

China's Intellectual Property System in the Process of Catch-up

-with Patent in Focus

Yajie Zhao

Academic Dissertation

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板凳宁坐十年冷，文章不写半句空。

One would rather warm a cold bench for one decade than write articles with emptiness.

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ABBREVIATIONS

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ABBREVIATIONS

COL	Court Organization Law
CPC	Communist Party of China
EIT Law	Enterprise Income Tax Law of the People's Republic of China
Eight Years Guidelines	1978-1985 Plan for Development of Science and Technology (Draft)
FDIs	Foreign Direct Investments
Five-year Plan	Five-year Plan for National Economic and Social Development
GNP	Gross National Product
IT	Information Technology
IP	Intellectual Property
IPR	Intellectual Property Right
KMT	Kuomintang (Chinese Nationalist Party)
MOST	Chinese Ministry of Science and Technology
NIS	National Innovation System
OECD	Organization for Economic Co-operation and Development
PEG	Patent Examination Guidelines
RPCS	Regulations on the Protection of Computer Software
S&T	Science and Technology
SIPO	State Intellectual Property Office of China
SOEs	State Owned Enterprises
SPC	Supreme People's Court of China
the Decision	A Decision To Establish Intellectual Property Court In Beijing, Shanghai, Guangzhou

the Rules	The SPC Rules for the Jurisdiction of the IP Courts of Beijing, Shanghai and Guangzhou
the Guidelines	Guidelines on Enrolling Judges for Intellectual Property Courts
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
Ten Years Guidelines	1963-1972 Plan for Development of Science and Technology
Twelve Years Plan on Science and Technology	The Perspective Plan for Science and Technology Development from 1956-1967
1985 Decision	Decision on the Reform of the Science and Technology System (1985)
1986-2000 Plan	1986-2000 Plans On S&T Development
1991-2000 Plan	The Ten-year Science and Technology Development Plan of the People's Republic of China and the Eighth Five Years Plan (1991-2000)
1991 Programme	National long-term science and technology development program
2006-2020 Outline	Outline for Medium and Long-term Program for Science and Technology Development 2006-2020
2008 Outline	Outline of The National Intellectual Property Strategy (2008)

ABSTRACT

This thesis explores the evolution of Chinese IP mechanisms during national development and transition to becoming a well-developed country. This subject is studied from the perspective of intellectual property (IP), with a special focus on the People's Republic of China since 1949.

Internationally, the Chinese State, as a late-developing country, has adopted various mechanisms to narrow its gap in income and in technological capability in relation to developed countries. Meanwhile, internally, China itself is going through a crucial stage of social transition, and switching its economic model from labour-intensive mode to high-tech and innovation-intensive mode. During China's international 'catch-up' process, and its own social transition, the role of IP has constantly changed.

This research on China's IP covers a period of the late Qing Dynasty until early June 2017, especially focusing on the period after 1949 and the modern Chinese IP system since its Reform and Opening-up Policy in 1979. The reviewed literature covers: (1) Chinese IP-related legislation and policies; (2) the domestic and international academic IP studies; (3) research reports from international organizations; (4) central reports from the Central Committee of the Communist Party of China, other reports and speeches from the central government with a historical period start from 1933; and (5) IP-related annual reports and statistics from the State Intellectual Property Office and the various levels of the people's court.

This thesis combines the narrative approach of Chinese IP studies, law in context, and historical perspective, and specifically studies the question: 'what is the IP system's role in the catch-up process of China?' The main research question is divided into sub questions: How does the development of the IP system and the national Science and Technology (S&T) integrate with each other (Chapter 2)? How is the IP system absorbed into Chinese society? The absorption of an IP system is explored via two aspects: one imperative aspect is the evolution of IP system from the perspective of enforcement (Chapter 3); and the other is how the IP system from the state level involved has impacted on the Chinese business players (Chapter 4). The manuscript concludes: Even though external pressures played an undeniable role during Chinese IP development, which can chase back to the 19th Century, China has been constantly advancing its IP system and its implementation mainly because of its internal and developmental needs since 1949 (Chapter 5). The outcome of this thesis summarises the three decades of Chinese modern IP development and its enforcement in the following way: an advanced legislation system that goes along with the international standards, an enforcement system with Chinese characteristics, and an administrative system for registration and examination focusing mainly on the domestic industries yet taking international practices as reference. China's adjustments of the IP policies are ultimately determined by the overall objectives for catching up and building an

innovative country. China updates its IP system strictly in line with its level of national S&T development. Based on the internal and international conditions, it is a selected development model from China's side to emphasize IP reform and modernization.

Chapter 1 The Chinese Social Transformation Through the Looking Glass of Intellectual Property

1. Brief Description of the Contemporary Chinese Science and Technology System, and Intellectual Property System

During the period of planned economy after the establishment of the People's Republic of China in 1949, inventions belonged to the state.¹ Thus, privatization of the result of knowledge was illegal.² Neither individuals nor organizations could claim an ownership of intellectual invention, nor monopolize the creations.³ In the late 1970s, Deng Xiaoping's proposition 'science and technology is the number one productivity'⁴ had properly established a social and legal identity for the creators as the 'first wealth creator' in China.⁵ In 1977, Deng addressed that China 'shall acknowledge it fell behind the developed countries', so that for China to achieve modernization, the key was to improve its science and technology.⁶ Chinese society shall respect those who engage in mental works and recognize them as workers.⁷ In the 1980s, the establishment of the modern intellectual property (IP) system has legalized the creators' rights as private rights.⁸ Moreover, the introduction of IP denotes the start of the reform

¹ Art. 23, Regulation on Invention Reward 1963

² 刘春田, 知识产权法 (第五版, 中国人民大学出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)).

³ Details see, such as, Regulation on Invention Reward 1963

⁴ 邓小平, 邓小平文选 (第三卷), 人民出版社 1993, 274 页 Deng X, *Selected Works of Deng Xiaoping*, Vol.3, Renmin Press, 1993, p274.

⁵ 刘春田, 知识产权法 (第五版, 中国人民大学出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)) 32.

⁶ 邓小平, 《尊重知识, 尊重人才》, 邓小平文选 (1975-1982), 人民出版社 1983 (X Deng, *Respect Knowledge, Respect Talents, Selected Papers of Deng Xiaoping(1975-1982)* (Renmin Press 1983)).

⁷ 邓小平, 《尊重知识, 尊重人才》, 邓小平文选 (1975-1982), 人民出版社 1983 (X Deng, *Respect Knowledge, Respect Talents, Selected Papers of Deng Xiaoping(1975-1982)* (Renmin Press 1983)). For development summarization of the first thirty decades after the establishment of People's Republic of China since 1949, see X Deng, *Implement the Policy of Readjustment, Ensure Stability and Unit* (25 December 1980).

⁸ S Zheng and others, *Peking University Encyclopedia of Jurisprudence* (Peking University Press 2001).

of Chinese property law.⁹ It is a milestone. It has offered a system grantee for liberate individuals, and can ‘represent the legislative orientation of civil law in China’.¹⁰ The Chinese IP system has held great strategic importance for Chinese social reform since 2008, focused on improving social productive forces as a comprehensive national strength.¹¹ The strategic importance of the IP system is reflected in four ways:¹² (1) The IP system introduces the legal and political mechanisms to promote the capacity to create, utilize, protect, and administer intellectual property, so as to improve China’s capacity for independent innovation and to build China into an innovative country. (2) Implementing and improving the IP system helps to improve China’s socialist market economy, standardize the market order, and establish a creditworthy society. (3) The reform of knowledge and technology is a precondition for economic development. The Chinese IP system provides necessary systematic support for legal protections for intellectual results.¹³ The IP system has been established in order to boost and benefit the Chinese economic development.¹⁴ The IP system can enhance the market competitiveness of Chinese enterprises and strengthen the core competitiveness of

⁹ 郑成思, 成思建言录 (知识产权出版社 2012) (C Zheng, *Chengsi’s Enlightenments* (Intellectual Property Press, 2012)).

¹⁰ ‘知识产权制度代表了我国民事立法的方向。’ 刘春田, 知识产权法 (第五版, 人民出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)) 33. Prof. Liu’s statement may sounds questionable to some Western scholars, especially for these who define IP as a special discipline under civil law. Therefore, it is necessary to clarify that, Prof. Liu’s statement was made in the context of People’s Republic China’s Reform and Opening-up. This statement correctly underlines the fundamental and great significance of IP in China. The introduce of IP caused systematic changes inside China on its economy and property system. The establishment of IP represents the historic moment when market economy has started to replace the planned economy. Moreover, both the General Provisions of Chinese Civil Law (2017) and General Principles of Chinese Civil Law (1986) regulates IP right as a basic part of civil right. IP law in China is not considered as special law. Comparing to traditional civil law disciplines, such as inheritance law or family law, the intensive legal reform has been carried out in property law. Therefore, Chinese IP can represent the legislative orientation of Chinese civil law.

¹¹ Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (2008).

¹² Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (2008). See such as, S Rein, *The End of Copycat China: The Rise of Creativity, Innovation, and Individualism in Asia* (John Wiley & Sons, Inc 2014)

¹³ 吴汉东, ‘经济新常态下知识产权的创新、驱动与发展’ [2016] 法学 31 (H Wu, ‘Innovation-Driven And Development Of Intellectual Property Under The New Economic Norm’ [2016] Legal Science) 31.

¹⁴ 刘春田, 知识产权法 (第五版, 人民出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)) 29-33.

China. (4) IP helps China to further open-up to the outside world.¹⁵ The indispensability of the IP system is a bridge for China to be involved in the international circle of modern business.¹⁶

After the Reform and Opening-up Policy¹⁷ in 1979, China had a speedy development due to its attractive labour conditions, low wages, and open policies to foreign investments.¹⁸ Because of the internal social conditions and external international situation in China before 1979, China had no option but to develop the country based on a labour-intensive and low-technology model of economy after its opening-up.¹⁹ Nowadays, summarized by Xi Jinping ‘China’s reform has entered into a deep water area after more than 30 years reform and opening-up. It can be said, the easy and everyone-is-satisfied type of reform has been completed, delicious meat is eaten, the rest are all tough issues.’²⁰ According to Xi Jinping, the main ‘tough issues’ are, but not limited to: (1) the continued prominence of imbalanced, disharmonious, and unsustainable problems, which have been generated by development; (2) the innovative

¹⁵ Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (2008).

¹⁶ 刘春田, 知识产权法(第五版, 中国人民大学出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)) 29-33.

¹⁷ Reform and Opening-up Policy refers to one of the two basic points of development, introduced by Mr. Deng Xiaoping. It is the fundamental line development of the Chinese Communist Party in the primary stage of socialism. This general policy of the socialist modernization drive was introduced by the Third Plenary Session of the Eleventh Central Committee of the Communist Party of China in 1978. ‘Reform’ means the internal reform, which is to adhere to the socialist system under the premise of consciously adjust and reform. ‘Open’ means open to the outside world, which is to speed up the inevitable choice of China’s modernization, in line with the characteristics of today’s international environment and the development trend of the world. The Reform and Opening-up Policy is a long-term national policy. See 奚洁人, *科学发展观百科词典*, 上海辞书出版社, 2007 (J Xi, *The Encyclopedia of Scientific Development* (Shanghai Lexicographic Publishing House 2007)).

¹⁸ C Chen, *Foreign Direct Investment in China* (Edward Elgar Publishing Limited 2011).

¹⁹ K Shao, ‘History is a Key Decoder: Why China Aims at Re-Emerging as a Global Leader of Innovation’ [2013] 29 *Law in Context* 117.

²⁰ ‘中国改革经过三十多年, 已进入深水区, 可以说, 容易的、皆大欢喜的改革已经完成了, 好吃的肉都吃掉了, 剩下的都是难啃的硬骨头。’ 中共中央中宣部, 习近平总书记重要讲话读本 (人民出版社 2014) (Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014)) 41. For a detailed understanding and analyses of the Reform and Opening-up Policy in the last 30 years, see Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 17.

capacity for technology is low; (3) industrial structure is irrational and the development mode is extensive; (4) both the development and income gap between urban and rural regions is wide; (5) social contradictions are significantly increased; (6) various problems exist in the areas which are closely connected to people's vital interests: education, employment, medical care, housing, ecological environment, food and drug safety, safety in production, and judicial enforcement and judicial affairs, and social security; (7) some citizens have hard life; (8) problems of formalism, bureaucracy, hedonism and extravagance are prominent; and (9) grave challenges and daunting tasks remain in fighting corruption.²¹ China is in a crucial period of social transition, and the Chinese government has begun to comprehensively move to 'deepen reform'²² and transfer its economy to a knowledge-based model.²³

The Chinese macro strategy, also known as 'the grand strategy', offers a broader and more comprehensive content for its micro strategies. In order to obtain political objectives, which include the assurance of external security and internal social development in peace and war, the dominant task of the 21st Century for the Chinese government is its economic and domestic development.²⁴ This grand strategy can be divided into three parts: (1) a sustainable domestic development with sufficient indemnification; (2) a peaceful international environment; and (3) a military posture for reliable self-defence.²⁵ All the national strategies at every micro level reflect this grand

²¹ Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 40.

²² 中共中央,中共中央关于全面深化改革若干重大问题的决, 2013 (The CPC Central Committee, *Decision of the Central Committee of the Communist Party of China on Deepening the Reform of Several Major Issues* (2013)).

²³ 全国人民代表大会,第十二届全国人民代表大会第三次会议关于2014年国民经济和社会发展计划执行情况与2015年国民经济和社会发展计划的决议2015 (People's Congress, *The Second Session of the Twelfth National People's Congress Resolution on the Implementation of the National Economic and Social Development Plan in 2014 and the National Economic and Social Development Plan 2015* (2015)). For detailed academic studies, such as CA Varum, C Huang and JJBG Gouveia, *China: Building an Innovative Economy* (Chandos Publishing Limited 2007).

²⁴ B Zheng, *China's Peaceful Rise- Speeches of Zheng Bijian (1997-2005)* (Brookings Institution Press 2005).

²⁵ B Hultdt and others, *China Rising - Reactions, Assessments, and Strategic Consequences* (The Swedish National Defense College 2008).

strategy. Since the Reform and Opening-up in 1979, China has developed considerably. Meanwhile, the Chinese government has keenly acknowledged the problems the country has as a developing country.²⁶ ‘The country has a dual structure model of development’, according to Wu Yi, who was the Vice Premier of the State Council²⁷: China is a country with a large population and weak economic foundation; it is also a country with big gap in natural and geographic conditions’ distribution. China has a vast difference between population and resource distribution, a considerable divergence of development between the urban and rural areas, and the development level is considerably different between the regions.²⁸ According to an international synthesis report²⁹ to the Office of Central Leading Group on Financial and Economic Affairs and the National Development and Reform Commission of China, the Chinese economy can be roughly divided into three groups based on the divergent individual income levels: (1) rural economy, which is based on the traditional agriculture with underemployment; (2) coastal economy, which is based on the export industries. It offers low wages. Although it has been leading the Chinese economy for the last two decades, it will slowly decline and disappear; and (3) knowledge-based economy, which is a productivity-driven and knowledge-based economic model that will lead the Chinese economy for the next decade, and support the transition of China to a high-income country. Nonetheless, given the regional diversity in economic and development levels in China, macro strategy must be balanced to accommodate these

²⁶ Detailed illustrations see Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014).

²⁷ Ms. Wu Yi was the Vice Premier of the State Council during the period of 2003 to 2008.

²⁸ Y Wu, ‘China’s Development Road’ (2006), First China-US Strategic Economic Dialogue; see also MK Whyte, ‘Sub-Optimal Institutions but Superior Growth: The Puzzle of China’s Economic Boom’ in J Lin and L Wang (eds), *China’s Economic Dynamics: A Beijing Consensus in the Making?* (Routledge 2014).

²⁹ E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy. An International Perspective* (Beijing Cairncross Economic Research Foundation 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013.

needs. The macro strategy should enhance a sustainable and healthy development of the Chinese economy.³⁰

China has experienced a period of rapid growth, similar to that observed in other developing countries, such as Argentina, Brazil, Chile, Colombia, and Mexico. However, as already been shown in these developing countries, robust development cannot sustain indefinite growth. The Chinese government is keenly aware of the needs for transformation of its development pattern, and such intentions are well illustrated in its national science and technology (S&T) and IP strategies. Reflected through these strategies, instead of the previous sustained growth mode of raw materials and massive exports of low technical goods, China is switching its economic engine to innovation.³¹ China is replacing its previous sustained growth mode to a sustainable one, which is the mode of a knowledge-based economy and domestic consumption.³²

The development challenges of China are unique. Firstly, comparing with countries such as Brazil, Mexico, Chile, and Colombia that underwent similar periods of rapid economic growth, the level of urbanization in China is lower.³³ Until 2013, the ratio of

³⁰ Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 57-75.

³¹ Such as, Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (2008); The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020) (2006); see also OECD, *OECD Reviews of Innovation Policy-China* (2008).

³² Such as, Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (2008); The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020) (2006); see also OECD, *OECD Reviews of Innovation Policy-China* (2008). Moreover, the State Council has issued its group regulation, the Outline of National Innovation - Driven Development Strategy in 2016, by which the importance of the national transition has been implemented at a strategic level inside the state administrative organs. The Outline of National Innovation - Driven Development Strategy (2016) is not a national law but a comprehensive provision for all the relevant administrative organs, which are under the supervision of the State Council. Thus, this strategy will not be discussed in detail within this manuscript. The Chinese title of this outline is 国家创新驱动发展战略纲要(2016).

³³ JV Henderson, 'Urbanization in China: Policy Issues and Options' (2009) <www.s4.brown.edu/china2012/Papers/Final%20Report%20format1109summary.pdf> accessed 15

urbanization reached 53.7%.³⁴ Chinese government is confronting various issues³⁵ caused by its urbanization process. Secondly, the homogeneity of the Chinese economy is low as well.³⁶ Existing studies have shown that: the disparities exist between different regions of China and also between its rural and urban areas.³⁷ This means that China contains a mixture of transformations of different types of development patterns after the Reform and Opening-up Policy.³⁸ The undeveloped regions still have a need for a transition from capital and labour input-driven growth to a development model of productivity gain. For the developing regions or early-stage developed regions, the transition might then involve a changing emphasis—from industry to services. Meanwhile, many of the well-developed regions require a change from foreign demands to domestic spending.³⁹ Despite ‘reducing the gap between the ambition of China’s plan and their uneven implementation’,⁴⁰ the Chinese central government

April 2013. Statistic shows that ‘China’s annual rate of urban population growth, at 3-4% during 1990-2004, was below the 5-6% rates typically experienced by other developing countries during their periods of rapid economic growth. Correspondingly, China’s level of urbanization in 2008 (45.7%) was below the 55% level typical for a country with China’s level of real income per capita.’

³⁴ Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 72.

³⁵ Such as social security problems, resource insufficiencies, severe environment pollutions, capital deficits, population issues and issues of interests’ conflicts and so on. See Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press, 2014) 57-75.

³⁶ 赵人伟, ‘中长期发展规划借鉴国际经验的问题 ——解读《中国经济中长期发展和转型: 国际视角的思考与建议》’ [2011] *经济学动态* 4-12 (R Zhao, ‘Long-term Development Plan: Drawing on the Experience of International Experience - Interpretation of China’s Medium and Long-term Economic Development and Transformation: Reflections and Suggestions from an International Perspective’ [2011] *Dynamics of Economics*) 4-12.

³⁷ E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy an International Perspective* (Beijing Cairncross Economic Research Foundation 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013.

³⁸ DL Yang, ‘Economic Transformation and State Rebuilding in China’ in BJ Naughton (ed), *Holding China Together, Diversity and National Integration in the Post-Deng Era* (Cambridge University Press 2004).

³⁹ E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy an International Perspective* (Beijing Cairncross Economic Research Foundation 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013; see also China Development Research Foundation, *China’s New Urbanization Strategy* (Routledge 2013)

⁴⁰ E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy an International Perspective* (Beijing Cairncross Economic Research Foundation 2011)

confronts the unavoidable diversity from one region to another as a severe challenge. To break through the current economic development challenges, China is adopting a synchronous development model of promoting the industrialization, informatization, urbanization, and agricultural modernization.⁴¹ The delivery of policies is localized and decentralized, however, it would be questionable if the country's legal system could correspond with the implementation of policies.

In order to have a clear view on Chinese IP, one needs to look at the economic and S&T disciplines. After all, IP is not the very first agenda for the country's development.⁴² The IP system is generated by the property system from trades, as a result of industrial civilization.⁴³ China is no different from other countries: if there is no S&T oriented industry in the country, then there is no base from which to discuss innovation-oriented IP.⁴⁴ The national policy on S&T has developed from 'March toward science' (1956), 'Science and technology is the number one productivity' (1978), and 'Relying on science and education to rejuvenate the nation' (1995), to 'Constructing the National Innovation System' (2006).⁴⁵ China is strategically creating a national innovation system (NIS), which should be relatively well-established by 2020.⁴⁶

<<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013.

⁴¹ Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press, 2014) 57-75.

⁴² 刘春田, 知识产权法 (第五版, 人民大学出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)) 25.

⁴³ 吴汉东, '知识产权本质的多维度解读' [2006] 中国法学 31 (H Wu, Interpretation of multi-dimensional nature of intellectual property rights, [2006] China Legal Science) 31.

⁴⁴ 李明德, 知识产权法 (第二版, 社会科学出版社 2014) (Li M, *Intellectual Property Law* (2nd edn, Social Sciences Academic Press 2014)).

⁴⁵ L Yang, 'Implementation of China's Rejuvenation through Knowledge' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2012); see also Z Song, 'From Marching Toward Science to Rejuvenating China by Relying on Science and Education: Comments on the Party's Policy of Science and Technology since the Founding of New China' 14 *Journal of Hulun Buir College* 78

⁴⁶ J Hu, 'Generally Complete the Construction of the National Innovation System with Chinese Characteristics by 2020' *China Daily* (7 September 2012).

China's current economic model is not for a long-term competition.⁴⁷ The labour-intensive and export driven industry model of China can not sufficiently compete with the existing high-tech and innovation-intensive industry model of developed countries. Meanwhile, China needs to stay up-to-date with the changes not only within China but also in the global environment, especially when the era of cheap capital around the world is coming to an end.⁴⁸ China has turned its orientation to the emerging industries. By doing so, China is strategically avoiding the existing patent gardens of developed countries and arguably standing at the same starting line with many developed countries.⁴⁹ A parallel construction of the IP system and NIS has been designed as part of a holistic plan of making China into a comprehensively well-off society by 2020. Moreover, the Chinese government keenly realizes its needs for an independent S&T strength for the country's further development.⁵⁰ IP and its strategies must support China's overall development and contribute to its NIS.⁵¹

China strongly commits to developing the country into a moderately prosperous society⁵² with a focus on innovation.⁵³ The downstream effects of the development of the NIS and IP system are worth anticipating. Their impact will become increasingly

⁴⁷ E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy an International Perspective* (Beijing Cairncross Economic Research Foundation 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013.

⁴⁸ R Dobbs and others, 'Farewell to Cheap Capital? The Implications of Long-Term Shifts in Global Investment and Saving' (McKinsey Global Institute 2010) <www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/farewell-cheap-capital> accessed 11 December 2014.

⁴⁹ 郑成思, 成思建言录 (知识产权出版社 2012) (C Zheng, *Chengsi's Enlightenments* (Intellectual Property Press, 2012)). See also K Shao and X Feng, *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014), or Yu P, 'The International Enclosure of China's Innovation Space', *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁵⁰ Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 67.

⁵¹ The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020) 2006. See also Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 67.

⁵² J Xi, *The Governance of China* (Foreign Languages Press 2014).

⁵³ X Fu, *China's Path to Innovation* (Cambridge University Press 2015).

obvious and offer a solid base for the nation's later economic reforms.⁵⁴ The goal is to become a world S&T power until the mid-21st century.⁵⁵ As Xi Jinping noted, 'We are a big country, we shall have our own things in regards of the innovations in science and technology [...] It takes forever and it is almost impossible to narrow the gap by simply following behind and imitating.'⁵⁶ The systematic constructions are carried out not only in concern of the Chinese domestic conditions but also in the context of a changing global environment. The domestic conditions and international environment are separate, yet linking factors that shall not be separately discussed.⁵⁷ However, the development of the country into a moderately prosperous society seemed to be a one-sided wish from China as a developing country. In 1982, Deng Xiaoping stated that 'It is not an easy thing to gain capital or technology from developed countries'.⁵⁸ Above all, although the main perspective of this monograph is 'catching-up', its starting point is to take into account the 'domestic conditions' and 'international pressures' altogether as one general background.⁵⁹

In order to serve the construction of the NIS, China has significantly deepened its reform of the S&T system. The Chinese State Council issued *the Outline for Medium and Long-term Program for Science and Technology Development 2006-2020* (2006-

⁵⁴ Economic reform is the core of the current Chinese reform. During the ongoing comprehensive moves to deepen reforms, economic reform is the 'principal axis', it leads and spurs reforms in other fields. So that all the reforms can form into one force, rather than few fragmented and scattered forces. Detailed illustrations see Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 38-56.

⁵⁵ The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020) (2006).

⁵⁶ '我们是一个大国，在科技创新上要有自己的东西。如果只是跟在别人后面模仿，那么就永远不可能缩小差距。' 中共中央中宣部，习近平总书记重要讲话读本（人民出版社 2014）（Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014)) 67.

⁵⁷ T Wen, 'The Relationship between China's Strategic Changes and Its Industrialization and Capitalization' in TY Cao (ed), *The Chinese Model of Modern Development* (Routledge 2005).

⁵⁸ X Deng, *Our State's Historic Experience on Economic Constructions* (6 May 1982).

⁵⁹ One may argue that domestic conditions and external pressures are different perspectives. However, as a same logic as the Reform and Opening-up Policy in China, a strict and clear division of internal 'reform' and external 'opening-up' in real life is hardly possible, and has a very limited academic necessity.

2020 Outline).⁶⁰ Meanwhile, China is running a research and development system, consisting of major special S&T projects. Specific projects are identified in the 2006-2020 outline together with the national S&T programme. These projects are: (1) basic research directed by the National Natural Science Foundation and National Basic Research Programme established in March 1997; and (2) applied research and programmes together with modelling products or key technologies.⁶¹

The State Council published *the Opinion on Deepening Institutional Reforms of Science and Technology and Fastening the Construction of National Innovation System*⁶² in 2012. This opinion has highlighted several actions involved in the construction of the NIS, such as: (1) making further improvements in the current policy, its design, and implementation capacity, in order to assist the market-oriented conditions for the innovative and creative industry; (2) strengthening academic-industrial linkages; (3) improving the funding system; and (4) enhancing the commercialization of intellectual property. These efforts are all macro mechanisms to: (1) improve the political environment for independent S&T; (2) assure the orientation of S&T to social development; and (3) improve the efficiency of the NIS, in offering and promoting advantages for independent innovation.⁶³

The NIS was strategically designed by the State Council of China. Its construction can be traced back to 1998, when China established the State Science and Education Leading Group, directed by the Prime Minister of China, in order to establish a proper

⁶⁰ 《国家中长期科学和技术发展规划纲要（2006-2020）2006》(The Outlines on National Medium-and Long-Term Program for Science and Technology Development (2006-2020) (2006)) <www.most.gov.cn/mostinfo/xinxifenlei/gjkjgh/200811/t20081129_65774.htm>.

⁶¹ Y Wang, 'China's National Innovation System and Innovation Policy' (2012) <http://apctt.org/nis/sites/all/themes/nis/pdf/CSNWorkshop_Report_P2S2_Wang.pdf> accessed 7 May 2013.

⁶² Available at <www.most.gov.cn/eng/pressroom/201211/t20121119_98014.htm#>, accessed 15 May 2014.

⁶³ Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 67.

NIS. This group consists of the Ministry of Science and Technology,⁶⁴ the Ministry of Finance, the Ministry of Industry and Information Technology, the Ministry of Agriculture, the National Development and Reform Commission, the Chinese Academy of Sciences, the Chinese Academy of Engineering, and the Natural Science Foundation Commission. Apart from these members, the Ministry of Health and the Ministry of Environmental Protection were also directly involved in the construction of the NIS.⁶⁵ In addition to the ministries at the central state level, China has an innovation system at the province level, because provinces in China each have their own Bureau of Science and Technology. Under this province level, China has a county level system for S&T administration.

The institutional reforms in S&T are constructed so that the intellectual results can fall within an environment with IP protections.⁶⁶ In short, by providing IP protections to technological development, China aims to provide motivation for technological innovation by: (1) creating a functioning institutional environment to conduct technological innovation; (2) encouraging the enterprises and individuals to be enthusiastically involved as main players; and (3) acknowledging the legitimate rights and interests for the innovations' contributors.⁶⁷ Thus, in the last 30 years China impressively constructed its IP system since its Reform and Opening-up Policy.

Compared with US, the EU and EU member states' IP law-making process, China completed its IP law-making and international regulatory compliance in a very short period. Chinese IP law has been designed together with other commercial law disciplines to serve China's economic development. Chinese Trademark Law was

⁶⁴ Before 1998, it was the State Council of Science and Technology. In 1998, the State Council of Science and Technology was recomposed into the Ministry of Science and Technology.

⁶⁵ Y Wang, 'China's National Innovation System and Innovation Policy' (Workshop Report 2012).

⁶⁶ X Feng, 'Challenges to China's Self-Driven Innovation' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁶⁷ X Feng, 'Challenges to China's Self-Driven Innovation' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

released in 1982, and has been amended three times in 1993, 2001, and 2013.⁶⁸ The Patent Law of the People's Republic of China was released in 1984, and has been amended three times in 1992, 2000 and 2008.⁶⁹ Copy Right Law was passed in 1990 and has two amendments, which are the 2001 and 2010 amendments.⁷⁰ China signed all the important international IP treaties within the last 30 years.⁷¹

The IP system is defined in the *Outline of The National Intellectual Property Strategy (2008)*, which was in preparation since 2004. According to *The Circular of the General Office of the State Council on Establishing the Leading Group for the Work concerning Formulating the Strategy for National Intellectual Property Right*,⁷² this steering group⁷³ is directed by previous Vice Premier Wu Yi.⁷⁴ The Outline is a series of policies which regulates China's IP-related actions since 2008. It is the first incidence

⁶⁸ For detailed info on the evolution of Chinese Trademark Law, see 李明德, 知识产权法 (第二版, 社会科学院出版社 2014) (M Li, *Intellectual Property Law* (2nd edn, Social Sciences Academic Press 2014)).

⁶⁹ See the detailed evolution of Chinese Patent Law in Chapter 2.

⁷⁰ For detailed info on the evolution of Chinese Copyright Law, see 李明德, 知识产权法 (第二版, 社会科学院出版社 2014) (M Li, *Intellectual Property Law* (2nd edn, Social Sciences Academic Press 2014)).

⁷¹ X Wen, 'Planning Development Department of the State Intellectual Property Office: Improving Intellectual Property Protection, Establishing Innovative Countries' [2007] 1 *Patent Statistics Bulletin* 25-42.

⁷² 国务院办公厅关于成立国家知识产权战略制定工作领导小组的通知 (Circular of the General Office of the State Council on Establishing the Leading Group for the Work concerning Formulating the Strategy for National Intellectual Property Right) 2005.

⁷³ The group includes the State Council, the State Intellectual Property Office (SIPO), the State Administration for Industry and Commerce (SAIC), the Copyright Bureau, the Development and Reform Commission, the Ministry of Science and Technology, the Ministry of Commerce, the Ministry of Foreign Affairs, the Ministry of Education, the Ministry of National Defense, the Ministry of Public Security, the Ministry of Finance, the Ministry of Personnel, the Ministry of Information Industry, the Ministry of Agriculture, the Ministry of Culture, the Ministry of Health, the State-owned Assets Supervision and Administration Commission (SASAC), the General Administration of Customs, the Administration of Taxation, the Administration of Quality Supervision, the Inspection and Quarantine (AQSIQ), the State Environment Protection Administration, the State Administration of Radio, Film and Television (SARFT), the State Forestry Administration, the Food and Drug Administration, the Legislative Affairs Office, the Chinese Academy of Sciences, the Chinese Academy of Social Sciences, and the Academy of Engineering.

⁷⁴ Z Zhang, 'Roadmaps of China's National Intellectual Property Strategy Outline' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

of IP strategically becoming a subject at the highest political level in China, which suggests that Chinese government has become more focused on IP than previously.⁷⁵ The 2008 Outline contains details of the guiding principles and strategic goals, and focuses on specific tasks together with a timeline for action.

One of the aims of the 2008 Outline is to strengthen the IP judicial protection system. Moreover, the 2008 Outline confirmed the leading role of the Chinese court in protecting IP. The people's courts of all levels play a role in protecting IP.

The IP judicial practice in China is relatively new: the first IP tribunal was held in the Beijing High People's Court in 1993. The Supreme People's Court of China (SPC) established its IP tribunal in 1996. At present, China holds IP tribunals both at the central and local levels.

China has 32 high people's courts, 409 intermediate courts, and 3117 basic courts.⁷⁶ Every high people's court has an IP tribunal. In Beijing, Shanghai, and Guangzhou, China also established distinct intermediate courts specialized for only civil and administrative IP cases.⁷⁷ Up until January 2017, a total of 63 intermediate people's courts host IP tribunals with jurisdiction on hearing the first instance of patent cases.⁷⁸ Some basic people's courts may also have an IP tribunal if the region where the court is located is relatively developed regarding economy, society, and technology. Until

⁷⁵ S Luginbuehl, 'China's Patent Policy' in S Luginbuehl and P Ganea (eds), *Patent Law in Greater China* (Edward Elgar Publishing Limited 2014).

⁷⁶ 最高人民法院:《人民法院简介》(The Supreme People's Court of China, 'Introduction of the People's Courts') <www.court.gov.cn/jgsz/rmfyjj/> accessed 2 May 2014.

⁷⁷ 《全国人民代表大会常务委员会关于在北京、上海、广州设立知识产权法院的决定》, 2014 (Standing Committee of the National People's Congress, *Decision on the Establishment of Intellectual Property Court in Beijing, Shanghai, Guangzhou* (31 August 2014)) <<http://npc.people.com.cn/n/2014/0901/c14576-25581035.html>> accessed 6 June 2015.

⁷⁸ For a detailed list see <<http://mp.weixin.qq.com/s/w6SGjkEP1ckLIRiIcZG7Og>> accessed 10 January 2017.

June 2016, China has 158 basic people's courts which have IP tribunals.⁷⁹ The IP tribunals in Chinese courts protect IP rights, they are established due to the speciality of IP cases, and they protect IPRs in consideration of China's own conditions.⁸⁰ The SPC established six circuit courts from 2015 until 2016, which do not hear IP cases.⁸¹ Four special IP tribunals in the intermediate people's courts of Nanjing, Suzhou, Wuhan, and Chengdu were established in 2017.⁸²

Apart from protecting IP rights, China's IP judicial practice has another role, which is fostering the knowledge-based economy in China.⁸³ Both roles are carried out via (1) SPC issues judicial interpretations and judicial policies, and (2) IP tribunal of each court level clarifies the standards of the application of law to IP disputes.⁸⁴

The judicial interpretations of the IP-law-related issues are relatively new.⁸⁵ In practice, these judicial interpretations of the SPC play a significant role in the Chinese IP judicial enforcement system and hold full legal force.⁸⁶ The judicial interpretations are made

⁷⁹ For a detailed list see <http://mp.weixin.qq.com/s/u7LzMXLO1pw1b3ajTIx_eg> accessed 15 June 2016.

⁸⁰ X Kong and W Du, 'Efforts and Tendencies in China's Judicial Practice of Intellectual Property' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁸¹ Provisions of the Supreme People's Court on Several Issues concerning the Trial of Cases by the Circuit Courts (2015).

⁸² 《最高法关于同意南京市、苏州市、武汉市、成都市中级法院内设专门审判机构并跨区域管辖部分知识产权案件的批复》，法2017（2）号（'The Approval On Establishing Specific Tribunal in Intermediate Court of Nanjing, Suzhou, Wuhan and Chengdu and Cross-regional Jurisdiction on Intellectual Property Cases' [2017] 2）.

⁸³ 李明德, '知识产权法院与创新驱动发展', 人民法院报 2014年9月3日 Li M, Intellectual Property Court and Innovation-Driven Development, People's Court News <http://rmfyb.chinacourt.org/paper/images/2014-09/03/05/2014090305_pdf.pdf> accessed 2 July 2015.

⁸⁴ X Kong, 'Basic Issues of the Application of Intellectual Property Law: Judicial Philosophy, Judicial Policy and the Method of Adjudication' [2013] Beijing: Law Press 1.

⁸⁵ For example, the systemized judicial interpretations on patent infringement cases is Interpretation of the Supreme People's Court on Several Issues Concerning the Application of Law in the Trial of Patent Infringement Dispute Cases, it came into force in 2009.

⁸⁶ Art. 5 Provision of the Supreme People's Court on the Judicial Interpretation Work. See, such as, 沈德咏, 最高人民法院民事诉讼法司法解释理解与适用, 人民法院出版社 2015 (D Shen, Understandings and Implementations on the SPC Judiciary Interpretations on The Chinese Civil Procedure Law (People's Court Press, 2015)).

in four forms ‘interpretation’, ‘provision’, ‘reply’, and ‘decision’.⁸⁷ They are made in order to interpret on the specific issues concerning the application of law in trial work.⁸⁸ The SPC judicial policies on hearing IP cases cover a wide range of different issues and act as guidance to the local courts. This constitutes in detail: (1) judicial interpretations on the specific application of a certain law in the trial work or the application of law in the trial of the cases of a certain category or a certain kind of problems shall be made in the form of ‘interpretation’; (2) judicial interpretations on the formulation of the norms or opinions which are necessary for the trial work on the basis of legislation spirit shall be made in the form of ‘provision’. (3) judicial interpretations on the requests for instructions on the specific application of law in the trial work by the higher people’s courts or the Military Court of the PLA⁸⁹ shall be made in the form of ‘Reply’; (4) the amendment or abolishment of judicial interpretations shall be made in the form of ‘decision’.

The SPC also publishes modelling cases to reflect the IP judicial practices. The double roles of the Chinese judiciary indicate that, the Chinese judiciary is a receiver of macro policies as well as being a micro policy-maker itself. SPC interpretations mirror the Chinese judicial understandings of the relationships among ‘the innovation’, ‘the protection of individual rights’ and ‘the public interests’.

After the Reform and Opening-up Policy,⁹⁰ China has applied the conceptual design which followed the example of the developed countries. By issuing deliberate IPR legislation, the state grants the holders of the rights an exclusive monopoly for a limited period. Based on this ‘monopoly’, the right holder can control the commercial exploitation by: (i) gaining revenues, and (ii) excluding others from making, selling, or

⁸⁷ Art. 6 Provision of the Supreme People’s Court on the Judicial Interpretation Work.

⁸⁸ Art. 2 Provision of the Supreme People’s Court on the Judicial Interpretation Work.

⁸⁹ People’s Liberation Army of China

⁹⁰ The conceptual design of IP before 1979 is illustrated in Chapter 2.

using the monopolized object.⁹¹ Meanwhile, similar to many other countries, China acknowledges that the social benefit derived from the large-scale usage of knowledge-based innovations shall outweigh the social cost. Thus, Chinese courts of all levels have been placed at a significant social position for balancing benefits between the knowledge creators and the various public interests in different regions.⁹² Although Chinese court pledges the enhancement of the IP judicial practices and the promotion of the innovation-based economy, it does not mean that Chinese court is offering a ‘strong’ protection, but rather an ‘effective’ protection to IPRs as TRIPS has been regulated.⁹³

2. Research Sources

2.1 Sources on S&T Policies and NIS

The research focus of this monograph is not on ‘innovation’ per se, therefore, the research inherits from previous studies and adopts a general definition on ‘innovation’. Innovation refers to ‘the introduction or adoption of new products, new production processes, new ways of organization and management, new methods of marketing and new business models. A complete innovation chain includes both the creation and commercialization of new knowledge’.⁹⁴

⁹¹ WR Cornish, *Intellectual Property: Patents, Copyright, Trademarks and Allied Rights* (Sweet and Maxwell 1999).

⁹² X Kong and W Du, ‘Efforts and Tendencies in China’s Judicial Practice of Intellectual Property’ in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁹³ 李含, ‘刘春田: 知识产权保护模式问题欠缺一场“真理标准”式的大讨论’ [2016] 法治周末 (H Li, ‘Liu Chuntian: There is a lack of great discussion of ‘criterion of truth’ for intellectual property protection mechanism’ [2016] Legal Weekly) <<http://news.hexun.com/2016-06-23/184551233.html>> accessed 23 June 2016.

⁹⁴ X Fu, *China’s Path to Innovation* (Cambridge University Press 2015).

It is apparent that S&T policies existed before the NIS, and academic research on Chinese S&T policies are clearly present in the literature. Chinese Ministry of Science and Technology (MOST) has very comprehensive records and descriptions on the S&T policies since the establishment of the People's Republic of China.⁹⁵ These systematic studies of MOST cover the period since 1949. They contain the contents, aims, achievements, shortages, influences, and evolution of these S&T policies. This monograph includes the previous research results from MOST. These results from MOST are analysed in depth in Chapter 2.

Another academic study on Chinese S&T policies for the period of 1978-2004 is presented by 'China: Building an Innovative Economy',⁹⁶ which covers the overall innovation strategies, drivers, and outcomes, as well as the detailed reforms carried in the S&T systems. In 2014, a group of representative scholars jointly published 'Innovation and Intellectual Property in China'.⁹⁷ It continues the academic research on those newly introduced up-to-date S&T strategies. These previous studies have offered a very solid base and knowledge on the Chinese S&T policies to this monograph, inspired this monograph to connect China's IP issues with S&T, and research them altogether in depth.

However, the existing research on Chinese S&T policies hardly cover the period before the People's Republic of China. How S&T has transition during modern Chinese history⁹⁸ is rarely systematically studied. Thus, the understanding of S&T policy

⁹⁵ Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/> accessed 28 July 2017.

⁹⁶ CA Varum, C Huang and JJBG Gouveia, *China: Building an Innovative Economy* (Chandos Publishing Limited 2007).

⁹⁷ K Shao and X Feng, *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁹⁸ The modern Chinese history starts from the year of 1840, the year of the First Opium War

evolution of the People's Republic of China is very limited and even seems to start from nowhere.

Internationally speaking, neither the Paris Convention for the Protection of Industrial Property, nor the Berne Convention for the Protection of Literary and Artistic Works, nor the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) have provisions that regulate the S&T policies or NIS. Both are left to the discretion of each member state.

The NIS has become the national strategic S&T policy since 2012 in China. The introduction of an NIS in China is not unique. Globally speaking, both developed countries and a considerable number of developing countries have introduced a NIS. The NIS was only introduced in China in the 21st Century, which is relatively late compared to other countries, such as the US, Germany, or Japan. There are many academic studies on the NIS,⁹⁹ which can be roughly divided into three groups:¹⁰⁰(1)

⁹⁹ Studies on NIS of developed countries, such as Ministry of Education and the Ministry of Employment and the Economy, *Evaluation of the Finnish National Innovation System - Full Report* (Helsinki University Press 2009); See also H Capron and W Meeusen, *The National Innovation System of Belgium* (Springer-Verlag 2000). Studies on the US and EU national innovation systems, see such as TCR van Someren and S van Someren-Wang, *Innovative China: Innovation Race Between East and West* (Springer 2013). There are also NIS academic studies of developing countries, such as Brazil, Africa countries, India etc, such as M Mazzucato and C Penna, *The Brazilian Innovation System: A Mission-Oriented Policy Proposal* (CGEE 2016); B Oyelanren-Oyeyinka and D McCormick, *Industrial Clusters and Innovation Systems in Africa: Institutions, Markets and Policy* (United Nations University Press 2007); and see also WC Wessner and JS Shivakumar, *India's Changing Innovation System: Achievements, Challenges and Opportunity for Cooperation* (The National Academies Press 2007). A mixture of both developed and developing countries NIS can be found, such as B-Å Lundvall, I Patarapong and V Jan, *Asia's Innovation Systems in Transition* (Edward Elgar 2006).

¹⁰⁰ Studies on NIS of different countries with various income-levels, such as, R Nelson, *National Innovation Systems - A Comparative Analysis* (Oxford University Press 1993), Nelson's book doesn't have a specific chapter on the NIS of mainland China, however, it has a chapter specifically introduced the NIS of Taiwan province. This book has no studies on Russia either. Although the lack of Russia and China can have impact on comparative studies inside this book and impact its research result, it doesn't deny its significant academic contribution on its systematic comparative studies on 15 different countries. Its summarization and study results of common elements and differences among different NIS have a considerable level of referential significance for NIS studies.

NIS studies for large high-income countries, such as the US, Japan, Germany, France, or Britain.; (2) NIS studies for the smaller high-income countries, such as Finland, Belgium, Sweden, or Denmark.; and (3) NIS studies for lower-income countries, such as Indian, Brazil, Argentina, Israel, Asian and Africa countries. These existing NIS studies reflect that the different geographic, economic, and political circumstances, nature resources, farmland conditions, national security concerns, and priorities have decided the construction of one country's NIS.

In China, 'The national innovation system is a government-led public system which gives full play to the basic role of the market in resource allocation while letting various innovation players forge close links and interact with one another'.¹⁰¹ Under the NIS, there are 5 sub-structures, which are envisaged as: (1) technology innovation system, which is the starting point of the NIS, comprising a combination of enterprises, universities, and research institutions in an enterprise-led system; (2) knowledge innovation system, which is a system designed for research institutions and universities with aims for promoting cooperation, resource sharing, and developing the general level of S&T; (3) defence-related science and technology innovation system, which is pictured as a promoter for combining the civilian type of innovations and the defence type of science and technology, and is also proposed to strengthen the development of dual-use technologies; (4) regional innovation systems, which have been constructed in consideration of the large-scaled Chinese territory and the visible regional differences inside the country, with individual characteristics and strengths that intensify the reform of the local science and technology systems and enhance the forces between the central and local levels; and (5) science and technology service agency

¹⁰¹ The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020) (2006).

system, which is designed as a system to simplify technology transfer activities.¹⁰² Until 2015, China had already established 355 national technology transfer centres.¹⁰³

A large amount of research has now been carried out on the Chinese NIS, offering valuable perceptions to understand its current incarnation. Chinese scholars have carried out many studies and translated much academic literature on different state's NIS to enlighten the Chinese understandings of NIS.¹⁰⁴ Both Chinese and international scholars have a visible number of studies on the Chinese NIS. These current studies can be roughly divided into two groups: (1) studies on S&T policies and the new world relationship with China¹⁰⁵ to enhance communication between the East and West; or (2) specific studies on the Chinese newly introduced NIS and its relevant factors to enlarge the understanding of the Chinese NIS. Such studies cover various aspects, such as policies, innovation capacities, capital issues, education rejuvenation of human

¹⁰² Y Wang, 'China's National Innovation System and Innovation Policy' (2012) <http://apctt.org/nis/sites/all/themes/nis/pdf/CSNWorkshop_Report_P2S2_Wang.pdf> accessed 7 May 2013.

¹⁰³ See Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020) (2006); Measures for the Administration of Demonstrative National Technology Transfer Agencies (2007); and Implementation of the National Technology Transfer Promotion Initiative (2008).

¹⁰⁴ See such as 李宏, 张薇, '世界主要国家与地区国家创新系统比较研究' [2003] 中国科技论坛 31 (H Li and W Zhang, 'Comparative Studies on the World's Main National and Regional National Innovation System' [2003] China Technology Forum 31); 刘强, 赵晓洁, '德国国家技术创新系统运行机制' [2003] 德国研究 16 (Q Liu, and XJ Zhao, 'National Innovation System of Germany' [2003] Germany Studies 16); 李正风, 曾国屏, 'OECD 国家创新系统研究及其意义——从理论走向政策' [2004] 科学学研究 (Z Li and GP Zeng, 'Systematic Studies on OECD Countries' National Innovation System and Its Meanings- From Theory to Policy', [2004] Studies in Science of Science 206); 陈洁, 国家创新体系架构与运行机制研究——芬兰的启示与借鉴 (上海交通大学出版社 2010) (J Chen, *Studies on the Construction of National Innovation System and Its Implementation - The Enlightenment From Finland* (Shanghai Jiao Tong University Press 2010)); and see also K Motohashi, 'Growing R&D Collaboration of Japanese Firms and Policy Implication for Reforming National Innovation System' [2006] 24 Studies in Science of Science 482 <www.mo.t.u-tokyo.ac.jp/theme/nihonkigyoutR&D.pdf> accessed 12 October 2016.

¹⁰⁵ Such as TCR van Someren and S van Someren-Wang, *Innovative China: Innovation Race Between East and West* (Springer 2013); See also M Zeng and P Williamson, *Dragons at Your Door: How Chinese Cost Innovation Is Disrupting Global Competition* (Harvard Business School Press 2007).

resources (talent plan), university and research institutions, multinational firms, and specific industrial studies.¹⁰⁶

Although there are numerous academic studies on the Chinese NIS, most of these studies focus on either a certain policy, a specific industry and certain innovation, a certain factor for innovation, or scrupulous development factors of innovation-based economy transition for China. Systematic studies on the NIS are rare.

The advanced systematic studies of the Chinese NIS are conducted by the Organization for Economic Co-operation and Development (OECD). The Chinese Ministry of Science and Technology formally requested the OECD to review China's innovation policy and innovation system in 2004.¹⁰⁷ Hence, following this request, the OECD published two reviews respectively in 2007 and in 2008 on the Chinese innovation policy and the NIS.¹⁰⁸ In the context of China's transition to a sustainable growth model, these two OECD reviews provide very extensive analyses of the breadth and

¹⁰⁶ Studies on the Chinese NIS, such as X Fu, *China's Path to Innovation* (Cambridge University Press 2015). such as OECD, 'OECD Reviews of Innovation Policy CHINA Synthesis Report' (2007) <www.oecd.org/sti/inno/39177453.pdf> accessed 28 July 2017; OECD, *OECD Reviews of Innovation Policy-China* (2008); S Gu and B-Å Lundvall, 'Policy Learning as a Key Process in the Transformation of the Chinese Innovation System' in S Gu and B-Å Lundvall (eds), *Asia's Innovation System in Transition* (Edward Elgar 2006); J Zhang, *The Development of High-Tech Enterprises in China's Universities* (Huazhong Science and Technology University Press 2003); K Zhang, 'Rise of Chinese Multinational Firms' [2009] 42 *The Chinese Economy* 81; H Yang and Y Cheng, 'The Empirical Analysis of Evaluating the Implement Effect of Introduction Overseas High-Level Talents Policy' [2013] 16 *Science & Technology Progress Policy*; and Electronic Information Product Management Department Under the Ministry of Information Industry Economic System Reform, The Economic Operation Department under the Ministry of Information Industry and China Software Industry Association, 'China Software Industry Development Study' (2006); CB Broggi, *Trade and Technology Networks in The Chinese Textile Industry - Opening Up Before the Reform* (Palgrave Macmillan 2016); see also J Hu, 'Study on the New Relations between FDI Attraction and Technology Introduction' (Tsinghua University 2004).

¹⁰⁷ OECD, *OECD Reviews of Innovation Policy-China* (2008).

¹⁰⁸ OECD, 'OECD Reviews of Innovation Policy CHINA Synthesis Report' (2007) <www.oecd.org/sti/inno/39177453.pdf> accessed 28 July 2017; And OECD, *OECD Reviews of Innovation Policy-China* (2008)

depth of the Chinese NIS system. The ‘OECD Reviews of Innovation Policy - CHINA Synthesis Report’ (2007)¹⁰⁹ has been improved and included into the ‘OECD Reviews of Innovation Policy - China (2008)’.

The over 590-pages-long ‘OECD Reviews of Innovation Policy – China (2008)’ has a very detailed systematic analysis of the Chinese S&T policies, especially for those after 1979. The review carried out advanced statistic studies; managed first hand interviews and meetings with representatives from the government, research community, business sector, and other actors of the Chinese NIS; and presented case studies from Shanghai, Liaoning, and Sichuan on the regional innovation systems. This review focuses on the key-performers of R&D and innovation activities in China and explicitly points out the important role that science, technology, and innovation holds in the new Chinese ‘innovation-driven’ develop model. Moreover, the OECD addresses the significance of fostering innovation for the current transition of China. The review offers insights on the pace of NIS development and analyses the main features of the Chinese NIS. The review analyses the role of Chinese policies and the governance of innovation. The OECD reviews¹¹⁰ conclude that: China’s NIS is not fully developed and is still imperfectly integrated, with linkages between actors and sub-systems remaining weak. Thus, the OECD recommended in its report that:¹¹¹ the Chinese government needs to improve the framework conditions for innovation. Meanwhile, the Chinese government should work to adjust, differentiate, and enhance dedicated policies to promote S&T and innovation activities.

¹⁰⁹ OECD, ‘OECD Reviews of Innovation Policy CHINA Synthesis Report’ (2007) <www.oecd.org/sti/inno/39177453.pdf> accessed 28 July 2017.

¹¹⁰ OECD, ‘OECD Reviews of Innovation Policy CHINA Synthesis Report’ (2007) <www.oecd.org/sti/inno/39177453.pdf> accessed 28 July 2017.

¹¹¹ OECD, ‘OECD Reviews of Innovation Policy CHINA Synthesis Report’ (2007) <www.oecd.org/sti/inno/39177453.pdf> accessed 28 July 2017.

The OECD studies were expanded by Fu Xiaolan¹¹² in 2015. Her studies draw on quantitative and qualitative research to form a bridge spanning the academic gap between the NIS, corporations from various leading industries, and the Chinese government. She pushed the current studies on the NIS to national and regional, as well as firms level. This study presents comprehensive descriptions as well as databases on the evolution of S&T strategies, processes, and drivers of innovation at different stages of development, and their impacts on China. Moreover, Fu also defines the Chinese NIS as an open innovation system. These up-to-date NIS studies have provided a solid base of sources to this monograph.

However, these mentioned NIS studies only used the Chinese IP-related data to reflect the development of innovation capacities and technological upgrading. IP related data, especially patent applications, are used to evaluate R&D outputs and the development of the NIS. The foci of these mentioned NIS studies were on factors such as foreign direct investment, human resources on R&D, firms, public support for the commercialization of R&D results, and regional roles. Although the OECD reviews point out the needs of IPR enforcement, the IP system per se was not studied in either of these mentioned NIS related studies. The studies on relationships between the IP system and NIS, and the interconnections between the implementations of the NIS and the IP system remain underdeveloped. Our understanding of how the industry is absorbing both systems in practice is also very limited.

¹¹² Director of the Technology and Management Centre for Development (TMCD), Professor of Technology and International Development, Oxford University.

2.2 Sources of the IP System

Although neither the IP-related international treaties regulate the NIS, the part II and part III of TRIPS has regulated requirements on general IP protections and their enforcement.¹¹³

The Chinese IP system contains: (1) laws and regulations on IP, such as patent law, trademark law and copyright law, and related regulations and legislation concerning genetic resources, traditional knowledge, folk literatures and arts, and geographical indications, as well as IP-related provisions in laws and regulations concerning anti-unfair competition, foreign trade, science and technology and national defence; (2) IP law enforcement and administration systems; and (3) IP governance, namely, IP in economic, cultural, and public policies.¹¹⁴ As a developing country, the patent-related policies play a fundamental role in China's science and technology policies as well as its IP strategy. This fundamental role of patent policies was established in 2010 via the *National Patent Development Strategy 2011-2020*, which was issued by the State Intellectual Property Office of China (SIPO).¹¹⁵

Modern IP studies were only introduced to China since the Reform and Opening-up Policy. Thus, comparing to other countries, the milestone academic studies on Chinese IP are relatively easier to track, beginning with Zheng Chengsi (1944-2006) who introduced the modern IP system to China and actively joined the drafting of Chinese patent and trademark law. Zheng was one of the main founders of China's copyright system.¹¹⁶ During the same period, Wu Handong and Liu Chuntian introduced and

¹¹³ Part II and III of TRIPS, see also WTO, 'Overview: The TRIPS Agreement' <www.wto.org/english/tratop_e/trips_e/intel2b_e.htm#enforcement> accessed 15 April 2017.

¹¹⁴ State Council of People's Republic of China, 'National Intellectual Property Strategy Outline' (2008) <www.gov.cn/gongbao/content/2008/content_1018942.htm> accessed 8 May 2013.

¹¹⁵ 《全国专利事业发展战略（2011-2020）2010》（National Patent Development Strategy (2011-2020) (2010)).

