2023

Manufacturing Innovation

Xuan-Thao Nguyen

Manufacturing Innovation

XUAN-THAO NGUYEN*

The annual Global Innovation Index released in September 2021 ranked China twelfth, surpassing developed economies such as Japan, Israel, and Canada and raising fears in the United States amidst sluggish growth in North America and strong growth in the Asia Pacific region.[1] Interestingly, the United States government responded by boycotting the Beijing Olympic Games, citing human rights abuses as the main reason.[2] A tech war between China and the United States brewed beneath the diplomatic rancor over the attendance at the Olympic Games. In this new Cold-War-type struggle, the winner will enjoy the greatest prize: dominating the twenty-first century.[3]

Contrary to the continuous criticisms that China is a tech pirate, China's new standing in the Global Innovation Index is the product of a complex legal and policy reform process.[4] This paper offers a seminal examination of

* Pendleton Miller Chair in Law; Director, Asian Law Center, University of Washington School of Law. Thank you to Michelle Swinney and Cecelia Shaulis for their superb assistance. Professor Nguyen dedicates the *Tech War* series of law review articles to her Chinese students at the University of Washington School of Law and Indiana University McKinney School of Law.

1. *Global Innovation Index 2021: Innovation Investments Resilient Despite COVID-19 Pandemic; Switzerland, Sweden, U.S., U.K. and the Republic of Korea Lead Ranking; China Edges Closer to Top 10*, WIPO (Sept. 20, 2021), https://www.wipo.int/pressroom/en/articles/2021/article_0008.html [https://perma.cc/U9N7-NETA]. The Index reports new findings that strong growth in the Asia Pacific "more than compensated for declines in North America and Europe." *Id.*

2. *US Diplomats to Boycott 2022 Beijing Winter Olympics*, BBC NEWS (Dec. 7, 2021), https://www.bbc.com/news/world-us-canada-59556613 [https://perma.cc/FKP4-L2CD] (stating that high-level government representatives from the United States and other countries are typically present at the Olympic Games but the United States government announced that "no official delegation would be sent to the Games because of concerns about China's human rights record"); Allie Malloy & Kate Sullivan, *White House Announces US Diplomatic Boycott of 2022 Winter Olympics in Beijing*, CNN (Dec. 6, 2021, 2:27 PM), https://www.cnn.com/2021/12/06/politics/us-diplomatic-boycott-winter-olympics/index.html [https://perma.cc/LT8D-U3WJ] (reporting that the United States diplomatic boycott is a statement against China's "ongoing genocide and crimes against humanity in Xinjiang").

3. *See, e.g.*, GORDON G. CHANG, THE GREAT U.S.-CHINA TECH WAR 1 (2020).

4. *See, e.g.*, Dan Blumenthal & Linda Zhang, *China Is Stealing Our Technology and Intellectual Property. Congress Must Stop It*, NAT'L. REV. (June 2, 2021, 6:30 AM), https://www.nationalreview.com/2021/06/china-is-stealing-our-technology-and-intellectual-property-congress-must-stop-it/ [https://perma.cc/H3DW-XBGZ] (accusing China for tech theft that costs United States firms between $225 billion and $600 billion every year and urging Congress to pass the United States Innovation and Competition Act that would "pump[] more government funding into the U.S. research enterprise"); *China Still Steals Commercial Secrets For Its Own Firms' Profit*, ECONOMIST (Nov. 11, 2021), https://www.economist.com/china/2021/11/11/china-still-steals-commercial-secrets-for-its-own-firms-profit [https://perma.cc/C8YZ-

how China has transformed from a global manufacturer of goods into a global manufacturer of innovation in the last several decades, solidifying its position for the new tech war of today. China leverages the ecosystem that it began building in the 1980s. China's strong embrace of intellectual property, indigenous innovations, and strategic policies turned intellectual property into new assets of innovation.

Using intellectual property assets as the proxy for innovation measures, this paper provides a comprehensive analysis of the legal and policy strategies that form the foundation for China's new role as the global manufacturer of innovation. Manufacturing innovation is evident through China's multi-prong approach regarding intellectual property production and maximization. Significantly, among many other policies that target innovation, China encourages the production of innovation by accepting patents and trademarks as collateral assets for financing. Entrepreneurs can quickly obtain loans against their portfolios of patents and trademarks. China also requires enterprises seeking to undergo an initial public offering (IPO) on the new tech board at the Shanghai Stock Exchange to own intellectual property assets as evidence of innovation.

Part I documents how the United States has assisted China's tech and intellectual property domination through President Nixon's historic visit to China, giving China Most Favorite Nation (MFN) status and ascending China to the World Trade Organization (WTO). Moreover, under Deng Xiaoping's leadership during the reform period, China rapidly developed its special economic zones (SEZs), laying the foundation for subsequent tech innovation and production.

Part II contains charts that demonstrate the astounding annual growth in the numbers of trademarks, invention patents, utility model patents, and industrial designs obtained by Chinese individuals and businesses. These numbers cement China as a powerhouse in producing intellectual property assets in place of physical goods.

Part III focuses on three key factors that contribute to the production of intellectual property assets. The first factor involves the legal development of intellectual property law and rapid legal reforms. China amends and modernizes different intellectual property laws every ten years, ensuring that the laws keep pace with the rapid production of intellectual property assets. The second factor involves judiciary reform and innovation for the enforcement of intellectual property rights that establish a new level of confidence in private ownership of valuable intellectual property assets. The third factor involves how the reorganization of the national intellectual property agency affirms intellectual property assets as products of innovation that prove important and worthy of protection and management.

Manufacturing innovation also epitomizes China's policies on subsidies, as explained in Part IV. China strategically maximizes its intellectual property

---

TXTV] (reporting the coordinated condemnation by the United States and other nations of the Chinese government for cyberhacking to steal commercial secrets).

production numbers by offering subsidies for innovator housing, filing fees, and selected industry sectors.

Most importantly, China provides *ex post* incentives. In Part V, this paper examines how China encourages the manufacturing of innovation by creating a special tech board on the Shanghai Stock Exchange and requiring companies filing for IPO to own patents. In addition, Chinese lenders accept patents and trademarks as collateral for loans to entrepreneurs. This encourages entrepreneurs to produce patents and trademarks because they become assets that can be used to obtain financing.

The paper arrives at Part VI by exploring the implications of what manufacturing innovation by China may mean to the United States. The United States must thoughtfully formulate a set of corrections regarding its success and failure at the production of innovation without demonizing China.

I. China as the World's Manufacturer of Goods

China successfully lifted its people from poverty by embracing the economic reform initiated by Deng Xiaoping.[5] China implemented poverty reduction policies[6] and subsequently transformed itself from a backward economy in the late 1970s to the world's factory and supplier of goods in all major categories by 2009.[7]

In consumer goods, from toys, clothes, shoes, and accessories to electronic products, China replaced country after country as the top producer and exporter.[8] In industry, office, and home equipment, China's products are omnipresent. Indeed, broadcasting, telecommunications, office machines, computers, integrated circuits, and cell phones are among China's notable exports to the world.[9] China dominates in commodities and raw materials, exporting refined petroleum, cotton, plywood, and tea.[10] For agricultural products, China occupies the perch as the world's largest producer. For instance, China leads all countries in the production of wheat and rice

5. Shujie Yao, *Economic Development and Poverty Reduction in China Over 20 Years of Reforms*, 48 ECON. DEV. & CULTURE CHANGE 447, 447 (2000) (stating that the poverty reform by Deng Xiaoping reduced poverty by approximately seventy-five percent and that the reduction "is unprecedented in world development history").

6. *Id.* ("One of the most important policy objectives of reform was to raise the living standards of the people so that no one would be suffering from hunger or malnutrition by the end of the twentieth century.").

7. *Top Chinese Imports and Exports: An Overview of China's Economy*, COMMODITY.COM, https://commodity.com/data/china/ [https://perma.cc/ET5X-4K9E] (Sept. 20, 2022).

8. *See Consumer Electronics Industry Report*, INTREPID SOURCING, https://intrepidsourcing.com/industry-reports/consumer-electronics-industry-report/#:~:textChina%20is%20the%20largest%20producer,for%20the%20Consumer%20Electronics%20Industry [https://perma.cc/SU5K-GSTY] (last visited Jan. 31, 2022).

