

# 知識產權商品化 策動香港再工業化發展

*IP Commercialization  
A Boost for Hong Kong  
Re-Industrialization Strategy*





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## Introduction of Hong Kong Young Industrialists Council (HKYIC)

Hong Kong Young Industrialists Council (HKYIC) has commenced its establishment since 1989, and officially registered in 1992. Our members mainly include previous awardees of the annual "Young Industrialist Awards of Hong Kong" organized by Federation of Hong Kong Industries and conferred by the judging panel comprising of government officials, leaders from the industrial and commercial sectors and presidents of universities. Our members are in their prime of life, energetic young industrialists with certain financial and social influence.

### Characteristics of our members:

- Young, award-winning at the age of 45 or under;
- Entrepreneurs with sound business performance and management experience;
- Leaders of various Hong Kong industrial organizations;
- Patriotic, care for Hong Kong and our society.

HKYIC is committed to unite the young industrialists in the development of Hong Kong and China under the leadership of each president, and make great contribution to the economic prosperity on both sides. Thanks to the recognition and praises given by the industry, we are also being considered as a new force in the Hong Kong industrial and commercial sectors.

As of today, HKYIC has over 150 members. Our membership, reputation and potential for development continue to grow with new awardees of "Young Industrialist Awards of Hong Kong" every year.

All HKYIC members have investments in China. According to unofficial statistics, companies invested by our members in China primarily engaged in electronics, household appliances, machinery, plastics, metals, chemicals, textiles, apparels, jewelry, watches, glasses, toys, food, telecommunications, and information technology. The number of their employees in Hong Kong and Mainland China is estimated to be 1 million, with an annual gross product value over HK\$200 billion and covering more than 50 listed companies.



HKYIC is endeavoring to maintain a friendly relationship among the Hong Kong industrial and commercial sectors and integrate the strengths of these parties. Our members are also enthusiastic about social involvement, public welfare, and national affairs through actively participating in the social and charitable activities in China and Hong Kong, such as setting up schools and hospitals, providing rescue and relief work and alleviating poverty, which in turn helps to maintain the social stability in China and Hong Kong.

Looking forward, HKYIC will continue its efforts to promote the development of Hong Kong industries, strengthen economic and trade relations between Hong Kong, China, and other foreign countries, to sustain Hong Kong's economic prosperity.





## Message from the Chairman of Hong Kong Young Industrialists Council (HKYIC)

Hong Kong has all along been an important hub of international business and trading, in addition to being a financial centre. As times progress and economies change, Hong Kong needs to upgrade and restructure itself to bolster technological innovation and industrial development. This process of upgrading and restructuring is indispensable for Hong Kong to secure an even more prominent role in the global economy. An important means to achieving this goal, IP commercialisation helps enterprises transform their IP into valuable commercial products, thus propelling the process of upgrading and restructuring of industries along the way.

It is widely known that Hong Kong has always been keen on establishing itself as a regional IP trading centre to maintain close ties with the IP industry players from around the world. It also aspires to becoming the springboard of choice for Mainland enterprises with which they can promote their technologies and trademarks to overseas markets. In 2021, Asia already accounted for 73% of IP filing activity worldwide. More remarkably, Mainland China and Hong Kong were leading in terms of IP registration: their international patent applications accounted for more than 40% of the filing activity worldwide.

According to the Global Innovation Index 2022 published by the World Intellectual Property Organisation, the Shenzhen-Hong Kong-Guangzhou cluster was ranked second among the world's top-performing science and technology clusters for three consecutive years, highlighting the vibrancy of innovative activities in the Greater Bay Area. With State support for Hong Kong to develop into a regional IP trading centre as expressed in the 14th Five-Year Plan, the China National Intellectual Property Administration and the Commerce and Economic Development Bureau have agreed to extend the Co-operation Arrangement in the Area of Intellectual Property signed in June 2017 to June 2027. This will be conducive to deepening and promoting interaction and co-operation in the area of IP between both parties, paving the way for smoother development of the industry.

However, to achieve the goal of IP commercialisation, Hong Kong needs to lay the groundwork on multiple fronts, which includes strengthening IP protection and management, improving the capabilities and quality of personnel handling



patents, increasing the number of patent applications and licensing volume, expanding IP trade and co-operation, as well as further pooling the efforts of government, industry, academic and research sectors to nurture more talents for the technology and innovation sector. It is only by laying the groundwork on these fronts well can we genuinely achieve the goal of IP commercialisation, which will in turn foster the new industrialisation in Hong Kong.

Director of the Asia Global Institute at the University of Hong Kong, Prof. Heiwai TANG, commissioned by the Hong Kong Young Industrialist Council, has completed a report concluding comprehensive research on the subject area. This is a highly symbolic milestone for Hong Kong's efforts in promoting IP commercialisation, in addition to laying a solid foundation for Hong Kong realising the goal of industrial restructuring. We look forward to continued efforts by Hong Kong in the future in strengthening IP protection and management. These efforts will elevate the importance and influence of Hong Kong in terms of the global economy, in addition to making an even greater contribution to Hong Kong's economic development and societal advancement.

**Geoffrey Edward KAO**

Chairman

Hong Kong Young Industrialist Council

2023





## Asia Global Institute

Asia Global Institute is a multidisciplinary think tank co-established by The University of Hong Kong and the Fung Global Institute.

The institute's mission is to generate and disseminate research and ideas on global issues from Asian perspectives. It aims to inform global policy and actions towards a prosperous and sustainable future for all.

## Bio of Prof Tang

Heiwei Tang is Victor and William Fung Professor in Economics, Director of the Asia Global Institute at the University of Hong Kong (HKU). Prior to joining HKU, he was tenured Associate Professor of International Economics at the School of Advanced International Studies (SAIS) of Johns Hopkins University. He is also affiliated with the Center of Economic Studies and Ifo Institute (CESifo, Germany), the Kiel Institute for the World Economy (Germany) and the Globalization and Economic Policy Center (U.K.) as a research fellow. He has been a consultant to the World Bank, the International Finance Corporation, the United Nations, and the Asian Development Bank; and held visiting positions at the IMF, Stanford, MIT, and Harvard. He is currently Managing Editor of Pacific Economic Review, and Associate Editor of the Journal of International Economics, the Journal of Comparative Economics and the China Economic Review. Since 2021, he has served on a number of public and regulatory bodies in Hong Kong SAR, including a member of the Currency Board Sub-Committee of the Hong Kong Monetary Authority's Exchange Fund Advisory Committee, Industry Advisory Committee of the Insurance Authority, Securities and Futures Appeals Tribunal, and the Minimum Wage Commission, among others.

Heiwei holds a Ph.D. in economics from MIT and a Bachelor of Science in mathematics from UCLA. His research interests span a wide range of theoretical and empirical topics in international trade, with a specific focus on production networks, global value chains, and China. His research has been published in leading journals in economics, including American Economic Review and Journal of International Economics. His research and opinions have been covered by BBC, Bloomberg, China Daily, CNA, CNN, Financial Times, New York Times, Al Jazeera, Foreign Policy, South China Morning Post, and various think tanks such as the Brookings Institution and the Peterson Institute for International Economics.



## Executive Summary

The global intellectual property (IP) economy is booming. IP has been proven to generate enormous positive externalities to high-quality economic growth. IP-intensive industries not only significantly contribute to the gross domestic product (GDP) but also offer better employment. Along with the digital revolution, the Fourth Industrial Revolution, and the technology race, massive global demands for IP commercialization have emerged, and the focus of IP activity is also shifting to the booming Asia-Pacific region.

Hong Kong, supported by China's 14th Five-Year Plan, is racking its brain to become a regional IP trading centre and maintain its advanced status as a developed region. Since the positioning and development strategy has yet to be clear, some may ask: Does the so-called IP trading only involve IP derived from Hong Kong, or does it also include IP derived from overseas? What are the advantages and potential of Hong Kong to grasp the wave of IP commercialization and support the growth of innovation and technology?

To shed light on these questions, Hong Kong Young Industrialists Council (HKYIC) conducted the "IP Commercialization Study - Hong Kong" in 2022-2023 in collaboration with the Asia Global Institute (AGI) at the University of Hong Kong, aiming to extract insights from the policy practices in the United States, Singapore, and China, as well as the views of different stakeholders in Hong Kong.

Based on our research and individual interviews with over 20 experts in the IP ecosystem (ranging from creation, application, commercialization, trade, and related professional services), we have identified the common challenges in the process of IP commercialization, which covers almost all segments of the ecosystem, including legal framework and enforcement, valuation mechanism, transparency and dissemination of information, risk management, and incentivization of stakeholders.

The legal framework and enforcement aspects include harmonizing the differences in legal systems between jurisdictions, ensuring adequate protection of IP rights locally and overseas, facilitating the management and financing of IP, and exploring a cost-effective alternative dispute resolution mechanism. As part of the valuation mechanism, it is necessary to establish a general standard for IP valuation, set up a valuation team including technical and financial experts, ensure that valuations are comparable and verifiable across different regions, and reduce high valuation costs.

In terms of information flow, a transparent information-sharing framework and platform should be established to reduce transaction costs by ensuring information transparency and facilitating the connection between buyers and sellers. Regarding risk management, it is necessary to assess the risk of market volatility and technology obsolescence, as well as continuously monitor market changes to optimize the IP portfolio. Considering that the commercialization of IP could be costly, encouraging various stakeholders' participation through fiscal policies is also necessary.

China and the United States have different approaches to these challenges as the two largest economies in the world. In the United States, the commercialization of IP is mainly driven by the private market, while in China, it is often driven from the top down by the government.



In the United States, private platforms such as the IAM Market and the Industry Patent Purchase Program dominate the patent market. The major role of the United States government is to foster the right environment that encourages inventors, enterprises, and investors to participate in the business activities of IP.

As a rising star, China has vigorously promoted the commercialization of IP in recent years. In its Outline for Building an IP Power (2021-2035) issued in September 2021, the State Council of the People's Republic of China has made a top-level plan to set the working and development goals and require relevant subordinated departments to implement the policy according to actual situation.

Singapore's government has also pushed hard to commercialize IP, especially in encouraging listed companies in Singapore Exchange (SGX) to disclose intangible assets. In 2020, SGX launched the Intangible Disclosure Evaluation and Audit Scheme in partnership with the IP Office of Singapore (IPOS), providing financial support to companies to evaluate their intangible assets. Singapore's public consultation on the Intangibles Disclosure Framework has also been completed recently. It is projected that listed companies in Singapore are expected to disclose information about their intangible assets but may choose whether to disclose monetary value.

Looking at the experiences of the United States, China, and Singapore, our findings reveal that although the governments in the three countries have different strategies to address challenges relevant to the commercialization of IP, similar elements exist in their solution framework.

To foster a friendly ecosystem for IP commercialization, all three economies facilitate information transparency and IP trading by building efficient secondary markets. This includes the creation of the A\*STAR Collaborative Commerce Marketplace, the Innovation Marketplace by Innovation Partners Partner for Impact (Partner for Impact), Patents 4 Partnerships, functional platforms for IP, and others. They also enhance their legal framework by establishing specialized courts, updating laws and regulations, forming valuation standards, and encouraging mediation as a cost-effective alternative dispute resolution.

As registration, legal, valuation, financing, insurance, and other IP services or related products often involve high costs, it is common for governments to provide subsidies, tax breaks, or other cost-effective alternatives to stakeholders. Talent development and professional cultivation are also emphasized, whether through various programs offered and even subsidized by universities, industry-specific organizations, or governments. Lastly, the three economies have also actively engaged in international collaboration, such as forming Patent Prosecution Highway (PPH) arrangements, to reinforce their positions in the global IP landscape by enhancing mutual recognition of patents approved by patent offices in different jurisdictions and streamlining the approval processes.

It is necessary to note that the experiences of the three economies have their uniqueness and limitations. The thriving IP market in the United States is derived from its top-notch R&D capacities, financial system, and economic scale. The premise of the government-led approach in China is that the Chinese government can mobilize its enormous state-owned businesses to ensure policy implementation. There are obvious merits of letting private players to set up platforms and brokerage firms in the market. The downside could be that brokerage companies have incentives to command monopoly power by purchasing clusters of patents, reducing market competition among innovative firms and hence lowering innovation.



As for Singapore, its IP Financing Scheme (IPFS) was underused. Learning from the unsatisfactory outcome, the Singaporean government has launched the “Singapore IP Strategy 2030” to strengthen policy support for the ecosystem of IP commercialization in all aspects, aiming to consolidate Singapore’s position as a global IP hub and create quality jobs for Singaporeans.

In recent years, the HKSAR government has made significant efforts in promoting the commercialization of IP, including developing the “Original Grant Patent” system, amending the Copyright Ordinance, promoting the implementation of the Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks in Hong Kong, and introducing a “patent box” that provides tax concessions for profits sourced in Hong Kong from qualifying patents generated through R&D activities.

Even so, due to the fierce regional competition, Hong Kong’s progress in the commercialization of IP has yet to be satisfactory. It is still necessary to consider how to grow the pie more efficiently and mobilize stakeholders to build Hong Kong as a regional IP trading center.

Hong Kong has ample experience and high efficiency in the professional services industry, as well as the advantages of a sound legal system, a good business environment, and the strength of basic research and development. While learning from overseas experience, Hong Kong should also make use of its own strengths to explore a unique development path. This report ends with 8 specific policy recommendations for the HKSAR government to consider, based on our country case studies and individual interviews with over 20 stakeholders and experts in Hong Kong and Shanghai:

1. Supporting IP-Backed Financing
2. Lowering the Costs and Risks of IP Valuation
3. Establishing an Alliance with a Secretariate to Pool Resources
4. Strengthening Existing Legal and Regulatory Frameworks
5. Incentivizing Various Stakeholders in the IP Ecosystem
6. Building an IP Talent Pool
7. Joining and Building International Networks of IP Platforms
8. Government’s Purchasing IP in Advanced Industries



# 1. Introduction to IP Commercialization

Intellectual property (IP) encompasses the creations of the mind, including invention, literary and artistic work, design, symbols, names, and images used in commerce, as defined by the World Intellectual Property Organization (WIPO).<sup>1</sup> With effective protection, IP grants significant value to the owners or users of IP, which in turn fosters economic growth, by encouraging inventors to create and innovate, and sometimes transform their ideas into practical applications and commercialized products.

## 1.1 From Legal Right to Property

As a legal right, IP allows creators exclusive control over the use and exploitation of their creations for a designated period. For example, patents grant inventors exclusive rights to utilize, sell, or license their inventions for generally 20 years from the filing date of the application, while copyrights provide authors exclusive privileges to reproduce, distribute, and perform their works for a limited duration. As Abraham Lincoln famously remarked, “The patent system adds the fuel of interest to the fire of genius.” By granting inventors exclusive rights for a limited time, they are able to profit from their creations and remain motivated to continue innovating and refining their work. This ultimately leads to increased innovation, economic growth, and overall societal progress.

With the development of IP, it is not only a legal right but also a form of intangible property that can offer a range of benefits to its holders. As with any property, IP can be bought, sold, licensed, transferred, and used as collateral. This opens a new avenue for commercialization and allows holders to extract value from their creations, resulting in significant economic benefits for individual creators and society.

On the one hand, inventors and creators can receive profits from their creations and secure financing by using IP as collateral. They can use the funds raised to reinvest in research and development (R&D) and further commercialize their creation for bigger profits. On the other hand, cross-sector collaboration in various industries eliminates the need for companies to reinvent the wheel. It allows them to develop innovative products and services based on existing IPs. Additionally, the diffusion of IP can help spread knowledge and innovation across various industries and facilitate the adoption of innovative technologies. In section 2, this report will further elaborate on the economic significance of IP commercialization.

## 1.2 Focus on Patent

There are many types of IP, including patents, trademarks, industrial designs, geographical indications, copyrights, and trade secrets. This report will focus mostly on the commercialization of patents and discuss trademarks and copyrights briefly, given their relative importance for Hong Kong. There are at least three reasons why we focus on patents:

<sup>1</sup> WIPO. What is Intellectual Property?, <https://www.wipo.int/about-ip/en/>



1. Effective evaluation and protection of patents will incentivize firms' and individuals' innovation and technology, and thus are highly related to Hong Kong's transformation into an international innovation and technology hub with new advanced industries. Patent commercialization is crucial in driving not only innovation in Hong Kong's technology and manufacturing sectors, but also the development of various professional service activities, such as financing for intangible assets, patent valuation, insurance, legal services, and brokering services. The development of the ecosystem shall result in more inclusive economic, productivity growth, and good job growth.
2. As an international financial market, Hong Kong's successful development as a regional IP trading center will facilitate the region's, in particular Mainland China's R&D. In particular, effective pricing and valuation of patents will raise the incentives for innovators to innovate and protect their values, which will in turn raise the demand for better IP protection institutions and enforcement. The professional service providers will also benefit from the development of a market with more active trading of IP.
3. Though the business models for monetizing other forms of IP (e.g., trademarks) are relatively better established in Hong Kong, patent owners, particularly those of small and medium-sized enterprises (SMEs), often find it difficult to profit from their intangible property because of the lack of necessary information and expertise to deal with the complex patent application and trading processes. Focusing on patent commercialization can help patent owners in Hong Kong unlock the potential of their IP, which in turn drives innovation and economic growth.

That said, we will discuss trademarks and copyrights briefly, given their relative importance for Hong Kong.

## 1.3 IP Commercialization: Fundamentals, Benefits, and Challenges

As mentioned, IP plays a crucial role in economic growth, and commercialization can maximize its effect. The subsequent sections will briefly introduce IP commercialization and discuss its benefits and challenges.

### 1.3.1 Types of IP Commercialization

Let us first define IP commercialization. There are four common types of activities regarding IP commercialization: assignment, licensing, joint ventures, and financing of IP.

#### Assignment

The assignment refers to the transfer of ownership of IP rights from one party to another in exchange for compensation. This approach enables IP owners to capitalize on the potential value of their IP assets and receive immediate cash flows, particularly when they lack the necessary capability or resources to market their IP assets. However, this approach requires an effective IP trading platform.



## Licensing

Licensing enables IP owners to allow others to use their IP in exchange for a fee or royalty. This approach allows licensors to retain ownership of their IP and earn royalties while licensees benefit from reduced risk and investment in R&D. However, licensing also poses challenges, such as trade secret leaks and increased competition.

## Joint Ventures

Joint ventures are collaborative business alliances in which two or more parties bring their IP assets and other resources to the table to achieve a goal while sharing risks. This approach allows companies (venturers) to leverage and share their IP assets to lower the cost of investment. However, forming joint ventures often come with potential challenges, such as the possibility of imbalanced contributions from different partners and tension arising from different management cultures.

## IP Financing

IP financing enables IP owners to utilize their IP assets as collateral for a loan or investment. This approach provides the necessary funding for firms to support their investment in innovation, especially if the principal value of an enterprise is often based on intangible assets. Moreover, IP financing can be a viable alternative to equity financing for start-up companies seeking to expand their business while retaining control over the firm. However, IP financing also poses challenges, such as the need for a complete ecosystem to support it, including legal systems, banks, financial institutions, and patent valuation. Additionally, IP financing can be risky for lenders due to the unpredictable nature of IP and its associated value. Therefore, developing comprehensive legal frameworks and valuation mechanisms for IP financing is essential to minimize the associated risks and ensure its effectiveness as a financing tool.

### 1.3.2 Benefits for Stakeholders

A mature IP commercialization market can benefit various stakeholders:

#### R&D Communities

R&D communities, such as research institutes and universities, are the fountainhead of new technologies. IP commercialization enables R&D communities to monetize their research achievement more effectively. In a well-developed ecosystem for IP commercialization, R&D communities are usually vibrant and have a close collaborative relationship with enterprises as the payoff is accessible.

The benefits of developing an ecosystem to commercialize basic science research in Hong Kong are significant, given its competitive advantage in academic research. Of note, according to the QS ranking in 2023<sup>2</sup>, 5 universities in Hong Kong were ranked top

<sup>2</sup> Quacquarelli Symonds Limited (2023) QS World University Rankings 2023: Top global universities, <https://www.topuniversities.com/university-rankings/world-university-rankings/2023>



65 in the world.<sup>3</sup> With a more mature IP ecosystem to commercialize scientific discovery into products and services, Hong Kong can better support its innovation and economic growth.

### Industrial Enterprises

Industrial enterprises typically require significant R&D and innovative activities to stay competitive. However, limited financial and human resources often pose challenges for these enterprises. To overcome these constraints, IP commercialization can benefit industrial enterprises in various ways. For instance, patent licensing and assignment transactions enable collaboration between companies, contributing to technological progress and concurrently helping reduce redundant R&D efforts. It also enables enterprises to access new technology without costly investments in R&D, as companies can access cutting-edge technologies through licensing or acquiring patents, which offer a faster time-to-market improvement in competitiveness.

Furthermore, patents can be used as collateral to secure financing for companies, especially for SMEs that lack traditional tangible assets. Letting intangible assets to be used as collateral enables companies to scale up their operation and investment, which in turn drives their expansion.

As Hong Kong is boosting the development of innovation and technology, together with new industrialization, building an effective IP market can generate synergy and benefit the growth of industrial enterprises.

### Third-party Professionals

Developing robust IP commercialization can also create opportunities for various professionals, including lawyers, patent agents, consultants, and valuation experts. For example, as more companies seek to protect and monetize their IP assets, there may be an increased demand for legal services and patent agents to help them with patent registration and enforcement. Similarly, as the market for IP transactions grows, there will be increased demand for consultants and valuation experts to provide guidance on IP valuation and transactions.

With robust finance and legal infrastructure, Hong Kong is well-suited for developing advanced IP commercialization. The emergence of digital platforms and technologies further facilitates information dissemination, negotiation, and transactions in the IP market. By leveraging these advantages, Hong Kong can continue to position itself as a hub for IP transactions in the Asia-Pacific region and create a dynamic IP commercialization ecosystem that benefits experts working in various professional service sectors.

<sup>3</sup> The five universities include The University of Hong Kong, The Chinese University of Hong Kong, The Hong Kong University of Science and Technology, City University of Hong Kong, and The Hong Kong Polytechnic University.



### 1.3.3 Challenges in Building IP Commercialization Ecosystems

Generally, five common challenges exist in developing a robust and effective IP commercialization ecosystem in most countries, despite the differences in their institutions and market development.

#### Legal Framework and Law Enforcement

The legal framework is an essential component of an effective IP commercialization ecosystem. Protecting and enforcing IP rights will be difficult in the absence of a well-established and neutral legal system. A clear and consistent legal framework can also help mitigate potential ambiguity and minimize uncertainty within the industry.

A challenge to establishing a reliable legal framework for IP is the lack of harmonization of IP laws across different jurisdictions, resulting in complexity and ambiguity for IP commercialization. Besides, different legal systems may have different approaches to IP protection, leading to inconsistency in legal interpretation and enforcement. Additionally, the lack of clarity in some areas of IP laws, such as software or biotech patents, creates uncertainty for stakeholders and can hinder the commercialization of IP assets.

Another challenge is the enforcement of IP rights, particularly in emerging market economies. In some nations, IP rights are not adequately protected due to weak enforcement mechanisms, leading to widespread infringement and piracy. Such situations not only affect the value of IP assets but also undermine the confidence of investors and stakeholders in the IP commercialization ecosystem. Furthermore, a predictable environment is essential for incentivizing companies to invest in their IP portfolios.

It is also essential to establish a robust legal framework and specialized IP courts or alternative dispute resolution mechanisms for IP protection and commercialization. It requires collaboration between stakeholders, including governments, legal experts, and industry players, to develop standardized approaches to IP laws and regulations. It also involves providing the necessary resources for law enforcement and capability building, such as training for law enforcement officials and investment in legal infrastructure for IP protection.