¹¹⁶ 郑成思, 成思建言录 (知识产权出版社 2012) (C Zheng, *Chengsi's Enlightenment* (Intellectual Property Press 2012)).

developed the basic theoretical connection between Chinese IP law and Chinese civil law.¹¹⁷ Wu's theory on 'intangible property'¹¹⁸ has significantly enlarged the understanding of the Chinese property system, and bridged the traditional property system to modern IP law.¹¹⁹ Following Zheng and Wu, and further developed by Liu Chuntian, and Li Mingde¹²⁰, Chinese IP academics have solidly formulated their own understanding of IPRs as private rights¹²¹, and have continuously studied IP law from other countries, such as the US.¹²²

These four scholars are also the very first to address the strategic role of IP to China for the 21st Century.¹²³ In the late 20th Century, Zheng pointed out that China's IP studies shall be prepared for systematic studies so that China's IP system can serve the Chinese 'innovation-based' economy when it comes.¹²⁴ Wu points out that the

¹¹⁷ 刘春田, '知识产权作为第一财产权利是民法学上的一个发现', [2015] 知识产权 3 (C Liu, *Intellectual Property Right as First Property Right is A Discovery of Civil Law Studies*) [2015] *Intellectual Property* 3).

¹¹⁸ 吴汉东, 无形财产制度研究 (法律出版社 2005) (H Wu, *Studies on Intangible Property System* (Law Press 2005)).

¹¹⁹ H Wu, *Intellectual Property Law* (6th edn, Peking University Press 2014).

¹²⁰ The author participated in the major academic project 'Legal Transplant for Innovation and Creativity? China and the Evolution of IP Norms' funded by the Finnish Academy. This project was conducted with cooperation between the Finnish Academy and the Chinese Academy of Social Sciences, together with Prof. Niklas Bruun, Prof. Li Mingde, and other advanced Chinese and foreign IP scholars. The analytical and comparative study of Chinese and European IP law, the analyses of system reforms in China offered by this project, has visibly enlarged the author's understanding of IP to the level of governance, that is: the adoption of a set of IP norms to China does not guarantee a functional IP system, it requires also intensive transformation of the perspectives and the implementing institutions. The project's outcome 'Governance of Intellectual Property Rights in China and Europe' has significantly enriched the author's understandings on the Chinese IP system and formulated a concrete theoretical foundation to this monograph. This project raised the author's curiosity to study the IP system with S&T policies and IP enforcement mechanism.

¹²¹ C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

¹²² Prof. Li Mingde has carried out considerable amount of studies on US IP law. Such as M Li, *US Intellectual Property Law* (Law Press 2014); see also 李明德, 知识产权法 (第二版, 社会科学出版社 2014) (M Li, *Intellectual Property Law* (2nd edn, China Social Sciences Academic Press 2014)).

¹²³ Such as 郑成思, 知识产权法——新世纪初的若干研究重点 (法律出版社 2004) (C Zheng, *Intellectual Property Law- Some Research Focuses for the Beginning of the New Century* (Law Press 2004)); see also 吴汉东, '国际变革大势与中国发展大局中的知识产权制度' [2009] 法学研究 3-17 (H Wu, *Intellectual Property System Under the Trend of International Changes and the Overall Development of China*, [2009] *Law Studies*) 3-17.

¹²⁴ See C Zheng, 'Review the Intellectual Property Research in the 20th Century' [1999] *Intellectual Property* 3.

internationalization of the Chinese IP system does not equal the convergence of global legal IP norms in the areas of protection of content, protection standards and levels of protection.¹²⁵ In addition, Liu addressed that enhancing the judicial protection level of IP inside China does not equal a strong protection of IPRs.¹²⁶ Moreover, Liu is one of the most representative scholars who was against adding criminal punishment to copyright infringements.¹²⁷ Liu's academic understandings of Chinese IP has a considerable impact on the drafting of the *Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (2008)*.¹²⁸

Together with other Chinese and foreign IP scholars, an enormous number of academic studies have been carried out on the Chinese IP system and its implementation. Meanwhile, apart from theoretical studies, the State Council, SPC, and SIPO has continuously published various types of reports that cover up-to-date data on IP filings, guidelines, judicial IP cases and annual reports with practical aspects. Many of these studies are used as important sources to this monograph.

2.3 Other Important Resources on China Studies

2.3.1 Chinese government's understandings about China, the NIS, and IP system

¹²⁵ Such as 吴汉东, '挑战与机遇: 中国入世 10 年的知识产权事业' [2011] 知识产权 13 (H Wu, 'Challenges and Opportunities: the 10 Years IP Career After China Joined WTO' [2011] Intellectual Property) 13.

¹²⁶ Such as 李含, '刘春田: 知识产权保护模式问题欠缺一场“真理标准”式的大讨论' [2016] 法治周末 (H Li, 'Liu Chuntian: There is a lack of great discussion of 'criterion of truth' for intellectual property protection mechanism' [2016] Legal Weekly) <<http://news.hexun.com/2016-06-23/184551233.html>> accessed 23 June 2016.

¹²⁷ Due to the resistance of Prof. Liu and the scholars represented by him, the Copyright Law of China (1991) had no criminal punishment against copyright infringement.

¹²⁸ Renmin University, 'Prof. Liu Chuntian's Resume' <www.law.ruc.edu.cn/sz/show.asp?No=92> accessed 12 June 2016.

During the research for this monograph, the researcher studied a significant number of speeches and documents from the central government and the central committee of the Communist Party of China, covering a period tracing back to the middle 20th Century. As the core policy maker and implementer, the Chinese government's documents reflect its basic understandings about China.

The Chinese government is committed to achieving socialist modernization as one of its 'centenary goals'¹²⁹. Today, Xi Jinping represents the core of the central collective Chinese leadership. The first generation began with Mao Tse-tung providing experience as well as the theoretical and material basis for the initiative of building socialism with Chinese characteristics.¹³⁰ The second generation with Deng Xiaoping continued to build socialism with Chinese characteristics. The third generation with Jiang Zemin advanced socialism with Chinese characteristics into the 21st Century.¹³¹ Followed by Hu Jintao and his team who adhered to and developed socialism with Chinese characteristics from a new historic starting point.¹³² Today, by carrying out

¹²⁹ Two centenary goals: to finish building a moderately prosperous society in all respects by the time the Communist Part of China celebrates its centenary in 2021; and to turn China into a modern socialist country that is prosperous, strong, democratic, culturally advanced, and harmonious by the time the People's Republic of China celebrates its centenary in 2049. See J Hu, *Report at the Eighteenth National Congress of the Communist Party of China* (8 November 2012).

¹³⁰ For detailed explanation of 'Socialism with Chinese Characteristics', see such as J Xi, 'Disseminate and Implement the Guiding Principles of the 18th CPC National Congress (2012)' in J Xi, *The Governance of China* (Foreign Languages Press 2014); And J Xi, 'Uphold and Develop Socialism with Chinese Characteristics (2013)' in J Xi, *The Governance of China* (Foreign Languages Press 2014).

¹³¹ J Xi, 'Disseminate and Implement the Guiding Principles of the 18th CPC National Congress (2012)' in J Xi, *The Governance of China* (Foreign Languages Press 2014).

¹³² J Xi, 'Address to the First Session of the 12th National People's Congress (2013)' in J Xi, *The Governance of China* (Foreign Languages Press 2014).

the Reform and Opening-up Policy, the Chinese leadership is comprehensively moving to ‘deepen reform’¹³³ and ‘the Belt and Road’.¹³⁴

Central government documents have recorded development problems, solutions, and challenges from a central state and governmental perspective. Although this may endanger the author’s study as being too politically driven, it is academically accurate to insist on studying these documents. The OECD reviews or other international studies represent the western and external understandings of the Chinese S&T policies, the NIS and IP system. The documents and speeches from the Chinese central government represent the internal understandings of them. These documents are selected works and speeches of the national leaders of China, such as Deng Xiaoping, Jiang Zemin, Hu Jintao, and Xi Jinping. As a matter of fact, with a narrative study of the Chinese IP system as this monograph is, it is impossible to ignore the Chinese government and its decisive role in Chinese IP development.

China is currently in its primary stage of socialism, which is the paramount reality and the most important national condition in contemporary China.¹³⁵ The ‘primary stage of socialism’ as a specific concept describes the national condition of China, which is defined as ‘a particular historical stage in the building of Chinese socialism. It refers to the historical stage in which China has gradually come out of under-development and will have by and large realized socialist modernization. It will take at least 100 years to

¹³³ Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Continuing the Reform (2013). Apart from Foreword and Conclusion, the decision contains 16 parts, which can be divided into three parts. The first section and the General Remarks elaborates on the significance, guiding thoughts and overall direction of continuing the reform comprehensively. The second section (parts 2-15) contains the main arraignment of main tasks important measures for continuing the reform in six aspects: economy (Part 2-7), politics (Part 8-10), culture (Part 11), society (Part 12-13), ecology (Part 15) and national defense (part 15). The third section elaborates on organizational leadership. A detailed explanation from the Political Bureau of the CPC Central Committee, see J Xi, ‘Explanatory Notes to the “Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Continuing the Reform”’ (9 November 2013).

¹³⁴ J Xi, ‘Work Together to Build the Silk Road Economic Belt and the 21st Century Maritime Silk Road’ (2017) <<https://eng.yidaiyilu.gov.cn/home/rolling/13299.htm>> accessed 18 May 2017.

¹³⁵ J Xi, ‘Study, Disseminate and Implement the Guiding Principles of the 18th CPC National Congress (2012)’ in J Xi, *The Governance of China* (Foreign Languages Press 2014).

take shape from the completion of the socialist transformation of the private ownership of the means of production in the 1950s to the completion of socialist modernization.¹³⁶ Reforms and developments from all aspects are carried out based on this national condition,¹³⁷ including the IP system.

The current Chinese overall reforms' plan includes economic, political, cultural, social, and ecological constructions. China introduced its 'three-step strategic plan' for the country's initial modernization. It was proposed by the 13th National Congress of the Communist Party of China(CPC) in 1987. In detail, the three steps are 'doubling the 1987 Gross National Product(GNP) by the end of the 1980s and ensuring that the people would have adequate food and clothing as the first step; doubling the 1990 GNP by the end of the 20th century and ensuring the people a moderately prosperous life as the second step; and increasing the per capita GNP level to that of moderately developed countries, ensuring the people a relatively affluent life, and realizing modernization by and large by the middle of the 21st century as the third step.' According to President Xi Jinping, China has entered a vital period, when new industrialization, application of information technology, urbanization, and agricultural modernization are simultaneously forging ahead, in parallel or interactively.¹³⁸ China needs to enhance its independent innovation ability, the reform of the S&T system has been carried out at the same time as social and economic reform.

The above-mentioned is the paramount national condition and plan for the Chinese NIS and IP system.

¹³⁶ The Thirteenth National Congress, *Walk Along the Road of Socialism with the Chinese Characteristics* (1987).

¹³⁷ J Xi, 'Study, Disseminate and Implement the Guiding Principles of the 18th CPC National Congress (2012)' in J Xi, *The Governance of China* (Foreign Languages Press 2014).

¹³⁸ J Xi, 'Transition to Innovation-Driven Growth' (Address to the 17th General Assembly of the members of the Chinese Academy of Sciences and the 12th General Assembly of the Members of the Chinese Academy of Engineering 9 June 2014) in J Xi, *The Governance of China* (Foreign Languages Press 2014). Xi pointed out in this report the needs of independent innovation to China 'We cannot always decorate our tomorrows with others' yesterdays. We cannot always rely on others' scientific and technological achievements for our own progress. Moreover, we cannot always trail behind others. We have no choice but to innovate independently.'

The Chinese government acknowledges that the nation falls behind developed countries in regard to S&T.¹³⁹ There is a need to catch-up with the developed countries. On top of this, the current Chinese government addressed that China is in a crucial transitional period. Summarized by Xi Jinping in his speech on Chinese governance, ‘Transition to Innovation-driven Growth’,¹⁴⁰ China has made remarkable achievements in social and economic development after the Reform and Opening-up Policy. The Chinese economy leapt to NO. 2 in the world. However, the Chinese economy is large but not strong, the economic development is fast but not of high quality. The current extensive development is not sustainable because the economic growth is mainly driven by factor inputs such as natural resources. Moreover, the modernization of China meant the current well-off population in the world will jump from 1 billion to more than double to 2.3 billion. The existing resources in the world would be far from enough for China. When the old path seems to be a dead end, the new road ‘lies in scientific and technological innovation, and in the accelerated transition from factor-driven and investment driven growth, to innovation-driven growth’.¹⁴¹

Moreover, the central government of China points out that ‘A big size does not mean strong, a heavy weight is not equivalent to strong, sometimes it is puffiness’.¹⁴² The Chinese government keenly acknowledges the need to enhance the strength of its national S&T strength and independent innovation capacities. The 18th CPC National Congress put forward an important strategic plan for the implementation of an

¹³⁹ The Perspective Plan for Science and Technology Development From 1956-1967. See also 邓小平, 《尊重知识, 尊重人才》, 邓小平文选(1975-1982), 人民出版社 1983 (X Deng, *Respect Knowledge, Respect Talents, Selected Papers of Deng Xiaoping (1975-1982)* (Renmin Press 1983)) .

¹⁴⁰ J Xi, ‘Transition to Innovation-Driven Growth’ (Address to the 17th General Assembly of the members of the Chinese Academy of Sciences and the 12th General Assembly of the Members of the Chinese Academy of Engineering 9 June 2014) in J Xi, *The Governance of China* (Foreign Languages Press 2014).

¹⁴¹ J Xi, ‘Transition to Innovation-Driven Growth’ (Address to the 17th General Assembly of the members of the Chinese Academy of Sciences and the 12th General Assembly of the Members of the Chinese Academy of Engineering 9 June 2014) in J Xi, *The Governance of China* (Foreign Languages Press 2014).

¹⁴² Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 65.

innovation-driven strategy, emphasizing that science and technological innovation must be in the core position.¹⁴³ The Chinese government underlines the needs for improving the efficiency of the NIS.

Guided by those central understandings of development, and based on S&T and economic conditions, the Chinese government emphasized the improvement of enforcement of IP protection to serve the efficiency of the NIS¹⁴⁴ and economic transition.¹⁴⁵

2.3.2 The concept of ‘catch-up’ and other supportive literatures

Accompanying the studies of the previous Chinese S&T policies and IP system, studies on the role of state, industry policies, and IP system are underway. These are discussed under the framework of ‘catch-up’.

The research inherits a broad definition of what ‘catch-up’ is. It is a mixture of economic catch-up and technical catch-up, a process by which a single late-developing country narrows its gap in income and in technological capability vis-à-vis a leading country¹⁴⁶ or a group of developed countries. Catch-up is a learning process adopted

¹⁴³ J Xi, ‘Transition to Innovation-Driven Growth’ (Address to the 17th General Assembly of the members of the Chinese Academy of Sciences and the 12th General Assembly of the Members of the Chinese Academy of Engineering 9 June 2014) in J Xi, *The Governance of China* (Foreign Languages Press 2014).

¹⁴⁴ Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 67.

¹⁴⁵ Such as J Xi, *Speech on the Sixteenth Meeting of the Leading Group for Financial and Economic Affairs* (2017), ‘Industrial property protection, especially intellectual property protection, is an important aspect of shaping a good business environment. We shall improve the relevant laws and regulations on the protection of intellectual property rights, improve the quality of intellectual property examination and its efficiency. We shall speed up the construction of new areas and formats of the intellectual property protection system. We shall increase the level of punishment on intellectual property infringement, so that infringers pay a heavy price. For both of the natural and legal persons, we shall motivate the right holders’ enthusiasm and initiative, to enhance their awareness of intellectual property rights to consciously use legal mechanisms to protect their rights according to law.’

¹⁴⁶ In O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010), catch-up has been defined as the process which a late-developing country narrows its gap in income and in technological capability vis-à-vis a leading country. This manuscript has expanded the definition from ‘a leading country’ to ‘a leading country or a group of developed countries’. This concept expansion is made based on the Chinese

by countries that are falling behind in technological and economic frontiers. ‘Catch-up is intended to highlight that historically, and today, countries that are lagging behind use practices employed in countries that are in the lead as models and performance standards’.¹⁴⁷

During the catch-up process, developing countries adopt practices from advanced economic countries as broad models. A main part of ‘catch-up’ is ‘technological learning’, which ‘encompassing the wide range of productive techniques for meeting development needs’.¹⁴⁸ The term ‘technology’ used in ‘catch-up’ is a much wider concept than the ‘necessary engineering know-how’ considered by technicians.

Catch-up is a complicated process and a multi-dimensional phenomenon. Catch-up contains not only the ‘know-how’, but also a ‘learning process’ that covers capabilities and activities of organization, coordination, and management.’ It is ‘a development process essentially involves learning about and trying to take on board practices that are in use in countries toward the frontier’.¹⁴⁹ Catch-up requires: (1) the process of technological learning in the foreground, namely, improvement of indigenous technologies¹⁵⁰; and (2) the background involves many different facets of a national’s

practice. During Chair Mao’s era, China’s development goal was to ‘*catch up and surpass Britain and the States*’. Since the Reform and Opening-up Policy, the Chinese central government has learned from its previous experiences, including bitter lessons that Mr. Deng Xiaoping pointed out ‘*one cannot succeed in development behind closed doors, China cannot develop itself in isolation from the world*’. For a big country’s development, such as China, on the base of its own efforts, China needs capitals and technologies from different countries. China has been studying from a group of developed countries as its references for development but not only one. See such as, X Deng, ‘Our Ambitious Goals and Fundamental Policies’ in X Deng, *Respect Knowledge, Respect Talents, Selected Papers of Deng Xiaoping (1975-1982)* (Renmin Press 1983).

¹⁴⁷ O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010).

¹⁴⁸ O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010).

¹⁴⁹ O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010).

¹⁵⁰ The means of learning and absorbing advanced technologies are: (1) frequent cross-border flow of people; (2) access new knowledge via open sources, such as exhibitions, conferences, books, papers and patent documents; (3) import products and learn by imitation; or import machines and equipment and learn by using them; (4) via patent licenses; and (5) the spillovers from local affiliates of multinationals. See O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010).

institutional structures, namely, acquiring more efficient modern practices (most likely from abroad). These may include, for example: education and training systems, labour and capital markets, competition and regulatory policies, programs in support of infrastructure, resources, and environmental management, IP system and the ability of government.¹⁵¹ The learning process shall cover both the essential factors: physical technologies and social institutions.¹⁵² Because obtaining physical technologies alone cannot guarantee a country's development or economic growth, the needs for development of social technologies are unavoidable.

The catch-up process differs from one country to another. For example, China and India both imported software-related technologies, however, the catch-up process of these two countries' software industries have been developed under very different models.¹⁵³ This is because indigenous conditions are often very different from one country to another. Therefore, studies of the catching-up process shall be specific to one country.¹⁵⁴ Moreover, even inside one country, mechanisms for catch-up can be different from one historical period to another. For example, China adopted very different catch-up mechanisms before and after 1979. Therefore, the studies of catch-up process are carried out with a period-specific manner.

¹⁵¹ O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010).

¹⁵² The term 'institutions' used this thesis inherits the definition, which is to 'denote structures and forces that mold and hold in place prevalent social technologies'. Nelson Richard applied an analytical approach to study the various meanings of 'institution' among economists and those who study technological advance. Nelson points out in his study that innovation driven economic growth needs to be understood as involving the co-evolution of physical and social technologies, and that the dynamics of institutional change should be seen in this light but not consider only the technology innovation as a key driving force. See RR Nelson, 'What Enables Rapid Economic Progress What Are the Needed Institutions' [2008] *Research Policy* 37.

¹⁵³ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

¹⁵⁴ 'Convergence' is a very similar concept as 'catch-up'. However, convergence takes the world as its study object and emphasizes the global reduction of overall differences in productivity and income. See O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010).

Other significant and relevant research perspectives of industrialization, technical, and economic development policies in general have offered a broader understanding to this monograph. One outstanding relevant research is ‘Kicking Away the Ladder: Development Strategy in Historical Perspective’,¹⁵⁵ which studies the catch-up process of many already developed countries as well as the newly industrialized economies. This comprehensive study has shown that the institutions and mechanisms which the developed countries have introduced to the current developing countries are not the fundamental inducement of their success but rather the result generated from these successes. The propaganda as ‘innovative and anti-imitation’ that the developed countries are having as their ‘state image’ is ahistorical. This advanced study from Chang has ensured the confidence to involve a historical perspective into this monograph.

Moreover, the current studies on the role of IP to a country’s catch-up process are diverse at the theoretical level, some claim that tighter IP standards of TRIPS make catching-up more difficult, whilst others argue the contrary. In 2010, a group of researchers via Oxford Press published the book ‘Intellectual Property Rights, Development and Catch-up’.¹⁵⁶ The book has presented an empirical and comparative study result on the investigation of the IP role in catch-up in country-specific and period-specific manners. This book has expanded the role of IP from theoretical debates to empirical research, and showed that the impact of IP during the catch-up process is real and multidimensional. Empirical research on the pathways of technological learning of different countries, and the influence of IP regimes on these pathways¹⁵⁷

¹⁵⁵ H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

¹⁵⁶ O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010).

¹⁵⁷ O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010) has studied the catch-up process with a wide coverage of different countries: US, Nordic countries, Japan, Korea, Israel, Argentina, Brazil, China, India and Thailand.

significantly expanded the current manuscript's understanding of the role of IP regimes in the catch-up process.

There are also studies on the aspect of structural changes in general in the sense of national governance, one of the representative studies on China is 'Medium and Long Term Development and Transformation of the Chinese Economy - an International Perspective' (2011). Even though it has no specific role in S&T policies, it has added a grand economic and general market understanding of China to this monograph.

3. Research Questions

China is carrying out its 'catch-up' to the frontiers, whilst going through a crucial period of social transition. Although the existing literature studied the national S&T policies, NIS, and IP system in depth, they were studied separately. The various central documents from the Chinese government have only generally addressed that the IP system shall serve the construction of the NIS. How these separate policies and systems elaborate together remains academically underdeveloped. According to Xi Jinping, China shall avoid fragmentation and isolation, and the resource allocation mechanism shall be systemized.¹⁵⁸ If there is only an IP system without domestic S&T development and independent innovation, China will have no real development but a 'passing-by' case of foreign capitals.¹⁵⁹ The Chinese government has switched its attention on the distribution process of wealth and income, rather than only on the foreign trade volume. Because, although China can have huge trade surplus from the statistics, without domestic S&T development and independent IPRs, the profit for

¹⁵⁸ J Xi, Explanatory Notes to the 'Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Continuing the Reform', in J Xi, *The Governance of China* (Foreign Languages Press 2014).

¹⁵⁹ 'Li Deshui: Huge Surplus Essentially Is Only a Passing by God of Wealth' *First Financial Daily* (26 January 2006) <<http://finance.sina.com.cn/g/20060126/07122307823.shtml>> accessed 18 September 2015.

China is very limited.¹⁶⁰ S&T development is an inevitable counter-balancing factor for China's own development. Therefore, the author questions the IP system as a state mechanism: **what is the IP system's role in the catch-up process of China?** This main research question has been divided into sub questions: (1) How does the development of the IP system and the national S&T integrate with each other?; and (2) How is the IP system absorbed into Chinese society? The absorption of the IP system is explored via two aspects: one imperative aspect is the evolution of IP system from the perspective of enforcement; and the other is how has the IP system from the state level involved and impacted Chinese business players. The conclusions will combine the mentioned circumambient questions and discuss them with a general narrative method of Chinese IP studies.¹⁶¹

This monograph studies the IP system with a focus on the patent regime. Because comparing with trademark, copyright, and other IP regimes, the patent regime is considered the most influential to technical catch-up.¹⁶² Moreover, from the state-level, various strategic guidelines and policies have shown that the Chinese government turned to concern patents as the most important among the various means of IP.¹⁶³

As a point of departure, this monograph thus analyses Chinese IP law and its enforcement from three separate yet related perspectives, they are: (1) the contextual

¹⁶⁰ 'Li Deshui: Huge Surplus Essentially Is Only a Passing by God of Wealth' *First Financial Daily* (26 January 2006) <<http://finance.sina.com.cn/g/20060126/07122307823.shtml>> accessed 18 September 2015.

¹⁶¹ The author agrees with Prof. Liu Chuntian that even though the methodology for researches and argumentation on Chinese IP has adopted both analytical method and narrative method, the narrative studies should be the dominant focus when it comes to its current incarnation Chinese IP studies. The author's way of presenting this research result has been following Prof. Liu Chuntian's narrative approach. Thus, this monograph focuses on the domestic and historical conditions of China and the nature of IP itself, rather than the international treaties and conventions oriented Chinese IP analytical studies. See C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

¹⁶² O Hiroyuku and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010); see also H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

¹⁶³ Such as Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (2008).

interactions among the national strategies on the S&T policies and the IP system; (2) the Chinese IP enforcement and its current statutory reform; and (3) from a practical aspect, taking the IT industry as an example and observing how the IP system is functioning for the domestic business. In detail, the second chapter reviews the fast development of the Chinese IP system and the S&T policies. It then elaborates the interconnection between the S&T policies and IP polices, and the mutualism between the IP system and S&T system. The third chapter illustrates the responses and ongoing adjustments of enforcement mechanism in the IP system. The fourth chapter uses the IT industry, especially Huawei, as an example for evaluating the reactions of Chinese leading business to the IP system and its implementation. The last chapter summarizes and lists the overall research results.¹⁶⁴

4. Methodology: A Combination of ‘Narrative Approach’, ‘Law in Context’, and ‘Historical Perspective’

4.1 Adopting ‘Narrative Approach in Chinese IP Studies’

Research into modern Chinese IP commenced in 1979.¹⁶⁵ An enormous amount of IP-related research has been carried out. The important academic achievements on IP and the development phases in the 20th Century are well summarized by Zheng Chengsi, who is acknowledged as one of the academic founders for Chinese IP research. Zheng summarized the early IP academic studies in five phases. Respectively, the 1979-middle 1980s period; the 1991 period; the late 1995 period, and the late 20th Century

¹⁶⁴ X Wen, ‘Planning Development Department of the State Intellectual Property Office: Improving Intellectual Property Protection, Establishing Innovative Countries’ [2007] 1 *Patent Statistics Bulletin* 25-42.

¹⁶⁵ C Zheng, ‘Review the Intellectual Property Research in the 20th Century’ [1999] *Intellectual Property* 3.

period. After the late 20th Century, China's IP studies matured and began to systematically prepare for the coming era of 'innovation-based economy'.¹⁶⁶ Chinese IP academia has developed a 'narrative approach' and 'analytical approach' on the Chinese IP studies.

Represented by Zheng Chengsi, Wu Handong, Liu Chuntian, and Li Mingde, Chinese IP academia in general has adopted both analytical and narrative methods in its research methodology. However, the way of arguing and their emphases are different. 'Narrative approach in Chinese IP studies' is a study and argumentation method, by which a researcher mainly focuses on the Chinese own domestic, historical conditions together with the nature of IP itself.¹⁶⁷ This approach takes the international IP system or IP-related treaties or conventions as references.¹⁶⁸

'Analytical method in Chinese IP studies' focuses on the international treaties and conventions on IP and their impacts on Chinese IP, by which the argumentation and research normally starts with the Berne Convention, Paris Convention, and TRIPS. IP scholars who adopt analytical method as a core methodology normally hold a strong conviction that it is difficult to explain some principles in Chinese IP law without the international principles from these international IP-related conventions and treaties.

¹⁶⁶ See C Zheng, 'Review the Intellectual Property Research in the 20th Century' [1999] *Intellectual Property* 3.

¹⁶⁷ 刘春田, '知识产权作为第一财产权利是民法学上的一个发现', [2015] *知识产权* 3 (C Liu, *Intellectual Property Right as First Property Right is A Discovery of Civil Law Studies*) [2015] *Intellectual Property* 3); See also H Wu, 'To Rethink the Identity, Subject and Object of Intellectual Property By Comparatively Studying Property Ownership' [2000] *Legal Review*; 吴汉东, '知识创新时代的知识产权法' [2010] *北方法学* 157 (H Wu, 'Intellectual Property Law In the New Era of Knowledge Innovation' [2010] *Northern Legal Science* 157).

¹⁶⁸ 刘春田, *知识产权法* (第五版, 人民大学出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)); See also C Zheng, 'The International System of Intellectual Property and the Law of Intellectual Property of China' [1984] *China Legal Science* 166; C Zheng, 'Review the Intellectual Property Research in the 20th Century' [1999] *Intellectual Property* 3.

This belief is due to the fact that some of the substantive contents of Chinese IP regulations are resourced from the important IP conventions, especially TRIPS.¹⁶⁹

4.2 Illustration of the Justifications on NOT Applying the Traditional Legal Doctrinal Approach

This monograph targets non-Chinese entities as its potential audience but not aimed to the judges, nor from the judges' perspective. Therefore, this monograph does not apply the traditional legal doctrinal approach.¹⁷⁰

Moreover, at the state level, China started its IP law making in 1982. At present, China has all the necessary statutes, the protection scopes and the implementations follow the international standards and rules of TRIPS.¹⁷¹ China's introduction of modern IP legislation fulfils the basic standards set out in the Berne and Paris Conventions, as well as in the TRIPS.¹⁷² Currently, China is carrying out intensive legal reform and the Chinese IP strategy until 2020 is 'establishing a comprehensive IP system', 'promoting creation and utilization of IP', 'enhancing IP protection', 'preventing abuse of IP rights', and 'fostering a culture for IP rights'.¹⁷³ Therefore, it is questionable if the reform at the state level is touching the social reality or it is just a wishful law and political

¹⁶⁹ Such as C Zheng, 'WTO and Intellectual Property Law of China' [2001] *Academic Journal of Yunnan University* 29.

¹⁷⁰ Even though some doctrinal scholars tried to free the 'judge' role model of doctrinal method, to a certain degree that the continental European view still refers to the doctrinal methodology to offer interpretative suggestions on legal norms from the perspective of judges.

¹⁷¹ A Wechsler, 'Intellectual Property Law in the People's Republic of China: A Powerful Tool for Innovation and Development' [2011] *China-EU Law Journal*, Online Version.

¹⁷² S Luginbuehl, 'China's Patent Policy' in S Luginbuehl and Peter Ganea (eds), *Patent Law in Greater China* (Edward Elgar 2014) 3-24.

¹⁷³ State Council of People's Republic of China. National Intellectual Property Strategy Outline (5 June 2008) <www.gov.cn/gongbao/content/2008/content_1018942.htm> accessed 28 July 2017.

thinking of vertical reformation.¹⁷⁴ From the state level, the ‘instrumental use of the law’ is very intensive. Hence, with an intensive state intervention as Chinese IP is experiencing at the moment, talking about the current Chinese IP in an apolitical way is questionable.¹⁷⁵

IP in China functions in multiple ways, in short, it serves those who want to use law to change the society and also to those who want to preserve the status.¹⁷⁶ And the focus and privilege of such mentioned instrumental usage switches from one to another, and is obviously reflected in the development of Chinese IP after 1979.¹⁷⁷ In order to see through the instrumental applications of the IP system, and study the ‘core values’ of IP in the coherent Chinese law system, this study then has to apply methodologies that go beyond the traditional legal doctrinal approach.

4.3 Illustration of the Justifications on Applying ‘Law In Context’, ‘Comparative Factor’ and ‘Historical Perspective’ as Methodology

This monograph is highly inspired by William Twining’s methodology ‘Law in Context’. Some may claim that there is a lack of fundamental support at the philosophical level and the application of a European methodology is under the risk of being improper for the interpretation of the Chinese IP situation.

¹⁷⁴ MYK Woo and ME Gallagher, *Chinese Justice - Civil Dispute Resolution in Contemporary China* (Cambridge University Press 2011).

¹⁷⁵ This will be discussed in detail in Chapter 2.

¹⁷⁶ 吴汉东, ‘知识产权本质的多维度解读’ [2006] 中国法学 31 (H Wu, ‘Interpretation of multi-dimensional Nature of Intellectual Property Rights’ [2006] *China Legal Science*) 31; See also 刘春田, 知识产权法 (第五版, 人民出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)).

¹⁷⁷ 郑成思, 知识产权法——新世纪初的若干研究重点 (法律出版社 2004) (C Zheng, *Intellectual Property Law- Some Research Focuses for the Beginning of the New Century* (Law Press 2004)).

Indeed, applying a European methodology to explain legal phenomena generated from a Far East society is debatable. However, as a common result of evaluation, there is no perfect method which covers all Western and Chinese perspectives. The emphasis of applying ‘law in context’ for this research is: whether the applied method is sufficient to solve the research questions.

Twining’s thoughts provide a useful insight to the author’s research: ‘to academic lawyers, law is a part of the humanities and social sciences; to the profession, it is in large part a business in service (mostly) to (big) business’.¹⁷⁸ Twining’s papers are different from the legal doctrine, because he has consistently enlarged the scope of the legal discipline from ‘exposition’ or ‘interpretation’ of legal rules to the study of law in its social context and he makes contact with neighbouring disciplines,¹⁷⁹ in short, ‘law in context’ or ‘rules are an important, indeed a central feature of law, but for almost any purpose – for understanding, for practice, and for reform – the study of rules alone is not enough; law must be studied in the context of social processes generally.’¹⁸⁰

The ‘Law in Context’ methodology deals with law and legal practice, and it links legal philosophy and sociology of law together with statutes. It is a very useful notion and method for this monograph. However, it is still necessary to ask, ‘what are the justifications for applying law in context to the Chinese situation?’

Firstly, comparing to the relatively self-developed process of Western law and theories, the contemporary Chinese law and theories are always under the impact of Western thoughts, especially Chinese IP studies. Most Chinese IP scholars can read one foreign

¹⁷⁸ DG Réaume, ‘Book Review on William Twining’s Blackstone’s Tower and Law in Context’ [1999] 661 University of Toronto Law Journal 49.

¹⁷⁹ Such as some of Twining’s latest books, *Globalization and Legal Scholarship* (2011), *General Jurisprudence: Understanding Law from a Global Perspective* (2009), etc.

¹⁸⁰ W Twining, *Law in Context: Enlarging a Discipline* (Clarendon Press 1997) 33; J Griffiths, ‘Book Review on W. Twining, *Law in Context: Enlarging a Discipline*’ (1998) 4 *European Journal of Crime, Criminal law and Criminal Justice* 145.

language or are closely working with scholars who read foreign languages.¹⁸¹ However, while applying Twining's 'Law in Context', it is necessary to make some clarifications in advance, as pointed out by a leading Chinese legal philosopher, Prof. Shu Guoying:¹⁸² (1) The research subject 'Chinese Law', as a whole, is not historically developed in the same way as Western law.¹⁸³ Due to modern technology,¹⁸⁴ the process of 'creating' a legal knowledge is very often replaced by 'copying' a legal knowledge. Although there is a fast generation and distribution of an enormous amount of publications, this knowledge is not systematized. Therefore, the system of legal knowledge has neither a solid base nor stable structure. The development processes and generation of the Chinese legal knowledge may, unfortunately, lack order. It is neither a mature nor well-managed system.¹⁸⁵ (2) The good and bad concepts, both the imported and self-generated, exist in tandem. Even though it may seem as a diversity of legal thoughts, it is necessary to keep in mind that assimilation of legal knowledge due to interests alone should be avoided.¹⁸⁶ (3) Academia cannot currently sufficiently support practitioners or legislators.¹⁸⁷ (4) The use of methodology of any kind should

¹⁸¹ C Zheng, 'Review the Intellectual Property Research in the 20th Century' [1999] Intellectual Property 3.

¹⁸² 舒国滢, 法哲学: 立场与方法, 北京大学出版社, 2010. (G Shu, *Legal Philosophy: Stand and Method* (Peking University Press 2010)).

¹⁸³ 舒国滢, "在历史丛林中穿行的中国法理学", 法哲学: 立场与方法, 北京大学出版社, 2010 (G Shu, 'Chinese jurisprudence in the jungle of history' in G Shu, *Legal Philosophy: Stand and Method* (Peking University Press 2010)).

¹⁸⁴ Prof. Shu especially discusses the change of 'creating knowledge' after the implementation of computer science and Internet.

¹⁸⁵ Prof. Shu metaphorizes the lack of systemization as 'immature kid putting together wooden blocks'. See 舒国滢, '从方法论看抽象法学理论的发展', 法哲学: 立场与方法, 41-64. 北京大学出版社, 2010. (G Shu, 'Observing the Development of Legal Philosophy Through Methodology' in G Shu, *Legal Philosophy: Stand and Method* (Peking University Press 2010) 41-64). Moreover, in 舒国滢, "在历史丛林中穿行的中国法理学", 法哲学: 立场与方法, 北京大学出版社, 2010 (G Shu, 'Chinese jurisprudence in the jungle of history' in G Shu, *Legal Philosophy: Stand and Method* (Peking University Press 2010)) Prof. Shu particularly studied the development of academia of legal jurisprudence and legal philosophy since 1949.

¹⁸⁶ Prof. Shu holds the opinion that: the fast copying of knowledge inevitably leads to misidentify good and bad knowledge. The massive copying of knowledge infiltrates into the process of creating knowledge that has generated bubbles and worship of publications inside the academia. Prof. Shu claims in his studies that the current Chinese system of legal knowledge is lack of solid foundation and structure. The weakly assembled system of 'copied knowledge' is a form of great leap. Moreover, knowledge creation is no longer a pure 'intellectual activity', it is subject to the temptation of material and power, and ultimately become a maidservant. 舒国滢, 法哲学: 立场与方法, 北京大学出版社, 2010. (G Shu, *Legal Philosophy: Stand and Method* (Peking University Press 2010)).

¹⁸⁷ Prof. Shu summarizes the lack of intellectual support for practitioners and legislators is fundamentally because Chinese legal theories in many cases lack attention on the secular life and society

not be pushed to the extreme; and (5) even though the weaknesses of current Chinese law and its jurisprudence has exposed it to strong criticism from other disciplines, it does not necessarily mean the legislation itself is not well made.

Many ‘Law in Context’ examples can be found in the existing Chinese IP studies. One can easily determine that, even though at the state level, China is trying very hard to make a positive promotion of Chinese IP, this effort was often challenged and objected by other contexts and disciplines, such as political, moral, social, and economic factors. The defence made from the Chinese side is also from these contextual factors but not based on legal statutes or jurisprudence. For example, questions about the lack of IP are raised under the context of cultural historicism, which is the Chinese legal tradition. By addressing an old Chinese proverb ‘to steal a book is an elegant offence’, William Alford illustrated the lack of tradition of IP in the traditional ideology of China.¹⁸⁸ The same questions are also interpreted under the context of the Eastern-way of learning under the Confucian tradition, such as stated in the work of Nils Montan ‘in the Confucian societies, imitation and reproduction of ideas, art, and scholarship are considered tokens of honor and respect. [...] within this cultural context, the protection of intellectual property rights is not a concept that fits easily into a Confucian society, where copying is often an integral part of the learning process’.¹⁸⁹ As a defence, Shao Ke stated in his article on the history of Chinese copyright and the traditional opinions about innovation,¹⁹⁰ which were proved from other aspects by different scholars

of China. Legal theories and legal practice cannot formulate a benign symbiosis system. Legal theories cannot offer sufficiently intellectual support for the creation of legal solution, basic principle, or make reasonable and convincing arguments for legal decisions. In some cases, legal theories are even absent from legal practices. See detailed discussion in 舒国滢, *法哲学：立场与方法*, 58-60. 北京大学出版社, 2010. (G Shu, *Legal Philosophy: Stand and Method* (Peking University Press 2010)) 58-60.

¹⁸⁸ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995). Prof. Alford studied why intellectual property law, and in particular copyright, has never taken hold in China.

¹⁸⁹ NV Monton, ‘Trademark Anticounterfeiting in Asia and the Pacific Rim’ [2001] *International Trademark Association* 21.

¹⁹⁰ 邵科, ‘窃书不算偷? ——如何剖析中国版权史及传统创新观’, *知识产权年刊*, 39-56. 北京大学出版社, 2011 (K Shao, ‘To Steal a Book is an Elegant Offense? – How to Anatomize the History of

that,¹⁹¹ the notion of private property and the involvement of economy, historically speaking, strongly existed during the ancient Chinese history. Moreover, during the Qing Dynasty, the Qing government tried to develop a patent system, which was recorded both in the Chinese as well as Western archives.¹⁹² During the reign of Emperor Guangxu (1871-1908) of the Qing Dynasty, China passed a patent law (1898) that granted patent protection, via proclamations and administrative measures to Chinese as well as Western citizens and companies.¹⁹³ Although this patent law hardly implemented, a report of the US patent office in 1909 proved that the Chinese government handled IP infringement cases by Chinese subjects very well by using ‘excellent dispositions in this matter’.¹⁹⁴ Counterfeiting and piracy has nothing to do with culture but could be a natural consequence of market equilibrium due to the imbalance between demand and supply, which can happen in any country but not only in China. Less developed countries are normally technology followers of developed countries, and unavoidably have to pass a primary stage of development. Such a primary stage of development, supported by historical facts, are usually packed with imitations but not innovations.¹⁹⁵

Chinese Copyright and the Traditional Opinions about Innovations’ [2011] Intellectual Property Rights Annual Journal 39).

¹⁹¹ Such as GCK Cheung, *Intellectual Property Rights in China: Policy of Piracy, Trade and Protection*. Routledge Contemporary China Series (Routledge 2009) 21.

¹⁹² WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

¹⁹³ 张平, 知识产权法详论, 北京大学出版社, 1994. (P Zhang, *Intellectual Property Law Analyses* (Beijing University Press 1994)).

¹⁹⁴ AW Pontius, *Protection Extended to Patents, Designs, Framed-Marks and Copyrights in China, Japan and Korea* (Government Printing Office 1909). ‘As regards the protection of American patents, designs, trademarks, and copyright against infringement in China by Chinese subjects, no formal regulations for their registration and protection against Chinese infringement in any given part of the Empire can meanwhile be secured through representations to the respective local authorities made through the American consular offices, a fact which evidences the Chinese Government’s present excellent disposition in this matter. The protection thus afforded is by means of proclamations and administrative measures.’

¹⁹⁵ H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

Secondly, it is impossible to imagine Western law without the input of scholars' writings where there is an absence of governmental authority. Comparing to the Chinese law-making procedure, the particular situation is very different. When China started its Reform and Opening-up in 1979, the country's population was poorly educated, which led to a generally poor human resource to its political, legal, institutional, economic, and educational reforms.¹⁹⁶ Furthermore, the lawmakers in many cases were law developers. Chinese law is unimaginable without the input of scholarly research, where in many cases scholars directly worked for the governmental authorities. Due to the needs of social reform in China, the Chinese legislators have unavoidably inserted particular social messages. Therefore, it is necessary to include 'context' to understand Chinese IP.

Furthermore, it is necessary to insert context to understand a transplanted system in its accepting state. Legal transplant is the most popularly used mechanism for legal changes, and Chinese IP is no exception.¹⁹⁷ It is easier to transplant an already existing and sophisticated system than create a new autochthonous law. It is a natural reaction and a universal phenomenon, when a less modern or less developed system has been contacted from a sophisticated modern system.¹⁹⁸ However, it is necessary to clarify that the research result of this monograph is not trying to develop any general theory of legal development. The research result does not apply to the developing countries that may or may not share similarities with Chinese societies.

While considering IP legal rules and its structure on one hand, and the Chinese social conditions on another, the author acknowledges Frederick Maitland's statement that

¹⁹⁶ K Shao, *History Is a Key Decoder: Why China Aims at Re-Emerging as a Global Leader of Innovation*, vol 1 (Law in Context 2013).

¹⁹⁷ A detailed study of IP transplant of China, see N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016).

¹⁹⁸ A Watson, *Comparative Law: Law, Reality and Society* (3rd edn, Vandeplass Publishing 2010).

‘the forms of action we have buried, but they still rule us from their graves’.¹⁹⁹ Or in short, ‘the dead ones are still impacting us from their graves’. This delicate concept warrants the question: For the Chinese IP system, are those the dead ones from the West, or the dead ones of the East? Therefore, a historical perspective has been inserted to this monograph.

Before proceeding to the detailed chapters, the author would like to spotlight a very abstract yet necessary picture about China. Some may immediately question if the following part is relevant to the research questions. The author leaves this answer to her audiences’ discretion. The reasons for including the following part are as follows: China has been searching for its own destiny since the middle of the 19th Century. To some extent, the intensive import of Western law was a visible reflection to the lack of ‘self-consciousness’ of China.²⁰⁰ To understand and evaluate the Chinese IP system, a significant amount of research has focused either on discussing substantive law or its protection level of enforcement. However, during this crucial transition period, it is necessary to comprehend the relationship between IP law and the society in which the IP system operates. This monograph is not claiming it understands the relationship between Chinese law and its society; it only tries to underline ‘law’ in a broad way within China’s own history of catch-up. The following part describes a general atmosphere of the large stage for Chinese law and what it contains, of which IP is an irreplaceable part.

4.4 Features of the Methodological approach

¹⁹⁹ F. Maitland, *The Forms of Action at Common Law* (1909)

<<http://sourcebooks.fordham.edu/basis/maitland-formsofaction.asp>> accessed 15 October 2016.

²⁰⁰ K. Shao, *History Is a Key Decoder: Why China Aims at Re-Emerging as a Global Leader of Innovation*, vol 1 (Law in Context 2013).

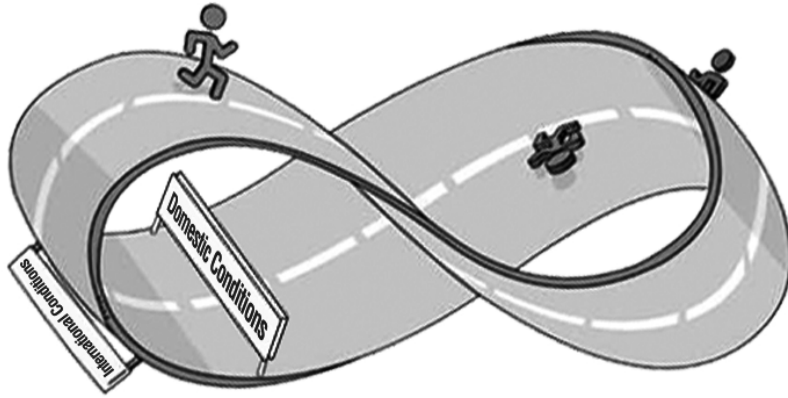
The fundamentally guiding opinion of this monograph is that: the causes behind a certain legal phenomenon can be various and complicated, which very often go beyond the legislations and are closely linked with other contexts. Therefore, instead of focusing on studies on legislation or cases, the author has explored Chinese IP in this monograph with a grand historical perspective within the contexts of social development on S&T, judicial reform, and intensive-IP-dependent industrial practices.

The narrative and contextual approach is discussing the Chinese IP system at the state level. With the contextual approach, the study is focused on the interests and values, promoted by the national government, reflecting the structural changes and modernization of the society, as well as industrial development and innovations. The comparative aspect adopted in this monograph is mainly used to illustrate the legal situation in other cultures to locate a reference object which can illustrate the level of development of China and Chinese IP.

This historical study focuses on the development of the key concepts and principles of the IP system in the past and during the transition with the intention of deepening understanding of the development of the law when meeting the challenges of a modern industrialised society and the global market. The author makes no clear distinction between the international and national conditions of IP law.

Above all, the author summarizes the feature of applied methodologies in this monograph as ‘researching the Chinese IP catch-up with a Möbius Strip perspective’, which means: Chinese IP is treated as one of the running athletes on the road of development consisted by different contexts. Historical perspective twists the road of development into a Möbius Strip, although international and domestic conditions can be divided, they are only one component of catch-up.

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5. A Visible Social Transformation - A Changing Attitude toward Confucianism in the Process of the Rule of Law in Modern China

The following part of this chapter makes no attempt to formulate a precise theory of historical, societal, or political study on the Chinese legal system. This monograph is not written to illustrate the relationship between Chinese law and its society. This part shows a general attitude fluctuation on law inside the Chinese society. Despite the ideologies and peel off the historical guise, the relationship between the society and the legal changes reveals how law responded to Chinese societal concerns. The massive borrowings in the Chinese legal system have indicated a growth of a society, and

³⁰⁰ Sourced from Baidu baike, <https://baike.baidu.com/pic/莫比乌斯带/4457881/0/d439b6003af33a8715976a2bc45c10385343b50d?fr=lemma&ct=single#aid=0&pic=d439b6003af33a8715976a2bc45c10385343b50d>, accessed on 18 December, 2017. Special thanks go to Mr. Zhang Ningfeng, doctoral candidate of Aalto University, who adjusted the picture to fit the context of this thesis.

offered a helpful key to understand how China looked for an appropriate system, and its rejection and approval of a foreign law. The following part formulates a basis to follow my later arguments on the Chinese IP system. Indeed, the whole IP system is just a part within the chain of the legal, regulatory, and policy aspects essential for a developing country to benefit from innovation, thus promoting a country's development.

The Chinese indigenous definition of society is mainly concerned with the implementation of rites, a system of theories that had been developed under Confucianism. Compared with the modern concept of Law, the implementation of Confucianism played a significant role in social management in a similar way as law. Following the definition of the scope of law and methodologies of legal anthropology, Confucianism could be treated as an indigenous legal system that differs from Western law. Because the Western notion of 'law' was an alien concept when it was introduced to Chinese society.

The modernization of China began with blots. The First Opium War between China and Britain transformed China into a semi-feudal and semi-colonial country. Hence, 1840 is defined as the first year of modern China. At the same time, the social circumstances after 1840 cruelly knocked Chinese intellectuals and induced the oscillation of Confucianism-centred governance.

Since 1840, Confucianism has been fluctuating. Following a hurricane in the awareness of law, attitudes toward Confucianism synchronously changed. This section discusses the change in social attitudes in the process of the rule of law in China since 1840.

From the First Opium War to the present, the modern history of China could be roughly divided into the following three parts according to the cognitive change in law:

1840-1911: The end of the Chinese imperial era

1911-1949: The Republic of China, Japanese invasion and the Chinese civil war

1949-present: The People's Republic of China

5.1 1840—1911: An Era of Many 'First Times'

The decades from 1840 to 1911 were the last years of the Chinese imperial era. The treaties approved and executed by the Qing government, which were all unequal, could be treated as the first generation of the 'modern law' of China. It was the first time that Confucianism caused doubt among the Chinese people.

1840-1874: The Ignorant Stage

The first confrontation occurred in the Taiping Rebellion during 1851 to 1864. The leader of this movement, Hong Xiuquan, claimed himself as the younger brother of Jesus Christ. The rebellion is defined as an early heroic revolution and gallant movement from the peasant class.²⁰² Moreover, from a micro-historical perspective, this is also the first time that a western concept was transplanted into China and challenged the indigenous rules. The Taiping Kingdom, which was established by Hong Xiuquan, set up rules to replace Confucianism and spread the idea of 'property in common and equality.' A patent law of some kind was proposed during this rebellion around 1859.²⁰³

Taiping troops were constantly burning down Confucian temples during the governance of the Taiping Kingdom. However, the Taiping Kingdom soon transformed itself into the imperial governance. During this period, the central position of Confucianism was still a core concept for governance.

²⁰² The Qing government stopped the rebellion by armed force. Zeng Guofan and his army scotched this rebellion cruelly due to fact that Hong Xiuquan disrespected the authority of Confucian. However, Sun Yansten seemed holding another attitude and spoke highly of this rebellion since the rebellion imported and implemented a western concept the first time into China and managed to build up an independent governance. Sun Yansten even called himself Hong Xiuquan II.

²⁰³ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

The notion of law was not seriously considered inside China until 1860, and the implementation and enforcement were hardly mentioned. The incineration of the Yuanmingyuan Palace in 1860 taught the Qing government a hard lesson. Nowadays, main stream Chinese historians criticize this incineration as an invasion, which was caused by the Second Opium War and aimed at broadening the privileges and potential market inside China.

However, one point is worth mentioning. Before the British and French troops captured Beijing in 1860, Emperor Xianfeng denied the pre-approved Treaty of Tianjin (1858) in June 1859. The Emperor should have met the ministers from Britain and France and officially exchanged the treaties. However, the Qing government not only refused to meet the ministers, but even attacked the British and French teams. Most of the Chinese historical books hold the idea that the attack of British and French troops on Beijing in 1860 was part of their invasion plan. However, in 1861, Zeng Guofan²⁰⁴ commented as follows: ‘In the ninth year of Emperor Xianfeng,²⁰⁵ foreigners came to exchange the treaties. Lord Senggelingin²⁰⁶ lured them into traps, attacked them and sunk their boats, and the whole of China cheered. However, the next year, foreigners came back again, attacked and occupied Beijing, and almost ruined the whole China. Senggelingin should commit suicide to atone his guilt’.²⁰⁷

Looking back through history, even though all the treaties were unequal, the historical experience should be borne in mind. China entered the modern world in an extremely immature way. Meanwhile, the reluctance toward being internationalized and modernized was obvious at that time.

²⁰⁴ Zeng Guofan(1811 – 1872), was an eminent Chinese official, military general, and devout Confucian scholar of the late Qing Dynasty in China. He was one of the most important figures who restored the stability of Qing Dynasty after Taiping Rebellion. The stability he set up are known as ‘Tongzhi Restoration’.

²⁰⁵ The year of 1859.

²⁰⁶ The general who attacked the British and French teams in 1859.

²⁰⁷ Original comment in Chinese: 咸丰九年，洋人来换合约，僧亲王（僧格林沁）诱而击沉其船，天下称快。然而隔年夷人复至，北京沦陷，几丧天下。僧格林沁应自杀以谢天下。

1874-1911: The Arousal Stage

Based on a shipwreck that occurred in Taiwan, the Japanese government started a military confrontation with China in 1874. Afterwards, the two countries signed the Beijing Treaty on Specific Issues of Taiwan.²⁰⁸ In Taiwan's history books, this treaty has been treated as the starting point when the 'brothers from same culture and same root' moved their relationship to an intensely hostile direction. By executing this treaty, the Qing government did not stop the expanding desire of Japan, but indirectly encouraged its rapacity. Hence, the first Sino-Japanese War, through which the Japanese aimed at the control of Korea, did not really occur suddenly. China not only lost the control of Korea after this war, but also its regional dominance in Asia. Loss of this war is also treated as a huge humiliation in the modern history of China.

The fact that China was defeated by Japan in 1894 strongly affected the central position of Confucianism. In the process of taking law into consideration, Confucianism was reinterpreted in 1898, and this raised the first social reform inside China, which covered education, culture, science, technology, political and legal matters. However, this reform failed, and because it lasted only for 104 days, it is known as the 'Hundred Days' Reform'.²⁰⁹

However, this is the first time that 'law' came into consideration nationally and was used to support the national transformation. An IP protection code '*Reward Regulation for Vitalizing Technologies and Crafts*' was passed in 1898, governing the importation of advanced technologies and inventions.²¹⁰

²⁰⁸ 《台事北京专约》

²⁰⁹ 戊戌变法

²¹⁰ 张平，知识产权法详论，北京大学出版社，1994。(P Zhang, *Intellectual Property Law Analyses* (Beijing University Press 1994)).

Kang Youwei²¹¹ stated in his *Notes for the Conveyance of Rites*,²¹² in which he interpreted that in order to reach ‘the Age of Great Harmony’,²¹³ one country should belong to its people. The concept of ‘people and public’ was brought to attention for the first time within the domestic knowledge system. Moreover, by analysing Confucian’s concepts on ‘The Age of Great Harmony’ and ‘The Well-off Society’,²¹⁴

²¹¹ Kang Youwei(1858-1927), Chinese scholar and reformer, aimed to establish a constitutional monarchy in China. The leader in the Hundred Days’ Reform.

²¹² 《礼运注》

²¹³ 天下大同 The Age of Great Harmony

- 大道之行也，天下為公
- When the great way prevails, the world is equally shared by all.
- 選賢與能
- The talent and virtue are elected.
- 講信修睦
- Mutual confidence was emphasized and brotherhood was cultivated.
- 故人不獨親其親，不獨子其子
- Therefore, people regard all parents as their own, and treat all children as their own.
- 始老有所終，壯有所用，幼有所長
- The elders can live in happiness, the adults are employed by their talent, the youths can grow and educate.
- 鰥、寡、孤、獨、廢疾者皆有所養
- Widows and widowers, orphans, childless, ill and invalids are all well taken care of.
- 男有分，女有歸
- Men and women all have an appropriate role in the society and family.
- 貨惡其棄於地也，不必藏於己
- Nature resources were fully used for the benefit of all, and not appropriated for selfish ends.
- 力惡其不出於身也，不必為己
- People contribute their ability to society and not for the private gain.
- 是故謀閉而不興，盜竊亂賊而不作
- Thus evil scheming is repressed, and crimes fail to arise.
- 故外戶而不閉，是謂大同
- So the doors do not have to be shut. This is called ‘the Age of Great Harmony’.

²¹⁴ 小康社会 The Well-off Society

- 今大道既隱，天下為家，
- Now the great way has been superseded, the world belongs to single family
- 各親其親，各子其子，貨力為己，
- Each one only regards own parents as parents, own sons and daughters as children and take all things as private gain
- 大人世及以為禮，
- Powers become hereditary and are justified as ritual system
- 域郭溝池以為固，
- Castles and moats are made as strong territorial protection
- 禮義以為紀，
- Rites and virtues are used as law
- 以正君臣，以篤父子，
- These are used to determine monarch relationship, to found filiation
- 以睦兄弟，以和夫婦，
- To safeguard the brotherhood and to unit couples together
- 以設制度，以立田里，
- So that various systems are established, and land has been divided
- 以賢勇知，以功為己。

he pointed out that ‘the Well-off Society’ had to be a necessary stage for entering ‘the Age of Great Harmony’. However, this interpretation caused a major conflict inside China, and Kang Youwei was criticized as a westerners’ slave²¹⁵ by some Chinese officials at that time.