9. *Top Chinese Imports and Exports: An Overview of China's Economy*, *supra* note 7.

10. *Id.*

commodities.[11] In addition, China enjoys global producer status for corn, millet, barley, and oilseed.[12]

China has ventured beyond consumer goods, agricultural products, and business equipment into the biopharma sector. Indeed, China's pharmaceutical industry is predicted to be the world's largest manufacturer this decade.[13] For a long time, China has held a dominant position in the medical equipment sector. During the early days of the COVID-19 pandemic, many countries, including the United States, experienced the dire consequences of China's domination when necessary medical equipment and masks were in short supply.[14] China decided to keep these medical necessities for themselves while other nations faced severe shortages. While most countries struggled in their battles against COVID-19, China leveraged its manufacturing prowess, capitalized on its quick recovery, and became the only country with positive economic growth in 2020.[15]

China's control in the manufacturing sectors and its dominant position on the global stage overall remain unmatched. For the past eleven consecutive years, China has maintained its status as the world's largest manufacturing nation.[16] If this force of domination continues to progress, China will replace the United States as the world's largest economy by 2028.[17]

China's ascendance to the apex of global manufacturing rests on several factors. In the early 1980s, Deng Xiaoping, the architect of China's reforms, created four SEZs. Shenzhen rose as the largest among the four.[18]

---

11. *China: World's Largest Agricultural Economy*, MILLER MAG. (Jan. 22, 2020), https://millermagazine.com/english/china-worlds-largest-agricultural-economy/.html#:~:text=China%20is%20the%20world's%20largest,millet%2C%20barley%2C%20and%20oilseed [https://perma.cc/A4KX-E54R].

12. *See id.*

13. *China's Pharmaceutical Industry Will Be the World's Largest in Under 10 Years*, DAXUE CONSULTING (July 19, 2022), https://daxueconsulting.com/pharmaceutical-industry-china/ [https://perma.cc/L2AJ-W56K].

14. *See* Willy C. Shih, *Bringing Manufacturing Back to the U.S. Is Easier Said Than Done*, HARV. BUS. REV. (Apr. 15, 2020), https://hbr.org/2020/04/bringing-manufacturing-back-to-the-u-s-is-easier-said-than-done [https://perma.cc/ZQP5-9FZF] (stating that the pandemic shortage of supplies forced some in the United States to advocate for increased manufacturing capability in the United States but the complexity of the supply chains hinders efforts to return the United States into a manufacturing center for consumer, electronic, computer, medical, and pharma products).

15. Jonathan Cheng, *China Is the Only Major Economy to Report Economic Growth for 2020*, DOW JONES INST. NEWS (Jan. 17, 2021), https://www.proquest.com/docview/2478384696?pq-origsite=Primo&parentSessionId=KJe%2FII4jxgoIeEPKefTvGa80su%2B55Z3jmAhE0WG18s8%3D [https://perma.cc/NZF3-9B39].

16. *China Keeps Position as World's Largest Manufacturing Country*, CGTN (Mar. 1, 2021, 10:28 PM), https://news.cgtn.com/news/2021-03-01/China-keeps-position-as-world-s-largest-manufacturing-country-YgMDvUPrW0/index.html [https://perma.cc/7VXP-PRY7].

17. *Chinese Economy to Overtake US 'By 2028' Due to Covid*, BBC (Dec. 26, 2020), https://www.bbc.com/news/world-asia-china-55454146 [https://perma.cc/47PV-UBCB].

18. Susan Tiefenbrun, *U.S. Foreign Trade Zones and Chinese Free Trade Zones: A Comparative Analysis*, 14 J. INT'L BUS. & L. 189, 214-15 (2015) (noting the four special economic zones are Shenzhen, Zhuhai, Shantou, and Xiamen); Deng Xiaoping, Remarks Made During an

Shenzhen, a small fishing locale in the southern part of China's southern province, Guangdong, served as the pioneer of Deng Xiaoping's embrace of economic reforms.[19] A market-oriented economy took root in Shenzhen, allowing foreign companies and entities from Hong Kong and Macau to operate and allowing Chinese talents the freedom to leave their hometowns and move into the SEZs.[20]

Cheap labor proved to be another significant factor facilitating China's rise as a global manufacturer.[21] In the 1980s, multinational corporations from Taiwan, Japan, and South Korea, as well as domestic Chinese

---

Inspection Tour of Shanghai (Jan. 28-Feb. 18, 1991) ("When we decided to establish the four special economic zones in 1979, we chose them mainly on the basis of their geographical advantages. Shenzhen is adjacent to Hong Kong, and Zhuhai is close to Macao. We chose Shantou because there are many natives of nearby Chaozhou living in Southeast Asian countries. Xiamen became a special economic zone because many natives of southern Fujian have emigrated to other countries and gone into trade.").

19. Ted Hagelin, *Reflections on the Economic Future of Hong Kong*, 30 VAND. J. TRANSNAT'L L. 701, 719 (1997) ("Deng Xiaoping was personally responsible for designating Shenzhen as China's first SEZ, a radical reform initiative which ultimately altered the course of China's economy."); Bin Xue Sang, *Pudong: Another Special Economic Zone in China?—An Analysis of the Special Regulations and Policy for Shanghai's Pudong New Area*, 14 NW. J. INT'L L. & BUS. 130, 132 (1993) ("[M]any observers attribute much of the success of China's economic reform and its exciting economic development to the achievements of the SEZs and the coastal cities."); Jason J. Kilborn, *The Rise and Fall of Fear of Abuse in Consumer Bankruptcy: Most Recent Comparative Evidence from Europe and Beyond*, 96 TEX. L. REV. 1327, 1348 (2018) (stating Deng Xiaoping's "reform and opening" policy created the special economic zones in 1979); Johanna McGeary, *Deng Xiaoping Set Off Seismic Changes in China*, TIME (Mar. 3, 1997), http://content.time.com/time/subscriber/article/0,33009,985990,00.html [https://perma.cc/7WVN-VJGH]. *See also Special Economic Zones: Performance, Lessons Learned, and Implications for Zone Development*, WORLD BANK GRP. (Apr. 2008), https://documents1.worldbank.org/curated/en/343901468330977533/pdf/458690WP0Box331s0April200801PUBLIC1.pdf (stating that economic growth has transformed "Shenzhen from a small, sleepy fishing village into a thriving urban metropolis").

20. Jean-Philippe Engel, *Foreign Direct Investment and Tax Incentives in China*, 20 J. INT'L TAX'N 48, 50 (2009) ("A primary goal of China's economic development strategy under Deng Xiaoping was the attraction of FDI in certain less developed areas of the country, which have come to be known as special economic zones (SEZs). The aim of this policy was a gradual shift to a more capitalist economic system from the existing planned state economy. Numerous tax holidays, preferential tax treatment, and grandfather provisions successfully attracted foreign investment."); Hagelin, *supra* note 19, at 718-20 (noting how the development of Shenzhen depended on Hong Kong, which contributed about sixty-six percent of foreign investment between 1979 and 1995); Siyuan An & Brian Peck, *China's Indigenous Innovation Policy in the Context of Its WTO Obligations and Commitments*, 42 GEO. J. INT'L L. 375, 382 n.13 (2011) (noting that Deng Xiaoping's policy permitted foreign investments in SEZs).

21. S. James Boumil III, *China's Indigenous Innovation Policies Under the TRIPS and GPA Agreements and Alternatives for Promoting Economic Growth*, 12 CHI. J. INT'L L. 755, 759 (2012) ("Known for decades as 'the world's factory,' China has capitalized upon its abundance of low-cost labor to manufacture the staples of daily life at prices that significantly undercut those produced by its Western competitors."); Prableen Bajpai, *Why China Is "The World's Factory"*, INVESTOPEDIA, https://www.investopedia.com/articles/investing/102214/why-china-worlds-factory.asp [https://perma.cc/G9JE-AKVD] (June 18, 2022); Brian Holland, *Migrant Children, Compulsory Education and the Rule of Law in China*, 14 BUFF. HUM. RTS. L. REV. 209, 215 (2008)

companies, opened their factories in the SEZs and other cities in China to take advantage of the cheap and plentiful labor force.[22] Indeed, when Deng Xiaoping began his pilot SEZs, China's young workers who wished to lift themselves out of poverty descended into the economic zones in search of better opportunities.[23] Shenzhen grew from a population of 59,000 in 1980 to a population of 12,357,000 in 2020.[24] The new migrants became the workers, participants, and stakeholders in the global manufacturing frontier.[25] Because of the abundance of cheap labor, manufacturers in China have no difficulty keeping production prices low and pleasing consumers and businesses worldwide.[26]

China's currency manipulation is another factor propelling China to its domination in global manufacturing.[27] The United States Congress attempted numerous times to introduce legislation to combat China's currency manipulation.[28] China artificially devalued its currency through government control of the exchange rate and refused to let the Chinese

---

(stating that China's urban centers increased the demand for cheap labor, which caused the migrations within China).

