

# Social Costs of the Patent System

## LE COÛT SOCIAL DU SYSTÈME DE PATENTE

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**Abstract:** The patent system is making progress and incorporating international practice at a tremendous pace in China. However, scholars have been raising doubts to the benefits of the patent system. They believe that the social costs borne by the developing countries for the patent system exceed the overall economic gains in the current international circumstances. China's current patent system indicates that there is a lack of sufficient understanding of the social costs and of the cost-benefit analysis of the patent system, which causes many controversies. Nowadays the related study is still struggling to quantify the social cost, while the qualitative analysis is highly disputed. However, an anatomy of the social costs is necessary to take specific cost control measures for the purpose of establishing an economically more efficient patent system suitable under China's current circumstances.

**Key words:** Patent, Social Costs, Patent System

**Résumé:** Pas à pas, la construction sur le système de patente en Chine est bien développé avec les coutumes internationaux, relativement, les savants sont suspicieux sur l'efficacité de ce système parce qu'il a déséquilibré le coût social des pays en développements avec le profit économique du monde entier, les pays en développements sont bien inquiets. Le système de patente chinois a un grand défaut dont l'analyse sur le coût-l'efficacité n'est pas suffisante, et il provoque pas mal de contestation. Maintenant, l'analyse sur le coût social du système de patente n'a pas encore fait une conclusion précise, mais il est nécessaire de bien analyser de divers coûts sociaux quand on forge le système de patente, afin qu'on puisse fonder un système qui peut bien contrôler le coût et peut bien adaptable à la situation du pays.

**Mots-Clés:** La patente, le système de patente, le coût social

### 1. INTRODUCTION

The most direct motive behind the patent system is to justify the lack in R&D investment, but the system is not perfect. It may induce corporate to over-invest and foster the desire to pursue monopoly via technological edge. It is impractical to try to achieve optimal input-output equilibrium of the patent system in uncertain areas like R&D. We must look at the social costs of the patent system in a more practical way. Since we do not have specific data related to the social costs analysis of the patent system, this article is based on empirical analysis.

### 2. OPERATIONAL COSTS OF THE PATENT SYSTEM

The operational costs of the patent system comprise of the administration costs of the patent authorities and patent holders, and is the price for keeping the system functioning.

#### 2.1 Costs of Granting a Patent

It requires a sophisticated approval process to grant a patent. It is not necessary to mention that, from submitting an application to examining and approving the grant of a patent, the patent authorities and the applicant need to spend tremendous human and physical resources. Moreover, additional costs are inevitable during the course of examination of patents. One key criteria of patent examination is creativity, but even the most authoritative examination institutions finds it difficult to avoid disputes in this regard. The European Patent Office has internationally advanced search and examination systems. However, in Germany only, over half of the invalidation requests against patents granted by the Europe Patent Office were upheld, and the most common reason is lack in creativity.<sup>2</sup> Inappropriate decision to grant or deny a patent will have negative impact on the public welfare. A patent office has considerable discretion in determining the scope of a patent request letter and thus the protection scope of a patent. The uncertainty in the protection scope of a

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patent will affect further research and development work and therefore hinder the technological development.

## 2.2 Costs of Using the Patent System

### 2.2.1 Costs of normal use

Society has to bear some patent related costs, such as operating expenses of the patent authorities and the dispute settlement institutions. These expenses are easy to quantify. For example, the budgets of the patent offices in the United States and Germany in 1981 were USD110 million and DEM200 million respectively. The operating costs of China's patent authorities are also included in government budgets.

Some other costs are difficult to quantify, such as the costs due to restricted competition, whether necessary or unnecessary, which is a result of the lawful monopoly established in the proper implementation of a patent right. The costs can take the forms of decreased output, increased price, entry barriers and patent manipulation, etc. As a major technology importer, China has to bear the increased costs to import foreign advanced technologies due to the protection for lawful monopoly granted by the patent system. To a considerable extent, the protection and the benefits of the exclusivity entitlements under China's patent system are enjoyed by foreign owners of advanced technologies.