Around 1900, the Boxer Rebellion occurred. The movement of Yihe Tuan, otherwise known as the Boxers, was organized by ordinary Chinese citizens and strongly against everything associated with the West. Not only Christian Churches but also ordinary believers, both Chinese and foreigners, suffered during this violent and mass rebellion. The rules established by the Boxers were very indigenous thoughts with the guidance of Confucianism. There were clearly stated rules such as not being greedy for money nor for intercourse, respecting parents, and being loyal to the government. Moreover, the name ‘Yi’ means loyalty and ‘He’ means harmony, which are the two most basic Confucian thoughts. The forms of this movement also indicated the extreme execution of Confucian values: (1) Traditions should be respected. Therefore, those who were treated as non-traditional were punished. Although there was no Chinese official data existing on the number of victims during this rebellion, official papers from that age recorded the extreme form of the movement, in which ordinary Chinese citizens who had western goods or only a western appearance suffered or were even killed in the street. (2) Family and decedents should be respected. Hence, those who caused damage to one’s family and disruption of the peace for decedents were executed as the most horrible punishment one could imagine. Chinese Christians, including their family members, were cruelly killed. Large numbers of Christian tombs were destroyed. In the

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- So that courageous intellectuals gained respects, each individual contributes his own career.
 - 故谋用是作，而兵由此起。
 - So that machinations are raised and wars are caused.
 - 禹、汤、文、武、成王、周公由此其选也。此六君子者，未有不谨于礼者也。。
 - Yu, Tang, Wen, Wu, Cheng, Zhou are the outstanding individuals, who had prudently implemented rites and virtues.
 - 以着其义，以考其信，着有过，刑仁讲让，示民有常，如有不由此者，在孰者去，众以为殃。是谓小康。
 - Interpreting the meanings, use them as standards to examine people. Exposing faults, establish the model of comity. Sufficiently disclose the rites and virtues. Dismiss the one who abuses powers and people treat group as such as a scourge. Such society is called as well-off.

²¹⁵ 洋奴

later Boxer Protocol, known as the Xinchou Treaty of 1901, compensations were required for the destroyed tombs. The retrospective effect as a basic political form of power in indigenous thoughts was also implemented during this rebellion. The movement developed into an extreme way that the tombs of westerners who arrived China years ago, who were famous for peace and harmony, were destroyed, including the tombs of Matteo Ricci²¹⁶ and Johann Adam.²¹⁷ Although this rebellion claimed to get rid of western culture and goods, according to an unofficial data, 99% of the victims were ordinary Chinese citizens. Sixty-six years later, a similar movement occurred. Homothetic forms and claims were executed, but this was then strongly against Confucianism.

In order to quell the extreme movement, the allied troops of eight countries intervened in China in 1901. In Chinese history, this intervention is known as the Invasion of Eight Countries' Allied Troops. The Xinchou Treaty of 1901 (Boxer Protocol) was approved as another international law. Following this treaty, in the commercial treaty of 1903²¹⁸, the US already expressly required China to issue patents to US citizens holding patents on the same terms as patents issued to Chinese citizens, although at that time China had neither patent law nor offices.²¹⁹ The Boxer Protocol established even more unfair obligations on the Chinese side. The citizens rose up to seek new governance and the Qing dynasty ended in 1911.

The first impression of modern law was unfortunately not very positive from the Chinese point of view. Both executing such laws, and not, led China to wars and social disasters. From a historical perspective, this could be one of the non-stated reasons why Chinese citizens nowadays always hold a skeptical attitude toward laws in general.

²¹⁶ 利玛窦

²¹⁷ 汤若望

²¹⁸ See Article X, Treaty Between the United States and China for the Extension of the Commercial Relations Between Them (1903), available at <www.chinaforeignrelations.net/node/209> accessed 14 July 2017.

²¹⁹ WP Alford, *To Steal a Book is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

5.2 1911-1949: Chaos

1911- 1921 Confucianism vs. Law

The governance of Qing ended with the Xinhai Revolution in 1911, and the Republic of China was founded in 1912. In August of that year, the first national party of China, Kuomintang (KMT) was formed. The establishment of KMT opened a new page in Chinese history when the political organization was transferred from the form of gang revolution to the revolution of political parties.²²⁰ However, the main founder, Song Jiaoren²²¹ of KMT, was assassinated under the order of Yuan Shikai²²² in 1913.

During this period, both Confucianism and Law achieved a new level. Yuan ShiKai aimed at reviving the Chinese monarchy; hence, the theory of Confucianism was widely disseminated. On the other hand, the Republic of China and its founders were eager to build up a nation with orders based on law. After the assassination of Song Jiaoren, the independence of the judiciary reached a new peak, which had never happened in earlier history. The Shanghai Public Prosecutors' Office even summoned the Prime Minister, Zhao Bingjun. Although inside the KMT, according to the disclosed record, 'we should follow Song Jiaoren's behest, use law but not armed force to solve the problem', the disagreement did not stop Sun Yansten from using armed force to overthrow Yuan's governance. Sun Yansten²²³ raised the second revolution, also known as the National Protection War in 1915, which failed after only two months. Yuan Shikai died in 1916;

²²⁰ Z Luxun, *The Modern Chinese History that Has not Been Taught in Taiwan* (Keio Cultural Enterprise Co. Ltd. 2011) 99.

²²¹ Song Jaoren (1882-1913), the first Chinese who aimed at establishing cabinet inside China. He is a political republican revolutionary and a main founder of the Republic of China as well as the KMT.

²²² Yuan Shikai(1858-1916), general and politician in the late Qing Dynasty, the second president of the Republic of China.

²²³ Sun Yansten(1866-1925), Chinese revolutionary and the first president of the Public of China. Forerunner of democratic revolution and father of the nation.

after which time China lacked a central authority like Yuan and soon entered the Warlord Era.

The spread of the thoughts of Confucianism or the ideas of law did not solve any real social problem or improve the Chinese citizen's living conditions, but was implemented as political claims to strengthen governance. Although Sun Yat-sen addressed the importance of law many times, even in his Three Principles of People (nationalism, democracy, and the people's livelihood), his individual power was above the law. An insinuating fact was that, after the Second Revolution, Yuan Shikai disbanded the KMT based on 'the crime of treason' according to law. This showed that both Confucianism and Law in China was used in a 'baroque' approach. Law, which had the same role as Confucianism inside China, was more likely used as a governmental rule and claims for political support rather than a widely accepted social norm. The supreme authority of law did not reach the same level as it has in western society. During this period, a patent law 'Interim Reward Regulations for Technologies and Crafts' was passed in 1912, but failed to play a significant role during this historical period.

However, the core position of Confucianism no longer existed. Half a century ago, when the Taiping Kingdom was destroying Confucian temples and books, intellectuals such as Zeng Guofan sent out an armed force to punish the disrespect of Confucian. Half a century later, when Yuan Shikai tried to revive the central position of Confucianism, intellectuals strongly disagreed with him. Although the future of the Republic of China was not clear at that time, democracy and the norm that one country belongs to its people was already rooted into the society. The restoration of the monarchy did not bring back the central position of Confucianism, but raised the New Culture Movement. Many revolutionaries disseminated the norms of law and science, exploring new notions based on them, in order to reveal a new China to Chinese citizens. They strongly criticized Confucianism, reformed the vernacular, and raised the modern awareness of rights, such as women's rights, freedom of speech, and other rights sourced from the norm of law. Three years later, combined with the unfair treatments

and the spineless government reaction after the First World War, the New Culture Movement turned into the May Fourth Movement. The main slogan was ‘Anti-Japanese, Anti-feudal, and Anti-imperialist’. The anti-feudal and anti-imperialist referred to the Confucian thoughts, the civilizations, and the kingdoms that Confucianism served.

Following the New Culture Movement, China came to be regarded as a nation, equivalent to the other nations in the world in the view of the Chinese.²²⁴ Moreover, Confucianism is no longer the unique authority. The authoritative power of Confucianism has been significantly weakened in the view of Chinese people, including its good values and concepts. The more than 2000-year-old indigenous concept and its supreme position was challenged, criticized, and abandoned within only 60 years.

1921-1949: What Shall Be the Central Authority? (I)

In 1921, the main leader of the New Culture Movement, Chen Duxiu, established the CPC. Mao Tse-tung, known as Chairman Mao, was among the representatives in the first national meeting of the CPC. Sun Yansten advocated the policy of ‘Ally with Russians and unite with the CPC’²²⁵ in the First National People’s Congress in 1924. This policy aimed to support and back up the coming Northern Expedition, in order to overthrow the governance of warlords in northern China.

However, after the death of Sun Yansten in 1925, the KMT and CPC separated into two groups that strongly opposed each other. The KMT represents the benefits of the

²²⁴ Ancient Chinese folk culture did not consider China as a ‘country/nation’ as what we define in the modern civilization, but as the central of the world, or ‘the celestial empire’. The New Culture Movement changed the state identification of China and addressed that: China is as same as the other countries, it is one of the countries within the international society. Historically speaking, modern concepts such as ‘nation’ and ‘citizen’ were introduced to China during the Hundred Days of Reform in 1898. The transition of state identification has been recorded in many Chinese literatures. For example, the lack of folk education and awareness of China as ‘country/nation/state’ with ‘Chinese ethnic’ was considered as one of the causes why there were so many traitors during the Japanese invasion period(1937-1945). Such as recorded in Deng Xiaoping’s speech in 1938, see X Deng, *Selected Papers of Deng Xiaoping*, vol 1 (Renmin Press 2008) 1.

²²⁵ 联俄容共, this slogan is disputed among historians. According to some historians’ view, this slogan never existed.

landlord class; however, the CPC represents the peasantry. Mao Tse-Tung wrote in his report that, 'Revolution is rebellion, it is a violent movement that is used by one class to annihilate another class. The revolutions in villages are the rebellions by which the peasantries annihilate the power of landlords'.²²⁶ In fact, during the Northern Expedition, the CPC already started the revolution mentioned in Mao's report. Some of the landlords lost their properties and some even lost their lives. In 1927, Chiang Kaishek started to purge the government from the CPC, and numerous CPC members were killed. The split of the CPC and KMT led to the Chinese Civil War.²²⁷ Although CPC and KMT later united to fight against the Japanese invasion(1937), before the surrender of Japan, the two parties started their war again.

The lack of a sense of power limitation led the two parties to fight against each other. The awareness and acceptance of the concept of law was not fully executed. The indigenous acknowledgement 'Nothing above one extreme power (emperor)' led the two parties an unsuccessful negotiation, and aimed at annihilating each other. This was exactly as in Mao's famous saying, 'power grows from the barrel of the gun'. Although the concept of law was imported into China, power and armed force was a central focus during these 28 years.

5.3 1949-1978: The Establishment of New Authority

1949-1976: What Shall Be the Central Authority? (II)

The People's Republic of China was founded in 1949. China was involved in the Korean War one year later. The appraisals of this war differ between history books that

²²⁶ 《湖南农民运动考察报告》(Investigation Report on the Peasant Movement in Hunan), '革命是暴动, 是一个阶级推翻一个阶级的暴动。农村革命是农民阶级推翻分拣地主阶级的权力的革命。'

²²⁷ One definition of the Chinese Civil War is that it lasted from 1945 until 1949. However, some historians think that the Civil War actually started in 1927, when the KMT and the CPC officially started against each other. This essay follows the second definition, because after 1927, China was already divided into two parts that were governed separately by KMT and CPC.

were published in mainland China and Taiwan; however, after sorting out the information, the objective facts are, but are not limited to, the following:²²⁸ (1) the Korean War offered a potential opportunity for the Republic of China to retake the mainland; (2) it made the relationship between China and the Soviet Union closer, but on the other hand, China became even more distant from the western countries; and (3) it caused an obvious increase in political struggles.

The first fact directly led to the ‘three movements’,²²⁹ and ‘three transformations’,²³⁰ and it was a cause of the third fact mentioned above.

Three movements were the (1) land reform, (2) punishment of counter-revolutionaries, and (3) resistance to U.S aggression and aid to Korea. In order to stop the Republic of China from retaking mainland China, the Instruction On The Suppression of Counter-revolutionary Activities came into force.²³¹ However, the three movements lacked sufficient disclosure. Articles in the Regulation On Punishment To The Counter-Revolutionary²³² had a very broad description of situations where a person could be convicted as guilty, but regulated the death penalty as well as lifelong or long-term imprisonment as a punishment. Moreover, Article 17 regulated that people who were convicted as guilty shall be deprived of political rights as well as part, or all, of their personal property. The number of sentenced prisoners was 1 000 000 according to Mao Tse-tung’s report in the Lushan Meeting in 1959. Unfortunately, the trial procedures had no clear rules and the conviction had no detailed legal standards for sentencing. Abuse of the death penalty was very common during the three movements.

²²⁸ The personal prestige of Peng Dehuai went up after the Korean War. Mao Anying, son of Mao Zedong, died during this war. These two facts indirectly catalyzed the later political movements.

²²⁹ 三大运动

²³⁰ 三大改造

²³¹ 中共中央关于镇压反革命活动的指示（1950）(Directive of the Central Committee of the Communist Party of China on the suppression of counter revolutionary activities(1950)) <<http://cpc.people.com.cn/GB/64184/64186/66655/4492589.html>> accessed 1 November 2012.

²³² 中华人民共和国惩治反革命条例(Regulation On Punishment To The Counter-Revolutionary of People’s Republic of China)<http://www.npc.gov.cn/wxzl/wxzl/2008-12/15/content_1462048.htm> accessed 1 November 2012.

In order to establish indigenous industry and also reduce the financial stress caused by the Korean War, three transformations were followed. From a legal point of view, this historical fact marks the first time that public property rights were prioritized over individual property rights in the People's Republic of China.

Legalized political instructions, together with overgeneralized legislation and abused execution increased political struggles. Compared with the three movements, the later movements²³³ all caused similar or even worse situations among ordinary citizens. At the same time, Chinese legislation closely followed the modes and concepts from the Soviet Union.

All the movements economically, intellectually, and politically ruined the old authority, established a new order, and raised social awareness of the new power. Despite the order on political, intellectual, and economic levels, a new order was also needed on the cultural level. The establishment of a new authority on the cultural level started with destruction in 1963.²³⁴ All the movements lacked both safeguarding of the law and the limitation of Confucianism; they were like preludes to the Cultural Revolution. After the Cultural Revolution, rehabilitation was carried out for most of the victims, but compensation for the victims was very limited and justice was too late for those who lost their lives. Facts on the Cultural Revolution are still not sufficiently disclosed, including the number of victims, which is still under discussion.²³⁵ In 'Deng Xiaoping Answers to Italian Journalist Olin Ena Faraci's Questions' (1980), Deng Xiaoping reviewed the mistakes of Cultural Revolution in detail with a political perspective.

²³³ The followed movements, which due to the length limitation will not be discussed in detail, are as follows: Three-anti and Five-anti Campaigns, 1952 (political level); The Hundred Flowers Campaigns, 1956 (intellectual level); the Anti-Rightist Movement, 1957 (political level); the Three Grand Flags Movement, 1958 (economic level); the Anti-Rightist Movement, 1959 (political level, Peng Dehuai lost power); and the Destruction of Four Olds, 1963 (cultural level).

²³⁴ B Ahn, 'The Making of the Cultural Revolution' in B Ahn, *Chinese Politics and the Cultural Revolution* (University of Washington Press 1976).

²³⁵ JW Esherick, PG Pickowicz and AG Walder, *The Chinese Cultural Revolution as History* (Stanford University Press 2005).

Deng pointed out that one of the causes of the Cultural Revolution was a faulty system.²³⁶

Although most Chinese folk cannot really define what law is, an impression has been left among the public that the sentencing of most of the individuals during the movements was due to political and governmental needs, but not based on the justice of law. Therefore, the first impression of law to Chinese people, which still exists nowadays, is that law is always strongly connected with political needs. At the same time, since law is so broadly implemented and interpreted, a lack of stability is also an impression of law. Based on historical facts, the rehabilitation of individuals was carried out as a result of improved political awareness, rather than from a legal perspective. This perhaps is one reason why average Chinese citizens are more likely to believe in individual officers to provide solutions, but not in the justice of law, even nowadays. Moreover, the historical facts leave a big question mark in the minds of the Chinese public concerning the concepts that law publicizes, such as freedom of speech, individual rights, and respect for individual property rights. The central authority of law did not become properly established in the Chinese people's view during the historical process. Therefore, many Chinese citizens are more concerned with the reality of how legal theories are implemented in practice than with how nice such legal theories sound. This was, after all, a hard lesson.

During this period, the theories of Confucianism were strongly criticized and denied, especially in the Destruction of Four Olds and the Cultural Revolution. Although the Chinese were 'desperately' trying to dispose of Confucianism, the thoughts of Confucianism simply changed their form of existence into a negative manner. Although Confucianism was no longer an official source of guidance, its effect on the way of behaving remained. For example, slogans, which contained indigenous concepts, were

²³⁶ 邓小平, 邓小平文选(1975-1982), 人民出版社 1983 (X Deng, *Selected Papers of Deng Xiaoping (1975-1982)* (Renmin Press 1983)) 303.

used as an indication of loyalty during this period.²³⁷ Family, public reputation, and peace after death are the basic concepts of the Rites. The form of punishment, for example for the Five Black Categories, exceeded the castigations to individual family members. ‘No Peace After Death’ was still the worst form of punishment. Many tombs were destroyed during the movements; politicians who lost power were not allowed to use their own names after death.²³⁸ Sullyng one’s public reputation was also widely used during the movements. Prosecution and public humiliation between family members was very common during this historical period.

1976-1979: Opening A New Balance

Deng Xiaoping came to power in 1973. The Reform and Opening-Up Policy was introduced in the end of 1978. The Four Cardinal Principles²³⁹ were established in 1979. The Confucius concept of a ‘well-off society’ were modernized and brought back to Chinese society by Deng Xiaoping in the same year. China aimed to achieve the status of a well-off society by 2020. This is the first time that the Chinese government used a classic Chinese concept from Confucianism as its policy as well as its developmental goal.

It is difficult to indicate how much Confucianism has influenced China. However, the Doctrine of the Mean has again appeared, such as reflected by a basic cardinal principle in the Chinese government ‘anti-leftist on the economic side and anti-rightist on the political side’.²⁴⁰ This is a reflection that the norm of law and Confucianism has

²³⁷ X Lü, *Rhetoric of the Chinese Cultural Revolution - the Impact on Chinese Thought, Culture and Communication* (University of South Carolina Press 2004).

²³⁸ For example, Peng Dehuai (1898-1974) was the military and political leader in China. Peng Dehuai was named as Wang Chuan on his cinerary box. Liu Shaoqi (1898-1969), was the president of the People’s Republic of China. Liu Shaoqi was named as Liu Weihuang on his cinerary box.

²³⁹ They are: the principle of upholding the socialist path; the principle of upholding the people’s democratic dictatorship; the principle of upholding the leadership of the Communist Party of China, and the principle of upholding the Mao Zedong Thoughts and Marxism-Leninism.

²⁴⁰ 在经济面反左，在政治面反右。Proposition of Zhao Ziyang, which has also been accepted by Deng Xiaoping and has been executed in detail in China.

reached a balance inside China. They have developed into two norms that improve, balance, and limit each other. ‘A harmonized society’ became the main voice.

From 1979 until today, China has been involved in the process of achieving a ‘well-off society’ via the rule of law. How the new era will look remains to be seen. China used and is still using the previous fests to boost national pride. Cherishing the great era of the Han and Tang Dynasty is one of the indications that China is still under the shadow of frustration.

Indigenous concepts and law have had many strong clashes with each other in Chinese history. Between 1840 and the present, China may have had two ‘cultural revolutions’ in the author’s opinion. One was the Boxer Rebellion, which was strongly against all western thoughts and goods. The other was the Cultural Revolution in the 1960s, which was strongly against tradition. However, the transplanted concept and indigenous civilization can reach harmony instead of destroying each other. There is no better historical support for this fact than modern Chinese history. It can be considered as a perfect example that an alien concept, ‘modern law’ itself, into another complex system may cause the concept to operate in a completely different way. During the last decades, Confucianism has been strongly criticized as something negative and blamed as the main reason that stopped China from undergoing modernization. It is worth mentioning that, even if there is a complete collapse of Confucianism inside China, the authority of law may still take time to be properly constructed in the society.

Under this general picture, it may not difficult to realize and accept the fact that, after all, IP is such a small matter at the beginning of the modern history of China.

Chapter 2 S&T and IP Evolution

Because of the Korean War, China had to implement its industrialization under a format of state capitalism.²⁴¹ Therefore, the Chinese macro strategy, also known as ‘grand strategy’, offers a broader and more comprehensive content for its micro strategies, in order to obtain political objectives, which include the assurance of external security and internal social development in peace and war. The dominant 21st-century task for the Chinese government is its economic and domestic development. Under this dominant task, the Chinese government confronts some problems: (1) the gap between the ambition of China’s plan and their uneven implementation,²⁴² and (2) unavoidable developmental diversity from one region to another. The delivery of policies may be localized and decentralized; it would be questionable if the development of the national S&T and IP system integrate with each other.

1. Before 1949

Before the People’s Republic of China, the first patent law of China was made in 1898 in the Qing Dynasty. This patent law was not properly implemented because of the failure of the Hundred days of Reform and the collapse of the monarchy. The technology of the Qing dynasty was visibly fallen behind the western world, though the Qing government tried to introduce modern industries into the country. These imported industries were at a very low technological level. China signed a treaty with the US, obliging it to provide formal protection of IPRs to foreigners in 1903, which was the first treaty that imposed foreign IPR standards on China.²⁴³ The Republic of China

²⁴¹ T Cao, *The Chinese Model of Modern Development* (Routledge 2005) 57.

²⁴² E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy. An International Perspective* (Beijing Cairncross Economic Research Foundation 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013.

²⁴³ P Yu, ‘The Second Coming of Intellectual Property Rights in China’ [2002] 11 Occasional Papers in Intellectual Property from BN Cardozo School of Law, Yeshiva University.

made its patent law in 1944.²⁴⁴ This patent law entered into force in 1949, but the government of KMT was incapable of implementing it because of its loss of power in mainland China.²⁴⁵ The implementation of republican legislations was completely shut down due to the political alternation of the People's Republic of China.²⁴⁶ The discontinuous of the technology and IP law made it practically very difficult to estimate the integration between IP law implementation and technology before 1949.

2. 1949-1978

The reconstruction of the country's industrialization started with the assistance of the Soviet Union after 1949. The '156 Big Projects' and most of the sub-projects were heavily industry-oriented, focused on constructing the foundation of the industrial system of China.²⁴⁷ The '156 Big Projects' were carried out via plants constructions together with whole equipment imports, and 150 of them were implemented. Due to the shortage of local capacities after the Japanese Invasion and Civil War, China in total constructed plants and imported equipment up to 7.3 billion RMB during the period of 1950 to 1959. Meanwhile, the Soviet Union sent out 8500 experts for technology direction, consultation, and human resource training. China sent out 20 000 students and technical personnel to study or receive training in the Soviet Union. Within that decade, for the total foreign exchange amount of 270 million US dollar, China signed in total 420 whole-set equipment and 163 single equipment import contracts with the Soviet Union and the Eastern European countries. Among these contracts, only 1%

²⁴⁴ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

²⁴⁵ H Guo, 'Patents' in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

²⁴⁶ CY Hsü, *The Rise of Modern China* (6th edn, Oxford University Press 2000).

²⁴⁷ G Li and C Lou, 'Characteristics of Technological Introduction in China in 1950s and Comments' [2004] *Journal of Northwestern University* 8.

involved technology-collaboration contracts.²⁴⁸ There were no charges on IPRs.²⁴⁹ Apart from the close political relationships between China and the Soviet Union in that decade, the understanding of private rights and IP were very different from those after 1979 as described in the introduction chapter. Private ownership of properties was considered strongly against the ideology of socialism.²⁵⁰ Individual welfare is subordinate to the social welfare and national interest,²⁵¹ and the newly established Chinese government is based on the socialist ideology. It carried out intensive measures aiming at abolishing all private property rights. Technology and intellectual achievements were considered as the common wealth of the state but not private property. During this period, China had a strong impact from the Soviet Union and transplanted many legal norms from it.²⁵² In 1950, the Chinese government promulgated *the Provisional Regulations on the Protection of Inventions Rights and Patent Rights*. By awarding ‘certificate of innovation’, the Chinese government entitled inventors to honorary recognition and the monetary rewards were tied to the cost-savings made from the invention, which was a lump sum bonus.²⁵³ Other invention related rights, such as exploitation and dissemination, were kept to the state.²⁵⁴ Although there were alternative options (known as a ‘two-track’ system²⁵⁵), where the

²⁴⁸ G Li and C Lou, ‘Characteristics of Technological Introduction in China in 1950s and Comments’ [2004] *Journal of Northwestern University* 8.

²⁴⁹ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

²⁵⁰ S Lubman, ‘Introduction: The Future of Chinese Law’ in S Lubman (ed), *China’s Legal Reforms* (Oxford University Press 1996).

²⁵¹ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

²⁵² N Bruun and L Zhang, ‘Legal Transplant of Intellectual Property Rights in China: Norm Taker or Norm Maker’ in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016).

²⁵³ D Bosworth and D Yang, ‘Intellectual Property Law, Technology Flow and Licensing Opportunities in the People’s Republic of China’ [2002] *International Business Review* 98.

²⁵⁴ S La Croix and DE Konan, ‘Intellectual Property Rights in China: The Changing Political Economy of Chinese-American Interests’ [2002] 39 *East-West Center Working Papers. Economic Series*.

²⁵⁵ If an invention was made outside the course of employment, or by individuals in private enterprises or by foreigners who had residence inside China, then the inventor can alternatively choose either a

Chinese government alternatively offered patents that had vested inventors with ownership and fundamental control on the invention,²⁵⁶ the later Regulation on Invention Reward in 1963 had stressed the public ownership of inventions by regulating ‘all inventions are national assets; any individuals and organizations are not allowed to apply for a monopoly. All the organizations around the country, including collective enterprises can use them’.²⁵⁷

During the period of 1949 to 1963, China managed to establish its basis for modern industrialization, 135 big projects among the 156 projects started working until the end of 1957. Among these projects, 68 had been completed or partly completed.²⁵⁸ These intensive technology transplants at some degree made China nearly achieve the level of the Soviet Union’s first five-year plan regarding steel, coal, electricity, and petroleum.²⁵⁹

China issued *The Perspective Plan for Science and Technology Development from 1956-1967*²⁶⁰ in 1956, also known as the Twelve Years Plan on Science and Technology. This is the first science and technology plan China had. Led by the Prime Minister Zhou Enlai, the government collected hundreds of scientists of various categories and disciplines to participate in the preparation. China also invited 16 well-known scientists in various disciplines from the Soviet Union to draft this plan. The Twelve Years Plan was a guideline for China to ‘focus on the development and catch up’. This plan came out together with four annexes, which were, (1) Statements On

certificate of invention or a patent. However, if the invention was made inside the course of employment in state-owned enterprises or related with national security or public interests, then the invention was state property, and the inventor would only have a certificate of invention.

²⁵⁶ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

²⁵⁷ Art. 23, Regulation on Invention Reward 1963

²⁵⁸ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up an International Comparative Study* (Oxford University Press 2012).

²⁵⁹ 陈夕, 《156 项工程与中国工业的现代化》, 《党的文献》1999, 28-34 (X Chen, ‘156 Projects and the Modernization of China’s Industries’ [1999] Literature of Communist Party of China 28-34.)

²⁶⁰ The Perspective Plan for Science and Technology Development from 1956-1967 (1956), available at <www.most.gov.cn/ztl/gjzcgqy/zcgqylshg/200508/t20050831_24440.htm> accessed 5 June 2017.

Important National Science Missions And The Central Problems, (2) Planning Manual of Basic Scientific Disciplines, (3) Urgent Measures in 1956 and Main points of Research Program in 1957; and (4) List Of The Names Of The Tasks And The Central Issues. The Twelve Years Plan contained 57 major scientific and technological tasks from 13 different aspects; 616 central issues, which raised further integrated 12 key tasks; and general guidelines on: (1) the system of research institutions; (2) policies on the usage of existing personnel; (3) general plans on training of cadres and the allocation ratio; and (4) principles of research institutions.²⁶¹

Although it stressed the importance of S&T for national development, its main focuses were on constructing, developing and catch-up the basic foundation of S&T for a country's needs, such as equipment, funding, human resources, and institutional arrangements.²⁶² It was not a plan at the national strategy level, but it played a significant and decisive role for (1) the layout of China's scientific research institutions; (2) the adjustment of universities and professional disciplines; (3) the directions for utilization and training of scientific and technological personnel; (4) the management methods and systems for technologies; and (5) the formation of the S&T system.²⁶³

Meanwhile, the period from 1949 to 1953 was the constructing period of the Chinese legal system. During this period, China had no constitutional law except for the *Common Program for Chinese People's Political Consultative Conference* which was published on 29 September 1949. It had a temporarily quasi constitution-like function. The *Interim Organization Regulations on the Supreme People's Court of the Central People's Government* regulated the supreme people's court as the highest judicial organ of China. The *Provisional Organization Regulations on People's Court* regulated a

²⁶¹ Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/> accessed 15 June 2015.

²⁶² L Yang, 'Implementation of China's Rejuvenation through Knowledge' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2012).

²⁶³ Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/> accessed 15 June 2015.

three-level court system, which contained courts at the county (or city) or province (or municipality directly under the central government) level and the Supreme People's Court. Moreover, China released the *Provisional of People's Mediation Committee's Organization* on 25 February 1954, which indicated the Chinese-characterized mediation system was properly established.²⁶⁴

The first Constitution of China was presented to the public on 20 September 1954. While formulating the first constitution, the National People's Congress also promulgated Court Organization Law (COL). Instead of the three levels court system, the COL regulated a four levels court system together with the special courts, and this system is valid until today. The construction of the Chinese legal system was extremely fast during the period of 1954 to 1957. The focus of the judicial system was on supporting the social transformation to socialism during this period.²⁶⁵

The People's Republic of China almost abandoned the Republic of China's IP legislations, especially for patents.²⁶⁶ The previous republican government presumed the existence of a marketplace, but it was not accepted by the government of the People's Republic of China. China issued only 4 patents from 1949 to 1963.²⁶⁷

Generally speaking, during this period of time, the concept of private property rights was hardly welcomed in China, nor was the awareness of IP. The ideology base did not properly support the private property norm of IP. As the precondition for IP was not formulated during that time. There was neither judicial nor administrative enforcement of IPR at the beginning of the People's Republic of China.

²⁶⁴ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

²⁶⁵ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

²⁶⁶ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

²⁶⁷ 赵元果, 中国专利法的孕育与诞生 (知识产权出版社 2003) (YG Zhao, *The Preparation and Emergence of Chinese Patent Law* (Intellectual Property Press 2003)).

The Chinese government launched the ‘Great Leap Movement’ in 1957. In 1959, for political reasons, the Soviet Union unilaterally tore up the contracts with China and all the experts were withdrawn in 1960.²⁶⁸ Meanwhile, China suffered three years of natural disasters. This strongly damaged the national economy. The main guideline was focused on ‘adjusting, consolidating, substantiating, and improving’ in 1960. These four words were also the main characteristics of the development of S&T in that period until 1966.²⁶⁹ With the approval of central government, and in addition to the implementation of the Twelve Years Plan, China promulgated the *1963-1972 Plan for Development of Science and Technology* in 1963,²⁷⁰ also known as the Ten Years Guidelines. The Ten Years Guidelines were aimed at strengthening the S&T basis for the country’s industrialization, mainly concentrated on the key breakthroughs that could be achieved within a short time period. ‘Self-dependence and catch-up’ was the main emphasis of the Ten Years Guidelines.²⁷¹

After the departure of the Soviet Union, counting on the limited existing materials, self-dependence was emphasized in solving key-problems and the government mobilized resources all over the country.²⁷² The catch-up was carried out during the historical period of the ‘cold war’. Together with the withdrawal of technology transfers from the Soviet Union, China hardly had access to, nor obtained any advanced technologies from abroad. The level of technology was lower than 1957. However, during this period, the indigenous capacities of technology development were fostered. Moreover, the significant integration of resources established a solid base for further industrialization.

²⁶⁸ CY Hsü, *The Rise of Modern China* (6th edn, Oxford University Press 2000).

²⁶⁹ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

²⁷⁰ 1963-1972 Plan for Development of Science and Technology (1963), available at <www.most.gov.cn/ztlz/gjzcgqy/zcqqylshg/200508/t20050831_24439.htm> accessed 29 July 2017.

²⁷¹ Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <www.most.gov.cn/kjgh/lskjgh/> accessed 15 June 2015.

²⁷² X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

The core view of the Ten Years Guidelines was ‘modernization of science and technology in the key among the moderations of agriculture, industry, national defense and science and technology’. It contained 77 volumes and covered aspects of: (1) project planning; (2) development planning; (3) surveys on agriculture, industries, and resources; (4) medical and health and its relevant aspects of professional planning; (5) technical planning science; and (6) basic science plan.²⁷³ This Ten Years Guidelines released 374 pilot projects, 3205 central issues, and 15,000 research subjects. However, the Ten Years Guidelines only implemented for three years.²⁷⁴ In 1966, the Cultural Revolution prioritized political movement over industrialization and invention.²⁷⁵

The legal and judicial system during the same period was considerably damaged. Since the second half year of 1957 until 1960, the legal system was heavily criticized and damaged because of the left-leaning political movements. A significant amount of personnel from the judicial system was accused and punished because of the movements. Many places merged the public security bureau, Procuratorate, and Courts into one unit as a Public Security Bureau of Politics and Law. The People’s Mediation Committee and the Public Security Committee were merged into a Policing Mediation Committee. All the special courts of railways and waterways were revoked. The public notarization system and lawyer system was shut down. The Justice Department and the State Council Legislative Affairs Bureau was shut down in 1959, as were the local offices of both units. All the legislative affairs were under the side-responsibilities of the people’s court.²⁷⁶ The Fifth National Judicial Conference proposed ‘a comprehensive leap for people’s judicial works’ in 1962. The Sixth National Judicial Conference continued the proposal to ‘carry out the production, and conduct the judicial

²⁷³ Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <www.most.gov.cn/kjgh/lskjgh/> accessed 17 June 2015.

²⁷⁴ Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <www.most.gov.cn/kjgh/lskjgh/> accessed 15 June 2015.

²⁷⁵ JW Esherick, PG Pickowicz and AG Walder, *The Chinese Cultural Revolution as History* (Stanford University Press 2005).

²⁷⁶ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

actions only when needed’,²⁷⁷ ‘carry out the production and implement case-hearings only when needed’.²⁷⁸ The Seventh National Judicial Conference then brought forward that: the judicial procedures were ‘cumbersome philosophies’, following the strict procedures for cases were ‘old legal norms’, the judicial branch should ‘break the old rules, change the old ones, and innovate the new ones.’ The construction of the judicial system was horribly damaged since 1957.

Although from 1962 until 1964, there were slight adjustments in the judicial system,²⁷⁹ the Cultural Revolution broke out in 1966. China then was under public chaos and the judicial system was completely paralysed. People carried out ‘Smashing the policy offices, procuratorate, and courts’, ‘Breaking the rules’ during the Cultural Revolution. These movements destroyed many working places of the judicial system, and a large number of judges, policemen as well as procurators were exiled or punished as ‘spies’, ‘betrayers’, or ‘capitalists’. Some lost their lives during this revolution. The National Procuratorate was officially revoked in 1969.²⁸⁰

During this historical period, there was no IP in China, neither for its concept nor enforcement. As a popular saying during the Cultural Revolution indicated ‘Is it necessary for a steel worker to put his name on a steel ingot that he produces in the course of his duty? If not, why should a member of the intelligentsia enjoy the privilege of putting his name on what he produces?’ The award system for inventors was abolished during the Cultural Revolution.²⁸¹ The Chinese government registered only 7,700 items of S&T achievements during the period of 1966 to 1978.²⁸²

²⁷⁷ 有事办政法，无事办生产

²⁷⁸ 有事办案，无事生产

²⁷⁹ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

²⁸⁰ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

²⁸¹ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

²⁸² D Bosworth and D Yang, ‘Intellectual Property Law, Technology Flow and Licensing Opportunities in the People’s Republic of China’ (2000) <http://secure.com.sg/courses/ICI/Grab/Student_Presentations/A01_G17.pdf> accessed 31 May 2014.

During the 1949-1978 period, without ideological recognition of innovation as intangible property, it was groundless to discuss IP or its enforcement. IP as a conceptual design is based on the norm that it is an optimization benefit balance for innovators and the society.²⁸³ However, during this period China maximized and prioritized the country's benefit, and equalled the country's development to individual development. Internally, innovation was not considered as a format of private property.

Many may claim that the ignorance of IP may have been due to cultural reasons. However, this may be an oversimplification? As briefly mentioned in the first chapter, China did not have a peaceful development environment for more than one century after the First Opium War in 1840. In contrast to many now-developed countries, China failed to participate in the Industrial Revolutions after the First World War. In contrast to Japan and France, which gained impressive economic growth after the Second World War,²⁸⁴ China did not manage to do the same. The economy and development of China was damaged or even discontinued, because the country experienced various war or semi-war situations or political struggles between 1840 and 1978. During such a special historical period, culture itself may be discontinued, transformed, or even abandoned. The Confucianism that we interpret today could considerably differ from that of 1840, which in turn may differ very much from that of *Analects* in 206 BC.²⁸⁵ Culture played a very minimal role under these circumstances. The base for conceptual awareness of IP concept simply failed to exist if people were constantly under the pressure of survival.

As a constructed and conceptual norm, from top to bottom, the central government of the People's Republic of China was unwilling to have a similar IP system to that of the

²⁸³ M Shiappacasse, 'Intellectual Property Rights in China: Technology Transfers and Economic Development' [2004] Buffalo Intellectual Property Law Journal 166.

²⁸⁴ H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

²⁸⁵ *Analects* had its final form during Han Dynasty (206BC -220AD).

Western world during 1949-1978. As a governance measure,²⁸⁶ the People's Republic of China at that time saw no need to have an IP system. In contrast to many now-developed countries, such as Britain in the fourteenth century,²⁸⁷ China hosted insufficient capital, technology, or educated human capital²⁸⁸ at the beginning of the People's Republic of China. From the local level, the country had neither technology nor market economy nor human resources to generate an IP system from the bottom up.

One significant difference worth highlighting is that, in contrast to many now-developed countries, such as Britain and the United States, the international environment surrounding China was completely different. Externally, China had rare contact with the rest of world, except for the Soviet Union. Internationally speaking, during 1949 to 1978, IP as a legal institution was not a required element for China's industrialization or foreign cooperation.

3. After 1978

3.1 The First Phase S&T Policies and Patent Law 1984

Economic reform was put forward as the very first agenda for China in December 1978. The Third Plenum of the Chinese Communist Party's Eleventh Central Committee decided that the primary mission of China is its economic development. Deng Xiaoping and the 'Reform and Opening-up Policy' in 1979 indicated the start of China's

²⁸⁶ N Lee, 'Intellectual Property Law in China-From Legal Transplant to Governance' in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016).

²⁸⁷ H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

²⁸⁸ E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy an International Perspective* (Beijing Cairncross Economic Research Foundation 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013.

comprehensive industrialization and ‘catch-up’. By adopting this policy, the Chinese central government recognized the importance of foreign capital and advanced technologies to the country’s process to modernization.²⁸⁹

Similar to the measures prior to 1960, the first import wave of foreign technologies focused on constructing new plants and importing whole-set equipment.²⁹⁰ However, during plant construction, a problem soon occurred when the Chinese side wanted to know why the equipment operated as it did. The foreign technology exporters noticed that China failed to sufficiently recognize the value of intangible items. Meanwhile, the Chinese side complained that the foreign parties kept the technological secrets in order to charge more, and the foreign companies took advantage of China’s inexperienced labour.²⁹¹

In the Symposium on Science and Education in 1977, Deng pointed out that science and education are the main approaches for China to catch-up. During this symposium, Deng suggested that China needed a mechanism, which shall unify the planning, coordination, arrangements, guidance, and cooperation for the country’s science and education.²⁹² Under his leadership, the Chinese government issued the *1978-1985 Plan for Development of Science and Technology (Draft)*²⁹³ in March 1978, which is also known as the Eight Years Guidelines. China then released the Reform and Opening-up

²⁸⁹ C Chen, L Chang and YM Zhang, ‘The Role of Foreign Direct Investment in China’s Post 1978 Economic Development’ [1995] *World Development* 69; see also J Liegsalz, *The Economics of Intellectual Property Rights in China: Patent, Trade and Foreign Direct Investment* (Springer Fachmedien 2010)

²⁹⁰ P Franks, ‘Leaning from Japan: Plant Imports and Technology Transfer in the Chinese Iron and Steel Industry’ [1988] *Journal of the Japanese and International Economies* 42.

²⁹¹ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

²⁹² Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <http://www.most.gov.cn/kjgh/lskjgh/>, accessed on 17 June, 2015

²⁹³ Available at <www.most.gov.cn/ztlz/gjzcqgy/zcqqylshg/200508/t20050831_24439.htm> accessed 29 July 2017.

Policy. The Eight Years Guidelines were implemented in parallel with the economic policies.

Together with the Eight Years Guidelines, the Chinese government also issued ‘Major Scientific and Technological Research Tasks’, ‘Layout of Basic Sciences’, and ‘Layout of Technical Sciences’. During the implementation of the Eight Years Guidelines, Deng presented the strategic guidelines, which were ‘science and technology is the first productivity’ and the ‘modern science and technology is the key in order to achieve four modernizations’.²⁹⁴ These two guidelines adjusted the ideological base with Chinese characteristics and offered a theoretical foundation for the basic principles and policies of the national economy and S&T. The main content of the Eight Years Guidelines was adjusted to 38 research projects under the format of national research programs in 1982. This is the first national S&T plan of the People’s Republic of China.²⁹⁵

By 1980, China established four special economic zones and extended these zones to other coastline cities. Meanwhile, China acknowledged the need for capital. In order to attract foreign direct investments (FDIs), China offered many preferential policies. They covered taxations, tariffs, land usages, offices, as well as administrative supports.²⁹⁶ For example, for income tax, the local enterprises had a normal rate of 33%. The foreign companies, including both joint ventures and wholly owned, are exempt from income tax for the first two years and only had a rate of 15% for the third year.²⁹⁷ Attracting the FDIs was considered necessary for China to solve the problem

²⁹⁴ Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <www.most.gov.cn/kjgh/lskjgh/> accessed 17 June 2015.

²⁹⁵ Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <www.most.gov.cn/kjgh/lskjgh/> accessed 17 June 2015.

²⁹⁶ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

²⁹⁷ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

of capital shortage. This was accepted and carried out by the authorities at every level. Moreover, many scholars pointed out that this keystone policy was also a shortcut to update technologies for China.²⁹⁸

The Third Plenum of the Chinese Communist Party's Eleventh Central Committee in December 1978 also decided that 'In order to protect people's democracy, we must strengthen the socialist legal system, institutionalize democracy and law, so that law must be strictly enforced, and violators are prosecuted'.²⁹⁹ This indicated that the establishment of the Chinese legal system entered a new chapter. Because the lack of substance of Chinese legal institutions before the Cultural Revolution and their subsequent disappearance during the revolution, legal reform had to include the revival of some institutions, and the judicial system was one of them. The legal system had to revive and restore its role; some scholars even defined this as 'creating entirely new legal institutions'.³⁰⁰

The first consequence for legal reform was legislative explosion. After 1979, China started intensive drafting of codes and statutes. Legislatively speaking, the 5th People's Congress promulgated the Constitution in 1982. Until 1988, China in total promulgated 47 legislations, amended 49 legislations, 634 administrative regulations, 464 economic regulations, and many regional regulations on administrative and economic related matters.³⁰¹ Among the very first generation of law-making process, together with the Reform and Opening-up Policy, China promulgated *Law of Joint Ventures Using Chinese and Foreign Investments* in 1979, which announced that industrial property could be regarded as an investment and emphasized technology transfer in its

²⁹⁸ G Long, 'China's Policies on FDI: Review and Evaluation' in TH Moran, EM Graham and M Blomstrom (eds), *Does Foreign Direct Investment Promote Development?* (Washington DC Institute for international Economics 2005).

²⁹⁹ 为了保障人民民主，必须加强社会主义法制，使民主制度化、法律化，做到有法可依，有法必依，执法必严，违法必究。

³⁰⁰ S Lubman, *China's Legal Reforms* (Oxford University Press 1996).

³⁰¹ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

corresponding articles. This was considered as the establishment of principle of ‘market for technology strategy’, and it is valid nowadays.³⁰² It also indicated that, for the first time, market-related legislations became the safeguard for both market and the state technology strategy.

The second consequence for the legal reform was the construction of an enforcement system. China amended the COL and the People’s Procuratorate Organization Law. The National People’s Congress promulgated the Procedural Law for criminal and civil litigations, the provisional Lawyer’s Act and Notarization Act, and the Regulation on Economic Contract Arbitrations.³⁰³ The people’s mediation system was revived as well. China intensively fostered the human resources for the enforcement system, which included expanding the number of law schools, reopening the University of Political Sciences and Law, and training many professionals via various ways in order to speed up the growth of legal talents. Moreover, China considerably enhanced the construction of the lawyers’ system, arbitrators’ system, system of people’s mediators, as well as the notary system.³⁰⁴

It is worth highlighting that, internationally speaking, regarding IP during this period of legal reform, China and the US signed the *Agreement on Trade Relations* in 1979. Inside this agreement, it mentioned reciprocal protection for copyrights, trademarks, and patents. This agreement, as many Chinese scholars claimed, caused an assumption to China that China bared legal obligation for IP protection even before the country had properly established its own IP system.³⁰⁵ Although the system caused some

³⁰² X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence from China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

³⁰³ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

³⁰⁴ C Gu, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988).

³⁰⁵ H Xue and C Zheng, *Software Protection in China: A Complete Guide* (Sweet & Maxwell Asian 1999).

ideological debates,³⁰⁶ China introduced the Trademark Law in 1982 and its Patent Law in 1984.

Internally speaking, via going through the S&T strategy after China's opening-up, it is obvious that the construction of the IP system in China was not only a pressure caused by foreign countries, but also an internal need. Because of the absence of IP, China had no ground for negotiations for its technology imports. For example, many technology transactions were charged several times higher than normal prices. Because the foreign firms noticed that the transferred technology to one firm maybe used freely by another, especially if it was a case of purchase made by the state-owned enterprise.³⁰⁷ Moreover, the institutional absence of IP also made China lack an evaluation base for determining the prices of imported technologies. For example, Chinese parties found themselves paid lots of money but imported invalid or out of protection patents due to the lack of knowledge of IP.³⁰⁸

The Chinese government carried out intensive market-related law reform in order to push the market mechanisms deeper into its economy. The Central Committee of the Chinese Communist Party issued the Decision on the Reform of Economy System in 1984. Right after the start of economy reform, by issuing *the Decision on the Reform of the Science and Technology System* in 1985 (1985 Decision), the Chinese government carried out reforms in its S&T system. This decision established the Public Research Institutes, Higher Education Institute, and separated the enterprises from these two. This means that China resolved the division of R&D, education, and the production sectors. The separation pushed the Public Research Institutes to seek

³⁰⁶ P Yu, 'The Transplant and Transformation of Intellectual Property Laws in China' in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016).

³⁰⁷ Y Zhao, *The Gestation and Birth of China's Patent Law* (Intellectual Property Publishing House 2003).

³⁰⁸ Y Zhao, *The Gestation and Birth of China's Patent Law* (Intellectual Property Publishing House 2003).

external funding, because the operative funding for them were reduced by the government after the 1985 Decision. The 1985 Decision also put forward the further development for the technology market, which offered the motivation for selling innovations.³⁰⁹

In contrast to previous national plans, an obvious adjustment was to add the economic factor into its national S&T strategy. Following the 1985 Decision, China released *the 1986-2000 Plans On S&T Development* (1986-2000 Plan). The 1986-2000 Plan's principle focus was that 'science and technology must serve economic construction, economic construction must rely on science and technology.'³¹⁰ This basic principle clearly pointed out the focus of China for its development, and switched from the earlier exhaustive approach to an economy-oriented approach. Instead of the short-sighted pursuit, China switched its development to an economy and S&T parallel system with Chinese characteristics closely linked with the country's actual conditions. The 1986-2000 Plan included: (1) National Science and Technology Development Plan 1986 - 2000; (2) National Development Plan of Science and Technology 1986-1990; and (3) technological policies in 12 fields. The technological policies were later expanded to 14 fields in 1988.

Deployed by the State Council, the State Science and Technology Commission, the State Planning Commission, and the State Economic and Trade Commission jointly organized feasibility studies for national technology policy with 3000 experts. The 'planning office' invited leading experts from Western Germany, Japan, the European Community, the United States, and other countries, in order to catch up the international trends and learn from other countries' experiences.³¹¹

³⁰⁹ L. Xue, 'A Historical Perspective of China's Innovation System Reform: A Case Study' [1997] 14 *Journal of Engineering Technology Management* 67.

³¹⁰ Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/> accessed 27 June 2015.

³¹¹ Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/> accessed 27 June 2015.

Following the 1985 Decision, and the 1986-2000 Plan, China issued Technology Contract Law in 1987, which properly established the framework for the technology market. Then the National Science Foundation was founded to incentivise the public research institutes. Venture capital also played a very positive role in the introduction of external funding after the Technology Contract Law was introduced. During this period, the Chinese government launched the National High-technology R&D program³¹²—the Spark Program in 1986 and Torch Program in 1988. Together with these programs, China established its own research funding system. Moreover, during this period, China untied the control of S&T personnel, allowed them to be free entrepreneurs and offered financial encouragements to them. For example, the Lenovo Group³¹³ was founded by 11 technicians in 1984, and those technicians were originally from the Chinese Academy of Science.³¹⁴ Together with these policies and decisions on capital and technology, China also enhanced its human capital by issuing the Decision on the Reform of the Education System in 1985 and applied similar policies for Higher Education Institutes.

Reviewing this period, the importance of IP was properly addressed for the first time after 1979. Its influence became increasingly obvious for China's own open up and reform and its efforts toward a market-based economy. In contrast to Western Society, where IP was an institutional invention sourced out of a market-based economy, in China it functioned and was implemented as a complementary measure for establishing the market-economy.

³¹² Also known as the 863 program

³¹³ Lenovo was earlier named as Legend.

³¹⁴ X Lan and L Zhang, 'Relationship between IPR and Technology Catch-up: Some Evidence from China' in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up: An International Comparative Study* (Oxford University Press 2012).

One may already sense the similarities in the Chinese S&T policies with Japan and Korea.³¹⁵ Instead of having the internal and external investments enter China haphazardly, China applied a very systematic designed planning system together with government investment programs similar to Japan.³¹⁶

China had tightly planned its industrial policy framework together with human-capital-related and learning-related policies at the very beginning of its reform and opening-up, of which an extremely similar case can be found in Korea.³¹⁷ Administratively and legislatively speaking, similar as Japan and Korea did, technology licensing and FDIs were regulated and implemented with an attempt to maximize the spill-over of the technology. This was carried out in a systematic way.³¹⁸ The Patent Law in 1984 enabled the individuals to file patents, although it was difficult for obtaining monopoly rents at that time, the law regulated material rewards.³¹⁹

A significant level of similarities are evident between the Chinese Patent Law (1984) and the Japanese Patent Law, but relatively little similarity is found comparing to Europe or the US. For example, the Patent Law 1984 offered three types of patent, which were invention, design, and utility model. The term of protection were shorter comparing to the EU and USA. The term of protection for invention patents was 15 years, and 5 years respectively for utility models and design patents. Moreover, the Patent Law (1984) adopted the ‘first-to-file’ principle but not the ‘first-to-invent’. All these aimed to a smooth circulation of new technologies.

³¹⁵ See H-J Chang and B Rowthorn, *The Role of the State in Economic Change* (Oxford University Press 1995).

³¹⁶ How Japanese managed its FDIs, see H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

³¹⁷ How Korea managed its labor capitals, see J You and H-J Chang, ‘The Myth of Free Labour Market in Korea’ [1993] 12 *Contributions to Political Economy*.

³¹⁸ H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

³¹⁹ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

The patent law also launched the ‘petty patent’ system for native applicants. The enactment of utility model and design patents, was intended to prompt the behaviour of ‘inventing around’.³²⁰ This systematic design later brought a very visible impact, especially at the beginning of the 21st Century. It contributed to the country’s later S&T strategy. The Chinese IT industry significantly benefited from this institutional design, for example, Huawei is one of the representative cases.³²¹

Moreover, SIPO’s official data visibly reflected the positive impacts of ‘petty patent’ to the domestic players. Until the end of 2010, the total number of utility model and design applications in total reached 2 387 500 pieces more than the invention patent applications.³²² The number of domestic utility model applications was almost 143 times the foreign applications. The number of domestic design patent applications was 17 times the foreign design applications.

³²⁰ L Xue, ‘A Historical Perspective of China’s Innovation System Reform: A Case Study’ [1997] 14 *Journal of Engineering Technology Management* 67.

³²¹ 胡谋,冉永平,‘华为,核心技术的突破之路’,人民日报 [2003] (M Hu and Y Ran, ‘Huawei, and Its Piercing through Road for Core Technologies’, *People’s Daily* (2003)).

³²² Table 1 - Total Applications for Three Kinds of Patents Received From China and Aboard (1985-2010) <http://english.sipo.gov.cn/statistics/szslzljb/201101/t20110125_570591.html> accessed 24June 2016.

Total Applications for Three Kinds of Patents Received from Home and Abroad

May 1985-December 2010									
		Invention		Utility Model		Design		Total	
		Number	%	Number	%	Number	%	Number	%
Total	Sub-total	2325012	100.0%	2414324	100.0%	2298238	100.0%	7037574	100.0%
	Service	1825487	78.5%	969048	40.1%	1011142	44.0%	3805677	54.1%
	Non-service	499525	21.5%	1445276	59.9%	1287096	56.0%	3231897	45.9%
Domestic	Sub-total	1429648	100/61.5	2397523	100/99.3	2173289	100/94.6	6000460	100/85.3
	Service	960761	67.2%	955832	39.9%	891690	41.0%	2808283	46.8%
	Non-service	468887	32.8%	1441691	60.1%	1281599	59.0%	3192177	53.2%
Foreign	Sub-total	895364	100/38.5	16801	100/0.7	124949	100/5.4	1037114	100/14.7
	Service	864726	96.6%	13216	78.7%	119452	95.6%	997394	96.2%
	Non-service	30638	3.4%	3585	21.3%	5497	4.4%	39720	3.8%

2011-01-25

As Deng’s famous slogan of indicated, ‘science and technology is the first productive force’, the obvious attempts to upgrade the country’s education system, training system as well as the R&D system via different reforms, clearly was aiming to support the country’s skill base as well as its technological capabilities but not a result purely created by external pressure. During the Patent Law (1984) period, the patent system was designed and functioned for this goal as well. The domestic economy was not properly established to enable the stage for IPR implementation and protection. At this phase, IPR protection could not sufficiently bring economic development. The lack of a set of domestic interests led to the lack of economic advantages of the IPR in the 1980s. Although the adequate economic values of the IP system were recognized by the Chinese central government, the system had no social and industry foundation to create stronger demands for IPR protection at the enforcement level. Existing research has shown that radical strategy for the stronger demands of IPR protection can destructive enthusiasm and may turn into a legal failure.³²³ Under the social conditions

³²³ See W Shi, *Intellectual Property in the Global Trading System: EU-China Perspective* (Springer Science & Business Media 2008).

in the 1980s, pushing an IP system to be the same as the developed countries may have receded the incentive of innovation, and the underpinnings which sustained creativities may have even collapsed.

During the period of the Patent Law 1984, state owned enterprises (SOEs) were not allowed to deal their patents unless otherwise authorized by the administrative authorities.³²⁴ The autonomy of implementing patent rights was very limited. This strict IP control also covered licensing out. Scholars claimed that this type of limitation inhibited SOEs and their research personnel from enthusiastically investing in R&D.³²⁵ Is this really the case? An economy can only commit substantial resources to R&D when it reaches a certain stage of overall development.³²⁶

This phenomenon in fact is not something new generated in China, but a fundamental problem sourced out of the IP system. IPR as a constructed notion of balance is designed in order to optimize benefit for both innovators and society.³²⁷ Over-extended protection of IPR can actually recede the innovation.³²⁸ Overprotection of IPR emasculates the balance between right proprietors and society at large.³²⁹ It is reflected by China with some Chinese characteristics strongly aligned with the country's economic strengths and comparative advantages. Comparing to the EU countries, during the Patent Law (1984) period, from the S&T strategy, it showed very clearly that China lacked sufficient capital, technologies, or human capital. But this did not

³²⁴ Art. 14 Patent Law 1984

³²⁵ See X Lan and L Zhang, 'Relationship between IPR and Technology Catch-up Some Evidence from China' in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

³²⁶ JR Allison and L Lin, 'The Evolution of Chinese Attitudes Toward Property Rights in Invention and Discovery' (Social Science Research Network 2000) <<http://papers.ssrn.com/abstract=222539>> accessed 28 June 2015.