#### Credible Valuation

Commercialization of IP assets requires a credible valuation framework. An accurate valuation is necessary to determine fair prices, particularly when patents are used as collateral for financing. However, valuing intangible assets can be expensive and challenging due to their uniqueness and context-specific nature.

Technical experts are essential in patent evaluation since assessing a patent's value requires specialized technical knowledge. However, the cost of their services can be a significant hurdle, especially for small inventors and startups. Without the guidance of technical experts, patent evaluation is prone to errors, and the process



of patent commercialization will be impeded. Therefore, to create a more friendly IP commercialization ecosystem, it is crucial for governments to offer reduced-cost patent evaluation services with partners, such as commerce chambers, making it easier for small inventors and startups to secure patent protection and bring their innovations to market.

In addition to the technical experts needed for patent valuation, third-party valuation is also important, given the cross-border nature of IP transactions. With the need to ensure the comparability and verification of IP valuation from different countries, the valuation process should be consistent and interoperable across different jurisdictions. All parties involved during the valuation process, including buyers, sellers, licensors, licensees, and lenders, should maintain neutrality and transparency.

The lack of a universally accepted methodology for valuing IP also challenges the comparability and verification of valuations from different jurisdictions, creating uncertainty in the industry and hindering the growth of IP transactions across borders. Moreover, various methodologies can be used to determine the value of IP assets. The choice of methodologies can significantly impact the final valuation, creating opportunities for manipulation or misrepresentation of valuation results, particularly in situations where there may be conflicts of interest, such as in-house evaluators representing the interests of their employer, or external evaluators who may have financial ties to one of the parties involved.

In such a context, there have been efforts to develop standardized valuation methodologies and guidelines for IP valuation. For example, the International Valuation Standards Council (IVSC) has developed a set of standards for the valuation of intangible assets, including IP. These standards are designed to promote consistency and transparency in valuation practices and can be used by valuation practitioners and other stakeholders as a benchmark for best practices. However, while standardization can help promote transparency and comparability, it is still essential to recognize that different IP assets may require different valuation approaches depending on their unique characteristics and context. Therefore, balancing standardization and flexibility in IP valuation practices is another challenge.

### **Transparency and Dissemination of Information**

Buyers and lenders need accurate information to make informed investment decisions, while sellers and owners require assurance that their intellectual property is traded at a fair value. Thus, building an efficient IP market requires an effective transaction platform and information-sharing framework that is widely recognized, integrated, and accessible for IP financing. However, ensuring that the platform and framework meet these requirements while protecting IP owners' interests, such as privacy, can be challenging.



The common practice is to develop a trusted intermediary that bridges the relationship between buyers and sellers to facilitate information dissemination and IP transactions. Such intermediaries can also reduce fraud risks and facilitate market operations with standardized IP valuation and transaction procedures.

### Risk Management

Technology obsolescence, infringement, and market risks are some associated risks for IP commercialization, and it is crucial to manage them effectively. Regarding the risk of technology obsolescence, it is necessary to develop a technology roadmap that helps identify the potential threats to the value of the IP asset and makes timely adjustments. A risk management strategy should also include continuously monitoring and updating the IP portfolio to ensure its adaptability in a rapidly changing market.

Infringement risk can be managed through proper due diligence and risk assessment before acquiring or licensing any IP asset. Conducting a thorough search for potential infringement and monitoring the market for potential violations can minimize the risk of infringement. It is also essential to have a well-defined IP enforcement strategy protecting the IP asset from unauthorized use.

Market risk can also be managed by conducting a thorough market analysis before IP investment and trade. Understanding the demand and supply dynamics of the market for a specific IP asset helps mitigate the risk of market volatility. Diversifying the IP portfolio can also help spread the risk and reduce the impact of market fluctuations.

### Incentivization of Stakeholders

Developing and commercializing IP incur substantial costs, particularly in R&D, as it may necessitate significant investment in personnel, equipment, and materials. Additionally, marketing and distribution expenses can also be substantial.

Besides, uncertainty about potential returns on investment can discourage stakeholders from committing significant resources to IP commercialization, owing to factors such as unpredictable market demand, unexpected competition, or possibilities of infringement. Predicting demand or market performance for a new product similar to an existing one can take time and effort, making it difficult for stakeholders to justify the investment required for IP commercialization.

Incentive policies, such as funding and tax credits or deductions, are commonly used to motivate stakeholders to participate in IP commercialization. It is common for the government to provide grant programs and training programs to IP owners and SMEs for capacity building. Many governments also offer tax deductions to companies with R&D investment or IP trading. These policies are believed to effectively reduce the cost of IP commercialization and encourage innovation.



## 1.4 Preview

We have given a brief introduction to IP commercialization. To provide valuable insights for Hong Kong's reference, in the following sections, we will outline the global trend and economic benefits of IP commercialization and examine how the United States, Singapore, and China develop their IP markets and respond to the corresponding challenges.

Our case studies will discuss the mature IP markets of the United States and the important role played by the United States Patent and Trademark Office (USPTO) in ensuring transparency and fair competition. We will also delve into how Singapore pursues becoming a leading global IP hub through a strong government-led approach, as well as the lessons learned from its endeavors. Additionally, studying China is essential due to its growing influence on the global stage. We will shed light on China's substantial efforts to promote IP commercialization, as well as the significant challenges it faces.

In the last section, we will reveal the main insights from interviewing experts from different segments of the IP ecosystem in Hong Kong. We asked them to share with us their views about the current challenges and future opportunities for Hong Kong to potentially become a regional IP trading center.

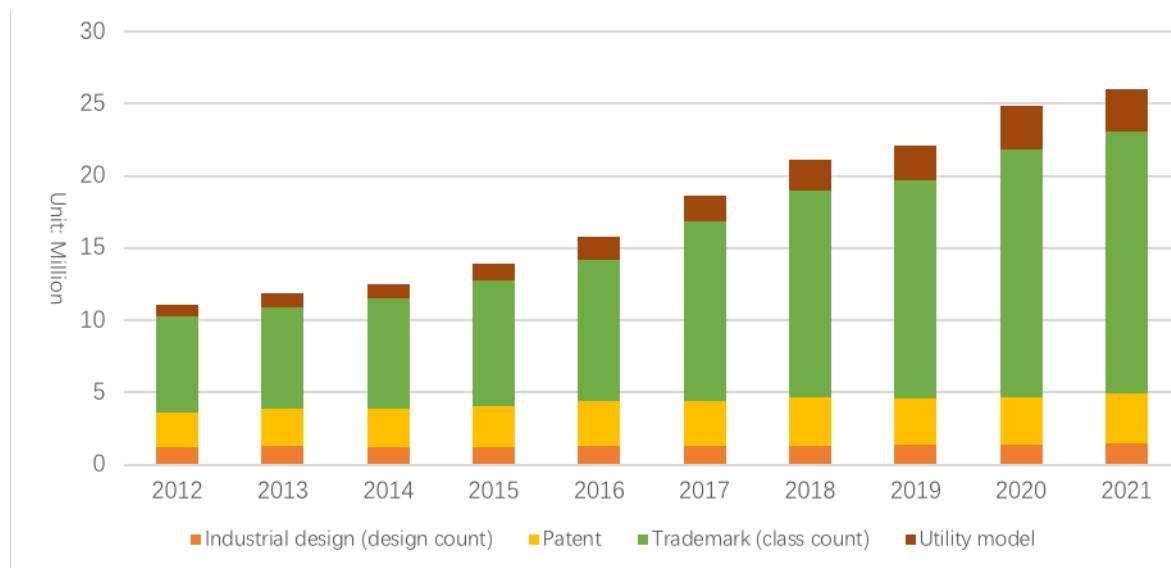


## 2. IP Commercialization: Global Trend and Economic Benefits

### 2.1 The Boom of the Global IP Economy

In the era of a knowledge-based economy, the significance of IP has been widely recognized. As Figure 1 shows, the total application of IP worldwide has witnessed a remarkable increase over the last decade, from 11 million applications in 2012 to 26 million applications in 2021.

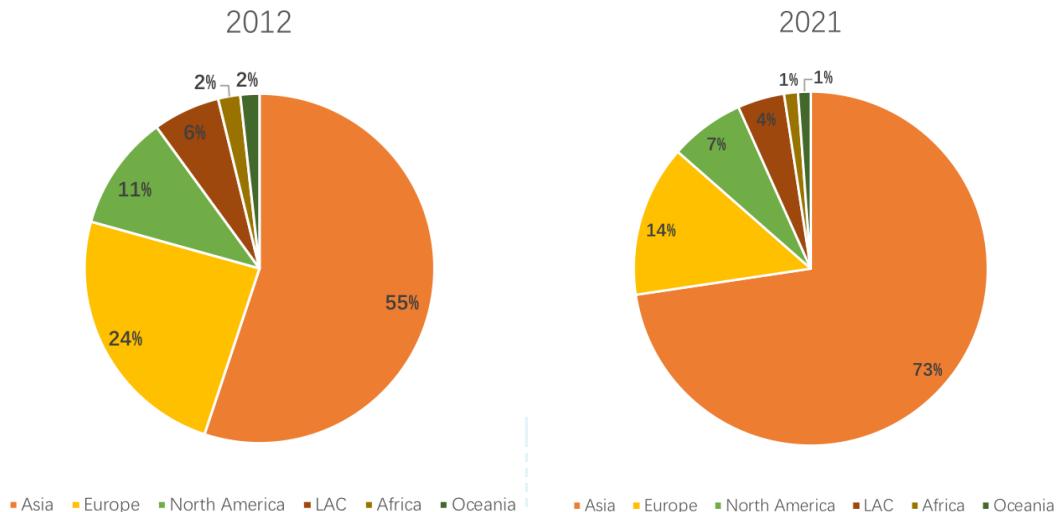
**Figure 1: Total IP Applications in the World, By Types (2012-2021)**



Data Source: WIPO statistics database (Last updated: February 2023). <https://www3.wipo.int/ipstats/keysearch.htm?keyId=201>

Another phenomenon is that with the rapid economic growth in Asia, Asia's demand for IP continues to rise, and its dominant position in the quantity of IP applications has been consolidated. Figure 2 shows that Asia occupied 73% of total IP applications worldwide in 2021, rising from 55% in 2012.

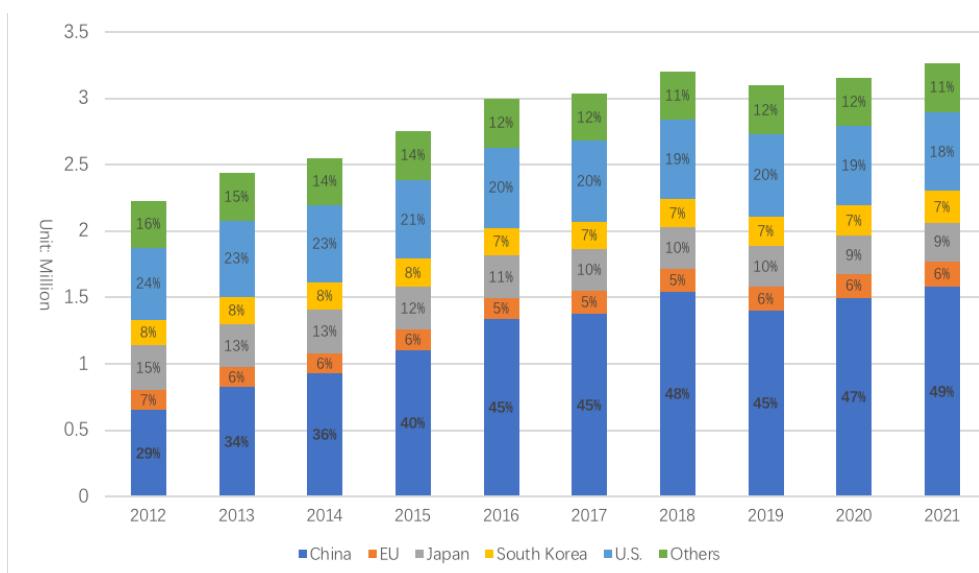
**Figure 2: Total IP Applications in the World, By Regions (2012 & 2021)**





Regarding patents, the type of IP we focus on in this report. Its applications have significantly increased over the last decade, and China has played a dominant role in this trend. As shown in Figure 3, the total number of patent applications for the top 20 IP offices has risen from 2.23 million in 2012 to 3.27 million in 2021, with China's proportion reaching 49% in 2021 compared to 18% for the United States and even lower ratios for other regions.

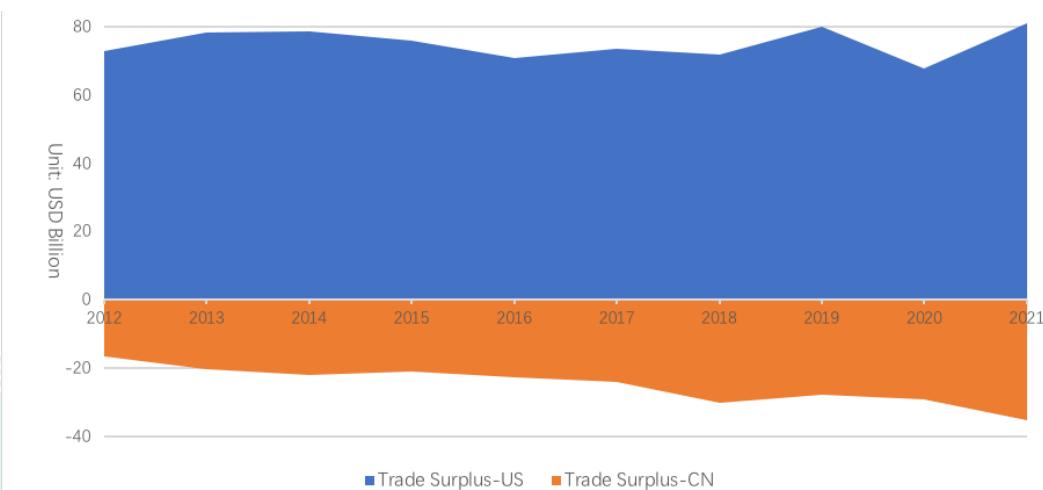
**Figure 3: Patent Applications for the Top 20 IP Offices (2012-2021)**



Data Source: WIPO statistics database (Last updated: February 2023). <https://www3.wipo.int/ipstats/keysearch.htm?keyId=221>

Interestingly, although the United States seems not to perform well in terms of the number of IP applications, it had an excellent performance in international IP trade, indicating that the United States's IP values may be relatively high. Figure 4 shows that the United States maintained over USD 70 billion in trade surplus from 2012 to 2021, while China witnessed IP trade deficits during the same period.

**Figure 4: IP Trade Surplus, United States & China (2012-2021)**

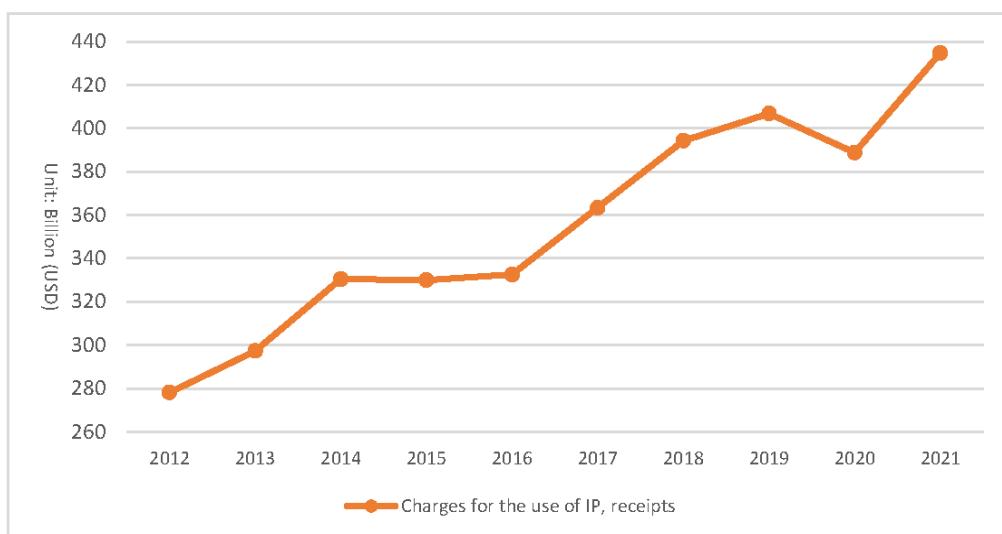


Data Source: The World Bank, Charges for the use of intellectual property, receipts & payments <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD?end=2021&start=2012> & <https://data.worldbank.org/indicator/BM.GSR.ROYL.CD?end=2021&start=2012>



Apart from the boom of IP applications, the international trade of IP is also becoming more and more frequent. Figure 5 shows that the global IP trade increased from 278 billion in 2012 to 435 billion in 2021.

**Figure 5: The total value of global IP trade, 2012-2021**



Data Source: The World Bank, Charges for the use of intellectual property, receipts (BoP, current US \$) <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD?end=2021&start=2012>

## 2.2 Economic Significance

The economic significance of IP commercialization has been demonstrated. According to the United States Patent and Trademark Office (2022)<sup>4</sup>, in 2019, IP-intensive industries in the United States accounted for 41% of domestic economic output and 44% of all United States employment. Similarly, the European Patent Office and the European Union Intellectual Property Office (2022)<sup>5</sup> found that Intellectual Property Rights (IPR) intensive industries were responsible for 39.4% of all employment in the EU, both directly and indirectly, during 2017-2019. Over the same period, IPR-intensive industries generated more than 47% of the EU's Gross Domestic Product (GDP) and accounted for over 80% of external trade, generating a trade surplus of € 224 billion. In addition, IPR-intensive industries accounted for over 75% of intra-EU trade. The evidence above showed that IP commercialization had been an indispensable element of an advanced economy.

<sup>4</sup> United States Patent and Trademark Office (2022) *Intellectual property and the United States economy: Third edition*. <https://www.uspto.gov/sites/default/files/documents/uspto-ip-us-economy-third-edition.pdf>

<sup>5</sup> The European Patent Office and the European Union Intellectual Property Office (2022) *IPR-intensive industries and economic performance in the European Union, industry-level analysis report, fourth edition*. [https://eipo.europa.eu/tunnel-web/secure/webdav/guest/document\\_library/observatory/documents/reports/IPR-intensive\\_industries\\_and\\_economic\\_in\\_EU\\_2022/2022\\_IPR\\_Intensive\\_Industries\\_FullR\\_en.pdf](https://eipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/reports/IPR-intensive_industries_and_economic_in_EU_2022/2022_IPR_Intensive_Industries_FullR_en.pdf)



Besides, the growing economic significance of patent-intensive industries has been presented in China. According to the China National Intellectual Property Administration (2023)<sup>6</sup>, the added value of patent-intensive industries in China rose from CNY 10.7 trillion and 11.6% of GDP in 2018 to CNY 14.3 trillion and 12.44% of GDP in 2021. It also created 48.70 million employments in 2021, occupying 6.52% of total employment, higher than 6.18% in 2018. In the same year, the seven major patent-intensive industries, such as Pharmaceutical and medical, information and communications technology (ICT) manufacturing, achieved a respective growth rate of 12.5% - 40.9%, which strongly supports high-quality economic development.

## 2.3 High-Quality Job Creation

The benefit of IP commercialization in creating good jobs has been proven in some regions. In the United States, the average weekly earnings for workers in IP-intensive industries was USD 1,517 in 2019, 60% higher than USD 947 for non-IP-intensive industries.<sup>7</sup> A similar figure happened in the EU, in which the average weekly personnel cost in IPR-intensive industries was EUR 840 during 2017-2019, 40.7% higher than EUR 597 for non-IPR-intensive industries.<sup>8</sup> In China, the workers in patent-intensive industries earned CNY 1.16 hundred thousand annually in 2021, 10.2% higher than those in non-patent-intensive industries.<sup>9</sup>

## 2.4 The Direction of Innovation

In the last year, WIPO published a report named The Direction of Innovation, illustrating that the COVID-19 pandemic, climate change, and the digital revolution have emerged as significant drivers of scientific and technological advancements. Along with the booming of digital technologies in patenting activities, the Fourth Industrial Revolution has happened, in which digital general-purpose technologies are expected to widely apply in industrial upgrades, and data will fully drive the global economy. Another opportunity is green technology, given that the global demand for fighting climate change has become immense. However, the insufficient provision of clean technology emerges because its growth has stagnated since 2012. Therefore, it is projected that policy measures and public funding will increasingly invest in this technology field.

<sup>6</sup> The China National Intellectual Property Administration (2023) *The added value of China's patent-intensive industries accounted for 12.44% of GDP in 2021 (In Chinese)*. [https://www.cnipa.gov.cn/module/download/down.jsp?i\\_ID=183178&colID=88](https://www.cnipa.gov.cn/module/download/down.jsp?i_ID=183178&colID=88)

<sup>7</sup> United States Patent and Trademark Office (2022) *Intellectual property and the United States economy: Third edition*. <https://www.uspto.gov/sites/default/files/documents/uspto-ip-us-economy-third-edition.pdf>

<sup>8</sup> The European Patent Office and the European Union Intellectual Property Office (2022) *IPR-intensive industries and economic performance in the European Union, industry-level analysis report, fourth edition*. [https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document\\_library/observatory/documents/reports/IPR-intensive\\_industries\\_and\\_economic\\_in\\_EU\\_2022/2022\\_IPR\\_Intensive\\_Industries\\_FullR\\_en.pdf](https://euipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/reports/IPR-intensive_industries_and_economic_in_EU_2022/2022_IPR_Intensive_Industries_FullR_en.pdf)

<sup>9</sup> The China National Intellectual Property Administration (2023) *The added value of China's patent-intensive industries accounted for 12.44% of GDP in 2021 (In Chinese)*. [https://www.cnipa.gov.cn/module/download/down.jsp?i\\_ID=183178&colID=88](https://www.cnipa.gov.cn/module/download/down.jsp?i_ID=183178&colID=88)

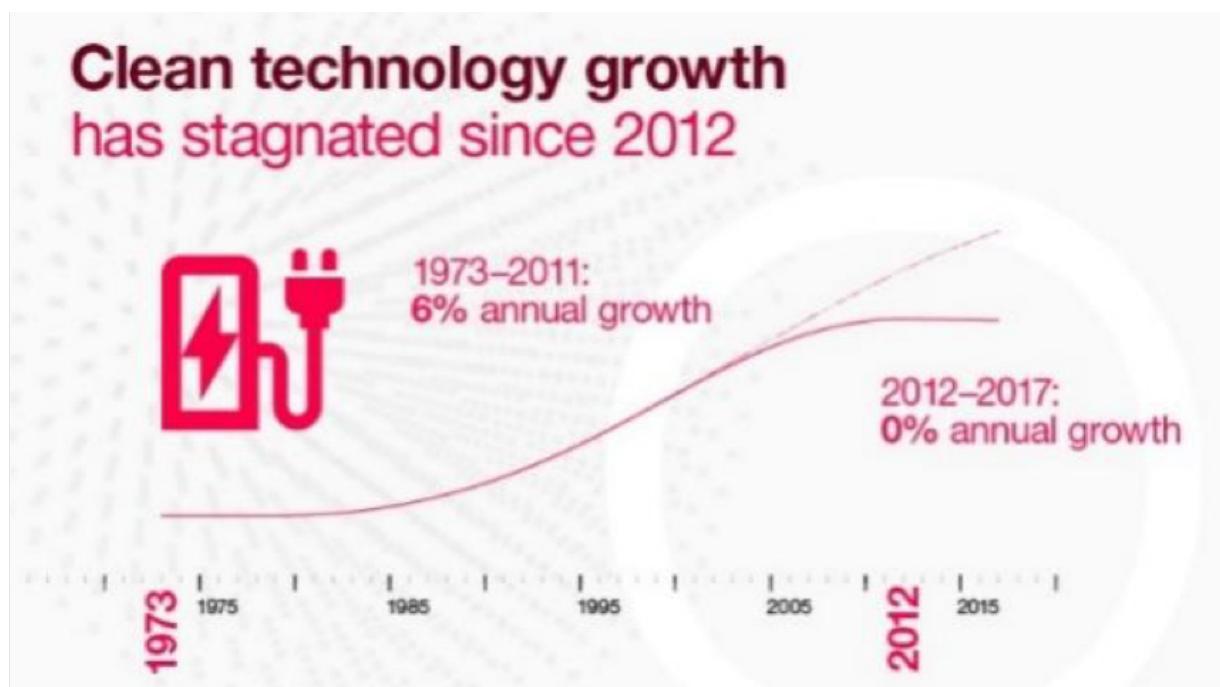


**Figure 6: Fast-growing digital technologies**



Noted: This Figure has been sourced from WIPO (2022) World IP Report 2022: The Direction of Innovation. Retrieved from <https://www.wipo.int/wipr/en/2022/index.html>

**Figure 7: Clean technology growth has stagnated since 2012**



Noted: This Figure has been sourced from WIPO (2022) World IP Report 2022: The Direction of Innovation. Retrieved from <https://www.wipo.int/wipr/en/2022/index.html>



### 3. IP Commercialization, Perspectives from the United States

#### 3.1 Introduction

The United States, distinguished by its robust innovation ecosystem and technological advancements, adopts a distinct approach to IP commercialization, as compared to countries like China and Singapore. While China focuses on nurturing high-tech enterprises and SMEs to meet the financing needs of innovative technologies and achieve high-quality economic growth, while Singapore aims to maintain its position as a global IP hub and trade center, the United States has its own unique priorities.

