventors are actually weak at marketing and managing.

As a matter of fact, before the fourth amendment of the Chinese Patent Law, the pilot reform on mixed ownership of employees’ invention patents had been started in Sichuan Province from 2016. Entities that participated in the pilot reform included universities, scientific research institutes and state-owned enterprises. Taking Southwest Jiaotong University as an example, according to its reports, the University transferred and licensed just 14 employees’ invention patents from 2010 to 2015, and generated revenue of just 1.58 million yuan. However, from 2016 to 2019, the University has achieved a total value of technology transfer of more than 100 million yuan after it completed patent ownership sharing with inventors of 185 employees’ invention patents (Liu Xin, 2020).

'Open Licence' Facilitates Patent Implementation

The asymmetry of information about the supply and demand of patented technologies is an important reason for the low rate of patent implementation (Zeng Li and Zhang Ju 2016). By adopting 'open licence' regulation in Articles 50 and 51, Patent Law 2020 establishes a very good mechanism for information disclosure of patent licensing. At the same time, difficulties for patent licensing especially royalty negotiation would be also significantly reduced by the 'open licence' regulation. Specifically, the practical effects of 'Open Licence' rules are manifested in three aspects.

First, it is conducive to promoting a patentee joining with potential licensees. It can effectively reduce the legal risks and uncertainty related to patent rights in patent licensing transactions and therefore can also promote the wider dissemination and implementation of patents owned by universities and research institutes.

Second, any potential licensee who needs a special patented technology can easily seek patent licensing with a transparent, reasonable and non-discriminatory licence fee. It makes licensing negotiation much easier, and therefore also increases the willingness of doing licensing, which is conducive to enterprises implementing more new patented technologies.

Finally, the 'open licence' rule activates the market competition mechanism, so that the market can provide more new technologies and new products of excellent quality and reasonable price, which therefore benefits the public.

*Earlier Disclosure of Inventions with Public Interest**Expected Win-Win Effect*

Before the fourth amendment of the Chinese Patent Law, even if inventors disclose their inventions to protect public interest in the case of a national emergency or in extraordinary circumstances, the disclosed inventions will also lose novelty and therefore will not be patentable unless the disclosure belongs to one of the three exceptions regulated by the former Article 24 of Patent Law 2008. For the purpose of promoting the earlier disclosure of inventions related to public interest in the case of a national emergency or extraordinary circumstances, for example the COVID-19 pandemic, Article 24(1) of Patent Law 2020 changes the situation by increasing a new 'grace period'. This should bring about the following practical effect.

An invention with a public interest will not lose its novelty for patent application if it would be filed within 6 months after the invention has been disclosed for the first time in the case of a national emergency or in extraordinary circumstances. This will promote the earlier disclosure of such important inventions and therefore ensure the win-win of both the inventor and the public.

What Might Constitute a 'National Emergency'?

The Chinese Constitution does not define a 'national emergency', but there are provisions on a 'national emergency' in other laws, regulations and some international

treaties. This could lead to confusion in understanding this notion in the practices. Generally speaking, a ‘national emergency’ is divided into a legal status and de facto status. The legal status needs to be decided by the Standing Committee of the National People’s Congress or the State Council in accordance with the powers and procedures prescribed by the Constitution and other relevant laws. But a de facto status can be constituted as long as something disrupts the normal order of society, including wars, natural disasters, pandemics and other crisis events. The ‘national emergency’ regulated in Article 24(1) of Patent Law 2020 should be generally understood to be a de facto state, which is also in line with the provisions of TRIPS.ⁱ

Conclusion

This article analyses the main points of the fourth amendment of the Chinese Patent Law, which refer mainly to 14 Articles and could be concluded in four main aspects including strengthening patent enforcement, promoting patent implementation, improving design patent protection, as well as expanding patent-related public services.