22. Neil King, Jr., *A Whole New World*, WALL ST. J. (Sept. 27, 2004), https://www.proquest.com/docview/398889182?pq-origsite=primo&accountid=6667 (noting the influx of foreign manufacturers from Taiwan, Japan, and South Korea that opened factories in China); *The Dragon and the Eagle*, ECONOMIST (Oct. 2, 2004), https://www.economist.com/special-report/2004/10/02/the-dragon-and-the-eagle [https://perma.cc/72JD-VUMY] (reporting that China became the largest recipient of foreign direct investment and predicting that China was poised to be the world's largest exporter and importer to edge out the United States as the world's largest economy).

23. Clarence Chan, *Migrant Cities in Guangdong Province*, CHINASOURCE (Dec. 12, 2004), https://www.chinasource.org/resource-library/articles/migrant-cities-2/; *13 Million Guangdong Migrants Could Gain Permanent Residence by 2020*, WALL ST. J. (July 10, 2015, 12:50 AM), https://www.wsj.com/articles/BL-CJB-27266 [https://perma.cc/3737-3UFL]; Tiefenbrun, *supra* note 18, at 215 ("The government of Shenzhen encouraged the mass migration of young workers into the city such that young migrants comprised 83 percent of the city's population, and people over sixty years of age were only 6 percent of the population.").

24. *Shenzhen, China Metro Area Population 1950-2022*, MACROTRENDS, https://www.macrotrends.net/cities/20667/shenzhen/population#:~:text=the%20metro%20area%20population%20of,a%201.88%25%20increase%20from%202019 (last visited Jan. 31, 2022). *See Migrant Workers and Their Children*, CHINA LAB. BULL., https://clb.org.hk/content/migrant-workers-and-their-children [https://perma.cc/FN9F-R922] (stating that there are approximately 262 million rural migrant workers in China) (May 26, 2022).

25. Xiaoyong (Shawn) Li & Neal A. Stender, *Investing in China: Changing Roles of Shanghai and Taiwan*, 20 No. 6 ACCA Docket 58, 70 (June 2002) ("Shenzhen manufacturing and clerical operations can be visited daily from Hong Kong and, like Shanghai, draw cheap labor, graduates, and professionals from all over the mainland.").

26. *See* Jennifer Pak & Sabri Ben-Achour, *Manufacturing: The China Inc. Model*, MARKETPLACE (Feb 2, 2021) https://www.marketplace.org/2021/02/02/manufacturing-the-china-inc-model/ [https://perma.cc/YK6Q-FSV3].

27. *See* Michael Collin, *The Truth About Trade Deficits and Currency Manipulation*, INDUS. WK. (Jan. 12, 2021) https://www.industryweek.com/the-economy/article/21152141/the-truth-about-trade-deficits-and-currency-manipulation (discussing China's currency manipulation and the impact on manufacturing).

28. *See* H.R. 3269, 108th Cong. (2003); H.R. 3157, 109th Cong. (2005).

Renminbi (RMB) float.[29] Despite strong criticisms from the United States, China refuses to allow its currency to freely float.[30] China's currency manipulations, according to critics, caused the widening of trade deficits between the United States and China.[31] China's currency manipulation allows products to be manufactured at lower prices, hampering competitors and thereafter replacing them.[32] In order to cope with China's currency practices, United States manufacturers facing their own existential crises must decide to either outsource jobs overseas or face large risks, including financial ruin.[33] The United States lost millions of manufacturing jobs due

29. *See* Daniel C.K. Chow, *Can the United States Impose Trade Sanctions on China for Currency Manipulation?*, 16 WASH. UNIV. GLOB. STUD. L. REV. 295, 307 (2017).

30. Joshua Brown, *US-China Trade Imbalance: The Economic, Political, and Legal Implications of Chinese Currency Manipulation*, 9 INT'L L. & MGMT. REV. 53, 58 (2012); Wei Shi, *The Cat and the Mouse Saga Continues: Understanding the US-China Trade War*, 55 TEX. INT'L L.J. 187, 198 (2020) ("Since the beginning of the 1990s, in pursuit of strengthened IPR enforcement, the United States leveraged a series of unilateral mechanisms— currency manipulation, non-renewal of Most Favored Nation (MFN) status, and opposition to entry into the WTO—to push China toward stronger protection of American intellectual property.").

31. One of the strong critics is Robert E. Scott of the Economics Policy Institute. *See* Robert E. Scott, *The China Toll: Growing U.S. Trade Deficit With China Cost More Than 2.7 Million Jobs Between 2001 and 2011, With Job Losses in Every State*, ECON. POL'Y INST. (Aug. 23, 2012), https://www.epi.org/publication/bp345-china-growing-trade-deficit-cost/ [https://perma.cc/Y2KT-96VL]; Robert E. Scott, *Currency Manipulation—History Shows That Sanctions Are Needed*, ECON. POL'Y INST. (Apr. 29, 2010), https://www.epi.org/publication/pm164/ [https://perma.cc/6D7W-RMYC] [hereinafter *Currency Manipulation—History Shows That Sanctions Are Needed*]; Robert E. Scott, *Currency Manipulation and Manufacturing Job Loss*, ECON. POL'Y INST. (July 21, 2016), https://www.epi.org/publication/why-negotiating-great-trade-deals-is-not-the-answer/ [https://perma.cc/N28N-R7LH] [hereinafter *Currency Manipulation and Manufacturing Job Loss*] ("Currency manipulation acts like an artificial subsidy to the host country's exports (making their goods artificially less expensive) and as a tax on all U.S. exports, which undercuts the competitiveness of U.S. products, especially manufactured goods (which make up 70 percent of all U.S. goods exports [USITC 2016]). As a result, the growth of trade deficits since the late 1990s has eliminated millions of U.S. manufacturing jobs.").

32. *See Currency Manipulation—History Shows That Sanctions Are Needed*, *supra* note 31; *Currency Manipulation and Manufacturing Job Loss*, *supra* note 31. *See also* Michele Nash-Hoff, *Chapter 1 – What Is the Current State of U.S. Manufacturing?*, CAN AM. MFG. BE SAVED? 3, http://savingusmanufacturing.com/excerpt2.php [https://perma.cc/JYY7-FLWJ] (observing that "multinational companies literally outsourced American jobs in an attempt to compete with the 'China price,' take advantage of less stringent environmental regulations, reduce taxes, and thereby maximize profits."); Robert E. Scott, *Growth in U.S.-China Trade Deficit Between 2001 and 2015 Cost 3.4 Million Jobs*, ECON. POL'Y INST. (Jan. 31, 2017), https://www.epi.org/publication/growth-in-u-s-china-trade-deficit-between-2001-and-2015-cost-3-4-million-jobs-heres-how-to-rebalance-trade-and-rebuild-american-manufacturing/ [https://perma.cc/PLM2-4VSS].

33. *See generally Growth in U.S.-China Trade Deficit Between 2001 and 2015 Cost 3.4 Million Jobs*, *supra* note 32. *See also* Robert E. Scott, *Unfair China Trade Costs Local Jobs*, ECON. POL'Y INST. (Mar. 23, 2010), https://www.epi.org/publication/bp260/ [https://perma.cc/F2VL-N4XM].

to massive job outsourcing as the trade deficits between the United States and China continued to persist.[34]

Geopolitically, in shaping post-Cold-War powers, the United States decided to assist China in its transformation from a poverty-stricken country to a global manufacturer. Desiring to drive a wedge between China and the Soviet Union, President Nixon's historic visit to China led to the subsequent normalized relationship between the United States and China.[35] From China's perspective, "rapprochement with the United States would give [China] access to the 'scientific and technical knowledge and equipment' necessary for [China's] development."[36] Most importantly, according to Deng Xiaoping, "because of Washington's disadvantages in its contest with Moscow, 'the American imperialists will defer to our wishes.'"[37] In other words, geopolitics heavily influenced United States-China relations and decisions, contributing to the rise of China as the global manufacturer.