In the United States, leveraging intellectual property plays a pivotal role in driving economic growth, fostering innovation, and supporting domestic industries. While the United States Patent and Trademark Office (USPTO) assumes a central role in patent registration and dispute resolution, the development of IP financing models in the United States is primarily market-driven, differentiating it from China's or Singapore's more top-down models. The United States government actively encourages the private sector to participate and invest in IP financing, creating an environment conducive to attracting funding for groundbreaking ventures and stimulating entrepreneurial activity.

This section of the report provides a comprehensive overview of IP development in the United States, examining the strategies, policies, and initiatives that facilitate IP commercialization. By delving into the dynamics of the American landscape and analyzing the country's approach to addressing the challenges associated with IP commercialization, valuable insights can be gained into how the United States leverages intellectual property to foster innovation, drive economic growth, and maintain a competitive edge on the global stage.

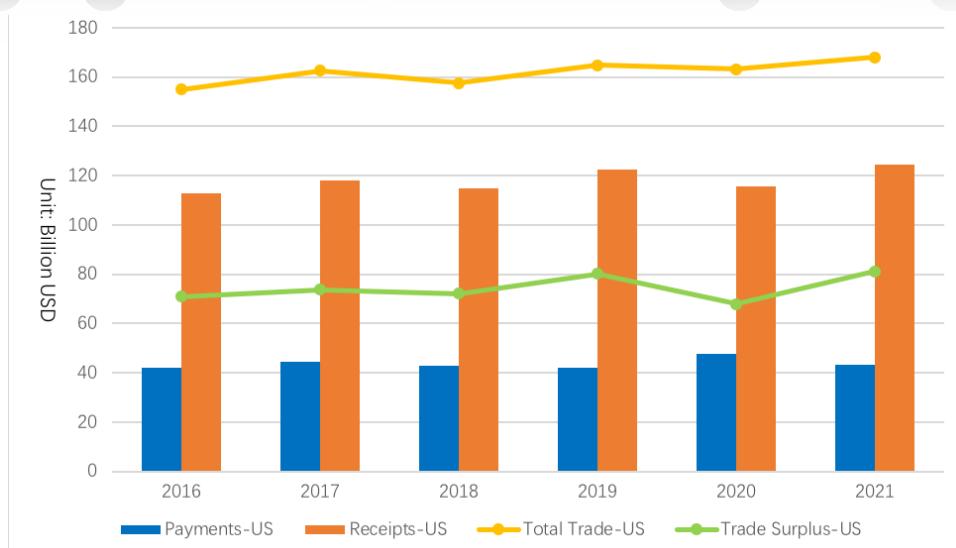
#### Massive Total Trade Volume and Trade Surplus

The trade statistics for the United States from 2016 to 2021 reveal the United States maintains a significant total trade volume and consistently generates a trade surplus. The total trade volume, which encompasses the combined value of payments and receipts, exhibited a range from USD 154.96 billion in 2016 to USD 167.96 billion in 2021. Likewise, the surplus of receipts over payments spanning from USD 67.85 billion in 2020 to USD 81.27 billion in 2021. These findings provide valuable insights into the trade performance of the United States and demonstrate its dominant position in global IP trade.





**Figure 8: Charges for the use of IP, receipts & payments, United States (2016-2021)**



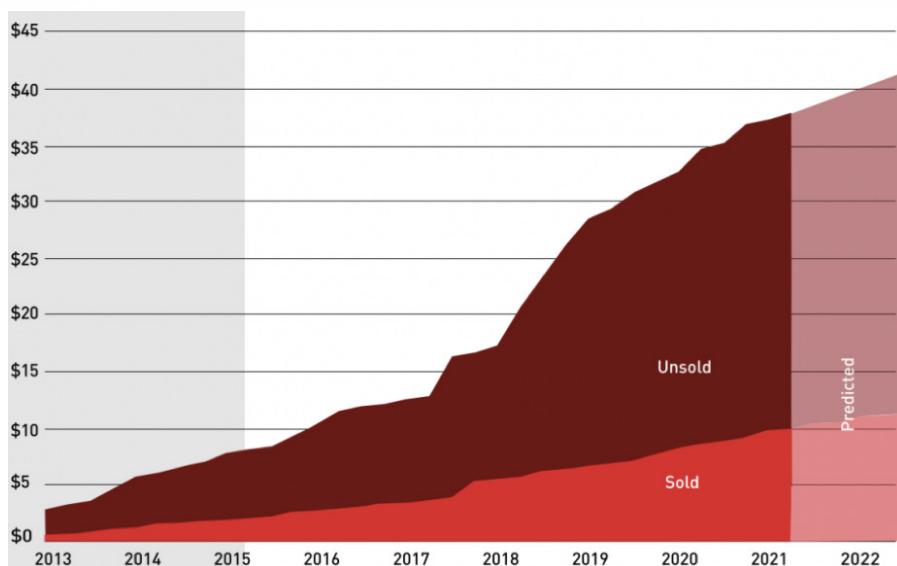
Data Source: The World Bank, Charges for the use of intellectual property, receipts & payments (BoP, current US\$), <https://data.worldbank.org/indicator/BM.GSR.ROYL.CD> & <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD>

### Growing Patent Market Size in the United States

The market for patent buying and selling is comprehensive and active, representing a significant component of intellectual property transactions. It is worth noting that a wide selection of assets has been successfully transacted. Figure 9 presents a visual representation of the growth of the patent market in the United States, displaying both the initial asking price set by sellers and the actual sold price. As of 2021, the total asking price for patents and patent portfolios on the market amounted to approximately \$38 billion, with over \$10 billion in sales identified. This highlights the robust nature of the United States patent market and underscores its significant value in patent applications and transactions in the innovation-driven economy. These findings further emphasize the market's pivotal role in fostering innovation and driving commercialization in the United States



**Figure 9: Cumulative sum of asking prices - brokered and tracked private market in the United States (\$ billion)**



Note: The figure is made by Richardson Oliver<sup>10</sup>(2022) based on the patent assignment records published by the United States Patent and Trademark Office (USPTO).

## 3.2 Market Formation

### 3.2.1 The Importance of Broker Market

Over the past decade, there has been a consistent shift in the patent market of the United States from quasi-public or broker-assisted deals to private transactions, signaling the maturation of the market and the increasing capabilities of in-house teams to handle their own deals. This transition highlights the growing expertise within organizations to manage and market patent transactions internally. Nonetheless, it is crucial to recognize the ongoing importance of brokers in facilitating transactions, particularly for buyers and sellers who lack internal corporate processes specialized in managing and marketing such deals. Brokers bring essential skills to the table, including their experience in identifying valuable assets, effectively setting expectations for both buyers and sellers, and demonstrating sales acumen. Their expertise and knowledge play a critical role in navigating the intricate landscape of the patent market and maximizing the value of these transactions for all involved parties.

Brokers utilize their extensive networks and connections to consistently source a wide range of patents for sale from various sellers, ensuring a diverse selection for buyers. They excel at aligning the expectations of both parties, which is often a challenging aspect of completing successful deals. Without the skills provided by brokers, many patent packages would remain overlooked and ultimately fail to receive attention. Over the past decade, brokers have adapted to the changing marketplace by diversifying their services. They now offer licensing options that were previously unimaginable for many

<sup>10</sup> Richardson Oliver (2022) The 2021 Brokered Patent Market. <https://www.richardsonoliver.com/publications/the-2021-brokered-patent-market>

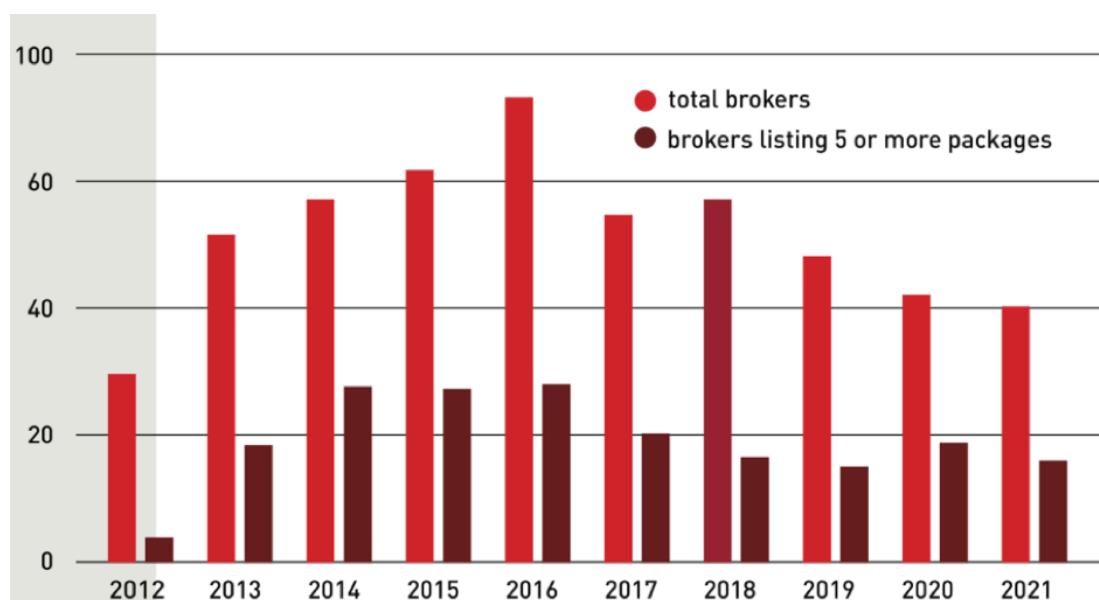


buyers a few years back. Brokers operate through multiple channels that were non-existent ten years ago, such as fixed-price patent auction programs, and they also assist in private transactions that are not available to the general buyer market. As the market continues to evolve and grow in complexity, brokers generally possess the adaptability required to navigate these changes successfully. However, it should be noted that not all brokers can endure and thrive amidst these transformations. The ability to adapt and stay abreast of market dynamics is paramount for brokers in this dynamic industry.

### Brokers Listing Package

In the dynamic landscape of the US patent market, the broker market has witnessed notable trends and shifts over the past decade. According to Oliver (2022), the total number of brokers engaging in patent package listings has displayed variability, reaching a peak in 2016 and subsequently experiencing a continuous decline from 2018 to 2021 (see Figure 10). Furthermore, it is important to note that the number of brokers listing five or more packages has exhibited fluctuations over time. In 2016, the number of brokers stood at 28. However, there has been a significant decline in this figure by 2021. This sharp drop highlights the changing landscape of the broker market and suggests a shift in the strategies and preferences of market participants. Understanding these variations provides valuable insights into the evolving dynamics of the patent industry and the role played by brokers in facilitating transactions.

**Figure 10: Numbers of brokers listing packages**



Note: The figure is made by Richardson Oliver<sup>11</sup>(2022) based on the patent assignment records published by the United States Patent and Trademark Office (USPTO).

<sup>11</sup> Richardson Oliver (2022) The 2021 Brokered Patent Market. <https://www.richardsonoliver.com/publications/the-2021-brokered-patent-market>



### 3.2.2 Two Innovative Approaches by the Private Sector

The patent market has witnessed notable disruptions due to the introduction of two major platforms: IAM Market by IAM and IP3 by Allied Security Trust (AST). These new patent marketplaces have significantly expanded the availability of patent packages within the overall market. In this section, we will use IAM Market and IP3 as case studies to illustrate how private-sector platforms play an important role in facilitating IP trading in the United States.

#### Case Study: IAM Market<sup>12</sup>

IAM Market is an innovative online marketplace designed for buy and sell-side practitioners in the intellectual property (IP) industry. This platform serves as a meeting point for individuals and organizations who recognize the commercial value of IP and technology and seek to engage in business transactions. The primary goal of the IAM Market is to simplify and enhance transparency in the IP transactions market. It provides a user-friendly interface that enables IP owners to showcase their licensing, sales operations, and technology transfer programs.<sup>13</sup>

Additionally, it allows IP owners to specify the particular rights they are interested in transacting. On the other hand, IP buyers can easily search for relevant IP assets based on industry, technology, and transaction type. Moreover, IAM Market facilitates requests for intellectual property and technology, creating a seamless environment for connecting buyers and sellers in the IP marketplace.

Launched in October 2015, IAM Market had listed 194 packages with 3,724 assets from 17 sellers by May 2016, representing 25% of all available packages according to the database established by IP Watchdog.<sup>14</sup> Up to today, IAM Market has grown significantly, currently boasting 26 vendors, 235 listings, and an impressive 2,369 transactions. These numbers underscore the platform's increasing popularity and effectiveness in facilitating successful IP transactions and connecting buyers and sellers in the ever-evolving intellectual property landscape.<sup>15</sup>

<sup>12</sup> More information on the <https://www.iam-market.com/>

<sup>13</sup> <https://www.iam-market.com/node/4>

<sup>14</sup> KENT RICHARDSON et al (2017). 2016 Patent Market Report: Overview, <https://ipwatchdog.com/2017/04/10/2016-patent-market-report-overview/id=81689/>

<sup>15</sup> <https://www.iam-market.com/>



\*\*\* SOLD \*\*\* ROI-21-0127 Street Spirit LLC: User Ratings for Platform Access Management - 3 assets

RZV

\*\*\* SOLD \*\*\* 3 US issued patents across 1 family related to user ratings for platform access management for online services that employ ID verification, user rating systems, and activity tracking to..

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\*\*\* SOLD \*\*\* ROI-21-0130 Geo-Tag LLC: Temperature Logging Smart Sensor - 1 asset

RZV

\*\*\* SOLD \*\*\* 1 US issued patent related to a temperature logging smart sensor for receiving and storing temperature data using a self-activating energy-harvesting sensor capable of receiving and..

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Vendors

IBM (61)

MiiCs & Partners (61)

Dynamic IP Deals LLC (41)

Stryker Corporation (16)

RZV (14)

SRI International (12)

Philips (11)

## Case Study: Industry Patent Purchase Program (IP3)<sup>16</sup>

AST, established in 2007 by four prominent global high-tech companies, operates as a member-driven cooperative with a distinct focus on mitigating patent risks. Unlike traditional profit-oriented entities, AST's primary objective is to provide patent risk mitigation services to some of the most innovative and renowned technology companies worldwide. With a mission centered around collaboration and collective strength, AST stands as a trusted partner in safeguarding intellectual property rights and fostering a conducive environment for technological advancements.<sup>17</sup>

Its "IP3 by Allied" program is a Collaborative Patent Purchase Program that provides a platform for patent sellers to efficiently sell their patents to IP3. This program is known for its well-recognized fixed price and fixed duration framework, ensuring a transparent and structured approach to patent transactions. Notably, participating in this unique program does not require any charges, commissions, or payments, making it an attractive option for patent sellers seeking a hassle-free and cost-effective avenue to monetize their intellectual property. With its streamlined process and commitment to fairness, IP3 by Allied stands out as an exceptional opportunity for patent sellers to engage in mutually beneficial transactions without any financial obligations.

Every year, patent owners submit their patents for sale at their specified prices for two weeks in June (June 20-July 1 for 2022).<sup>18</sup> AST makes these submissions available to its full membership of leading multinational companies, including Dolby, Google, Intel, Meta, Microsoft, Sony, Twitter, Uber, and others. In 2021, over 300 sellers and brokers offered over 1,000 submissions, consisting of 960 patent families with 2,039 active assets from 46 jurisdictions. These submissions were evaluated by over 40 AST members over a

<sup>16</sup> More information on the <https://www.ast.com/ip3/>

<sup>17</sup> <https://www.ast.com/about-us/asts-mission/>

<sup>18</sup> <https://www.ast.com/ip3/>



couple of months, with many collaborating on purchases. AST members spent \$3.86 million to acquire 34 deals, which included 39 patent families with 88 active assets. The sellers' asking prices ranged from \$5,000 to \$780,000 per deal. The average purchase price per lot was \$113,617, while the price per patent family was \$93,000.



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**Sell Your Patent**  
 Sell your patent to IP3, a well-recognized Fixed Price, Fixed Duration, Collaborative Patent Purchase Program. There are no charges, commissions or payments required to participate or sell through this unique program.

**Broader Exposure**  
 Through IP3, sellers are exposed to some of the world's largest leaders in technology allowing the opportunity to market their assets in the secondary market to a much broader audience than what they could find on their own.

**Streamlined Process**  
 This is a streamlined, time limited, rapid response sales model which is beneficial to patent sellers. We provide frequent communication throughout the process and, if interested, AST will purchase your portfolio at the price you set with no haggling.

**IP3 2021 Results**  
 Last year's IP3 program received submissions from 261 sellers and closed 34 deals. IP3 2021 attracted strong interest from both patent sellers and Member companies as result of rebounding economic activity in the latter half of the year. Member companies spent \$3.86 million to acquire 39 patent families.



IP3 connects buyers to the World's Leading Technology Companies representing multiple industries including:



Automotive



Information Technology



Communications



Semiconductors



Ecommerce



Social Media



Health Technology



Software

Submission Terms and Conditions

Patent Assignment Agreement

Program FAQs

### 3.2.3 Government Approach: Patent Platform Establishment<sup>19</sup>

Besides the private platforms, the public sector also established trading platforms to alleviate information and transaction frictions. The USPTO set up the IP Marketplace Platform, known as "Patents 4 Partnerships," which focuses on providing access to publicly available patent information for research and analysis purposes. The platform provides a centralized database of United States patents available for licensing, allowing interested parties to search for specific patents. On the platform, patent owners can voluntarily list their patents and patent applications as "available for licensing", together with relevant licensing information. Besides, the platform offers a streamlined and efficient registration process, reducing litigation risks and the costs associated with background investigations.

<sup>19</sup> More information on: <https://developer.uspto.gov/ipmarketplace/search/patents>



The screenshot shows the USPTO IP Marketplace Platform interface. At the top, there's a search bar with placeholder text "Search Inventions" and a "enter search terms (e.g. keywords, inventor's name, patent number, etc.)" field. Below the search bar are links for "About the Platform", "Terms of Use", and "Open Data". On the left, there's a sidebar titled "Refine by" with options for "Issue/Pub Date", "Inventor", and "Licensing Options", each with a "Reset" button. A note below the sidebar says: "Please contact us with information about additional patents/published patent applications to list on this Platform. Please email [IPMarketplace@uspto.gov](mailto:IPMarketplace@uspto.gov) with any other comments or corrections. Please visit our FAQ for frequently asked questions and answers." The main content area is titled "Inventions" and shows "934 results found". It has a table with columns: "Title", "Patent/Pub Number", "First Named Inventor", "Issue/Pub Date", and "Licensing Options". Each row in the table includes a small icon of a document with a plus sign. The first few rows of data are:

Title	Patent/Pub Number	First Named Inventor	Issue/Pub Date	Licensing Options
Method For Customizable Priority Wait List Notification For Appointments	20210216971	Weinberg; Andrew Mark	05/02/2023	<span style="color: green;">Available</span>
Using Memory Device Sensors	9937830	O'Donnell; Cheryl M., Gove; Erica M.	01/10/2023	<span style="color: green;">Available</span>
Systems And Methods For Closing Portions Of Body Tissue	11497507	Culbert; Bradley S.	11/15/2022	<span style="color: green;">Available</span>
Protective Case For Mobile Terminal	10594352	Feng; Mou	06/28/2022	<span style="color: green;">Available</span>
RESPIRATORY PROTECTION SYSTEM	11318333	Ellerbrake; Christopher T.	05/03/2022	<span style="color: green;">Available</span>
ELECTROCHEMICAL REACTOR FOR GENERATING ACTIVE COMPOUNDS	11198943	Boudreau; Jordache	12/14/2021	<span style="color: green;">Available</span>

### 3.3 Challenges and Responses

While the private sector, particularly the presence of reputable platforms, plays a crucial role in driving the development of the IP market in the United States, the significance of the United States government's role should not be underestimated. The government has actively fostered a conducive ecosystem for innovation and IP commercialization, acknowledging its importance in supporting and promoting the growth of the IP market.

#### 3.3.1 Legal Infrastructure and Administration

Compared with countries like China and Singapore, the United States government intervened less in the development of IP market, but it has actively participated in designing the regulatory framework and policy to ensure fair competition and foster protection of IP through rigorous process of patent application, registration, training, and the development of the related legal institutions.

##### Patent Registration

The registration of patents is fundamental to the entire commercialization environment. The USPTO was in charge of safeguarding the fundamental functions needed for that process. For lenders to be able to conduct due diligence on assessing the value of IP as collateral, the key is that the rights to use the IP are appropriately protected by law, which includes a fair, transparent, and rigorous registration process. Moreover, the market needs to be “thick” enough with enough buyers and sellers so that there is a sufficiently liquid market for the patent under consideration. In the extreme case when the borrower/debtor decides to default the loan, the lender/creditor can take over the ownership of the patent (the collateral) and monetize it when needed.<sup>20</sup>

<sup>20</sup> More information on: [https://www.americanbar.org/groups/intellectual\\_property\\_law/publications/landslide/2021-22/june-july/value-of-ip/](https://www.americanbar.org/groups/intellectual_property_law/publications/landslide/2021-22/june-july/value-of-ip/)



To streamline the patent registration process, the USPTO operates a Patent Public Search platform. This platform serves as a transparent avenue for patent owners and prospective sellers to publicly disclose various activities related to their patents, including transactions, assignments, licensing agreements, and collateral activities. The primary objective of the Patent Public Search platform is to facilitate the smooth exchange of intellectual property assets by providing a centralized and accessible website for individuals and entities interested in buying and selling patents.<sup>21</sup>

The USPTO's registration function and the transparency provided by the Patent Public Search play a critical role in ensuring a smooth and efficient patent market. These measures provide a strong foundation for IP commercialization, allowing businesses and investors to make informed decisions while promoting fair market competition.

