

Impact of Chinese IPR In the ICT Sector – Assignations, Licensing and Protection

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Abstract. The world has entered the era of universal Intellectual Property Rights (IPR): everyone is a creator of knowledge production and their intellectual property. In recent years, China has placed greater emphasis on intellectual property: the burgeoning cultural industry has brought the concept of intellectual property to the forefront of people's minds, especially in information and communication technologies, which are closely linked to everyday life. We will start by understanding the history of Intellectual Property Rights in China. Once the basics are understood, the authors will detail Chinese patent law, its coverage, and case evaluation primary. The third part describes the three main sources of IPR disputes. In the fourth part, the authors present systematic recommendations for improving the quality of China's IPR system from an ICT perspective.

Keywords: China, Intellectual Property Rights (IPR), Information and Communications Technology (ICT), disputes, assignations, licensing, protection.

1. Introduction

The Chinese Intellectual Property Rights (IPR) and patent protection laws have traversed centuries of a long journey to transcend into the current modern version, comparable to most other established legal institutions of the world. However, no other country faces as many legal infractions concerning IPR infringement as Chinese law (Muehfeld and Mei, 2022). These problems include both – Chinese firms protecting their patents in China and foreign firms suing Chinese infractions in China (Li and Alon, 2019). Thus, we know that studying Chinese Intellectual Property Rights issues is essential for posterity's sake. Further, there is the fact that technological development is instrumental in Chinese economic development (Wang, 2015). These two factors combined explain why Chinese Information and Communications Technology sector (ICT) is a significant sector for study. The current paper will discuss IPR assignations, distribution, and protection in the ICT sector.

2. IPR in China

The World Trade Organization (WTO) Agreement on "Trade-Related Aspects of Intellectual Property Rights" (TRIPS) defines Intellectual Property Rights (IPRs) as "...the rights provided to people over the inventions of their minds." This definition describes Intellectual Property Rights (IPRs) (World Trade Organization, 2021). In addition, it notes that one of the most critical functions of IPRs is to "...usually offer the innovator an exclusive ownership over the utilization of his or her invention for a predetermined amount of time." The industrial and creative industries are the two primary categories covered by Intellectual Property Rights. These rights can be broken down further into subcategories.

In the 1980s, China became a member of the World Intellectual Property Rights Organization, which marked the beginning of the current Intellectual Property Rights administration in China (WIPO). The first pieces of domestic regulation to be adopted were the Trademark Law, the Patent Law, and the Copyright Law passed between 1982 and 1984 and 1990, respectively (Berrell and Wrathall, 2003). In the year 2001, they became members of the World Trade Organization. Even though China had already joined the Paris Convention for the Protection of Industrial Property, the Madrid Agreement for the International Registration of Trademarks as well as the Berne Convention for the Protection of Literary and Artistic Works in the 1980s, the TRIPS eventually became the most important international framework influencing legal legislation on Intellectual Property Rights in

China (Yu, 2014). Consequently, the relevant intellectual property laws were amended (Mandel et al., 2020). Evaluations of intellectual property producers in China and recent years have also demonstrated that enforcement of Intellectual Property Rights law is particularly inadequate. For instance, compared to territories that have historically been adjacent, such as Hong Kong or Singapore, China's implementation of IPR law is notably lacking (Sun et al., 2021). Researchers have pointed to several different sources, some of which are partially intertwined with one another and have been emphasized to varying degrees. These sources include economics, culture, actor-centeredness, politics, and institutions. The fluctuation in the execution of IPR protection, a fluctuation that may be traced back to discrepancies in law enforcement and compliance, has been cited as the cause of the variation (Page, 2019).