Consequently, both the United States and China encouraged companies from the United States and other countries to invest and do business with Chinese counterparts. The positive responses from the United States and other foreign investors mounted.[38] This translated into billions of dollars in investments in China during the 1980s.[39] In turn, major companies lobbied the United States government to bestow permanent MFN status to China, despite China's unacceptable human rights practices.[40] China began to benefit from the temporary MFN status when the United States first granted it to China in 1980.[41] The MFN status bestows China with trade

34. *See* Robert E. Scott, *Unfair China Trade Costs Local Jobs*, *supra* note 33. The job losses to China are permanent. *See also* Edward Alden, *No, the Pandemic Will Not Bring Jobs Back From China*, FOREIGN POL'Y (May 26, 2020, 4:40 PM), https://foreignpolicy.com/2020/05/26/china-jobs-coronavirus-pandemic-manufacturing-trump/ [https://perma.cc/P2P3-MYVA].

35. A. JAMES GREGOR, THE CHINA CONNECTION: U.S. POLICY AND THE PEOPLE'S REPUBLIC OF CHINA 78 (Hoover Inst. Press, Stan. Univ. 1986) ("In his State of the World message in February 1970, Richard Nixon declared that it would be in the interest of the United States to improve relations with the People's Republic of China. In the following months, Washington reduced the restrictions against cultural exchanges, travel and trade with the PRC."). Normalization of the relations between the United States and China occurred in 1979 under the Carter Administration. *See* James V. Feinerman, *Pioneering the Study of Chinese Law in the West*, AM. J. COMPAR. L. 739, 740 (2017).

36. GREGOR, *supra* note 35, at 82.

37. *Id.*

38. *See generally* Pat K. Chew, *Political Risk and U.S. Investments in China: Chimera of Protection and Predictability?*, 34 VA. J. INT'L L. 615, 617-23 (1994) (recounting the increase in investment and contracts conducted by companies from the United States and other countries in Asia and how their enthusiasm did not dissipate even after various political and nonpolitical risks associated with doing business in China).

39. *Id.*

40. *See* Paul Mastrocola, *The Lords of the Rings: The Role of Olympic Site Selection as a Weapon Against Human Rights Abuses: China's Bid for the 2000 Olympics*, 15 B.C. THIRD WORLD L.J. 141, 169 n.215 (1995) (noting the incongruence of China's MFN status and its human rights abuses).

41. H.R. REP. NO. 105-140, at 2 (1997) ("MFN status was first granted to the People's Republic of China on February 1, 1980, and has been renewed annually since then on the basis of Presidential waivers.").

advantages, lowering the cost of China's products for export due to lowered trade barriers.[42] Chinese goods accordingly became more competitive in price, enabling Chinese manufacturers to scale and grow faster while accumulating greater shares of the United States' enormous market.[43]

Moreover, in an effort to fortify its move in geopolitics, the United States also ensured China's ascent to the WTO by securing the Senate votes necessary to grant permanent MFN status to China in 2000.[44] Subsequently, the United States government cemented China's MFN permanent status on December 27, 2001.[45] Both the MFN permanent status and the WTO membership propelled China's quick rise into the position of the global manufacturer.[46] This allowed China to trade favorably with the United States and other nation members within the WTO.[47]

In addition, the stability of China's political, social, and economic systems created a conducive environment for businesses. The Chinese government has also installed a well-financed infrastructure and excellent transportation and communication networks.[48] All these advances work in concert to

42. Kimberly Amadeo, *Most Favored National Status: Pros and Cons*, BALANCE (Apr. 20, 2022), https://www.thebalance.com/most-favored-nation-status-3305840#:~:text=MFN%20status%20is%20critically%20important,barriers%20as%20much%20as%20possible [https://perma.cc/K5UB-N8VJ].

43. *Id.*

44. *See* Press Release, Tom Cotton, Cotton Introduces Bill to End China's Permanent Most-Favored Nation Status (Sept. 17, 2020), *available at* https://www.cotton.senate.gov/news/press-releases/cotton-introduces-bill-to-end-china-and-146s-permanent-most-favored-nation-status#:~:text=the%20Senate%20voted%20to%20give,to%20the%20World%20Trade%20Organization.&text=Granting%20China%20this%20trade%20status,million%20American%20jobs%20after%202001 [https://perma.cc/226H-PEYD] ("The Senate voted to give China permanent most-favored-nation status on September 19, 2000. This vote paved the way for China's accession to the World Trade Organization.").

45. *See id.* The United States then believed that the admission of China into the WTO would be advantageous to the United States because United States companies could export to China as Chinese productivity and wages increased, increasing demand for United States products as well. *See, e.g.*, Sean D. Murphy, *Contemporary Practice of the United States Relating to International Law*, 94 AM. J. INT'L L. 348, 374 (2000); Brad L. Bacon, *The People's Republic of China and the World Trade Organization: Anticipating a United States Congressional Dilemma*, 9 MINN. J. GLOB. TRADE 369, 388-89 (2000).

46. Cotton, *supra* note 44 ("Granting China this [MFN] trade status contributed to the 'China Trade Shock' that destroyed 2 million American jobs after 2001. It also led to a surge of business investment in China that made the CCP stronger and more dangerous."). *See also* Daniel C.K. Chow, *Why China Opposes Human Rights in the World Trade Organization*, 35 U. PA. J. INT'L L. 61, 80-83 (2013) (describing China's WTO membership benefits).

47. Chow, *supra* note 46, at 80-83.

48. Ailsa Chang, *Why Many U.S. Companies Have Kept Production in China And Have No Plans of Moving*, NPR (Aug. 30, 2019, 4:23 PM), https://www.npr.org/2019/08/30/756034624/why-many-u-s-companies-have-kept-production-in-china-and-have-no-plans-of-moving (identifying the benefits of keeping production in China, such as "a highly trained labor force, a well-financed infrastructure, a great safety and quality control regimen, excellent transportation and communication points and, basically, a system of production for light industrial that's been set up over a 30-year period").

discourage companies from considering relocation from China to other nations.[49] China's continued improvements, creating a favorable business environment, hasten the disappearance of factories in the United States. As China opens new factories and exports products made with the cheap and abundant labor force to the United States and the rest of the world, China experiences and accumulates new and valuable insights necessary for China's next phase.[50]

In summary, three decades of reforms have enabled China, particularly the SEZs, to develop and transform the nation into the global hub of supply chains.[51] That means that there is a robust business ecosystem where different stakeholders of the supply chains can coexist, increase efficiency, and reduce costs.[52] Labor, logistics, finance, and law are designed to function inside the SEZs, ensuring that all segments related to manufacturing and distribution, from China's factories to any region worldwide, achieve their deliverables.[53] In fact, products manufactured in the SEZs meet international standards for exports because they are made specifically for the international market, not the Chinese domestic market.[54] As of today, foreign and domestic companies operating in China have no desire to leave China in the near future.[55] Even with politics, bad air pollution, and corruption, China is still the reigning and most favorable nation for manufacturers and supply chains.[56] The COVID-19 pandemic, in

49. *Id.*

50. *Id.* (explaining why companies chose to stay in China instead of moving to Vietnam or India); *see also* Yu Jing et al., *Moving Businesses Out of China? This American Manufacturer Says No*, CGTN (Oct. 12, 2020, 1:53 PM), https://news.cgtn.com/news/2020-10-06/Moving-businesses-out-of-China-This-American-manufacturer-says-no-UmQBCzuAwM/index.html [https://perma.cc/NP6X-6YM5] (reporting that United States manufacturers continued to operate in China due to the availability of raw materials, as well as a skilled and inexpensive labor force).