### **Legal Transparency and Accessibility**

Legal transparency and stability are prioritized in the United States, where the government generally refrains from intervening in the development of new business formats, methods, and markets. The judicial system plays a crucial role in resolving disputes and shaping the market through its decisions. United States courts strive for consistency, reliability, and transparency to convey a sense of fairness to market participants.

Accessibility is another emphasis in the legal infrastructure. Fostering innovation requires enabling SMEs to access affordable legal services during the process of IP commercialization. To address this need, the USPTO launched the Law School Clinic Certification Program, which offered low-cost professional services.

### **Case Study: USPTO Law School Clinic Certification Program**

The USPTO Law School Clinic Certification Program offered law clinic programs to train legal professionals through experiential learning while also providing essential legal services to early-stage innovative SMEs. IP law clinics, in particular, are regarded as an effective tool in meeting the needs of early-stage innovators by granting them access to IP legal services.

In 2011, the United States Patent and Trademark Office (USPTO) launched a pilot accreditation program, granting clinic law students, under the supervision of a registered attorney or agent, the authority to file and register patent and trademark applications on behalf of innovators. The program was successful, leading the United States Congress to pass a law in late 2014, making the USPTO Law School Clinic Certification Program permanent.

[ue-and-risk-considerations-intellectual-property-collateral/](#)

<sup>21</sup> More information on: <https://ppubs.uspto.gov/pubwebapp/static/pages/landing.html>



### 3.3.2 Credible Valuation

The United States IP landscape faces a unique challenge related to the venture debt market, which has witnessed notable activities and interactions between IP experts and commercial lenders. This is primarily due to the presence of robust equity financing and a well-established financial industry with experienced professionals. For example, well-known financial institutions like Silicon Valley Bank<sup>22</sup> and Hercules Capital<sup>23</sup> have been actively involved in providing venture debt financing to technology companies, leveraging their expertise in assessing the value of intellectual property assets.

Moreover, collaboration between IP professionals and commercial lenders in the venture debt market extends to the management and valuation of intellectual property portfolios. For instance, Allied Security Trust, an IP-focused organization, collaborates with lenders to assess the value and potential risks associated with patents.<sup>24</sup> By conducting thorough due diligence and utilizing their expertise in IP valuation, they provide lenders with critical insights into the strength and market potential of the intellectual property assets offered as collateral.

The collaboration between IP professionals and commercial lenders in the venture debt market not only facilitates financing for companies with valuable IP assets but also plays a crucial role in managing, valuing, and commercializing those assets. By leveraging their expertise in portfolio management, valuation, diligence services, and the financialization and commercialization of IP assets, these companies are able to effectively incorporate IP-related financial services. This collaboration not only enhances operational efficiency but also strengthens the credibility of their valuation results as they are conducted by reputable third-party evaluators. Consequently, this collaborative effort contributes to a more comprehensive and reliable approach to IP valuation and financial services, addressing the unique challenges faced in the United States IP landscape.

### 3.3.3 Risk Management

Patents, as valuable intangible assets, grant exclusive rights to inventions, but their value and monetization potential may diminish in the event of a default. When a company defaults on its financial obligations, its assets may be seized and sold to settle outstanding debts. However, the value of patents relies heavily on effective enforcement and commercialization by the company. During a default, potential buyers may hesitate to invest in patents due to uncertainties surrounding enforcement, licensing, or commercial viability.

Moreover, the monetization of patents requires continuous investment in research and development, marketing, and licensing activities. In the case of a defaulting company,

<sup>22</sup> More information on: <https://www.svb.com/startup-insights/venture-debt/when-is-venture-debt-right-for-your-business>

<sup>23</sup> More information on: <https://www.sec.gov/Archives/edgar/data/1280784/000119312517314118/d431768d497.htm>

<sup>24</sup> More information on: <https://www.ast.com>



these essential resources may become scarce or insufficient, posing challenges to effectively maintain or exploit the value of intangible assets.

Furthermore, intangible assets, such as patents, often possess specialized and industry-specific characteristics. If a defaulting company operates in a niche market or has developed technology with limited applicability, finding potential buyers or licensees for these patents can be considerably difficult. The absence of a ready market or potential buyers for such specialized assets can impede their monetization potential in times of financial distress or default.

In summary, the inability to effectively monetize intangible assets, like patents, during a company's default can be attributed to uncertainties surrounding enforcement and commercial viability, limited resources for ongoing investment, and the specialized nature of the assets themselves. These factors significantly diminish the potential value and marketability of intangible assets in the face of financial distress or default.

### **Case Study: The bankruptcy of Eastman Kodak Company (“Kodak”)<sup>25</sup>**

Eastman Kodak, once a giant in the photography industry, faced financial difficulties and filed for bankruptcy in 2012. The company had a substantial portfolio of patents related to imaging technology, which were considered valuable intangible assets. However, during the bankruptcy proceedings, Kodak struggled to fully monetize these patents.

Despite attempts to sell its patent portfolio, Kodak faced challenges in finding buyers willing to pay the expected value for the patents. Potential buyers were cautious due to uncertainties surrounding the enforcement and commercial viability of the patents, as well as the evolving dynamics of the digital imaging market.

Additionally, Kodak’s bankruptcy situation limited its ability to invest in ongoing research and development, marketing efforts, and licensing activities to maintain and enhance the value of its patent portfolio. This lack of resources further hindered the monetization potential of the intangible assets.

Ultimately, Kodak was only able to sell a portion of its patent portfolio to a consortium of companies for a significantly lower amount than initially anticipated. The inability to fully monetize its patents played a significant role in the overall financial challenges faced by the company during its bankruptcy proceedings.

The case of Eastman Kodak highlights the difficulties that can arise when attempting to monetize intangible assets in the face of financial distress. The uncertainties surrounding the marketability and commercial viability of patents, combined with limited resources for investment and industry-specific challenges, can impede the successful monetization of intangible assets during a company’s default or bankruptcy.

<sup>25</sup> More information on: <https://spectrum.ieee.org/the-lowballing-of-kodaks-patent-portfolio>



The United States government and regulatory bodies are committed to fostering a conducive environment for the enforcement and commercialization of intangible assets, including patents, trademarks, and copyrights. Their active promotion of robust intellectual property rights (IPRs) protection ensures strong safeguards for intangible assets, instilling confidence in potential buyers or licensees and mitigating uncertainties surrounding IP rights.

### **Government: Implementing Effective IPR Protection Mechanisms**

By establishing effective IPR protection mechanisms, such as patent pools<sup>26</sup> and licensing initiatives<sup>27</sup>, the United States government creates a favorable climate that supports the enforcement and monetization of intangible assets. Patent pools and licensing initiatives facilitate collaborative licensing arrangements by bringing together patent holders and potential users. These platforms enable easier access to patented technologies, reduce transaction costs, and provide alternative avenues for interested parties to acquire or license valuable IP assets.

These mechanisms not only enhance the value and marketability of intellectual property but also facilitate the smooth transfer of rights and licensing agreements. Companies involved in the acquisition or licensing of intangible assets benefit from increased certainty and clarity surrounding IP rights, contributing to a more predictable and secure business environment. This, in turn, encourages investment, innovation, and the efficient monetization of intangible assets within the United States market.

Through the implementation of such IPR protection mechanisms, the United States government actively promotes collaboration and knowledge exchange, fostering an ecosystem where intangible assets can be effectively commercialized. By providing accessible avenues for licensing and acquisition, these mechanisms contribute to a more vibrant and dynamic marketplace for intellectual property, facilitating the growth of innovation-driven industries and supporting economic development.

### **The IPR Center: Coordinating Responses to Intellectual Property Crimes**

The IPR Center plays a vital role in coordinating the United States government's response to counterfeiting and intellectual property crimes through strategic partnerships with government agencies and private industry. By collaborating with these entities, the IPR Center works to protect the nation from intellectual property theft, safeguarding the economy, American public, and national security.

Partner agencies within the IPR Center have dedicated teams of specialized agents and analysts responsible for identifying intellectual property threats within their respective jurisdictions. They actively share this critical information with relevant stakeholders

<sup>26</sup> More information on: <https://www.finnegan.com/en/insights/articles/dealing-with-u-s-patent-pools-as-a-third-party.html>

<sup>27</sup> More information on: [https://2012-2017.usaid.gov/sites/default/files/documents/1865/NW2-CCBY-HO4-Open\\_Licensing\\_Policy\\_Ratio\\_nale.pdf](https://2012-2017.usaid.gov/sites/default/files/documents/1865/NW2-CCBY-HO4-Open_Licensing_Policy_Ratio_nale.pdf)



and collaborate with different government departments and intellectual property rights holders to conduct comprehensive investigations and combat predatory and illegal trade practices.<sup>28</sup> This collaborative and holistic approach facilitates the seamless flow of data, resources, and information across organizations, fostering a synergy of expertise to bolster investigative efforts.

To illustrate this coordination, one example is Operation Engine-Newity.<sup>29</sup> This initiative emerged in response to the automotive industry's alert in 2009 regarding emerging health and safety threats stemming from the illegal sale and distribution of counterfeit automotive parts and equipment. In collaboration with partner agencies like HSI, CBP, the FBI, and others, Operation Engine-Newity was launched. Under this operational framework, the IPR Center continuously develops leads for field agents, provides support for ongoing investigations, and maintains close collaboration with industry experts to address specific threats, such as counterfeit airbags.

Another significant program is Operation in Our Sites, initiated in June 2010.<sup>30</sup> This operation strategically targets the distribution of counterfeit products, pirated movies, and television content through websites. By conducting thorough criminal investigations, seizing domains and assets, and making arrests, Operation in Our Sites disrupts and dismantles organizations involved in online intellectual property criminal activities. This operation effectively addresses both individuals operating illegal websites and those misusing legitimate platforms for engaging in criminal conduct.

Through these examples and numerous other programs, the IPR Center effectively coordinates the United States government's response to counterfeiting and intellectual property crimes. By fostering partnerships, sharing information, and leveraging collective expertise, the IPR Center works tirelessly to protect the economy, the American public, and national security from the risks associated with intellectual property theft.

<sup>28</sup> More information on: <https://www.iprcenter.gov/what-we-do>

<sup>29</sup> More information on: <https://www.iprcenter.gov/file-repository/ipu-operation-engine-newity.pdf/view>

<sup>30</sup> More information on: <https://www.ice.gov/factsheets/ipr-in-our-sites>



## 4. IP Commercialization, Perspectives from Singapore

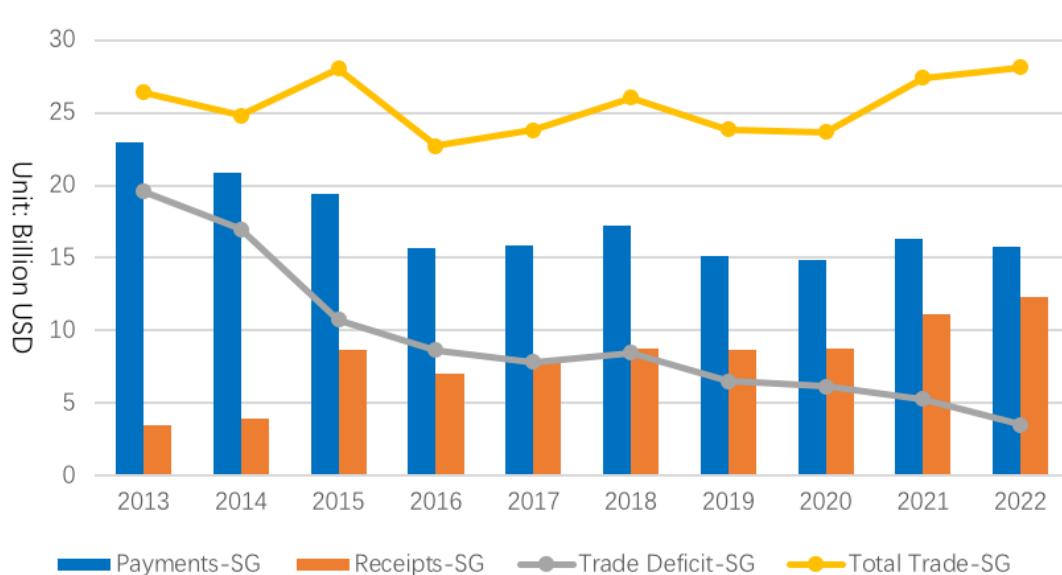
### 4.1 Introduction

For a long time, Singapore has recognized the crucial role of IP commercialization in driving economic growth. Backed by a strong government-led approach and significant investment, Singapore has positioned itself as a leading IP trade hub on the global stage. This ambition dates back to its IP Hub Master Plan in 2013, which identified Singapore's unique strengths in IP transactions and management, quality IP filings, and IP dispute resolution. Building on this foundation, in 2021, the Singapore Intellectual Property Strategy 2030 (SIPS 2030) was launched, a 10-year plan aimed at solidifying Singapore's position as a global hub for IA/IP and driving sustainable economic growth for the long term.

#### A Plummeting IP Trade Deficit

During the period from 2013 to 2022, as Figure 11 shows, Singapore's IP trade deficit has rapidly decreased. Its total value of IP payments has fluctuated with a downward trend, and its total value of IP receipts has been increasing significantly, resulting in the IP trade deficit plummeting from USD 19.58 billion in 2013 to USD 3.46 billion in 2022. At the same time, the overall scale of Singapore's IP trade remains relatively stable. These figures illustrate that Singapore has made obvious progress in transitioning from an IP consumer to an IP producer country.

**Figure 11 Charges for the use of IP, receipts & payments, Singapore. (2013-2022)**



Data Source: The World Bank, Charges for the use of intellectual property, receipts & payments (BoP, current US\$), <https://data.worldbank.org/indicator/BM.GSR.ROYL.CD> & <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD>

In the upcoming sections, this report provides an overview of the market formation in Singapore and how Singapore responds to challenges for the development of IP commercialization.



## 4.2 Market Formation

### 4.2.1 Build Efficient Secondary IP Trade Markets

The lack of an efficient secondary market for IP and the difficulty for lenders to dispose of IA/AIP collaterals in Singapore is a widely recognized hurdle for developing IP financing. Its government has established two notable platforms to address these challenges: The Innovation Marketplace facilitated by Innovation Partner for Impact (IPI) and the A\*STAR Collaborative Commerce Marketplace (ACCM). These initiatives are crucial in building networks and harnessing the exchange of assets within the IP ecosystem.

#### Case Study: Innovation Marketplace, facilitated by IPI

Innovation Partner for Impact (IPI)<sup>31</sup> is a subsidiary of Enterprise Singapore, a government agency dedicated to supporting the growth of Singapore as a hub for global trading and startups by facilitating capacity building, innovation, and globalization for enterprises.

The Innovation Marketplace, supported by IPI, is a dynamic platform connecting technology providers with enterprises seeking innovative solutions. The IPI team provides advisory services, technology matching, and market insights to foster collaborations and transactions. Businesses can access various technologies, patents, and expertise to enhance their competitive edge.

A successful example is an SME called Pioneer Environmental Technology Pte Ltd. The company benefited from the IPI innovation marketplace and successfully collaborated with Solvay, a Belgian chemical MNC, to co-develop chemical-resistant polyether ether ketone (PEEK) membranes.<sup>32</sup> Throughout the collaboration, the SME not only attained the desired properties on the substrate that complemented its R&D efforts but also benefitted greatly from Solvay's comprehensive technical reports, insights, and analyses.

#### Case Study: A\*STAR Collaborative Commerce Marketplace (ACCM)

ACCM<sup>33</sup> is administrated by A\*STAR, the national agency for science, technology, and research in Singapore. ACCM promotes collaborative research and development (R&D) efforts between industry players by offering a platform where enterprises can explore licensing opportunities, partnerships, and commercialization of technologies. This marketplace facilitates the transfer of intellectual assets from the research domain to commercial entities, stimulating innovation and supporting the growth of the secondary IP market. Given the free membership system, companies listed on the ACCM have more chances of being successfully connected.

According to the directors of SEGENIC Pte Ltd and Comlite Technology Pte Ltd, the ACCM platform is a valuable resource for SMEs to forge alliances with like-minded companies and connect with multinational corporations (MNCs) to expand their business

<sup>31</sup> More information on: <https://www.ipi-singapore.org/>

<sup>32</sup> More information on: <https://www.ipi-singapore.org/contents/2022/12/ipi-year-in-review-2022-16723817937917/IPI%20Year-in-Review%202022.pdf>

<sup>33</sup> More information on: <https://accm.sg/>



opportunities. SEGENIC Pte Ltd found that the platform's rigorous verification system increases the chances of successful connections with MNCs, and the portal provides access to a pool of valuable resources for SMEs to connect with their potential partners. Meanwhile, Comlite Technology Pte Ltd found that the platform provides valuable insights into recent market trends and relevant sector developments.<sup>34</sup>

#### 4.2.2 International IP Market Connectivity

The Patent Prosecution Highway (PPH) is a program involving collaboration between IP Offices, wherein the evaluation of a patent application in one IP Office can be expedited by referring to the examination results from another IP Office. This collaborative approach enables applicants to secure corresponding patents more quickly and efficiently.

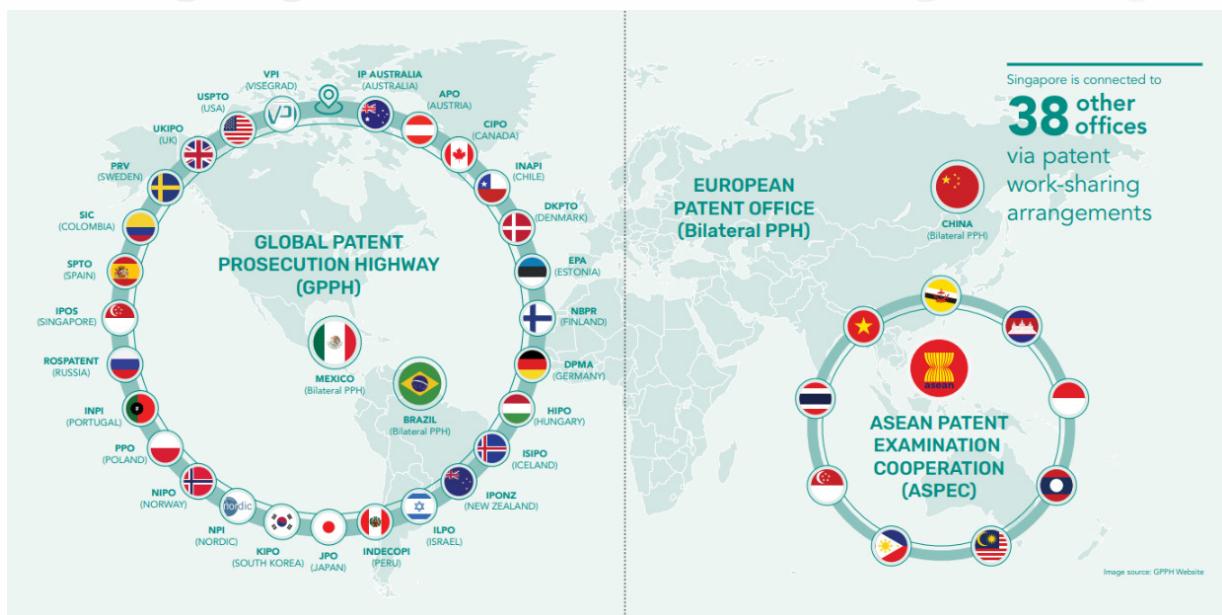
Singapore's commitment to connecting with the global IP market is demonstrated through its strategic initiatives. The Intellectual Property Office of Singapore (IPOS) actively participates in the Global Patent Prosecution Highway (GPPH) pilot program, which includes over 27 participating offices such as the United States Patent and Trademark Office (USPTO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO) and the Intellectual Property Office of the United Kingdom (UKIPO). In addition, IPOS has established bilateral PPH pilot programs with the National Institute of Industry Property Ministry of Economy of Brazil (INPI), the China National Intellectual Property (CNIPA), the Mexican Institute of Industrial Property (IMPI), and the European Patent Office (EPO).<sup>35</sup>

<sup>34</sup> More information on: <https://accm.sg/about-us>

<sup>35</sup> IPOS (2023) Acceleration Programmes- Patent Prosecution Highway. Retrieved from <https://www.ipos.gov.sg/about-ip/patents/how-to-register/acceleration-programmes>



Figure 12 Singapore's Global Work-sharing Arrangements for Patent



Note: This figure has been source from the Government of Singapore & IPOS (2021a) Singapore IP Strategy 2030 Report, pp.28-29. Retrieved from <https://www.ipos.gov.sg/docs/default-source/default-document-library/singapore-ip-strategy-report-2030-18may2021.pdf>

## 4.3 Challenges and Responses

### 4.3.1 Legal Framework and Law Enforcement

#### Reputable Legal Infrastructure

An effective legal system that is transparent, efficient, and impartial is essential to protect the value of IP and resolve disputes. Singapore's legal framework is widely respected globally, serving as a backbone for registering, protecting, and commercializing IP assets.

Singapore's efforts in maintaining a robust legal framework for IP protection can date back to establishing a specialized IP court in 2012 and releasing an IP court guide in 2013. Its government periodically reviews IP laws to ensure adaptability to evolving industry trends. For instance, the Copyright Act 2021 updated Singapore's copyright regime in response to the immense impact of technological changes. The Parliament of Singapore also passed the Intellectual Property (Amendment) Bill 2021 on January 2022, which improved business-friendliness, operational efficiency, and legislative and procedural clarity, to make businesses easier to protect and manage their IA and IP.

In addition, Singapore provides alternative dispute-resolution mechanisms outside the courtroom. Specifically, the country started to collaborate with the World Intellectual Property Organization (WIPO) to operate the Arbitration and Mediation Center Singapore Office since 2010, allowing enterprises to resolve disputes more efficiently. The Intellectual Property Office of Singapore (IPOS) provided a funding scheme called the Enhanced Mediation Promotion Scheme (EMPS), covering part of the parties' mediation costs to encourage parties in IPOS proceedings to choose mediation as an alternative



to a hearing. The funding scheme was renamed the Revised Enhanced Mediation Promotion Scheme (RE MPS) and extended for an additional three years from April 2022. Under the REMPS, parties in each mediation case can receive reimbursement of the mediation costs up to S\$10,000 for cases that only IPOS disputes or S\$14,000 for cases that involve both IPOS disputes and foreign IP rights.<sup>36</sup>

### Legal Transparency

Singapore is committed to legal transparency by providing comprehensive guidelines and procedures. Once a dispute adjudicates after a full hearing, Written Grounds of Decision will be delivered to ensure clarity and transparency. One website called Lawnet facilitates reference and access to research and legal information.<sup>37</sup> This platform allows stakeholders to stay informed about the latest rulings and precedents. In addition to ensuring accessibility to accurate legal information, IPOS provides clear guidelines about the processes and available litigation routes from the outset of an IP dispute.

### Law Professionals Training

Singapore stands out as an advanced IP education and training leader by establishing the IP Academy and empowering enterprises to leverage their IP assets for growth.<sup>38</sup> After 20 years of experience in professional education since its inception in 2003, the academy has garnered reputation for excellence in IA/IP education and training, attracting a diverse faculty of experts from academia and industry. Through its comprehensive executive training and certification programs, the academy equips professionals with the necessary skills and expertise in IP law, IA/IP management, and value creation. Additionally, the academy's global network of partnerships further enhances its offerings, enabling sharing of the best practices and knowledge exchange internationally. This commitment to specialized IP professional training reinforces Singapore's advanced position in developing IP commercialization.<sup>39</sup>

## 4.3.2 Credible Valuation and Transparency of Information

### Build Consistent, Transparent, and Interoperable Valuation Standards

To foster IP commercialization, applying consistent, transparent, and interoperable valuation methods across various domains (e.g., financial reporting, transfer pricing, licensing, and IP financing) is crucial. The International Valuation Standard (IVS 210), published in 2021 by the International Valuation Standard Council (IVSC) offers an essential framework. As a member of the IVSC, Singapore closely follows the standards of the Council, but it also attempts to create its own IA/IP valuation guidelines based on the IVS 210. The Intellectual Property Office of Singapore (IPOS) has pledged to develop

<sup>36</sup> More information on: <https://www.ipos.gov.sg/docs/default-source/growing-your-business-with-ip/funding-assistance/remps-information-sheet.pdf>

<sup>37</sup> More information on: <https://www.lawnet.sg/lawnet/web/lawnet/about-lawnet/what-is-lawnet/general#tabs-1>

<sup>38</sup> More information on: <https://iposinternational.com/en/academy/overview>

<sup>39</sup> More information on: <https://iposinternational.com/en/academy/overview>



a pool of accredited IA/IP valuers as part of the infrastructure necessary to support IA/IP valuation for enterprises.