2.1 Patent terms

The patent law in China is an additional pillar of the Intellectual Property Rights (IPR) system that is in place in the nation. The Patent Legislation of the People's Republic of China, which was last updated in 2008, is the applicable patent law. Obtaining a patent for an innovation, a utility model, or a design can be done now (Zhang et al. 2008). Twenty years of protection are afforded to those that are successful in having their inventions patented, but utility models and designs only receive ten years of protection. If an invention or utility model does not fulfill the requirements of originality, ingenuity, and practical applicability, a patent will not be granted for the invention or utility model (Yang, D. 2003). It is against the law to patent scientific discoveries, rules and techniques for mental activities, methods for the diagnosis or treatment of disease, plant or animal kinds, chemicals derived by nuclear transformation, two-dimensional patterns of pattern, color, or a combination of the two that primarily serve as indicators, and several other things as well. Patents already granted in specific instances are subject to licensing requirements (Xiang et al., 2007). An innovation, a utility model, or a design can each qualify for a separate patent.

Before explaining the licensing of the patent technologies, however, it is necessary to say that information and communication technology has two areas in which suitable property protection is required – patent and copyright. Many software inventions, ideas, and concepts fall under the ambit of copyright protection (Zhang, 2015). However, the essay will mainly discuss the patenting and transfer of technology that falls under the ambit of patent protection. These consist mainly of the hardware technology that can be useful in the ICT industry. These hardware technologies face similar issues as any other big or small technology or technology transfer-related issues in China. However, care has been taken to explain the particular laws that are especially important in the ICT sector, primarily for patenting hardware, software copyright, and artistic or literary trademarks that may be required in the sector.

2.2 Patent licencing

2.2.1 Invention patent

The patent system in China allows for the possible protection of things or procedures that have been invented. It may take many more years than it would take to secure a utility patent, but once it is obtained, the patent holder is protected for twenty years. A patent on an innovation is the best bet if the product requires a significant amount of time to produce or if it will continue to be valuable for a significant amount of time in the future (Fan, P 2015). The patent office in China is highly advanced today. According to Pisacane and Zibetti (2020), the patent office today globally ranks 2 in the number of applications and the tremendous amount of traffic every year.

The Patent Law permits the transferring or reassignment of priority applications, existing applications, and granted patents in their entirety or part from the applicant or owner to any assignee. This includes the ability to transfer or assign awarded patents. An assignment of a patent must be made in writing and signed by both the assignor and the assignee to comply with the requirements of the Patent Law (Dang et al., 2015). Verification of a patent assignment must occur with the China National Intellectual Property Administration before it becomes legally binding in China (CNIPA).

It is not necessary to record a patent's transfer of ownership at any given time. On the other hand, registration of the patent assignment needs to occur as soon as it is humanly possible, given that it will only take effect on the registration date or the day CNIPA validates the registration. In case of a lawsuit or an infringement, the choice to not register might cost more in the long run (Fan, P 2015).

2.2.2 Utility model patent

Utility patents can be granted in China for solving novel problems or improvements, such as an entirely new form or structural characteristics. Only actual items can be purchased through them. There is no direct equivalent in the United States to a utility patent held in China; however, there are similarities to utility model patents held in Japan and Europe. Utility patents are easier to obtain and require a lower level of "inventiveness" than innovation patents do in order to be granted (Prud'homme, D 2017). According to Wang (2015), technology transfer from other companies and firms in China happens mostly in utility patent design. Usually, the designs that do get transferred are not state-of-the-art. The result is that there is considerable scope for improvement in these. This enormous scope of improvement causes many issues that will be explained in the end.

Utility patents remain in effect for ten years, in contrast to innovation patents suitable for twenty. On the other hand, the relaxed standards of scrutiny make it possible to obtain one in less than a year. Because of this, they are common in industries where customers gradually start to place less value on the products they purchase, such as electronic items (Chen et al. 2019).

2.2.3 Design patent

Pattern, shape, pattern and shape, shape and color, pattern, shape, and color are some exterior characteristics that a Chinese design patent can protect. A Chinese design patent can also protect pattern, pattern and shape, shape and color, and pattern, shape, and color. The only additional requirement is that the patented innovation must be suitable for "industrial application," sometimes known as mass manufacturing. As with utility patents, design patents may be obtained quickly (within a year) and protected for ten years (Chen et al. 2019).

