PATENTS AND INNOVATION IN MAINLAND CHINA AND HONG KONG

How do patents affect innovation in Mainland China and Hong Kong? How can two patent systems operate within one country, and how is innovation affected by the "one country, two systems" model? For the first time, this book links these challenging issues together and provides a comprehensive overview for government officials, lawmakers, academics, law practitioners and students to understand the patent systems of Mainland China and Hong Kong. Themes examined include the interaction between the two distinctive patent regimes, the impact of patents on innovation in China's specific industries such as green tech, traditional Chinese medicines and telecommunications, the role of utility models in inflating low-quality patents and the application of good faith principle in enforcing FRAND in Mainland China, patent system reforms in Hong Kong, and the impact of these changes on innovation in the two vastly distinctive yet closely connected jurisdictions.

Yahong Li graduated from Stanford University with a doctorate in Science of Law. She teaches and researches intellectual property law extensively, in particular on the intersection of IP and innovation. Her major publications include *Imitation to Innovation in China: The Role of Patents in Biotechnology and Pharmaceutical Industries* (2010); *International and Comparative Intellectual Property: Law, Policy and Practice* (2005); and "China" in L. Bentley (ed.) *International Copyright and Practice* (2015). She is Associate Professor and Director of the LLM Program in Intellectual Property and Information Technology at the Faculty of Law, the University of Hong Kong; a member of ATRIP; and Honorary Advisor of the Hong Kong Institute of Patent Attorneys.

Patents and Innovation in Mainland China and Hong Kong

TWO SYSTEMS IN ONE COUNTRY COMPARED

Edited by

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Foreword

The "one country, two laws" principle was a key part of the 1984 Sino-British Declaration that led in 1997 to the handing back to China by Great Britain of Hong Kong, its then Crown Colony. In the 20 years since the return of Hong Kong to Chinese sovereignty and its transformation into a self-governed Special Administrative Region (SAR) under Article 31 of the People's Republic of China (PRC) Constitution, it has thus provided a living and evolving case study of the challenges and opportunities offered by the coexistence in one country of two different systems of law.

As they do in many areas of law and practice, the challenges and opportunities present themselves in the field of patents. This is a youthful subject in Mainland China where the first patent law after the foundation of the PRC in 1949 dates only from 1984. Of course, as the contributors to the first part of this work describe so well, the pace of development and change since that time has been dizzying, and today's patent law and practice is very different to that initial law. As Dr. Yahong Li notes in her introduction to this fascinating examination and explanation of multifarious aspects of the laws both on the Mainland and across the border in the SAR, the PRC is now in the process of transitioning from an imitation economy to one based on its own innovative activities, with varying degrees of success and speed across the diverse reaches of the massive country.

Hong Kong too is in a state of transition as it tries to position itself as one of the hubs of the Greater Pearl River Delta region, while at the same time moving up the value chain and starting to play the IP game in all its manifestations (Frank Charn Wing Wan sets out in his chapter the role of patents in the development of Hong Kong's economy).

Just one of many initiatives was the introduction, in June 2016, of its own "original grant" patent system (described by Leslie Shay in his chapter on the new regime). Previously, Hong Kong SAR patents were obtained merely by re-

registering after having patents granted in other countries (or in the supranational European Patent Office in Munich) that have search and examination capabilities. However, as occurred earlier in Singapore (described in an excellent chapter by Ronald Yu), the Hong Kong authorities decided after considering the pros and cons (the arguments are enumerated by Jeffrey Mclean and Winnie Yue in their contribution, which also reveals the somewhat surprising fact that only six patent cases have reached court in Hong Kong in the past 20 years) that the importance of innovation to the territory's future necessitated sending a strong message that patents were being taken more seriously than they were before. That strong message was embodied in part by the move to the "original grant" system and away from re-registration.

Obviously, it is far too early to make any evaluation as to whether the HKSAR Government's initiatives to encourage and foster innovation are bearing fruit, although without doubt there is much room for improvement: Dr. Li observes that, of the more than 12,000 patent applications made in the SAR in 2015, fewer than 250 were filed by local residents. Although I endorse wholeheartedly Dr. Li's cautionary note that it is quality and not quantity that counts in this area as in many others, there is no doubt that the process of altering a society's mindset from one focused on short-term gain to one prepared to invest for the longer term is a slow and arduous one that many countries are engaged in.

While Hong Kong tries to up its game in innovation and creativity, on the Mainland the number of invention patent filings have exploded, as each year's World Intellectual Property Organization (WIPO) figures testify. But here again, all may not be what it seems: filing a patent may be a measure of an individual's or business's innovation that is beloved by many bureaucrats, but in the real world it is quality patents and ease of enforcement and commercialization that count. This can be seen too in the contributions both on utility models (where Dan Prud'homme addresses on a comparative basis the perennial problem of reconciling the aims of accessibility of the right with the need to ensure quality) and the invention patent scene in the PRC for green technology (where Li Gao describes the industry as "big but not strong"), Traditional Chinese Medicine (TCM) (amongst many other startling facts, Yifu Chen draws attention to the statistic that there were nearly 27,000 patents granted for herbal medicines in the PRC by 2011 compared to a mere 21 in the US Patent Office) and telecoms (where Limeng Yu sets out examples of the increasing resort to litigation in a field in which there are large numbers of invention patents granted every year).