In addition to valuation guidelines, Singapore is also focused on developing IP disclosure guidelines, given the lack of a global standardized IP reporting framework. It proposed to set up an inter-agency committee led by the Accounting and Corporate Regulatory Authority (ACRA) and the IPOS. The aim is to enhance transparency and certainty in IP transactions by developing mandatory and standardized IP disclosure guidelines for listed and soon-to-be-listed companies to disclose and communicate their IP value through the Singapore Exchange (SGX).

### **Valuation Professional Training**

The training of IP professionals is essential due to the crucial role of valuation in intangible asset finance. According to the IPOS, the field of IP is complex and requires expertise beyond legal knowledge. IP professionals must possess a diverse skill set encompassing legal foundations, contract and competition laws, patent drafting and negotiation, marketing and branding know-how, business strategy, and asset valuation. With the expected growth of IP activities, there is a pressing need to rapidly nurture a knowledgeable and skilled workforce to cater not only to the basic filing and prosecution needs but also to provide value-added services such as asset management, valuation, and technology analysis. The IP Academy was established to offer various types of training programs. Besides, there are a variety of certification programs offered by different organizations:

#### **Case Study: Chartered Valuer and Appraiser (CVA) program**

The Chartered Valuer and Appraiser (CVA) program has been provided by Nanyang Technological University since 2016. The CVA program aims to strengthen Singapore's valuation capability. As Asia's first business valuation certification aligned with the International Valuation Standards (IVS), the CVA program covers various topics, including the conceptual framework for valuation, the valuation process using various approaches, as well as practical insights and methodologies. By offering comprehensive education on valuation practices that adhere to international standards, the CVA program aims to enhance the expertise of valuation professionals in Singapore. This initiative supports the development of a competent and reliable valuation community capable of delivering high-quality valuations of intangible assets.<sup>40</sup>

Several other education programs aimed at different levels of professionals were also launched to build a steady pipeline of IP professionals to support the country's IP human resources needs. For example, The IPOS and Workforce Singapore (WSG) launched the IP Professional Conversion Program (PCP) in 2017, equipping mid-career professionals with comprehensive IP knowledge and facilitating their transition into new jobs.

<sup>40</sup> More information on: <https://www.ntu.edu.sg/business/admissions/NEE/public-programmes-for-professionals/finance-and-valuation/CVA>



Additionally, WIPO collaborated with the Singapore University of Social Sciences (SUSS) to introduce the Master of IP and Innovation Management (MIPIM) program, which integrates IP expertise from legal, business, and technology domains. These initiatives aim to develop a skilled and competent IP workforce, supporting Singapore's position as a leading IP development and valuation hub.

### 4.3.3 Risk Management

#### IP Collateral Protection Insurance

Developing and trading intangible assets are by nature and often perceived as risky. Thus, traders and creditors of loans to those who own IP often have a high demand for insurance. As such, IA/IP collateral protection insurance is offered to address the high risks and uncertainty financial institutions face. In insolvency, commercial insurers engaged by enterprises can share the loan default risk and reduce financial institutions' exposure to risk.

Singapore has collaborated with existing commercial stakeholders to develop IA/IP collateral protection insurance to support the entire IP ecosystem. Additionally, to reduce enterprises' costs, the Singapore government supports a portion of the insurance premium paid by enterprises to commercial insurers engaged in securing IP financing. In 2020, the government increased its support for such premia from 50 percent to 80 percent.

#### Case Study: Creative Technology Ltd (CT)

CT is a Singapore-based technology company that specializes in digital entertainment products. In 2017, CT secured an SGD 60 million loan from a group of banks, with their IA/IP portfolio as collateral. To reduce the risk of default, CT purchased Intellectual Property Insurance from a commercial insurer. This insurance policy protected the lenders in the event of default and enabled CT to secure financing at favorable terms.<sup>41</sup>

### 4.3.4 Incentivization of Stakeholders

To support companies seeking financing under the IP Financing Scheme (IPFS), IPOS previously provided a valuation subsidy to offset the cost of IP valuation and other administrative applications. The subsidy served as an incentive to encourage more businesses to participate in the scheme. The valuation subsidy offered by IPOS was subject to a cap of 50 percent of the IP valuation cost or 2 percent of the value of the IP or SGD 25,000, whichever was lower.

However, after a total of 12 million SGD loans had been disbursed, IPFS was discontinued in 2018 due to a dissatisfied participation rate. It has revealed four key IP financing challenges: limited acceptance of IA/IP as collateral, undisclosed IA/IP information, lack of secondary markets for IA/IP liquidation, and the gap in IP management practice.<sup>42</sup> Based

<sup>41</sup> More information on: [https://eresources.nlb.gov.sg/infopedia/articles/SIP\\_1200\\_2010-07-23.html](https://eresources.nlb.gov.sg/infopedia/articles/SIP_1200_2010-07-23.html)

<sup>42</sup> WIPO (2021) *Unlocking IP-backed Financing: Country Perspectives Singapore's Journey*, p.7. Retrieved from <https://www.ipos.gov.sg/docs/default-source/resources-library/unlocking-ip-backed-financing-2022-web.pdf>

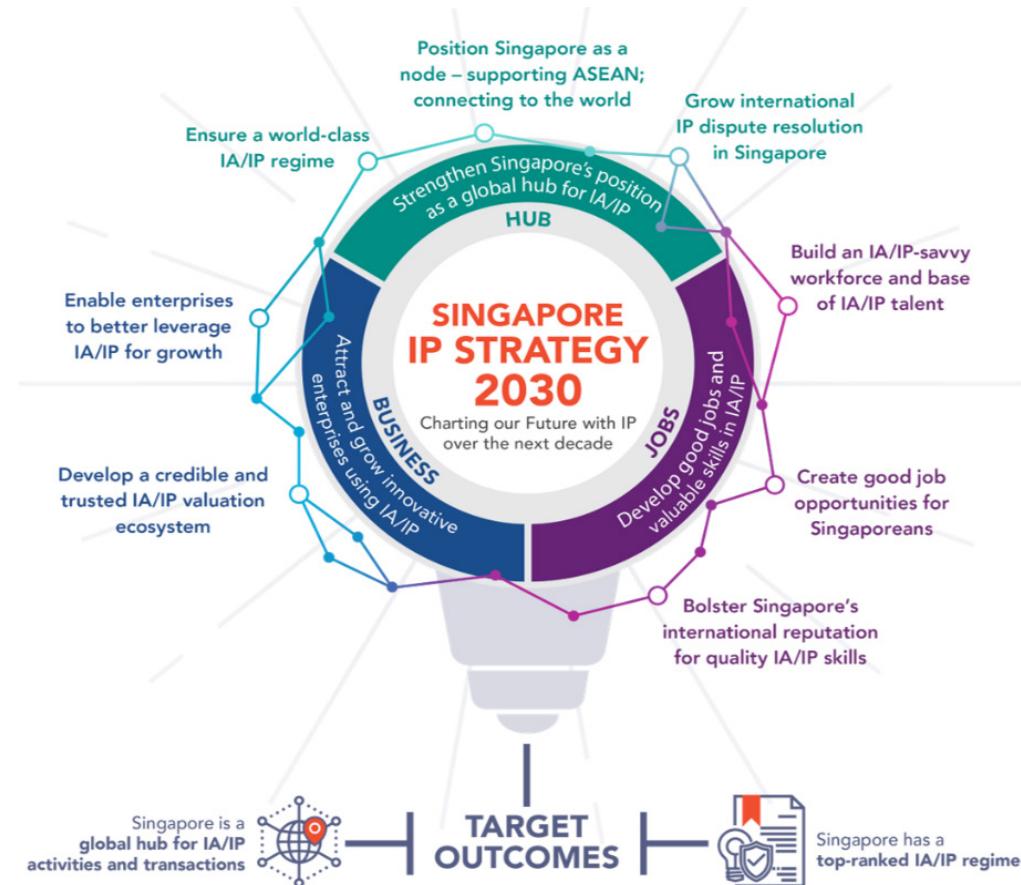


on such experiences, Singapore's government realized the insufficiency of only providing IP financing subsidies to businesses. Apart from subsidies, building a vibrant ecosystem for IA/AP financing with a holistic strategy is also crucial.

#### 4.3.5 Singapore IP Strategy 2030<sup>43</sup>

In 2021, Singapore unveiled its 10-year plan, the Singapore IP Strategy 2030 (SIPS 2030), aiming to reinforce its position as a global-Asia node of technology, innovation, and enterprise, and support its broader Research Innovation Enterprise (RIE) goals. SIPS 2030 , which involves over 10 government agencies, builds upon the 2013 IP Hub Master Plan<sup>44</sup> and consists of three interconnected thrusts: strengthening Singapore's position as a global hub for IA/IP, attracting and growing innovative enterprises using IA/IP, and developing good jobs and valuable skills in IA/IP. Under each thrust, more detailed work goals were formulated, as shown in Figure 13 and Figure14.

**Figure 13: SISP 2030**



Source: IPOS (2022a) Singapore IP Strategy 2030. Retrieved from <https://www.ipos.gov.sg/manage-ip/singapore-ip-strategy-2030>

<sup>43</sup> More information on the Government of Singapore & IPOS (2021a) *Singapore IP Strategy 2030 Report*. Retrieved from <https://www.ipos.gov.sg/docs/default-source/default-document-library/singapore-ip-strategy-report-2030-18may2021.pdf>

<sup>44</sup> IPOS (2021b) *Strategy To Boost Singapore's Position As A Global Intangible Assets & IP Hub Unveiled*. Retrieved from <https://www.ipos.gov.sg/news/updates/ViewDetails/strategy-to-boost-singapore-s-position-as-a-global-intangible-assets-ip-hub-unveiled/>



Figure 14: Detailed Work Goals of SISP 2030

### STRENGTHEN SINGAPORE'S POSITION AS A GLOBAL HUB FOR IA/IP



#### Ensure a world-class IA/IP regime

- Support technology advances through policy reviews
- Empower innovators and creators through digitalisation



#### Position Singapore as a node – supporting ASEAN: connecting to the world

- Facilitate protection of innovations in overseas markets through Singapore
- IP and the ASEAN Economic Community
- ASEAN IP programmes to support businesses
- Improve access to IP information and services digitally in ASEAN



#### Grow international IP dispute resolution in Singapore

- Build IP dispute resolution capabilities through training and professional development
- Market Singapore's IP dispute resolution services internationally

### ATTRACT AND GROW INNOVATIVE ENTERPRISES USING IA/IP



#### Enable enterprises to better leverage IA/IP for growth

- Increase enterprises' access to IA/IP advisory and IA/IP-related services
- Work closely with industry partners to build IA/IP awareness and competencies
- Support enterprises in deriving and maximising value from IA/IP



#### Develop a credible and trusted IA/IP valuation ecosystem

- Support IA/IP transactions through credible IA/IP valuation guidelines and practice
- Support IA/IP transactions with better IA/IP disclosures

### DEVELOP GOOD JOBS AND VALUABLE SKILLS IN IA/IP



#### Build an IA/IP-savvy workforce and base of IA/IP talent

- Equip our future workforce with the necessary IA/IP skills and knowledge to perform their roles well
- Executive training for working professionals and senior executives to deepen capabilities in IA/IP and capitalise on it for business growth



#### Create good job opportunities for Singaporeans

- Skills Framework for IP
- Integrate IA/IP skills and competencies in job roles involved in innovation



#### Bolster Singapore's international reputation for quality IA/IP skills

- Develop a national standard in IA/IP management
- Promote recognition of the IA/IP management standards

Source: IPOS (2022b) SIPS 2030 Comprises Three Inter-linked Thrusts. Retrieved from <https://www.ipos.gov.sg/manage-ip/singapore-ip-strategy-2030/ip-hub>



SIPS 2030 has been put into action. As of May 2023, six items of finished works were posted on the IPOS's website, as shown in Figure 15. Obviously, the current accomplishments of SIPS 2030 are still far from its ambitious work goals. Whereas SIPS set up a holistic framework driving Singapore's development as a global hub for IA/IP activities and transactions, its effectiveness still needs to be further observed as its implementation is still in the early stages.

**Figure 15: SIPS 2030 In Action, Information as of May 2023**

<b>IP Hub</b>
<ul style="list-style-type: none"><li>1. Delivered a report called “Conversations at the Intellectual Property and Artificial Intelligence Interface: Understanding the Needs of Singapore’s Innovation Community.”</li><li>2. Delivered a report called “Study on the Protection and Management of Trade Secrets in Singapore.”</li><li>3. Established a website platform that provides an overview of IP Dispute Resolution in Singapore and links to relevant resources, such as the websites of the Singapore International Commercial Court and Singapore Mediation Centre.</li></ul>
<b>Business With IP</b>
<ul style="list-style-type: none"><li>1. Delivered a “Trade Secret Enterprise Guide” for enterprises’ reference.</li><li>2. Offered an IPOS Go Mobile App that enables businesses to access key functions in the IPOS e-services portal (IPOS Digital Hub), such as timely status updates on IP filings, filing new trademark applications, IP renewals, and IP searches.</li></ul>
<b>Jobs With IP</b>
<ul style="list-style-type: none"><li>1. Made an infographic that provides some key insights on the rising relevance of IP skills for companies and individuals in Singapore.</li></ul>

Note: The information has been sourced from IPOS (2022c) SIPS 2030 In Action. Retrieved from <https://www.ipos.gov.sg/manage-ip/singapore-ip-strategy-2030#sips-in-action>





## 5. IP Commercialization, Perspectives from China

### 5.1 Introduction

Compared to Singapore, whose IP strategy serves the need to maintain its position in the global economy as an IP hub and trade center, China's motives for developing its IP financing primarily focus on nurturing high-tech enterprises and SMEs to fulfill the financing needs of innovative and independent technologies. This is done for both high-quality economic growth and security reasons. After 2017, the State Council issued a range of supporting policies to nurture enterprises and support innovation, reflecting China's need to finance local high-tech enterprises and SMEs.

Due to these divergent goals, China, Singapore, and the United States exhibit different characteristics in their emphasis on developing IP financing. Compared to Singapore, China is relatively weak in developing market-based financing models and implementing internationally recognized standards. The government-led mechanisms are even more apparent when compared with the United States, where the patent office primarily registers patents and resolves legal disputes. In contrast, China not only issues a bundle of supporting policies to incentivize various stakeholders to serve the financing needs of enterprises but also maintains control over stakeholders in the IP industry, including commercial banks and national trade platforms.

In this section, this report provides an overview of IP development in China and how China responds to the challenges in the development of IP commercialization.

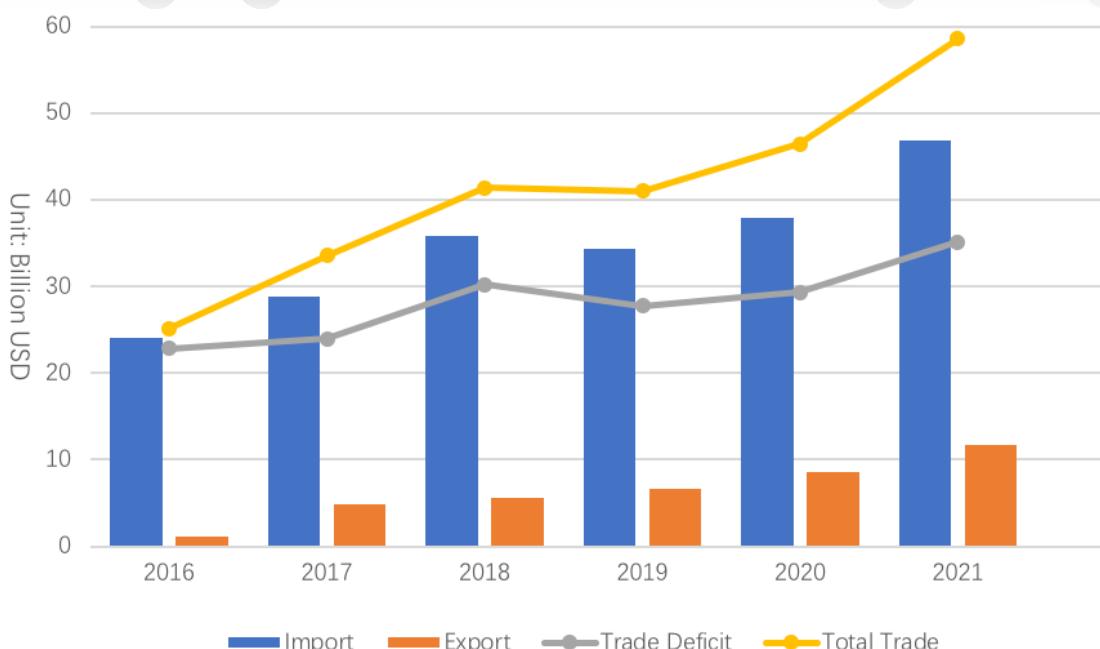
#### China's Growing IP Trading

Amid China's rapidly expanding service trade in recent years, the scale of China's Intellectual Property Rights (IPR) trade exhibits robust and continuous growth. As Figure 16 shown, China's total value of IPR imports and exports has more than doubled, increasing from US \$25.14 billion in 2016 to US \$58.59 billion in 2021. Notably, IPR trade exports reached US \$11.74 billion in 2021, representing an exponential growth of over 10 times compared to the US \$1.16 billion recorded in 2016. During the same period, the IPR trade import had also soared nearly two times from US \$23.98 billion to US \$46.85 billion, resulting in a growing trade deficit from 22.82 billion to 35.11 billion.

These figures underscore the strong momentum of China's IPR trade. The significant expansion in both imports and exports signifies the growing recognition and utilization of IPR within China's evolving economic landscape. The substantial growth in IPR exports signifies China's emerging prominence as a global player in IP-driven industries. However, the growing IPR trade deficit also indicates China's high degree of dependence on foreign countries.



**Figure 16: China's IPR Trade Import and Export Statistics, 2016-2021**



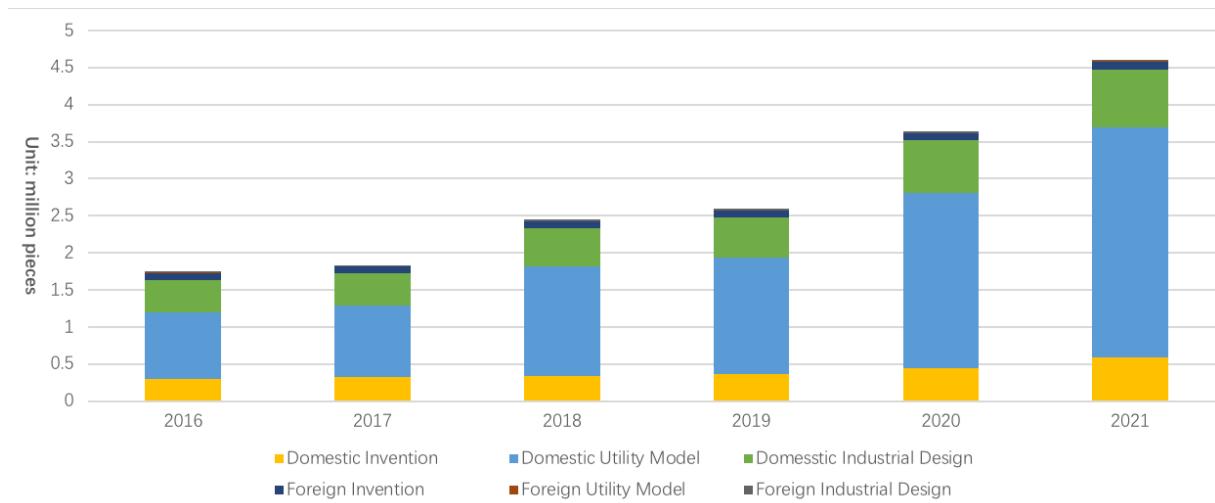
Data Source: The World Bank, Charges for the use of intellectual property, receipts & payments (BoP, current US\$) – China, <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD?locations=CN> & <https://data.worldbank.org/indicator/BM.GSR.ROYL.CD?locations=CN>

### Growing Annual Patent Grants in China

Apart from IPR trading, China has experienced a significant increase in the number of patent grants as shown in Figure 17, rising from around 1.75 million in 2016 to 4.6 million in 2021. Among the different types of patent grants, Utility Model has exhibited the most rapid growth, surging from 0.9 million in 2016 to 3.1 million in 2021, with a staggering growth rate of over 344%. These figures not only highlight the increasing momentum of innovation and IP protection in China but also underscore the country's commitment to driving technological advancements across various sectors.



**Figure 17: Annual Patent Grants of Three Kinds Originated from China and Abroad, 2016-2021**



Data Source: China National IP Administration, China IP Statistical Yearbook 2021, <https://english.cnipa.gov.cn/jianbao/year2021/b/b1.html>

### China's Growing Role in the Global Patent Cooperation Treaty System

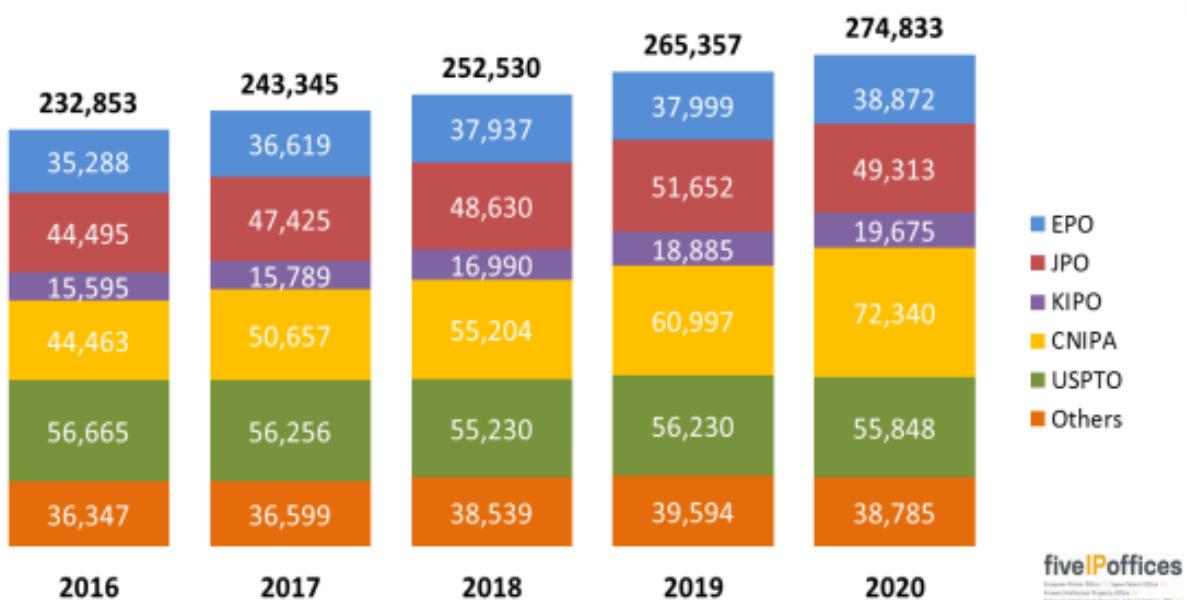
Within the framework of the Five IP Offices and the Patent Cooperation Treaty (PCT), the Five IP Offices fulfill multiple roles as receiving offices (ROs). They primarily receive international PCT applications originating from their respective countries and can also function as international search units (ISAs) and international preliminary examination units (IPEAs) for applicants, whether they are national or non-national residents.<sup>45</sup>

According to the IP5 Statistics Report (2020 Edition), the number of international PCT applications has demonstrated significant growth from 2016 to 2020, with a compound annual growth rate of 3.6%. Among the Five IP Offices, the National Intellectual Property Administration of China (CNIPA) witnessed the most substantial increase, with a remarkable growth rate of 18.6% in 2020. These figures highlight the increasing significance of international cooperation in IP protection and underscore China's growing role in the global PCT system.