The fourth amendment of the Chinese Patent Law will absolutely have significant effects on patent practice, such as deterring intentional patent infringement, encouraging patent implementation, etc. However, for the newly added regulations and corresponding principles, new implementation rules as well as judicial interpretations need to be formulated to ensure the new regulations are smoothly enforced. In general, the following aspects need to be further clarified: first, the standards for determining intentional patent infringement need to be well-defined, otherwise the principle of punitive damages might be difficult to enforce or be abused. Second, for the suitable application of the ‘open licence’ regulation, implementation rules should be issued to regulate and guide the patentees and licensees to reasonably use their rights. Third, for the better implementation of pharmaceutical patent protection extension, the scope of ‘new pharmaceuticals’ and the calculation method of the extended period need to be further defined. Fourth, for the correct implementation of a ‘grace period’, a ‘national emergency’ regulated in Article 24(1) of Patent Law 2020 should generally be understood to be a de facto status, in line with the provisions of TRIPS. Finally, the specific rules for applying for partial design protection must be provided.

Competing Interest Statement

The authors declare none.

Funding

This research is financial supported by the National Nature Science Foundation of China (Project No. 71072033), and the Philosophy and Social Science Project of Hubei Provincial Department of Education (Project No. 20Q093).

Notes

- a Chinese Patent Law 2020, Article 42(3).
- b Chinese Patent Law 2020, Article 50.
- c Chinese Patent Law 2020, Article 51.
- d Chinese Patent Law 2020, Article 21.
- e Chinese Patent Law 2020, Article 24.
- f The case of *Zhengzhou Tuopu Rolling Technology Co., Ltd v. Zhengzhou Tianhong Tailong Metallurgical Machinery Technology Co. Ltd., Hu Yuxiu, Beijing Tailong Automation Equipment Co. Ltd.* (The Intermediate People's Court of Zhengzhou made a judgment of first instance in June, 2006).
- g The data were collected from the Wolters Kluwer Legal Database.
- h Issued by the General Office of the Central Committee of the Communist Party of China and the General Office of the Chinese State Council.
- i TRIPS is the abbreviations of Agreement on Trade-related Aspects of Intellectual Property Rights.

References

- Fan Una C (2015) Capture your breath: FDA regulations can incentivize the recapture of off-patent. *ALPLA Quarterly Journal* **43**, 189–220.
- Cardenas Navia JF (2014) Thirty years of flawed incentives: an empirical and economic analysis of hatch-waxman patent-term restoration. *Berkeley Technology Law Journal* **29**, 1319.
- Lester S and Huan Zhu (2019) Rethinking the length of patent terms. *Science Electronic Publishing* **5**, 1–13.
- Liu Xin (2020) Development of university patents under the background of ownership reform of scientific and technological achievements - a case study of 20 universities in Sichuan Province. *Chinese University Science and Technology* **8**, 77–81.
- Sukhatme, NI and Cramer Judd NL (2019) Who cares about patents? Cross-industry differences in the marginal value of patent term. *American Law and Economics Review* **21**, 1.
- Yamanaka T and Kano S (2015) Patent term extension systems differentiate Japanese and US drug lifecycle management. *Drug Discovery Today* **20**, 1–7.
- Yamanaka T and Kano S (2016) Mapping lifecycle management activities for blockbuster drugs in Japan based on drug approvals and patent term extensions. *Drug Discovery Today* **21**, 306–314.
- Zeng Li and Zhang Ju (2016) Research on licensing system under the background of the Fourth Amendment of Patent Law. *China Invention and Patent* **5**, 59–64.

About the Authors

Ling Feng is a lecturer at the School of Economics, Management and Law of Hubei Normal University, Huangshi, Hubei Province, China. Her research interests focus

on technology innovation and intellectual property law, and intellectual property strategy.

Xiang Yu is a Foreign Member of Academia Europaea and a Professor of the School of Management and the Director of the Sino-European Institute for Intellectual Property (<http://patent.hust.edu.cn/>), Huazhong University of Science & Technology (HUST, <http://english.hust.edu.cn/>), Wuhan, China. His main research fields include Intellectual Property and International Trade, Patent Strategy and Technological Innovation, Licensing and Technology Transfer.