51. Thomas J. Schoenbaum & Daniel C.K. Chow, *The Perils of Economic Nationalism and a Proposed Pathway to Trade Harmony*, 30 STAN. L. & POL'Y REV. 115, 156 (2019) ("Currently, China, the world's factory, sits in the middle of many global supply chains. Multinational companies from all over the world find it in their interest to source components from around the world, ship them to China, where they are assembled into finished goods; then the finished products are exported to the United States and around the world.").

52. Bajpai, *supra* note 21.

53. Tiefenbrun, *supra* note 18, at 214 ("Favorable tax concessions, access to credit and raw materials, and other beneficial treatment was given to companies doing business within these four zones in order to attract foreign investment in export-processing production. Chinese laws and regulations with respect to foreign investment were formulated specifically to attract and protect foreign investors' assets, profits, rights, and other interests.").

54. *Id.* at 214.

55. *See* Kenneth Rapoza, *Why American Companies Choose China Over Everyone Else*, FORBES (Sept. 3, 2019, 11:58 AM), https://www.forbes.com/sites/kenrapoza/2019/09/03/why-american-companies-choose-china-over-everyone-else/?sh=19dc171e71de [https://perma.cc/4WCG-2EJ6].

56. *Id.* (identifying why United States companies select China for manufacturing and operations).

fact, has consolidated China's dominance: "China overtook the U.S. as the world's top destination for new foreign direct investments [in 2020]."[57]

II. Evidence of China's IP Production

The United States has frequently criticized and berated China as an egregious violator of intellectual property rights and a pirate of counterfeit trademarked and copyrighted goods. Countless comments, news articles, industry groups, and politicians focus on China's intellectual property piracy amidst China's rise as the global manufacturer.[58] The relentless criticism perhaps prevents critics from recognizing the major shift in China. This shift reveals that, while China occupies the enviable status as the global manufacturer of cheap goods, China has deftly seized the opportunity to propel itself to the world's leading manufacturer of intellectual property.[59] The data from 2010 to 2019, shown in Tables 1-4 below, exhibits China's intellectual property production and domination.

A. Invention Patents

The pace of China's innovation in many sectors can be seen in the numbers of invention patents, utility models, and industrial designs issued by the government to inventors and creators.[60] Invention patents in China are similar to utility patents in the United States, which are only issued upon formal examination for patentability by the appropriate governmental

57. Paul Hannon & Eun-Young Jeong, *China Overtakes U.S. as World's Leading Destination for Foreign Direct Investment; Flows Into America Nearly Halved as COVID-19 Dragged on the Economy in 2020*, Wall St. J. (Jan. 25, 2021), https://www.wsj.com/articles/china-overtakes-u-s-as-worlds-leading-destination-for-foreign-direct-investment-11611511200 [https://perma.cc/MV8Q-VDP5].

58. *See* William Hennessey, *Deconstructing Shanzhai – China's Copycat Counterculture: Catch Me If You Can*, 34 Campbell L. Rev. 609, 621 (2012).

59. *See* Handong Wu, *One Hundred Years of Progress: The Development of the Intellectual Property System in China*, 1 WIPO J. 117, 120 (2009). In 2006, President of China Hu Jintao announced a new transformation of the economy based on innovation, claiming that "[s]trengthening the building of China's system of intellectual property rights and vigorously upgrading the capacity of creation, management, protection and application regarding intellectual property are our urgent need for the purpose of . . . building an innovation-oriented country." *See also National Patent Development Strategy (2011-2020)*, N.Y. Times, https://graphics8.nytimes.com/packages/pdf/business/SIPONatPatentDevStrategy.pdf (last visited Sept. 18, 2022) (stating that China set up strategic goals to make it an innovative country and a powerful country on patents).

60. *See* 1 Patents Throughout the World § 36:4 (4th ed. 2021) (explaining the different types of patent protection available under China's Patent Law); *see* Renjun Bian, *Patent Litigation in China: Challenging Conventional Wisdom*, 33 Berkeley Tech. L.J. 413, 415, 422-23 (2018) (discussing invention patents, utility model patents, and design patents under China's Patent Law and patent infringement litigation associated with different types of patents in recent years in China).

agency.[61] China National Intellectual Property Administration (CNIPA) is the counterpart of the United States Patent and Trademark Office (USPTO) and is in charge of administering the examination of patent and trademark applications.

Table 1 shows the number of patent filings and patent grants in China each year from 2010 to 2019.[62] As seen in 2010, the total number of patent filings was 308,326.[63] Only ten years later, the filings leaped more than four times to reach the astounding level of 1,328,067 applications.[64] Similarly, the number of patents granted in 2010 was 84,813 and increased more than four times in 2019 to 399,862.[65] The duration of patent protection in China is twenty years from the filing date, so the total number of patents still in force in China in 2019 was 2,670,784.[66]

Table 1 – China Patents

Year	Patent in Force	Patent Filings	Patent Grants
2010	564,760	308,326	84,813
2011	696,939	436,186	118,128
2012	875,385	561,472	152,096
2013	1,033,908	734,115	154,472
2014	1,196,497	837,857	176,351
2015	1,472,374	1,010,557	279,509
2016	1,772,203	1,257,466	322,523
2017	2,085,367	1,306,077	352,576
2018	2,366,314	1,460,243	377,306
2019	2,670,784	1,328,067	399,862

Source: WIPO Statistical Country Profiles – China

Chinese companies are doing business in many jurisdictions across the world. These multinational companies often seek patent protection outside

61. *See* Daniel R. Cahoy et al., *Global Patent Chokepoints*, 20 STAN. TECH. L. REV. 213, 224-25 (2017) (stating that China's "invention patent is analogous to the 'utility patent' in the United States in that it covers a new technical solution for a product or process").

62. *See Statistical Country Profiles: China*, WIPO, https://www.wipo.int/ipstats/en/statistics/country_profile/profile.jsp?code=CN [https://perma.cc/WA9Y-UV99] (last visited Feb. 19, 2023).

63. *Id.* The total number of patent filings includes filings by Chinese applicants residing both inside and outside the country.

64. *Id.*

65. *Id.*

66. Cahoy et al., *supra* note 61, at 224-25 (noting that invention patents in China last for twenty years).

of China through the international Patent Cooperation Treaty (PCT) filing system.[67] In 2019 and 2020, China led all nations in the total number of PCT filings.[68] The United States and Japan follow as the second and third largest filers for PCT applications, respectively.[69] One explanation for China's large number of PCT filings is that China's government encourages China's multinational companies to file internationally by providing subsidies for international filings.[70]

B. Utility Model Patents

In order to encourage the manufacturing of intellectual property, China strategically recognizes protection for utility model patents. China's Patent Law defines "utility models" as "new technical solutions proposed for the shape and structure of a product."[71] China is not the only country that embraces utility model patents. Countries like Japan, South Korea, Germany, Italy, Spain, Poland, Portugal, the Philippines, Brazil, and Australia adopt similar protections for utility model patents.[72] Extending protection to utility models is a way to encourage innovations that require significantly fewer resources to procure.[73] Formal examination of the utility models is often not required because the models do not possess a high standard of inventiveness, as required in invention patents.[74] Consequently, the utility model patent system invites "broader participation in inventive enterprises, especially by smaller collective enterprises and private citizens

67. *PCT – The International Patent System*, WIPO, https://www.wipo.int/pct/en/ (last visited Sept. 24, 2022) ("By filing one international patent application under the PCT, applicants can simultaneously seek protection for an invention in a large number of countries."). There are 156 countries participating in the PCT filing system. *See The PCT Now Has 156 Contracting States*, WIPO: IP Services, https://www.wipo.int/pct/en/pct_contracting_states.html [https://perma.cc/D8KS-VDFX] (last visited Sept. 24, 2022).

68. *See PCT Highlights*, WIPO, https://www.wipo.int/pct/en/highlights/ (last visited Sept. 24, 2022). *See also* Aaron Wininger, *China Remains Top Patent Cooperation Treaty Application Filer in 2020*, Nat. L. Rev. (Mar. 2, 2021) https://www.natlawreview.com/article/china-remains-top-patent-cooperation-treaty-application-filer-2020 [https://perma.cc/N2DS-5FNX].