<sup>45</sup> More information on: [https://www.fiveipoffices.org/sites/default/files/attachments/3e022c73-3012-4f1b-aafc-d317389f60cf/The%2BI\\_P5%2BOffices%2Band%2BPCT.pdf](https://www.fiveipoffices.org/sites/default/files/attachments/3e022c73-3012-4f1b-aafc-d317389f60cf/The%2BI_P5%2BOffices%2Band%2BPCT.pdf)



Figure 18: PCT Activities --as Receiving Office



Note: This graph has been sourced from the "IP5 Statistics Report 2020 Edition, [https://www.cnipa.gov.cn/module/download/down.jsp?i\\_ID=179154&collID=90](https://www.cnipa.gov.cn/module/download/down.jsp?i_ID=179154&collID=90).

## 5.2 Market Formation

### 5.2.1 Trade Platforms

#### Challenge: Duplicate IP Secondary Market with Fragmented Information

Since 2014, multiple intellectual property (IP) trading platforms have been established in China, involving participation from the National IP Office, local governments, and private institutions. However, despite the existence of numerous platforms, a recent report from the Bank of China (BOC) highlights that many of these platforms suffer from a lack of differentiation and intense competition, resulting in limited activity and the failure to establish an effective integrated secondary market for IP trade. This homogeneity among platforms has created challenges for pledgees in managing non-performing loans, as they must navigate multiple secondary markets and determine the appropriate platform for asset liquidation and reference prices.<sup>46</sup>

#### Solution: From Pilots to Powerhouses

While allowing for the proliferation of duplicated platforms, the Chinese government has refrained from market consolidation and, instead, focused on identifying national platforms that exhibit superior performance in their respective functions. In 2022, the Chinese National Intellectual Property Administration (CNIPA) announced its plans to select the first 5-10 functional national platforms from pilot platforms that have successfully undergone a comprehensive evaluation.<sup>47</sup> These selected platforms will be responsible for establishing national institutions for intellectual property rights and

<sup>46</sup> More information on: [https://pdf.dfcfw.com/pdf/H3\\_AP202206211573679184\\_1.pdf?1655819952000.pdf](https://pdf.dfcfw.com/pdf/H3_AP202206211573679184_1.pdf?1655819952000.pdf)

<sup>47</sup> More information on: [https://www.cnipa.gov.cn/art/2022/11/30/art\\_75\\_180579.html](https://www.cnipa.gov.cn/art/2022/11/30/art_75_180579.html)



property rights trading in scientific and technological achievements. Furthermore, all recognized national platforms will be directly supervised by CNIPA.

Additionally, to facilitate capacity building and knowledge dissemination in the field of intellectual property, the government is collecting case studies from different cities and stakeholders to be shared as valuable examples of experiences. As an illustration, the National Copyright Administration has published the initial set of typical cases showcasing the successful construction of robust IP rights.<sup>48</sup>

### 5.2.2 Incentive Measures

#### Financial Regulation

To promote IP commercialization and facilitate the acceptance of intangible assets as collateral, the Chinese government has implemented measures to relax financial regulations on capital adequacy requirements for financial institutions and encourage separate credit programs. In addition to the top-down approach to promoting IP commercialization, the China Banking and Insurance Regulatory Commission (CBIRC) has specified that the non-performing rate of loans secured by intellectual property should not exceed three percentage points higher than the non-performing rate of other types of loans. Consequently, these loans cannot be considered as factors for regulatory and bank assessment deductions.<sup>49</sup>

#### Government Subsidies

However, for entrepreneurs, accessing IP commercialization as a means to secure financing and expand their business is hindered by the high costs associated with professional services required to enter the IP market. To tackle this challenge, several provinces in China have implemented policies to subsidize the expenses related to IP financing. These subsidies can cover a portion of loan interest fees, insurance premiums, or valuation costs.

For instance, in Dongguan, enterprises that apply for intellectual property pledge financing can receive an interest subsidy of up to 70%, with a cap of 1 million yuan per year. Additionally, there is a 50% subsidy on the patent value evaluation fee and the patent pledge insurance fee. It is important to note that the specific details of these policies may vary across different regions.<sup>50</sup>

<sup>48</sup> More information on: <https://www.ncac.gov.cn/chinacopyright/upload/files/2022/11/c288d0cfbedd92f1.pdf>

<sup>49</sup> More information on: <http://www.xtxh.net/xtxh/finance/45388.htm>

<sup>50</sup> More information on: [https://www.cnipa.gov.cn/module/download/down.jsp?i\\_ID=43275&colID=431](https://www.cnipa.gov.cn/module/download/down.jsp?i_ID=43275&colID=431)



### 5.2.3 Capacity Building

#### Develop the Portfolio and IP Management Ability through WIPO Support Center

The WIPO Technology and Innovation Support Center (TISC)<sup>51</sup> program aims to provide innovators in developing countries with access to locally-based, high-quality technology information and related services. This initiative assists these innovators in leveraging their innovative potential, as well as in creating, protecting, and managing their intellectual property (IP) rights.

##### Case Study: Qingdao Aibo Detection Technology Co., Ltd

TISCs offer comprehensive support to enterprises, including IP training, IP financing, patent search and analysis, IP management, and other innovation support services.

Aibo, a medical product company dedicated to innovation and development, faced financial constraints and had a low credit rating and limited assets when seeking financing. However, Aibo capitalized on the services provided by their local TISC. They sent staff members to participate in patent information training and utilized accessible patent databases to support product development and plan their patent portfolio. With the assistance received, Aibo experienced continuous growth and gained a deeper understanding of the importance of IP.

As a result, Aibo successfully obtained a loan of 3 million yuan (approximately USD 460,000) from the Bank of Qingdao by pledging two IPs as collateral. Additionally, they completed preliminary patent portfolio planning by filing 16 patent applications for their essential technologies.

#### Industry Park Responsible for Promoting Enterprises Accessibility

It is a common issue for start-ups and SMEs in need of IP financing services to have limited knowledge about the intellectual patent system, managing IP portfolios, and understanding the mechanisms of IP finance services. Additionally, making effective use of government-provided supporting policies requires access to relevant information. In response to bridging these information gaps, China emphasizes the role of industrial parks in connecting relevant departments, enterprises, and financial institutions. Industrial parks serve as agencies that provide information, explain policies, and gather feedback from enterprises within their premises. This approach enables enterprises without a solid understanding of IP financing concepts to access the relevant services and support.

##### Case Study: Caohejing Development Zone

Caohejing Development Zone utilizes the park's intellectual property database to screen target enterprises with IP assets and potential financing needs. Leveraging this data, the industry park integrates resources from evaluation professionals, financial institutions, and relevant government departments to support the IP financing process.

<sup>51</sup> More information on: <https://www.wipo.int/tisc/en/>



For instance, Company C, located in the incubator of Caohejing Industry Park, has developed a “digital” third-party logistics delivery platform based on data. Caohejing Development Zone has collaborated with Shanghai Bank and professional appraisal agencies to create a financing scheme that includes a trademark pledge for the enterprise. Through the assessment conducted by professional appraisal companies, the market value of the “One Stop” brand was recognized, facilitating the Shanghai Bank’s approval process within one week. Additionally, with the coordination efforts of the Caohejing Development Zone, the Shanghai Trademark Association Center completed the trademark pledge on the same day of application. As a result, the company was provided with a credit line of 12 million and successfully approved a loan of 5 million.

## 5.3 Challenges and Responses

### 5.3.1 Legal Infrastructure

Owing to differences in the legal system compared to Western countries, China’s legal system has generally been viewed negatively by Western investors. According to the IP Index 2022 report published by the United States Chamber, China scored a mere 37 out of 100, ranking it 38th globally.<sup>52</sup> Nonetheless, China has taken steps to improve the quality and transparency of its legal system.

A notable example is the establishment of three specialized IP courts in Beijing, Shanghai, and Guangzhou since 2014. These courts handle all first-instance IP matters in their respective regions and have a panel of judges with specialized IP training and backgrounds to facilitate proceedings. Building on the success of these courts, the Chinese government has continued to expand the number of specialized courts. In fact, on December 29, 2018, the Intellectual Property Court of the Supreme People’s Court was officially established, further demonstrating China’s commitment to improving its legal system.

Increased transparency has also been observed in China’s legal system. Since 2014, it has been mandatory for all judicial opinions to be published on China Judgments Online (CJO), with few exceptions. This transparency has significantly impacted the way attorneys practice law and the quality of advice they can provide. Furthermore, typical cases and the Essence of Judgments are made accessible to the public<sup>53</sup>, enabling legal practitioners to gain a better understanding of the law.

An alternative IP dispute resolution mechanism in China is the Intellectual Property Dispute Mediation Committee. This committee offers a cost-effective and convenient solution for resolving IP disputes. In Beijing, there are 16 professional organizations dedicated to specific industries, such as electronics, IT, software, and medicine, established to handle disputes within their respective sectors. In 2022, these committees

<sup>52</sup> More information on P.83, [https://www.uschamber.com/assets/documents/IPIndex-FullReport\\_2022.pdf.pdf](https://www.uschamber.com/assets/documents/IPIndex-FullReport_2022.pdf.pdf)

<sup>53</sup> More information on: <https://ipc.court.gov.cn/en-us/news/more-5-20.html>



collectively received 12,288,000 disputes and successfully mediated 4,540 cases, achieving a 60% success rate. These mediation efforts were carried out under the guidance of the Beijing Municipal Intellectual Property Office.<sup>54</sup>

### 5.3.2 Credible IP Valuation

China has developed three types of mechanisms for conducting IP valuation: independent third-party professional institutions, internal evaluation within financial institutions, and evaluation services provided by government-affiliated organizations. While these professional services offer a solution for valuing intangible assets, similar to Singapore, the introduction of third-party services adds to the costs of IP financing, which may potentially lower incentives for enterprises.

#### Independent Third-party Evaluation Professional

Independent third-party evaluation professionals are a globally common practice. In China, for example, Industrial Bank has established a pool of external evaluation professional institutions. Government-affiliated organizations also partner with commercial banks. For instance, the Shanghai Pudong Productivity Promotion Center (SPPC) collaborates with banks in Shanghai. The SPPC first examines the qualifications of the enterprises, and then the appraisal agency conducts the value assessment. If the loan is successful, the Center charges a 2% service fee. However, a concern arises regarding the independence of third-party valuation institutions, as there is a potential risk of collusion with enterprises to provide inflated valuation results.

#### Commercial Banks Self-evaluation

In addition, there are cases where commercial banks are responsible for valuation and independently develop their own valuation and rating systems. For instance, the Bank of Communications Beijing Branch has independently developed a self-built patent index system. This system is used to identify patents held by technology-based micro and small enterprises that possess marketable and fast-growing potential. The bank combines this with a self-built patent evaluation system, which helps gauge the future earnings potential of these patents.

While this method effectively reduces costs for enterprises, it has two apparent weaknesses. Firstly, designing the system independently imposes high requirements on the abilities of commercial banks, limiting the expansion of this approach to lenders without sufficient resources. Secondly, independent valuations may be susceptible to vulnerabilities and lack credibility. The adoption of various valuation principles by different financial institutions also hinders the promotion of an integrated market, which naturally requires a shared standard.

<sup>54</sup> More information on: [https://www.cnipa.gov.cn/art/2022/12/9/art\\_502\\_180746.html](https://www.cnipa.gov.cn/art/2022/12/9/art_502_180746.html)



### Valuation and Rating by Government

The third method exhibits a strong government-led characteristic, with IP management officials taking the lead in establishing a credit whitelist screening mechanism. This mechanism utilizes credit and intellectual property data to provide value-added services, including offering reasonable credit lines and facilitating loan renewals for whitelisted enterprises.

For example, in Beijing, a “white list” of enterprises has been established along with a two-way promotion mechanism. The IP management department actively promotes IP-rich enterprises on the “white list” to banks. Additionally, banks can submit a list of enterprises seeking IP pledge financing to the IP management department, which conducts professional evaluations and provides feedback.

### Apparent Weaknesses

Problems with IP evaluation are also apparent in China, which to some extent, hinders the development of the IP financing market. One weakness is the absence of nationwide standardized asset valuation methods, a shortfall compared to Singapore’s efforts to lead internationalized valuation standards. This weakness is compounded by the shortage of professionals and a mature secondary market to provide price reference, making it difficult to accurately evaluate IP assets.

Despite these challenges, there have been recent efforts to address the issue. The China Asset Appraisal Association’s release of the “Asset Appraisal Practice Guidelines - Intellectual Property” on November 25, 2021, is a significant step forward. The guidelines define intellectual property assets and specify the evaluation process for trade secret assets, emphasizing the importance of confidentiality and the need to consider the impact of the right holder’s protection measures on the asset’s value.

### 5.3.3 Risk-Mitigation Mechanisms

#### Government-initiated Special Funds

In 2020, a policy paper issued by the State Council proposed to establish funds to co-share the risk with financial institutions to compensate for the potential loss from IP pledges for start-ups and SMEs.<sup>55</sup>

#### Indirect Pledge Financing with Guarantee & Insurance Agency

Guarantee Agency (sometimes led by the government as Government Guarantee Special Fund) allows banks to grant loans to companies with insurance policies and financing guarantee letters. Once the risk occurs, the insurance company, the bank, and the guarantee institution share the loss. The ratio varies in different regions. For instance, the insurance company, the bank, and the guarantee institution share the loss in the ratio of 6:2:2 in Qingdao.

<sup>55</sup> More information on: [http://www.gov.cn/zhengce/content/2020-07/30/content\\_5531274.htm](http://www.gov.cn/zhengce/content/2020-07/30/content_5531274.htm)



## Packaged Assets as Collateral

To mitigate the risks for financial institutions, another practice is to require a package of assets as collateral. Two kinds of packages have been accepted in practice.

- 1) The combination of tangible and intangible assets. Companies package intellectual property with accounts receivable, equity, tangible assets, and corporate credit as pledges to apply for loans, thereby reducing the risk to the bank. It is common to bundle tangible assets of the enterprise, such as land, property, equipment, etc.
- 2) Another mode is to pledge a bundle of IP, which mainly aims to address the potential information asymmetry, where the commercial bank fails to decide if the pledged intellectual property is essential to the enterprises and contains substantial investment. As a result, financial banks may require a combination of pledges, such as patents, copyrights, and trademarks, instead of a single patent to raise the cost of default for the lending enterprise and reduce the risk of information asymmetry.

### **Case Study: “Patent + Trademark” Hybrid Pledge Financing Model, Bank of Communications Shanghai Branch<sup>56</sup>**

Company A, founded in October 2004, is a technology-based enterprise dedicated to providing library Internet of Things solutions using RFID technology (radio frequency identification). Although the company has invested heavily in R&D, the number of patents owned is aged. Given the company’s trademark has been inactive but has a reputation, the Bank of Communications suggested the company revitalize all intangible assets and designed a “patent + trademark” IPR hybrid pledge financing model for the company.

### **Case Study: Pacific AnXin Agricultural Insurance Co., Ltd. – Promotes IP Pledge Financing through the Linkage between Insurance and Banking<sup>57</sup>**

Pacific AnXin Agricultural Insurance Co., Ltd. promotes IP pledge financing through a unique linkage between insurance and banking. The company’s innovative approach focuses on several key features aimed at supporting strategic emerging industries in line with Shanghai’s industrial development plan.

First and foremost, Pacific AnXin Agricultural Insurance Co., Ltd. has set its sights on key service targets, prioritizing industries that are crucial to Shanghai’s overall development. In addition, the company has implemented an innovative operation mode, which creates a new financing model that links “Bank + Insurance + Intellectual Property” and clarifies the risk-sharing ratio of bad debts.

To further enhance its evaluation system, the company analyzes patents and trademarks from technical, legal, and economic perspectives. Additionally, it evaluates the innovation ability, management level, and development prospects of companies in an integrated manner, directly presenting the findings in the final credit assessment. This rigorous

<sup>56</sup> More information on: <https://sipa.sh.gov.cn/cmsres/53/53633e8696614bffb840377b9f2e7e9a/f8e7262c5ca814a3dbf753a4fcfa1507.pdf>

<sup>57</sup> More information on: <https://sipa.sh.gov.cn/xxgkml/20220216/5f94ac98c56f4f04b556da39abfd01a6.html>



evaluation process ensures that the company offers accurate credit assessments and risk evaluations.

Finally, with the support of the Shanghai government, Pacific AnXin Agricultural Insurance Co., Ltd. has created the “Shanghai Model,” which provides insurance premium subsidies for insured enterprises. Certain districts also offer a percentage of insurance premiums and loan interest subsidies, significantly reducing the burden of insurance for enterprises. By offering these incentives, the company has successfully created a supportive ecosystem that promotes innovation, growth, and development in Shanghai’s emerging industries.

### 5.3.4 Incentivization of Stakeholders

#### Streamlined Administrative Procedures

To promote the development of the IP industry, the State Council assigned a department responsible for pledge registration to ease registration requirements, shorten review times, and offer one-stop services. China also established a nationwide IP pledge information platform<sup>58</sup>, which allows for administrative and registration procedures to be conducted online, thus enhancing efficiency. Furthermore, since 2022, China’s trademark registration certificates have been issued in electronic form.

#### Incentive Measures for Patent Filing and Corresponding Side Effects

The Chinese government has implemented various incentives to encourage patent filing, particularly among enterprises with limited knowledge and incentives to register their IP. These incentives include subsidies for filing costs, tax breaks, and social benefits, with patent quantity serving as a key metric.

While these measures have played an essential role in jump-starting the Chinese patent system, they also led to negative consequences. For instance, there has been a proliferation of low-quality or “junk” patents, as well as abnormal patent application behavior. Some applicants file patents not to protect valuable innovation but to profit from subsidies that can exceed the actual patent filing fees.

The issue of low-quality patents raised concerns worldwide. In a report by the United States Patent and Trademark Office (USPTO) on the increase in registered patents in China, it was noted that non-market factors and an emphasis on filing numbers could overstate innovation and brand creation in China. In response to these concerns, the Chinese government announced that it will phase out all existing patent subsidies by 2025 completely.<sup>59</sup>

<sup>58</sup> More information on: <https://zscq.creditchina.gov.cn/>

<sup>59</sup> More information on: [https://www.cnipa.gov.cn/art/2022/1/25/art\\_75\\_172922.html](https://www.cnipa.gov.cn/art/2022/1/25/art_75_172922.html)



### 5.3.5 Intellectual Trade Barriers

#### Technical Standards-based IP Trade Barriers

Technical standards-based IP trade barriers are laws and regulations implemented by host countries in international trade with the aim of enhancing the technological competitiveness of imported products or restricting imports. China faces challenges from Technical Barriers to Trade (TBT) across various industries and a wide range of products. Data indicates that as of December 31, 2021, WTO member countries had issued a total of 2947 TBT notifications, involving tens of billions of dollars. This number represents a significant increase from 1853 notifications in 2010, highlighting the persistently severe situation of trade barriers on China's exports.

In 2019, the proportion of enterprises affected by technical trade measures, as well as the direct losses and new costs incurred, saw significant reductions compared to the previous year. This positive outcome can be attributed to the collaborative efforts of government departments, industry associations, and enterprises themselves. Chinese exporters have demonstrated an increased awareness of technical trade measures and have become more proactive in participating and responding to them. Survey data indicates that, when faced with foreign technical trade measures, over 50% of export enterprises promptly engage in consultations and communication with customs and foreign importers to explore countermeasures. Additionally, 59.72% of the enterprises have improved their management practices, 54.4% have diversified their markets, 45.56% have embraced technological innovations, and 43.84% have adjusted their product structure to enhance their competitiveness. These actions have effectively solidified and expanded their export markets.<sup>60</sup>

Trade friction is a surface-level phenomenon, but its essence stems from the competition between industries and technological strengths. At the core of this competition lies innovation, highlighting the need for China to develop and implement an industrial development policy that aligns with its unique characteristics while adhering to the regulations set forth by the World Trade Organization.

#### Patent Knowledge-based IP Trade Barriers

Patent-based intellectual property trade barriers pertain to trade measures or policies wherein a country or enterprise employs the patent protection system to initiate lawsuits against manufacturers or enterprises, accusing them of patent infringement through patent applications and the establishment of patent traps. The objective is to reduce competition and impose high fees for patents.

<sup>60</sup> More information on: [http://www.customs.gov.cn/hangzhou\\_customs/575609/zlbd/2068312/3316586/index.html](http://www.customs.gov.cn/hangzhou_customs/575609/zlbd/2068312/3316586/index.html)



According to the Bureau of Foreign Exchange, China ranks fourth globally in terms of patent import fees in 2018, and it incurs substantial royalty payments each year. In 2021 alone, China's patent import and export trade deficit amounted to \$30 billion.

The imposition of high patent fees significantly discourages enterprises from developing new products and greatly hampers the technological advancement of developing nations, including China. Hence, in international trade, China should continuously monitor the development trends and patent qualifications of various countries and enterprises in key sectors. This vigilance will enable China to timely adjust the fees paid for patent infringement in international trade, while simultaneously enhancing domestic product innovation and quality.



## 6 IP Commercialization – Hong Kong

### 6.1 The Strength of Hong Kong as an IP Hub

Hong Kong demonstrates a range of notable strengths as an IP hub. Supported by strong national policies, Hong Kong's sound legal framework ensures comprehensive protection for various forms of IP, while its robust enforcement mechanisms combat counterfeiting and piracy effectively. The region's business-friendly environment, characterized by low taxation rates and a sound financial regime, attracts businesses and investors seeking to capitalize on their IP assets. Hong Kong also offers a wide range of professional IP support services and boasts world-class arbitration and mediation facilities, providing a reliable platform for resolving IP disputes.

Its strategic location as a gateway to China and Asia further enhances its appeal, facilitating IP trading, technology transfer, and collaborations with regional partners. Hong Kong's robust research and development capabilities, along with its comprehensive support for incubated companies and startups, further contribute to its status as a dynamic and vibrant IP hub. These strengths position Hong Kong as an attractive destination for businesses, investors, and innovators looking for a supportive ecosystem, strong IP protection, and access to regional markets, fostering innovation and driving economic growth.

#### Protecting IP: Hong Kong's Legal Commitment

Hong Kong, like other advanced economies globally, recognizes the significance of IP in their economic, social, and cultural progress. Its IP legal framework aligns completely with Hong Kong's international commitments, including the Agreement on Trade-Related Aspects of IPRs, ensuring the protection of the legitimate rights of investors, businesses, and creators. Furthermore, Hong Kong serves as a prominent regional hub for IP trading. The formulation of IPRs protection and trading policies falls under the purview of the Commerce and Economic Development Bureau of the HKSAR government.