2.3 Patent law in china

The purpose of the Patent Law is to protect the legitimate rights and interests of patent holders, encourage the creation of new ideas and the commercialization of those inventions, stimulate tremendous creative potential, advance science and technology, and promote economic and social advancement (NPC.GOV.CN. 2022). Inventions are described as technological solutions proposed for a product, process, or the improvement of any of these. This definition may be found in Article 2. When we speak about "utility models," we refer to innovative technical solutions for the structure and design of a commodity, or the combination of such solutions, that are acceptable for use in the real world. Designs are unique combinations of a product's shape, pattern, or color, or the combination of color with shape and pattern, that are both aesthetically attractive and practical for industrial use. Designs may also combine color with shape and pattern (NPC.GOV.CN. 2022).

In Patent Law, each type of patent is described in Article 2, and the process for maintaining a design patent is outlined in Article 4. Suppose national security or any other major concerns of the State are involved in an invention-creation for a patent for which an application is filed, and it is required that anonymity be maintained. In that case, the proposal shall be dealt with following the appropriate regulations of the State, as stated in article 4 of the patent law. This is required to ensure anonymity is maintained (Huang, C. 2017).

The right to implement an invention shall be entrusted to the group or individuals who worked together to create the invention or to the unit or individual who created the invention while acting under the entrustment of another group or individual unless other arrangements have been made. If two or more units or participants work together to create an invention, or if one unit or individual creates an invention while acting under the entrustment of another group or individual, the right to implement an invention shall be entrusted to that group or individual. If the patent is granted, the term

"patentee" will refer to the individual or organization that initially filed the patent application (Article 8).

2.4 Patent infringement

In early development stage nations, private actors are more prone to infringe Intellectual Property Rights than the state itself. This is demonstrated by the history of Intellectual Property Rights protection in developed countries (Hill & Hult, 2019). This is frequently the result of the state needing more legislation to enforce them or the desire to do so. In the wake of the British technology embargo, the newly formed government of the United States actively encouraged and incentivized its citizens to acquire foreign Intellectual Property Rights (IPR), particularly those held by the British. This was done to ensure that the United States remained competitive in the global marketplace (Peng et al. 2017). According to, Surowieski (2014), the United States should not blame China for its intellectual property practices because the country has become a scientific superpower through its forms of industrial espionage. These forms of industrial espionage include covert observation, the recruitment of foreign experts with insider knowledge, the importation of contraband equipment, and the theft of proprietary information. The United States of America resorted to high tariffs on imports, government incentives, illegally aiding talented employees to leave Britain, and corporate espionage to revitalize its manufacturing sector. This was done to compete with other countries such as Britain (using only naked eyes, of course). Biographies of Hamilton also reveal his involvement in "obtaining" British industrial inventions, as well as the US Patent and Trademark Office's (USPTO) knowledge in granting patents to those who "copied" them. This information comes from Hamilton's time working in both capacities (Saiz and Castro 2017).

China's acquisition of Intellectual Property Rights across the world is, in contrast to that of the United States, a vast, well-organized, and deliberate effort, including the country's intelligence agency, judiciary, and armed services (Hickey, 2019). There is an accumulation of data indicating that the party-state is involved in and actively supports the theft of intellectual property (IP) and the forceful transfer of IP (Davis & Wei, 2019).

Many recent examples show how the Chinese government manipulates the results of intellectual property disputes between domestic and international companies. In response to a report of possible Intellectual Property Rights (IPR) infringement by a Chinese partner, Chinese police reportedly raided the Shanghai office of DuPont Co., demanded passwords, printed documents, seized computers, and intimidated DuPont employees, as reported by the Wall Street Journal. The government has "an arsenal of levers to rip away American intellectual property" rather than assisting DuPont in enforcing its property rights (Wei & Davis, 2018). The Chinese government also coordinated and financed an American startup's purchase of a new satellite technology created by Boeing for the fictitious goal of "improving online connectivity in Africa (Wray, 2019)." Nevertheless, the true motive was to steal the technology for the space program. The purchaser's attorneys argued that the U.S. court lacked jurisdiction since the defendant was located in China and that suing a state-owned enterprise in China "heightens the insult to China's sovereignty" (Spegele & O'Keeffe, 2018).