³²⁷ WR Cornish, *Intellectual Property: Patents, Copyright, Trademarks and Allied Rights* (Sweet and Maxwell 1999).

³²⁸ W Landes and R Posner, *The Economic Structure of Intellectual Property Law* (Belknap Press of Harvard University Press 2003).

³²⁹ W Landes and R Posner, *The Economic Structure of Intellectual Property Law* (Belknap Press of Harvard University Press 2003).

lead to an immediate opening for foreign capital to all industries. Article 25 of the Patent Law 1984 excluded chemical, pharmaceutical, and alimentary or process inventions from patentability, in order to favour domestic industries and to reduce the will of foreign capital in these sectors.³³⁰

Apart from capital and technologies, all economies require human capital to play a core role for promoting economic growth. When technical competitiveness had not yet been established, it was then insufficient to produce desirable inventions.³³¹ IP's role in a country's development has been advertised to be way too positive. It is not necessarily a positive and single answer if IP motivates innovation or if IP increases a nation's economic growth. IP as a link between 'innovation and law' as well as 'economy and law' is not a simple or even naïve case as such. Depending on the orientation of a country on the 'ladder of development', IPR can either elicit or impede innovation. IP can either foster or handicap economic growth.³³² Above all, from a historical perspective, the Patent Law (1984) period reflects China's radical and reserved attitude towards IP at the beginning of the nation's reform and opening-up.

3.2 The Second Phase S&T Policies and Patent Law (First Amendment 1992)

The State Council passed *The Ten-year Science and Technology Development Plan of the People's Republic of China and the Eighth Five Years Plan (1991-2000)*³³³ in 1991. Based on the previous 15 years experiences, this 1991-2000 Plan adjusted the objectives and content. In 1991, the state council approved the *National Long-term*

³³⁰ C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

³³¹ M Shiappacasse, 'Intellectual Property Rights in China: Technology Transfers and Economic Development' [2004] *Buffalo Intellectual Property Law Journal* 166.

³³² H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002); see also S Wei, 'Intellectual Property, Innovation and the Ladder of Development: Experience of Developed Countries for China', *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

³³³ Available at <www.most.gov.cn/ztlz/gjzcgqy/zcgqylshg/200508/t20050831_24436.htm> accessed 29 July 2017.

*Science and Technology Development Program*³³⁴ (1991 Programme) and it was launched in the late 1980s. Both were promulgated for national implementation in 1992. In the same year, the Patent Law was amended for the first time, and Trademark Law was amended one year after. Based on the 1991-2000 Plan, China macroscopically settled the general picture of national S&T development for 2000 and for 2020. The 1991 Programme furthered the overall, directional, and urgent 27 industrial fields, and carried out a detailed analysis for the long-term and major S&T tasks. China made a parallel division between the 1991 Programme and the 1991-2000 Plan. It had continued the strategy of the 1986-2000 Plan. The 1991-2000 Plan respectively clarified the goals for technological development and tasks for five years and for a decade.³³⁵

The State Planning Commission and the State Science and Technology Commission jointly organized and set up an inter-ministerial coordination leading group in 1994. The leading group compiled *the 9th Five Years Plan of the National Science and Technology Development and the 2010 Long-Term Plan*,³³⁶ which included the situation and the status quo, the guiding ideology and basic principles, development goals and tasks, development keystones, reforms of the scientific and technological system, constructions of the personnel training and technology teams, supporting conditions, and other measures. For various reasons, the 1994 plan was not officially released.³³⁷

After the 1991-2000 Plan, the 211 program and 985 program were launched in 1992. The 211 program aims to build 100 high-level research universities in the 21st Century,

³³⁴ Available at <www.most.gov.cn/ztzl/gjzsqgy/zcqgylshg/200508/t20050831_24436.htm> accessed 29 July 2017.

³³⁵ Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/> accessed 7 July 2015.

³³⁶ Available at <www.most.gov.cn/ztzl/gjzsqgy/zcqgylshg/200508/t20050831_24435.htm> accessed 29 July 2017.

³³⁷ Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/> accessed 7 July 2015.

and the 985 program aims to build up world-class universities.³³⁸ The Central Committee of the Chinese Communist Party and the State Council issued the Decision on Accelerating Scientific and Technological Progress, which introduced the national strategy ‘revitalizing the nation through science, technology, and education’.³³⁹ After this decision, the Chinese government invested a significant amount in basic and high-technology research. It pushed the applied research and its development more to the market. In 1996, China launched the second 863 program, in order to: (1) foster the overall innovation capacity in high-technology sectors, including IT, biotechnology, new energy, and new materials; and (2) improve the internal competitiveness of resultant industries.

The national core development was guided by three doctrines toward the 21st Century, ‘revitalizing the nation through science, technology and education’, ‘sustainable development’, and ‘revitalizing the nation through its talents’.³⁴⁰ These three doctrines remained until today as internal strategy for the country’s international ‘peaceful rise’.³⁴¹ ‘China relies on domestic institutional innovations, industrial restructuring, developing domestic markets, transforming high savings into investment capital, and improving the quality of the workforce to overcome the limitations imposed by resources and other circumstantial problems’.³⁴²

China carried out intensive reforms on the workforce in the S&T field during the period of Patent Law (1992 amendment). The Higher Education Law came into force in 1998,

³³⁸ ‘Project 211 and 985 - China Education Center’

<www.chinaeducenter.com/en/cedu/ceduproject211.php> accessed 7 July 2015.

³³⁹ ‘科教兴国’

³⁴⁰ S Deng and Y Cui, ‘Human Capital and Relying on Science and Education to Rejuvenate the Country’ [2000] *Science, Technology and Dialectics* 64.

³⁴¹ B Huldtt and others, *China Rising - Reaction, Assessments, and Strategic Consequences* (National Defense University 2007).

³⁴² 郑必坚, ‘中国和平崛起新道路和亚洲的未来——在 2003 年博鳌亚洲论坛的讲演’ [2004] 理论参考 (BJ Zheng, ‘The Peaceful Rise of China and the Future of Asia, Lecture BFA in 2003’ [2004] Theoretical Reference).

and an amendment was issued in 2015, which legalized the task of the Chinese higher education in Art. 5, ‘to foster innovative and practical capacity of senior specialized talents, to develop the culture of science and technology and promote socialist modernization’. The new amendment came into force on June 1, 2016. The task of higher education was updated to train senior specialized talents with social responsibilities, together with innovative and practical capacities. The higher education of China has been continuously encouraged since 1998, to ‘independently conduct scientific research, technological development, and social services. The State encourages institutions of higher learning and enterprises, institutions, social organizations and other social organizations in various forms of cooperation in scientific research, technological development and popularization. State supports qualified higher education institutions to become research bases’.³⁴³ The enrolment scale of higher educational institutions and the sizes of these institutions have been considerably enlarged from 1999. Statistics show that the number of undergraduate entrants was 0.6 million in 1999, and later reaching 2.5 million in 2005. The enrolment of undergraduate students in higher education institutions was 1.8 million in 1999, and rising to 7.9 million in 2005.³⁴⁴ During the 1991-2000 Plan, China carried out the transformation and commercialization of the S&T achievements. Data shows that from 1998 until 2003, there were 1050 public research institutions transferred to enterprises and 204,000 employees, including 111,000 S&T personnel moved from science to industry.³⁴⁵

During the 1991-2000 Plan, the Chinese government promulgated a significant number of statutes to ensure private property rights in general, whilst encouraging various types of investments, introducing diverse ownerships, and enhancing the protection of

³⁴³ Art. 35 Higher Education Law (1998/2015).

³⁴⁴ Organization for Economic Co-operation and Development, ‘Chapter 14. Intellectual Property Rights in China: Governance Challenges and Prospects’ in *Governance in China* (OECD 2005).

³⁴⁵ X Lan and L Zhang, ‘Relationship between IPR and Technology Catch-up Some Evidence From China’ in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

contracts. For example, the Economic Contract Law of the People's Republic of China was amended in 1993,³⁴⁶ and Contract Law was promulgated in 1999.³⁴⁷ All these measures attracted FDIs to China during the period of 1991-2000.³⁴⁸ During this period, China transferred its partial opening strategy to a comprehensive opening strategy, and started the negotiations to join the WTO in 1996.

Together with the foreign investments, the amount of technology importation severely increased during the period of 1991 to 2000. The reasons for this considerable amount of multinational technology transfer were market access and cost saving. However, these transfers were mainly aimed at short-term profits. The foreign investors confronted a dilemma that although they wanted to access the Chinese market, the leakage of technology was intentionally controlled to a minimum level.³⁴⁹ Statistics show that the major business mode for technology transfer³⁵⁰ was the establishment of joint ventures, which was twice as common as technology licensing. The amount of technology buying-out was comparatively extremely low, however. Three-quarters of the foreign players kept their core technologies away from the transferring process. Meanwhile, more than three-quarters of foreign players claimed that the protection of IP in China was insufficient.³⁵¹

After eight years of collecting experiences, the Patent Law was amended in 1992. This amendment was also born from the external pressure from the developed countries, especially the US.³⁵² The Memorandum of Understanding Between the Government

³⁴⁶ No longer in force after the Contract Law.

³⁴⁷ The previous Law of the People's Republic of China on Technology Contracts 1987 was also invalidated by the Contract Law in 1999.

³⁴⁸ SJ Kamath, 'Property Rights and the Evolution of Foreign Direct Investment in a Centrally Planned Developing Economy: Reply to Pomfret' [1994] 42 *Economic Development and Cultural Change* 419.

³⁴⁹ J Hu, 'Study on the New Relations between FDI Attraction and Technology Introduction' (Tsinghua University 2004)

³⁵⁰ W Beat, 'Technology Transfer in China', *Patent Law in Greater China* (Edward Elgar Publishing Limited 2014)

³⁵¹ J Hu, 'Study on the New Relations between FDI Attraction and Technology Introduction' (Tsinghua University 2004)

³⁵² C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

of the United States of America and the Government of the People's Republic of China on the Protection of Intellectual Property in 1992 led to some significant changes in Chinese Patent Law.³⁵³

The Patent Law (1992 amendment) improved the level of protection for invention patents. The 1992 amendment: (1) granted patentability to chemical, pharmaceutical, and alimentary or process inventions; (2) expanded substantive rights to cover the right to import and the protection for method patents extended to the relevant products; (3) expanded the term of protection for innovation patents to 20 years counted from the date of application, and the term of protection for utility model and design patents to 10 years counted from the date of application; (4) introduced the priority system; (5) Comparing to the patent law of 1984, the 1992 amendment relatively shortened the period of examination,³⁵⁴ and (6) it allowed employee invention, in which an individual can own patents for the inventions created at work if an agreement was made between the inventors and employers.³⁵⁵ Moreover, the Chinese Patent Law started to follow the TRIPS rhetoric since this amendment, even though TRIPS³⁵⁶ was still a draft at the time.³⁵⁷

From 1985 to 1994, the Chinese domestic players obtained a dominant position in regard the number of patent filings inside China. Among these applications, very few invention patents were filed compared to the filings of utility model and design patents. The filings of invention patents were 8558 pieces during Patent Law (1984) and only

³⁵³ 'Memorandum of Understanding Between the Government of the United States of America and the Government of the People's Republic of China on the Protection of Intellectual Property' (1992) <http://tcc.export.gov/trade_agreements/all_trade_agreements/exp_005362.asp> accessed 11 May 2016.

³⁵⁴ C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

³⁵⁵ X Lan and L Zhang, 'Relationship between IPR and Technology Catch-up Some Evidence From China' in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An international Comparative Study* (Oxford University Press 2012).

³⁵⁶ TRIPS became effective on 1 January 1995.

³⁵⁷ P Drahos, *The Global Governance of Knowledge: Patent Offices and Their Clients* (Cambridge University Press 2010).

increased to 11423 pieces in 1992. In contrast, utility model filings grew 8.5 times from 5174 pieces until 44369 pieces; and design filings increased 13 times from 640 pieces to 8357 pieces. The number of domestic applications on the invention patent was very similar to foreign applications, and it was even higher than the foreign filings in 1990.³⁵⁸

During 1985 to 1994, the utility model was the most favoured patent filing type for domestic players. This preference persisted until the 21st Century. Moreover, individuals filed most of the applications, which was a very rare phenomenon compared to other countries. This phenomenon also existed in Chinese invention patent filings. The phenomenon was a visible reform result caused by the 1986-2000 Plan, when the public research institutes and higher education institutes allowed individuals to spin-off. The patentees were the individual entrepreneur or technician but not the enterprises.

After the amendment of the Patent Law in 1992, filings on invention patent increased. Utility model was still a preference for the domestic players. SIPO's statistic shows that the number of filings on design patent had a considerable boost. It raised almost 6 times, from 8357 pieces in 1992 until 50120 pieces in 2000.³⁵⁹ Different from the Patent Law in 1984, the amendment made in 1992 caused a filing escalation on the invention patents filed by the foreign applicants. The number of filings raised from 4387 pieces in 1992 until 26401 pieces in 2000.³⁶⁰ As showed in table 1, it is visible that the number of foreign filings on utility model was very low, and foreign applicants preferred more design filings. Some scholars pointed out that, foreign companies combined the register of trademark with the application of design patents.³⁶¹ In contrast to the foreign practice, in Chinese practice, domestic players combined the register of utility models and invention patents.

³⁵⁸ Detailed statistics see <<http://english.sipo.gov.cn/statistics/>> accessed 29 July 2017.

³⁵⁹ Detailed statistics see <<http://english.sipo.gov.cn/statistics/>> accessed 29 July 2017.

³⁶⁰ Detailed statistics see <<http://english.sipo.gov.cn/statistics/>> accessed 29 July 2017.

³⁶¹ D Yang, M Sonmez and D Bosworth, 'Intellectual Property Abuses: How Should Multinationals Respond?' [2004] 37 Long Range Planning 459.

Up until this point, the Chinese IP system was more focused on creating rights, clarifying ambiguities, and filling-up gaps, but no emphasis was made on insufficient remedial measures. In fact, the IP system failed to sufficiently address the issues of remedies. It was heavily dependent on the existing administrative remedies generated by the controlled economy. Both the judicial and administrative remedies remained insufficient, dependent, and unprofessional.³⁶²

This enforcement defect was reflected very well by the external pressures from foreign governments, that continued to ask China for a further IP reform; US-Sino IP disputes were particularly representative. In fact, the USA is one of the most representative developed countries to push pressures on China via government negotiations.³⁶³ Warren Maruyama, the former general counsel of the US Trade Representative described the negotiation agenda in his article ‘At a 1985 meeting to the US – China Joint Committee on Commerce and Trade, the US for the first time expressed concerns about weak Chinese IPR standards. In 1987, the US put IPR on the agenda for US-China market access talks’.³⁶⁴

The focus of the US government at that time was not on patents or trademarks, but on copyrights. For example, statistics show that the Chinese patent system was mainly consumed by domestic applicants before 1992, the filings of invention patents from abroad was 4493 in 1985, but decreased to 4387 in 1992.³⁶⁵ The delay of copyright law in China was considered extremely problematic for the US government, especially for its movie, music, and software industries. A lack of both market access and copyright protections had motivated the US government to constantly put pressure on the Chinese

³⁶² WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

³⁶³ C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

³⁶⁴ M Warren, ‘US- China IPR Negotiations: Trade, Intellectual Property, and the Rule of Law in a Global Economy’ in MA Cohen, E Bang and S Mitchell (eds), *Chinese Intellectual Property Law and Practice* (Kluwer Law International 1999).

³⁶⁵ See <<http://english.sipo.gov.cn/statistics/index.html>> accessed 29 July 2017.

government. This led to a memorandum of understanding in 1989,³⁶⁶ which led to the adoption of the Chinese Copyright Law in 1990, and the Computer Software Protection Regulations in 1991. The US charged China under Section 301 of the Trade Act of 1974 for violating IPRs.³⁶⁷ The charge was later on reconciled in the Sino-American Memorandum of Understanding on the protection of Intellectual Property in 1992, in which ‘both governments will provide procedures and remedies to prevent or stop, internally and at their borders, infringement of intellectual property rights and to deter further infringement’.³⁶⁸ China and US passed the Accord of Intellectual Protection in 1995, in which China shall ‘take immediate steps to address rampant piracy throughout China; to make long-term changes to ensure effective enforcement of intellectual property rights; and to provide US right holders with enhanced access to the Chinese market’.³⁶⁹

The Patent Law amended in 1992 was also aimed at reforming the patent system toward commercializing the inventions. This governance mechanism undoubtedly encouraged innovations in the whole country. Up until this point, it is not difficult to sense three visible forces for IP development in China: (1) the central government and the national needs, transforming China from planned economy to market economy, using S&T and IP as stimulus; (2) the foreign investors and foreign governments as external pressures, which required market access with IP protection; and (3) the domestic players and insufficient enforcement at different levels, caused an obvious gap between the unified central planning and uneven local implementations.

³⁶⁶ PRC Agrees to Push for Copyright Law That Will Protect Computer Software (World Intellectual Property Report 1989).

³⁶⁷ SK Sell, ‘Intellectual Property Protection and Antitrust in the Developing World Crisis, Coercion, and Choice’ [1995] 49 *International Organization* 315.

³⁶⁸ US Department of State, ‘Intellectual Property: Memorandum of Understanding between the United States of America and the People’s Republic of China’ [1992] 12036 *Treaties and Other International Acts Series* 6.

³⁶⁹ United States Information Service, ‘U.S Trade Deficit Hits Record as Imports Rise, Exports Drop’ *News Release* (22 June 1995).

4. S&T Policies and Patent Law in the 21st Century

Since October 1998, the MOST carried out preliminary studies on the 10th Five-year Plan for National Economic and Social Development. In February 2000, the drafting group was set up and consisted of the State Planning Commission, MOST, the State Economic and Trade Commission and others—a total of 11 units. Instructed by the State Council, the State Planning Commission and MOST jointly promulgated the 10th Five-year Plan for National Economic and Social Development (The 10th Five-year Plan) in May 2001.³⁷⁰

Based on the previous 1991-2000 Plan, the 10th Five-Year Plan³⁷¹ added guiding principles as ‘dos and don’ts, overall follow-up with major breakthroughs, develop high technology, actualize industrialization, improve the S&T’s capacity of substantive innovation, leap forward in technology development.’ The 10th Five-Year Plan mentioned the establishment of a national innovation system for the first time, and its main theme was referred as ‘innovation and industrialization’. Moreover, it was a strategic plan with two levels, which were: (1) to promote the upgrade of industrial technologies; and (2) to improve the capacity of S&T for substantive innovations. The content of the 10th Five-Year Plan is relatively more specific and more operational compared to the previous plans. While programming this plan, China introduced the ‘3+2’ programme system. The ‘3’ meant three main national S&T program, which were the 863 plan, plans to tackle key problems, and basic research programmes. The ‘2’ meant the construction of two environments: (1) the construction of sufficient conditions for research and development; and (2) the construction of an environment

³⁷⁰ Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <www.most.gov.cn/kjgh/lskjgh/> accessed 7 July 2015.

³⁷¹ Available at <www.most.gov.cn/ztlz/gjzcgqy/zcqqylshg/200508/t20050831_24434.htm> accessed 29 July 2017.

for the technology industry. The detailed 10th Five-Year Plan was implemented in its following annual plans.³⁷²

During the implementing period of the 10th Five-year Plan, the MOST strengthened strategic research on the technological development at the macro-level and adjusted the work approaches on S&T. Firstly, it adjusted the guiding ideology for the S&T innovation strategy, emphasized more on the original innovations, and strived to achieve the leap forward of S&T. Secondly, it adjusted the concept of S&T and its management system. Meanwhile, it firmly established the concept of ‘people-oriented’ and its relevant value system for the S&T. Thirdly, it adjusted the policy of S&T and pooled the resources together to solve major problems. Fourthly, it adjusted the mode of S&T. It meant the MOST switched the focus from individual innovations to the integrations of various technologies, with an emphasis on formulating competitive products and constructing the relevant industries based on such integrations. Fifthly, it adjusted the S&T policy object. The MOST switched the focus from research institutions to mobilize and organize the S&T in the whole society.

China joined the WTO in 2001, which indicated its proper entry to the global market. In order to respond to the new trend after joining the WTO, China put forward and implemented three strategies, which were ‘talents, patents and technical standards’. Since then, China highlighted the focus, tackled the key problems, and implemented 12 major S&T projects. Patents have been lifted to a new level of significance. A continuous and steady national S&T policy has been formulated since the 10th Five-years Plan. Following the 10th Five-Year Plan, the Chinese government issued the 11th Five-Year Plan together with the Medium And Long Term Scientific and Technological Development Plan and the 12th Five-year Plan respectively in 2006 and 2011. These latest policies were already discussed in detail in Chapter 1, thus will not be repeated in this chapter.

³⁷² Ministry of Science and Technology, ‘Science and Technology Development Plans in the History’ <www.most.gov.cn/kjgh/lskjgh/> accessed 7 July 2015.

All the discussed policies are well summarized by another fellow and worth citing at length,³⁷³ and this manuscript expanded it to the latest 13th Five-year Plan.

Name	Year	Issued by	Contents
The Perspective Plan for Science and Technology Development from 1956-1967	1956	The CPC Central Committee and State Council	Detailed provisions on scientific research systems, scientific research institution settings, scientific and technological personnel use and training, such as the general principles of the scientific research institutions, human and material resources, the principle of scientific research and personnel training and selection
The 1963-1972 Plan for Development of Science and Technology	1963	The CPC Central Committee and State Council	Provisions on 12 aspects, such as professional research institution construction, training of research personnel, scientific investment management, appraisal and reward systems for scientific research achievements, technology promotion, involving the systems for personnel training, selection, assignment, transfer, reward, management, and research awards.
The 1978-1985 National	1978	State Council	In addition to key research planning objectives, it singled out the goals of

³⁷³ Special thanks to Yang Lihua and the well summarized table. Original table and detailed description please see, L Yang, 'Implementation of China's Rejuvenation through Knowledge' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2012).

Science and Technology Development Plan			scientific research teams and institutional development. It proposed 14 aspects of security measures, including the development of higher education, accelerating scientific and technological personnel training; accelerating the popularization and application of scientific and technological achievements; establishment of national science awards system.
The 1986-2000 Science and Technology Development Plan	1986	State Council	It emphasizes the combination of technology and economy, and pushing forward the reform of science and technology systems, unveiling science and technology plans such as the high-tech research and development plan (the 863 plan), the torch programme for promoting the industrialization of high-tech industry, the Spark Program to support rural areas, and National Natural Science Foundation to support basic research.
The Ten-year Science and Technology Development Plan of the People's Republic of China and the	1991	State Council	Emphasized the reform of science and technology system, reflected the changes in the reform from the planned economy to market economy system, proposed explicitly for the first time that the growth of investment in science and technology shall exceed that of GNP, and put forward clear objectives for R&D funds, and to

Eighth five years plan (1991-2000)			take measures to promote scientific and technological progress.
The Science, technology and Education Development Program of the 10 th Five-year Plan for National Economic and Social Development	2001	The former State Planning Commission and the Ministry of Science and Technology	It proposed to establish a national innovation system, to improve the ability of independent innovation, to enhance the quality in science and technology, to continue to implement technological innovation projects, to encourage enterprises to become the subjects of technological progress and innovation, to establish national knowledge innovation system, and to promote knowledge innovation projects.
The Medium and Long-term Scientific and Technological Development Plan	2006	State Council	This plan proposed the guidelines for scientific and technological work and is clearly put forward to build a national innovation system. The policies, government procurement, intellectual property strategy, monetary policy, science and technology investment system and so on.
National Eleventh Five-year Science and Technology Development Plan	2006	The Ministry of Science and Technology	It proposed to establish a national innovation system with Chinese characteristics, including the technological innovation system with enterprises as subjects, the knowledge innovation system with the combination of scientific research and higher

			education, the innovation system of national defence science and technology, the regional innovation system, and the technology intermediary service system.
Twelfth Five-year National Science and Technology Development Plan	2011	The Ministry of Science and Technology	It proposed to comprehensively promote the construction of a national innovation system, to speed up the implementation of the national science and technology major projects, foster and develop vigorously strategic emerging industries, strengthening the construction of science and technology innovation base and platform, vigorously foster innovative talents of science and technology, optimize the societal environment of innovation.
Thirteenth Five-year National Science and Technology Innovation Plan ³⁷⁴	2016	State Council	It proposed the action guidelines to be a member of the ranks of innovative countries, to overall improve the independent innovation capability, enhance the leading role of scientific and technological innovation support, promote the scale and quality of talents, mature and stereotype the institutional mechanisms conducive to innovation, and optimize the ecology of innovation and entrepreneurship.

³⁷⁴ ‘十三五’国家科技创新规划 2016 (国发〔2016〕43号) (Thirteenth Five-year National Science and Technology Innovation Plan (State Council 2016 No 43)).

Thirteenth Five-year National Science and Technology Innovation and Social Development Planning ³⁷⁵	2016	The Ministry of Science and Technology	It emphasized the deep integration of S&T and social development. It aims to improve the social development, S&T strength and innovative ability, make intensive breakthroughs in key technologies, make S&T more effectively benefit the people, achieve the rapid development of related industries, apply S&T support to ensure and achieve new breakthroughs on social security.
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Since the 10th Five-year Plan, China has deepened the reform of the S&T system, and actively promoted the construction of the NIS; patents also became a new form of evaluation indicators for industrial innovations.

Chinese government, both at the state level and regional levels gave out subvention and bonuses to the patent applicants, which especially encouraged the invention patents. To the inventors and designers, the Patent Law (2000 amendment) regulated in art. 16 ‘The entity to whom a patent right is granted shall award to the inventor or creator of the service invention or creation a reward and shall, after exploitation of the patented invention or creation, pay the inventor or creator a reasonable remuneration on the basis of the scope of spreading and application as well as the economic benefits yielded.’ Based on art.16, the chapter VI of the Detailed Rules for the Implementation of the Patent Law of the People's Republic of China 2001,³⁷⁶ has regulated a very detailed subvention and bonuses system.³⁷⁷

³⁷⁵ ‘十三五’国家社会发展科技创新规划 2016 (国科发社〔2016〕404号) (Thirteenth Five-year National Science and Technology Innovation and Social Development Planning (Ministry of Science and Technology 2016 No 404)) .

³⁷⁶ Amended in 2002 and 2003.

³⁷⁷ Detailed Rules for the Implementation of the Patent Law of the People’s Republic of China

Article 74 A state-owned enterprise or institution which has been granted a patent right shall, within 3 months as of the announcement of the patent right, award the inventor or designer a money prize. The sum of money prize for a patent for invention shall be no less than 2,000 Yuan; the sum of money prize

These measures intensely boosted enthusiasm for domestic patent filings. On top of the subvention and bonuses system, Chinese governments of all levels also introduced tax credit on the R&D expenditure to high-tech enterprises, and the R&D centres in certain areas or certain sectors.³⁷⁸ Different provinces released relevant encouragements based on their regional conditions, such as Ningxia, Guizhou, Jiangsu, Henan, Shanxi, Chongqing, and Hubei. Statistics show that, domestic R&D increased 3.4 times between 2000 and 2006.³⁷⁹

To enterprises, the subvention and bonuses were carried out considerably via taxation privileges, regulated by the *Enterprise Income Tax (EIT) Law of the People's Republic of China* (2007).³⁸⁰ Moreover, the *Regulation on the Implementation of the EIT Law of*

for a patent for utility model or design shall be no less than 500 Yuan. Where an invention-creation was made on the basis of an inventor's or designer's proposal adopted by the entity to which he belongs, the state-owned enterprise or institution which has been granted a patent right shall award to him a higher money prize liberally. Any enterprise holding the patent right may include the said money prize paid to such inventors or designers into its production cost; any institution holding the patent right may disburse the said money prize out of its operating expenses.

Article 75 A state-owned enterprise or institution which has been granted a patent right shall, after exploiting the patent for invention-creation and within the duration of the patent right, draw each year from any increase in profits after taxation a percentage of no less than 2% due to the exploitation of the patent for invention or utility model, or a percentage of no less than 0.2% due to the exploitation of the patent for design, and award it to the inventor or designer as remuneration. The entity may, otherwise, by making reference to the above said percentage, award a lump sum of money to the inventor or designer as remuneration.

Article 76 Where a state-owned enterprise or institution which has been granted a patent right authorizes other entities or individuals to exploit the patent, it shall, after taxation, draw a percentage of no less than 10% from the fee which is charged from the license of exploitation of this patent and award it to the inventor or designer as remuneration.

Article 77 Other Chinese entities may award money prizes and remuneration by making reference to the provisions in this Chapter

³⁷⁸ For example, the 2009 Circular of the State Administration of Taxation on the Issues Concerning Implementation of the Preferential Income Tax for Hi-Tech Enterprises regulated in Art. 4 Any qualified hi-tech enterprise after identification (re-examination) may apply for preferential enterprise income tax from the year when the approval of identification (re-examination) is valid. After acquiring the hi-tech enterprise certificate issued by hi-tech enterprise identification administration agencies of provinces, autonomous regions, municipalities directly under the Central Government and separately planning cities, a hi-tech enterprise may hold the 'hi-tech enterprise certificate' and its copies and relevant materials to apply to the competent tax authority for handling the formalities of reduction or exemption of tax. Consequently, the hi-tech enterprise may make pre-declaration of enterprise income tax payment or enjoy operational preferential taxation at the tax rate of 15%.

³⁷⁹ OECD, 'OECD Reviews of Innovation Policy CHINA' (2008).

³⁸⁰ *Article 27 The enterprise income tax on the following incomes may be exempted or reduced: (4) The incomes incurred from the transfer of technologies, which meets the relevant requirements.*

Article 28 The enterprise income tax on important high- and new-tech enterprises that are necessary to be supported by the state shall be levied at the reduced tax rate of 15%.

the People's Republic of China (2007) has furthered the detailed implementation of Art. 27 (4) and Art. 30 (1) of the *EIT Law*.³⁸¹

By increasing the funding, the Chinese government encouraged talents who studied and worked abroad to return home to China. This talent attraction measure goes along with the principle of 'talents, patents and technical standards'. Those overseas talents could bring back knowledge, experience, and technology with up-to-date international technical standards.³⁸² They are the new generation of human resources, which is very different from the first-generation labour model in 1979.

The Patent Law of China was amended in 2000 in order to accompany economic reform and technology development, whilst fulfilling the WTO's basic requirements on legislations.³⁸³ In short, comparing to the 1992 amendment, the 2000 amendment contained: (1) a further expansion of the exclusivity of patent right in Art. 11, from '[...] make, use or sell the patented product, or use the patented process and use or sell the product directly obtained by the patented process [...]' to '[...] make, use, promise the sale of, sell or import the patented product, or use the patented process and use, promise the sale of, sell or import the product directly obtained from the patented process[...]' ; (2) the inclusion of patent examination into judicial guidance; (3) a further procedure guarantee for the patent right holders by adding the litigation preservation system, which is a similar system comparing to the injunction system in civil law system; and

Article 30 The following expenses of an enterprise may be additionally calculated and deducted: (1) The expenses for the research and development of new technologies, new products and new techniques.

³⁸¹ *Article 90 The term 'reduction and exemption of EIT for qualifying technological transfers' as used in Article 27 (4) of the EIT Law refers to the portion not exceeding 5 million yuan obtained by a resident enterprise from technological transfer shall be exempted from EIT, and the excess shall be taxed at the reduced half rate.*

Article 95 The term 'additional deduction of research and development expenses' as used in Article 30 (1) of the EIT Law refers to an additional 50% deduction of the research and development expenses incurred from the research and development of new technologies, new products, and new techniques on the basis of the actual deductions where the enterprise when no intangible asset has been formed and calculated into the current gains and losses. If intangible assets have been formed, they shall be amortized at 150% of the cost of the intangible assets.

³⁸² H Yanfeng and Y Cheng, 'The Empirical Analysis of Evaluating the Implement Effect of Introduction Overseas High-Level Talents Policy' [2013] 16 Science & Technology Progress Policy.

³⁸³ C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

(4) a further simplified patent filing procedure, which deleted the patent revoke system regulated in the 1992 Amendment and inosculated it into the patent invalidation system.

Legislatively speaking, since the beginning of the 21st Century, the Chinese patent system reached international standards. Within less than two decades, China developed its patent legislation from scratch to an international level. Internationally speaking, the fast construction of Chinese IP legislations is unique.³⁸⁴ The construction and modernization of the IP system took three decades in total, whilst a similar process took over hundreds of years in the EU member states or in the US.³⁸⁵

The amendment in 2000 adopted TRIPS into Chinese patent law and adjusted the dual-track enforcement system. Under the patent law 1984 and 1992 amendments, local courts only held jurisdiction over administrative decisions on application, invalidation, revocation, or objection of invention patents. Administrative decisions on invalidation, revocation, or objection of utility models or design patents were under the supervision of the Board of Re-examination of Patent, and the Board's decision was final.³⁸⁶ But the amendment in 2000 made the Chinese patent system, both legislation and enforcement, meet the requirements of TRIPS. It significantly raised the judicial level of protection on patents to international standards.³⁸⁷

Meanwhile, the trend of Chinese patent filings changed its emphasis during the period of 2000 to 2007, and switched from utility model filings to the filings of invention patents and designs. The visible boost of filings on invention patents and designs was

³⁸⁴ P Yu, 'Intellectual Property, Economic Development, and the China Puzzle' in D Gervais (ed), *Intellectual Property, Trade and Development: strategies to optimize economic development in a TRIPS Plus Era* (Oxford University Press 2007).

³⁸⁵ Z Jiang and R Kariyawasam, *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

³⁸⁶ H Guo, 'Patents' in Z Jiang and R Kariyawasam (eds), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

³⁸⁷ H Guo, 'Patents' in Z Jiang and R Kariyawasam (eds), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

obviously different from many other countries' IP experiences. This reflects the focus on the social transition of China to become an innovative country.³⁸⁸ The available statistics clearly show that, before the 2008 patent law amendment, the number of filings on invention patents in 2000 was 51,747 pieces, reaching 245,161 pieces in 2007. During the same time period, the number of utility model applications was 68,815 pieces in 2000 and 181,324 pieces in 2007. The number of design applications was 50,120 pieces in 2000 and 267,432 pieces in 2007.³⁸⁹

The third amendment of patent law began in 2005. In contrast to previous revisions, the third amendment raised the state's internal needs of patent law to a relatively more significant level, and many articles were revised to match the national development level of economy and S&T. Before the amendment, China carried out 40 research projects focused on various specific patent-related legal issues. Based on the reports of these projects, China revised its patent law and published it for public review.³⁹⁰ The Standing Committee of the National People's Congress passed the third amendment of Chinese Patent Law in December 2008.³⁹¹

(1) This amendment has upgraded the standard of mixed novelty requirement to absolute novelty, in Art. 22, from '[...] Novelty means that, before the date of filing, no identical invention or utility model has been publicly disclosed in publications in the country or abroad or has been publicly used or made known to the public by any other means in the country, nor has any other person filed previously with the Patent Office an application which described the identical invention or utility model and was published after the said date of filing.' To '[...] Novelty means that the invention or

³⁸⁸ K. Shao, 'Patent Law, National Strategies and Policy Incentives: China Road to a Leading Innovator' [2011] 14 *The International Trade and Business Law Review* 85.

³⁸⁹ See <<http://english.sipo.gov.cn/statistics/index.html>> accessed 29 July 2017.

³⁹⁰ C. Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

³⁹¹ Studies on the 2008 amendments, such as see Y. Wei-Ning and Y. Y. Anderw, 'The Dragon Gets New IP Claws: The Latest Amendments to the Chinese Patent Law' [2009] *Intellectual Property & Technology Law Journal*, <<http://www.ipo.org/wp-content/uploads/2013/03/DragonGetsNewIPClaws.pdf>>, accessed 27 July 2017.

utility model is not an existing technology, and prior to the date of application, no entity or individual has filed an application heretofore with the patent administrative department of the State Council for the identical invention or utility model and recorded it in the patent application documents or patent documents released after the said date of application.’

(2) It added and separately defined ‘invention patent, utility model, and design patent’.³⁹² Moreover, it further detailed the grant conditions for design patent in Art. 23 ‘Any design for which a patent right is granted shall not be attributed to the existing design, and no entity or individual, before the date of application, filed an application with the patent administrative department of the State Council on the identical design and recorded it in the patent documents published after the date of application. As compared with the existing design or combination of the existing design features, the design for which a patent is granted shall have distinctive features. The patented design may not conflict with the lawful rights that have been obtained by any other person prior to the date of application. The term “existing design” as used in this Law refers to a design known to the general public both at home and abroad prior to the date of application’.

(3) This amendment set forward the legal requirements with respect to the validity of acquiring genetic resources and disclosure of source for the intentions and creations depending on the genetic resource, ‘[...] No patent will be granted for an invention based on genetic resources if the access or utilization of the said genetic resources is in violation of any law or administrative regulation.’³⁹³ and ‘[...] For an invention based on genetic resources, the applicant shall state the direct source and the original source of the genetic resources in the application documents. If the applicant is not able to state the original source, it or he shall state the reasons’.³⁹⁴

³⁹² Art. 2

³⁹³ Art. 5

³⁹⁴ Art. 26

(4) It removed the clause on foreign-related patent agencies. Any legally formalized patent agency can handle foreign patent issues.

(5) Considerable changes were made on the compulsory licenses. This amendment re-added rules on compulsory license concerning fails to exploit in Art. 48 ‘The patentee, after the lapse of 3 full years from the date patent is granted and after the lapse of 4 full years from the date when a patent application is filed, fails to exploit or to fully exploit its or his patent without any justifiable reason [...]’ Regulated compulsory licenses on medicine and semi-conductor technology. One article is added to grant the Chinese government additional trading power while negotiating with the right holders as Article 50: ‘For the purpose of public health, the patent administrative department of the State Council may grant a compulsory license for a patented medicine so as to produce and export it to the country or region which conforms to the provisions of the relevant international treaty to which the People's Republic of China has acceded.’ Another article is added as Article 52: ‘Where the invention involved in the compulsory license is a semi-conductor technology, the exploitation of the compulsory license shall be limited only to public interests and the circumstance as described in Article 48 (2) of this Law.’ Nowadays, the compulsory license also functions as a remedy for patent misuse in China.³⁹⁵ And,

(6) The 2008 amendment newly regulated limitation of patent rights and excluded two more activities from patent infringement, regulated in Art. 69: ‘ [...] (3) for any foreign means of transport which temporarily passes through the territory, territorial waters or territorial airspace of China, its using the relevant patents in accordance with any agreement concluded between China and that country to which the foreign means of transport belongs, or in accordance with any international treaty to which both countries

³⁹⁵ Q Kong, ‘China In the WTO: Enforcement of the TRIPS Agreement and the Doha Agenda’ in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

which differs from many other countries, where institutions are more permanent arrangements while policies are more changeable. During the past three decades, both policies and institutions in China are characterized in a variable way in order to properly embark on the country’s industrialization. Combining together the data recorded in this chapter, it shows that the adopting of an IP system in China is positive.

The following table lists the milestone S&T policies and IP legislations together, to illustrate the main research result that: *S&T policies and IP legislation upgrades come hand in hand after the Reform and Opening-up Policy*. China joined the international IP treaties according its country’s level of S&T development. Moreover, *China updates its IP system strictly in line with its level of national S&T development*. The main research finding of this chapter can be confirmed with the latest Legislative Work Plan of The Standing Committee of The National People’s Congress,⁴⁰¹ which came into force in April 2017. After releasing the 13th Five-year National Science and Technology Innovation Plan and confirming the development of China’s S&T level into the ranks of innovative countries, the Standing Committee of The National People’s Congress started its new round of patent law amendments.

S&T Policies and IP legislations in China

Year	S&T National Strategy	Year	National IP Laws And Regulations	International IP Law And Regulations ⁴⁰²
		1950	•Provisional Regulation On The Protection Of	

⁴⁰¹ 全国人大常委会 2017 年立法工作计划 (Legislative Work Plan of The Standing Committee of The National People's Congress in 2017).

⁴⁰² X Wen, ‘Planning Development Department of the State Intellectual Property Office: Improving Intellectual Property Protection, Establishing Innovative Countries’ [2007] 1 *Patent Statistics Bulletin* 25-42.

			Invention Rights And Patent Rights •Provisional Regulation On Trademark	
1956	The Perspective Plan For Science And Technology Development From 1956-1967			
1963	The 1963-1972 Plan For Development Of Science And Technology	1963	•Regulation To Encourage Inventions •Regulations Governing The Control Of Trademarks Regulations To Encourage Improvements In Technology	
1978	The 1978-1985 National Science And Technology Development Plan			
		1980		Convention Establishing The World Intellectual Property

				Organization And A Contracting Country Of WIPO
		1982	Trademark Law	
		1984	Patent Law	
		1985		Paris Convention For The Protection Of Industrial Property
1986	The 1986-2000 Science And Technology Development Plan			
		1989		<ul style="list-style-type: none"> •Treaty On IP Respect Of Integrated Circuits •Madrid Agreement Concerning The International Registration Of Marks
		1990	<ul style="list-style-type: none"> •Regulation For The Protection Of Computer Software •Copyright Law 	
1991	The Ten-Year Science And Technology Development Plan Of The People's			

	Republic Of China And The Eighth Five Years Plan (1991- 2000)			
		1992	First Amendment Of Patent Law	Berne Convention Of The Protection Of Literary And Artistic Works Universal Copyright Convention
		1993	First Amendment Of Trademark Law	Geneva Convention For The Protection Of Producers Of Phonograms Against Unauthorized Duplication Of Their Phonograms
1994	The 9th Five Years Plan Of The National Science And Technology Development And The 2010 Long-Term Plan (<i>Not Official Released</i>)	1994		<ul style="list-style-type: none"> •Patent Cooperation Treaty •Nice Agreement Concerning The International Classification Of Goods And Services For The Purposes Of The Registration Of Marks
		1995		Budapest Treaty On The International

				Recognition Of The Deposit Of Microorganisms For The Purpose Of Patent Procedure
		1996		Locarno Agreement On Establishing An International Classification For Industrial Designs
		1997	Regulation On The Protection Of New Varieties Of Plants	Strasbourg Agreement Concerning The International Patent Classification
		1999		International Convention For The Protection Of New Varieties Of Plants
		2000	Second Amendment Of Patent Law	Patent Law Treaty
2001	The Science, Technology And Education Development Program Of The 10 th Five-Year Plan For National Economic And Social Development	2001	<ul style="list-style-type: none"> •Regulations On The Protection Of Layout Design Of Integrated Circuits •Second Amendment Of Trademark Law •First Amendment Of Copyright Law 	Agreement On Trade Related Aspects Of Intellectual Property Rights (TRIPS)

		2004	Regulations On The Protection Of Customs Protection Of Intellectual Property	
2006	<ul style="list-style-type: none"> •Outline For Medium And Long-Term Program For Science And Technology Development 2006-2020 •National Eleventh Five-Year Science And Technology Development Plan 			
		2008	<ul style="list-style-type: none"> •Outline Of The National Intellectual Property Strategy •Third Amendment Of Patent Law 	
2010	Decision Of The State Council On Accelerating The Fostering And Development Of Strategic Emerging Industries	2010	<ul style="list-style-type: none"> •National Patent Development Strategy 2011-2020 •Second Amendment Of Copyright Law 	
2011	Twelfth Five-Year National Science And			

	Technology Development Plan			
2012	Opinion On Deepening Institutional Reforms Of Science And Technology And Fastening The Construction Of National Innovation System	2012	Notice Of The General Office Of The State Council On Forwarding Several Opinions Of The State Intellectual Property Office And Other Departments On Strengthening The Work Of Intellectual Property Rights In Strategic Emerging Industries	
		2013	Third Amendment Of Trademark Law	
2016	Thirteenth Five-year National Science and Technology Innovation Plan			
		2017	Legislative Work Plan of The Standing Committee of The National People's Congress published (<u>Preparation and Research Demonstration on the</u>	

			4 th amendment of <u>Patent Law</u>)	
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This table clearly demonstrates that policies and legislations coordinated with each other in a very sophisticated way in China. The intensive attempt to upgrade the country's technological capabilities is obvious. The Chinese central government managed its complementary investments through a systematized way together with indicative planning and direct investment programmes from both national and local governments. Meanwhile, policies on human capital were very forcefully designed together with the state's S&T and IP systems. The effective improvements made in these policies and legislations at the national and international level have benefited China's development. The whole process of evolution has proved the original characteristics designed for Chinese Patent Law originated in the 1980s, when legislators defined the patent system for China as a 'technical system with legal overtones which could be utilized by a socialist state, and the establishing a patent system in China would benefit the country'.⁴⁰³

Previous studies on the IP system, from various scholars, have shown that strengthening IP in general may not favour the interests of the poorest developing countries.⁴⁰⁴ However, for scientifically-sophisticated developing countries, such as the China case discussed in this chapter, the impact of IPR brought positive results, which warrants further attention for the country's development. However, it is also undeniable that during and after the establishment of the system, its maintenance demands a considerable amount of capital and skilled human resources. It is costly to run the system properly.⁴⁰⁵

⁴⁰³ H Guo, 'Patents' in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

⁴⁰⁴ K Shao and X Feng, *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁴⁰⁵ N Gallini and S Scotchmer, 'Intellectual Property: When Is It the Best Incentive System?' [2001] UC Berkeley Department of Economics Working Paper

The connection between China and the rest of the world is becoming consistently stronger. The rise of China is concrete, which plays an increasingly important role at an international level, and Chinese businesses are now growing as competitors, bringing challenges to other country's economic competitiveness. Regarding IPR protections, even though China has matched its national IP law together with international standards, legislatively speaking; undeniable cultural, legal, and institutional gaps and differences remain,⁴⁰⁶ such as the US and China IP dispute. IPR infringement has been taken as one of the many major problems between China and the US.⁴⁰⁷ In 2003, the US government provided intensive training for Chinese IP professionals, including judges, prosecutors, and customs officers.⁴⁰⁸ Since 2004, intellectual property rights have been linked to national security in the US.⁴⁰⁹ In 2005, the US again addressed a need for strong IP enforcement, heavy fines, and imprisonment of IPR infringers to reduce IP infringement in China.⁴¹⁰ The US has addressed a need for strong IP enforcement for years and linked IPR infringements together with its national economic and business losses. In fact, evaluating IPR infringements became one of the major grounds for the developed country to gauge China as an economic rival.⁴¹¹

China holds a very positive, open-minded and practical attitude on IP. The Chinese government acknowledges the important role of IP both nationally and internationally,

⁴⁰⁶ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

⁴⁰⁷ J Kyng, *China Shakes the World: A Titan's Rise and Troubled Future- and the Challenges for America* (A Mariner Book Houghton Mifflin Company 2007).

⁴⁰⁸ US Department of State, 'Testimony by Assistant Secretary of State for Economic and Business Affairs, E. Anthony Wayne before the Senate Judiciary Committee' (2004).

⁴⁰⁹ US Department of State, 'Testimony by Assistant Secretary of State for Economic and Business Affairs, E. Anthony Wayne before the Senate Judiciary Committee' (2004).

⁴¹⁰ US Department of State, 'Trade Official Urges China to Punish IPR Violators Forcefully' (2005).

⁴¹¹ CKC Gordon, *Intellectual Property Rights in China: Politics of Piracy, Trade and Protection* (Routledge 2009).

which ‘China should consider in depth how to make use of the intellectual property system to promote economic and social progress and achieve a win-win result in international cooperation and exchange’.⁴¹² There are undeniable improvements needed for the system, however. The Chinese government places great efforts into continuously strengthening the IP enforcement system, in order to provide effective and appropriate protection for IP.

During the period of establishing IP legislation, the IP enforcement of China was criticized as weak,⁴¹³ and many developed countries even claimed it to be non-existent. However, despite insufficient enforcement of IP globally, as well as the economic, legal, cultural, and ideological differences, no enforcement system can work unless its government agrees and the country’s people are willing to enforce.

Therefore, the following chapter observes the IP system as a functional key during the country’s catch up, and deliberates how IP enforcement is coordinated together with the country’s development.

Chapter 3 The IP Enforcement Mechanisms in China⁴¹⁴

1. Introduction

⁴¹² Y Wu, ‘Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement’ (Organization for Economic Cooperation and Development 2005). See also 郑成思, 成思建言录 (知识产权出版社 2012) (C Zheng, *Chengsi’s Enlightenments* (Intellectual Property Press 2012)).

⁴¹³ US Department of State, ‘Testimony by Assistant Secretary of State for Economic and Business Affairs, E. Anthony Wayne Before the Senate Judiciary Committee’ (2004).

⁴¹⁴ Partly published as ‘The Chinese Developments Regarding the Judicial Enforcement Mechanisms in Intellectual Property Law’ in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016).

The Chinese government passed the Decision On Reform Of The Science And Technology System in 1985 and confirmed its science and technology policy and development strategy which is ‘economic construction must rely on science and technology and scientific and technological work must be geared to the needs of economic construction’.⁴¹⁵ China entered into a socialist market economy⁴¹⁶ in 1992. After the Reform and Opening-up Policy until the early 21st Century, Chinese economy and a significant level of its S&T development counted on the introduction of foreign capital and technology, with key technologies being imported.⁴¹⁷ Some scholars summarize this period of development as ‘exchanging market for technology’.⁴¹⁸ In 2006, the Chinese government specified independent innovations as orientation for the new strategy. Moreover, the perspective of the first NIS in China is that Chinese enterprises are the main generators of S&T in the market economy.⁴¹⁹ The social transfer of China after the Reform and Opening-up Policy is strongly related with its catch-up process. Such social transfer is reflected in IP policies and law.

The catch-up on patent legislation can be summarized as following: the Chinese Patent Law entered into force on April 1, 1985. This Patent Law has been amended three times with the latest version entering into force on September 1, 2009. From the legislative perspective, the first amendment in 1992 aimed at making Chinese Patent Law fulfil the requirements of TRIPS in order to join the WTO, and the second in 2000 assisted

⁴¹⁵ L Yang, ‘Implementation of China’s Rejuvenation through Knowledge’ in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2012).

⁴¹⁶ The socialist market economy is a concept introduced by Deng Xiaoping. Mr. Deng pointed out in his speeches that market economy is not about capitalism, planned economy is not about communism. Both market economy and planned economy are just different means to serve the development of China. Mr. Deng’s speeches later on formulated into the Deng Xiaoping Theories. For detailed discussions of the socialist market economy, see 邓小平, 邓小平文选 (第三卷), 人民出版社 1993, 第 366-383 页. X Deng, *Selected Works of Deng Xiaoping*, Vol 3 (Renmin Press, 1993), p366-383

⁴¹⁷ C Chen, *Foreign Direct Investment in China* (Edward Elgar Publishing Limited 2011).

⁴¹⁸ L Yang, ‘Implementation of China’s Rejuvenation through Knowledge’ in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2012).

⁴¹⁹ L Yang, ‘Implementation of China’s Rejuvenation through Knowledge’ in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2012).

China to become better accepted by the WTO members.⁴²⁰ After joining the WTO, IP law-making in China is no longer a purely domestic affair.⁴²¹ The latest amendment in 2008 was made because of the Chinese economic, technological, and cultural interests, which meant that a real internationalized patent system came into force in China in 2009.

The first two amendments of the Chinese Patent Law were reformed in order to serve Chinese S&T, trade policies, and to benefit its economic development. However, there has been a shift after 2008 when the State Council issued the Outline of the National Intellectual Property Strategy 2008. It confirmed the IP-based or innovation-based economic development model. This 2008 outline was made to reform the national economy model, rather than serve economic development.⁴²²

Moreover, the third amendment was the first important implementation of the 2008 outline.⁴²³ New patent law aims to: (1) improve patent quality; (2) safeguard national security and other ‘substantial interests’, improving the balance between patent protection and public interest and; (3) put in place measures to improve patent enforcement and prevent abuse of rights.⁴²⁴ By 2020, the IP system should be significantly improved so that China could develop into ‘a country good at the creation, utilization, protection and administration of intellectual property.’ This state level

⁴²⁰ J Song, Deputy Director of Department of International Cooperation, ‘State Intellectual Property Office, Official Report on Latest Developments of Chinese Patent Law and its Practice’ (2004).

⁴²¹ 杨国华, *中国加入 WTO 法律问题专论* (法律出版社 1999) (G Yang, *Monograph on the Legal Issues of China Joining WTO* (Law Press 1999)).

⁴²² H He and P Zhang, ‘Impact of the Intellectual Property System on Economic Growth Country Report China’ (WIPO-JPO-UNU Joint Research Project 2007) <www.wipo.int/export/sites/www/about-ip/en/studies/pdf/wipo_unu_07_china.pdf> accessed 29 July 2017.

⁴²³ S Luginbuehl, ‘China’s Patent Policy’ in S Luginbuehl and P Ganea (eds), *Patent Law in Greater China* (Edward Elgar Publishing Limited 2014).

⁴²⁴ EU-China IP2, ‘Third Revision of China’s Patent Law, Legal Texts and Documents on the Drafting Process 2006-2008’ (2010) <www.ipkey.org/zh/resources/ip-information-centre/22-patent/2079-third-revision-of-china-s-patent-law-legal-texts-and-documents-on-the-drafting-process-2006-2008_2079> accessed 12 June 2014.

strategy aims to boost the domestic innovation economy, and it is considered an essential part of public policies of China. The strategy takes into the consideration the Chinese national conditions under the changing global environment.

After the release of the state strategy in 2008, China also introduced local IP strategies and policies, implementation measures, continued law making, and various activities to improve the general environment for innovation.⁴²⁵ For example, after the *Decision on Accelerating the Fostering and Development of Strategic Emerging Industries*, the General Office of the State Council has issued a *Notice of the General Office of the State Council on Forwarding Several Opinions of the State Intellectual Property Office and Other Departments on Strengthening the Work of Intellectual Property Rights in Strategic Emerging Industries* in 2012, which is an interpretation of the decision on IP matters.⁴²⁶ Reviewing the development of Chinese patent law and its state IP strategy, the process reflects that public policies are legalized, and meanwhile the legal system is actively reacting with public policies.⁴²⁷

In summary, the IP system was not prioritized until the early 21st Century. Its grand historical background has been briefly illustrated in the first chapter and a detailed review of IP development has been discussed in Chapter 2. The implementation of the IP system is a joint activity of the central government, provincial, city, and even some county level governments and different entities, such as the judicial organs as well as different business players. Moreover, apart from the national IP strategy, all provinces and cities above the county level issued IP strategies based on their regional development. Thus, when there are judicial IP cases, Chinese courts consistently seek

⁴²⁵ After 2008, China has amended and drafted about 54 IP-related law and policies.

⁴²⁶ 国务院办公厅转发知识产权局等部门关于加强战略性新兴产业知识产权工作若干意见的通知 (Notice of the General Office of the State Council on Forwarding Several Opinions of the State Intellectual Property Office and Other Departments on Strengthening the Work of Intellectual Property Rights in Strategic Emerging Industries (2012) <<http://en.pkulaw.cn/display.aspx?cgid=172998&lib=law>> accessed 29 July 2017.

⁴²⁷ F Xi, *China's Path to Innovation* (Cambridge University Press 2015).

for balance among all the stakeholders.⁴²⁸ Therefore, the IP system is absorbed into the Chinese society via the judicial branches.

China's introduction of modern IP legislation fulfils the basic standards set out in the Berne and Paris Conventions, as well as in the TRIPS-agreement, which has been a rather recent and fast development.⁴²⁹ Since 'law in books has never really become law in practice', it is general knowledge that the introduction of basic material standards in IP law does not necessarily translate into practice.⁴³⁰ The first prerequisite for an IP system to function well is that IP protection has to be recognized, and in cases where registration is required, it must be registered. Second, the management of IP-rights must be handled in an efficient manner and there must be exploitation avenues for rights, so that a process from innovation to business practice can take place. Third, in cases of infringements, the protection must be enforced.

As illustrated in Chapter 2, it is clear China has made significant progress in developing its IP system since 2008. The numbers of patent applications and IP registrations have been increasing with an impressive frequency. China has a modern IP system in place and it is highly used nowadays. One SPC chief justice announced that the Chinese court deals approximately 15,000 civil IP cases a year, among which 95% were Chinese domestic litigation cases and 5% were between foreign and Chinese companies.⁴³¹ China's efforts to further improve its IP policy and enforcement system are aimed to support its modernisation strategy based on technological innovation, openness to

⁴²⁸ X Kong and W Du, 'Efforts and Tendencies in China's Judicial Practice of Intellectual Property' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁴²⁹ S Luginbuehl, 'China's Patent Policy' in S Luginbuehl and Peter Ganea (eds), *Patent Law in Greater China* (Edward Elgar 2014) 3-24.