It is important to note that Hong Kong's IP regime operates independently from that of Mainland China. The Basic Law, specifically Articles 139 and 140, stipulates that Hong Kong must safeguard achievements in scientific and technological research, patents, discoveries, and inventions, as well as the lawful rights and interests of authors in their literary and artistic creations through its own laws.<sup>61</sup>

### 6.2 Hong Kong's IPRs Landscape

#### Positive Growth in Registrations and Grants

Through a meticulous examination of the trend and growth rates, it becomes evident that registrations and grants in Hong Kong have displayed a consistent and favorable growth trajectory across all categories. Over the period from 2019 to April 30, 2023, trade marks demonstrated a steady upward trend, witnessing a noteworthy increase from 442,263

<sup>61</sup> <https://www.policyaddress.gov.hk/pa97/english/ptib.htm>

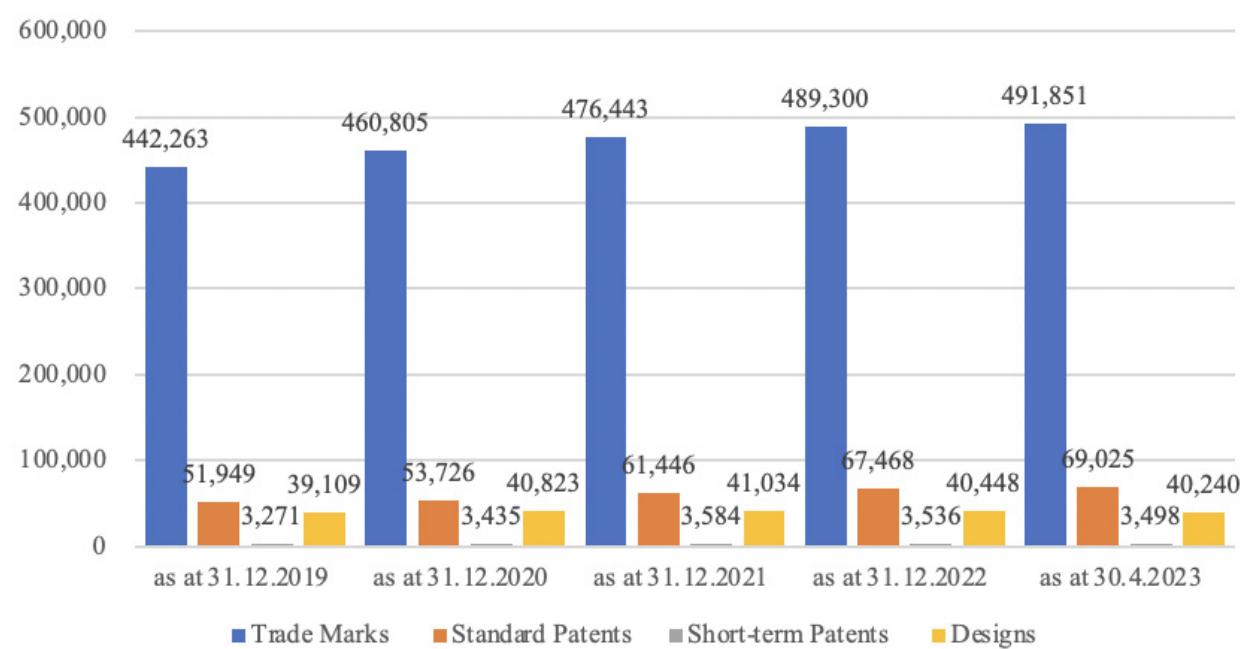


registrations to 491,851, reflecting a cumulative growth rate of 11.21%. This is not surprising given the vibrant entertainment industry in Hong Kong that produces films, songs, and TV episodes consistently.

Similarly, standard patents experienced substantial growth, surging from 51,949 grants in 2019 to 69,025 by April 2023, resulting in a remarkable growth rate of 32.87%. While short-term patents exhibited slight fluctuations, the overall trend remained positive, with registrations rising from 3,271 to 3,498, yielding a growth rate of 6.94%. Designs followed a moderate growth pattern, commencing at 39,109 registrations in 2019 and reaching 40,240 by April 30, 2023, with an overall growth rate of 2.89%. These findings underscore the robust IP landscape in Hong Kong, reflecting a thriving interest and emphasis on safeguarding intellectual assets within the region.

The consistent growth observed in registrations and grants highlights a healthy IP landscape in Hong Kong. These findings provide valuable insights for industry stakeholders and policy-makers, indicating the importance and interest in IPRs within the region.

**Figure 19: Number of Registrations/Grants of Trade Marks, Patents and Designs in force in Hong Kong<sup>62</sup>**



Data Source: IP Department, HKSAR Government

### Perception of Legal Environment

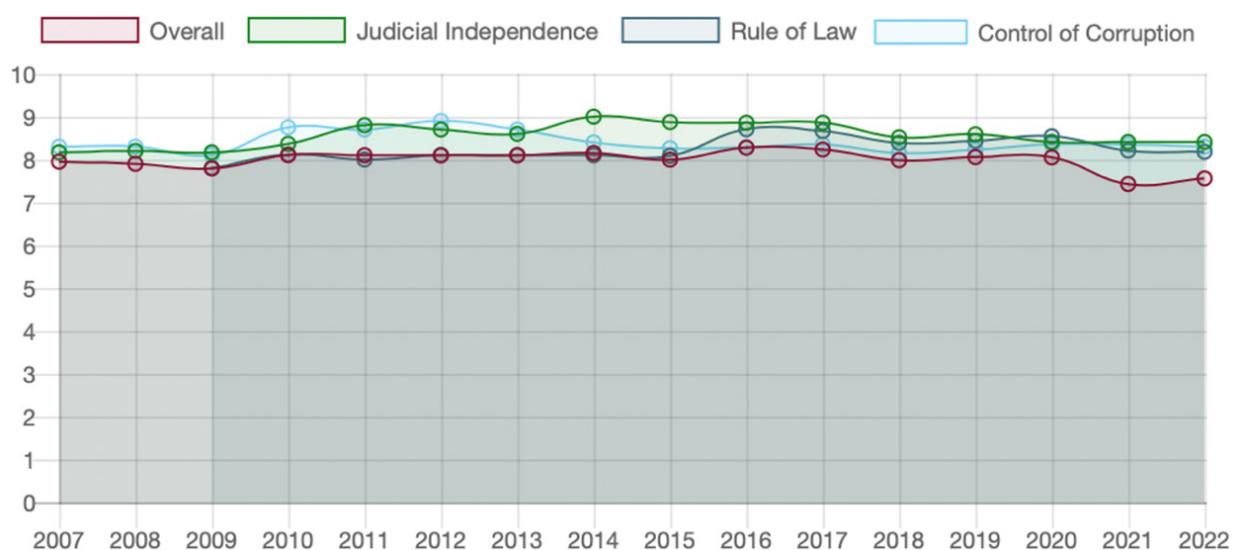
Hong Kong is also recognized for its established legal environment, which serves as a cornerstone of its governance and economy. Hong Kong's overall score of 7.56 in the legal environment is commendable, positioning it as the 16th ranked country globally and the 5th ranked within its region in 2022. Equally noteworthy are the specific category scores. Hong Kong

<sup>62</sup> [https://www.ipd.gov.hk/filemanager/ipd/common/tools-resources/ip-statistics/IPD\\_D1\\_D28-Statistics\\_eng.pdf](https://www.ipd.gov.hk/filemanager/ipd/common/tools-resources/ip-statistics/IPD_D1_D28-Statistics_eng.pdf)



achieved a score of 8.41 for Judicial Independence, placing it at the 8th position globally and the 3rd position within its region. In terms of the Rule of Law, Hong Kong received a score of 8.18, ranking 14th globally and 4th within its region. Additionally, Hong Kong scored 8.30 for Control of Corruption, securing the 14th spot globally and the 4th spot regionally. These statistics offer valuable insights about Hong Kong's performance across different dimensions, shedding light on its strengths and areas that could benefit from further improvement.

**Figure 20: Hong Kong - Score of Legal Environment<sup>63</sup>**



Note: The provided data and statistics on Hong Kong's Intellectual Property Rights (IPR) ranking are sourced from the Property Rights Alliance.

### Perception of IP Protection

Hong Kong is evaluated based on its IPR statistics for the year 2022. The overall score for Hong Kong is 6.82, placing it at the 21st rank globally and 5th in the region. Notably, the perception of IP protection in Hong Kong is strong, as indicated by a high score of 8.45, positioning it at the 5th rank globally and 2nd in the region. This suggests a favorable perception of the effectiveness of IP safeguards and the enforcement mechanisms in place.

However, there are areas that warrant attention and improvement. Hong Kong's score for patent protection is 5.80, which places it at the 51st rank globally and 10th in the region. This suggests the need for enhanced measures to bolster the protection of patents, such as strengthening patent laws, streamlining the patent application process, and ensuring efficient enforcement mechanisms.

Similarly, the score for copyright protection in Hong Kong is 6.20, positioning it at the 28th rank globally and 7th in the region. While this demonstrates a relatively higher level of copyright protection, there is still room for improvement. It is essential to continually assess and update

<sup>63</sup> <https://www.internationalpropertyrightsindex.org/country/hong-kong-sar-of-china>

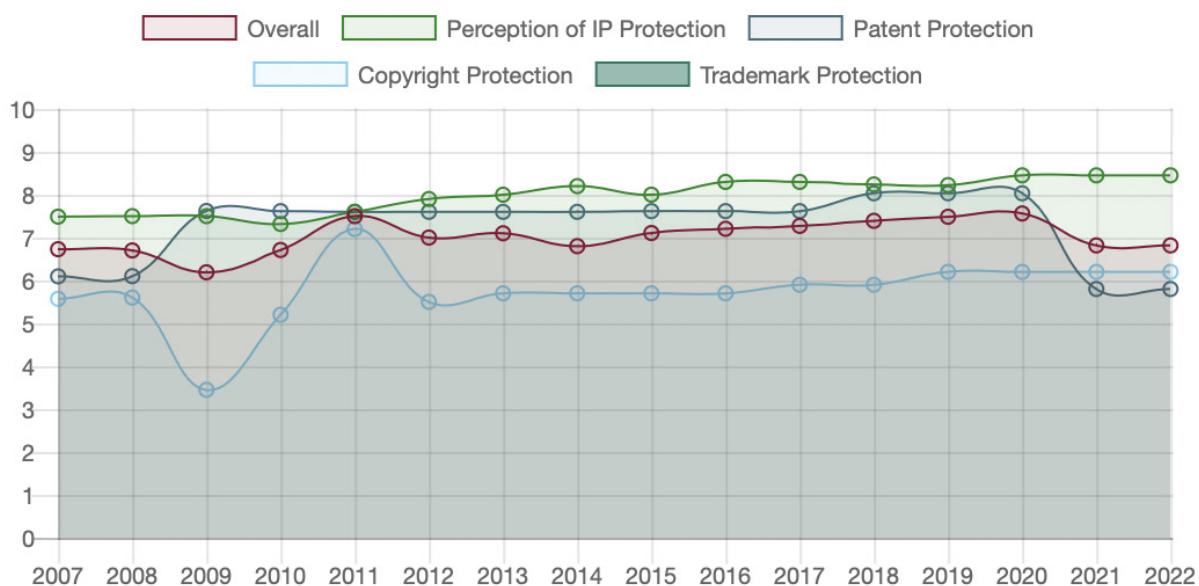


copyright laws to keep pace with evolving technologies and address emerging challenges, such as digital piracy and unauthorized use of copyrighted content.

Unfortunately, this report does not provide specific data regarding trademark protection in Hong Kong, which is an important aspect of IPRs. However, it is crucial for Hong Kong to ensure a robust and efficient trademark registration and enforcement system to safeguard the interests of brand owners and foster a fair and competitive business environment.

Overall, the IPR statistics highlight Hong Kong's relatively positive perception of IP protection, but they also indicate areas that require further attention and improvement, particularly in patent and copyright protection. Addressing these areas will contribute to a stronger and more comprehensive IP framework, fostering innovation, creativity, and economic growth in Hong Kong.

**Figure 21: Hong Kong - Intellectual Property Rights Score<sup>64</sup>**



Note: The provided data and statistics on Hong Kong's IPR ranking are sourced from the Property Rights Alliance.

### 6.3 IP Trading in Hong Kong

The commercialisation of IP plays a pivotal role in driving the ongoing development of a knowledge-based economy. Hong Kong, in line with other advanced economies, recognizes the tremendous potential of IP as a burgeoning growth area. With a strategic focus on harnessing IP, Hong Kong is actively fostering the evolution of its IP industry into a vibrant sector that not only stimulates economic growth but also generates substantial employment opportunities. To support this thriving ecosystem, the Hong Kong Commerce and Economic Development Bureau of the HKSAR government provides a comprehensive range of services. These include expert

<sup>64</sup> <https://www.internationalpropertyrightsindex.org/country/hong-kong-sar-of-china>



consultation, tailored training programs, access to funding opportunities, and various other forms of support specifically designed to facilitate IP commercialisation and trading.

### 6.3.1 Activities

Hong Kong companies exhibit a wide array of professional methods to assign, license, or trade their IP assets, thereby harnessing their value and creating new avenues for business growth. These approaches encompass diverse practices, ranging from direct assignments to licensing, joint ventures, research collaborations, and acquisitions, enabling effective management and monetization of IP assets.<sup>65</sup>

Direct assignments constitute a foundational means of IP transfer, involving formal agreements that facilitate the transfer of IPRs from one entity to another through sales or transfers. Such transactions entail comprehensive transfers of ownership, typically accompanied by financial compensation. By engaging in direct assignments, companies can effectively capitalize on their IP assets and facilitate their transfer to entities capable of maximizing their commercial potential.

Moreover, licensing IP stands out as a prominent and widespread practice within Hong Kong's IP trading landscape. Licensing agreements play a pivotal role in facilitating the commercial utilization of IPRs. This form of IP trading empowers businesses to grant permission to other entities to utilize their IP in exchange for royalties or other mutually agreed financial arrangements. Licensing arrangements provide flexibility, allowing IP owners to leverage their assets without relinquishing ownership, while licensees gain access to valuable IP for their own business operations. The prevalence of licensing in Hong Kong's IP trading ecosystem is further underscored by the existence of various licensing models, including technology transfer licensing, merchandising, franchising, and brand-extension licensing. These licensing activities contribute to a vibrant IP ecosystem in Hong Kong, fostering collaborations, stimulating innovation, and facilitating the commercialization of IP assets.

In addition to direct assignments and licensing, Hong Kong companies actively engage in joint ventures, research collaborations, and acquisitions to effectively manage and trade their IP assets. Joint ventures involve strategic partnerships between two or more companies, pooling their resources and expertise to develop and commercialize IP. These collaborations offer opportunities for shared risks and rewards, as well as access to new markets and technologies.

Research collaborations enable companies to collaborate with academic institutions or research organizations to jointly develop and commercialize IP. Such collaborations foster innovation, promote knowledge exchange, and facilitate the translation of research outcomes into practical applications. By leveraging their combined resources and

<sup>65</sup> <https://www.ip.gov.hk/en/trading-ip/in-general/index.html>



expertise, companies can expedite the development and commercialization of IP assets.

Furthermore, acquisitions involve companies acquiring other entities to gain ownership of their IP assets. This strategy enables companies to expand their IP portfolio, penetrate new markets, and access valuable IP assets held by the acquired entities. Acquisitions provide opportunities for strategic growth and industry consolidation.

In summary, Hong Kong companies adopt a diverse range of professional methods. These strategies empower companies to maximize the value of their IP, foster innovation, and drive economic growth in Hong Kong's dynamic business environment.

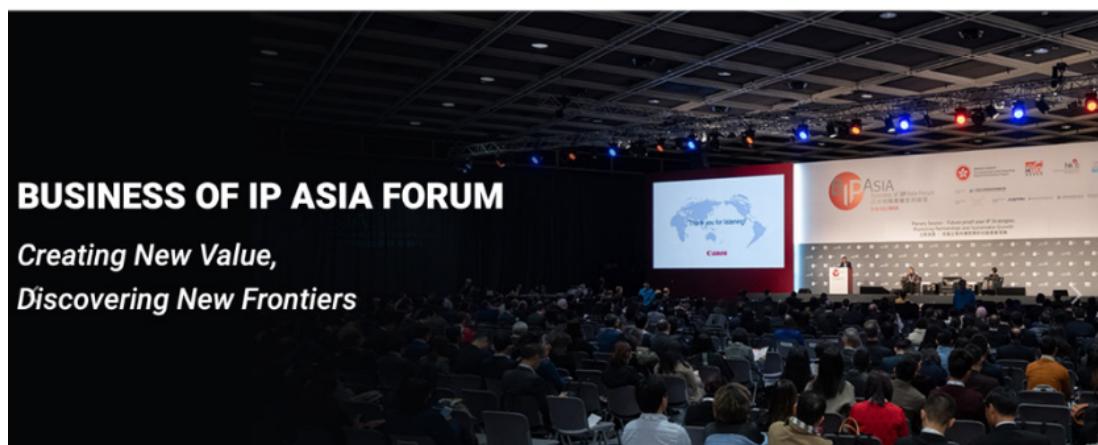
### **The Business of Intellectual Property Asia Forum: Fostering Collaboration and Innovation<sup>66</sup>**

Established in 2011, the Business of Intellectual Property Asia Forum (BIP Asia Forum) has emerged as a premier annual event on the IP landscape in the Asia-Pacific region. This prestigious forum is a collaborative effort between the Government of the Hong Kong Special Administrative Region, Hong Kong Trade Development Council, and Hong Kong Design Centre. The BIP Asia Forum serves as a prominent platform that brings together industry leaders, IP professionals, and stakeholders from around the world. It provides a unique opportunity for knowledge sharing, insightful discussions, and strategic collaborations, contributing to the advancement and promotion of IP in the region.



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### **Asia IP Exchange: Unlocking Global Intellectual Property Opportunities<sup>67</sup>**

Discover a world of IP opportunities and connect with industry players from across the globe through the Asia IP Exchange (AsialPEX). This cutting-edge online platform and database offer free access to over 28,000 tradable IP listings, presenting a vast array of

<sup>66</sup> More information on: <https://bipasia.hktdc.com/conference/bip/en>

<sup>67</sup> More information on: [https://www.asiaipex.com/Home/Index\\_EN](https://www.asiaipex.com/Home/Index_EN)



IP assets from various corners of the world. Explore the extensive collection showcased on AsialPEX, which serves as a gateway to explore and unlock the potential of IPs from diverse industries and sectors. Whether you are seeking IP collaborations, licensing opportunities, or innovative ideas, AsialPEX provides a valuable platform to engage with a global community of IP enthusiasts, fostering a vibrant environment for IP exchange and collaboration.

### 6.3.2 Hong Kong's IP Trade Performance Remain Stable

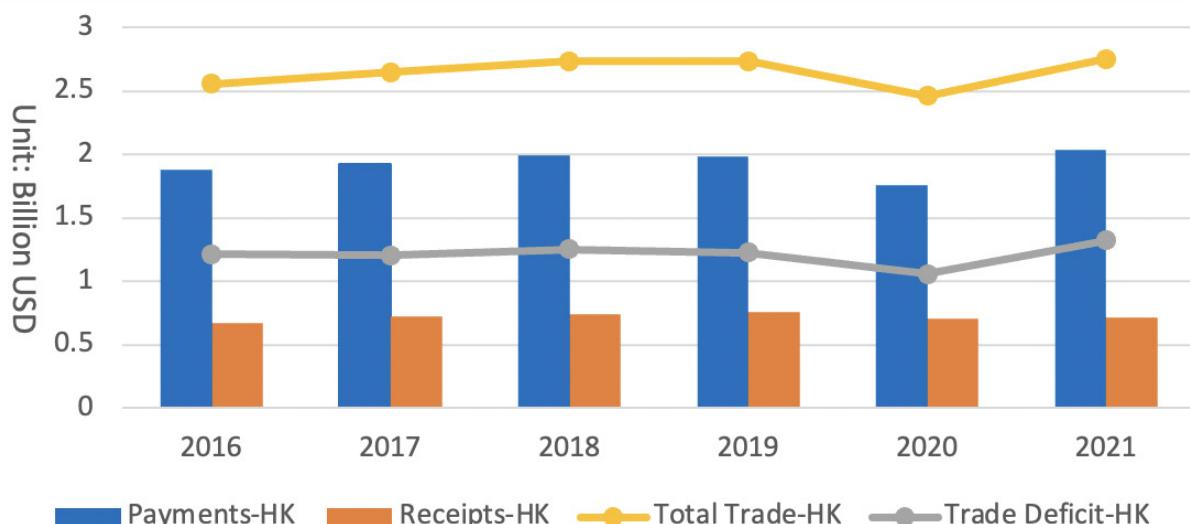
Hong Kong's trade performance in the field of IP has remained stable and showcased a small growth trend from 2016 to 2021. Payments made by Hong Kong increased from 1.88 billion USD in 2016 to 2.04 billion USD in 2021, reflecting a positive upward trajectory. Similarly, receipts also experienced a gradual rise, reaching 0.71 billion USD in 2021. This steady growth in both payments and receipts demonstrates Hong Kong's resilience and competitiveness in the IP market.

Furthermore, the total trade volume of Hong Kong expanded steadily over the years, reaching a peak of 2.75 billion USD in 2021. However, it is worth noting that the trade deficit also grew during this period, indicating a higher level of imports than exports. Despite this trade deficit, Hong Kong's IP trade performance remains stable and demonstrates the robustness of its IP ecosystem.

These consistent growth patterns reflect Hong Kong's commitment to fostering an environment conducive to IP trade and innovation. By maintaining stability and fostering continuous growth, Hong Kong solidifies its position as a key player in the global IP market.



**Figure 22: Charges for the use of IP, receipts & payments, Hong Kong. (2013-2021)**



Data Source: The World Bank, Charges for the use of intellectual property, receipts & payments (BoP, current US\$), <https://data.worldbank.org/indicator/BM.GSR.ROYL.CD?locations=HK> & <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD?locations=HK>

## 6.4 Challenges and Responses

Hong Kong faces several significant challenges in the domain of IP that demand careful consideration and proactive strategies for resolution. Counterfeiting and piracy pose substantial threats, exploiting Hong Kong's strategic location and bustling trading environment. Effectively combatting the production, distribution, and sales of counterfeit goods, as well as addressing online piracy, is of utmost importance. Additionally, the enforcement of IPRs requires a robust legal framework, sufficient resources, and seamless coordination among enforcement agencies. The rise of e-commerce and digital platforms has amplified the challenge of online infringement, necessitating enhanced capabilities in detection, prevention, and remediation. Public awareness about the value of IPRs and the fostering of a culture that respects such rights remain critical, as inadequate understanding and appreciation can stifle innovation and impede economic growth.

Furthermore, strengthening international cooperation and collaboration is vital, given the transnational nature of IP infringement. Hong Kong should actively engage in information sharing, joint efforts, and partnerships with other jurisdictions. Moreover, enhancing the patent system, including streamlining procedures, reducing backlogs, and fostering innovation, will promote the growth of technology-driven industries and attract investments in research and development. Tackling these challenges necessitates a comprehensive approach encompassing legislative enhancements, enforcement measures, targeted public education campaigns, international cooperation, and ongoing adaptation to evolving trends and technologies in the IP landscape.

In response to the numerous challenges surrounding IP, Hong Kong has implemented proactive strategies to effectively address these issues. The government has established key departments, such as the Intellectual Property Department and the Customs and Excise Department, to formulate policies, enforce regulations, and raise public awareness about IPRs. Additionally, Hong Kong recognizes the significance of streamlined dispute resolution mechanisms, as



demonstrated by the introduction of the Arbitration (Amendment) Ordinance 2017. These collective efforts reflect Hong Kong's commitment to fostering a favorable environment for creativity, protecting IP assets, and promoting economic growth.