69. Wininger, *supra* note 68.

70. *See id.* (stating that the Shanghai Municipal Government provides a patent subsidy of 50,000 RMB or $7,700 for each PCT filing). CNIPA, however, has announced that all subsidies will be eliminated by 2025. *Id.*

71. Patent Law of the People's Republic of China (promulgated by the Standing Comm. Nat'l People's Cong., Mar. 12, 1984, rev'd for the fourth time Oct. 17, 2020), art. 2 (China) ("Utility models mean new technical solutions proposed for the shape and structure of a product, or the combination thereof, which are fit for practical use.").

72. John Richards, *Utility Model Protection Throughout the World*, IPO (2013), https://ipo.org/wp-content/uploads/2013/03/Utility_Model_protection.pdf (providing the history of utility model patent protection).

73. Peter K. Yu, *Intellectual Property and Asian Values*, 16 Marq. Intell. Prop. L. Rev. 329, 389-90 (2012) (identifying reasons why developing countries extend protection to utility model patents).

74. Richards, *supra* note 72, at 1.

who are less likely to have resources devoted to invention patents."[75] Putting a strong emphasis on national goals for broader innovations, China has now become "the world's most active utility model system."[76]

Table 2 shows the number of utility model patents filed by Chinese residents each year from 2010 to 2019.[77] In 2010, the number was 407,238.[78] Ten years later, the number rose to 2,259,765, more than five times the original number.[79] This increase demonstrates that Chinese inventive enterprises and individuals embrace the protection system for utility models: they file and receive registrations for their own inventions in utility models.

Table 2 – China Utility Model Patents

Year	Utility Model Patent Filings by Residents
2010	407,238
2011	581,303
2012	734,437
2013	885,226
2014	861,053
2015	1,119,714
2016	1,468,295
2017	1,679,807
2018	2,063,860
2019	2,259,765

Source: WIPO Statistical Country Profiles – China

Most importantly, the protection of utility model patents goes beyond the administrative registration system. China provides a strong enforcement mechanism through the judiciary for intellectual property rights. Chinese enterprises treasure their innovations in utility model patents, and they enforce their rights in utility model patents by asserting litigation against

75. PETER FENG, INTELLECTUAL PROPERTY IN CHINA 170 (2d ed. 2003).

76. Daniel Gajewski, *Utility Model Examination in China Is Quietly Changing*, IPWATCHDOG (July 28, 2019), https://www.ipwatchdog.com/2019/07/28/utility-model-examination-china-quietly-changing/id=111451/ [https://perma.cc/8TYJ-WHG3]. Interestingly, there is a different view of China's utility model patents as "junk." *See* Thomas T. Moga, *China's Utility Model Patent System: Innovation Driver or Deterrent*, U.S. CHAMBER COM. 8 (2012), *available at* https://www.uschamber.com/assets/archived/images/documents/files/1211_china_patent_paper.pdf.

77. *Statistical Country Profiles: China*, *supra* note 62.

78. *Id.*

79. *Id.*

infringers. Indeed, among all patent infringement cases, utility model patent litigation dominates.[80]

Notable utility model patent infringement cases attracted media attention when these cases reached the highest court. For instance, on August 10, 2020, China's Supreme People's Court affirmed the lower court's decision awarding one million RMB for infringement of the utility model patent for a selfie stick in *Yuandesheng Plastic Electronics v. Zhonshan Pinchuang Plastic Products Co., Ltd.*[81] The utility model in this case survived nineteen invalidation attempts, and the Supreme People's Court issued an injunction and compensation in favor of the patent holder.[82] Moreover, the duration of the infringement litigation, from the filing date in the lower court to the final disposition at the Supreme People's Court level, was only eleven-and-a-half months.[83] In its opinion, the Supreme People's Court also "mentioned [that] nearly 150 cases of infringement of this utility model patent have been appealed to them," in addition to nine additional pending invalidation requests related to the same patent.[84] In other words, the availability of quick access to justice through the court system for the enforcement of patent rights accentuates the value of utility model patents to both owners and competitors in China.

C. Design Patents

In addition to invention patents and utility model patents, Chinese enterprises also gravitate towards design patents. According to the latest version of China's Patent Law, designs "mean, with respect to the entirety or a part of a product, new designs of the shape, pattern, or the combination thereof, or the combination of the color with shape and pattern, which are rich in aesthetic appeal and are fit for industrial application."[85] Similar to the design patent system in the United States, there are no extensive substantive examinations for design patent applications in China. Consequently, the majority of applications mature to patent registrations. Design patents enjoy a fifteen-year protection term.

---

80. *See* Bian, *supra* note 60, at 422-23 (observing that "utility model patents and design patents comprise a much larger part of patent infringement litigation in China than invention patents.") One recent study identified that approximately 25.3 percent of patent infringement cases involved utility models. *Id.* at 445. *See also* Gajewski, *supra* note 76 (reporting that thirty percent of all patent infringement cases involve utility models).

81. Aaron Wininger, *Chinese Utility Model Patent That Survived 19 Invalidation Attempts Leads to 1 Million RMB in Damages*, Nat. L. Rev. (Aug. 27, 2020), https://www.natlawreview.com/article/chinese-utility-model-patent-survived-19-invalidation-attempts-leads-to-1-million [https://perma.cc/T5CA-A4XF].

82. *Id.*

83. *Id.* (noting that the case was originally filed in the lower court on July 30, 2020, and the Supreme People's Court issued its decision on August 10, 2020).

84. *Id.*

85. Patent Law of the People's Republic of China (promulgated by the Standing Comm. Nat'l People's Cong., Mar. 12, 1984, rev'd for the fourth time Oct. 17, 2020), art. 2 (China).

Table 3 shows the number of industrial design patents filed each year from 2010 to 2019 by Chinese citizens residing both inside and outside of China.[86] Consistent with the growth in invention patent filings and utility model patent filings in the same period, the number of industrial design patent filings in China experienced an increase from 448,121 in 2010 to 1,118,565 in 2019.[87]

Table 3 – China Industrial Design Patents

Year	Industrial Design Patent Filings
2010	448,121
2011	563,863
2012	718,125
2013	765,221
2014	677,313
2015	730,511
2016	794,083
2017	862,643
2018	957,372
2019	1,118,565

Source: WIPO Statistical Country Profiles – China

With respect to enforcement through the judiciary system, Chinese owners of design patents make up 61.57 percent of all patent infringement litigation in China.[88] This can be interpreted to mean that design matters to patent owners: they seek registrations for their designs first and remedies through the courts next. Design also matters to competitors: they rely on the judiciary system to defend their right to use the design in the marketplace. Illustratively, in *Grohe vs. Zhejian Jianlong Sanitary Ware Co., Ltd.*, Grohe asserted that the defendant infringed Grohe's design patent for a handheld showerhead.[89] The lower court of first instance found there to be no infringement, the appellate court reversed and ruled in Grohe's favor, and the defendant then appealed to China's Supreme People's Court.[90] Because a design patent protects only the overall visual effects of the design,

86. *Statistical Country Profiles: China*, *supra* note 62.

87. *Id.*

88. *See* Bian, *supra* note 60, at 444-45.

89. *China's Guiding Cases in IP Law, Part III: Infringement of Design Patents*, OBWB (Nov. 30, 2017), https://www.obwbip.com/newsletter/chinas-guiding-cases-in-ip-law-part-iii-infringement-of-design-patents [https://perma.cc/4CA5-V48U].

90. *Id.*

courts should not consider the design feature primarily functional.[91] The Supreme People's Court ruled that the appellate court's decision was made in error and affirmed the lower court of first instance's decision.[92] This decision and the high volume of design patent infringement cases in China confirm the importance of designs in competition and illustrate the sophistication of the judiciary system in crafting design law jurisprudence.