⁴³⁰ U Mattei, 'Comparative Law and Economics' in B Bouckaert and G De Geest (eds), *Elgar Encyclopedia of Law and Economics* (Edward Elgar 2000) 518-519.

⁴³¹ Z Jiang and R Kariyawasam, *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

foreign direct investment and further integration into the global economy.⁴³² As every developing country, its IP system also needs to function in a way which enables maximum technology diffusion.⁴³³ Therefore, the Chinese challenges are mainly related to: (1) IP management, how to design and adapt the IPR policies to accommodate changing needs and new requirements;⁴³⁴ and (2) IP enforcement.⁴³⁵

As a socialist country with decades of history of ‘planned economy’, it is not strange to find Chinese society accepts the idea of viewing the private IPRs as public rights. This is very dangerous in practice. Chinese views on IP are under the main guidance of TRIPS since becoming a member of the WTO in 2001. Thus, it is necessary to substantively adopt TRIPS into Chinese IP views.⁴³⁶ In particular, as stated in the preamble in TRIPS, ‘All members should recognize intellectual property rights as private rights’. The role of this declaration is significant to Chinese society. It is a reference point for guiding Chinese social transition and economic development, as well as for the Chinese people in supporting their understanding of the improvement of the IP system.⁴³⁷

The Chinese challenges are evident both in its judicial system and as more general concerns, which seem to be common world over. Some general concerns relate to the capabilities and competence of the courts to deal with complex issues related to new

⁴³² OECD, ‘Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement’ (OECD 2005).

⁴³³ H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

⁴³⁴ OECD, ‘Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement’ (OECD 2005).

⁴³⁵ J Cao, ‘Dual Enforcement System’ in S Luginbuehl and Peter Ganea (eds), *Patent Law in Greater China* (Edward Elgar 2014) 195-208.

⁴³⁶ C Liu, ‘Copyright Protection under the Network Environment’ in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

⁴³⁷ 刘春田, ‘知识产权作为第一财产权利是民法学上的一个发现’, [2015] 知识产权 3 (C Liu, Intellectual Property Right as First Property Right is A Discovery of Civil Law Studies) [2015] Intellectual Property 3).

technology, the duration of the court procedures and the predictability of outcomes. Specific Chinese features are related to the relative weakness of the rule of law tradition in China with the SPC as both a last instance appeal court, but also as an instance issuing guidelines and guidance especially for lower courts. Furthermore, there is a strong tradition of administrative adjudication of IP disputes in China, for instance, the SIPO and its regional offices have a role in this administrative procedure. The huge regional differences regarding technological development and relevant IP problems raise specific challenges for the Chinese IP system.

China offers its IP rights holders different means to enforce the rights. Administrative enforcement is a unique feature among all the enforcement mechanisms. In general, the IP enforcement mechanisms in China and their features and weakness are well summarized by Elaine Wu in the following table which is worth citing at length⁴³⁸:

	Features/Strengths	Limits/Weaknesses
Administrative Enforcement	<ul style="list-style-type: none"> • Inexpensive, fast, local. • Expert agency - nearly an administrative agency for each type of IP right. • Do not need a lawyer. • May be able to obtain an injunction. 	<ul style="list-style-type: none"> • "Local Protectionism". • Penalties usually non-deterrent, non-transparent. • Difficult to transfer to criminal prosecution. • Limited geographic jurisdiction. • Damages for injured party not likely available. • Lack of co-ordination among enforcement bodies.
Civil Enforcement	<ul style="list-style-type: none"> • Specialised judiciary that may be trained in IPR. • Availability of damages and injunctive remedies. • Rights of appeal. • Nationwide jurisdiction. 	<ul style="list-style-type: none"> • High cost. • Low damage awards.
Criminal Enforcement	<ul style="list-style-type: none"> • Can be brought by police/prosecutors or injured party. • Deterrent damages possible (fine and imprisonment). • Possibility of civil damages in addition to criminal punishment. 	<ul style="list-style-type: none"> • High thresholds. • Not all IP infringements are criminalised. • May be a problem in having administrative cases referred to criminal prosecution.
Customs Enforcement	<ul style="list-style-type: none"> • Available for import and export, stops goods in Transit. • Inexpensive. • Stops the harm caused by export of counterfeit goods. 	<ul style="list-style-type: none"> • Storage charges and other expenses can be high. • Export of counterfeit and pirated goods increasing. • Customs can only inspect a limited percentage of goods exported.

⁴³⁸ Source: 'Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement' (OECD 2005).

However, it is necessary to address that China is not a unique country in regarding IP system reformation. Considering the leading developing countries from the early 21st Century until today, or other already-developed Asian countries from even earlier in history, such as Korea and Japan, IPR-system reform has been very similar, which can be summarised as:

Expanded coverage of patent law: patentability was expanded in order to cover new technologies, such as the three patent law amendments in China;

Offered Incentives for patenting in public research organisations, such as in the Chinese Patent Law 2000 Amendment;

Increased flexibility of the IP administrative agencies, such as simplified filing procedure and reduced patent filing costs, connecting with international organizations and improved international filings, e.g having WIPO agency in Beijing in 2014.⁴³⁹

Reinforced patent holders' rights via establishing special IP courts, such as Beijing IP court, Shanghai IP court and Guangzhou IP court.⁴⁴⁰

Many countries experiences have showed that the scale of IP protections continuously expands in line with the national level of industrialization and follows the steps to the global economy.⁴⁴¹

⁴³⁹ SIPO, 'WIPO Chinese Agency Opened in Beijing' (16 July 2014) <http://english.sipo.gov.cn/news/official/201407/t20140716_980595.html> accessed 22 August 2014.

⁴⁴⁰ M Li, 'Special Intellectual Property Court in China' in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Edward Elgar Publishing Limited 2016).

⁴⁴¹ OECD, 'Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement' (2005).

Enforcement problems in China became a serious concern that received even more attention than the IPR legislations both in China and many other countries. Judicial enforcement hardly functioned and both the administrative and even criminal enforcement was considered insufficient for preventing IPR infringement activities inside China.⁴⁴² China then noticed that it was necessary to make the judicial channels into a greater role. A series of necessary steps were taken to lower the threshold for criminal penalties in judicial execution, and China carried out considerable reforms in its judicial system for a relatively stronger IP enforcement.⁴⁴³

Under this general frame, this chapter focuses on the Chinese IP enforcement.

2. The Dual-Enforcement System

2.1 Developments Within the Chinese Court System

Over the last few decades, China has made significant improvements in the field of IP law and its enforcement. For example, the number of IP cases has increased considerably in the last few years. The number of all first and second instances, and protest cases⁴⁴⁴ for civil IP cases from 2001 until November 2006 was 64,099. The number of filed cases already reached 66,609 during the first six months of 2014.⁴⁴⁵ According to the Supreme People's Court's annual report of 2013, there were 114,075

⁴⁴² Quality Brand Protection Committee of China Association of Enterprise with Foreign Investment, 'Annual Review of Counterfeiting Development 2000' (2004).

⁴⁴³ OECD, 'Intellectual Property Rights in China: Governance Challenges and Perspectives' in *Governance in China* (2005).

⁴⁴⁴ Protest cases are cases which are reheard by the People's Court, based on the protest procedures carried out by the People's Procuratorate. It is a legal supervision mechanism of China, because based on the art. 129 of the Constitution, people's procuratorates are 'state organs for legal supervision'. When a decision contains mistakes made by the People's Court, according to the law, the People's Procuratorate can protest the incorrect decision, and require to reopen the proceedings and rehear the case.

⁴⁴⁵ 孙雷: 《<关于在北京, 上海, 广州设立知识产权法院的决定>探析》, 《中国版权》2014年第5期, 另参见2014年知识产权上地论坛(L Sun, 'Analysis on the Standing Committee of the National People's Congress Decision on the Establishment of Intellectual Property Court in Beijing, Shanghai, Guangzhou' [2014] 5 China Copyright 5. Published also at the Shangdi Forum of Intellectual Property 2014).

first and second instances IP cases. The number of first-instance foreign-related IP civil cases was 1697, which meant an increase of 18.75% compared to 2012.⁴⁴⁶

Within the coming three years, China will significantly enhance the implementation of Chinese IP rights via the establishment of specialized courts and IP tribunals. On the other hand, China faces many challenges in harmonizing IP enforcement nationwide, especially in the field of patents.

The Chinese judicial system is under the supervision of the SPC. The organization and administrative supervision among each level is regulated by the COL. Under the SPC, the system has three levels of local courts, they are: 32 higher courts, 409 intermediate courts, and 3117 basic courts.⁴⁴⁷ Furthermore, there are military courts and other specialized courts. The IP courts, which were established in late 2014, are a new form of intermediate courts. These IP courts will be discussed later in this chapter.

The geographical division of the courts and their levels follow the national division and levels of local governments.⁴⁴⁸ Generally speaking, the organizations of the Chinese courts are very similar from one to another. Before 2016, patent cases were normally heard in the division of a court (often no.3 or no. 5).⁴⁴⁹

The basic people's courts hear the first instance trials, unless otherwise stipulated by law.⁴⁵⁰ They have no jurisdiction over patent infringement cases. But certain courts

⁴⁴⁶ 最高人民法院:《2013年中国法院知识产权司法保护状况》,《人民法院报》,2014年4月25日(SPC:2013 China IPR Judicial Protection in Court, *People's Court News* (25 April 2014)) <www.chinacourt.org/article/detail/2014/04/id/1283299.shtml> accessed 6 June 2015.

⁴⁴⁷ 最高人民法院:《人民法院简介》(The Supreme People's Court of China, 'Introduction of the People's Courts') <<http://www.court.gov.cn/jgsz/rmfyjj/>> accessed 2 May 2014.

⁴⁴⁸ W Shao, *Patent Litigation Practices in Mainland China* (Taiwan Ministry of Economic Affairs, Intellectual Property Office 2011).

⁴⁴⁹ JM Duncan, MA Sherwood, and Y Shen, 'A Comparison between the Judicial and Administrative Routes to Enforce Intellectual Property Rights in China' [2008] 7 *The John Marshall Review of Intellectual Property Law* 529.

⁴⁵⁰ Art. 20 and 21 of the COL.

have been authorized by the SPC to hear first instance trials on contractual issues, which involve patent matters. Due to differences in regional development, the SPC has also authorized some basic courts to hear the first instance trials on infringement cases on utility models and designs.⁴⁵¹ It was earlier predicted as a trend that, in the future, with the improvement in Chinese IP legal practice, basic courts would have an increasing jurisdiction over patent cases. However, after the establishment of IP courts inside China, it is unclear how this will be developed in the near future. The issue will be discussed further in part 3 and 4 of this chapter.

The intermediate people's courts only hear the first instance trials that: (1) are stipulated by law, or (2) the cases that are transferred from its related lower court. They also have jurisdiction as second instance courts in trials, which are (1) appeals of the cases that are firstly heard at its lower courts, or (2) protest cases that are against the lower courts' judgments, which are raised from the People's Procuratorate according to the trial supervision procedure.⁴⁵²

According to the law, patent infringement cases on innovation patents will be heard at least on the level of intermediate courts. Intermediate Courts are situated in the capital cities of the provinces, the autonomous regions, and the municipalities which are directly under the control of the central government, and function as first instance in these cases.

According to article 27 of the COL, the higher people's court of each province can only hear the trials as first instance cases if: (1) this is stipulated in laws and/or regulations decree; or (2) if the cases are transferred to it from an intermediate people's court. They also hear appeals or protest cases regarding the intermediate courts' judgments. In contrast to the basic and intermediate people's courts, the higher people's courts cannot

⁴⁵¹ Examples of such courts are the Yiwu Court of Zhejiang Province, the Kunshan Court of Jiangsu, and the Haidian Regional Court of Beijing, which hear first instance civil trials regarding patents of utility models and designs.

⁴⁵² Art. 24 of the COL.

request to transfer a filed case to be heard at its higher level because the SPC does not hear any transferred case from its lower level.

The SPC is at the highest level and supervises the judicial workings of the other courts.⁴⁵³ It also has the authority to interpret the application of law.⁴⁵⁴ The SPC only hears cases as the first instance if: (1) the laws and/or regulations stipulate so; or (2) if it is considered necessary. It hears cases as the second instance, which are appeals or protest cases regarding the higher courts or special courts' judgments.

The SPC has an IP division, which consists of 5 benches with 25 judges, 1 assistant, and 7 clerks. This division has jurisdiction over: (1) civil cases on IP or competition matters; (2) administrative cases regarding the licenses and authorization of patents, trademarks, and other IP rights; and (3) hearing and judicial supervision of the refusals of its lower courts' effective judgments of the previously mentioned two case types.⁴⁵⁵ According to the trial supervision process, protests that are raised by the Supreme People's Procuratorate will also be heard inside this division, except for the cases that are originally heard by one of the benches inside the division. The division also has authority to review the IP cases or provide consultative instructions according to the requests from its lower courts. Moreover, this IP division of the SPC is responsible for research, guidance, and supervision of all national IP trials and anti-trust cases; and it is responsible for the implementation of the national IP strategy.⁴⁵⁶ By issuing *the Opinions of the Supreme People's Court on Several Issues Regarding the Implementation of the National Intellectual Property Strategy* in 2009⁴⁵⁷, the SPC has

⁴⁵³ Art. 29 of the COL.

⁴⁵⁴ Art. 32 of the COL.

⁴⁵⁵ The division has authority to deny the application of retrial and hear the retrial in the mentioned civil and administrative cases.

⁴⁵⁶ 最高人民法院：《最高法院知识产权庭介绍》（People's Supreme Court, 'Introduction of the IP division of the SPC'）（12 April 2010）<www.court.gov.cn/zscq/zscqt/201004/t20100412_3940.html> accessed 31 July 2014.

⁴⁵⁷ Opinions of the Supreme People's Court on Several Issues Regarding the Implementation of the National Intellectual Property Strategy, No. 16 [2009] of the Supreme People's Court.

set forth six main means with a coverage of 36 perspectives to implement the national IP strategy.⁴⁵⁸

China has a dual enforcement system for IP protections, which offers administrative protection to its IP right holders, separate from judicial enforcement.⁴⁵⁹ The IP administrative protection is a legal protection mechanism that is carried out by the relevant national administrative authorities in compliance with the relevant legal procedures and measures. It deals with IP disputes, maintains IP order, and enhances IP social awareness.⁴⁶⁰ The contents of administrative protection of IP covers, but is limited to, the following: (1) authorizations and recognitions; (2) administrative procedures regarding mediation, ruling, reconsideration, arbitration; (3) investigations regarding fine and enforcement;⁴⁶¹ (4) remedies; (5) sanctions;⁴⁶² (6) legal supervision;

⁴⁵⁸ The six main means are formulated according to the requirements of the national IP strategy and by taking into account the actualities of the judicial protection of IP by the people's courts. The SPC's particular implementations of the national IP strategy are: (1) to fully apprehend the significance of the implementation of the national IP strategy and earnestly enhance the sense of responsibility and mission of the people's courts in respect of the judicial protection of IP; (2) to give full play to the leading role of judicial protection of IP and effectively guarantee the building of an innovative country; (3) to properly hear the various categories of IP cases and effectively intensify the judicial protection of IP; (4) to improve the trial system and work mechanism for IP and optimize the allocation of trial resources; (5) to strengthen the judicial interpretation of IP and improve the IP litigation system; and (6) to strengthen the construction of the IP judges team and enhance the capacity of judicial protection of IP.

⁴⁵⁹ SIPO and its 62 regional offices.

⁴⁶⁰ 邓建志, 单晓光, '我国知识产权行政保护的涵义', [2007] 1 知识产权法 62 (J Deng and X Shan, 'The Conception of IP Administrative Protection in China' [2007] 1 Intellectual Property Law 62).

⁴⁶¹ Patent Law (2008 Amendment): Art. 63 *Whoever counterfeits the patent of anyone else shall, in addition to bearing civil liabilities in accordance with the law, be ordered by the patent administrative department to make a correction and be announced by the patent administrative department; its or his illegal gains, if any, shall be confiscated, and it or he may be fined up to three times the illegal gains. If there is no illegal gain, it or he may be fined up to 200, 000 Yuan. If any crime is constituted, it or he shall be subject to criminal liabilities according to law.*

Art. 64 *When the patent administrative department investigates into and deals with a suspected counterfeit patent case on the basis of the evidence it has already gathered, it may query the relevant parties so as to find the information relevant to the suspected violation, may conduct an on-site inspection over the site of party suspected of having committed the violation, may consult and copy the contracts, invoices, account books and other materials relating to the suspected violation, may check the products relating to the suspected violation, and may seal up or detain the counterfeit patented product as proved by evidence.*

When the patent administrative department exercises the functions as prescribed in the preceding paragraph according to law, the parties shall assist and cooperate with it and shall not reject or hamper it.

⁴⁶² For the detailed administrative remedies and sanctions for patent infringement, see Patent Law (2008 Amendment): Art. 60 [...] *the patentee or any interested party may either bring a lawsuit with the people's court, or request the patent administrative department, for settlement. If the patent administrative department ascertains at the time of settlement that infringement exists, it may order the infringer to immediately stop the infringement act. The party dissatisfied may, within 15 days as of receipt*

and (7) administrative services.⁴⁶³ The administrative authorities offer remedies for right holders in IP infringement cases and it is a parallel protection system compared to judicial protection. Namely, IP protection in China offers a ‘dual-enforcement’ system.⁴⁶⁴ Based on real needs, IP right holders can either seek remedies from the relevant State Council departments and their regional offices or from the judicial branches. For the administrative authorities, it is normally a two-level system where the central offices directly under the State Council are responsible for IPR examinations and registrations, and their local administrative offices conduct the general administrative works and IPR administrative enforcements.

2.2 The Administrative Enforcement System

In China, the highest authority is the National People’s Congress.⁴⁶⁵ Both the National People’s Congress and its Standing Committee are the legislative organs of China.⁴⁶⁶ But only the People’s Congress is responsible for constitution-related amendments and supervisions. The People’s Congress also has the highest authority to enact and amend basic laws governing criminal offences, civil affairs, the state organs, and other matters.⁴⁶⁷

of the notification, bring a lawsuit with the people’s court in accordance with the Administrative Procedural Law of the People’s Republic of China. If the infringer neither brings a lawsuit within the time limit nor stops the infringement act, the patent administrative department may apply to the people’s court for compulsory enforcement. The patent administrative department that settles the dispute may, upon request of the parties may hold a mediation regarding the compensation amount for infringement upon the patent right. If no agreement is reached through mediation, either party may bring a lawsuit with the people’s court in accordance with the ‘Civil Procedural Law of the People’s Republic of China’.

⁴⁶³ 邓建志,单晓光:《我国知识产权行政保护的涵义》,《知识产权法》,2007年第1期(J Deng and X Shan, ‘The Conception of IP Administrative Protection in China’ [2007] 1 Intellectual Property Law 62).

⁴⁶⁴ 刘峰:《我国知识产权侵权救济‘双轨制’的正当性》,《知识产权法》,2008年第2期(F Liu, ‘The Justice Analysis On the ‘Dual Enforcement System’ of Patent Infringement Remedies in China’ [2008] 2 Intellectual Property Law 50).

⁴⁶⁵ Constitution (2004 Amendment) Art. 57

⁴⁶⁶ Constitution (2004 Amendment) Art. 58

⁴⁶⁷ Constitution (2004 Amendment) Art. 62

The Chinese central government is the State Council.⁴⁶⁸ It has the power to adopt administrative measures, enact administrative rules and regulations and issue decisions and orders in accordance with the Constitution and the law.⁴⁶⁹ The local people's congress can enact local laws or regulations.⁴⁷⁰ The local rules must not contravene the Constitution and the law and administrative rules and regulations, and local regulations shall be reported to the Standing Committee of the National People's Congress and be recorded. The ministries and commissions within the State Council have the authority to issue orders, directives, and regulations within the jurisdiction of their respective departments and in accordance with the law and the administrative rules and regulations, decisions and orders issued by the State Council.⁴⁷¹ Therefore, China has a four-levelled hierarchy system of laws, within which, the Chinese constitution is the highest, and the laws are then enacted by the National People's Congress at the second level. The administrative regulations enacted by the State Council are on the third level, and the local regulations and department regulations are on the bottom level.⁴⁷²

Therefore, under the State Council, China has a two-levelled administrative system for IP issues. The central administrative bodies are under the direct governance of the State Council, which are responsible for granting the IPRs. The local administrative authorities under the central administrative bodies are responsible for administering and administrative enforcement of IPR within their territorial jurisprudence. International affairs are handled at the level of central administrative bodies.⁴⁷³ China's administrative organisations that are dealing with IPR-related issues and their functions have been briefly summarized as following:⁴⁷⁴

⁴⁶⁸ Constitution (2004 Amendment) Art. 85

⁴⁶⁹ Constitution (2004 Amendment) Art. 89

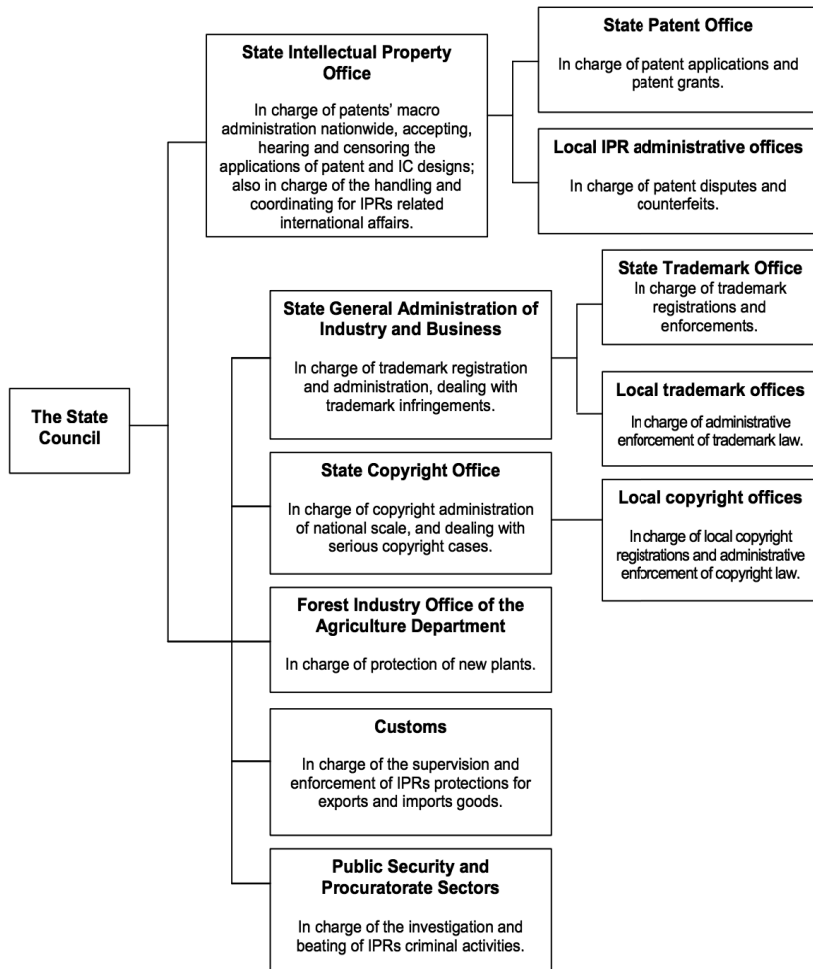
⁴⁷⁰ Constitution (2004 Amendment) Art. 100

⁴⁷¹ Constitution (2004 Amendment) Art. 90

⁴⁷² CC Donald, *China's Legal System: New Developments, New Challenges* (Cambridge University Press 2008).

⁴⁷³ 温旭, *知识产权业务律师基础实务*, 人民出版社 2014 (X Wen, *Intellectual Property Lawyer Based Legal Practices* (Renmin University Press 2014)).

⁴⁷⁴ Source: OECD, 'Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement' (2005) 46.



Generally speaking, compared to the judicial remedies, administrative remedies are faster for infringement cases, the procedures are less complicated, and the enforcement of its decision is also more efficient. However, if one of the parties decides to challenge the administrative decision and initiates a judicial appeal in the related intermediate court, then the process would be longer. Moreover, the administrative remedies do not offer compensation to the rights holders.⁴⁷⁵ On the other hand, administrative protection still maintains its popularity because it costs less than the judicial procedure,

⁴⁷⁵ W Shao, *Patent Litigation Practices in Mainland China* (Taiwan Ministry of Economic Affairs, Intellectual Property Office 2011).

and frequently brings parties to mediation.⁴⁷⁶ Taking patent cases as example, Chinese law and its enforcement regulation allows the administrative patent authorities to settle cases related to: infringements⁴⁷⁷, utilisation fees for the period between the publication of the patent application and the granting of patent rights, application rights and ownership rights, and rewards and payments of officially recognized inventors. SIPO issued Guidelines for the Administrative Mediation of Patent Disputes (for Trial Implementation) in May 2016.⁴⁷⁸

2.3 The Relationship Between the Administrative & Judicial Enforcement

The ‘dual-track’ enforcement system of IPR in China is unique, offering both administrative and judicial protections for the right holders. The administrative and judicial protections are not in conflict, but cooperate with each other. Under the ‘dual-track’ system, judicial protection holds a dominant position. The on-going enforcement reform enhances the role and importance of IPR judicial protection in dealing with infringement cases, and the administrative protection will function to assist, which is more efficient in counterfeit and piracy-related cases.⁴⁷⁹ The adoption of the ‘dual protection, parallel operation’ mechanism of China regarding IP enforcement fits well into the Chinese conditions and functions effectively inside the country.⁴⁸⁰

⁴⁷⁶ S Luginbuehl, ‘China’s Patent Policy’ in S Luginbuehl and P Ganea (eds), *Patent Law in Greater China* (Edward Elgar Publishing Limited 2014).

⁴⁷⁷ Art.60, Patent Law

⁴⁷⁸ Notice of the State Intellectual Property Office on Issuing the Guide to the Determination of Patent Infringements (for Trial Implementation), the Rules of Evidence for Agency Law Enforcement Involving Patents (for Trial Implementation) and the Guidelines for the Administrative Mediation of Patent Disputes (for Trial Implementation) 2016.

⁴⁷⁹ Z Jiang and R Kariyawasam, *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

⁴⁸⁰ OECD, ‘Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement’ (Organization for Economic Cooperation and Development 2005).

The administrative enforcements of IPR in China derive from Chinese history as far back as the early years of the People's Republic of China.⁴⁸¹ The administrative enforcements have played a constructive role for IP development in China. However, since the judicial enforcement matured, the current 'dual-track' system brings new challenges, such as, how to have judicial enforcement and administrative enforcement corresponding with each other and how to reach a balance between the judicial and administrative power.⁴⁸² According to the IP Strategy Outlines 2008, the historical mission of administrative protection as a transitional measure will be completed once the judicial mechanism is mature. Since 2008, although a 'dual-track' system is still maintained, judicial protection has gradually become the dominant trend.⁴⁸³

3. The 'Three-In-One' Model

IP law enforcement has become of greater concern since 2008 with increased motivation to transition China to be an innovative country; the requirements of an internationalized economy; the increased difficulty and complexity of the IP cases; and the need for an unified judicial implementation of IP law inside China.⁴⁸⁴ The Chinese State Council has stated in its 12 years strategy: 'We should improve the trial system for intellectual property-related cases, optimize the allocation of judicial resources, and

⁴⁸¹ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

⁴⁸² 李含, '刘春田: 知识产权保护模式问题欠缺一场“真理标准”式的大讨论' [2016] 法治周末 (H Li, 'Liu Chuntian: There is a lack of great discussion of 'criterion of truth' for intellectual property protection mechanism' [2016] Legal Weekly) <<http://news.hexun.com/2016-06-23/184551233.html>> accessed 23 June 2016.

⁴⁸³ 李含, '刘春田: 知识产权保护模式问题欠缺一场“真理标准”式的大讨论' [2016] 法治周末 (H Li, 'Liu Chuntian: There is a lack of great discussion of 'criterion of truth' for intellectual property protection mechanism' [2016] Legal Weekly) <<http://news.hexun.com/2016-06-23/184551233.html>> accessed 23 June 2016.

⁴⁸⁴ State Council of the People's Republic of China, *National Intellectual Property Strategy Outline* (5 June 2008) <www.gov.cn/gongbao/content/2008/content_1018942.htm> accessed 6 June 2015.

simplify remedy procedures. We should consider setting up special tribunals to accept civil, administrative, or criminal cases involving intellectual property'.⁴⁸⁵

The first model of the improvements, carried out by the regional courts, is the 'three-in-one' pilot tribunal in different provinces. Generally speaking, it is a trial model that either hears all civil, administrative, and criminal IP cases in one tribunal; or hears the IP cases with a collegial panel of judges that are from civil, administrative and criminal tribunals; or a mixed use of the two. The representative models are: Pudong model (1996 January), Nanhai model (2006 July), Xi'an model (2006 December), Wuhan model (2008 April), Chongqing model (2008 November), Beijing No.2 Intermediate Court model (2008 December), and Zhuhai model (2009 December).⁴⁸⁶

It is not only a model for the hearing of cases but also a matter of how to organize the court.⁴⁸⁷ The non-unified implementation at the provincial level shows that: (1) the court level for the first instance of the 'three-in-one' model is different from one province to another. Legislatively speaking, at which court level the IP tribunal shall belong and how it shall be organized is still under discussion;⁴⁸⁸ (2) some provinces establish a separate, qualified and specialized tribunal for IP cases, some are hearing

⁴⁸⁵ State Council of the People's Republic of China, Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy (State Council 2008) para 45.

⁴⁸⁶ 胡淑珠, '论知识产权法院(法庭)的建立——对我过知识产权审判体制改革的理性思考', [2010] 4 知识产权 37 (S Hu, 'Discussions On the Establishment of IP Court' [2010] 4 Intellectual Property 37). See also 周志伟, 戴启洪, 我国知识产权法院设立方案探讨, 2014 年知识产权土地论坛 (Z Zhou and Q Dai, 'Analysis on the Establishment of China Exclusive Intellectual Property Courts' [2014] Shangdi Forum of Intellectual Property).

⁴⁸⁷ This current situation is caused due to the legal reform development of China. After the open and reform policy, even though China achieved considerable improvements in the field of legal enforcement, it is still undeniable that the legal practices for hearing IP cases are limited. Hence, according to the law, the qualified court has the autonomy to organize and adjust the IP chamber according to its regional situations. The court experiments with the model via organizing different modes, and at the same time hearing cases. Thus, the three-in-one model contains two characteristics. It is an inventive case hearing model and at the same time a court-organizing model. It is a mechanism that China uses to collect practical experiences and handle real cases at the same time.

⁴⁸⁸ 胡淑珠, '论知识产权法院(法庭)的建立——对我过知识产权审判体制改革的理性思考', [2010] 4 知识产权 37 (S Hu, 'Discussions On the Establishment of IP Court' [2010] 4 Intellectual Property 37).

the case within each of the original chambers; and (3) some models concentrate on enhancing the court in general and some focus on improving the panel of judges.

Even though, at the central state level, the strategy outlines a clear aim, the implementation differs noticeably at the provincial level. How the differences will be harmonized is unclear.

From an international perspective, the ‘three-in-one’ model is a uniquely Chinese system. Although it has been implemented differently, it is a common mechanism that the Chinese courts use to support and enhance the openness of information and resources.⁴⁸⁹ Until 2014, China had six high people’s courts, 74 intermediate courts, and 80 basic people’s courts applying a three-in-one model in IP cases.⁴⁹⁰

In July 2016, the SPC published *Opinions of the Supreme People's Court on Promoting the ‘Three in One’ Trial of Civil, Administrative and Criminal Cases Involving Intellectual Property Rights in Courts Nationwide*,⁴⁹¹ which promote the establishment of IP tribunals nationally. This decision renames intellectual property right trial divisions of the people's courts at all levels into an intellectual property right tribunal, where earlier inside the court, they were referred to as ‘No. x Division of Civil Trial’.⁴⁹²

In order to enhance the general effectiveness of IP protection by building a working mechanism and trial system in conformity with the judicial characteristics and pattern

⁴⁸⁹ 李小武: 《中国知识产权法院的设立目的》, 2014 年知识产权上地论坛 (X Li, ‘The Aims of the Establishment of the Chinese Intellectual Property Court’, [2014] Shangdi Forum of Intellectual Property).

⁴⁹⁰ 袁定波, ‘设立知识产权法院意在规范市场竞争’, 法制日报, 2014 年 6 月 9 日 (D Yuan, ‘Establishing the Intellectual Property Court Aims to Standardize the Market Competition’ *Legal Daily* (9 June 2014)).

⁴⁹¹ 法发 [2016] 17 号《最高人民法院关于在全国法院推进知识产权民事、行政和刑事案件审判‘三合一’工作的意见》(Supreme People's Court Decision on Promoting Intellectual Property Civil, Administrative and Criminal Cases ‘three in one’ Trail in all National Courts [2016] No. 17).

⁴⁹² Art. 5

of intellectual property rights. It joins the forces of the judicial and administrative authorities to achieve a comprehensive remedy. The SPC foresees the three-in-one approach will unify judicial standards, as well as improve trial quality and efficiency. Meanwhile, the three-in-one approach can support the development of the specialized IP trial teams and advance the quality of IP trial teams.

According to this decision, the SPC will establish a ‘Three-in-One Work Coordination Group’ to coordinate and guide the three-in-one work of courts nationwide. Meanwhile, this decision has significantly deepened judicial reform. All higher and intermediate people’s courts shall establish corresponding coordination bodies to organize coordination of the three-in-one work within their jurisdictions, take the specific responsibility of the jurisdictional distribution, guidance and supervision of the intellectual property right cases within their jurisdictions, connect the higher and lower levels, and coordinate internally and externally. This decision has also specified the civil, administrative, and criminal IP cases in detail in Art. 7.⁴⁹³

Data released in July 2016 shows that China presently has 158 basic people’s courts in total, with jurisdiction over IP cases: there are 6 in Beijing, 2 in Tianjin, 6 in Shanghai, 3 in Chongqing, 3 in Anhui, 4 in Fujian, 2 in Gansu, 32 in Guangdong, 2 in Guangxi, 1

⁴⁹³ ‘Civil cases involving intellectual property rights’ means civil dispute cases involving copyrights, trademark rights, patent rights, technology contracts, trade secrets, new varieties of plants, integrated circuit layout designs, or other intellectual property rights or involving unfair competition, monopoly, or franchise contracts.

‘General civil dispute cases involving intellectual property rights’ means civil dispute cases involving intellectual property rights except those involving patents, new varieties of plants, integrated circuit layout designs, know-how, computer software, determination of famous trademarks, or monopoly.

‘Administrative cases involving intellectual property rights’ means administrative dispute cases filed by the parties with the people’s courts against administrative actions taken by the administrative agencies in respect of copyrights, trademark rights, patent rights, or other intellectual property rights or unfair competition.

‘Criminal cases involving intellectual property rights’ means criminal cases involving infringement of intellectual property rights as provided for in Section 7, Chapter III: Crimes of Undermining the Order of Socialist Market Economy, Specific Provisions of the Criminal Law of the People’s Republic of China. In respect of the criminal cases of private prosecution involving intellectual property rights, the people’s courts may still exercise jurisdiction according to the principle of territorial jurisdiction specified in the Criminal Procedure Law.

in Henan, 3 in Hubei, 6 in Hunan, 35 in Jiangsu, 3 in Jiangxi, 2 in Liaoning, 5 in Shandong, 2 in Shanxi, 6 in Sichuan, 2 in Xingjiang, and 33 in Zhejiang.⁴⁹⁴

Jurisdictions on civil cases involving IPR shall continue to be governed by the provisions and official replies regarding the jurisdiction of the people's courts. In addition, Art. 8 of the new decision further detailed the jurisdictions for various situations:

‘Where no basic people’s court within the jurisdiction of an intermediate people’s court has jurisdiction over general civil dispute cases involving intellectual property rights, a report may be submitted level by level to the Supreme People’s Court for designation of a basic people’s court to exercise unified jurisdiction, or the intermediate people’s court may directly exercise jurisdiction over administrative and criminal cases involving intellectual property rights within its jurisdiction.

Where there are two or more basic people’s courts having jurisdiction over general civil dispute cases involving intellectual property rights within the jurisdiction of an intermediate people’s court, the scope of jurisdiction of each basic people’s court may, after a report is submitted level by level to and approved by the Supreme People’s Court, based on the number of cases, trial forces, and other circumstances within the jurisdiction, be defined and adjusted.

A basic people’s court having jurisdiction over general civil dispute cases involving intellectual property rights shall try criminal and administrative cases involving intellectual property rights as court of first instance within the region specified by the intermediate people’s court. Where a basic people’s court without jurisdiction over general civil dispute cases involving intellectual property rights discovers that the case before it is an administrative or criminal case involving an intellectual

⁴⁹⁴ Z Jiang, *SPC: Intellectual Property Jurisdiction of the Basic People’s Courts* (July 2016) <http://mp.weixin.qq.com/s/u7LzMXLO1pw1b3ajTlx_eg> accessed 17 July 2016.

property right, it shall transfer the case to a basic people's court having jurisdiction over general civil dispute cases involving intellectual property rights as designated by the intermediate people's court.

The intellectual property right tribunal of an intermediate people's court shall try appeals from administrative and criminal cases involving intellectual property rights closed by the basic people's courts within its jurisdiction and the criminal cases involving intellectual property rights appealed by the people's procuratorate at the same level.

The intellectual property right tribunal of a higher people's court shall try appeals from administrative and criminal cases involving intellectual property rights closed by the intermediate people's courts within its jurisdiction, administrative and criminal retrial petition cases involving intellectual property rights, and the criminal cases involving intellectual property rights appealed by the people's procuratorate at the same level.

The intellectual property right tribunal of the Supreme People's Court shall try appeals from administrative and criminal cases involving intellectual property rights closed by higher people's courts, administrative and criminal retrial petition cases involving intellectual property rights, and the criminal cases involving intellectual property rights appealed by the Supreme People's Procuratorate.'

This new decision indicates a significant step forward for a systematization of IPR enforcement and further pushes forward IPR enforcement at the province level. In January 2017, the SPC newly established the IP tribunal in Nanjing, Suzhou, Wuhan

and Chengdu.⁴⁹⁵ The ‘three-in-one’ model does not apply to courts inside Beijing, Shanghai, and Guangzhou.

4. The Intellectual Property Court in Beijing, Shanghai And Guangzhou

On 31 August 2014, the Standing Committee of the National People’s Congress of China published *A Decision to Establish Intellectual Property Court in Beijing, Shanghai, Guangzhou* (the Decision).⁴⁹⁶ According to articles 3 and 4 of the Decision, IP courts are intermediate courts. The IP courts are under the supervision of the SPC and the High People’s Court of its region.⁴⁹⁷ Meanwhile, the jurisdiction of these three courts is stipulated in the SPC Rules for the Jurisdiction of the IP Courts of Beijing, Shanghai and Guangzhou released on 27 October 2014 (the Rules).⁴⁹⁸

These three courts have exclusive jurisdiction over the first instance cases inside their municipal district concerning: (1) civil and administrative cases on patents, new plant varieties, layout designs, technical secrets, and computer software; (2) administrative cases on administrative acts carried out by State Council departments or local people’s governments above the county level, that involve copyright, trademark, or unfair competition; and (3) civil cases involving well-known trademarks.⁴⁹⁹ In contrast to

⁴⁹⁵ 最高人民法院关于同意南京市、苏州市、武汉市、成都市中级人民法院内设专门审判机构并跨区域管辖部分知识产权案件的批复 2017 (Supreme People’s Court’s Consent of Establishing the IP Tribunal in Nanjing, Suzhou, Wuhan, Chengdu’s Intermediate People’s Court and Cross-Regional Jurisdiction of Some Intellectual Property Cases 2017).

⁴⁹⁶ 《全国人民代表大会常务委员会关于在北京、上海、广州设立知识产权法院的决定》，2014 (Standing Committee of the National People’s Congress, *Decision on the Establishment of Intellectual Property Court in Beijing, Shanghai, Guangzhou* (31 August 2014)) <<http://npc.people.com.cn/n/2014/0901/c14576-25581035.html>> accessed 6 June 2015.

⁴⁹⁷ Art. 5 of the Decision.

⁴⁹⁸ 《最高人民法院关于北京、上海、广州知识产权法院案件管辖的规定》，〈法释〔2014〕12号〉(No 12 SPC Rules on the Jurisdiction of the IP Courts in Beijing, Shanghai and Guangzhou (27 October 2014)) <<http://www.chinacourt.org/law/detail/2014/10/id/147980.shtml>> accessed 6 June 2015.

⁴⁹⁹ Art. 1 of the Rules.

Beijing and Shanghai, the IP court in Guangzhou has its regional jurisdiction on the first and third type of cases within the whole Guangdong province.⁵⁰⁰

The rules have excluded copyright and trademark civil cases from the first instance of the IP courts. The newly established IP courts will only function as second instance appeal courts for cases as such, unless otherwise stipulated. There are many questions remaining in practice, which require the SPC's guidelines or interpretations. An example of such cases concerns the unification of jurisdiction over complicated cases that contain patent, trademark, and copyright at the same time, and the standards and procedure for transferring copyright and trademark cases from the basic people's courts to the IP courts in Beijing, Shanghai, and Guangzhou.⁵⁰¹

The earlier authorized basic people's courts no longer held jurisdiction over the aforementioned three types of cases inside Beijing, Shanghai, and Guangzhou after the Rules came into force. The intermediate courts of Beijing, Shanghai, and Guangzhou have no jurisdiction on the mentioned three types of cases, but the administrative cases carried out in the municipal district of Guangzhou will still be heard at its original intermediate courts inside Guangdong. Cases that partly have the mentioned three types of cases will also be heard inside the IP courts.

The newly established IP courts differ from the already existing three-in-one model; they are 'two-in-one': the newly established IP courts hear only civil and administrative cases. Moreover, at the provincial level, the administrative cases on administrative acts, which are carried out by State Council departments or local people's governments above the county level—that involve copyright, trademark, or unfair competition—are

⁵⁰⁰ Art. 2 of the Rules. See 吴汉东, '知识产权法院的专门法院属性与专属管辖职能', 人民法院报 (Wu H, The Characters and Exclusive Jurisdiction of the Intellectual Property Court)' 2014 People's Court News, http://rmfwb.chinacourt.org/paper/images/2014-09/03/05/2014090305_pdf.pdf

⁵⁰¹ 冯晓青, 武志孝《我国知识产权法院与普通法院关系研究》, 2014年知识产权论坛上地论坛 (X Fen and Z Wu, 'Research on the Relationships between Intellectual Property Court and General Court in China' [2014] Shangdi Forum of Intellectual Property).

left out. The second instance of the aforementioned three types of IP cases are heard inside the higher people's court in Beijing, Shanghai, and Guangzhou.

In this context, China will not establish a separate high people's court for IP cases. Firstly, if the high court does not hear the first instance of IP cases, or only hear the listed type of cases for IP courts, the number of cases for the special IP courts is not big enough for a separate high court.⁵⁰² Secondly, the establishment of a specific high people's court for IP, would face other legal problems, such as how to fit it in the current court system, which level of government it is responsible to, how to manage its team of judges and so on. Thirdly, the current IP courts are still in the phase of collecting experience, China might establish a high people's court at a later stage.

5. The Impacts of IP Courts on the 'Dual-Enforcement System'

It is difficult to say if there will be any substantive change to the dual enforcement system with an administrative enforcement on one hand and judicial on the other. The establishment of IP courts changes and unifies the jurisdiction of civil and administrative cases to the IP court inside Beijing and Shanghai, but how this will be implemented inside the whole country is unclear at this stage. The establishment of IP courts also may harmonize the implementation of substantive law.⁵⁰³

⁵⁰² 冯晓青, 武志孝《我国知识产权法院与普通法院关系研究》, 2014年知识产权上地论坛 (X Fen and Z Wu, 'Research on the Relationships between Intellectual Property Court and General Court in China' [2014] Shangdi Forum of Intellectual Property).

⁵⁰³ Supported by the SPC, Beijing IP Court plays an important role during the current round of judicial reform. Leading by President Su Chi, the Beijing IP Court lunched 'Precedent Judgement Guidance System' and has an institution specifically conducting researches on standardization of IP court in China. The institution is established in 2015. It is focusing on establishing the online database, academic researches and collecting practical experiences during 2016-2017. Following the IP court's action plan, the system will be nationally launched by SPC in 2018-2019.

The Patent Re-examination Board of SIPO is responsible for examining requests for re-examination and requests for invalidation and making decisions accordingly.⁵⁰⁴ Since the patent amendment in 2000,⁵⁰⁵ the Chinese patent system, both legislation and enforcement, is fully in line with the requirements of TRIPS. The responsible people's courts have full jurisdiction over administrative decisions on application, invalidation, revocation, or objection of all types of patents.⁵⁰⁶ Following the establishment of the special IP courts, there has been a significant change regarding the jurisdiction of administrative cases.

According to article 1(2) of the Rules, the jurisdiction of the first instance of administrative cases on administrative acts that are carried out by State Council departments or local people's governments above the county level which involve copyright, trademark, and/or unfair competition, have all been transferred to IP courts instead of the original intermediate courts. However, such unification at this stage is only limited to Beijing, Shanghai, and the municipal area of Guangzhou. Administrative cases for the aforementioned matters, which are carried outside of Guangzhou, will be still heard at the original intermediate courts.

The Rules also stipulate the exclusive jurisdiction of the first instance for IP court in Beijing in its article 5 as follows:

'(1) refusals of the administrative adjudications or decisions, which are made by the State Council departments, on the authorizations or acknowledgements of patents, trademarks, new plant varieties, or integrated circuit designs; (2) refusals of the administrative decisions on the compulsory licenses, or arbitration decisions on compulsory license fees, which are made by the State Council departments, on the authorizations or acknowledgements of patents, trademarks, new plant varieties,

⁵⁰⁴ Guidelines for Patent Examination

⁵⁰⁵ For the detailed evolution of the Chinese Patent Law, please see Chapter 2.

⁵⁰⁶ H Guo, 'Patents' in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

or integrated circuit designs; and (3) refusals of other administrative acts related to IP authorizations or acknowledgements.’

The annual report of the SPC reported 2886 first-instance administrative IP cases in 2013, among which 1312 (45.23%) were foreign-related cases.⁵⁰⁷ The unification of jurisdiction of administrative cases may significantly raise the public IP awareness. It is possible that the establishment of IP courts will have an impact on the preference of parties on choosing remedies between the judicial and administrative paths. Meanwhile, it follows the IP Strategy 2008, where judicial enforcement shall be the dominant trend.

In June 2016, Beijing, Tianjin, and Hebei province officially started the ‘joint meeting mechanism’ of the courts. The courts of these three regions will study the necessity and feasibility of jurisdictions on the major civil and commercial cases, for which a court can have jurisdiction that crosses the administrative divisions. This mechanism mainly focuses on exploring and establishing a system, for which IP cases will be all heard in Beijing, foreign maritime and commercial cases will be heard in the courts of Tianjin, and cross district resources-related cases will be heard in Hebei. This mechanism aims to promote judicial unity, and break the barriers of economic and social development in these regions.

Under this new mechanism, for IP cases, Beijing courts will have jurisdiction on patent, trademark and copyright and other intellectual property civil cases. IP disputes involving new energy, new materials, environmental protection, and other new and high technology industries will also be heard in Beijing. Anti-trust and unfair-competition cases inside the region of cooperation and development will also be heard in Beijing.

⁵⁰⁷ 最高人民法院：《2013 年中国法院知识产权司法保护状况》，《人民法院报》，2014 年 4 月 25 日 (2013 China IPR Judicial Protection in Court, *People’s Court News* (25 April 2014)) <www.chinacourt.org/article/detail/2014/04/id/1283299.shtml> accessed 25 April 2014.

At the same time, this mechanism will also explore how to properly handle the relationship between the judicial protection and administrative protection.⁵⁰⁸

The reform of the judicial enforcement of IP remains on-going, however according to the IP strategy, in the near future there will be more changes in the IP enforcement system.

6. Chinese IP Judges

In 2014, China reported 7000 judges in the higher people's courts and 36,000 in the intermediate courts.⁵⁰⁹ In total, up until 2014, China had 2700 judges for intellectual property cases.⁵¹⁰

In accordance with article 6 of the Decision, the presiding judges in the newly established IP courts will be nominated by the respective Directors' Meetings of the Municipal People's Congress Standing Committee of Beijing, Shanghai, and Guangzhou; and separately approved by their respective Standing Committee of the Municipal People's Congress. The rest of the judges will be nominated by the presiding judge and approved by the respective Standing Committee of the Municipal People's Congress of Beijing, Shanghai and Guangzhou.

⁵⁰⁸ '京津冀将探索跨区域划知识产权案件集中管辖', 中国知识产权报, 2015年6月12日 ('Beijing, Tianjin and Hebei will explore centralize the jurisdiction of intellectual property cases', China Intellectual Property (12 June 2015)) <<http://ip.people.com.cn/n1/2016/0612/c136655-28427113.html>> accessed 14 June 2016.

⁵⁰⁹ 最高人民法院:《人民法院简介》(The Supreme People's Court of China 'Introduction of the People's Courts') <www.court.gov.cn/jgsz/rmfjji/> accessed 2 May 2014.

⁵¹⁰ 刘春田:《知识产权法院的职责与使命》,《人民法院报》2014年9月3日 (C Liu, 'Intellectual Property Court's Mandate and Mission' [2014] People's Court News) <http://rmfyb.chinacourt.org/paper/html/2014-09/03/content_87169.htm?div=-1> accessed 6 June 2015.

The Decision does not mention the specific criteria for electing IP judges. During the deliberation of this Decision, members from the deliberating group recommended to promulgate standards on electing IP judges.

First, the IP judges are facing the same problems as other judges in the judicial system. For example, the remuneration for Chinese judges is paid by their local governments. Although it has been commonly understood for many years that the remuneration of judges shall not be paid only from the local government, this problem persists.⁵¹¹ In short, the SPC has pointed out the following 6 common problems in the judicial system: (1) fairness and efficiency of the judgement; (2) difficulties in case filing, litigation, and enforcement; (3) the need for improvement in the system and mechanisms to guarantee access to an independent and fair judiciary; (4) administrative burden of courts affecting quality and efficiency; (5) partiality and corruption in the court officials; and, (6) heavy workload with increasing caseloads for some courts and poor working conditions for court personnel for the less developed regions.⁵¹²

Stated in the strategy outline in 2008, these will also be parts of the further reformations within the judicial system.

It was claimed that the Chinese courts faced a lack of judges, and many judges were short of the relevant background knowledge and experience at the beginning of the establishment of IP system. Since the 1980s until now, China and its judicators unified the implementation of IP law at a certain level. During the last 30 years of development, many professional judges were educated and practically experienced. At the same time,

⁵¹¹ L. Wang, 'Intellectual Property Protection in China' [2004] 36 *The International Information & Library Review* 253.

⁵¹² Q. Zhou, 'Report on the Work of the Supreme People's Court (2013-2014). Delivered at the Second Session of the Twelfth National People's Congress on 10 March 2014' <www.china.org.cn/china/2014-05/08/content_32331522.htm> accessed 6 June 2015.

apart from the shortage of judges, the loss of judges also became a problem within the Chinese judiciary.

However, there is an opposite voice nowadays. The current reform claims that the professionalism as well as the unification of implementation is limited, and therefore the judicial system should aim at improving the judiciary. The judicial system is introducing ‘员额制 (yuán é zhì)’ (elected judiciary/quota system for judges). It is a system that, refers to the existing judiciary, according to the workload, the size of the city and its population, economic development, and other factors to determine the number of judges inside the courts and using only the actual qualified judges. The system is a new form of judicial mechanism consisting of judges and judge assistants.⁵¹³

In contrast to European countries, China is not introducing a pool of IP judges. The SPC published its *Guidelines on Enrolling Judges for Intellectual Property Courts* (the Guidelines) on 28 October 2014 and confirmed the application of the new mechanism. The judges are elected according to article 3. Based on the Guidelines in 2014, the newly established Beijing IP court had 25 judges in total.⁵¹⁴ The number of IP judges has expanded to 43 up until June 2017.⁵¹⁵ The Guangzhou and Shanghai courts were separately established on 16 and 28 December 2014. The Guangzhou court has 13 and the Shanghai court has 10 IP judges.⁵¹⁶

⁵¹³ 郑永昶, ‘建立法官员额制度之构想’, [2003] 7 人民司法 25 (YX Zheng, ‘The Idea Establishing the quota system for judges’ [2003] 7 People’s Judiciary 25).

⁵¹⁴ 北京知识产权法院: 《北京知识产权法院法官信息》, 审判信息网 (Intellectual Property Court in Beijing, ‘Information of IP judges in the Intellectual Property Court in Beijing’) <www.bjcourt.gov.cn/fgxx/detail.htm?court=30&channel=100606002> accessed 1 December 2014.

⁵¹⁵ 北京知识产权法院: 《北京知识产权法院法官信息》, 审判信息网 (Intellectual Property Court in Beijing, ‘Information of IP judges in the Intellectual Property Court in Beijing’) <www.bjcourt.gov.cn/fgxx/detail.htm?court=30&channel=100606002> accessed 20 June 2017. The number of judges published in February 2017 was 44. The Report of China IP House states there are 45 judges in Beijing IP Court 2016.

⁵¹⁶ 中华人民共和国知识产权局: 《广州知识产权法院挂牌成立》, 2014 年 12 月 17 日 (State Intellectual Property Office of the P.R.C, ‘The Guangzhou Intellectual Property Court Is Established’ (17 December 2014)) <www.sipo.gov.cn/mtjj/2014/201412/t20141217_1047660.html> accessed 24 March 2015; 中华人民共和国知识产权局: 《上海知识产权法院挂牌成立》, 2014 年 12 月 31 日 (State Intellectual Property Office Of the P.R.C, ‘The Shanghai Intellectual Property Court Is Established’

Meanwhile, IP judges are facing other specific challenges as well.

Firstly, the establishment of IP courts is a forerunner of the judicial reform. The establishment of IP courts is not only a major reform of China's IPR judicial protection system, in fact, it has become the experiment lab and pilot of Chinese judicial reform and bears the responsibility of the reform initiatives.⁵¹⁷ Meanwhile, the elected judiciary system is still different from the appointed judiciary system. However, too many extra political responsibilities and administrative expectations may actually harm judicial independence or it may weaken under the stress of too many irrelevant tasks.⁵¹⁸ Whether the model implemented in Beijing, Shanghai, and Guangzhou can actually be introduced to the whole country is still questionable: for example, how to decide the number of judges in a court inside a certain region, under what standards to elect the judges from the existing groups, and how to balance the number of cases and judges?⁵¹⁹

Secondly, article 4 of the Guidelines stipulates that a person within the judicial personnel, who meets the qualifications of the Judges Law of the People's Republic of China, can be a qualified IP judge if he or she meet the following criteria: he or she (1) has a level-four senior judge's qualification; (2) has more than six years of relevant experience working in trials; (3) holds a bachelor or above degree of law from the ordinary universities; and (4) has strong capacities on presiding over the trials and

(31 December 2014)) <www.sipo.gov.cn/mtjj/2014/201412/t20141231_1054112.html> accessed 24 March 2015.

⁵¹⁷ 袁定波, '设立知识产权法院意在规范市场竞争', 法制日报, 2014年6月9日(D Yuan, 'Establishing the Intellectual Property Court Aims to Standardize the Market Competition' *Legal Daily* (9 June 2014)).

⁵¹⁸ 李小武: 《中国知识产权法院的设立目的》, 2014年知识产权上地论坛 (X Li, 'The Aims of the Establishment of the Chinese Intellectual Property Court' [2014] Shangdi Forum of Intellectual Property).

⁵¹⁹ 刘丽: 《法官员额制度研究》, 辽宁省沈阳市中级人民法院 (L Li, 'Studies On the Elected Judiciary System' *Liaoning Shenyang Municipal Intermediate People's Court* (19 October 2014)) <<http://syzy.chinacourt.org/public/detail.php?id=6424>> accessed 6 June 2015.

writing skills for legal documents. The current system does not require the IP judges to have a technical background.

The lack of technical background has already caused problems in practice, especially for patent cases, where judges lacked effective mechanisms to understand substantive technologies. For instance, 70% of second-instance patent cases in Beijing High People's Court were remanded or for retrial due to technological factors.⁵²⁰ Article 5 allows each region to decide the criteria for other legal professionals as IP judges. Other judges highlighted that if, during the further reformation, there is no top-level binding guidance on the ratio of judges but each region can decide the number of judges, the imbalance of different regions may lead to a harder unification, or even to a bigger mess.

7. Statistic Studies of Beijing IP Court (2015-2016)

The author has selected Beijing IP Court as a specific case study on China's IP judicial mechanisms. Although the Beijing IP Court has only been established for a relatively short time, as one of the very first established special IP courts it holds an importance and representative meaning for studies on Chinese IP judicial reforms. The practices of Beijing IP court follow the detailed implementation of judicial reform. The Beijing IP Court functions as a pioneer, vanguard, and an experimental field for Chinese IP judicial reforms.⁵²¹

⁵²⁰ 北京高院, '北京高院:当前知识产权审判需要注意的法律问题', 2016年5月9日 (Beijing High People's Court, 'BHPC: Attention needed on Legal Problems in the current intellectual property trials', (9 May 2016)).