The Chinese government employs various regulations to ease the transfer of Intellectual Property Rights. One is the state's use of "adverse administrative approvals and licensing processes" as a "tool to extract... concessions, generally on technology." White House National Trade Council Director Peter Navarro cites "burdensome and invasive testing" as another example of a practice used to "harvest information and technology" (Hudson Institute, 2018). Foreign ownership is restricted in sectors considered "strategic" by the government. MNCs are compelled to create joint ventures with domestic companies to produce and distribute their goods in exchange for access to cutting-edge technology (O'Connor, 2019).

Cases involving patents in China and those involving other forms of intellectual property have been heard in Chinese courts by specialized IP panels for the last three decades (Kolton, G. S. 1996). On October 31, 2014, the Supreme People's Court of China created intellectual property tribunals in Beijing, Shanghai, and Guangzhou. In these courts, cases that were filed anywhere other than Beijing

City, Shanghai City, or the Guangdong province are not accepted. Claimants who sue against defendants outside these two main cities and the province are still required to use the specialized IP tribunals unless the infringing action occurs within one of the areas mentioned above. Even though preparations are now being made to build intellectual property tribunals in other southeastern provinces, it is still unclear where precisely these courts will be situated (Li, M 2016).

Each of the three courts that hear intellectual property cases is on par with the power of the Intermediate People's Court. The decisions of lower courts in Beijing City, Shanghai City, and Guangdong province that fall within civil or administrative law can be appealed to these higher courts. The IP Courts hear the earliest cases involving patent issues, while the IP Court of the SPC evaluates appeals to those decisions (Zhang et al. 2022). In a manner analogous to that of Germany, the courts in China make decisions about charges of infringement, whereas the PRB of the CNIPA makes decisions regarding allegations of validity. The only court that hears appeals from PRB verdicts is the Beijing Intellectual Property Court, located in Beijing.

The Supreme Court of China is the appellate body for all disputes involving patent validity and infringement. The Intellectual Property Courtroom of the SPC will make an effort, if it is practicable to do so, to treat issues of validity and infringement simultaneously in order to achieve a more efficient procedure (Zhang et al. 2022).

The patent's claims are compared to the technical particulars of the invention and the drawing in order to arrive at an assessment of the patent's scope of coverage. Suppose it can be demonstrated that the claimed infringing invention or commodity has all of the technical features specified in the claims. In that case, the accused innovation or commodity will be regarded as within the patent's protective scope. It is not necessary for the copyrighted technology and the technology being infringed upon to be in the same technical field to demonstrate an instance of intellectual property infringement (Health, C. 2021). If the utility model in question is being questioned for an infringement, only previous papers in the same technological area will be allowed in most situations. In instances of patent infringement, the range of applications will be enlarged to encompass other technologies analogous to those covered by the patent.

3. IPR Protection: Reasons for dispute

As such, this section of China's legal implementation is where the most significant contentions happen. According to Muehfeld and Wang (2022), there is a tremendous amount of controversy in this area because China's legal and judicial system has not yet come to the same amount of strength in the execution and implementation of laws the case as other developed countries. This means that while China enjoys patent protection in other countries, companies from other foreign countries working in China through Chinese partners find different amounts of protection for their work. There have been many such cases in the recent past. Between the years of 2016 to 2020, it has been seen that the patent issues arising concerning China mainly involve Chinese companies suing their foreign competitors on foreign soil. For instance, the Tokyo-based company Ryohin Keikaku was a company that was grossly affected by the Chinese companies' aggressive litigation tactics. In the ICT industry, too, such disputes have been widespread and very damning for the reputations of Chinese companies. For example, in 2017, Huawei, one of the biggest names in the Chinese ICT hardware business, applied for an EU trademark for their computer hardware, to which the French fashion house Chanel objected. Chanel claimed that their logo was very similar to Chanel's trademark. However, the EU court ruled in favor of Huawei, saying that the differences were too significant to make the trademarks seem similar (BBC, 2021). Considering that China sees the enormous volume of such disputes, one is compelled to ask the question – why so. Muehfeld and Wang (2022) refute that China's ill-formed judicial and legal system is solely responsible for this discrepancy. They cite the examples of other developing countries where the system is not as strong, and yet, culturally, those places enjoy a much better record in terms of IPR protection. Here, the essay will first explain the legal recourses

companies facing IPR troubles in China can resort to and then explain why these recourses are inadequate or made so because of other legal wordings and loopholes.