D. TRADEMARKS

China's trademark registrations are increasing at an astounding rate.[93] Compared to invention patents, utility model patents, and design patents, trademarks exceed them all. For instance, Table 4 shows that, in 2010, China saw 1,113,120 trademark applications.[94] Ten years later, the number of trademark applications jumped almost eight times to 8,604,721.[95] Similarly, in 2010, China saw 1,338,479 trademark registrations. Ten years later, the number of trademark registrations jumped almost six times to 7,151,992.[96]

Table 4 – China Trademarks

Year	Trademark Filings	Trademark Registrations
2010	1,113,120	1,338,479
2011	1,445,916	1,079,009
2012	1,693,976	1,072,780
2013	1,940,739	1,106,437
2014	2,422,084	1,438,867
2015	3,100,200	2,378,247
2016	4,192,897	2,620,469
2017	6,388,803	3,329,697
2018	8,118,820	5,633,103
2019	8,604,721	7,151,992

Source: WIPO Statistical Country Profiles – China

China's tremendous growth in the number of trademark registrations tells a story of innovation. Contrary to traditional thinking about patents as key

91. *Id.*
92. *Id.*
93. *Statistical Country Profiles: China*, *supra* note 62.
94. *Id.*
95. *Id.*
96. *Id.*

determinants for innovation, economists in recent years have identified trademarks as indicators of innovation.[97] Trademarks are names associated with products or services in the marketplace. Trademarks connect the producers to the consumers; they are the embodiments of the producers' investments and innovations.[98] Understandably, to introduce a newly trademarked product or service, the enterprise must already be engaging in research and development (R&D), design, and testing. In other words, trademarks are symbols of the backend of innovations.[99] The more products and services are introduced into the marketplace, the more trademark registrations are obtained and used in commerce.[100] Accordingly, in the last decade, the fast growth of trademark registrations in China corresponds with the fast pace of innovations, indicating that Chinese enterprises have captured and dominated the global marketplace.[101]

III. Manufacturing Intellectual Property Contributors

There are three contributors playing important roles in China's rise as the global manufacturer of intellectual property: rapid revisions of intellectual property laws, transformative judicial decisions in intellectual property cases, and activity from governmental agencies creating intellectual property administration policies that provide the foundation for intellectual property production to rise in China.

---

97. *See generally* Sandro Mendonca et. al., *Trademarks as an Indicator of Innovation and Industrial Change* (Lab'y Econ. Mgmt., Working Paper No. 2004/15, 2004), https://www.econstor.eu/bitstream/10419/89486/1/504056689.pdf [https://perma.cc/44LS-J969] ("The business of branding products has long been part of ordinary economic life. Trademarks are the outcome of establishing recognizable designations and symbols for goods and services, as well as firms' identities. They play a crucial role in the process of marketing innovations, being instrumental in differentiating the attributes of goods and services in the marketplace. These characteristics make trademarks a potential indicator of product innovation and sectoral change."). *See also* Carolina Castaldi et. al., *Trademarks and Their Role in Innovation*, IBC NETWORK 1, https://www.ibcnetwork.org/gestion/uploads/news_events/document_60.pdf [https://perma.cc/AH97-WK3F] (last visited Sept. 25, 2022) ("Even though trademark registration does not include any novelty requirement, there is already convincing conceptual and empirical evidence that trademarks have various links to innovation.").

98. Castaldi et al., *supra* note 97, at 1 ("Conceptually, trademarks are information signals to the markets that innovative companies can use to distinguish the quality of their new products and services").

99. *Id.* (stating that trademarks are information signals about "the arrival of a start-up and help entrepreneurs to convince prospective investors and clients about their innovative value propositions").

100. *Id.* (describing literature on trademarks as signals for innovation that "flag the market introduction of new products and services," in addition to the "founding of startups with innovative business models or technologies").

101. Critics of China's growth in trademark registrations would assert that there exist abuses of trademark registrations. China addressed the trademark registration abuses in the latest revisions of its Trademark Law. *See* infra Section III(A)(3).

A. China's Rapid Revisions of Intellectual Property Laws

The numerical evidence of China as the key global manufacturer of intellectual property exists in parallel with China's rapid revisions of various intellectual property laws. China has aggressively updated its intellectual property laws to form a systematic and timely approach to various new property assets: patents, copyrights, trademarks, domain names, and trade secrets produced by creative and entrepreneurial individuals and entities. Most significantly, the recent revisions of the intellectual property laws support the country's shift from a manual-labor-based economy to an innovation-based economy. As expected in a planned economy, all four rounds of revisions reflect the Chinese government's national strategy for transforming the country from being the global manufacturer of cheap goods to the leader of innovative and creative products.

1. *Patent Law Revisions*

China considered adopting a patent system in 1980, two years after President Nixon's historic visit to China for the "Opening of China,"[102] as part of China's economic reform.[103] When China began to welcome foreign investments to certain parts of the country, China was under pressure to embrace intellectual property.[104] In the subsequent five years, China drafted its new patent law, which became effective on April 1, 1985.[105]

China resisted a patent system based on international norms because, during the early years of its economic reform, China's domestic patent filings were almost nonexistent.[106] The patent system, therefore, protected foreign companies doing business in China, not Chinese businesses.[107] In order to attract foreign investments, China needed to revise its 1985 patent law because the original version was soon proven inadequate.[108] Moreover, the United States placed China on the Special 301 blacklist watch list, threatened to impose trade sanctions against China in 1991, and insisted that China revise its patent law to protect chemical and pharmaceutical products, extend the scope of patent protection, and lengthen the patent term's duration, among other things.[109] On January 17, 1992, the United States and China signed a Memorandum of Understanding that included

102. *See The Opening of China*, Richard Nixon Found., https://www.nixonfoundation.org/exhibit/the-opening-of-china/ [https://perma.cc/42EX-HXGF] (last visited Sept. 25, 2022).
103. China's State Council approved on January 14, 1980, preparations to start drafting a patent law. *See* Bonan Lin et al., Overview of Chinese Patent Law 3-4 (2004), https://ipo.org/wp-content/uploads/2013/04/China_Overview_ChinesePatentLaw_Sept20040425.pdf [https://perma.cc/K35U-FPVL].
104. *Id.* at 3.
105. *Id.* at 4.
106. *Id.* at 3-4.
107. *Id.* at 3.
108. *Id.* at 6.
109. Lin et al., *supra* note 103, at 6.

provisions related to patent revisions.[110] On September 4, 1992, China issued the First Revision of Patent Law, marking a new path of successive revisions.[111]

Gaining admission to the WTO in 2001 proved to be a momentous achievement for China. In order to qualify for WTO membership, China had to amend certain laws, including its patent laws.[112] In 2000, the year before its ascension to the WTO, China adopted the Second Revision of Patent Law.[113] China benefited significantly from its ascension to the WTO by expanding trade with other countries while accelerating economic growth.[114]

After establishing its role on the world stage, China then focused on its own transformation towards innovation in the next two decades. In 2010, China revised its patent law with the Third Revision of Patent Law.[115] Thereafter, in 2020, China again revised its patent law with the Fourth Revision of Patent Law.[116] These two latest revisions of China's patent law, along with revisions of other intellectual property laws from 2000 to 2020, affirm a major shift from revising law under foreign pressure to crafting law for the nationalist purpose of encouraging indigenous inventions.[117] In other words, China revised patent laws for China in the twenty-first century. As Table 1 illustrates, the number of invention patent filings in China leaped from just 308,326 in 2010 to a staggering 1,328,067 in 2019.[118] Likewise, Table 2 demonstrates the growth from 407,238 utility model patent filings in 2010 to 2,259,765 in 2019.[119] Regarding industrial designs, China witnessed an increase from 448,121 design filings in 2010 to 1,118,565 design filings in 2019.[120]

The rapid successive revisions of patent law—together with the tremendous growth of actual invention patent, utility model patent, and industrial design patent filings—signal the importance of patents and designs to Chinese firms, so much that they seek legal protection for their

110. *Id.* (discussing the agreement between the United States and China).
111. *Id.* at 7.
112. *Id.* at 8-13.
113. *Id.* at 8.
114. *China in the WTO: Past, Present, and Future*, WTO, https://www.wto.org/english/thewto_e/acc_e/s7lu_e.pdf [https://perma.cc/CE2Y-SQ4K] (last visited Sept. 25, 2022).
115. *General Introduction to the Third Revision of the Patent Law of the People's Republic of China and Its Implementing Regulations*, CNIPA (July 17, 2013), https://english.cnipa.gov.cn/art/2013/7/17/art_1349_81674.html [https://perma.cc/3DGC-EEF8] ("[T]he 17th National Congress of the Communist Party of China put forward the target of enhancing the capacity of indigenous innovation and building an innovative country, and the State Council formulated the Outline of National Intellectual Property Strategy").
116. Haifeng Huang et al., *China Promulgates Fourth Amendment to Patent Law*, JONES DAY 1 (Nov. 2020), https://www.jonesday.com/en/insights/2020/11/china-promulgates-fourth-amendment-to-patent-law [https://perma.cc/BNX8-KGQJ].
117. *Id.*
118. *See* supra Section II(A).
119. *See supra* Section II(B).
120. *See supra* Section II(C).

innovation and creativity. Once upon a time, foreign entities dominated patent filings in China.[121] That past is now replaced by the new innovative China, where Chinese entities dominate patent filings in the country and position China into a new era of technological competition.