### 2.2.2 Costs of non-utilization or idle-utilization

It is common practice for mega corporations to apply for a series of patents without utilizing them in order to maintain technology edge and to restrict competition. These technologically monopolistic corporations may also maintain their advantage by purchasing patents through "patent diplomacy," or purchasing all assets of the companies that hold or will hold patents to construct a unbeatable patent package.<sup>3</sup> A considerable number of patent packages are not utilized, but just serve monopolistic interests. These "sleeping patents" are economically viable to the patent holders, but result in great losses to society. It is also a loss to society to disallow competitors to enter into relevant areas. The idle-utilization of patents delay the process of testing the patents in practice, which directly affect the consumer welfare and technology advancement. Mandatory permission of patent use may rectify the situation to some extent, but there is cost associated with mandatory permission; and losses before implementing the mandatory permission is irretrievable. Social costs seem to be inevitable.

### 2.2.3 Costs of inappropriate use and evasion of law

In practice, patent users often use the patent system to

evade applicable law for their own benefits, for example, the mutual holding of patents, or clauses in a patent agreement restructuring competition. If one company finds its technology advancement impeded by another company's patent right, a common solution is to mutually hold each other's patent, which may result in price alliance, production quota and entry barriers. A patent holder will try his/her best to implant restrictive clauses in a patent licensing agreement, which is the most important approach of utilizing a patent. These measures serve the patent holder's benefits and may be lawful, but they will obstruct industrial innovation and the costs will be borne by society.

## 2.3 Costs of Settling Patent Disputes

Patent dispute settlement is time consuming and costly around the world,<sup>4</sup> and China is no exception. China's patent dispute settlement mechanism includes administrative mediation, administrative award, and litigation if arbitration fails, or direct litigation. Different approach will result in lawsuits of different nature. Sometimes two lawsuits will be carried out for one case: an administrative lawsuit to invalidate an administrative ruling, and a civil lawsuit to claim for compensation. The special administrative settlement process is more flexible. However, nearly all of those displeased with administrative mediation and rulings and driven by massive benefit from implementation of patents will inescapably turn to court, which increases the settlement costs immensely. Even if litigation is chosen from the beginning, the requirement for patent-related expertise, difficulty in obtaining evidence and large claim amount will all increase judicial costs. The situation in China is more austere since China does not have special intellectual property courts or experienced judges in this field. Other cost drivers include the comparatively young age and "primitivity" of China's patent system, and the difficulty in enforcing judgments.

Intimidating settlement costs make many turn to more economic solutions which result in more and more private settlement. Private settlement is beneficial to the parties, but the negative aftermath is always borne by society. The ultimate goal of patent system is to reward innovation by sacrificing some consumer and public welfare, so it is nothing but further infraction of public

<sup>4</sup> According to Canadian statistics in 70's, most patent disputes took 3-5 years to close and lawyers' fees range from CAD20,000 (simple case) to 100,000 (complicated case); and CAD3,000 to 10,000 was also needed for expert testification. Settlement expenses in US has been skyrocketing recently: average expenses of patent lawsuits in 1998 reached USD1.2 million for each party, and it was even higher for complicated cases. From Lin Xiuqin, "The pros and cons of the patent system viewed from the perspective of law and economics - also on the amendment of the patent law of our country," *Modern Legal Theories* (Xian Dai Fa Xue), No. 4, Vol. 26, August 2004, p.113.

<sup>3</sup> [Austria] *Iraqi.kofu, Patent System Economics*, translated by Ke Ruihao, Beijing University Press, August 2005, p.55.

interest if the sacrificed welfare is used by the parties to bargain, compromise, collude or form monopolistic alliance.