⁵²¹ 知产宝司法数据研究中心, '北京知识产权法院司法保护数据分析报告' (IP House Judicial Data Analyses Center, 'Report on Judicial Protection Data of Beijing Intellectual Property Court') (2016) <www.iphouse.cn/pdfdata/zhichanfayuan5-31.pdf?from=timeline&isappinstalled=0> accessed 20 June 2017.

As stated by the presiding judge of the IP division of the SPC, Xiaoming Song, Chinese IP courts will be among the largest accepting IP cases in the world. After the establishment of specialized IP courts, it is predictable that the number of IP cases will increase. Especially in the IP court of Beijing, the number of cases, including the first and second instances, will reach more than 10,000. Considering the number of judges inside the court, the Beijing court is already facing challenges, such as: how to properly and sufficiently resolve the disputes.⁵²²

According to the latest accessible data for 2016,⁵²³ in Beijing IP Court, first instance IP civil cases lasted for an average of 351 days in 2016. The process of second instance IP civil cases lasted 108 days. Respectively, the first instance civil process lasted 331 days for trademark cases, 382 days for patent cases, and 406 days for copyright cases. The second instance civil cases lasted 116 days for trademark cases.

The average process for first instance IP administrative cases lasts for 167 days. For trademark cases, the process of first instance administrative cases lasts for 158 days. However, the period lasts much longer for patent cases. The average process of an administrative case on a patent lasts for 356 days. On average, cases last for: 325 days for the subject of dissatisfaction with the review decision of the Patent Re-examination Board; and 373 days for the subject of dissatisfaction with the decision of the Patent Re-examination Board on declaration of patent invalidation/validation.

⁵²² 袁定波, '设立知识产权法院意在规范市场竞争', 法制日报, 2014年6月9日(D Yuan, 'Establishing the Intellectual Property Court Aims to Standardize the Market Competition' *Legal Daily* (9 June 2014)).

⁵²³ Detailed report and all the data cited in this part is available at 知产宝司法数据研究中心, '北京知识产权法院司法保护数据分析报告' (IP House Judicial Data Analyses Center, 'Report on Judicial Protection Data of Beijing Intellectual Property Court') (2016) <www.iphouse.cn/pdfdata/zhichanfayuan5-31.pdf?from=timeline&isappinstalled=0> accessed 20 June 2017.

The growth in the number of cases is much faster than the growth of the number of judges, the current reformation is on-going under the challenge of ‘too many cases but too few judges’.⁵²⁴ The concern of the SPC in 2014 became increasingly visible and has been reflected by the Beijing IP Court.

According to the latest accessible data,⁵²⁵ there were 10638 cases filed in Beijing IP Court in 2016. Among these filed cases, there were 7071 administrative cases, 3567 civil cases, and 1104 patent-related administrative cases.

The Beijing IP Court concluded 8111 cases in 2016. The total number of concluded cases has risen 49.3% compared to 2015.⁵²⁶ Among these concluded cases, there were 4976 administrative cases and 3135 civil cases. The court concluded 444 first instance patent-related civil cases and 8 second instance cases.⁵²⁷ The details of the 444 first instance patent-related civil cases are as follows: there were 15 cases on contract disputes; 333 cases on patent infringement issues;⁵²⁸ 92 cases on ownership-related disputes; and 4 cases on confirmation of non-infringement. Among the 8 second instance cases, 7 were contract disputes and 1 was on patent infringement.

⁵²⁴ 胡道才, ‘员额制后, 法官该如何选任’, 光明日报, 2014年9月4日 (D Hu, ‘After the elected judiciary, how to elect judges’ *Guangming Daily* (4 September 2014)) <www.njfy.gov.cn/www/njfy/xwzx_mb_a3914090559424.htm> accessed 6 June 2015.

⁵²⁵ Detailed report and all the data cited in this part is available at 知产宝司法数据研究中心, ‘北京知识产权法院司法保护数据分析报告’ (IP House Judicial Data Analyses Center, ‘Report on Judicial Protection Data of Beijing Intellectual Property Court’) (2016) <www.iphouse.cn/pdfdata/zhichanfayuan5-31.pdf?from=timeline&isappinstalled=0> accessed 20 June 2017.

⁵²⁶ The amount of settled cases was 5432 in 2015.

⁵²⁷ The IP judgements and judicial decisions from all levels of people’s courts in Beijing are public available, detailed info see <www.bjcourt.gov.cn/cpws/index.htm?st=1&q=&sxnflx=6&prompt=&dsrName=&ajmc=&ajlb=&jbfyId=&zscq=1&ay=&ah=&cwslbmc=&startCprq=2016-01-01&endCprq=2016-12-31&page=98> accessed 5 August 2017.

⁵²⁸ Apart from patent cases that has not been disclosed into statistic studies, among the 333 patent infringement cases, the amount of invention patent related cases was 163, the amount of utility model cases was 35, the amount of design patent cases was 132. Detailed report and all the data cited in this part is available at 知产宝司法数据研究中心, ‘北京知识产权法院司法保护数据分析报告’ (IP House Judicial Data Analyses Center, ‘Report on Judicial Protection Data of Beijing Intellectual Property Court’ (2016)) <www.iphouse.cn/pdfdata/zhichanfayuan5-31.pdf?from=timeline&isappinstalled=0> accessed 20 June 2017.

The Beijing IP Court heard 592 patent-related administrative cases in 2016. Among these administrative cases, 194 were subjected to dissatisfaction with the review decision of the Patent Re-examination Board. Respectively, there were 150 invention-patent-related cases, 14 utility-model-related cases, and 2 design-related cases. The Beijing IP Court dismissed 16 review decisions of the Patent Re-examination Board, and they are all invention-patent-related cases.

Among the concluded patent-related administrative cases, there were 369 cases which were subjected the dissatisfaction with the decision of the Patent Re-examination Board on declaration of patent invalidation/validation. Respectively, there were 75 invention-patent-related cases, 133 utility-model related cases, and 58 design-related cases. The Beijing IP Court dismissed 15 cases on invention-patent-related declaration, 15 cases on utility-model-related declaration, and 7 cases on design-related declaration.

It is worth mentioning that, within the Beijing IP court, all the mentioned patent cases were heard by a team of only 11 judges in 2016. Although it is small while comparing the rise of number of Chinese IP judicial cases and filings, it is still a very large number of cases in the Beijing IP Court. Predictably, the number of cases will increase, the challenge of ‘too many cases but too few judges’ for IP court will remain in the near future. However, the limited number of judges can unify the judicial practices, sufficiently collect judicial experiences, and speed up the national formulation of court hearing standards.

Statistics reflect that the level of economic cooperation and economic development reflect IP judicial practices. The Beijing IP court concluded 1462 foreign-related IP cases in 2016, these included 1404 administrative cases and 58 civil cases. The cases included foreign parties from 59 countries. Parties from the United States occupied more than a third of these foreign-related cases (492 cases) and by far the most of any foreign nation. Parties from Germany were the second most evident, representing 160

cases. The rest of the top-five countries for IP cases were Japan (121 cases), France (109 cases), and Britain (96 cases).

A relatively low number of cases are focused on patent-related issues. Within the concluded administrative cases, there are 102 patent related cases. Within the concluded civil cases, 28 cases were patent-related.

During judicial reform, the rate of mediation remains high for all types of IP suits. Among the concluded 28 patent-related civil cases, 24 had foreign plaintiffs. There were 15 withdraw cases because of mediation. There were 4 cases succeeded in the court. Patent invalidation is applied as a strong mechanism against a foreign counter party. In 2016, among these 28 patent civil cases, 4 were dismissed, all due to patent invalidation.

8. Conclusion

At this stage, China is very promising and carrying out considerable legal reform regarding IP after joining the WTO. During the adjustment process of market internationalization, law has become a packet of complicated public interests, private rights, economic reformation, as well as social welfares.⁵²⁹ The country obviously notices the need to encourage its domestic innovation and seeks long-term economic growth instead of having a market with copies.⁵³⁰

⁵²⁹ W Liu, 'Intellectual Property Protection Related to Technology in China' [2005] 72 *Technological Forecasting and Social Change* 339.

⁵³⁰ GK Leonard and LJ Stiroh (eds), *Economic Approaches to Intellectual Property: Policy, Litigation and Management* (Thomson/West 2006) 11 and 403.

The legal reformation is a part of China's strategy aimed toward creating a technology- and capital-intensive economy. Until 2020, the reformation is aimed toward 'establishing a comprehensive IP system', 'promoting creation and utilization of IP', 'enhancing IP protection', 'preventing abuse of IP rights', and 'fostering a culture for IP rights'.⁵³¹ Strengthening IPR adjudication is clearly marked out by the SPC.

The newly established IP courts inside China offer more professional IP judges and provide valuable experiences for further legal reformation. Moreover, the newly implemented 'elected judiciary' will significantly enhance the efficiency, as well as the quality, of IP cases. The reformation clearly shows that China seeks stronger IP protection. On the other hand, stronger IP protection may lead to a possible rise in the cost of judicial implementation and enforcement, for both the administration and the parties. In this regard, at least on the surface, the development in China is very similar to the European development where the establishment of the Unified Patent Court and the many efforts to guarantee high quality judges in the new Court system is a main priority on the IP Agenda in Europe.

In contrast to the EU, for China it is especially the relationship between private enforcement mechanisms in courts and administrative enforcement mechanisms involving patent authorities that is in focus. Since the establishment of the special IP courts, when big corporations enter into patent disputes, courts appear to be better equipped to deal with such conflicts than administrative bodies.

Moreover, although the opinions of the SPC on promoting the 'three in one' trial unified the IP court hearing of China significantly, the earlier existing triple system already indicated a considerable gap inside China between well-developed and developing regions. This reflects that the countrywide skill in dealing with IP issues still needs

⁵³¹ State Council of the People's Republic of China, *National Intellectual Property Strategy Outline* (5 June 2008) <www.gov.cn/gongbao/content/2008/content_1018942.htm> accessed 6 June 2015.

improvement. Will the intensive reformation increase the gap? The diversity generates a new challenge for China, which is: how to reduce the gap between the ambition of China's IP reform and its uneven implementations in different provinces.

Throughout the different regions of China, the level of technological innovation is particularly diverse. Statistics published by SIPO indicate that the distribution of patent filings has considerable gaps among different provinces. Where the highest province reached more than 9000 filings (Guangdong) in 2006, and the lowest 5 regions had less than 1000 filings (Macao, Tibet, Qinghai, Hainan, Ningxia). The distribution disparity is enormous, the following list shows that the total number of patent filings over 21 years (1985-2006) for the lowest regions were not even close to the developed region's filings over 1 year. Apart from Macao, which has a special economic model⁵³², the rest of the regions are all non-developed.

Distribution of Domestic Applications for Patent Received in SIPO (1985-2006)⁵³³

Region	Accumulated Number	Year 1985-2002	Year 2003	Year 2004	Year 2005	Year 2006
Total	2,727,857	1,344,177	251,238	278,943	383,157	470,342
Macao	207	141	18	9	27	12
Tibet	447	170	24	62	102	89
Qinghai	2826	1988	173	124	216	325
Hainan	5716	3860	445	375	498	538
Ningxia	5371	3344	441	399	516	671
Gansu	13702	8612	961	910	1759	1460

⁵³² Macao is a well-developed region, where is an international free port and it is one of the world's four major casinos.

⁵³³ Source: SIPO, *Distribution of Domestic Applications for Patents Received from 1985 to 2006* <http://english.sipo.gov.cn/statistics/200804/t20080416_380891.html> accessed 29 July 2017.

Inner Mongolia	17282	11031	1393	1457	1455	1946
Xinjiang	17531	10459	1473	1492	1851	2256
Hong Kong	21260	12028	1816	2148	2645	2623
Guizhou	17666	10038	1242	1486	2226	2674
(Changchun)	14314	4599	2689	1937	2409	2680
Guangxi	28798	19183	2250	2202	2379	2784
Shanxi	24513	16012	1743	1949	1985	2824
(Xiamen)	13684	3895	1957	2070	2796	2966
Yunnan	25774	16035	1966	2132	2556	3085
Jiangxi	28750	17645	2434	2685	2815	3171
(Harbin)	28223	16375	2133	2447	3528	3740
(Xian)	26084	14421	2341	2200	2950	4172
(Shenyang)	51177	32832	5696	3898	4414	4337
Jilin	44197	27594	4267	3657	4101	4578
Anhui	32413	18599	2676	2943	3516	4679
Shanxi	44296	27775	3421	3217	4166	5717
Chongqing	38002	15511	4589	5171	6260	6471
Heilongjiang	61670	39194	4972	4919	6050	6535
(Nanjing)	24897	5895	3074	3908	5227	6793
(Dalian)	31253	11144	3055	4377	5573	7104
Hebei	69325	44434	5623	5647	6401	7220
(Qingdao)	33987	14510	2886	2834	5927	7830
(Wuhan)	38623	16710	3419	4136	6233	8125
(Jinan)	26977	5331	2853	4067	6507	8219
(Chengdu)	33194	8436	4169	4324	7241	9024
Hunan	82125	49366	6054	7693	8763	10249
Fujian	71068	36523	7236	7498	9460	10351

(Ningbo)	26920	4825	1892	2026	7764	10413
(Hangzhou)	35294	6047	4024	5029	9479	10715
Henan	72051	39953	5261	6318	8981	11538
(Guangzhou)	73919	34159	8137	8314	11016	12293
Sichuan	85779	47400	7443	7260	10567	13109
Tianjin	70932	30758	6812	8406	11657	13299
Hubei	77853	37148	6635	7960	11534	14576
Liaoning	141,098	80134	13545	14695	15672	17052
Taiwan	172,041	92993	18112	17841	20599	22496
Beijing	195,597	111,065	17003	18402	22572	26555
(Shenzhen)	98306	20359	12361	14918	20940	29728
Shanghai	188,614	76986	22374	20471	32741	36042
Shandong	195,137	93836	15794	18388	28835	38284
Zhejiang	234,077	91119	21463	25294	43221	52980
Jiangsu	214,883	84880	18393	23532	34811	53267
Guangdong	426,856	168,363	43186	52201	72220	90886

Combing the patent filing statistics and the establishment of three-in-one trial and special IP courts shows that the level of IP protection requires the support of advanced technology. For legal reform, it is not only limited to the problem of law, but may also need to concern other factors, such as an open market.⁵³⁴ Such considerations can be found in the current practices of the EU, USA, and China, due to this common problem of legal governance.

⁵³⁴ Similar academic conclusion can be found in other academic researches, see J Ginarte and W Park, 'Determinants of Patent Rights: A Cross-National Study' [1997] 26 Research Policy 283; See also, W Liu, 'Intellectual Property Protection Related to Technology in China' [2005] 72 Technological Forecasting and Social Change 339.

As a country carrying out vertical legal reform from top to bottom, China has a long way to go and needs more time to mature its market. The cooperation of legal reform with political as well as economic considerations should be harmonized instead of sacrificing the effectiveness of law.⁵³⁵ China is now facing challenges not only to carrying out the legal reformation but also harmonizing its socio-economic reformations together with different regimes.

Thus, the main finding of this chapter is that, *different from the internally standardized IP legislation, China's IP enforcement system is very national oriented and contains many Chinese characteristics*. China needs flexible IPR policies and institutions, which can leave sufficient room for its transition period. Moreover, as IP is a pilot pool for China's legal reform, during the construction of the IP system, China developed its own three-stage model, which has strong Chinese characteristics since it is neither a case-law country nor a typical continental-law country. The first stage is to establish new principles based on real cases. The second stage is to collate experiences from similar cases and to support the formation of the court's 'judicial interpretation'. The last stage is to transfer the interpretations into legislation when it is mature.⁵³⁶ The three-stage model reflected the flexibility and practicability of the Chinese IP system, which is feasible and effective to follow up the fast social transformation of China. It also actively involves the judicial understandings of the relationship between innovations,

⁵³⁵ W Liu, 'Intellectual Property Protection Related to Technology in China' [2005] 72 *Technological Forecasting and Social Change* 339. See also GK Leonard and LJ Stiroh (eds), *Economic Approaches to Intellectual Property: Policy, Litigation and Management* (Thomson/West 2006) 11 and 403.

⁵³⁶ 刘春田, 知识产权法 (第五版, 人民大学出版社 2014) (C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014)).

the protection of intellectual fruits and the public interest.⁵³⁷ The three-stage model will remain as the current practice of China.⁵³⁸

The dominant position for judicial enforcement reflects that the main players in IP will be the individual right holders, who are mainly diverse enterprises from different industries. Thus, in order to have a properly functioning IP system, the Chinese government will simultaneously change its role from the current ‘leader’ to an ‘advisor’ later. This requires the Chinese government to split its roles instead of being the one who formulates rules of the game, being a player in its own right, as well as a coach. A further IP reform in China will then go beyond IP law and the IP system, as a step-by-step procedure based on many other issues.

Chapter 4 IT Patents and Their Enforcement

1. Introduction

1.1 The Insert of Technical Factor: IT Industry As An Evaluating Example

Technology has changed our way of conducting business and directed the economic model to reflect the innovation economy. Modern innovations and the innovation economy has a strong connection with the patent system, and China is not an exception. IP is likened to currency in many ways during modern business activities, such as the intensive use of registered IP rights in business negotiations, price bargaining, investment means or market value assessments. The following section explains the use of the IT industry and IT patents in this monograph, in order to explore how domestic

⁵³⁷ X Kong and W Du, ‘Efforts and Tendencies in China’s Judicial Practice of Intellectual Property’ in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁵³⁸ 刘春田, ‘知识产权法院的职责与使命’ [2014] 人民法院报 (C Liu, ‘Intellectual Property Court’s Mandate and Mission’ [2014] People’s Court News) <http://rmfyb.chinacourt.org/paper/html/2014-09/03/content_87169.htm?div=-1> accessed 5 September 2014.

industry has been involved and impacted by the NIS and IP system in China's catch-up. This monograph is focused on IT invention patents as an evaluating example, to add a technical point to this monograph. The justifications are as follows:

(1) *The Outline on National Medium- and Long-Term Program for Science and Technology Development (2006-2020 Outline)* has identified 11 priority areas and 62 priority subjects, which have already been mentioned in the National High-tech Research and Development Program since 1986. The priority areas are: energy, water and mineral resources, environment, agriculture, manufacturing, transplantation, information industry and modern service industry, population and health, urbanization and city development, public security, and national defence.⁵³⁹ The Chinese State Council has also stated 8 frontier technologies in this outline, which are: biotechnology, information technology (IT), advanced material technology, advanced manufacturing technology, advanced energy technology, marine technology, laser technology, and aerospace technology.⁵⁴⁰ Within these strategic industries, for public accessible technologies, the IT industry has become a leading industry in China.⁵⁴¹

On top of the prioritized areas in the 2006-2020 outline, the State Council has also identified 7 strategic emerging industries by issuing the *Decision on Accelerating the Fostering and Development of Strategic Emerging Industries*.⁵⁴² Differing from the prioritized areas, the emerging industries are the planned orientation of development,

⁵³⁹ Chapter III: Main Areas and Priority Topics, *The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020)* 2006, <www.most.gov.cn/mostinfo/xinxifenlei/gjkjgh/200811/t20081129_65774.htm> accessed 29 July 2017.

⁵⁴⁰ Chapter V: Frontier Technologies, *The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020)* 2006, <www.most.gov.cn/mostinfo/xinxifenlei/gjkjgh/200811/t20081129_65774.htm> accessed 29 July 2017.

⁵⁴¹ 余江,陈凯华, '中国战略性新兴产业的技术创新现状与挑战——基于专利文献计量的角度' 2012 科学学研究 30 (J Yu and K Chen, 'Current Situation and Challenge of Technological Innovations in Chinese Strategic Emerging Industries: A Patent—bibliometric Perspective') [2012] 30 *Studies in Science of Science* 682).

⁵⁴² 国务院关于加快培育和发展战略性新兴产业的决定 (Decision of the State Council on Accelerating the Fostering and Development of Strategic Emerging Industries) 2010.

and it is relatively more forward-looking, longer term, and higher sustainability. The emerging industries are: energy conservation and environmental protection, new generation IT, bio-industry, high-end equipment manufacturing, new/advanced energy, new material, and the new energy automobile industry. According to this decision, the Chinese government is very committed to further develop its national IT industry. For example, an accessible data report⁵⁴³ shows that the annual research and development disbursement of the gross domestic expenditure of China on telecommunication equipment in 2004 was about 54 times the spending of 1995. For the same time period, the investment for the pharmaceutical industry only rose 5 fold, and 10 fold for the manufacturing industry.

(2) Among the listed technologies in the 2006-2020 Outline, for the purpose of solving the research question, data and cases in the IT industry are relatively easier to access. There is also a considerable amount of prior research on the IT industry.

In fact, while China properly established the IP system complying with the relevant international standard in 2004, Chinese companies from the IT industry were the only ones actively dealing with IP-related legal affairs.⁵⁴⁴ Those enterprises are among the leading business practitioners who are international IP players. It is an undeniable fact that the IT industry is the forerunner for the IP-based economy in China.

In 2005, the leading companies in the IT industry, namely Huawei Technologies and ZTE Corporation, had 3508 and 909 filings for invention patents. The leading pharmaceutical enterprise⁵⁴⁵ had less than 20 patent applications. The largest company

⁵⁴³ H He and P Zhang, 'Impact of the Intellectual Property System on Economic Growth Country Report China' (WIPO-JPO-UNU Joint Research Project 2007) <www.wipo.int/export/sites/www/about-ip/en/studies/pdf/wipo_unu_07_china.pdf> accessed 29 July 2017.

⁵⁴⁴ Z Zhang, 'Roadmaps of China's National Intellectual Property Strategy Outline' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁵⁴⁵ The enterprise is North China Pharmaceutical Group Corporation, which is one of the best profit-makers in China. It is necessary to clarify that although the pharmaceutical industry has a small number of filings, the number of patent filings is not comparable between the pharmaceutical and IT industry.

of China in developing, manufacturing, and exporting construction machinery⁵⁴⁶ had 6 applications. Although the automotive industry in 2005 had 4.5 times the research and development disbursement compare to 1998. China's largest and most extensive automotive research and development facility⁵⁴⁷ had 17 patent filings that year.⁵⁴⁸

(3) Comparing to other industries, the Chinese IT industry has a relatively long period of development. Moreover, it is also an international industry in China with relatively sufficient human resources and experience in managing research and development activities.⁵⁴⁹ The Chinese IT industry is committed to developing innovations, and holds a strong awareness of IP in daily business. The IT industry has an advanced involvement in commercializing innovations; the increase in invention patent applications is obvious and stable.⁵⁵⁰ Moreover, regarding the 'emerging industries' in China, the IT industry is comparable with similar advanced businesses from developed countries relative to IP.

Accessible data from the period of 1985 to 2011 shows that⁵⁵¹ patents in the biotechnology industry increased in number since 2007, reaching a peak in 2009. There is no Chinese practitioner among the international players in the biotechnology industry, which requires further efforts in research and development. The Chinese environment

Because the role of patents for these two industries are different due to their different business models: for pharmaceutical industry, few essential patents for one pharmaceutical company can mean a lot in the market. Moreover, China also offers other administrative protections for pharmaceuticals, such as the administrative registration and protection for traditional medicine, for details, see Regulations on Protection of Traditional Chinese Medicines (1992).

⁵⁴⁶ Xuzhou Construction Machinery Group

⁵⁴⁷ China First Automobile Works Group Corporation

⁵⁴⁸ H He and P Zhang, 'Impact of the Intellectual Property System on Economic Growth Country Report China' (WIPO-JPO-UNU Joint Research Project 2007) <www.wipo.int/export/sites/www/about-ip/en/studies/pdf/wipo_unu_07_china.pdf> accessed 29 July 2017.

⁵⁴⁹ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

⁵⁵⁰ X Lan and L Zhang, 'Relationship between IPR and Technology Catch-up Some Evidence from China' in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

⁵⁵¹ 刘艳梅, 余江, 张越, '七大战略性新兴产业技术创新态势的国际比较' [2014] 中国科技论坛 (Y Liu and others, 'International Comparison on Patents of Seven Strategic Emerging Industries' [2014] Chinese Science Forum 68).

industry published more than 20,000 patents, and China became the No.1 patent filing country in this industry since 2007. But internationally speaking, the environment industry has no leading company from China at the moment. The right holders of the patents are either small-to-medium sized enterprises or individuals. The Chinese environment industry also lacks self-driven core technology and the players in this industry generally lack the major key and common technologies. The same problem exists in the advanced equipment manufacturing industry. Moreover, the advanced equipment manufacturing industry needs to avoid technological garden and to catch-up with the international leading technologies in this field. The advanced energy automotive industry is still a developing industry itself inside China. Its peak of 1600 patent filings was in 2009. The industry of advanced energy developed slowly before 2007. Although a considerable boost of patents have been filed since 2008, it has no representative company with organized IP groups in this industry. IP right holders in the industry of advanced energy are typically small-to-medium sized enterprises. The development of the advanced material industry has started slowly since 2000, and has been stably rising since 2007. However, under the context of global economy, the advanced material industry still needs to seek a technological predominance. Thus, the advanced material industry is not entering the phase of general commercialization of inventions. Different from the above-mentioned industries, although the new generation IT industry still needs to catch up to the leading countries in this field: China held less than 1% of the international patents in this industry in 1985, the proportion reached 30% in 2011. This statistic has shown that there is significant improvement and obvious catch-up in the IT industry in general,⁵⁵² thus China is catching up with patent filings internationally in this filed as well. China's PCT filings reached 21,516 in 2013, which was the third largest number of filed applications for any country. Among the

⁵⁵² 毛金生, 程文婷, '战略性新兴产业知识产权政策初探 2011 知识产权法 63 (J Mao and W Chen, 'Discussion on the Intellectual Property Policies on the Strategic Emerging Industries' [2011] Intellectual Property Law 63).

applications, companies from the IT industry, namely ZTE and Huawei, were the applicants who held the largest proportion of applications.⁵⁵³

(4) Although there is a national IP strategy, as well as regional IP strategies, these are not automatically categorized as industrial IP strategies. For each industry, the implementation of the national and regional IP strategies, and formulation of industry specific strategy, takes time and is very challenging.⁵⁵⁴ Moreover, not every industry needs intensive filings of IP. Data shows that the Chinese IT industry has already achieved remarkable results under the guidance of the IP strategy. Although industries are diverse from one another, making the IT industry an example and a forerunner of the implementation of the Chinese IP system holds significant academic value.

The IT industry's example in this monograph offers a platform to review the IP system and its construction inside China, and adds a significant technical factor for further analyses. Inserting the IT industry as the technical factor properly bridges the catch-up of the IP system and its implementation with industrial practices.

As showed by the discussions in previous chapters, the internal and international environments for the development of the Chinese IP system are considerably different from many developed countries. The self-sufficiency and self-reliance mode of development failed to work out in both the imperial period and early years of the People's Republic of China.⁵⁵⁵ The modernization of China required, and continues to require, foreign technologies. However, the technologies and industries that are operating the IP system in China are not under the same conditions as those in the developed countries. The world is also transforming from being a post-industrial to an

⁵⁵³ 'US and China Drive International Patent Filing Growth in Recode-Setting Year' (2014) <www.wipo.int/pressroom/en/articles/2014/article_0002.html> accessed 13 August 2015.

⁵⁵⁴ X Feng, 'Challenges to China's Self-Driven Innovation' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁵⁵⁵ X Deng, *Selected Works of Deng Xiaoping* (Beijing Renmin Press 1993).

information society.⁵⁵⁶ Within China, the type and capacities of Chinese players are diverse, with considerably different responses to the same patent system. Internationally speaking, at the beginning of the 21st Century, there were various question marks whether China is fully capable to jump into the patent-walled gardens of innovation created by the developed countries.⁵⁵⁷ With years of development, many disclosed statistics show that the improvement and achievement from the Chinese side is obvious.

The Chinese IT industry has risen to become the leading player in the Chinese market among the strategic industries. Until 2012, among every 100 patents, 5 patents related to electronic communication technology, reaching a ratio of 36.6% of IT patents.⁵⁵⁸ Meanwhile, the IT industry has contemporaneously developed, managed to catch-up, and is now even leading internationally (Huawei). Thus, this chapter focuses on IT industry and its relevant patent issues as an example, seeking to evaluate how the industrial players absorbed the catch-up of the NIS and IP system.

1.2 Brief Introduction of the Chinese IT and Software Industry

The first numerical computer was invented in 1946 in the US.⁵⁵⁹ Since then, the global computer industry has instigated the software industry, which is nowadays the most lucrative industry in the world. China got its first numerical computer in 1958.⁵⁶⁰ The Chinese development of software began in the same period.⁵⁶¹ Globally speaking, the

⁵⁵⁶ A Murray, *Information Technology Law* (3rd edn, Oxford University Press 2016).

⁵⁵⁷ Details see, such as, K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014); see also P Drahos, *The Global Governance of Knowledge: Patent Offices and Their Clients* (Cambridge University Press 2010).

⁵⁵⁸ 余江,陈凯华, ‘中国战略性新兴产业的技术创新现状与挑战——基于专利文献计量的角度’ 2012 科学学研究 30 (J Yu and K Chen, ‘Current Situation and Challenge of Technological Innovations in Chinese Strategic Emerging Industries’ [2012] *Studies in Science of Science*).

⁵⁵⁹ Known as Electronic Numerical Integrator and Calculator, see S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

⁵⁶⁰ Known as Model 301

⁵⁶¹ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

software industry is regarded as the most important for developing the IT industry. China is not an exception. The Chinese commercialized software industry has developed with sophisticated strategies.⁵⁶² National-level policy for the software industry in China started in 2000 after the State Council issued *Policies for the Promotion of Software and Integrated Circuit Industry*⁵⁶³. The State Council issued *the Action Plan for the Rejuvenation of the Software Industry*⁵⁶⁴ in 2002, and *the Notice of the State Council on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries* in 2011.⁵⁶⁵ These policies reflect Chinese macro policy supports, instructions, and an action plan to develop its software industry.

As illustrated in the last part of Chapter 1, together with the discussions in Chapter 2, the Chinese software industry before the Reform and Opening-up Policy was developed under the socio-economic environment. During this time, the focus was on analysis programming, compiler and operation systems, and applications for China's defence and S&T sectors. Software was not an independent industry in China until the establishment of the China Software Industry Association in September 1984.⁵⁶⁶ China's commerce-oriented software industry only properly took off in late 1984, which was a very late start compared to many developed countries.

For many developed countries, the patent system has developed for centuries before the IT industry appeared. The differences are obvious, for example, Microsoft was founded

⁵⁶² S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

⁵⁶³ Polices for the Promotion of Software and Integrated Circuit Industries (2000) <www.pkulaw.cn/fulltext_form.aspx?Db=chl&Gid=31043&keyword=&EncodingName=&Search_Mode=accurate> accessed 29 July 2017.

⁵⁶⁴ Already in invalid.

⁵⁶⁵ Notice of the State Council on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries (2011) <www.pkulaw.cn/fulltext_form.aspx?Db=chl&Gid=144961&keyword=&EncodingName=&Search_Mode=accurate> accessed 29 July 2017.

⁵⁶⁶ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

in 1975, which was one decade earlier than the establishment of the modern Chinese patent system, because the modern Chinese patent system only began in 1985. The Chinese IT industry started almost at the same time, as did the Chinese industrial players. The main state-owned software companies were founded in 1985, such as the China National Software & Service Co. Ltd, China Computer And Software Company, and the China Computer System Integration Company. Lenovo was founded in 1984, ZTE (Zhongxing Telecommunication Equipment Corporation) was founded in 1985, and Huawei was founded in 1987. Tencent was only established in late 1998 and Baidu only began in 2000. During the 1980s, the Chinese IT industry engaged almost exclusively with the Chinese domestic market.⁵⁶⁷ Lenovo, ZTE, and Huawei slowly set their sights on the international market, allocating resources for the global market only since the late 1990s.

2. An Example of Catching Up of China - Patent Development Reflects Within the IT and Software Industry

Patent development for the IT and software industry differs between China and the developed countries. While the already-developed countries confront the problems of squeezing all the new technologies, such as microelectronic, biotechnology, and telecommunications, into the long-existing and one-size-fits-all IP system, and questioning whether the system is sufficient and effective⁵⁶⁸, China was amending its IP legislations in order to be more accepted by international society in order to attract more FDIs and obtain more accesses to the Western technologies. In short, two complete different stories collided.

⁵⁶⁷ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

⁵⁶⁸ LC Thurow, 'Needed: A New System of Intellectual Property Rights' [1997] *Harvard Business Review* 94

<http://business.kingston.ac.uk/sites/all/themes/kingston_business/retake/bs6701innovation1.pdf>
accessed 29 July 2017.

For the already-developed countries, such as the USA, Japan, and the EU member states, it is a story about keeping ahead. In contrast, the Chinese case is about catching up. The following section uses IT, mainly software, as an example to illustrate these two narratives in detail.

The USA started the discussions on the patentability of computer programs since the 1960s, when the computer program was defined as ‘mental steps’, which were not patentable.⁵⁶⁹ Unless the computer software in question was combined together with an object and led to ‘physical transformation of matter’, it was otherwise non-patentable, for example, the famous *Gottschalk v. Benson*⁵⁷⁰ in 1972, where computer software was defined as mathematical computing rules.⁵⁷¹ Meanwhile, the US court did not exclude computer software from patentability.⁵⁷² The dominant industries of the previous decades in developed countries were raw-materials related industries. Before 1981, it the USA did not grant patent rights to computer software.⁵⁷³

During the same period, China lost the technical support of the Soviet Union and then entered a decade of the Cultural Revolution. Until 1981, the Reform and Opening-up policies had begun to be implemented, and the focus was on attracting FDIs. The patent system was not even established.⁵⁷⁴

The USA’s attitude on granting patent rights to computer software appeared to deviate from *Gottschalk v. Benson* since 1981. In the case *Diamond v. Diehr*⁵⁷⁵ in 1981, the Supreme Court stated that if a computer software was a part of an industrial process,

⁵⁶⁹ 孙海龙, 曹文泽, ‘计算机软件专利保护法律问题研究’ [2002] 法学家 45 (H Sun and W Cao, Researches on the Legal Studies on Patent Protections on Computer Software’ [2002] Jurists 45).

⁵⁷⁰ *Gottschalk v Benson* [1972] 409 US 63, 75.

⁵⁷¹ 张乃根, *美国专利法判例选析*, 中国政法大学出版社, 1995 (N Zhang, *Analyses on Selected US Patent-Related Cases* (China University of Politic and Law Press 1995)).

⁵⁷² 张乃根, *美国专利法判例选析*, 中国政法大学出版社, 1995 (N Zhang, *Analyses on Selected US Patent-Related Cases* (China University of Politic and Law Press 1995)).

⁵⁷³ 孙海龙, 曹文泽, ‘计算机软件专利保护法律问题研究’ [2002] 法学家 45 (H Sun and W Cao, Researches on the Legal Studies on Patent Protections on Computer Software’ [2002] Jurists 45).

⁵⁷⁴ See Chapter 2

⁵⁷⁵ *Diamond v Diehr* [1981] 450 US 175, 185.

then the industrial process and the computer software as a whole was patentable. The computer software did not exclude the industrial process as a whole away from patentability.⁵⁷⁶ Chinese academia defines the period from 1981 until the 1990s as the transition period for computer software patents.⁵⁷⁷ During this period, the US had many important cases that triggered discussion and exploration of how to grant patents to computer software, and the US Trademark and Patent Office released the Examination Guidelines for Computer-related Inventions in 1996. The deviation and transition during this period reflected an obvious broadening of patent protection in order to cover computer software.⁵⁷⁸

The Japanese patent system reacted very actively toward software, its patent law offered legislative grounds for patent protection on software since the very beginning⁵⁷⁹ and its patent office had opportune updates regarding of its examination guidelines.⁵⁸⁰ During this period, in the developed countries, especially in the US and Japan, the patent system was actively reacting to the era of information technology. Although the European Patent Convention explicitly excluded computer software from patentability in Art. 52, in practice, both courts and patent offices kept a close watch on the US practices.⁵⁸¹

During the same period in China, SIPO released the Examination of Guidelines in 1993, which already broaden patent protection to include computer software, although

⁵⁷⁶ 张乃根, *美国专利法判例选析*, 中国政法大学出版社, 1995 (N Zhang, *Analyses on Selected US Patent-Related Cases* (China University of Politic and Law Press 1995)).

⁵⁷⁷ P Zhang, 'The Change of the Computer Software Patent Protection Concept On the E—Commerce Environment' [2000] *Intellectual Property* 22.

⁵⁷⁸ 孙远钊, '电脑软件与业务方法的智慧财产保护—美国最近法例引介与评析' [1999] *法学丛刊* 44 (Y Sun, 'Intellectual Property Protections on Computer software and Business Methods – The Introduction And Analyses Of The Recent Cases In US' [1999] *Journal of Law* 44).

⁵⁷⁹ 中山信弘(著), 郭建新(译), *软件的法律保护*, 大连理工大学出版社, 1988 (N Nakayama, translated by Guo J, *Legal Protections on Computer Software* (Dalian University of Technologies Press 1988)).

⁵⁸⁰ Respectively in 1975, 1982, 1988, 1993 and 1996.

⁵⁸¹ 郭雪军, '计算机软件的专利保护: 一个实证的分析' [2008] *知识产权* 38 (X Guo, 'A Positive Analysis on Patent Protection for Computer Software' [2008] *Intellectual Property* 38).

Chinese IT was still an infant industry at the time. This indicated the intention of the Chinese patent practices on computer software to connect with the international trend.⁵⁸² Chinese IP academia defined patent protections on software as an indication of the growth and maturing of a new technology, and a strategic movement of the US software industry, which was a question that goes beyond the patent itself.⁵⁸³ The Chinese patent system, or the IP system in general, was a norm taker and a follower, as for other developing countries.⁵⁸⁴

Without a possibility to say no to IP⁵⁸⁵, the Chinese patent system has had to confront and be involved in the global question of IP, before fully understanding patents and being able to mature in its own practices: ‘how to squeeze the new technology into the relatively old system’. During this period, compared to the US practices, the Chinese patent practices on computer software were relatively stricter.⁵⁸⁶ Moreover, evaluating the Chapter 9 on Examination Guideline in 1993, its implementations as well as the later judicial practices⁵⁸⁷, it significantly guided the patenting processes on the developments of different Chinese characters’ coding systems, which started during the

⁵⁸² 郑成思, 成思建言录 (知识产权出版社 2012) (C Zheng, *Chengsi's Enlightenments* (Intellectual Property Press 2012)). 符望, ‘互联网与专利制度’ [2000] 科技与法律 59 (W Fu, ‘Internet and Patent System’ [2000] *Science and Law* 59).

⁵⁸³ 杨健, 李颖新, 孟欣, ‘关于我国软件产业的战略思考’, [2002] 中国信息年鉴 (J Yang, Y Li and X Meng, *Strategic Thoughts on the Chinese Software Industry*’ *China Information Almanac* (2002)) <http://www.cia.org.cn/subject/subject_05_xhxzt_9.htm>, latest accessed on 7 August, 2017.

⁵⁸⁴ 徐博, ‘我国计算机软件的专利保护现状及对策建议’, [2012] 科技创新与知识产权 68 (B Xu, ‘The Current Patent Protection Situation of Computer Software in China and Suggestions’ [2012] *Technology Innovation and Law* 68).

⁵⁸⁵ A Wechsler, ‘Intellectual Property Law in the People’s Republic of China: A Powerful Tool for Innovation and Development’ [2011] *China-EU Law Journal*, Online Version.

⁵⁸⁶ 李长健, 徐丽峰, ‘我国计算机软件专利保护文献综述’, [2010] 重庆邮电大学学报: 社会科学版 20 (C Li and L Xu, ‘Literature Review on Computer Software Patent Protection in China’ [2010] *Journal of Chongqing University of Post and Telecommunications* 20).

⁵⁸⁷ 徐博, ‘我国计算机软件的专利保护现状及对策建议’, [2012] 科技创新与知识产权 68 (B Xu, ‘The Current Patent Protection Situation of Computer Software in China and Suggestions’ [2012] *Technology Innovation and Law* 68).

same historical period.⁵⁸⁸ The examination guidelines created in 1993 played a specific part⁵⁸⁹ regarding the coding of Chinese characters, and distinguished the patentable and non-patentable situations. This guideline has been developed further in later revisions. In general, IP strength was very low during this period in China, for example, Huawei established its IPR management department in 1995, but hardly held any IPR at the time.⁵⁹⁰

Since 1998, the USA entered the IP expansion era, which has expanded patent protection on computer software. Moreover, patent protection has been expanded for the business methods related to computer software,⁵⁹¹ through *State Street Bank & Trust Co. v. Signature Financial Group Inc.*⁵⁹² in 1998 and *At&T Corp. v. Excel Communications, Inc.*⁵⁹³ The US judicial practices carried out the transition of subject matter from ‘useful arts’ to ‘practical utility’, almost abolished the patentability exclusion of business methods in real practices, and actualized granting patent rights on individual computer software in 1999.⁵⁹⁴

The patent practices of computer software in China remained the same as it was in 1993. The requirements for novelty, inventive steps, and practically application remain

⁵⁸⁸ 符望, ‘互联网与专利制度’ [2000] 科技与法律 59 (W Fu, ‘Internet and Patent System’ [2000] Science and Law 59).

⁵⁸⁹ Part. 3, Chapter 9, Examination Guidelines 1993.

⁵⁹⁰ 中国知识产权网, 从华为看专利的成本与价值 (2016) (China Intellectual Property (CNIPR) , ‘Through Huawei to See the Cost and Value of Patents’ (2016)) < http://www.cnipr.com/xy/swzs/zcy/201707/t20170721_218487.html>, latest accessed on 12 September, 2017.

⁵⁹¹ P Zhang and H Lu, ‘From Refusing Protection to Providing Facilities: A Chronological Study of Desirability of Computer Software Patent’ [2001] Intellectual Property 222.

⁵⁹² *State Street Bank & Trust Co. v Signature Financial Group, Inc.* [1998] 149 F.3d 1368, 47 US PQ2d 1596.

⁵⁹³ *AT&T Corp. v Excel Communication Inc.* [1999] F.3d, 50 US PQ 2d 1447.

⁵⁹⁴ 黄俊英, 刘江彬, 获筠‘探讨美国法院对电脑软件专利性之见解与相关判例之分析’ (1999 全国智慧财产权研讨会) (J Huang, J Liu and Y Di, ‘Discover the US Courts Views on the Patentability of Computer Software and Analysis the Relevant Cases’ (National Forum of Intellectual Property 1999)).

relatively high: individual computer software in many cases is not patentable.⁵⁹⁵ Since 2000, the State Council started issuing policies on encouraging the development of software and integrated circuit industries.⁵⁹⁶ The Chinese government acknowledges the prominence of the IT industry, aimed at breeding new industries as well as engendering new vitalities to the traditional industries. Inside the IT industry, software and integrated circuits are outlined as the core industry for the IT industry and the foundation for the nation's informatization.⁵⁹⁷ Following the State Council Document No. 18 in 2000, regional government in each province carried out the implementation details and relevant regional policies. These policies contained sectors of governmental guidance, funding, and investment on the cultivation of human resources. Since 2000, the Chinese government stimulated its IT industry and targeted to reach or get close to an internationally advanced level on both R&D capacities as well as commercialization. Correspondingly, the software industry can sufficiently supply most of the internal needs and have volumes of exportations. The integrated circuits can sufficiently fulfil most internal needs, and exportation, meanwhile, lessens the R&D and manufacturing disparity with the developed countries. In its chapter 10, the State Council Document No. 18 in 2000 also addressed IP policies, but the policies only covered copyright.

After the release of the State Council Document No. 18(2000), the copyright administrative departments standardized and strengthened the software copyright registration system, and encouraged copyright registration on software. In practice, legally registered software has relatively stronger protections according to national law.⁵⁹⁸ Meanwhile, no unit may use unauthorized software products in their computer systems.⁵⁹⁹ Following the Document No. 18, the Ministry of Public Security, Ministry

⁵⁹⁵ 李长健, 徐丽峰, '我国计算机软件专利保护文献综述', [2010] 重庆邮电大学学报:社会科学版 20 (C Li and L Xu, 'Literature Review on Computer Software Patent Protection in China' [2010] Journal of Chongqing University of Post and Telecommunications 20).

⁵⁹⁶ Notice of the State Council on Issuing Several Policies on Encouraging the Development of the Software and Integrated Circuit Industries, State Council Document No 18 (2000).

⁵⁹⁷ Notice of the State Council on Issuing Several Policies on Encouraging the Development of the Software and Integrated Circuit Industries, State Council Document No 18 (2000).

⁵⁹⁸ Rule. 32 State Council Document No. 18 (2000).

⁵⁹⁹ Rule. 33 State Council Document No. 18 (2000).

of Information Industry, and the State administration for Industry and Commerce, SIPO, the State Copyright Bureau and the State Administration of Taxation jointly and regularly carried out fights against smuggling and pirated software, severely cracked down on organized productions and sales of pirated software since late 2000. ⁶⁰⁰

The development of the IT industry has been officially strategized as a precedence over other industrial sectors since the 16th National Congress of the Communist Party of China in 2002. ⁶⁰¹ Moreover, IT has been extensively applied to economic and social fields. IT has been converted as an important driving force for China's economic and social development. The Chinese government ambitiously aimed to establish its IT industry as a real global player.

Similar to some eastern Asian countries, such as Japan and South Korea⁶⁰², the Chinese government plays a fundamental role for the infant IT industry and its catch-up. The Chinese government has produced a significant number of activist policies on industry, trade, and technology since 2000. Since the beginning of the 21st Century, the IT industry made considerable improvements in its industrial scales and structures, as well as its technical level.

The expeditiousness of catch-up is obvious. Taking the electronic information industry as an example, the sales income was about 6300 billion Yuan in 2008; the value added was about 1500 billion Yuan which accounted for about 5% of the GDP of China and contributed over 0.8 of a percentage point to the GDP growth in that year; the amount of exports was as high as USD 521.8 billion which accounted for 36.5% of total exports in foreign trade for the whole nation. ⁶⁰³ China became the largest base for

⁶⁰⁰ J Sigurdson, *Technological Superpower China* (Edward Elgar Publishing Limited 2005).

⁶⁰¹ J Sigurdson, *Technological Superpower China* (Edward Elgar Publishing Limited 2005).

⁶⁰² H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

⁶⁰³ General Office of the State Council, *Planning on Adjusting and Revitalizing the Electronic Information Industry 2008*.

manufacturing electronic information products, and has made a series of important technical breakthroughs in fields such as telecommunications, high performance computers, and digital TV. The electronic information industry is outlined as ‘a strategic, fundamental and pioneering pillar industry of the national economy and is of great significance to increasing employment, driving economic growth, adjusting the industrial structure, transforming the mode of development, and safeguarding national security.’ since the 17th National Congress of the Communist Party of China.⁶⁰⁴ The industry started to react closer with the change of the international world, the Chinese government sensed and upgraded its relevant policies and released more effective measures in accordance with the changes. Following the latest trend of the international world, the catch-up continues and the policies upheld a significant level of constancy.

The State Council issued *the Notice On Issuing Several Policies on Further Encouraging the Development of the Software And Integrated Circuit Industries* in 2011, which further emphasized the strategic importance of the software and integrated circuit industries.⁶⁰⁵ Since then, the 18th National Congress of the Communist Party of China has continued to improve its incentive measures, optimized the environment for industrial development, enhanced S&T innovation capabilities, and increased the quality and level of industrial development. These policies have involved the coordination and cooperation of regional governments and all relevant departments. The comprehensive implementations of these policies have been timely followed up and controlled by the National Development and Reform Commission.

The current macro policies released in 2011 are the continuation and enhancement of Document No. 18, which was released in 2000. These policies apply to all qualified enterprises inside the territory of China, and to all types of the ownerships, they cover: (1) fiscal and taxation; (2) investment and finance; (3) R&D; (4) import and export; (5)

⁶⁰⁴ General Office of the State Council, Planning on Adjusting and Revitalizing the Electronic Information Industry 2008.

⁶⁰⁵ Notice of the State Council on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries, State Council Document No 4 (2011).

human resources; (6) IP; (7) market; and (8) implementation.⁶⁰⁶ New IP policies continuously provide special preferences to copyright protections, and encourage software enterprises to always register their copyrights.⁶⁰⁷ The protection of software copyrights has been increased to adapt to the network environment, and actively develop and apply the protection technologies for network copyrights for genuine software to effectively protect the IPRs of software.⁶⁰⁸

Meanwhile, the State Council introduced other encouraging policies and expanded the policy scope onto other types of IPRs. In contrast to the IP policies outlined in Document No. 18 in 2000, the State Council has started supporting the software and integrated circuit enterprises to register IP rights abroad, and providing fiscal funds for the enterprises that fulfil the requirements of the relevant law. The State Council has intensified its policy support to develop the relevant service industry of IP.⁶⁰⁹

The level of implementation of the IP system in general has risen since 2011. Crack down on IP infringements has been expanded to all types of infringements, instead of only the smuggled and pirated software. Moreover, there is an ongoing reduction in governmental tolerance on the usage of pirated software. The State Council is establishing a long-term and effecting mechanism on using genuine software,⁶¹⁰ including: (1) prohibition of any kind of pre-installed non-genuine software from sales; (2) use of genuine software in the government organs, and the expenses for software purchases are part of fiscal cost; (3) improvement in the management of the software assets, meanwhile, general software are under the centralized procurement of the government; and (4) guidance for enterprises and the general public to use genuine software. At a macro level, these policies play a substantial role for its relevant industry.

⁶⁰⁶ Notice of the State Council on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries, State Council Document No 4 (2011).

⁶⁰⁷ Rule 26, State Council Document No. 4 (2011).

⁶⁰⁸ Rule 27, State Council Document No. 4 (2011).

⁶⁰⁹ Rule 26, State Council Document No. 4 (2011).

⁶¹⁰ Rule 28, State Council Document No. 4 (2011).

Moreover, although the reserved attitude of the State Council and SIPO remains on patent protection of software, and the copyright protections play a dominant position, statistics show that the time of patent development of the representative enterprises is synchronous with the relevant policies during the same time period. In contrast to companies in many developed countries, the Chinese IT giants' IP strategy was born with an international orientation.

For example, after the establishment of the IP management department in 1995, the IP strength of Huawei enabled it to make business negotiations with foreign players since 2000.⁶¹¹ Until the end of 2002, Huawei held 2154 patent applications accumulatively.⁶¹² Huawei filed approximately 1500 patent applications in 2003. Up until November 2003, Huawei had filed 3662 patent applications accumulatively, among which 3462 are Chinese patent applications, and 85% are invention patents; and 200 foreign patent applications and 226 PCT applications.⁶¹³ Progressively, the patent applications of Huawei reached nearly 6000 pieces until the end of 2004.⁶¹⁴ The accumulative number of patent filings boosted to 19187 pieces in 2006 for Huawei. The filing number reached 29,666 in June 2008.⁶¹⁵ Globally speaking, Huawei became the

⁶¹¹ 中国知识产权网, 从华为看专利的成本与价值 (2016) (China Intellectual Property (CNIPR) , 'Through Huawei to See the Cost and Value of Patents' (2016)) <http://www.cnipr.com/xy/swzs/zcyj/201707/t20170721_218487.html>, latest accessed on 12 September, 2017.

⁶¹² 胡谋,冉永平, '华为:核心技术的突破之路' [2003] 人民日报 (M Hu and Y Ran, 'Huawei: Its Piercing through Road for Core Technologies' *People's Daily* (July 2003).

⁶¹³ 军文, '华为 2003 的坚实脚步' [2004] 通信世界 46 (W Jun, 'The Solid Steps of Huawei in 2003' [2004] *Communication World* 46), also available at Huawei Media Center <<http://pr.huawei.com/cn/news/media-coverage/hw-092065-news.htm>> accessed 12 August 2014.

⁶¹⁴ X Lan and L Zhang, 'Relationship between IPR and Technology Catch-up Some Evidence from China' in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012).

⁶¹⁵ X Lan and L Zhang, 'Relationship between IPR and Technology Catch-up Some Evidence from China' in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012)

no.1 applicant for PCT filings in 2008.⁶¹⁶ Huawei took two decades to become a global player.⁶¹⁷ This catch-up process continues, resembling a race against time, obtaining effective patent rights is becoming increasingly important. Until December 31, 2015, Huawei had filed 52,550 patent applications in China and 30,613 outside China, among which 50,377 applications were granted with patent rights.⁶¹⁸

3. IT Patent Protections in China

3.1 Relevant Law and SIPO's Practices

The relevant IP legislations in China for the IT industry follow the international treaties as well as the laws in the developed countries. These regulations include software as well as e-commerce related issues,⁶¹⁹ such as, copyright, patent, and anti-unfair competition law. In China, the Regulations on the Protection of Computer Software (RPCS) specifically regulate copyright related issues for computer software. The first RPCS was adopted in 1991, and abolished in 2001. The current RPCS was adopted in December 2001 and came into force in 2002. Heretofore, the RPCS has been amended twice, respectively in 2011 and 2013, although this thesis will review this in detail.

Comparing to the EU and US, China has no Database Directive at the moment. Databases can be protected via either copyright law or unfair competition law. Moreover, according to the current practices. SIPO grants patent protections to database-related matters as well, if a database is composed of data and a system

⁶¹⁶ 'Huawei Became the No 1 Applicant for PCT Patent' (9 February 2009) <www.most.gov.cn/gnwkjdt/200902/t20090205_67080.htm> accessed 14 December 2014.

⁶¹⁷ A fight of patent filings slowly bloomed out. ZTE past Huawei became the No.1 applicant for PCT filings in 2011. This monograph will not expand on this part due to length limitation.

⁶¹⁸ Huawei Annual Report 2015.

⁶¹⁹ W Guo, C Jin and J Wang, *Network Legal Problems and the Countermeasures* (Law Press 2001).

managing data, the data managing software can be granted patent rights. For example, SIPO granted patent rights to a ‘system and method for executing a search in a rational database (CN200610064263.4)’ in 2009.

Contract Law plays a role and is always applied by enterprises due to the fact that Chinese players are, in many cases, licensees who conducted many software trade activities and obtained IT technologies from developed countries.⁶²⁰ Meanwhile, open source software has been broadly used in China, but its relevant regulations, legal practices, and research on open-source-related license agreements or the legal risks caused by applying open source are insufficient.⁶²¹

In contrast to the European Patent Convention—Art. 52(2)(c), which has explicitly listed out and excluded computer software from patentability, Chinese Patent Law (2008 amendment) has not listed out computer software as non-patentable subject matter and has no specific article for computer software either.⁶²² Computer program related patent issues are regulated in the Patent Examination Guidelines (PEG).

The Guidelines for Examination were first promulgated in 1993, then abolished after the promulgation of the Guidelines for Examination in 2001. Both Guidelines had a separate chapter for computer programs. The guideline in 2001 was then replaced on May 24, 2006 and the new guidelines entered into force on July 1, 2006.

⁶²⁰ P Zhang and Z Meng, ‘Computer Software, Information Technology and E-commerce (1)’ in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011).

⁶²¹ 张平,马骁, *共享智慧: 开源软件知识产权问题解析*, 北京大学出版社(2005) (P Zhang and X Ma, *Sharing of Knowledge: Analysis on Intellectual Property Issues Related to Open Source Software* (Peking University Press 2005)).

⁶²² 徐博, ‘我国计算机软件的专利保护现状及对策建议’ [2012] 《科技创新与知识产权》 68 (B Xu, ‘The Current Patent Protection Situation of Computer Software in China and Suggestions’ [2012] *Science and Technology Innovations and Intellectual Properties* 68).

In accordance with the provisions of Rule 122 of the Implementing Regulations of the Patent Law of the People's Republic of China, the PEG is an administrative order of department rules promulgated by SIPO. Based on the practical experiences, the newly amended patent law in 2008 and its implementing regulations, the Guidelines for Examinations was revised into PEG in 2010 and entered into force since February 1, 2010. So far, PEG has been amended respectively by the Decision of the State Intellectual Property Office on Amending the Guidelines for Patent Examination (2013), the Decision of the State Intellectual Property Office on Amending the Guidelines for Patent Examination (2014), and the Decision of the State Intellectual Property Office on Amending the Guidelines for Patent Examination (2017).

The PEG regulates detailed rules and standards for SIPO. Namely, the Patent Office of SIPO is authorized to make decisions on the acceptance, examination, and grant patent for patent applications, which are made on behalf of, and in the name of, SIPO. The Patent Re-examination Board, set up by SIPO, is responsible for examining requests for re-examination and requests for invalidation and making decisions accordingly.⁶²³

PEG functions as a supplement and it details the provisions of the Patent Law and its relevant Implementing Regulations.⁶²⁴ It provides references to the Patent Office and Patent Re-examination Board on enforcing the relevant laws and regulations, meanwhile it contains regulations that the relevant parties shall abide by.