### **The Role of Hong Kong's Intellectual Property Department<sup>68</sup>**

The establishment of the Intellectual Property Department in July 1990 marked a significant milestone in Hong Kong's dedication to IP matters. With a core focus on offering expert counsel to the Government of the Hong Kong Special Administrative Region, the department plays a vital role in shaping IP policies and legislation. Moreover, it provides civil legal guidance to the government, ensuring the proper implementation and enforcement of IP regulations. One of its key responsibilities is to enhance public awareness and foster respect for IPRs in the community. Additionally, the department takes the lead in driving the government's strategic efforts to position Hong Kong as a prominent regional hub for IP trading. In this capacity, it oversees the registries for trade marks, patents, designs, and copyright licensing bodies, facilitating seamless operations and promoting innovation and creativity in the region.

### **The Role of Hong Kong's Customs and Excise Department<sup>69</sup>**

The Customs and Excise Department in Hong Kong shoulders the crucial responsibility of upholding and enforcing laws related to IPRs. This encompasses the enforcement of regulations against trade mark and copyright infringement within the region. In response to evolving buyer and user behaviors, the department has proactively allocated additional resources to tackle IP-related crimes in the online landscape. This strategic focus encompasses crime prevention, robust enforcement measures, and extensive public education initiatives, ensuring a comprehensive approach to safeguarding IPRs in Hong Kong.

### **IP Disputes: Enhancing Arbitration for IPR in Hong Kong<sup>70</sup>**

The Arbitration (Amendment) Ordinance 2017 ("Amendment Ordinance") marks a significant step in the realm of IP dispute resolution in Hong Kong. Enacted on 14 June 2017 and published in the Gazette on 23 June 2017, the Amendment Ordinance introduces key amendments to the Arbitration Ordinance (Cap. 609). Notably, these amendments clarify that all disputes involving IPRs can be effectively resolved through arbitration, underscoring Hong Kong's commitment to providing a robust and efficient platform for IP dispute resolution. Furthermore, the Amendment Ordinance dispels any notion that enforcing arbitral awards involving IPRs is contrary to the public policy of Hong Kong. These amendments, specifically focused on IPRs arbitration, came into effect on 1 January 2018 (with the exception of section 103J, which operates upon the commencement of section 123 of the Patents (Amendment) Ordinance 2016 on 19 December 2019).

<sup>68</sup> More information on: <https://www.ipd.gov.hk/en/home/index.html>

<sup>69</sup> More information on: <https://www.customs.gov.hk/en/service-enforcement-information/intellectual-property-rights-protection/index.html>

<sup>70</sup> More information on: <https://www.ipd.gov.hk/filemanager/ipd/en/share/publications/Arbitration-of-IP-Disputes-e.pdf>



## 7. Case Summary

The United States, China, and Singapore face similar challenges in IP commercialization, in regards to almost all segments of the ecosystem, including developing legal institutions, law enforcement, credible valuation, transparency and dissemination of information, risk management, and incentivization of stakeholders. Although their governments' responses to challenges vary, a similar solution framework emerges from our studies of the three economies.

### 7.1 United States

The United States has established mature IP markets and implemented government initiatives to facilitate the commercialization of IP. Private-sector platforms like IAM Market provide a venue for patent sellers to showcase their patents and engage in direct transactions with interested buyers. At the same time, the Industry Patent Purchase Program (IP3) streamlines transactions with fixed terms and prices, reducing negotiation costs. In addition, the United States Patent and Trademark Office (USPTO) introduced the “Patents 4 Partnerships” platform, offering a centralized database of United States patents available for licensing, thereby connecting technology owners with potential licensees and promoting technology transfer and commercialization.

The role of the United States government is critical in building a solid foundation for IP commercialization. The USPTO plays a pivotal role in managing patent registration and operating the Patent Public Search platform, which ensures transparency and fair competition. To support early-stage innovators, the USPTO has launched the Law School Clinic Certification Program, providing low-cost professional services through law students supervised by registered attorneys or agents who can file patent and trademark applications on behalf of innovators. Furthermore, the United States Intellectual Property Rights (IPR) Center collaborates with government agencies and private industries, reinforcing the country's IP commercialization framework by bolstering investigative efforts and reducing infringement risks.

In conclusion, the United States case study highlights the importance of fostering efficient IP markets and emphasizes the critical role of government in cultivating a favorable environment for IP commercialization. By drawing inspiration from successful initiatives such as the USPTO and IPR Center, it is crucial to establish well-developed IP agencies that effectively support and promote the monetization of intellectual property.

### 7.2 Singapore

Singapore has positioned itself as a leading global hub for IP trading through its strong government-led approach and significant investments. Its government has built efficient secondary IP trade markets to facilitate networking and asset exchange within the ecosystem. For instance, the Innovation Partner for Impact (IPI) Innovation Marketplace and the A\*STAR Collaborative Commerce Marketplace (ACCM) offer a dynamic platform connecting technology providers with enterprises. Additionally, the Intellectual Property Office of Singapore (IPOS) has



formed Patent Prosecution Highway (PPH) arrangements with key country players, such as the United States and China, to reinforce Singapore's position as a global-Asia node on IP.

Singapore has also taken proactive steps to enhance its legal institutions and nurture talent for IP commercialization. The government established a specialized IP court in 2012 and released an IP court guide in 2013. It also introduced the Copyright Act 2021 and the IP (Amendment) Bill 2021 to ensure the adaptability of IP laws. Additionally, IPOS extended the Enhanced Mediation Promotion Scheme (EMPS) as the Revised Enhanced Mediation Promotion Scheme (RE MPS) for an additional three years, starting from 1 April 2022. The REMPS offers subsidies to parties involved in IPOS proceedings, encouraging them to choose mediation as an alternative to a hearing. Furthermore, Singapore established the IP Academy in 2003 to nurture law professionals specializing in IP commercialization.

Regarding IP valuation, Singapore adheres closely to the standards of the International Valuation Standard Council (IVSC), while attempting to create its own IA/IP valuation guidelines based on the International Valuations Standards for Intangible Assets (IVS 210). Additionally, Singapore has proposed establishing an inter-agency committee led by IPOS and the Accounting and Corporate Regulatory Authority (ACRA) to enhance transparency and certainty in IP transactions by developing mandatory and standardized IP disclosure guidelines for companies that are listed and soon-to-be-listed. IPOS has also committed to developing a pool of accredited IA/IP valuers as part of the infrastructure necessary to support IA/IP valuation for enterprises.

The Singapore government collaborated with commercial stakeholders to develop IA/IP collateral protection insurance and supported a portion of the insurance premium paid by enterprises for securing IP financing. In the past, IPOS also provided a valuation subsidy to encourage companies seeking financing under the IP Financing Scheme (IPFS). However, the program was discontinued in 2018 due to a low participation rate, which highlighted the need to build a vibrant ecosystem for IP financing.

Learned from such a lesson, the Singapore government launched the Singapore Intellectual Property Strategy 2030 (SIPS 2030) in 2021. The SIPS 2030 comprises three interlinked thrusts, including strengthening Singapore's position as a global hub for IA/IP, attracting and growing innovative enterprises using IA/IP, and developing good jobs and valuable skills in IA/IP. Whereas a holistic framework has been formulated, its effectiveness still needs to be further observed as its implementation is still in the early stages.

In short, the Singapore case study shows a robust government-led approach to fostering a conducive environment for IP commercialization. This includes the development of effective secondary IP trade markets, adaptable legal institutions, transparent information dissemination, and talent cultivation. Furthermore, the study underscores the importance of constructing a vibrant ecosystem for IP financing through a comprehensive strategy rather than merely offering subsidies.



## 7.3 China

China's role in global IP commercialization is becoming increasingly significant, as evidenced by its growing annual patent grants, IP trading, and impact on the global Patent Cooperation Treaty (PCT) system. Driven by the financing needs of innovative and independent technologies, IP financing development in China primarily focuses on nurturing high-tech enterprises and SMEs. Although China is relatively weak in developing market-based financing models and implementing internationally recognized standards, it has taken proactive actions and issued supporting policies to stimulate IP commercialization.

Aiming to establish an effective integrated secondary market for IP trade, in 2022, the Chinese National Intellectual Property Administration (CNIPA) announced its plans to establish national institutions. Besides, several provinces in China have implemented policies to subsidize the expenses related to IP financing, such as loan interest fees, insurance premiums, and valuation costs.

The Chinese government has also sought to improve IP protection by establishing numerous specialized courts and the Intellectual Property Court of the Supreme People's Court. Similar to the practices in other regions, China has built an alternative cost-effective IP dispute resolution mechanism through the Intellectual Property Dispute Mediation Committee. In Beijing, various professional organizations have been established to handle disputes in industries such as electronics, software, and medicine.

China's IP valuation mechanism consists of independent third-party professional institutions, internal evaluation within financial institutions, and evaluation services provided by government-affiliated organizations. However, apparent weaknesses remain due to the absence of nationwide standardized asset valuation methods and the shortage of professionals and mature secondary markets.

To strengthen the risk-mitigation mechanism for IP commercialization, the Chinese government provides special funds to guarantee agency and co-share the risk with financial institutions at different ratios. Another practice for reducing the risk of IP financing in China involves requiring a package of assets as collateral, which can be a combination of tangible and intangible assets or the pledge of a bundle of IP.

In short, the case study of China highlights the significant efforts made by the Chinese government to promote IP commercialization. While China has become increasingly significant in global IP commercialization, it still faces challenges in developing mature secondary markets, implementing internationally recognized valuation standards, law enforcement, and professional cultivation. This presents ample opportunities for Hong Kong to contribute to the nation and develop itself as a regional IP trading center.



## 8. Policy Recommendations

China's 14th Five-Year Plan supports Hong Kong to develop into a regional IP trading centre. Based on our country case studies and focus-group interviews, there are several policy recommendations that Hong Kong could consider to enhance its ecosystem for IP commercialization.

### Supporting IP-Backed Financing

As is well known, Hong Kong has unique strength in various professional service sectors due to its institutional competitive advantages. The city's status as an international financial center, due to a combination of factors including its established legal institutions based on common law, a deep pool of experienced and international talents in banking, insurance, legal professions, risk management, and investment, implies that a natural starting point to kick start the development of the IP trading ecosystem should be financial services.

Hong Kong's financial and banking sectors have been upholding the highest international standards. Regulators can impose new regulations (sticks) and offer incentives (carrots) to influence investors' investment strategies. For instance, the green finance model developed by the Hong Kong SAR government together with various regulators in town provides a model framework. The SAR government itself issued billions USD green bonds to support green projects. Hong Kong Monetary Authority (HKMA) in particular implement its 3-phase strategy to implement sustainable and green banking, offering standards for banks to follow, with well-defined mandates and supervisory and monitoring processes. Banks are required to issue a specific amount of green financial products and loans to borrowers to support their green projects.

Hong Kong's green finance framework offers a model framework for establishing a potential IP commercialization ecosystem. The SAR government can consider issuing IP bonds to global investors. Banks should be given incentives or even mandates to lend to support IP-related projects and accept IP as intangible assets as collateral for borrowers. As such, innovative companies will be willing to invest in R&D to create IP as those investments will be perceived as generating expected assets rather than pure costs. Insurance companies should be involved to offer protection schemes to minimize downside risks from investments from IP.

Based on the lessons from Singapore, purely offering tax benefits or subsidies to companies or firms may not work. Authorities should rely on the mechanisms of its mature exchange markets and come up with transparent standards to encourage companies, particularly the listed ones, to disclose their IP as intangible assets. They will be incentivized to do so knowing that investors are motivated to invest in IP-related financial products.

Moreover, Hong Kong should leverage on its rich financial market that include, in addition to its equity market and banking system, various good incubation programs, and angel, private equity and venture capital funds. The government and public organizations should consider establishing IP-backed financial schemes for companies that create IP, ranging from startups to big firms. The SAR



government should work closely with insurance companies to participate in these financial schemes to offer insurance protection and appropriate risk sharing. For start-ups, incubation programs and angel capital will help them to invest in low-capital innovation. Large-amount financing (USD 20 million or above) for relatively matured but still early-stage companies (e.g., Soonicorn), there should be a new funding source through banks' financing, accepting IP as collateral complemented with a collateral insurance to protect creditors' interests.

### **Lowering the Costs and Risks of IP Valuation**

Efficient market trading requires credible pricing based on transparent and standardized methods. For relatively standardized goods and services, usually transactions in competitive markets will naturally reveal their prices. However, IP valuation is particularly challenging because of its underlying technological nature and that markets for specific IPs are usually quite thin, if not missing. Field-specific knowledge and expertise are often needed to evaluate the value of an IP. The cost of IP valuation is usually too high for many companies, especially the small ones, to overcome. The shortage of market transactions together with the lack of expertise further raise the risks of IP production, investment, and trading.

To lower the costs of IP valuation and the risks of IP-related activities, regulators or platform creators can offer clear and consistent valuation methodologies to facilitate a fairer valuation process. Big data technologies can be deployed to offer reference prices of IP. IP trading and information platforms should be created with the goal to reveal information about individual IP, and increase matching between buyers and sellers as well as professional service providers such as insurance companies and legal professionals. Even for non-traders, such platforms will let them learn about their market positions and differentiate their innovation from existing ones, increasing companies' incentives to innovate, thereby contributing to Hong Kong's path to become international innovation and technology center and East-meets-West center for international cultural exchange, among others. There are plenty of examples of platforms, both private and public, from the three countries we study in these reports.

Based on the experiences of the three country case studies together with the insights obtained from focus-group interviews, the SAR government and related public organizations can also consider reducing the cost of IP valuation by subsidizing it. The government together with insurance companies and banks should come up with risk sharing schemes following the models adopted by certain local governments in Mainland China.

Once individual businesses and investors can better understand the value of their IP assets, they will be able to conduct more effective planning, accounting, and investment decisions. Additionally, the government should promote the use of IP valuation in different sectors, including finance and technology, to raise awareness and encourage the growth of IP commercialization.

### **Establishing an Alliance with a Secretariate to Pool Resources**

Due to the high costs of IP creation, valuation, and trading, cost sharing from pooling resources in



a small economy is important. As an example, all research-oriented universities in Hong Kong have their technology transfer offices (TTO). Each university has researchers from different disciplines to produce IP every year, but there is a limited supply of experts and professional service providers who have the field-specific science and knowledge to help the researchers to pitch their IP to potential investors, let alone commercializing them. According to the researchers we interviewed, they often reveal that their comparative advantage is in research but not in marketing or commercialization. If others can help them market and eventually commercialize their research outcomes, they can focus on scientific innovation and become even more motivated to do so.

Against this backdrop, an alliance should be created to connect different stakeholders and experts from different segments of the IP ecosystem. The alliance should have a secretariate with administrative staff to arrange collaboration between different stakeholders. Information should be shared between different universities' TTO about their faculty's most recent research outputs, so that the alliance's resources can be better allocated to commercialize academics' innovation. Besides, the alliance can have their in-house lawyers, patent experts, scientists, and researchers, marketing professionals to help the alliance's members to better understand their innovation's market value and strategies, so as to reduce the burden on the TTO of each university or organization. After all, economies of scale are important for innovation, especially for a small economy.

### **Strengthening Existing Legal and Regulatory Frameworks**

Protection of IP values is the prerequisite for IP creation, valuation, and trading, which in turn needs robust legal and regulatory frameworks. Hong Kong's legal institutions have been globally recognized as developed and fair, and its government has made consistent efforts to strengthen the IP regime, including the establishment of the "original grant patent" (OGP) system, the implementation of the Protocol Relating to the Madrid Agreement Concerning the International Registration of Marks in Hong Kong, and the amendment of the Copyright Ordinance.

That said, regarding IP protection and related litigation, there is room for improvement. The SAR government can further improve on lowering legal costs of IP applications and strengthening law enforcement of IP infringement. Referring to the experiences of China and Singapore, one way to lower legal costs is to encourage mediation by establishing an IP dispute mediation committee to expensive litigation. Related authorities can consider offering subsidies to lower IP-related legal costs. Moreover, given that Mainland China is the leading origin of non-resident patent applications in HKSAR, the SAR government should also strengthen collaboration with the Mainland in terms of law enforcement and dispute resolution.

### **Incentivizing Various Stakeholders in the IP Ecosystem**

The high costs of IP commercialization reduce stakeholders' engagement and slow down progress. Currently, the IP market scale in Hong Kong still has much room to grow. The SAR government should take active actions to increase incentives among various stakeholders to contribute to building an ecosystem. The tax concessions for profits sourced in Hong Kong from qualifying patents



generated through R&D activities, as announced by the government's financial secretary in the 2023-2024 Budget, was a good start.

Based on the experiences of China and Singapore, the government can consider collaborating with external parties (e.g., banks, insurance companies, and IP-specific law firms) to lower IP-related costs. It can also consider committing a fixed annual budget to provide financial support to companies for IP registration, protection, valuation, assignment, licensing, and financing, as well as encouraging dispute mediation. This can help reduce the costs and risks for businesses to foster the development of a collaborative ecosystem for IP commercialization.

Our country case studies show that creating an effective IP market to lower transaction cost is an essential component of IP commercialization. Given that the Hong Kong Trade Development Council (HKTDC) has developed a free online platform called Asia IP Exchange to showcase IPs and IP service providers, in the current stage, it is sensible to focus resources on marketing the existing platform and enhancing its existing functions and adding new ones. Based on similar platforms built in China (e.g., [www.zhihuiya.com](http://www.zhihuiya.com)) and the United States (e.g., <https://www.iam-market.com/>), it can be improved on several dimensions, such as offering information on pricing and valuation, facilitating trading and offering preliminary legal services through third parties. All these will help lower at least initial IP transaction costs and attract more participants in IP creation, valuation, and trading.

### **Building an IP Talent Pool**

The ecosystem of IP commercialization requires many different types of experts, ranging from bankers to scientists. Hong Kong should grasp the opportunity arising from the development of itself into a regional IP trading hub to nurture and attract new talents. The city currently lacks almost all types of experts needed to develop it into such a hub, but experts in IP law, valuation, transfer, and commercialization should be the targeted areas of building the talent pool.

This can be achieved through establishing IP-related undergraduate, postgraduate programs in different departments in universities, together with professional training and certificate programs offered by business associations, sometimes jointly with academic institutions. Some of these offerings can be done with international organizations, such as the WIPO Academy. Only with a broad skilled workforce, can Hong Kong become a regional IP trading hub. Furthermore, the government should create a conducive environment for attracting top global IP talents by offering occupation-specific immigration quotas with hiring subsidies.

### **Joining and Building International Networks of IP Platforms**

Developing a regional IP trading center requires a big IP market, and for Hong Kong the market is obviously global not local. The existing Economic Technical Cooperation Agreement (Ecotech Agreement) signed in June 2017 between the HKSAR and the Mainland can be expanded and deepened in streamlining the IP processes through more mutual recognition of patent applications and ownership. Cooperation in areas from IP creation to protection and trading should be strengthened.



Besides, the SAR government should consider joining up Patent Prosecution Highway (PPH) with the patent offices of other jurisdictions, which will expedite the patent examination process and enhance patent applicant's expected protection in other jurisdictions. It will help better position HKSAR as a middleman of IP commercialization between Mainland Chinese and the rest of the world. Relatedly, it should also examine the necessity of establishing specialized IP courts to handle specialized IP disputes in Mainland China and in the region.

### **Government's Purchasing IP in Advanced Industries**

The HKSAR government can also consider buying some IP itself to be used for developing the pillar advanced industries (e.g., life and health technology, artificial intelligence, and data science), as announced in the Hong Kong Innovation & Technology (I&T) Development Blueprint by the Secretary for Innovation, Technology & Industry in December 2022. This can be done through various government's new investment funds, such as the Hong Kong Growth Portfolio. The obvious targets of acquisitions will be IP and patents owned by researchers at local universities.

There are several advantages to have the SAR government's purchasing IP in specific industries. First, it will facilitate the commercialization of university's basic scientific research. Second, it will help create a market of IP trading by setting up clear examples of valuation. Third, it will help the development of new advanced industries, contributing the development of Hong Kong as another hub – the International Innovation and Technology Hub. Finally, given the relatively small size of Hong Kong's labor force and the need to have a diverse set of experts working in the IP ecosystem, it helps to narrow the scope of the scientific and technology fields a bit and focus on just a few technology industries. Health-tech will be a natural starting point, but others can be considered as well.



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### Industry

Mr. Nixon Chau, Managing Director and General Manager of SenseTime Hong Kong

Mr. Harrison Ho, Managing Director of International Wealth Management at Nomura International (HK) Ltd; Chairman of the Financial and Treasury Services Committee of Hong Kong General Chamber of Commerce (HKGCC)

Mr. Eddie Hui, Managing Director & CEO of Semk Holdings International Limited and the founder of B-Duck

Mr. Andrew Liao, Senior Counsel of Andrew Liao SC's Chambers

Mr. Richard Wong, Director of China Global Solutions, AON; Convenor of IP-backed Financing Working Group, HKGCC

Mr. Michael Yu, Director of Sunnex Products Ltd

### Academia

Prof. Johnny Ho, Director of Knowledge Transfer Office at City University of Hong Kong

Prof. Anderson Shum, Associate Vice President (Research and Innovation) at the University of Hong Kong

Prof. David Weitz, Professor of Physics and Applied Physics at Harvard School of Engineering and Applied Sciences

Ir Dr Alfred Tan, Deputy Director of Technology Transfer Office at the University of Hong Kong



## Government, NGO, and Public Organization

Dr. King Au, Executive Director of Financial Services Development Council (FSDC)

Ms. Jamie Cheng, Director of Ecosystem and University Technology Transfer of Hong Kong Applied Science and Technology Research Institute (ASTRI)

Mr. Johnson Kong, Board Member of the International Intellectual Property Commercialization Council (IIPCC)

Mr. Nicholas Kwan, Deputy Head of HKSAR Chief Executive Policy Unit

Mr. Edmond Lai, Chief Digital Officer of Hong Kong Productivity Council (HKPC)

Ms. Rita Meng, Senior Researcher, HKSAR Chief Executive Policy Unit

Mr. Greg So, Former Secretary of Commerce and Economic Development Bureau of the HKSAR Government

Mr. Peter Yan, CEO of the Hong Kong Cyberport Management Company Limited

Mr. Michael Lin, Partner of Marks & Clerk.

Mr. Yu Chen, Deputy Director of Shanghai Intellectual Property Administration

Mr. Qu Lin, General Manager of Shanghai Technology Exchange

## Steering Committee

Mr. Eugene Chan, Executive Vice President of Hong Kong Young Industrialists Council Limited

Mr. Nick Chan, Partner of Squire Patton Boggs (HK)

Mr. Jason Chiu, Committee Member of Hong Kong Young Industrialists Council Limited

Mr. Geoffrey Gkao, Chairman of Hong Kong Young Industrialists Council Limited

Dr. Charleston Sin, Executive Director of MIT Hong Kong Innovation Node

Mr. Paul Tai, Ex-officio of Hong Kong Young Industrialists Council Limited

Mr. Wayne Yu, Committee Member of Hong Kong Young Industrialists Council Limited

\*The lists are arranged alphabetically by the individuals' last names.



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**香港九龍長沙灣道 889 號華創中心 22 樓 05-06 室**  
Unit 5-6, 22/F, CRE Centre, 889 Cheung Sha Wan Road, Kowloon, Hong Kong

**Tel:** +852 2424 1511  
**Fax:** +852 2425 1357  
**Email:** info@hkyic.org  
**Website:** <https://hkyic.org/>