As its editor, Yahong Li must be congratulated on gathering together in one volume a collection of contributions of such high quality on many of the areas in the patent field that bear comparative study. Of course, what makes unique the subject matter of this book is that the comparison is possible within one country where two systems with different roots, imperatives and influences coexist.

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Foreword

On 1 July 1997, China resumed sovereignty over Hong Kong under the 'one country, two systems' framework. Although voluminous literature on the transition of this former British colony exists, very few books or journal articles have examined the parallel intellectual property developments in these two jurisdictions. This volume is therefore a delight to read. It is also very timely in light of the twentieth anniversary of Hong Kong's handover.

This book brings together policymakers, legal practitioners and academic commentators to discuss a wide range of patent issues, including innovation models, patent system designs, green technology, traditional Chinese medicines, telecommunications equipment and services, and enforcement of FRAND licences. The chapters draw on the contributors' expertise and experience in intellectual property law and policy in Mainland China, Hong Kong and often both. Although the topics vary from chapter to chapter, all the chapters centre around three important sets of stories, the study of which will greatly enhance our understanding of intellectual property developments in China.

The first set of contributions concerns transformation and transition. Since its promulgation in 1984, the Chinese Patent Law has been revised three times: in 1992, 2000 and 2008. These amendments responded to both the rapidly changing internal conditions and the continued external pressure from the United States and other developed countries, especially before China joined the World Trade Organization (WTO) in December 2001. In the mid- to late 2000s, China also underwent a dramatic transformation from an imitation economy to one relying on innovation – a phenomenon that is well captured by the editor's earlier monograph, *Imitation to Innovation in China: The Role of Patents in Biotechnology and Pharmaceutical Industries*.

Today, there is no denying that China is an emerging intellectual property power, even though pirated and counterfeit goods remain widely available in

many parts of the country. Based on the 2016 statistics compiled by the World Intellectual Property Organization, China now ranks third in terms of international patent applications under the Patent Cooperation Treaty (PCT), behind only the United States and Japan. Among corporate PCT applicants, ZTE and Huawei also rank first and second in the world, respectively. In addition, China has the world's fourth largest volume of international trademark applications filed under the Madrid system.

Compared with Mainland China, Hong Kong has not experienced as dramatic a transformation. Nevertheless, intellectual property protection in this special administrative region has still improved considerably. When I was a kid growing up in Hong Kong, pirated cassette tapes and counterfeit clothes were widely and openly sold. If one were to pay for computer games, such payment would often have been for copying floppy disks, rather than buying genuine software. Even when I was studying in the United States in the 1990s, it was quite common to see people buying pirated computer games, video CDs and DVDs in select shopping malls.

Today, however, many people in Hong Kong have acquired at least some basic understanding of intellectual property law. In the recent public debate on the Copyright (Amendment) Bill 2014, for example, many youngsters and university students were amazingly well versed in concepts and terms used by intellectual property lawyers. Because pirated and counterfeit goods are no longer sold as frequently, many people in Hong Kong have also changed their attitude towards these goods. To be sure, there is still widespread piracy in the digital environment, but there is no evidence that the level of online piracy is much higher in Hong Kong than in other parts of the world.

The biggest transformation Hong Kong has seen, however, has to be the change of the intellectual property system from one serving a British colony – or, worse, its mother country – to one tailored to the needs and interests of a somewhat autonomous administrative region. In the patent area, no policy change has better exemplified this transformation than the introduction of the original grant patent system in June 2016, which is discussed in several chapters of this book. Until the introduction of this full-fledged system, Hong Kong reregisters the patents granted by the State Intellectual Property Office of China (SIPO), the UK Intellectual Property Office and the European Patent Office. The Hong Kong Intellectual Property Department did not undertake any substantive examination at all.

The second set of contributions pertains to positioning and interrelationship. For China, a big question concerns the country's role in the regional and international intellectual property regimes. In its National Patent Development Strategy (2011–2020), SIPO set out a 2015 target of at least

two million patent applications for inventions, utility models and designs. Although this target seems highly ambitious – and, for many, mind-blowing – China had already surpassed this target by 2012. In 2016, China received close to 3.5 million patent applications – 1,338,503 for inventions, 1,475,977 for utility models and 650,344 for designs. The total of patents granted alone exceeded 1.75 million.

Another area that has received considerable attention is China's emergence as the world's most litigious jurisdiction in all three branches of intellectual property law. With over 12,000 patent lawsuits in 2016, as reported by the Supreme People's Court, China is now one of the world's preferred venues for patent litigation. That Chinese courts have attracted such a high litigation volume is ironic – and, for many, surprising – considering that foreign businesses continue to complain about the lack of rule of law and the underdevelopment of the judicial system in China. Such juxtaposition therefore leads one to wonder whether the significant increase in intellectual property lawsuits could eventually strengthen the country's overall protection and enforcement of intellectual property rights. The growing litigiousness has also sparked concerns about an unprecedented ligation explosion that will eventually backfire on foreign rights holders, making it more difficult to do business in China.