Chinese patent practices have separated the concept of computer program and computer program invention. The Guidelines in 1993 gave no definition on computer program or computer-program-related invention. The Guidelines in 2001 gave only the definition of computer program, and had a very abstract definition of computer-program-related

⁶²³ Guidelines for Patent Examination.

⁶²⁴ Detailed Rules for the Implementation of the Patent Law of the People's Republic of China (2001), revised and replaced by Rules for the Implementation of the Patent Law of the People's Republic of China (2002 Revision) and then Detailed Rules for the Implementation of the Patent Law of the People's Republic of China (2010 Revision).

invention as ‘The invention relates to a computer program mentioned in this chapter refers to address the issues raised by the invention, all or part of a computer program to handle process-based solutions.’⁶²⁵ The guidelines in 2006 detailed it into the following version, and it is still in use today.

Computer programs defined by the PEG is ‘a coded instruction sequence which can be executed by a device capable of information processing, e. g., a computer, so that certain results can be obtained, or a symbolized instruction sequence, or a symbolized statement sequence, which can be transformed automatically into a coded instruction sequence. Computer programs include source programs and object programs’.⁶²⁶ This definition is as same as RPCS regulates in its Art. 3(1).

Under Chinese Patent Law, computer programs without technical features are rules and methods for mental activities, which are not patentable.⁶²⁷ For example, ‘computer program’ merely relates to an algorithm, or mathematical computing rules, or computer programs recorded in mediums, or rules or methods for games, for example.⁶²⁸ In current practices, many are filing computer software under the format of a combination of computer software and a device.

PEG also defines computer-program-related inventions as ‘solutions for solving the problems of the invention which are wholly or partly based on the process of computer programs and control or process external or internal objects of a computer by the computer executing the programs according to the above-mentioned process. The said control or process of external objects includes control of certain external operating process or external operating device, and process or exchange of external data, etc.; the said control or process of internal objects includes improvement of internal

⁶²⁵ Examination Guidelines 2001, Part II, Chapter 9 ‘本章所说的涉及计算机程序的发明是指为解决发明提出的问题，全部或部分以计算机程序处理流程为基础的解决方案’.

⁶²⁶ Guidelines for Patent Examination.

⁶²⁷ Art. 25(2) Patent Law.

⁶²⁸ Chapter 9 Rule. 2(1) Guidelines for Patent Examination.

performance of computer systems, management of internal resources of computer systems, and improvement of data transmission, etc. Solutions relating to computer programs do not necessarily include changes to computer hardware.⁶²⁹ For example, layer composition, magic channel spacing, materials, which relate to physical characteristics improvement, are patentable.

Patents related to computer software shall contain common general characteristics with invention applications in other fields, and fulfil the general requirements of an invention patent. In addition to the general rules, due to the special characteristics of computer programs and computer-program-related inventions, PEG lists specific provisions in Chapter 9 and promulgates the details and examples for whether a certain computer program is patentable. It lists the cases that fall inside Art. 25(2), such as: (1) a method to solve the ratio of the circumference of a circle to its diameter using computer programs; (2) a method of automatically computing the coefficient of kinetic friction; and (3) a general transition method for global language characters.⁶³⁰

According to the general rule in Art. 25(2) of Chinese Patent Law, rules and methods for mental activities are not patentable subject matters. However, if a computer program includes not only rules and methods for mental activities, but also technical features, then the computer software as such is not rules and methods for mental activities, and shall not be excluded from patentability in accordance with Article 25, such as: (1) a method for controlling a die forming process of rubber; (2) a method for enlarging storage capacity of mobile computing devices; (3) a method of removing image noise; and (4) a method of measuring liquid viscosity by using computer programs.⁶³¹

A computer program falls outside Art. 25(2) of the Patent Law, but does not fulfil the requirement of Art. 2, patent right will not be granted, which means the programme

⁶²⁹ Guidelines for Patent Examination.

⁶³⁰ Detailed analysis see Chapter 9, Guidelines for Patent Examination.

⁶³¹ Detailed analysis see Chapter 9, Guidelines for Patent Examination.

does not solve technical problems, or utilize technical means, or obtain technical effects, such as: (1) a method for computer game; and (2) a system for learning foreign language with active selection of learning contents.⁶³²

A computer program is patentable and it falls under Art. 2 of Chinese Patent Law as a technical solution if: (1) the execution of computer programs is functioned as solutions for technical problems, and reflects technical means in conformity with the laws of nature by computers running programs to control and process external or internal objects; or (2) if the execution of computer programs leads to the process of external technical data, completes a series of technical process on the technical data in accordance with the laws of nature through execution of a kind of technical data process program by a computer; or (3) the execution of the computer program improves the internal performance of a computer system, completes a series of setting or configuration to parts of a computer system in accordance with the laws of nature through execution of a kind of system internal performance improvement program by a computer.

In China, the current IP system for IT protection is using copyright protection as a main base, meanwhile combining patent, trade-secret, trademark, and other protections.⁶³³ As neither of the IP mechanisms are specifically designed for the IT industry, they all have disadvantages respectively in theories or in enforcement phase. In contrast to copyright, where right holders are entitled to enjoy copyright protection from the date when the work is completed, administrative registration is a prerequisite for patent protection for software. It worth mentioning that, although registration of software for copyright is mainly for the purpose of the administration by relevant organs,⁶³⁴ when it comes to right enforcement, it is always recommended to have the right registered.

⁶³² Detailed analysis see Chapter 9, Guidelines for Patent Examination.

⁶³³ 应明,孙彦, 计算机软件的知识产权保护, 知识产权出版社出版 (2009) (M Ying and Y Sun, *Intellectual Property Protections on Computer Software* (Intellectual Property Publishing House 2009)).

⁶³⁴ Art. 7 RPCS

3.2 The Current Status of IT Patents' Enforcement– Software as an Example

The total amount of patent activities growing with an accelerating speed. The latest statistic shows that, both the administrative and judicial enforcement is exploding. SIPO held 24497 patent-related administrative cases in 2014, which raised 50.1% comparing to the previous year. The patent-dispute-related cases in total reached 8220 with an increase of 62.6% comparing to 2013, and among them, the amount of patent infringement disputes was 7671. There were 521 foreign⁶³⁵ patent infringement cases. The counterfeit-issue-related cases increased 45.5%, and in total reached 16259 cases.⁶³⁶ Although the total amount of cases was large, the amount of invention-patent-related dispute cases was small (1239).⁶³⁷ SIPO addressed that the general capacity of handling invention patent infringement cases needs further improvements. From above, although there is no specific data available, the case amount of software patent infringement in administrative enforcement is tiny.

For judicial enforcement, the amount of invention patent infringement cases is very little as well. For example, the available literature has demonstrated that the total filings of IPR cases from 2000 to 2003 were 23257 cases, among which 80% were trademark

⁶³⁵ A civil relationship is 'foreign' when:

- (a) one or both parties are foreign nationals, foreign legal persons or other organizations, stateless persons; or
- (b) the parties or parties to the permanent residence in the territory of the People's Republic of China; or
- (c) the subject matter outside the territory of the People's Republic of China; or
- (d) The legal facts that produce, alter or destroy civil relations take place outside the territory of the People's Republic of China;
- (e) other circumstances that can be identified as foreign civil relations.

For details, such as Interpretations of the Supreme People's Court on Several Issues Concerning Application of the Law of the People's Republic of China on Choice of Law for Foreign-Related Civil Relationships (I).

⁶³⁶ SIPO, 'Comparative Analysis on the Data of Patent Administrative Enforcement Cases in 2014 and 2013 in the Intellectual Property System' (7 January 2015)

<www.sipo.gov.cn/zscqgz/2014/201501/t20150106_1056435.html> accessed 17 June 2015.

⁶³⁷ SIPO, 'Comparative Analysis on the Data of Patent Administrative Enforcement Cases in 2014 and 2013 in the Intellectual Property System' (7 January 2015)
<www.sipo.gov.cn/zscqgz/2014/201501/t20150106_1056435.html> accessed 17 June 2015.

cases.⁶³⁸ Another more specific study has shown that there were 471 decisions made for patent infringement cases among all the closed IP suits between 2006 and 2011.⁶³⁹ Most of the IT invention patent related cases were heard in Beijing, and there were 14 cases between 2006 and 2011.⁶⁴⁰ There were 9648 patent suits filed in 2014.⁶⁴¹ However, the IT-issue-related national representative cases with big social impacts were copyright infringement or integrated circuit design patent infringement related cases.⁶⁴² Moreover, these are cases happening among the big players, for example, according to the annual report of the SPC in 2015, the SPC re-trialed a case⁶⁴³ among Huawei, ZTE, and Alibaba regarding a method patent.⁶⁴⁴ Moreover, the judicial enforcement ratio on innovation patent related infringement cases remains low after the establishment of the IP court. Taking the Beijing IP court as an example, the total amount of closed patent-related cases is 1813 since the establishment of the Beijing IP court in November 2014 till 30 June 2017. Among the 668 patent infringement cases, there were 142 closed with judgements (plaintiff won 116 cases), 4 closed with consent judgements based on mediation, and the remaining 522 cases were closed with rulings. According to the classification criteria of the International Patent Classification, among

⁶³⁸ J Cao, 'New Development of IP Judicial Protection' [2004] 14 Intellectual Property 9.

⁶³⁹ JB Love, C Helmers and M Eberhardt, 'Patent Litigation in China: Protecting Rights or the Local Economy?' [2016] 18 Vanderbilt Journal of Entertainment & Technology Law 713.

⁶⁴⁰ JB Love, C Helmers and M Eberhardt, 'Patent Litigation in China: Protecting Rights or the Local Economy?' [2016] 18 Vanderbilt Journal of Entertainment & Technology Law 713.

⁶⁴¹ 最高人民法院, '中国法院知识产权司法保护状况白皮书 (2014)' (SPC, 'White Paper on IP Judicial Protection in China' (2004)) <<https://perma.cc/X4VR-GTWF>> accessed 19 August 2015.

⁶⁴² "聚合网络科技有限公司与中国移动通信集团浙江有限公司等侵害计算机软件著作权纠纷上诉案", "炬泉光电科技(上海)股份有限公司与上海雅创电子零件有限公司等侵害集成电路布图设计专有权纠纷上诉案" SPC, '中国法院知识产权司法保护状况白皮书 (2014)' (SPC, 'White Paper on IP Judicial Protection in China' (2004)) <<https://perma.cc/X4VR-GTWF>> accessed 19 August 2015.

⁶⁴³ 一审: 浙江省杭州市中级人民法院 (2012) 浙杭知初字第 419 号民事判决 (2014 年 4 月 17 日); 二审: 浙江省高级人民法院 (2014) 浙知终字第 161 号民事判决 (2015 年 2 月 13 日); 再审: 最高人民法院 (2015) 民申字第 2720 号民事裁定 (2015 年 12 月 11 日) First instance: Zhejiang Hangzhou Intermediate Court (2012) No. 41, 17 April 2014; Second Instance: Zhejiang High People's Court (2014) No. 161, 13 February 2014; Re-trial: SPC (2015) No. 2720, December 11, 2015.

⁶⁴⁴ The Supreme People's Court of China, 'IP Cases Annual Report of The Supreme People's Court of China 2015' (2016) <www.chinacourt.org/article/detail/2016/04/id/1845020.shtml> accessed 12 June 2016.

the 142 cases with judgments, the cases are grouped to particular technologies, human necessities (43 cases), fixed constructions (17 cases), electricity (28 cases), performing operations and transporting (17 cases), chemistry and metallurgy (15 cases), physics (17 cases), mechanical engineering (4 cases), and paper (2 cases).⁶⁴⁵

Above all, patent cases involving software and computer technology constitute just a small minority in both administrative and judicial enforcement. Even though filings on invention patents from the Chinese IT industry have exploded in the last decade, the enforcement ratio maintains low. One crucial reason is that the industry itself in China is still growing and maturing. The low judicial enforcement ratio significantly reflects that the software industry itself in China is still developing. Therefore, patents at this stage mainly function as jetton for business negotiations with international players, protections for own technologies, and R&D achievements.

The relatively low intensive enforcement does not mean the Chinese IT industry fails to appreciate innovation or IP. In fact, it is the opposite. Following the main finding of Chapter 2 in this monograph, if we combine S&T policies and the IP system together with the IT industry, the IT industry's development in China can be narrated by years as the following phases:⁶⁴⁶

(1) From the 1950s to the late 1970s, software in China was mainly for military use and national defence, the ratio of commercialization and industrialization of these software was extremely low, matching its demand in the domestic market. The IP protection and enforcement was a blank.

⁶⁴⁵ 许波, 北京知识产权法院专利审判大数据 (2014.11.6-2017.6.30) (Xu B, Big Data on the Beijing Intellectual Property Court Patent Trials(2014.11.6-2017.6.30)).

⁶⁴⁶ Detailed statistic see Electronic Information Product Management Department Under the Ministry of Information Industry economic System Reform, The Economic Operation Department under the Ministry of Information Industry and China Software Industry Association, 'China Software Industry Development Study' (2006).

(2) Between the 1980s and the middle of the 1990s represents the groping period for the Chinese software industry. During this period, the industry slowly progressed to create the needed fundamental elements for a knowledge-based industry. The software industry of China conceded that it could not have exactly the same development model as the US, because the grand picture of the software industry was already formulated. Globally speaking, the competency of the Chinese software industry is low. Domestically speaking, the local software enterprises lacked the necessary capacities and sustainability. Meanwhile, the Chinese software industry also maintained a distance from some developing countries' business model, such as the famous Indian labour intensive and software-outsourcing model⁶⁴⁷. This partly is due to the linguistic and cultural difference,⁶⁴⁸ and partly is because the Indian model is at the bottom of the value chain, which mainly provides coding services to large companies from developed countries.⁶⁴⁹

During this period, Shi Zhenrong (also known as Stan Shih), the chairman of the board of Acer Inc.⁶⁵⁰, created the concept of the Smiling Curve which portrays the added value distribution of the personal computer industry, which was later also used to analyse the hardware industry. Shang-Ling Jui, the senior vice president of SAP,⁶⁵¹ and later the managing director of the SAP Labs in China and the SAP R&D Center in Korea, expanded the Smiling Curve to the software industry at the beginning of the 21st Century.

⁶⁴⁷ B Parthasarathi, *The Indian Software Industry: Business Strategy and Dynamic Co-Ordination* (Palgrave Macmillan 2004).

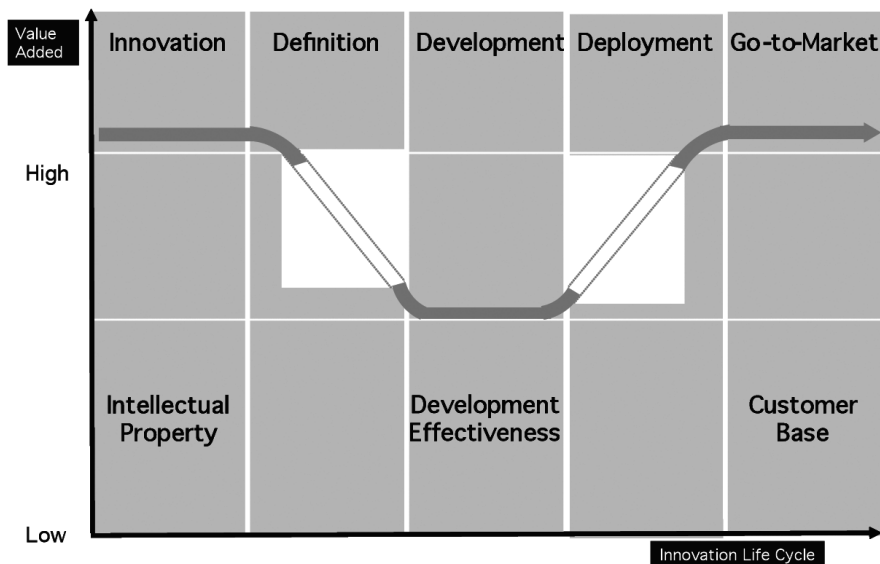
⁶⁴⁸ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

⁶⁴⁹ N Gregory, S Nollen and S Tenev, *New Industries from New Places: The Emergence of the Software and Hardware Industries in China and India* (The World Bank and Stanford University Press 2009).

⁶⁵⁰ 'Biography of Stan Shih'

<<https://web.archive.org/web/20081115174657/http://global.acer.com/about/biographical.htm>>
accessed 8 June 2014.

⁶⁵¹ System, Application and Products, it is the largest global enterprise management and e-business solution provider.



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Chinese IP legislation was at its early stage during this period. Taking IT industry as an example, the indigenous players were developing their understanding of IP mainly through the global market and daily business. In contrast, international business players were requesting a proper establishment of IP protection in China. For both domestic and international IP holders, this period is the groping period for carrying out administrative and judicial enforcement on IP in China.

(3) From the middle of the 1990s, and especially since the beginning of the 21st Century, the Chinese software industry has emphasized the prominence of IP.⁶⁵³ The Chinese government keenly acknowledges that more attention shall be paid to the distribution

⁶⁵² Source: S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010) 22.

⁶⁵³ In fact, the collapse of the DVD-player industry of China taught a hard and painful lesson to the Chinese in the late 1990s and early 21 century. The Chinese manufacturers produced two-third of the world's DVD players. However, they employed cheap labors, had neither IP on the core parts nor key technology. The Chinese DVD enterprises paid tremendous royalty fees even after the global cliff down of the DVD players' prices. The fade-off of the Chinese DVD player industry taught China that IP rather than low labor cost shall be the new competitive advantage for the new round economic development.

process of wealth and income, rather than the foreign trade volume.⁶⁵⁴ Learning from Taiwan industries', the profits China can earn from its labour-intensive foreign trade model is very limited, more attention has been paid not only to tangible goods but also to the intangible ones, such as technology patents.

Within the globally formulated and matured IP system, software piracy in China more greatly damages China's own software industry as opposed to advanced international business entities.⁶⁵⁵ Globally speaking, the Chinese software industry at this stage is elevating its position on the Smiling Curve, such as developing innovative ideas, joining the standards making process, and global marketing strategies.

Since the beginning of the 21st Century, the Chinese government polished the national IP legislations and put forward IP policies at the state strategic level. SIPO has matured the administrative enforcement on IP. The SPC has actively improved the judicial protection level on IP, established IP courts and IP tribunals. Although an intensive IP enforcement has not occurred, the Chinese domestic business players have considerably boosted their national and international filings on all types of IPRs.

4. Conclusion

4.1 The Gloss of Regional Protectionism

Globally speaking, the opening-up of patentability of computer programs inflects the transformation and 'keep-up' of the patent system itself due to new technologies.⁶⁵⁶

⁶⁵⁴ 'Li Deshui: Huge Surplus Essentially Is Only a Passing by God of Wealth' *First Financial Daily* (26 January 2006) <<http://finance.sina.com.cn/g/20060126/07122307823.shtml>> accessed 18 September 2015.

⁶⁵⁵ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

⁶⁵⁶ LC Thurow, 'Needed: A New System of Intellectual Property Rights' [1997] *Harvard Business Review* 94 <http://business.kingston.ac.uk/sites/all/themes/kingston_business/retake/bs6701innovation1.pdf> accessed 29 July 2017.

The raising of the computer software industry and its continuous growth of importance to a country's development has already gone far beyond an algorithm, or mathematical computing rules. The IP protection scale on computer software strongly depends on the role and size of the technology itself at different stages of social progress.⁶⁵⁷

From the US experiences, people in the early stage (before 1981) of computer development focused on increasing computational speed and accuracy of computer hardware. Software functioned only as a completion of the hardware. When Japan and already developed countries entered the game, the strategic position of the software industry was acknowledged to be different from the US, and the relevant patent system of these countries reacted differently to the US as well.

The case for China is different from the other developed countries. While the US already started adjusting the patent system for software, during the same period China hardly had a proper foundation for any type of economic development and just reopened its gate to the world.⁶⁵⁸ In contrast to the US and other developed countries, where the IT industry sustains their eminence, in China the IT industry has functioned as an approach for catching up. The business model of the Chinese IT industry is different from the US IT industry.⁶⁵⁹ Therefore, as long as China wants to sufficiently implement its IP system, the Chinese government inescapably has to consider a balance between its domestic conditions and the changing global environment.⁶⁶⁰

It is obvious that the Chinese software industry has rapidly grown since the 21st Century. For example, China's software and IT services business revenue was around 0.38

⁶⁵⁷ P Zhang, 'The Change of the Computer Software Patent Protection Concept On the E—Commerce Environment' [2000] Intellectual Property 22.

⁶⁵⁸ See Chapter 2

⁶⁵⁹ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

⁶⁶⁰ 吴汉东, '知识产权战略实施的国际环境与中国场景', [2012] 法学 3 (H Wu, 'The International Environment and Domestic Context of the Implementation of Intellectual Property Strategy' [2012] Legal Science 3).

trillion yuan in 2005, reaching 1.36 trillion yuan in 2010, employing more than 3 million people and accounting for 18% of electronic-information industry output that year.⁶⁶¹ Until 2010, China had more than 2000 software enterprises with annual income more than 100 million yuan, among which, there were seven enterprises with business income more than 5 billion yuan, four enterprises with business income more than 10 billion yuan, and one enterprise with business income over 50 billion yuan. Software enterprises are mainly located in Guangdong, Beijing, Jiangsu, Shandong, Liaoning, Shanghai, Zhejiang, Fujian, and Sichuan provinces. These 9 provinces host 87% of the software enterprises. The Chinese Ministry of Industry and Information Technology pointed out that there was a lack of a global leader, the whole industry was in the low-end value chain. The industrial innovation system was imperfect and lacked core technologies. China needed to build leading enterprises together with small and medium enterprises to support the development of industry pattern, in order to complete the industrial chain for sufficient industrial synergistic effect.⁶⁶²

The software and IT services business revenue reached 4.3 trillion yuan in 2015, accounted for 25% of electronic information industry output in 2015, employing 5.74 million people.⁶⁶³ Until 2015, the number of software enterprises leapt to 38,000. The copyright registrations reached 292,400 pieces and was 3.8 times comparing to 2010. Moreover, until 2015, the total revenue of the top 100 enterprises of software business accounted for 14% of the total industry. The shortlisted threshold for top 100 enterprises increased from 0.396 billion yuan in 2010 to 1.33 billion yuan in 2015. R & D strength

⁶⁶¹ 工业和信息化部，软件和信息技术服务业“十二五”发展规划（2012）（Ministry of Industry and Information Technology, Software and Information Technology Services Industry the 12th Five-year Development Plan(2012)).

⁶⁶² 工业和信息化部，软件和信息技术服务业“十二五”发展规划（2012）（Ministry of Industry and Information Technology, Software and Information Technology Services Industry the 12th Five-year Development Plan(2012)).

⁶⁶³ 工业和信息化部，软件和信息技术服务业发展规划 2016-2020 年（2016）（Ministry of Industry and Information Technology, Software and Information Technology Services Industry Development Plan for 2016-2020 (2017)). There's a statistic difference: the business revenue of the software and IT services industry accounted for 18% of electronic information industry output in 2010 in the Software and Information Technology Services Industry the 12th Five-year Development Plan (2012). This proportion is 16% in the Software and Information Technology Services Industry Development Plan for 2016-2020 (2016).

(R & D expenses accounted for the proportion of the main business income) reached 9.6% among these top 100 companies. The international influence of the industry has significantly improved. Among the top ten Internet companies in the world, Chinese enterprises account for four. Although the achievements have been obvious during 2010-2015, for 2016-2020 the Ministry of Industry and Information Technology of China suggested that the software industry needs to acknowledge severe problems, such as: (1) the weak innovative capacities on basic software and core industry related software; (2) commercialization of the software products is still low, and the industry lacks sufficient integrations with other industries; (3) international influence of the industry does not match its overall scale, the ability to expand the international market remains weak, and the pace of internationalization needs continuous acceleration; (4) mismatch between software market pricing and software value; and (5) intellectual property protection needs to be further strengthened.⁶⁶⁴

Reflected by the Chinese software industry, IP system became a strong internal need for China's social and economic transformation. Ten years after joining the WTO, China was transforming from a pure norm taker to a norm maker.⁶⁶⁵ Fifteen years after joining the WTO, we can no longer imagine how the world would look without China.⁶⁶⁶ Based on the experiences from practices, China is slowly yet continuously adding its own understanding of IP.⁶⁶⁷ Internationally, China is positively reacting with the global IP system. It has been the No.1 country for innovation patent filings for 4

⁶⁶⁴ For a more detailed industrial analyses and development plan, see 工业和信息化部, 软件和信息技术服务业发展规划 2016-2020 年 (2016) (Ministry of Industry and Information Technology, Software and Information Technology Services Industry Development Plan for 2016-2020 (2016)).

⁶⁶⁵ 吴汉东, '挑战与机遇: 中国入世 10 年的知识产权事业' [2011] 知识产权 13 (H Wu, 'Challenges and Opportunities: the 10 Years IP Career After China Joined WTO' [2011] Intellectual Property 13).

⁶⁶⁶ Center for Strategic and International Studies, 'China's 15th WTO Anniversary: Assessing the Record and Charting the Path Forward' (2012) <www.csis.org/events/chinas-15th-wto-anniversary-assessing-record-and-charting-path-forward/?block3> accessed 29 December 2016.

⁶⁶⁷ 吴汉东, '知识产权战略实施的国际环境与中国场景' [2012] 法学 3 (H Wu, 'The International Environment and Domestic Context of the Implementation of Intellectual Property Strategy' [2012] Legal Science 3).

years and no.1 country for trademark filings for 14 years.⁶⁶⁸ Internally, Chinese government and SIPO aims to enlarge its IP filings up to 1 million during its 13th Five-Year Plan.⁶⁶⁹

In the global context, the dominant economy is no longer raw materials or capital but core technologies. While other industries are transforming into knowledge-based industries, IP will always be in a central position for this era.⁶⁷⁰ It is difficult to say if this is due to the pre-existing IP system promoted by the growth of technology, or if technology raised the importance of IP.

One thing is clear, globally speaking, IP has already developed into an inevitable institution for every latecomer for development. It is the precondition for any developing country to start its communication with the already developed countries; it is also the legal mechanism for developed countries to maintain their upfront economic positions.⁶⁷¹ While the developed countries criticizing that the Chinese IP system is a format of regional protectionism, IP is a regionally protective mechanism for the developed countries; by which, the developed countries have generated and developed IP-related non-tariff barriers.⁶⁷²

Taking the computer software industry as an example, infringing such a technology-based right is much easier than before. The cost of conducting such infringement is

⁶⁶⁸ 吴汉东, ‘经济新常态下知识产权的创新、驱动与发展’ [2016] 法学 31 (H Wu, ‘Innovation-Driven And Development Of Intellectual Property Under The New Economic Norm’ [2016] Legal Science 31).

⁶⁶⁹ 知识产权人才十三五规划 (国知发人字[2017] 12 号) (SIPO, The 13th Five Years Plan on Personnel on Intellectual Property [2017] No 12).

⁶⁷⁰ WIPO, ‘世界知识产权报告——突破创新与经济增长’ (WIPO, ‘Annual Report – Innovation Breakthrough and Economic Growth’) (2015)

<www.wipo.int/edocs/pubdocs/zh/wipo_pub_944_2015.pdf> accessed 14 May 2016.

⁶⁷¹ 吴汉东, ‘挑战与机遇: 中国入世 10 年的知识产权事业’ [2011] 知识产权 13 (H Wu, ‘Challenges and Opportunities: the 10 Years IP Career After China Joined WTO’ [2011] Intellectual Property 13).

⁶⁷² 吴汉东, ‘挑战与机遇: 中国入世 10 年的知识产权事业’ [2011] 知识产权 13 (H Wu, ‘Challenges and Opportunities: the 10 Years IP Career After China Joined WTO’ [2011] Intellectual Property 13).

significantly lower comparing to the previous raw material and capital focused economic model, and the damages to the right holders can be fatal. Pirated software is visible in both developed and developing countries. Some may claim that regional protectionism is evident in a more obvious way, such as the ratio of using pirated software is extremely high in developing countries. Indeed, if following the development model of the raw-material era, by tolerating piracy and meanwhile supporting its own relevant infant industry, the government of a developing country can theoretically formulate a new ladder-to-be or even claim that piracy is a form of regional protectionism. However, can it really be the case nowadays? The answer provided by this monograph is a NO. In fact, taking the software industry as an example, the Chinese software industry business model can follow neither the US nor Indian model.⁶⁷³ Damages of software piracy to the Chinese software enterprises are much more serious and harmful than it is to the multinational companies. In contrast to the raw-material business, software is a typical example of IP. Furthermore, the rise of the Chinese IT industry shows that on IP issues of the 21st Century, the question lies not only on substantive law; the role of IP enforcement becomes increasingly important.

While evaluating regional protectionism under the context of both administrative and judicial enforcement in China, however, one might question whether it actually currently exists. Firstly, the small amount of invention patent-related infringement cases is insufficient to support the claim on China's regional protectionism. Second, both domestic and foreign players experience the same problems and disadvantages caused by the insufficient IP enforcement during this transitional period of China. Even if there may have regional protectionism existing as theoretically claimed in IP enforcement, the Chinese IP enforcement system itself is not advanced enough at this stage to setup the claimed type of protection via its enforcement organs. China is still constructing its IP system. The insufficiency of the enforcement system benefits neither

⁶⁷³ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

domestic nor international right holders. Thirdly, as shown by statistics,⁶⁷⁴ judicially speaking, the outcomes of Chinese patent litigations bear very little evidence of protectionism.

4.2 Collecting Experiences on Know How to Implement Patents

China is reaching a crossover point that it automatically seeks for a higher level of IP protection out of its own interests.⁶⁷⁵ Criticizing China's 'great-leap' on the enormous amount of patent filings may be too naïve and perhaps horribly imprudent. It is a basic and logical question that: what are the players going to do after having thousands of patents? This is apparently not an image project. There is nothing complex but a common sense that the non-capital or property system works in such a way. Through the on-going judicial reform, China is putting efforts into improving the judicial capacities on handling IP cases and creating sufficient judicial protection for IPRs.⁶⁷⁶

One noteworthy goal of Chinese patent law is to improve its 'security system' for implementation, which covers three parts: legislation, creation of a more sufficient administrative enforcement, and sufficient judicial enforcement.⁶⁷⁷ Legislatively speaking, China has completed the phase of general legislation, and is stepping into the phase of 'adjustments' and 'leak-fillings'. For enforcement, China will step further on

⁶⁷⁴ See JB Love, C Helmers and M Eberhardt, 'Patent Litigation in China: Protecting Rights or the Local Economy?' [2016] 18 *Vanderbilt Journal of Entertainment & Technology Law* 713.

⁶⁷⁵ P Yu, 'Intellectual Property, Economic Development, and the China Puzzle' in D Gervais (ed), *Intellectual Property, Trade and Development: strategies to optimize economic development in a TRIPS Plus Era* (Oxford University Press 2007).

⁶⁷⁶ 吴汉东, 锁福涛, '中国知识产权司法保护的理论与政策' [2013] 当代法学 42 (H Wu and F Suo, 'Ideas and Policies on China IPR Judicial Protection' [2013] *Contemporary Legal Sciences* 42.)

⁶⁷⁷ 吴汉东, '专利法实施的目标任务与保障体系' [2015] 《知识产权》3 (H Wu, 'The Objectives of Patent Law Implementation and Its Security System' [2015] *Intellectual Property* 3.)

the reform of the ‘dual-track’ system, which will significantly enhance the level of protection of IPRs.⁶⁷⁸

Via exploring how the IP system has been absorbed into the business, this chapter reveals that: *if we separately evaluate the simultaneous constructions on the S&T system, IP system, and IT industry, each individual construction has its own remarkable achievements. However, an intent to experience collecting of know-how on implementing patents is visible for each.* While putting the S&T, IP system, and industry together, the parallel construction reveals diverse understandings of ‘catching-up’ in practice and a need for further integration when it comes to the IP issues. How the coagulation of the parallel construction will be carried out remains unclear. If the boost up of domestic and international patent filings of the Chinese industry since the 21st Century mirrors the raising awareness of IP for the Chinese government as well as Chinese business players, the small amount of judicial and administrative enforcements perhaps reflect that: there is still a need for know-how and improvement for obtaining experiences in implementing patents for the Chinese government, the Chinese people’s courts, and the right holders.

Moreover, by exploring the growth process of the Chinese software and IT services industry, it has shown that Chinese government is evaluating the level of industrial development of software and identifies the software industry with a strong focus on big players but not the small and medium enterprises or individual right holders. It is worth highlighting that constructing an IP system is not enough, the system must be sufficiently functional in order to favour the country’s development, and a sufficient nation-wide implementation of the IP system requires both the policy makers as well as the judicial organs to consider the balance between, (1) giant business players and small firms, and (2) undeveloped regions, developing regions, and well-developed

⁶⁷⁸ 钟莉,刘建新,王俊毅, ‘知识产权司法保护与行政执法衔接策略研究’ [2009] 科技与法律 58(L Zhong, J Liu and J Wang, ‘The Strategic Cohesion on the IPR Judicial Protection and Administrative Enforcement’ [2009] Technology and Law 58.)

regions inside the country. For patent-related policies, ‘should the Chinese government set up S&T and IP policies to favour the Chinese giant companies, such as Huawei, or should it concern more the small business and R&D players’, the answer to such a question for policy makers goes beyond IP, but has transferred into a question on how the Chinese government would like to distribute its state resources.

The current administrative system for patent registration and examination focuses mainly on the domestic industry yet references internal practices. There are a few remarks worth considering:

- (1) The specific technologies and the relevant industries of these policies are very clear and detailed. China as a developing country followed the developed countries’ technology trends, and its catch-up has aims at the global advanced technological standards. The selection of a particular technology is strongly connected with the global inclination, rather than the level of the country’s internal development. The route of the internal development has then been adjusted to catch-up to the international standards as fast as possible. For the precise leading technologies, China had no difficulty to introduce them to its society.
- (2) The pertinent policies are very sophisticated packages that include various institutions to develop the infant industries, such as capital, technology, human capital, tariffs, taxation, organization, market and IP policies. The introduction and establishment of these institutions in China follows the international recommendations. In contrast with the initiation of the technology, the level of implementing those institutions may differ from the international standards but is strongly linked with the level of the national conditions and developments. For some of the precise institutions, such as IP, the State Council placed extra efforts into establishing the awareness of the institutions in order for the institutions to be accepted and functional in Chinese society.

- (3) The policies have very explicit timeframes, which noted the exact transition period for all the institutions and individual players to react in tandem. Although it is unclear how the State Council decides the length of the time frame, the institutional development is very fast and the upgrades are timely. This reflects that the level of state involvement in China is severe for every factor both vertically and horizontally.
- (4) These policies illustrate that China is still a norm follower. In contrast to the developed countries, such as Britain, the USA, or Japan, China follows the existing international IP community but not actively creating new IP agenda. However, in regard to the development of IP institutions, especially those in TRIPS, China has been trying to achieve as high a level as possible. After reaching the global standards, the investments made on improving the administrations, managements and system improvement in general are enormous. Predictably, the level of implementation on these institutions, including IP, will be continuously raised.
- (5) Combining these policies together with the leading companies' steps, diverse levels of acknowledgement of the institutions among the Chinese players are detectable. Some players already run ahead of the policies, such as Huawei. Yet some still need to be encouraged in order to accept and implement the concept into daily business, such as the previously discussed leading pharmaceutical enterprise. This gap is massive and unique.

Meanwhile, the know-how and experience collecting intention is more visible at the judicial level. There are currently two judicial interpretations regarding patent infringements. They are: *Interpretation I (2009)*⁶⁷⁹ and *Interpretation II (2016) of the*

⁶⁷⁹ This interpretation is originally developed from the Several Provisions of the Supreme People's Court on Issues Concerning Applicable Laws to the Trial of Patent Controversies in 2001, and it was revised respectively in 2013 and 2015.

Supreme People's Court on Several Issues Concerning the Application of Law in the Trial of Patent Infringement Dispute Cases, the interpretations apply to all cases on patent infringements and disputes, and there is no particular rule so far related to specific patent issues on computer programs. Although the amount of cases is small, computer-program-related IP enforcement still plays an important role in the current judicial reform inside China. This has been reflected in the newly established IP courts, where their exclusive jurisdiction on first instance covers civil and administrative cases of computer software,⁶⁸⁰ although copyright is the main protective mean for computer program. According to the empirically based 'three-stage' model discussed in the previous chapters, computer-software-related cases in China at the moment are facilitating the establishment of principles and collection of experiences. However, a strong IP protection could favour the developed regions such as Beijing, Shanghai, and Guangzhou, but may not necessarily favour the developing or undeveloped regions. How the Chinese people's courts will balance the level of IP protection with the developmental differences of different regions in the country remains unclear.

Chapter 5 Conclusion

This monograph has illustrated the IP development in China and especially focused on its modernization after the Reform and Opening-up Policy since 1979. The monograph has delineated the IP system as one of the many factors within a grand picture of China's mechanism to catch-up and social transition. This monograph focuses particularly on the catch-up process and has reviewed IP in China during the general historical turbulences (Chapter 1), its increasing importance in the national strategy and social transition (Chapter 2), then the evolution of administrative and judicial enforcements on IP and their subsequent reforms (Chapter 3). This monograph has

⁶⁸⁰ 《最高人民法院关于北京、上海、广州知识产权法院案件管辖的规定》，（法释〔2014〕12号）（No 12 SPC Rules on the Jurisdiction of the IP Courts in Beijing, Shanghai and Guangzhou (27 October 2014) <<http://www.chinacourt.org/law/detail/2014/10/id/147980.shtml>> accessed 6 June 2015.

inserted a technical factor by employing the IT industry and its relevant IP issues as an example (Chapter 4), studying how the IP system at the state level impacts Chinese business players.

Transitional development in the country set requirements for balancing the need to stay up to speed with global development and the challenge to find the country's own way for development in China. A 'jacobinical' way of assuming China has similar social conditions as developed countries, picturing China as a country of imitations, and evaluating the country's IP and its implementation with already developed countries' standards is debatable. Such assumption could be a continuous reflection of 'general disdain of foreigners for a system with which they had little familiarity and for which they had even less respect'.⁶⁸¹ In fact, the country's very first national S&T policy in 1957 already emphasized the need for China to avoid plagiarism and blind imitations.⁶⁸² Judging from the experiences of other countries, it takes decades for an institution to properly function after its establishment; the Chinese IP enforcement system needs future maturity.

Drawing from the decades-long policies on IP modernization, it is not difficult to see that China is a country of creations and innovations. However, the social, economic, and technological conditions disabled China from sufficient IP enforcement even though the country strove for IP development for years since its opening-up. Nevertheless, China has positively and continuously made great efforts to be a country that respects IPRs. The efforts have been evolved in policies and legislation, as well as both in administrative and judicial enforcements. Those efforts have encompassed all levels of the governments. In addition, the Chinese government is in consultation with the industry representatives, constructing a proper IP enforcement system via sophisticated design of judicial reforms.

⁶⁸¹ WP Alford, *To Steal a Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995).

⁶⁸² The Perspective Plan For Science And Technology Development From 1956-1967.

1. Limitations of the Current Research Findings

As presented in Chapter 2, the importance of IP and the quality of its implementation are strongly associated with growth performance. This monograph focuses on the association between IP and S&T growth. Based on the general picture elucidated in Chapter 1, Chapter 2 highlights that evaluating single policy or institution can limit the understanding of the Chinese IP system. The interconnection between the strategic policies and the establishment of institutions is traceable. China hosts S&T policies that impact IP, including aspects such as policies, legislation, and enforcement.

Comparing the IP notions during the historical period between 1949 to 1979, the country's development progress exposes that IP policies can have retroaction on S&T policies. As briefly mentioned in Chapter 2, international pressures⁶⁸³ played a positive role in China's adoption of the IP system and its modernization. Moreover, the Chinese experience presents insight for IP studies of developing countries, which is: a proper combination of good policies and institutions can allocate social resources from the macro level, attract FDIs, generate economic growth, and render social improvement.

Under this new era, the idea of avoiding the influence of developed countries is contentious. According to Chapter 1 and 2, there is very little space for a latecomer, namely a developing country, to construct new norms of legal mechanism on technology management, especially after the establishment of a globally accepted IP norm. The Chinese fast growth during the last three decades demonstrates the benefits

⁶⁸³ Detailed studies on international pressures on the Chinese IP system, see CKC Gordon, *Intellectual Property Rights in China: Politics of Piracy, Trade and Protection* (Routledge 2009); see also P Torremans, H Shan and J Erauw, *Intellectual Property and TRIPS Compliance in China, Chinese and European Perspective* (Edward Elgar Publishing Limited 2007); and C Liu, *Intellectual Property Law* (5th edn, Renmin University Press 2014).

of implementing from the already developed countries. A proper degree of external pressure can be helpful. Healthy and mutual understandings and communications between the developed and developing countries are supportive for the growth of different countries.

The current Chinese reforms discussed in Chapter 2 and Chapter 3 show that the reforms are based on an academic presumption that a further growth of the country requires substantial enhancement on the quality of the IP system, especially in the implementation step. However, the on-going enforcement reforms in China cannot sufficiently predict the timeframe needed for the successful improvement process. Moreover, whether the ‘good quality’ institutions can lead the presumed growth is unclear and requires further research. Globally speaking, the already developed countries are experiencing continuous growth slowdown, thus: (1) What is the definition and criterion of ‘good quality’ for institutions? As a matter of fact, an extensive level of diversity exists in both IP understanding and practices among developed countries. (2) Additionally, as reviewed in previous chapters, the on-going judicial reform of China has highlighted another global IP academic challenge: a lack of knowledgeable human resources to be advanced IP agents, IP lawyers, and judges. (3) The cost of creating a ‘good quality’ IP system can be massive. After all, apart from allocating resources, the IP system itself consumes a noteworthy amount of social resources. The previous chapters amplify and reveal these problems, but the questions *per se* are beyond the scope of this monograph.

2. Final Observations

Several findings may be drawn from the previous four chapters, and these will be described in this section.

2.1 A Sophisticatedly Designed Governance with Strong Administrative Intervention on IP Development

The Chinese government has played a fundamental role for the country's IP development since 1949. The People's Republic of China has introduced two different types of IP systems since its establishment, and both of the systems are transplanted. The Soviet Union's IP model was adopted before the Reform and Opening-up Policy, and a modern IP system started since the promulgation of the Patent Law in 1984.

As a developing country, China had no option to say no to the creation of the modern IP system after the Reform and Opening-up Policy in 1979. IP is a pre-condition for every developing country nowadays to properly join the international business society. Observing the big events and academic records of China's IP, it is clear that the modernization of IP in China did not naturally happen as a response to its market economy, but it was instigated by the internal needs for development and the external pressure for market access to China. Therefore, during China's social transition at this stage, it is considerably late to call for the creation of IP awareness in the public. IP shall be accepted as an existing common sense.

Although the Chinese IP system has been constructed by following the international IP norms created by the developed countries, it is arguable to completely isolate the Chinese IP law studies from its domestic implementations or its local industrial bases. China shall obey the international treaties. However, it is groundless to call for or picture Chinese IP with the same IP or implementation system as that of the US or EU.

One of the main academic findings and claims of this monograph is that: *it is not difficult to find external pressures when the Western IP norm was first introduced in China. Even though external pressures played an undeniable role during Chinese IP development, which can be reviewed to the 19th Century as illustrated in the First*

Chapter, China since 1949 has been constantly advancing its IP system and its implementation mainly because of its internal and developmental needs (Chapter 2).

Although China could not say no to the IP system, the current experience of China and the accumulative statistics in this monograph have shown that the transplanted modern IP system has helped China's economic development. Besides, as illustrated in Chapter 1, after developing the IP system for three decades, IP nowadays is playing a substantive role in economic transformation and is making extensive contributions to the country's sustainable economic development.

Internally speaking, IP has been premeditated as a part of the sophisticated, planned national strategy for catching up with the developed world. The attitude shifts toward the increase of IP protections and successive IP reforms as illustrated in Chapter 3 has shown a considerable level of continuous state governance together with administrative intervention. As explored in Chapter 2, an active state governance on IP strongly exists inside China, even after the policy and legislation making phase. The management of social resources and capacities are well designed to fulfil the purposes of the national catch-up process. Upgrades of the IP system are strictly designed state actions to achieve the developmental tasks. The role of the IP system has been designed and expanded more than attracting FDIs, but also serves the domestic transition of economic mode.

As revealed in Chapter 2, the parallel creations of the NIS and IP system has exposed that, in contrast to current main-stream claims as discussed in Chapter 2, the frequency which has occurred in the timeline of the IP legislation amendments is not an epiphenomenon. China has adjusted the IP system hand in hand with the country's indigenous innovation capabilities, such as technological development and generation of human resources and so on. During the same historical period, China actively joined all necessary international treaties, which indicates its openness and willingness to foreign technology transfer. *This thesis has academically proved that: The S&T and IP*

policies have shown a clear governance on innovations. The governance on innovation has been infiltrated in the political process inside China. The construction of the NIS and the IP system reflects that China as a state has intensively obtained physical technologies and constructed social institutions. Non-state players are involved in the NIS and IP systems via various administrative mechanisms. However, according to the current studies, *the national-oriented NIS and IP development model seems to lack sufficient consideration for the role and function of the market.* How the NIS and IP system functions in the market remains unclear.

As discussed in Chapter 2, Chinese IP policies are flexible, which leave sufficient room for fast upgrades and timely adjustments. Comparing with many already developed countries, the IP legislation has been frequently revised in China. The fast adjustments and frequently revised legislations aim to enable the country to quickly respond to both the internal and external changes and challenges; so that the policies and rules stay in time with the technological and industrial development.

IP policies are relatively more focused and specific than legislations for the improvement of certain industries. Chinese IP policies have been implemented in various forms via different levels of the Chinese governments; the disposition to implement these IP policies is obvious. The emphasis of these policies is aimed at selected industries, rather than folks. Comparing to the IP policies, Chinese IP legislations are general rules which cannot address detailed problems of any particular industry. In contrast to the policies, IP legislations and their enforcements are designed to fit all industries, cover folks, and with a higher level of independence and much less inclination. Above all, this monograph highlights that *China has adopted interventionist IP policies to encourage and guide its industries.*

Chapter 3 explores the evolution of judicial enforcement on IP. By studying the active involvement of all the levels of people's courts in the national IP strategy and construction of the IP system, the thesis academically proves that: *Via adjusting the*

judicial enforcement and improve the protection level of IPRs, Chinese government is trying to motivate non-state players to be more involved into the IP system. Such adjustments on judicial organs reflect that the governance on innovations has also been infiltrated in the implementation process of the exercise of rights. However, the national wide construction of the IP system with unified standards at the state-level could confront severe challenges during implementation because of regional diversities. For example, the protection standards may be too weak to the developed regions but too strong to the undeveloped regions. The unified construction can confront a ‘schizophrenic’ implementation.⁶⁸⁴

Following these mentioned innovation plans, certain industries have been more preferential from the perspective of the state development strategies, and the IP policies have been actively used for the development of these industries, such as the IT industry as Chapter 4 has shown. The Chinese software industry is adopting neither the US nor Indian business model. The IP policies in other countries indeed have their referential significance, especially developed countries, such as the US. However, it is implausible to cite the EU or US standards as academic authorities to push the development of the Chinese IP system and its implementation out of its own Chinese contexts, especially if the industries’ development is considerably interacting on the IP system’s guidance as disclosed in Chapter 4. The Chinese government has introduced various administrative means to motivate and boost the registration of innovations. The strong administrative interventions are detectable inside the NIS as well as the IP system.

2.2 The Incentive Overall Catch-Up of Chinese IP to the Global Standard Does Not Guarantee an Inevitable Success

⁶⁸⁴ Challenges of regional diversities, see P Yu, ‘The Transplant and Transformation of Intellectual Property Laws in China’, *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016).

Different from many already developed countries, where IP was generated because of the development of a domestic market; the international norms are fundamentally encoded in the Chinese IP system as recorded in Chapter 2. Similar to many other developing countries, such as Brazil, Indian, or Russia, China as a norm taker currently utilizes very little effort to access the latest institutional development of national IP. The Chinese introduction and construction of an IP system has been performed with sophisticated design by the state. In addition, China is willing to follow up the advanced IP rules from the developed countries. This has indirectly guaranteed China a fast development in regard to its IP legislation.

However, because the introduced rules were not originally generated from Chinese domestic practices, this directly generated a gap between the domestic enforcement and transplanted legislation. As showed in Chapter 3, squeezing domestic legal practices into international legal standards require modification on both sides, which raises costs and complexity to sufficiently run the system. The introduced international IP standards are results and summaries of already developed countries' experiences, but not the cause of the current developmental status. Thus, a sufficient implementation of these international standards in any developing country will require development of many other factors in that country besides the matter of law, of which China is not an exception. China is actively observing its own solutions for the implementation problems, and one of the important judicial enforcement reforms is the nation-wide construction of a 'three-in-one' IP tribunal model together with a 'two-in-one' special IP court in the already well-developed regions.

Moreover, because of the 'international gene', the national IP strategy of China is a strategy for international competition and correspondingly a domestic development strategy. Reflected by the Chinese catching-up experience, this monograph claims that on top of emphasizing IP's territorial feature, China has demarcated IP with an international feature. The already developed country did not have a similar definition for IP at their creation stage of the system. The definition of IP that was developed

inside China has expanded out of the scope of a simple legal concept and can be reviewed as a political tactic. The current China example has reflected and confirmed the dual significance of IP in the contemporary new global IP development. China has been slowly constructing its IP system into a very dynamic model with continuous adjustments.

Internally speaking, the implementation of the IP strategy has offered a systematic support for China's economic transformation. The national IP strategy indicates that China is entering a new stage of development, namely, a knowledge-based economy. This is confirmed from the side of some of the latest S&T-related strategies, such as the issuing of the Notice of the State Council on Issuing the 'Made in China (2025)'.⁶⁸⁵

One of the academic findings of this monograph is that, the three decades of Chinese modern IP development and its enforcement mirrors *the diverse levels of development within the Chinese IP system, which can be summarized as: an advanced legislation system that goes along with the international standards, an enforcement system with Chinese characteristics, and an administrative system for registration and examination focusing mainly on the domestic industries*⁶⁸⁶ yet taking international practices as reference (Chapter 2 and Chapter 3).

The Chinese experiences confirm that, evaluating the level of IP development can reflect the development level of a country. Taking the Chinese software industry as an example, the transformation from a country of 'importing IP' to a country of 'independently creating IP' and to a country of 'exporting IP', there has five interlocked

⁶⁸⁵ Notice of the State Council on Issuing the 'Made in China (2025)' 2015.

⁶⁸⁶ For example, the newly released Management Means on the Prioritized Patent Examination (SIPO Order No.76 [2017]) has introduced the 'Prioritized Patent Examination Process' to patent applications, which has come into force on 1 August 2017. For patent applications which fall within the scope of this administrative order (Art.2. Art.3 and Art. 4), SIPO agrees to give a prioritized examination within the following period (Art. 10): (1) for invention patent applications, SIPO shall issue the first notice of opinion within 45 days and close the case within one year; (2) patent applications for utility models and designs shall be closed within two months; (3) patent reexamination cases shall be closed within seven months;(4) cases of invalidation declaration on invention or utility model patents shall be closed within five months, the invalidation declaration on design patents shall closed within four months.

phases. The leading factor for economic development changes in each stage.⁶⁸⁷ The first stage is the exportation of low-tech products, and the driving factors are low labour cost, intensive labour resources, cheap raw materials, and relatively low needs on education. The second stage starts when the exportation contains certain technologies, which is a beneficial result caused by the vast experience from the first stage together with industrial imitations and R&D investments.⁶⁸⁸ The third stage, to a developing country such as China, will involve learning from the developed countries and trying to increase its own investments into acquiring, developing, and managing IP. The fourth stage is to reach the same status as developed countries in terms of IP. The last stage is the occupation of comparative advantages and ability to export IP.⁶⁸⁹

Even though the improvement of the Chinese IP system is obvious and the system has already reached a similar level as the already developed countries have, such as the specific IP court discussed in Chapter 3, the general strength of IP still needs further enhancement.

In short, one of this monograph's findings is that: *China's adjustments of the IP policies are ultimately determined by the overall objectives for catching up and building an innovative country. China updates its IP system strictly in line with its level of national S&T development. Based on the internal and international conditions, it is a selected development model from China's side to emphasize IP reform and modernization.*

⁶⁸⁷ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010); see also E Lim and M Spence, *Medium and Long Term Development and Transformation of the Chinese Economy an International Perspective* (Beijing Cairncross Economic Research Foundation 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>> accessed 12 November 2013.

⁶⁸⁸ X Fu, *China's Path to Innovation* (Cambridge University Press 2015).

⁶⁸⁹ S Jui, *Innovation in China: The Chinese Software Industry* (Routledge 2010).

However, it is worth mentioning that: fundamentally, this is no different from gambling.⁶⁹⁰ This monograph would like to address in its concluding chapter that, the embedment of IP into a country does not necessarily guarantee an inevitable success, just like the early introduction of IP in China back in the 19th Century as described at the very end of Chapter 1. After all, apart from the willingness of the state to introduce and implement the policies, the success of any policy is critically dependent on the detailed forms of the policies and the capacities of the state in general, which has been proved by many other countries' experiences.⁶⁹¹

Therefore, even though it can be agreed for the moment that the IP system contributed to China's development, it still requires a further clarification on the exact shape that IP system and its implementations can yield. The current diverse practices of IP in different countries, which include both developed and developing countries, have shown that: there is neither a 'one-size-fits-all' IP system, nor universal implementation for a country's development. After fulfilling the requirements of the international standards on IP, China has been progressing a step-by-step basis of IP system-relevant issues according to its domestic level of development. Chinese IP enforcement shall warrant more academic attention. Following this monograph, the utmost relevance for further research can be: (1) internally speaking, how to systematically organize the Chinese IP development diversities in enforcement; and (2) internationally speaking, how globalization and the contemporary liberal trade regime can impact the ongoing Chinese IP reform and transition.

2.3 An IP Enforcement System with Chinese Characteristics

⁶⁹⁰ K Shao and X Feng, *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014).

⁶⁹¹ H-J Chang, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002).

As elucidated in Chapter 3, IP administrative enforcement is caused by the earlier year's limited judicial capacity, and it is closely related to the national conditions of the Chinese IP system. After decades of development, administrative enforcement has grown into an important tool for the protection of IPRs in China.

Administrative enforcement authorities can independently carry out actions against IP infringements or resolve IP civil disputes. Comparing to the developed countries' IP enforcement system, such as the UK and the US, the Chinese IP administrative enforcement system has a quasi-civil-judicial status, which covers the administrative punishment for the infringement of IPRs, adjudication for IP ownership disputes, and mediation. Administrative enforcement has a quasi-criminal-judicial status for which the extent of administrative enforcement contains: (1) border measures which prohibit pirated goods from being imported and exported; and (2) 'misdemeanor system' which authorizes all the IP administrative organs to provide administrative punishment for minor IP crimes according to the relevant administrative legislations. The 'dual-track' system has matched the practicalities of China and sustained the IP system even though it obviously differs from the international practice. Correspondingly, the involvement of administrative force in IP enforcement causes some problems. Although the establishment of a modernized IP system in legislations can be achieved in a short period, the implementation of the global IP standards regulated by the TRIPS in such a short period might be comprehended as a form of 'great leap'.

The gap between international standards and domestic conditions led to an obvious lack of unity in the enforcement system, for example, the definition of protective standards in administrative and judicial enforcement is miscellaneous at the moment. The 'dual-track' system offers optional protections for IPRs, but the overlap of protective agencies can lead to the lack of efficiency. The 'dual-track' system adds a noteworthy level of complexity to IP civil cases. In the short-term, it can raise the possibility of controversial decisions among the judicial and administrative organs. The 'dual-track' system exemplifies the lack of convergence in the Chinese IP enforcement system. The

current system leads to competition between the administrative and judicial forces. In the long-term, after the maturation of the judicial enforcement, parallel enforcement might be a waste of public resources. As discussed in Chapter 3, the Chinese government is keenly cognizant of these potential problems. Thus, the intention to reduce competition waste among, for example, macro-state level judicial and administrative organs is sensible in the current judicial reform.

The on-going judicial reform reflects on the dual track system as a parallel system and is now revising it into a collateral system. Judicial enforcement will obtain the dominant position in Chinese IP enforcement. Meanwhile, the trend shows that China is currently amending and slowly moving its IP enforcement system toward the one-track system, similar to developed countries. Nevertheless, whether to abolish the IP administrative enforcement in China, or not, is beyond the research scope of this monograph.