### **3. POSSIBLE EXTRA-SYSTEMATIC COSTS OF THE OPERATION OF THE PATENT SYSTEM**

#### **3.1 Ideological Costs of Implementing the Patent System**

China does not have a patent system until recently. Only over 20 years passed since the patent system was established. Although the legislation develops very fast, the idea of intellectual property rights does not grow as fast in the public. After all, what can be copied within a short period of time are the regulations and systems that have been developed for hundreds of years in the Western countries. It takes much more time for the public to nurture the idea of intellectual property rights. When interviewed by the Xinhua News Agency in December 2005, TIAN Lipu, Head of the State Intellectual Property Office, admitted that in China “the idea of intellectual property rights is still weak among the public,” and that there is a lack of sound psychological acknowledgement. The currently popular saying of “reasonable piracy” indicates that China does not have the tradition of considering intellectual property rights the natural rights of the creators. Rather, the rules of intellectual property rights are considered rules of policies based on the utilitarian theories. Therefore, the ideological costs of implementing the patent system are much greater in China than the developed Western countries. Careful ideological guidance is needed from the government to implement the patent system, given the conscious and unconscious violations of this system by the public. It will be a difficult and long process, and we must recognize the difference.

#### **3.2 Costs of Obtaining Patent-related Information (i.e., the Search Costs)**

A patent application must refer to existing patents to establish its originality and creativity. The research and development work of a company must also avoid duplication of existing patents. Therefore, it is very important to obtain patent-related information. In China, the substance of a patent application is not examined. Given the rapid increase of number of the patents with usually low quality, a company has to spend tremendous time and money to confirm that its research and development work is not violating the patents of other companies. The policy of encouraging invention and creation in China by the standard of the number of patents worsens the widespread of problematic patents

and “garbage” patents, which increases the costs of search for patent-related information.

#### **3.3 Product Price Paid by Consumers and Other Users**

The costs during the operation and usage of the patent system will inevitably increase the patent holder’s expenses, which will in turn increase the price for using the patent products by consumers and other users. Moreover, if the patent holder restricts production and raises price based on his/her exclusivity rights, the society will have to bear the increased costs. For example, in the pharmaceutical sector, the price of the anti-HIV medicine d4T produced by Bristol Myers Squibb (BMS) is USD4.5 per 40 mg in the United States. In Brazil, however, the same medicine produced by Pinheiro is sold for USD0.3. In India, Cipla sells d4T at USD0.1 per 10 mg, a price which is 98% lower than the BMS’ but still profitable. We can see from these examples that the ratio of the monopolistic profits to the price of patented products is substantial, especially in important sectors such as pharmaceuticals and agricultural products, etc. The high product price may cause a series of social problems, far exceeding the profits derived from these products.

#### **3.4 Costs of Importing Advanced Technology**

China as a developing country has made substantial progress in technological creation, but is still left behind compared with the developed countries. As a major technology importing country, the strengthened patent protection in China means higher royalties for imported technology or even inability to reach agreement on the terms concerning use of patent. If the threshold of protection is high (e.g., broad coverage of patents or extended protection period), the conditions for import of foreign patents would be more harsh, and the usable creations may be fewer in practice. For the patents the intent of licensing of which has been agreed on, the royalties would be higher. An individual enterprise is unable to bear the foreign exchange costs, which may still be borne by society.

#### **3.5 Loss of Basic Research**

Stiglitz, the winner of the Nobel Prize in Economics, once said that the creation system of a State composes of research institutes and educational systems. The State plays a limited role in technological creation, but provides funding to academic institutions from which numerous creations stem. Universities and research institutes normally focus on research and do not engage in production. For these institutions, if their research results cannot be patented, it would be difficult for them to profit from applied research. In China, because of the

current State conditions, most research institutes can only obtain limited resources from the State. They can only obtain profits from licensing their patents to users, to support further research and to avoid unemployment of the researchers. On the surface, the actual profits derived from patent licensing have tempted universities from basic research to commercial research, the result of which is a net loss for society.<sup>5</sup>