Mainly, the Chinese Intellectual Property Rights (IPR) law has three main recourses (Cox and Sepetys, 2009):

3.1 Administrative action

This is mainly used for significant copyright and trademark infractions on a foreign company by a Chinese firm on Chinese soil (Pisacane and Zibetti, 2020). According to the existing laws, it can be understood that the administrative enforcement of the IPR rights is a highly unique form of implementation system that exists in China mainly to offset the fact that the original legal and judicial system of China is still not fully equipped to handle the vast number of IPR infractions and cases that come their way (Cox and Sepetys, 2009). Thus, this system is a form of compromise and, as such is a fascinating study that is a part of the Chinese legal system as a unique entity.

According to Pisacane and Zibetti (2020), in case of copyright or trademark infringement, the suffering party, often with the help of an agent or a private investigator, will submit evidence to the particular administrative officer in the region that is responsible for overseeing the copyright enforcement in the region. These administrative authorities, once they realize that a case of infringement truly exists, can apply the following powers (Pisacane and Zibetti, 2020) :

- They can cease the infringing materials from the perpetrator company.
- They can observe and evaluate the size of the evidence/shreds of evidence and create methods of preservation of this evidence for future use.
- They will confiscate any of the illegal income through these infringements, illegal reproductions of the original, and counterfeit goods as well as any.
- They can order the destruction of counterfeit goods.
- Depending on the context and conditions, the administrative enforcers can also order the seizure and the destruction of the tools required to create these counterfeit goods and other acts of infringement.

They can sanction legal fines on the infringer. The authorities usually decide these fines based on precedent and other means where possible because there are no fundamental laws in the Chinese system that can streamline or define the conditions or cases where the fines can be decided (Qu, 2012). As such, it can be seen that the intention of using legal recourse through administrative officers is that the infringer will be hurt by the process (Cox and Sepetys, 2009). Interestingly, it must be understood here that the suffering party does not receive any compensation through the administrative officer as these officers do not have the power to liquidate the money earned illegally through the companies to compensate the losses of the party that has suffered the infraction (Pisacane and Zibetti, 2020; Qu, 2012).

Thus, the punishment meted out here is quick but is highly subject to the whims and fancies of the administrative officer, their legal competency, and their willingness to look into the matter (Cox and Sepetys, 2009). Further, there is the fact that the legal fines that the administrative officers can sanction from these infringers may range between 200,000 RMB to 250,000 RMB. This amount is too small to account for any real damage to the infringer (Qu, 2012).

Such infractions tend to leave a sour note, especially in the ICT sector, where the costs of the technologies are enormous, and the infringement may result in vast losses for the suffering party. Further, there is the fact that the local administrative officers are more interested in getting the parties to resolve the issues on their own without going to legal recourse at all. The provision for this is indirectly provided in the Arbitration law that can act here as necessary apart from the Article 55 of the Copyright Laws. Based on the rules provided in the Arbitration laws, any arbitrator, in this case – the local administrative enforcer, has the power to call for arbitration based on the wording of the copyright document. As such, the drafting of the copyright contract will become extremely important. Without proper scrutiny of the law, the copyright document might even be considered null and void (Pisacane and Zibetti, 2020). Further, cases of nationalistic protection are also evident under the

administrative officer section, as these offices will be more interested in trying to protect the Chinese firms because of their nationality. Therefore, most foreign firms do not like to take this as a legal recourse and wish to go to the Civil Court directly (Pisacane and Zibetti, 2020).