Like China, Hong Kong faces similar questions about positioning and interrelationship, but these questions are different. They are not about the jurisdiction's role in shaping intellectual property developments in the Asia-Pacific region or the world. Hong Kong is just too small a place to take on such a role. Instead, the questions are about the role this special administrative region can and will play in China in view of the country's exciting and fast-paced intellectual property developments. Will the new original grant patent system provide the much-needed boost to reposition Hong Kong vis-à-vis other provinces and municipalities in China? Or should this special administrative region turn to other niche areas, such as the establishment of a hub for intellectual property trading? Ultimately, what will be Hong Kong's intellectual property identity?

A related and oft-raised question concerns Hong Kong's relationship with the Guangdong Province. Such a relationship is important considering that many Hong Kong businesses have production plants and marketing outlets in the Pearl River Delta. With Huawei, Tencent and ZTE, the Guangdong province has also been home to many intellectual property–intensive businesses, especially in the area of telecommunications services and electronic goods.

Moreover, Guangzhou now has one of the three newly established specialized intellectual property courts, alongside Beijing and Shanghai. This court

has been explicitly empowered with cross-territorial jurisdiction over intellectual property cases in the Guangdong province. The province also constantly has to address difficult intellectual property challenges, including the notorious *shanzhai* (copycat) activities which critics have widely cited as illustrations of the continued inadequacy of intellectual property protection in China.

The last set of contributions captured in this book relate to divergence and discontent – or, to be more precise, the uneven distribution of the benefits derived from the intellectual property system. After all, this system does not provide the same benefits throughout the country or across the varying economic sectors. Compared with the first two sets of chapters, this final set is more subtle. Yet, these chapters are just as important, as they reveal a key policy dilemma confronting intellectual property policymakers in China and other parts of Asia.

It is nothing new to lament the uneven economic developments in China or its enormous gap between the rich and the poor. According to the National Bureau of Statistics, last year China had a Gini coefficient of 0.465, one of the highest in the world. Although economic inequality has received growing attention from policymakers and academic researchers both in China and abroad, inequality in the intellectual property context has been rarely explored.

Out of the three main branches of intellectual property law, the patent regime has been the most revealing about the highly uneven developments in China. Based on the 2016 SIPO figures on invention patents, Jiangsu, Guangdong and Anhui provinces – the provinces with the three largest volumes of applications – had a total of 184,632, 155,581 and 95,963, respectively. Meanwhile, Yunnan, Jilin and Gansu provinces had a total of only 7,907, 7,537 and 6,114, respectively. If one counts provinces and autonomous regions with fewer than 4,000 patent applications, such as Xinjiang, Inner Mongolia, Ningxia, Qinghai, Hainan and Tibet, the statistical contrasts will become even starker.

Like China, Hong Kong has experienced a similar – and arguably more longstanding – gap between the rich and the poor. Emblematic of economic Darwinism and generally reluctant to introduce policies to combat economic inequality, this former British colony has lately been filled with widespread citywide discontent, never-ending public protests and incessant political stonewalling.

Although similar disparity can be found in the intellectual property arena, such disparity is less about people than about economic sectors. To begin with, few individuals in Hong Kong can develop inventions out of their garages.

Garages are just too expensive for most local citizens to own. Furthermore, the patent system seems to have benefitted only a select group of industries, leading to the continuous debate about whether Hong Kong should continue to offer protection for short-term patents, which are granted without substantive examination. With the recent establishment of the new original grant patent system, it is therefore fair to question whether the new system will privilege certain industries at the expense of the others.

A related question about the differential impact of the intellectual property system concerns the ownership of patent-intensive industries. Are they based in Hong Kong, originated from China or merely subsidiaries of gigantic multinationals headquartered abroad? If the industries are located outside Hong Kong, should local policymakers start undertaking a deeper analysis on the costs and benefits of stronger intellectual property protection?

Policymakers frequently note, with little or no reflection, the need for stronger intellectual property protection to attract foreign investment. Yet, economists have repeatedly documented the ambiguous linkage between the two. The people in Hong Kong have also begun to realize the significant economic, social and cultural costs incurred by an out-of-balance intellectual property system, as shown in the recent protests against increased copyright protection in the digital environment.

Indeed, the concerns about striking an inappropriate balance were a primary cause for China's resistance to the external push for stronger intellectual property protection in the first place. The challenges confronting Hong Kong policymakers, to some extent, have brought us full circle to the historical debate on intellectual property law and policy in China.

Thus, when all of these three sets of chapters are taken together, this timely and important book has provided a rare window to examine the patent developments in both Mainland China and Hong Kong. Although the patent systems in these two jurisdictions are rarely discussed together – and even more rarely under the context of the 'one country, two patent systems' framework – the discussion in this volume has been highly insightful and especially instructive. By linking together the parallel developments of these two interrelated yet distinctive systems, this book has greatly enhanced our understanding of intellectual property developments in China.

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