#### 4. CONCLUSION AND DISCUSSIONS

Some of the above costs are necessary for the operation of the patent system, while some others are inefficient costs caused by the patent system. The US scholars William M. Landes and Richard A. Posner point out in *The Economic Structure of Intellectual Property Law* that: "Although there are strong economic reasons the support property rights to inventions, there are also tremendous social costs. In addition, we cannot with confidence answer the question whether the profits have indeed exceed costs based on our current knowledge." The British Intellectual Property Commission points out clearly, in the report of *The Combination of Intellectual Property Rights and Development Policies* issued in September 2002, that the effect of intellectual property rights protection is minimum in developing countries with weak technological abilities, based on evidence concerning trade, foreign investment and growth. In the foreseeable future, the profit of intellectual property rights protection in developing countries will not be higher than the costs. This point is sniffed by some people as alarmism or pleasing the developing countries, but reminds China to weigh the pros and cons, and consider carefully before designing the patent system.

Industrial economists Kennis W. Clark and Roger Miller once said the reason that the patent system exists may be the lack of a property alternative. Up to now, the human being has not designed a better system than the patent system to encourage creation and invention. In the current context, the positive effect of implementing the patent system should be first acknowledged. The purpose of analyzing in this article the social costs of the patent system is not to deny the positive effect of the patent system, but to shed some light on the search for a more economical patent system. According to the neo-institutionalist economic theories, the economic activities of any entity may cause external diseconomies, i.e., social costs, due to unpaid costs. Taking into consideration social resources allocation and social benefits coordination, the State must participate in and affect positively the determination of social costs in one way or another, rather than rely solely on the

spontaneous adjustment of the market.<sup>6</sup> Costs are not avoidable but controllable. Based on the factual situations as a developing country, China may take measures to reduce the social costs of the patent system as much as possible: first, to increase the operational efficiency of the patent system and control system management costs. China has been making efforts to increase the efficiency of the administrative agencies, from which the cost reduction for the patent system will also benefit. Second, the establishment of the patent system should be steady rather than in a rush. Only after the industrialization and technology development has developed to a certain level could a patent system encourage the creativity of inventions in China, rather than copying foreign technologies.<sup>7</sup> Furthermore, the exceedingly simplistic and general legislation and enforcement of China's patent law indicates the insufficient recognition of the potential costs of the patent system. The patent laws and regulations need to be more detailed and perfected. China should break free from the prejudice that the law shall be general rather than in detail, and establish specific implementing rules of the patent system. It is also a short cut to rapidly increase the patent law enforcement capacity to establish intellectual property rights departments in courts and to train judges specialized in intellectual property rights law. Last, the control of extra-patent system social costs needs efforts from all directions, especially from the State, e.g., by allocating more funds to basic research, controlling price for key products such as pharmaceuticals, promoting education and nurturing the idea of intellectual property rights in the public, etc.

The unrestricted and exceedingly protected patents will become a heavy burden on society. The fact that China has been paying much attention in strengthening patent protection warrants the urgent need for the social cost analysis of the patent system. The patent system will benefit China greatly and serve the technological and economic development, only after the negative impact of the patent system is properly assessed.

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<sup>6</sup> Zheng Jun, 'The Social Implications of Costs and Social Control', *Sichuan Social Sciences Online*: <http://www.sss.net.cn>

<sup>7</sup> *Supra* note 2, page 66. In this aspect, there is a good example in Switzerland. In the early 20th century, Switzerland established mechanical invention patent system to protect its watch industry. But in the very beginning Switzerland did not establish patent protection for chemical engineering components and production process, because its own primitive chemical industry still needed to copy foreign technologies.

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<sup>5</sup> [US] William M. Landes Richard A. Posner, *The Economic Structure of Intellectual Property Law*, translated by Jin Haijun, Beijing University Press, May 2005, pp.402-403.

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