3.2 Civil litigation

Thus, it can be seen that if any recourse is required by the suffering party to receive any compensation, this has to be obtained through civil litigation. However, the process of receiving the necessary compensation in this system is a challenging one. There are no doctrines of binding precedent in the court (Qu, 2012). This means that previous cases and the hearings on those cases do not affect the current case, even if the context of the two cases is the same. As such legal recourses cannot be sought, there is a slight chance of reimagining the loopholes or gaps in the law, and as such, every case has to be studied on its merit. This accounts for a situation that draws on the cases in the civil court for far too long for any party to feel comfortable with the litigation process (Cox and Sepetys, 2009). Given that the ICT sector mainly deals with utility patents (Wang, 2015), the civil law-based jurisdiction seems directly suited for legal enforcement of the utility patents whose main objective in terms of protection is – to prevent the infringer from making, selling, offering for sale, using, importing for sale or a patented product for any business or a business-related activity (Pisacane and Zibetti, 2020).

Usually, the initiation of the infringement action takes place in a competent People's court or the administrative court, as explained above. However, given that the People's court has better powers to provide justice, the civil court is the preferred choice for most parties looking for compensation for their losses (Qu, 2012). According to Pisacane and Zibetti (2020), the People's Court has a range of activities in its repertoire that it can utilize in this case, including – calling for injunctions and evidence and asset preservation for the hearing and trial. Apart from this, the People's Court, even the lower courts, have the right to cease the violation and obtain compensatory damages from the violating party (Cox and Sepetys, 2009).

The injunction here is a powerful weapon that the civil court can recommend based on Article 66 of the Patent law, where the patentee will show proof that the other party has infringed or will infringe upon their patent rights and, therefore, stop it at the earliest is essential to prevent irreparable losses (Pisacane and Zibetti, 2020). The article also provides for the wrongful application of injunction, which can be liable to pay compensatory losses to the suffering party (Pisacane and Zibetti, 2020).

However, the principle of Civil Procedure in Chinese civil courts is such that the burden of proof lies with the claimant to show that the defendant is guilty of patent infringement. This is entirely contrary to the standard law system that most consultant lawyers and other foreign parties are used to, where the Court proceedings start based on the “discovery of evidence,” a fact completely missing in Chinese law. Such differences in the addition and implementation cause a lot of dispute and confusion (Qu, 2012).

However, the compensation system is simplistic and does not consider all the features that may result in economic damages for the suffering parties. In terms of deciding the compensation, the trial considers mainly damages according to the appropriate multiples of royalties according to the damage. The fact that this infringement may have caused future monetary losses for the suffering party is not considered, and many other such complexities are ignored (Cox and Sepetys, 2009). Sometimes, when the damages are too great, or the setting up of the compensation is too difficult to evaluate, the Court may even arbitrarily decide on an amount from RMB 10,000 to RMB 1 million based on the patent, the nature of the infringement, and compensation based on ‘actual loss’ or ‘illicit gains’ (Pisacane and Zibetti, 2020).

In case the claimant is not happy with the decision of the People's Court, they may go to the respective Intermediate Court or then reapply to the High Court. In rare cases, the decisions are sent for an appeal to the Supreme Court. These four court systems form the pillar of the civil and criminal jurisdiction of China's IPR protection and enforcement activities (Qu, 2012).

3.3 Criminal sanction

In the case of severely extreme cases, it has been seen that criminal sanctions may be justified. Based on the Criminal Code of PRC (People's Republic of China), severe infringement of third-party IPR may result in imprisonment for a maximum term of 3 years (Pisacane and Zebetti, 2020). However, this term may be increased to 7 years if the amount of loss based on the infringement is higher than the estimated threshold (Qu, 2012).

Apart from these infringements, it is essential to understand that the Chinese political scenario with one party ruling the country and being responsible for most of the businesses in the country has many political underpinnings in their IPR protection. Li and Alon (2019) believe that because of these political connotations, China has often experienced an advantage compared to other countries in terms of copyright protection.