However, indeed, as a developing country and a latecomer, China has no need to re-invent the IP system. This does not mean that China shall unquestionably abolish its functional administrative enforcement mechanism, which has been established based its own domestic experiences. It took decades to establish a modern IP system. One might, of course, claim that after the establishment of the IP system and its judicial enforcement, it takes decades to improve the practice, close various leakages, and strengthen the general capacities of the enforcement. Does this claim exclude or terminate the administrative enforcement? The answer is 'no'. In fact, the same logic that applies to improving judicial enforcement can be implemented to administrative enforcement. It is also a matter of time to polish the management of administrative agencies, close the loopholes, and strengthen the general capacities.

This monograph is not claiming the on-going strategies as any sort of agenda or action plan to go further than the highlighted and globally accepted standards. However, the 'one-size-fit-all' standards and the EU-US centred international standards for institutional development have generated new issues while solving diverse domestic

problems in China. In addition, these standards have limitations to guide newly developed industries as reflected in the previous chapters. Systematic differences at the enforcement level shall be accepted to certain extent as it is in the case of the Chinese dual-track system for its IP enforcement. Rather than completely replacing one with the other, the noteworthy challenge is to properly harmonize these two enforcement mechanisms and avoid pluralism.

One can claim that the single-track IP judicial enforcement is commonly applied in the countries that China is modelling their system from, namely the already developed countries. This monograph has no intention to question the on-going IP reform, because the Chinese experience has shown that continuous institutional development can lead to fast growth. However, the single-track IP judicial enforcement implemented in the developed countries is not perfectly functioning in either one of the single developed countries. The enforcement among these countries is non-harmonized. Inefficiency has been a general IP enforcement challenge to many countries, China should address more attention and give patience to its indigenous enforcement system.

Moreover, *the 'three-in-one' model and the special IP court indicate a new trend is slowly emerging inside China, which is: the modernization of judicial system, together with the implementation of centralized management with specialized judiciary* (Chapter 3). The establishment of special IP courts in Beijing, Shanghai, and Guangzhou is the first step toward the modernization of the IP judicial system. As mentioned in Chapter 3, IP court has been given exclusive jurisdiction, which means other people's courts have no jurisdiction on the same matters⁶⁹² in Beijing, Shanghai, and Guangzhou; the parties shall not change jurisdiction based on agreement, and the people's court cannot change the jurisdiction based on the court rulings. The jurisdiction provides exclusivity and priority to the IP court's jurisdiction. Moreover, it is a compulsory jurisdiction that excludes foreign court's jurisdiction over the litigations. Meanwhile, in other provinces,

⁶⁹² See chapter 3, part 4.

the establishment of a ‘three-in-one’ model continues and is being furthered by the SPC. Every province is collecting IP judicial enforcement experience. Such an arrangement at the macro level aims at integrating the specialized judicial resources, improving the professional level of the judiciary, and harmonizing the judicial standards of IP protection.

The on-going IP reform is a giant project considering the large size of the Chinese territory, its population, and the diverse development levels of different regions. Even though institutional improvements contribute to the economic growth, one fundamental point to be continuously mentioned is: the Chinese IP system is multifunctional, but dominantly it shall function as a legal mechanism to maintain the justice order of intellectual rights and enhance the knowledge-based transition progress. Internally speaking, a successful system shall cover the nation as a whole, but not only a few well-developed regions, even though such an arrangement means a low level of profits. At the same time, internationally speaking, the designing of Chinese legal reform may need to consider the responsibilities and obligations in advance as China is becoming an economic super power. The Chinese experience of constructing and improving the IP system can be a supportive case study for the global IP system.

2.4 A Need for Further Improvement on IP Practices in Business

The sophisticated design of S&T and IP policies has created some unique characteristics in the Chinese invention patent portfolio. Chapter 4 takes the IT industry as an example, since IT is one of the privileged and representative industries. It shows that the capital, taxation bonus, R&D resources, and human capital are allocated in certain selected industries (Chapter 4). Huawei’s considerable number of patent filings and its relevant patent-related activities show that Chinese patents are being gradually industrialized and commercialized. However, the small number of judicial cases indirectly show that the patent filings are centralized in the hands of few leading players

instead of a commonly implemented intellectual management mechanism for business. The level of industrialization and commercialization of patents is still relatively low. The IP policies and their concepts are mainly used at the central government level, consequently, there is a demand for further policies' localization and decentralization.

As showed in Chapter 4, Huawei which was founded in 1985, established its IP management office in 1995, and started properly filing invention patents at the beginning of the 21st century. On one hand, Huawei's case shows that the direction of economic activities and technological changes require time to be developed. On the other hand, the fact that China favoured particular industries during the transition period, such as the IT industry, has been encouraging the growth of certain firms. However, such implementation limits the birth of new firms and the innovative capabilities in other industries. The national wide IP system shall not only benefit certain industries or big players but also accelerate the development of small firms and other R&D entities.

Chapter 4 also shows that, comparing to the patent portfolio that the developed countries have for their advance industries, such as the pharmaceutical or automotive industry, the IP structure is relatively simple in a new industry, such as IT. This leaves a huge space for improvement. Although policies and institution can be transplanted from the external society with global standards to China, each country must develop its own industrial model based on its own economic, social, internal, and international circumstances. Government can help firms to adopt and apply new ideas and technologies, but the important thing is that these industries should be able to sustain and renew themselves later on. Thus, government support can be crucial during the initial steps but the industry should develop self-sufficiency on innovation. This requires the involvement of market and competition. The role switch of Chinese government is necessary, that is the government should interfere less and encourage the industry to produce new ideas.

ABOVE ALL, during the current catching-up process, both the Chinese government and industries have learned and benefited considerably from the positive approaches and development experiences of already-developed countries. Nonetheless, the developed countries' achievements did not come easily. During the process of catching-up, it is necessary to draw attention to the negative factors and failures that the developed countries have experienced, to prevent the Chinese government and industries from confronting similar issues.

Many similarities can be drawn from the divisional catch-up process of the Chinese S&T and IP system. This manuscript summarizes the state catch-up model of China in following phases:

(1) the beginning stage of catching-up, which could be defined as the 'preparation period', is the phase of collecting capital, constructing similar or transplanting same institutions, cultivating relevant human resources and basic knowledges. The institution construction can cover many sectors, such as legislation, administration, education, and the funding system, as well as implementing organs.

The Chinese catch-up model has a character in its way that the 'preparation period' is the most time-consuming period among all the three phases. The preparation can take decades and several generations. The central Chinese government is well-aware of the time-consuming preparation during the implementation of the Reform and Opening-up, as Deng Xiaoping pointed out in 1982, 'utilizing the first ten years to prepare for the next ten years'.⁶⁹³

(2) The second stage of catching-up, which this monograph defines as the 'chasing period', is the phase of testing established institutions, advancing human resources,

⁶⁹³ 邓小平, 邓小平文选 (第三卷), 人民出版社 1993, 第 16 页. X Deng, *Selected Works of Deng Xiaoping*, Vol 3 (Renmin Press, 1993), p16.

adjusting the allocation of resources, collecting relevant and domestic experiences, and improving mechanisms for implementations at the central and local levels; and

(3) The final stage of catching-up, which can be defined as ‘sprinting to the end-point’, is the phase of systemization of different institutions and maturing the capacities for sustainable implementation at various levels of capital-allocation, technology-handling, and human resources upgrading.

The ‘preparation period’ is well reflected by the Chinese S&T policies, both during the Soviet-Union period and the early years after the Reform and Opening-up Policy. For example, the intensive attraction of FDIs and technologies, the massive training for relevant human resources, and the establishment of different funding systems for R&D. The current on-going construction of the NIS indicates that the Chinese S&T is at the end of chasing period and is entering the last phase. For the IP system, China completed the preparation period for IP legislation in a relatively very short period, and is at the end of the ‘chasing-period’. The new amendments of different Chinese IP legislations, such as the on-going discussions on the fourth amendment of Chinese Patent Law, are worth looking forward to. The actions carried out by the IP enforcement sector all indicate that China is quickly completing the ‘preparation period’ for IP enforcement. These actions include the newly established IP court in Beijing, Shanghai, and Guangzhou; the IP tribunals in Nanjing, Suzhou, Wuhan, and Chengdu; and the nationwide introduction of a ‘three-in-one’ model. The mechanisms that have been carried out for formulating the team of IP judges, the adjustment in the ‘dual-track’ system, and the enhanced construction of IP system, all mapped out the Chinese ambition to enter and complete the ‘chasing period’ of rapid IP enforcement.

The Chinese construction of the IP system itself is a giant social and governmental project to access and promote knowledge and innovation. In contrast to the developed countries, the Chinese IP system is endowed with the mission of promoting innovation and developing the country into an innovation-driven society. The acknowledgement

of IP norms and their importance have improved together with the country's growth. Therefore, considering the new Chinese economic phase, the continuous improvements of IPRs are very promising in the future.

The on-going judicial reform reflects the confidence and commitment for the institutional development of IP in China. The process of harmonization of the administrative and judicial enforcement shows that China is willing to adjust its enforcement system to integrate with global practices. Whether China should reduce the importance of the administrative enforcement requires more specific studies.

The enormous growth of patent filings will continue or even go higher, because the relevant policies have been actively released to encourage R&D and technical improvement. The ratio of innovation patents has risen dramatically since the beginning of the 21st century. However, linking the patents and enforcement system requires proficient understanding of the technologies, practical experiences, and professional practitioners. In other words, it took decades to construct a modern IP system and its sufficient implementation. At this point, China has already fulfilled the global standards set up by the international treaties, such as Berne Convention, Paris Convention and TRIPS. Nevertheless, similar to developed countries, a sufficient enforcement of the IP system needs more time for implementation. Both China and the rest of the world shall give patience to China to properly develop its IP enforcement mechanisms.

Reviewing the IP development of China since 1898, riding with the Chinese elites' ups and downs and their mechanism on national development, has emphasized that China is very unique in a way that IP law has gone far more than a law discipline itself. It is, indeed, as many have said: how one was yesterday has decided how one is today, how one is today will decide how one's future looks like. Then the following logical question is: what will be the next after the 'catch-up' and 'social transition'? Due to the length and research period limitation, this monograph has not touched the part of 'keep-

ahead'. Hopefully there can be another volume later to answer this question or this monograph can inspire whoever interested in this topic to carry it further.

REFERENCES

- Ahn B, 'The Making of the Cultural Revolution' in B Ahn, *Chinese Politics and the Cultural Revolution* (University of Washington Press 1976)
- Alford WP, *To Steal Aa Book Is an Elegant Offense: Intellectual Property Law in Chinese Civilization* (Stanford University Press 1995)
- Allison JR and Lin L, 'The Evolution of Chinese Attitudes Toward Property Rights in Invention and Discovery' (Social Science Research Network 2000) SSRN Scholarly Paper ID 222539 <<http://papers.ssrn.com/abstract=222539>>
- Beat W, 'Technology Transfer in China', Patent Law In Greater China (Edward Elgar Publishing Limited 2014)
- Bently L and Sherman B, *Intellectual Property Law* (3rd edn, Oxford University Press 2009)
- Beijing High People's Court, 'BHPC: Attention needed on Legal Problems in the current intellectual property trials', (9 May 2016) 北京高院, '北京高院:当前知识产权审判需要注意的法律问题', 2016年5月9日
- 'Beijing, Tianjin and Hebei will explore centralize the jurisdiction of intellectual property cases' China Intellectual Property (12 June 2015) <<http://ip.people.com.cn/n1/2016/0612/c136655-28427113.html>> '京津冀将探索跨区划知识产权案件集中管辖' 中国知识产权报, 2015年6月12日
- 'Biography of Stan Shih' <<https://web.archive.org/web/20081115174657/http://global.acer.com/about/biographical.htm>>
- B Xu, Big Data on the Beijing Intellectual Property Court Patent Trials (2014.11.6-2017.6.30) 许波, 北京知识产权法院专利审判大数据(2014.11.6-2017.6.30)
- Bosworth D and Yang D, 'Intellectual Property Law, Technology Flow and Licensing Opportunities in the People's Republic of China' [2002] International Business Review 98
- Bosworth D and Yang D, 'Intellectual Property Law, Technology Flow and Licensing Opportunities in the People's Republic of China' (31 May 2016) <http://secure.com.sg/courses/ICI/Grab/Student_Presentations/A01_G17.pdf>
- Broggi CB, *Trade and Technology Networks in the Chinese Textile Industry - Opening Up Before the Reform* (Palgrave Macmillan 2016)
- Bruun N and Zhang L, 'Legal Transplant of Intellectual Property Rights in China: Norm Taker or Norm Maker', in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016)

- Center for Strategic and International Studies, 'China's 15th WTO Anniversary: Assessing the Record and Charting the Path Forward' (2012)
<www.csis.org/events/chinas-15th-wto-anniversary-assessing-record-and-charting-path-forward/?block3>
- Cao J, 'Dual Enforcement System' in S Luginbuehl and Peter Ganea (eds), *Patent Law in Greater China* (Edward Elgar 2014)
- Cao J, 'New Development of IP Judicial Protection' [2004] 14 *Intellectual Property* 9
- Cao T, *The Chinese Model of Modern Development* (Routledge 2005)
- Capron H and Meeusen W, *The National Innovation System of Belgium* (Springer-Verlag Berlin Heidelberg 2000)
- Chang H-J and Rowthorn B, *The Role of the State in Economic Change* (Oxford University Press 1995)
- Chang H-J, *Kicking Away the Ladder: Development Strategy in Historical Perspective* (Anthem Press 2002)
- Chen C, Chang L and Zhang YM, 'The Role of Foreign Direct Investment in China's Post 1978 Economic Development' [1995] *World Development* 691
- Chen C, *Foreign Direct Investment in China* (Edward Elgar Publishing Limited 2011)
- Chen J, *Studies on the Construction of National Innovation System and Its Implementation - The Enlightenment from Finland* (Shanghai Jiao Tong University Press 2010) 陈洁, 国家创新体系架构与运行机制研究——芬兰的启示与借鉴 (上海交通大学出版社 2010)
- Chen X, '156 Projects and the Modernization of China's China's Industries' [1999] *Literature of Communist Party of China*
- Cheung GCK, *Intellectual Property Rights in China: Policy of Piracy, Trade and Protection* (Routledge 2009)
- China Development Research Foundation, *China's New Urbanization Strategy* (Routledge 2013)
- China Science and Technology Statistics, 'Patent Statistical Analysis of 2014'
<www.sts.org.cn/tjbg/cgyllw/documents/2016/2014年我国专利统计分析.pdf>
- Circular of the General Office of the State Council on Establishing the Leading Group for the Work concerning Formulating the Strategy for National Intellectual Property Right 2005
- Cornish W, *Intellectual Property: Patents, Copyright, Trademarks and Allied Rights* (Sweet and Maxwell 1999)
- Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Continuing the Reform (2013)

- Decision of the State Council on Accelerating the Fostering and Development of Strategic Emerging Industries (2010) 国务院关于加快培育和发展战略性新兴产业的决定
- Deng S and Cui Y, 'Human Capital and Relying on Science and Education to Rejuvenate the Country' [2000] *Science, Technology and Dialectics* 64
- Deng X, *Implement the Policy of Readjustment, Ensure Stability and Unit* (25 December 1980)
- Deng X, *Respect Knowledge, Respect Talents, Selected Papers of Deng Xiaoping (1975-1982)* (Renmin Press 1983) 邓小平, '尊重知识, 尊重人才', *邓小平文选 (1975-1982)*, 人民出版社 1983
- Deng X, *Our State's Historic Experience on Economic Constructions* (6 May 1982)
- Deng X, *Selected Works of Deng Xiaoping, Vol 3* (Renmin Press, 1993) 邓小平, *邓小平文选 (第三卷)*, 人民出版社 1993
- Deng JZ and Shan XG, 'The Conception of IP Administrative Protection in China' [2007] *Intellectual Property Law* 62 邓建志, 单晓光, '我国知识产权行政保护的涵义', [2017] 1 *知识产权法* 62
- Dobbs R and others, 'Farewell to Cheap Capital? The Implications of Long-Term Shifts in Global Investment and Saving' (Mckinsey Global Institute 2010) <www.mckinsey.com/industries/private-equity-and-principal-investors/our-insights/farewell-cheap-capital>
- Donald CC, *China's Legal System: New Developments, New Challenges* (Cambridge University Press 2008)
- Drahoš P, *The Global Governance of Knowledge: Patent Offices and Their Clients* (Cambridge University Press 2010)
- Duncan JM, Sherwood MA and Shen Y, 'A Comparison between the Judicial and Administrative Routes to Enforce Intellectual Property Rights in China' [2008] 7 *The John Marshall Review of Intellectual Property Law* 529
- Esherick JW, Pickowicz PG and Walder AG, *The Chinese Cultural Revolution as History* (Stanford University Press 2005)
- EU-China IP2, 'Third Revision of China's Patent Law, Legal Texts and Documents on the Drafting Process 2006-2008' (2010) <www.ipkey.org/zh/resources/ip-information-centre/22-patent/2079-third-revision-of-china-s-patent-law-legal-texts-and-documents-on-the-drafting-process-2006-2008_2079>
- Fen X and Wu Z, 'Research on the Relationships between Intellectual Property Court and General Court in China' [2014] *Shangdi Forum of Intellectual Property* 冯晓青, 武志孝, '我国知识产权法院与普通法院关系研究'
- Feng X, 'Challenges to China's Self-Driven Innovation' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014)

- Francks P, 'Leaning from Japan: Plant Imports and Technology Transfer in the Chinese Iron and Steel Industry' [1988] *Journal of the Japanese and International Economies* 42
- Fu W, 'Internet and Patent System' [2000] *Science and Law* 59 符望, '互联网与专利制度' [2000] *科技与法律* 59
- Fu X, *China's Path to Innovation* (University of Oxford, Cambridge University Press 2015)
- Gallini N and Scotchmer S, 'Intellectual Property: When Is It the Best Incentive System?' [2001] UC Berkeley Department of Economics Working Paper
- Gordon CKC, *Intellectual Property Rights in China: Politics of Piracy, Trade and Protection* (Routledge 2009)
- Governance in China - OECD (2016) <www.oecd.org/gov/governanceinchina.htm>
- Gregory K. L and Lauren J. S, *Economic Approaches to Intellectual Property: Policy, Litigation and Management* (Thomson/West 2006)
- Gregory N, Nollen S and Tenev S, *New Industries from New Places: The Emergence of the Software and Hardware Industries in China and India* (The World Bank and Stanford University Press 2009)
- Griffiths J, 'Book Review on W. Twining, *Law in Context: Enlarging a Discipline*' (1998) 4 *European Journal of Crime, Criminal law and Criminal Justice* 145
- Gu C, *Chinese Legal System*, vol 1 (China & Hongkong Law Studies Ltd 1988)
- Guo X, 'A Positive Analysis on Patent Protection for Computer Software' [2008] *Intellectual Property* 38 郭雪军, '计算机软件的专利保护: 一个实证的分析' [2008] *知识产权* 38
- Gu S and Lundvall B-Å, 'Policy Leaning as a Key Process in the Transformation of the Chinese Innovation System', *Asia's Innovation System in Transition* (Edward Elgar 2006)
- Guidelines for Patent Examination
- Guo H, 'Patents', in Z Jiang and R Kariyawasam (eds), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011)
- Guo W, Jin C and Wang J, *Network Legal Problems and the Countermeasures* (Law Press 2001)
- He H and Zhang P, 'Impact of the Intellectual Property System on Economic Growth Country Report China' (WIPO-JPO-UNU Joint Research Project 2007) <www.wipo.int/export/sites/www/about-ip/en/studies/pdf/wipo_unu_07_china.pdf>
- Henderson JV, 'Urbanization in China: Policy Issues and Options' (2009) <www.s4.brown.edu/china2012/Papers/Final%20Report%20format1109summary.pdf>
- Hsü CY, *The Rise of Modern China* (6th edn, Oxford University Press 2000)

- Hsü CY, *The Rise of Modern China* (6th edn, Oxford University Press 2000)
- Huang J, Liu J and Di Y, 'Discover the US Courts Views on the Patentability of Computer Software and Analysis the Relevant Cases' (National Forum of Intellectual Property 1999) 黄俊英, 刘江彬, 获筠'探讨美国法院对电脑软件专利性之见解与相关判例之分析' (1999 全国智慧财产权研讨会)
- Hu D, 'After the elected judiciary, how to elect judges' *Guangming Daily* (4 September 2014) <http://www.njfy.gov.cn/www/njfy/xwzx_mb_a3914090559424.htm> 胡道才, '员额制后, 法官该如何选任', 光明日报, 2014 年 9 月 4 日
- Hu M and Ran Y, 'Huawei, and Its Piercing through Road for Core Technologies', *People's Daily* (2003) 胡谋, 冉永平, '华为, 核心技术的突破之路', 人民日报 [2003]
- Hu J, 'Generally Complete the Construction of the National Innovation System with Chinese Characteristics by 2020' *China Daily* (7 September 2012)
- Hu J, 'Study on the New Relations between FDI Attraction and Technology Introduction' (Tsinghua University 2004)
- Huldt B and others, *China Rising - Reaction, Assessments, and Strategic Consequences* (National Defense University 2007)
- Hu S, 'Discussions On the Establishment of IP Court' [2010] 4 Intellectual Property 37 胡淑珠, '论知识产权法院(法庭)的建立——对我过知识产权审判体制改革的理性思考', [2010] 4 知识产权 37
- Intellectual Property Court in Beijing, 'Information of IP judges in the Intellectual Property Court in Beijing' <www.bjcourt.gov.cn/fgxx/detail.htm?court=30&channel=100606002> 北京知识产权法院:《北京知识产权法院法官信息》, 审判信息网
- Interpretations of the Supreme People's Court on Several Issues Concerning Application of the Law of the People's Republic of China on Choice of Law for Foreign-Related Civil Relationships (I)
- IP House Judicial Data Analyses Center, 'Report on Judicial Protection Data of Beijing Intellectual Property Court' (2016) 知产宝司法数据研究中心, '北京知识产权法院司法保护数据分析报告'
- Jiang Z and Kariyawasam R, *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011)
- Jui S, *Innovation in China: The Chinese Software Industry* (Routledge 2010)
- Jun W, 'The Solid Steps of Huawei in 2003' [2004] *Communication World* 46, also available at Huawei Media Center <<http://pr.huawei.com/cn/news/media-coverage/hw-092065-news.htm>> 军文, '华为 2003 的坚实脚步' [2004] 通信世界 46

- Kong X and Du W, 'Efforts and Tendencies in China's Judicial Practice of Intellectual Property' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014)
- Kong X, 'Basic Issues of the Application of Intellectual Property Law: Judicial Philosophy, Judicial Policy and the Method of Adjudication' [2013] Beijing: Law Press 1
- Kristina S and Alan C, 'Intellectual Property Rights Protection in China: Trends in Litigation and Economic Damages' (NERA Economic Consulting 2014) <www.zlqip.cn/hold/books/other/matts/other3.pdf>
- Kynge J, *China Shakes the World: A Titan's Rise and Troubled Future- and The Challenges Forfor America* (A Mariner Book Houghton Mifflin Company 2007)
- La CS and Konan DE, 'Intellectual Property Rights in China: The Changing Political Economy of Chinese-American Interests' [2002] 39 East-West Center Working Papers
- Lan X and Zhang L, 'Relationship between IPR and Technology Catch-up Some Evidence from China' in H Odagiri, A Goto, A Sunami and RR Nelson (eds), *Intellectual Property Rights, Development, and Catch-up An International Comparative Study* (Oxford University Press 2012)
- Landes W and Posner R, *The Economic Structure of Intellectual Property Law* (Belknap Press of Harvard University Press 2003)
- Landes WM and Posner RA, *The Political Economy of Intellectual Property Law* (The American Enterprise Institute 2004)
- Lee N, 'Intellectual Property Law in China-From Legal Transplant to Governance' in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016)
- Lee N, Bruun N, and Li M, *Governance of Intellectual Property Rights in China and Europe* (Edward Elgar 2016)
- Legislative Work Plan of The Standing Committee of The National People's Congress in 2017 全国人大常委会 2017 年立法工作计划
- Li C and Xu L, 'Literature Review on Computer Software Patent Protection in China' [2010] *Journal of Chongqing University of Post and Telecommunications* 20) 李长健, 徐丽峰, '我国计算机软件专利保护文献综述', [2010] *重庆邮电大学学报:社会科学版* 20
- Liegsalz J, *The Economics of Intellectual Property Rights in China: Patent, Trade and Foreign Direct Investment* (Springer Fachmedien 2010)
- 'Li Deshui: Huge Surplus Essentially Is Only a Passing by God Of Wealth' *First Financial Daily* (26 January 2006) <<http://finance.sina.com.cn/g/20060126/07122307823.shtml>>

- Li H, Liu Chuntian: The Problems of Protection Model on Intellectual Property Rights Lack a "Truth and Standard" Type of Discussion" [2016] <<http://news.hexun.com/2016-06-23/184551233.html>> 李含, '刘春田: 知识产权保护模式问题欠缺一场“真理标准”式的大讨论, 法治周末
- Li G and Lou C, 'Characteristics of Technological Introduction in China in 1950s and Comments' [2004] *Journal of Northwestern University* 8
- Li M, Intellectual Property Court and Innovation-Driven Development, *People's Court News* <http://rmfyb.chinacourt.org/paper/images/2014-09/03/05/2014090305_pdf.pdf> 李明德, '知识产权法院与创新驱动发展', *人民法院报*, 2014年9月3日
- Li M, *Intellectual Property Law* (2nd edn, Social Sciences Academic Press 2014)
- Li M, *US Intellectual Property Law* (Law Press, 2014)
- Lim E and Spence M, *Medium and Long Term Development and Transformation of the Chinese Economy an International Perspective* (Zhongxin Publishing 2011) <<http://pages.stern.nyu.edu/~jcarpen0/Chinaluncheon/Synthesis%20Report%20Complete%20English.pdf>>
- Liu C, Intellectual Property Right as First Property Right is A Discovery of Civil Law Studies) [2015] *Intellectual Property* 3 刘春田, '知识产权作为第一财产权利是民法学上的一个发现', [2015] *知识产权* 3
- Liu C, 'Intellectual Property Court's Mandate and Mission' [2014] *People's Court News* 刘春田, '知识产权法院的职责与使命', *人民法院报*, 20
- Liu C, 'Copyright Protection under the Network Environment' in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011)
- Liu C, *Intellectual Property Law* (5th edn, Renmin University Press 2014)
- Liu F, 'The Justice Analysis On the 'Dual Enforcement System' of Patent Infringement Remedies in China' [2008] 2 *Intellectual Property Law* 50 刘峰: 《我国知识产权侵权救济“双轨制”的正当性》, 《知识产权法》, 2008年第2期
- Li L, 'Studies On the Elected Judiciary System' Liaoning Shenyang Municipal Intermediate People's Court <<http://syzy.chinacourt.org/public/detail.php?id=6424>> 刘丽, '法官额制度研究', 辽宁省沈阳市中级人民法院
- Li M, 'Special Intellectual Property Court in China' in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Edward Elgar Publishing Limited 2016)
- Liu W, 'Intellectual Property Protection Related to Technology in China' [2005] 72 *Technological Forecasting and Social Change* 339

- Li X, 'The Aims of the Establishment of the Chinese Intellectual Property Court', *Shangdi Forum of Intellectual Property* (2014) 李小武: 《中国知识产权法院的设立目的》, 2014 年知识产权上地论坛
- Long G, 'China's Policies on FDI: Review and Evaluation' in TH Moran, EM Graham and M Blomstrom (eds), *Does Foreign Direct Investment Promote Development?* (Washington DC Institute for international Economics 2005)
- Love JB, Helmers C and Eberhardt M, 'Patent Litigation in China: Protecting Rights or the Local Economy?' [2016] 18 *Vanderbilt Journal of Entertainment & Technology Law* 713
- Lü X, *Rhetoric of the Chinese Cultural Revolution - the Impance on Chinese Thought, Culture and Communication* (University of South Carolina Press 2004)
- Lubman S, 'Introduction: The Future of Chinese Law' in S Lubman (ed), *China's Legal Reforms* (Oxford University Press 1996)
- Lubman S, *China's Legal Reforms* (Oxford University Press 1996)
- Luginbuehl S and Ganea P, *Patent Law in Greater China* (Elgar Intellectual Property Law and Practice 2014)
- Luginbuehl S, 'China's Patent Policy' in S Luginbuehl and P Ganea (eds), *Patent Law in Greater China* (Edward Elgar Publishing Limited 2014)
- Lundvall B-Å, Patarapong I and Jan V, *Asia's Innovation Systems in Transition* (Edward Elgar 2006)
- Maitland F, *The Forms of Action at Common Law* (1909)
<<http://sourcebooks.fordham.edu/basis/maitland-formsofaction.asp>>
- Mao J and Chen W, 'Discussion on the Intellectual Property Policies on the Strategic Emerging Industries' [2011] *Intellectual Property Law* 63) 毛金生, 程文婷, '战略性新兴产业知识产权政策初探 2011 知识产权法 63
- Mattei U, 'Comparative Law and Economics' in B Bouckaert and G De Geest (eds), *Elgar Encyclopedia of Law and Economics* (Edward Elgar 2000)
- Mazzucato M and Penna C, *The Brazilian Innovation System: A Mission- Oriented Policy Proposal* (CGEE 2016)
- Mertha A, *The Politics of Piracy: Intellectual Property in Contemporary China* (Cornell University Press 2005)
- 'Memorandum of Understanding Between the Government of the United States of America and the Government of the People's Republic of China on the Protection of Intellectual Property'
<http://tcc.export.gov/trade_agreements/all_trade_agreements/exp_005362.asp>
- Ministry of Industry and Information Technology, Software and Information Technology Services Industry the 12th Five-year Development Plan(2012) 工业和信息化部, 软件和信息技术服务业“十二五”发展规划 (2012)

- Ministry of Industry and Information Technology, Software and Information Technology Services Industry Development Plan for 2016-2020 (2016) 工业和信息化部, 软件和信息技术服务业发展规划 2016-2020 年 (2016)
- Ministry of Education and the Ministry of Employment and the Economy, *Evaluation of the Finnish National Innovation System - Full Report* (Helsinki University Press 2009)
- Ministry of Science and Technology, 'Science and Technology Development Plans in the History' <www.most.gov.cn/kjgh/lskjgh/>
- Monton NV, 'Trademark Anticounterfitting in Asia and the Pacific Rim' [2001] International Trademark Association 21
- Motohashi K, 'Growing R&D Collaboration of Japanese Firms and Policy Implications for Reforming National Innovation System' [2006] 24 Studies in Science of Science 482 <www.mo.t.u-tokyo.ac.jp/theme/nihonkigyour&D.pdf>
- Murray A, *Information Technology Law* (3rd edn, Oxford University Press 2016)
- Nakayama N, translated by J Guo, Legal Protections on Computer Software (Dalian University of Technologies Press 1988) 中山信弘(著), 郭建新(译), 软件的法律保护, 大连理工大学出版社, 1988
- National Patent Development Strategy 2011-2020 (2010) 全国专利事业发展战略 (2011-2020)
- Nelson R, *National Innovation Systems - A Comparative Analysis* (Oxford University Press 1993)
- No 12 SPC Rules on the Jurisdiction of the IP Courts in Beijing, Shanghai and Guangzhou (27 October 2014) <www.chinacourt.org/law/detail/2014/10/id/147980.shtml> 最高人民法院关于北京、上海、广州知识产权法院案件管辖的规定 2014 (法释 [2014] 12 号)
- Notice of the State Council on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries 2011
- Notice of the State Council on Issuing the 'Made in China (2025)' 2015
- Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy 2008
- Notice of the General Office of the State Council on Forwarding Several Opinions of the State Intellectual Property Office and Other Departments on Strengthening the Work of Intellectual Property Rights in Strategic Emerging Industries (2012) 国务院办公厅转发知识产权局等部门关于加强战略性新兴产业知识产权工作若干意见的通知
- Odagiri H and others, *Intellectual Property Rights, Development, and Catch-Up, an International Comparative Study* (Oxford University Press 2010)

- OECD, 'Chapter 14. Intellectual Property Rights in China: Governance Challenges and Prospects', in *Governance in China* (OCED 2005)
- OECD, 'Intellectual Property Rights in China: Governance Challenges and Perspectives', in *Governance in China* (OCED 2005)
- OECD, 'OECD Reviews of Innovation Policy CHINA Synthesis Report' (2007) <www.oecd.org/sti/inno/39177453.pdf>
- OECD, OECD Reviews of Innovation Policy- China (2008)
- Oyelanren-Oyeyinka B and McCormick D, *Industrial Clusters and Innovation Systems in Africa: Institutions, Markets and Policy* (United Nations University Press 2007)
- Parthasarathi B, *The Indian Software Industry: Business Strategy and Dynamic Coordination* (Palgrave Macmillan 2004)
- Planning on Adjusting and Revitalizing the Electronic Information Industry 2008
- People's Congress, *The Second Session of the Twelfth National People's Congress Resolution on the Implementation of the National Economic and Social Development Plan in 2014 and the National Economic and Social Development Plan 2015* (2015) 全国人民代表大会, 第十二届全国人民代表大会第三次会议关于 2014 年国民经济和社会发展计划执行情况与 2015 年国民经济和社会发展计划的决议 2015
- People's Supreme Court, 'Introduction of the IP division of the SPC' (12 April 2010) <www.court.gov.cn/zscq/zscqt/201004/t20100412_3940.html> 最高人民法院: 《最高法院知识产权庭介绍》
- Polices for the Promotion of Software and Integrated Circuit Industries 2000
- PRC Agrees to Push for Copyright Law That Will Protect Computer Software (World Intellectual Property Report 1989)
- 'Project 211 and 985 - China Education Center' (7 July 2016) <<http://www.chinaeducenter.com/en/cedu/ceduproject211.php>>
- Provision of the Supreme People's Court on the Judicial Interpretation Work (2007)
- Publicity Department of the Communist Party of China, *Important Speeches of the General Secretary Xi Jinping* (Renmin Press 2014) 中共中央中宣部, 习近平总书记重要讲话读本 (人民出版社 2014)
- Quality Brand Protection Committee of China Association of Enterprise with Foreign Investment, 'Annual Review of Counterfeiting Development 2000' (2004)
- Regulation on Invention Reward 1963
- Rein S, *The End of Copycat China: The Rise of Creativity, Innovation, and Individualism in Asia* (John Wiley & Sons, Inc 2014)
- S.J Kamath SJ, 'Property Rights and the Evolution of Foreign Direct Investment in a Centrally Planned Developing Economy: Reply to Pomfret' [1994] *Economic Development and Cultural Change* <www.jstor.org/stable/1154451?seq=1#page_scan_tab_contents>

- Schiappacasse M, 'Intellectual Property Rights in China: Technology Transfers and Economic Development' [2004] Buffalo Intellectual Property Law Journal 166
- Sell SK, 'Intellectual Property Protection and Antitrust in the Developing World Crisis, Coercion, and Choice' [1995] 49 International Organization 315
- Shao K and Feng X, *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014)
- Shao K, 'Patent Law, National Strategies and Policy Incentives: China Road to a Leading Innovator' [2011] 14 the International Trade and Business Law Review 85
- Shao K, *History Is a Key Decoder: Why China Aims at Re-Emerging as a Global Leader of Innovation, vol 1* (Law in Context 2013)
- Shao K, 'To Steal a Book is an Elegant Offense? – How to Anatomize the History of Chinese Copyright and the Traditional Opinions about Innovations' [2011] Intellectual Property Rights Annual Journal 39 邵科, '窃书不算偷? ——如何剖析中国版权史及传统创新观', 知识产权年刊, 39–56. 北京大学出版社, 2011
- Shao W, *Patent Litigation Practices in Mainland China* (Taiwan Ministry of Economic Affairs, Intellectual Property Office 2011)
- Shen D, Understandings and Implementations on the SPC Judiciary Interpretations on The Chinese Civil Procedure Law (People's Court Press, 2015) 沈德咏, 最高人民法院民事诉讼法司法解释理解与适用, 人民法院出版社 2015
- Shi W, *Intellectual Property in the Global Trading System: EU-China Perspective* (Springer Science & Business Media 2008)
- Shu G, 'Methodological Development of Legal Theory' [2010] Legal Philosophy: Stand and Method 41 舒国滢, '从方法论看抽象法学理论的发展', 法哲学: 立场与方法, 41–64. 北京大学出版社, 2010
- Shu G, *Legal Philosophy: Stand and Method* (Peking University Press 2010) 舒国滢, 法哲学: 立场与方法, 北京大学出版社, 2010
- Sigurdson J, *Technological Superpower China* (Edward Elgar Publishing Limited 2005)
- SIPO, 'Comparative Analysis on the Data of Patent Administrative Enforcement Cases in 2014 and 2013 in the Intellectual Property System' (7 January 2015) <www.sipo.gov.cn/zscqgz/2014/201501/t20150106_1056435.html>
- SIPO, 'WIPO Chinese Agency Opened in Beijing' (16 July 2014) <http://english.sipo.gov.cn/news/official/201407/t20140716_980595.html>
- SIPO, 'The 13th Five Years Plan on Personnel on Intellectual Property' [2017] No 12 知识产权人才十三五规划 (国知发人字[2017]12号)
- Song Z, 'From Marching Toward Science to Rejuvenating China by Relying on Science and Education: Comments on the Party's Policy of Science and Technology since the Founding of New China' 14 Journal of Hulun Buir College 78

- SPC: 2013 China IPR Judicial Protection in Court, *People's Court News* (25 April 2014) <www.chinacourt.org/article/detail/2014/04/id/1283299.shtml> 最高人民法院:《2013 年中国法院知识产权司法保护状况》,《人民法院报》,2014 年 4 月 25 日
- SPC, 'White Paper on IP Judicial Protection in China' (2014) <<https://perma.cc/X4VR-GTWF>> 最高人民法院, '中国法院知识产权司法保护状况白皮书 (2014)'
- Standing Committee of the National People's Congress, *Decision on the Establishment of Intellectual Property Court in Beijing, Shanghai, Guangzhou* (31 August 2014) 《全国人民代表大会常务委员会关于在北京、上海、广州设立知识产权法院的决定》, 2014
- State Council of People's Republic of China, 'National Intellectual Property Strategy Outline' (2008) <www.gov.cn/gongbao/content/2008/content_1018942.htm>
- State Intellectual Property Office of the PRC, The Guangzhou Intellectual Property Court Is Established (17 December 2014) <www.sipo.gov.cn/mtjj/2014/201412/t20141217_1047660.html> 中华人民共和国知识产权局:《广州知识产权法院挂牌成立》,2014 年 12 月 17 日
- State Intellectual Property Office Of the P.R.C, 'The Shanghai Intellectual Property Court Is Established' (31 December 2014) <www.sipo.gov.cn/mtjj/2014/201412/t20141231_1054112.html> 中华人民共和国知识产权局:《上海知识产权法院挂牌成立》,2014 年 12 月 31 日
- Sun L, 'Analysis on the Standing Committee of the National People's Congress Decision on the Establishment of Intellectual Property Court in Beijing, Shanghai, Guangzhou' [2014] 5 *China Copyright* 5. Published also at the Shangdi Forum of Intellectual Property 2014 孙雷:《<关于在北京,上海,广州设立知识产权法院的决定>探析》,《中国版权》2014 年第 5 期,另参见 2014 年知识产权上地论坛
- Sun Y, 'Intellectual Property Protections on Computer software and Business Methods – The Introduction And Analyses Of The Recent Cases In US' [1999] *Journal of Law* 44 孙远钊, '电脑软件与业务方法的智慧财产保护—美国最近法例引介与评析' [1999] *法学丛刊* 44
- Supreme People's Court Decision on Promoting Intellectual Property Civil, Administrative and Criminal Cases 'Three-in-one' Trail in all National Courts [2016] No 17 法发 [2016] 17 号《最高人民法院关于在全国法院推进知识产权民事、行政和刑事案件审判“三合一”工作的意见
- 'The Approval On Establishing Specific Tribunal in Intermediate Court of Nanjing, Suzhou, Wuhan and Chengdu and Cross-regional Jurisdiction on Intellectual Property Cases' [2017] 2 最高法关于同意南京市、苏州市、武汉市、成都市

- 中级法院内设专门审判机构并跨区域管辖部分知识产权案件的批复 2017 (法 2017 (2) 号)
- The CPC Central Committee, Decision of the Central Committee of the Communist Party of China on Deepening the Reform of Several Major Issues (2013) 中共中央, 中共中央关于全面深化改革若干重大问题的决, 2013
- The Outlines on National Medium- and Long-Term Program for Science and Technology Development (2006-2020) 2006
- The Perspective Plan for Science and Technology Development from 1956-1967
- The Supreme People's Court, Opinions of the Supreme People's Court on Several Issues Regarding the Implementation of the National Intellectual Property Strategy, No 16 [2009]
- The Supreme People's Court of China, 'IP Cases Annual Report of The Supreme People's Court of China 2015' (2016) <www.chinacourt.org/article/detail/2016/04/id/1845020.shtml>
- The Supreme People's Court of China, '人民法院简介' ('Introduction of the People's Courts' (2 May 2014)) <www.court.gov.cn/jgsz/rmfyjj/>
- The Thirteenth National Congress, *Walk Along the Road of Socialism with the Chinese Characteristics* (1987)
- Thirteenth Five-year National Science and Technology Innovation and Social Development Planning (Ministry of Science and Technology 2016 No.404) '十三五' 国家社会发展科技创新规划 2016 (国科发社 (2016) 404 号)
- Thirteenth Five-year National Science and Technology Innovation Plan (State Council 2016 No 43) '十三五' 国家科技创新规划 2016 (国发 (2016) 43 号)
- 'Through Huawei to See the Cost and Value of Patents' China Intellectual Property (CNIPR) (2016) <www.cnipr.com/yysw/zscqjyytrz/201605/t20160504_196682.htm> 中国知识产权网, 从华为看专利的成本与价值 (2016)
- Thurow LC, 'Needed: A New System of Intellectual Property Rights' [1997] Harvard Business Review <http://business.kingston.ac.uk/sites/all/themes/kingston_business/retake/bs6701innovation1.pdf>
- Torremans P, Shan H and Erauw J, *Intellectual Property and TRIPS Compliance in China, Chinese and European Perspective* (Edward Elgar Publishing Limited 2007)
- Treaty Between the United States and China for the Extension of the Commercial Relations Between Them (1903), available at <www.chinaforeignrelations.net/node/209>
- Twining W, *Law in Context: Enlarging a Discipline* (Clarendon Press 1997)

- United States Information Service, 'U.S Trade Deficit Hits Record as Imports Rise, Exports Drop' *News Release* (22 June 1995)
- US Department of State, 'Intellectual Property: Memorandum of Understanding between the United States of America And the People's Republic of China' [1992] 12036 Treaties and Other International Acts Series 6
- US Department of State, 'Testimony by Assistant Secretary of State for Economic and Business Affairs, E. Anthony Wayne Before the Senate Judiciary Committee' (2004)
- US Department of State, 'Trade Official Urges China to Punish IPR Violators Forcefully' (2005)
- van Someren TCR and van Someren-Wang S, *Innovative China: Innovation Race Between East and West* (Springer Berlin 2013)
- Varum CA, Huang C and Gouveia JJBG, *China: Building an Innovative Economy* (Chandos Publishing Limited 2007)
- W.Pontius AW, Protection Extended to Patents, Designs, Framed-Marks and Copyrights in China, Japan and Korea (Government Printing Office 1909)
- Wang L, 'Intellectual Property Protection in China' [2004] 36 *The International Information & Library Review* 253
- Wang Y, 'China's National Innovation System and Innovation Policy' (2012) <http://apctt.org/nis/sites/all/themes/nis/pdf/CSNWorkshop_Report_P2S2_Wang.pdf>
- Warren M, 'US- China IPR Negotiations: Trade, Intellectual Property, and the Rule of Law in a Global Economy'' in MA Cohen, E Bang and S Mitchell (eds), *Chinese Intellectual Property Law and Practice* (Kluwer Law International 1999)
- Watson A, *Comparative Law: Law, Reality and Society* (3rd Edition) (3rd edn, Vandeplass Publishing 2010)
- Wechsler A, 'Intellectual Property Law in the People's Republic of China: A Powerful Tool for Innovation and Development' [2011] *China-EU Law Journal*, Online Version
- Wei S, 'Intellectual Property, Innovation and the Ladder of Development: Experience of Developed Countries for China', *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014)
- Wei-Ning Y and Anderw Y Y, 'The Dragon Gets New IP Claws: The Latest Amendments to the Chinese Patent Law' [2009] *Intellectual Property & Technology Law Journal*, <<http://www.ipo.org/wp-content/uploads/2013/03/DragonGetsNewIPClaws.pdf>>
- Wen T, 'The Relationship between China's Strategic Changes and Its Industrialization and Capitalization' in TY Cao (ed), *The Chinese Model of Modern Development* (Routledge 2005)

- Wen X, Intellectual Property Lawyer Based Legal Practices (Renmin University Press 2014) 温旭, 知识产权业务律师基础实务, 人民大学出版社 2014
- Wen X, 'Planning Development Department of the State Intellectual Property Office: Improving Intellectual Property Protection, Establishing Innovative Countries' [2007] Patent Statistics Bulletin
- Wessner WC and Shivakumar JS, *India's Changing Innovation System: Achievements, Challenges and Opportunity for Cooperation* (The National Academies Press 2007)
- Whyte MK, 'Sub-Optimal Institutions but Superior Growth: The Puzzle of China's Economic Boom' in J Lin and L Wang (eds), *China's Economic Dynamics: A Beijing Consensus in the Making?* (Routledge 2014)
- WIPO, 'Annual Report – Innovation Breakthrough and Economic Growth' (2015) WIPO, '世界知识产权报告——突破创新与经济增长'
- WIPO, 'US and China Drive International Patent Filing Growth in Record-Setting Year' (2015) <www.wipo.int/pressroom/en/articles/2014/article_0002.html>
- Woo MYK and Gallagher ME, *Chinese Justice - Civil Dispute Resolution in Contemporary China* (Cambridge University Press 2011)
- WTO, 'Overview: The TRIPS Agreement' <www.wto.org/english/tratop_e/trips_e/intel2b_e.htm#enforcement>
- Wu H, 'Challenges and Opportunities: the 10 Years IP Career After China Joined WTO' [2011] Intellectual Property 13 吴汉东, '挑战与机遇: 中国入世 10 年的知识产权事业' [2011] 知识产权 13
- Wu H, 'The International Environment and Domestic Context of the Implementation of Intellectual Property Strategy' [2012] Legal Science 3 吴汉东, '知识产权战略实施的国际环境与中国场景' [2012] 法学 3
- Wu H, Intellectual Property System Under The Trend of International Changes and the Overall Development of China [2009] Law Studies 3-17 吴汉东, '国际变革大势与中国发展大局中的知识产权制度' [2009] 法学研究 3-17
- Wu H, The Characters and Exclusive Jurisdiction of the Intellectual Property Court) 2014 *People's Court News*, <http://rmfyb.chinacourt.org/paper/images/2014-09/03/05/2014090305_pdf.pdf> 吴汉东, '知识产权法院的专门法院属性与专属管辖职能', *人民法院报*
- Wu H, 'Intellectual Property Law In the New Era of Knowledge Innovation' [2010] Northern Legal Science 157 吴汉东, '知识创新时代的知识产权法' [2010] 北方法学 157
- Wu H, 'Innovation-Driven And Development Of Intellectual Property Under The New Economic Norm' [2016] Legal Science 吴汉东, '经济新常态下知识产权的创新、驱动与发展' [2016] 法学

- Wu H, *Studies on Intangible Property System* (Law Press 2005) 吴汉东, 无形财产制度研究 (法律出版社 2005)
- Wu H, *Intellectual Property Law* (6th edition, Peking University Press 2014) 吴汉东, 知识产权法 (第六版), 北京大学出版社 2014
- Wu H and Suo F, 'Ideas and Policies on China IPR Judicial Protection' [2013] Contemporary Legal Sciences
- Wu H, 'The Objectives of Patent Law Implementation and Its Security System' [2015] Intellectual Property
- Wu H, 'To Rethink the Identity, Subject and Object of Intellectual Property by Comparatively Studying Property Ownership' [2000] Legal Review
- Wu Y, 'China's Development Road' (2006), First China-US Strategic Economic Dialogue
- Wu Y, 'Promoting IPR Policy and Enforcement in China - Summary of OECD-China Dialogues on Intellectual Property Rights Policy and Enforcement' (Organization for Economic Cooperation and development 2005)
- Xi J, 'Transition to Innovation-Driven Growth' (Address to the 17th General Assembly of the members of the Chinese Academy of Sciences and the 12th General Assembly of the Members of the Chinese Academy of Engineering 9 June 2014) in J Xi, *The Governance of China* (Foreign Languages Press 2014)
- Xi J, *The Encyclopedia of Scientific Development* (Shanghai Lexicographic Publishing House 2007) 奚洁人, 科学发展观百科词典, 上海辞书出版社, 2007
- Xi J, 'Work Together to Build the Silk Road Economic Belt and the 21st Century Maritime Silk Road' (14 May 2017) <<https://eng.yidaiyilu.gov.cn/home/rolling/13299.htm>>
- Xi J, Explanatory Notes to the 'Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Continuing the Reform' in J Xi, *The Governance of China* (Foreign Languages Press 2014) (9 November 2013)
- Xi J, *The Governance of China* (Foreign Languages Press 2014)
- Xu B, 'The Current Patent Protection Situation of Computer Software in China and Suggestions' [2012] Science and Technology Innovations and Intellectual Properties 68 徐博, '我国计算机软件的专利保护现状及对策建议' [2012] 《科技创新与知识产权》 68
- Xue H and Zheng C, *Software Protection in China: A Complete Guide* (Sweet & Maxwell Asian 1999)
- Xue L, 'A Historical Perspective of China's Innovation System Reform: A Case Study' [1997] Journal of Engineering Technology Management 14
- Yang D, Sonmez M and Bosworth D, 'Intellectual Property Abuses: How Should Multinationals Respond?' [2004] 37 Long Range Planning 459

- Yang DL, 'Economic Transformation and State Rebuilding in China' in BJ Naughton (ed), *Holding China Together, Diversity and National Integration in the Post-Deng Era* (Cambridge University Press 2004)
- Yang G, Monograph on the Legal Issues of China Joining WTO, Law Press 1999 杨国华, 中国加入 WTO 法律问题专论 (法律出版社 1999)
- Yang H and Cheng Y, 'The Empirical Analysis of Evaluating the Implement Effect of Introduction Overseas High-Level Talents Policy' [2013] 16 Science & Technology Progress Policy
- Yang J, Li Y and Meng X, Strategic Thoughts on the Chinese Software Industry' *China Information Almanac* (2002) 杨健,李颖新,孟欣, '关于我国软件产业的战略思考', [2002] 中国信息年鉴
- Yang L, 'Implementation of China's Rejuvenation through Knowledge' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2012)
- Y Liu and others, 'International Comparison on Patents of Seven Strategic Emerging Industries' [2014] Chinese Science Forum 68 刘艳梅, 余江, 张越, '七大战略性新兴产业技术创新态势的国际比较'[2014] 中国科技论坛 68
- Ying M and Sun Y, *Intellectual Property Protections on Computer Software* (Intellectual Property Publishing House 2009) 应明,孙彦, 计算机软件的知识产权保护, 知识产权出版社出版 (2009)
- You J and Chang H-J, 'The Myth of Free Labor Market in Korea' [1993] 12 Contributions to Political Economy
- Yu J and Chen K, 'Current Situation and Challenge of Technological Innovations in Chinese Strategic Emerging Industries' [2012] Studies in Science of Science 余江, 陈凯华, '中国战略性新兴产业的技术创新现状与挑战——基于专利文献计量的角度' 2012 科学学研究 30
- Yu P, 'Intellectual Property, Economic Development, and the China Puzzle' in D Gervais (ed), *Intellectual Property, Trade and Development: strategies to optimize economic development in a TRIPS Plus Era* (Oxford University Press 2007)
- Yu P, 'The International Enclosure of China's Innovation Space', *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014)
- Yu P, 'The Second Coming of Intellectual Property Rights in China' [2002] 11 Occasional Papers in Intellectual Property from BN Cardozo School of Law, Yeshiva University
- Yu P, 'The Transplant and Transformation of Intellectual Property Laws in China' in N Lee, N Bruun and M Li (eds), *Governance of Intellectual Property rights in China and Europe* (Elgar Intellectual Property and Global Development 2016)

- Yuan D, 'Establishing the Intellectual Property Court Aims to Standardize the Market Competition' *Legal Daily* (9 June 2014) 袁定波, '设立知识产权法院意在规范市场竞争', 法制日报, 2014年6月9日
- Zeng M and Williamson P, *Dragons at Your Door: How Chinese Cost Innovation Is Disrupting Global Competition* (Harvard Business School Press 2007)
- Zhang N, *Analyses on Selected US Patent-Related Cases* (China University of Politic and Law Press 1995) 张乃根, *美国专利法判例选析*, 中国政法大学出版社, 1995
- Zhang P, *Intellectual Property Law Analyses*, Beijing University Press 1994 张平, *知识产权法详论*, 北京大学出版社, 1994
- Zhang P and Ma X, *Sharing of Knowledge: Analysis on Intellectual Property Issues Related to Open Source Software* (Peking University Press 2005) 张平, 马骁, *共享智慧: 开源软件知识产权问题解析*, 北京大学出版社(2005)
- Zhang J, *The Development of High-Tech Enterprises in China's Universities* (Huazhong Science and Technology University Press 2003)
- Zhang K, 'Rise of Chinese Multinational Firms' [2009] 42 *The Chinese Economy* 81
- Zhang P and Lu H, 'From Refusing Protection to Providing Facilities: A Chronological Study of Desirability of Computer Software Patent' [2001] *Intellectual Property* 222
- Zhang P and Meng Z, 'Computer Software, Information Technology and E-commerce (1)' in R Kariyawasam (ed), *Chinese Intellectual Property and Technology Laws* (Edward Elgar Publishing Limited 2011)
- Zhang P, 'The Change of the Computer Software Patent Protection Concept On the E—Commerce Environment' [2000] *Intellectual Property* 22
- Zhang Z, 'Roadmaps of China's National Intellectual Property Strategy Outline' in K Shao and X Feng (eds), *Innovation and Intellectual Property in China* (Edward Elgar Publishing Limited 2014)
- Zhao R, 'Long-term Development Plan: Drawing on the Experience of International Experience - Interpretation of China's Medium and Long-term Economic Development and Transformation: Reflections and Suggestions from an International Perspective' [2011] *Dynamics of Economics* 4 赵人伟, '中长期发展规划借鉴国际经验的问题——解读《中国经济中长期发展和转型: 国际视角的思考与建议》' [2011] *经济学动态* 4
- Zhao Y and Bruun N, 'Chinese Developments Regarding Judicial Enforcement Mechanisms in Intellectual Property Law', *Governance of Intellectual Property rights in China and Europe* (Edward Edgar 2016)
- Zhao Y, *The Gestation and Birth of China's Patent Law* (Intellectual Property Publishing House 2003)

- Zhao YG, *The Preparation and Emergence of Chinese Patent Law* (Intellectual Property Press 2003) 赵元果, *中国专利法的孕育与诞生* (知识产权出版社 2003)
- Zheng B, *China's Peaceful Rise- Speeches of Zheng Bijian (1997-2005)* (Brookings Institution Press 2005)
- Zheng BJ, 'The Peaceful Rise of China and the Future of Asia, Lecture BFA in 2003'[2004] Theoretical Reference 郑必坚, '中国和平崛起新道路和亚洲的未来——在 2003 年博鳌亚洲论坛的讲演' [2004] 理论参考
- Zheng C, 'Review the Intellectual Property Research in the 20th Century' [1999] Intellectual Property 3
- Zheng C, 'The International System of Intellectual Property and the Law of Intellectual Property of China' [1984] China Legal Science 166
- Zheng C, *Chengsi's Enlightenments* (Intellectual Property Press, 2012) 郑成思, 成思建言录 (知识产权出版社 2012)
- Zheng C, *Intellectual Property Law- Some Research Focuses for the Beginning of the New Century* (Law Press 2004) 郑成思, 知识产权法——新世纪初的若干研究重点 (法律出版社 2004)
- Zheng S and others, *Peking University Encyclopedia of Jurisprudence* (Peking University Press 2001)
- Zheng YX, 'The Idea Establishing the quota system for judges', People's Judiciary 25 郑永昶, '建立法官额制度之构想' [2003] 7 人民司法 25
- Zhong L, Liu J and Wang J, 'The Strategic Cohesion on the IPR Judicial Protection and Administrative Enforcement' [2009] Technology and Law
- Zhou Q, 'Report on the Work of the Supreme People's Court (2013-2014)' (Supreme People's Court 2014) SPC official report delivered for the Second Session of the Twelfth National People's Congress) <www.china.org.cn/china/2014-05/08/content_32331522.htm>
- Zhou Z and Dai Q, 'Analysis on the Establishment of China Exclusive Intellectual Property Courts' [2014] Shangdi Forum of Intellectual Property 周志伟, 戴启洪, '我国知识产权法院设立方案探讨' 2014 年知识产权上地论坛