For example, because the technology transfer from firms that take place in Chinese involves utility models with much scope for improvement, many Chinese firms are prone to making upgrades on the existing patents. However, based on the wording of the IPR protection laws in the PRC, if these upgrades of the patents are significant enough, the new patents will be considered to belong to the party that designed the new patent. This results in substantial economic losses for the foreign companies that entrust these firms with the transfer of their technology (Zhang, 2015).

4. Recommendation

As explained before, the political and economic ramifications of how China has been able to fight for its IPR rights in other countries and has not provided the same rights to firms on its soil have created many different misunderstandings and fears that have caused much trouble for foreign firms who have not had the initial understanding about the way of working in the Chinese soil. With this regard, there is very little to be done as the many reasons stated within the literature that contribute to this situation are –

(1) China's present political situation wherein the power lies solely with one political party; therefore, its overall directive is what the foreign companies have to contend with (Li and Alon, 2019).

(2) China's legal and judicial enforcement system and the legal system is still wrought with much arbitration and vague rules, and an informal system of functioning that needs much cleaning up (Cox and Sepetys, 2009). Despite the years of improvement in their laws, foreign companies doing business must be patient with the system to grow up to be as competent and sufficient as the laws in their own country.

(3) Further, there is the fact that Chinese culture, rife with Confucianist philosophies, considers imitation as a form of flattery rather than a violation of the rights of the inventor (Yu, 2015).

According to Berrell and Wrath (2007), managers from foreign companies wanting to do business in the Chinese market today can be prepared for these IPR infractions in many different ways. The study showed that many international foreign managers working in China suggest that companies do their due diligence when doing business with Chinese firms in China. Because of the considerable importance given to the informal system of functioning, there is high importance given to firms with a better reputation of doing well in business, and there the foreign managers should look to hire their specialists to draw the contractual wordings very carefully.

As mentioned previously, how the contract is worded becomes very important in Chinese businesses because this wording will decide the ownership of patents in case of contentious issues like any new technology being commissioned or a patent being upgraded (Mercurio, 2012). Further, managers should also be aware of the possibility of reverse engineering their patents, and the contracts being drawn should take these into account (Mercurio, 2012; Jiang et al., 2018). Most importantly, foreign firms entering the Chinese market need to identify trustworthy Chinese collaborators to do business within China. Mercurio (2012) suggests that technology transfer should be done to companies that do not work in the immediate competition of the company and work upstream or downstream in the industry. This way, these industries will have lesser incentives to steal or violate

patent rights. Further, the technology transfer should be done in bits and pieces instead of providing one firm with the entirety of the patenting rights (Jiang et al., 2018).

Further, the importance of the practice of *guanxi* has to be mentioned here. To many Westerners, this practice may account for corrupt practices (Blackman, 1997; Tsui and Farah, 1997). However, in Chinese culture, the term simply means having a profound and instrumental interpersonal tie-up between parties such that they can work together and trust each other at work (Berrell and Wrathall, 2007). While many may look down upon the practice of *guanxi*, it is crucial that firms wanting to do business in China better understand how it works and accept it. Building a sound and robust cordial rapport with trustworthy Chinese relations is the difference between IPR protection and loss of the privileges of rights in China.

5. Conclusion

The current study has provided many interesting insights into understanding the sector of ICT and how IPR infractions and IPR enforcement are essential requirements in developing the Chinese ICT sector. The study has provided exciting insights about the current IPR status of the PRC, and it has shown that while China has advanced a lot in terms of formulation of laws for the protection of the rights of businesses from violation of infractions of patents, trademarks, or copyrights, there is a long road ahead. China's legal and judicial system still needs to actively establish an IPR management system actively, bridging the gap between existing laws, regulations, and legal language, to create a robust and effective system that suits procedurally. However, overcoming these long-standing traditions in any culture is authoritarian and Chinese. There is an urgent need for internal cooperation, collaboration, a culture of mutual respect, and better patience in operating organizations to become a crucial legal system to drive the current business development in China.

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