2. *Copyright Law Revisions*

China's history with copyright protection is complicated. China enacted its Trademark Law and Patent Law in 1982 and 1984, respectively, but did not pass its Copyright Law until 1990.[122] The delay in enacting copyright law perhaps rests on the Chinese government's tight control of expression that heavily regulates the press and publishing industry.[123] Moreover, China did not seriously process complaints of Chinese violations of United States copyrighted works.[124] The severity of the copyright piracy necessitated the United States to insist on China's enactment of Copyright Law and protracted trade negotiations between the two countries in the 1980s.[125] In the end, China passed its first Copyright Law on September 7, 1990, which later came into force on June 1, 1991.[126]

In 2001, the same year that China overhauled its Patent Law and Trademark Law for the purpose of China's accession to the WTO, China revised its Copyright Law.[127] The revisions attempted to bring China's copyright law provisions more in line with international norms.[128] New types of works of authorship and online works for copyright protection were recognized in the 2001 revisions.[129] In addition, judicial enforcement became available to copyright holders.[130] Injunctive relief and larger damages provisions were included in the revisions.[131] Overall, these new copyright measures aimed to combat the rampant piracy of books, video

121. LIN ET AL., *supra* note 103, at 3.

122. Hongsong Song, *The Development of Copyright Law and the Transition of Press Control in China*, 16 OR. REV. INT'L L. 249, 267 (2014).

123. *Id.* at 270.

124. LIN ET AL., *supra* note 103, at 6 (stating that "the focal point of the negotiations was intellectual property protection in China" and that the trade negotiation between the United States and China "dragged on for two years without progress until 1991, when the US Government placed China on the Special 301 blacklist and threatened China with trade sanctions.").

125. *Id.*; *see also* Song, *supra* note 122, at 270 (noting that the United States conditioned the U.S.-China trade agreement of 1989 on China's establishment of the new copyright law).

126. Song, *supra* note 122, at 270.

127. *China Amends Copyright Law*, CHINA.ORG.CN (Nov. 16, 2001), http://www.china.org.cn/english/2001/Nov/22246.htm [https://perma.cc/976Z-V67F].

128. *Id.* ("[T]he amendments greatly reduce differences between China's copyright laws and the international conventions on copyright protection, and the WTO's Agreement on Trade-Related Intellectual Property Rights (TRIPS).").

129. *See id.* ("The amendments extend the scope of the law to involve more subjects, including acrobatic performances, architectural designs and literary and artistic works published via the Internet.").

130. *Id.*

131. *Id.*

products, and computer software because authentic copies cost significantly more than counterfeits.[132] Overall, China amended its Copyright Law under the pressure of joining the WTO.

In the next two decades from 2001 to 2021, China focused on developing its own creative content in books, films, and video games while leveraging the digital environment in creation, delivery, and distribution.[133] The explosive growth of the internet and e-commerce led China to embark a new national plan where intellectual property creation and innovation are key pillars in culminating the revision of its Copyright Law in 2010.[134] The revisions, in fact, existed under China's grand strategy that culminated on June 5, 2008.[135] The China State Council announced the "Strategic Outline for National Intellectual Property Rights," which targeted 2020 as the year China would be a nation with high levels of creation, utilization, protection, and administration of intellectual property rights.[136]

The arrival of social media and the platform economy led China to its latest round of copyright law revisions in 2020. China expanded the scope of copyright protection to cover works arising from digital technology.[137] For instance, Article 3 of the amended Copyright Law incorporates a catch-all provision: "other intellectual creations that satisfy the characteristics of works."[138] Consequently, courts and relevant administrative agencies will decide copyright protection for future works generated from new technological advancements and innovations.[139] Likewise, Article 3 replaced the wording of "cinematographic works" with "audiovisual works," allowing works from sports, e-sports, music videos, and flash, among others, to be covered for protection.[140] Also, under the new revisions in 2020, broadcasting now covers both wired and wireless, extending copyright protection to online streaming of sports, e-sports, and other online entertainment.[141] Moreover, in order to deter copyright infringement in the

---

132. *Id.*

133. *Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy*, GOV'T INFO. DISCLOSURE COLUMN (June 11, 2009), http://www.gov.cn/zhengce/content/2008-06/11/content_5559.htm [https://perma.cc/8BJ7-NDH9].

134. *Id.*

135. *Id.*

136. White & Case LLP, *Strategic Outline for National Intellectual Property Rights*, LEXOLOGY (Aug. 1, 2008), https://www.lexology.com/library/detail.aspx?g=CF150d3a-a409-4d19-aae1-4e1edc25088a [https://perma.cc/KM76-VPXH]; *see also* Mark Cohen, *Survey on China's "National Intellectual Property Strategy"*, CHINA IPR (Apr. 22, 2018), https://chinaipr.com/2018/04/22/survey-on-chinas-national-intellectual-property-strategy/ [https://perma.cc/AAV3-3A6F]; *Notice of the State Council on Issuing the Outline of the National Intellectual Property Strategy*, *supra* note 133.

137. *See China Passes Harsher Amended Copyright Law*, MANAGING IP (Dec. 9, 2020), https://www.managingip.com/article/b1plvjd646ffr7/china-passes-harsher-amended-copyright-law [https://perma.cc/JA6S-4C3E].

138. *Id.*

139. *Id.*

140. *Id.*

141. *Id.*

digital era, China imposes harsher damages against infringers, encouraging a "desirable legal environment for inspiring creativity."[142]

3. *Trademarks and Revisions*

Among the different types of intellectual property, China selected trademarks for early legal development. In 1982, China's Trademark Law was passed.[143] For comparison purposes, China did not create its patent law and copyright law until 1984 and 1990, respectively. Perhaps the pressure from the United States and the West necessitated the development of trademark law ahead of patent law and copyright law.[144] For instance, global companies such as Coca-Cola wanted their trademark protection before they would operate and distribute their products in China. In other words, trade could not exist without trademarks and corresponding protection.

China then revised its Trademark Law in 1993 and 2001.[145] The revisions in 2001, like the companion patent laws and copyright laws, were designed to bring China's Trademark Law in compliance with the WTO's standards in order for China to be admitted as a WTO member.[146]

The subsequent massive growth in China's trade and commerce domestically and globally meant that China was producing more products and needed more trademarks to be used in association with those products.[147] The growth caused China to revise its Trademark Law in 2012 to accommodate the new goods being produced.[148] During this decade, China witnessed its ascent as the world's trademark powerhouse: China registered more trademarks than any other country worldwide, and China led all nations in annual trademark filings and registrations beginning in 2010.[149] The United States fell behind and continues to stay behind.[150]

---

142. *Id.*

143. Trademark Law of the People's Republic of China (adopted at the 24th Meeting of the Standing Committee of the Fifth National People's Congress on August 23, 1982, and promulgated by Order No.10 of the Standing Committee of the National People's Congress on August 23, 1982; amended for the first time in accordance with the Decision on Revising the Trademark Law of the People's Republic of China adopted at the 30th Meeting of the Standing Committee of the Seventh National People's Congress on February 22, 1993; and amended for the second time in accordance with the Decision on Revising the Trademark Law of the People's Republic of China adopted at the 24th Meeting of the Standing Committee of the Ninth National People's Congress on October 27, 2001), http://www.wipo.int/wipolex/en/text.jsp?file_id=131395 [https://perma.cc/MYK2-LQXF] [hereinafter Trademark Law of the People's Republic of China].

144. *Id.*

145. *See* Xuan-Thao Nguyen, *The World's Trademark Powerhouse: A Critique of China's New Trademark Law*, 40 SEATTLE U.L. REV. 901, 903-04 (2017).

146. *Id.* at 917.

147. *Id.*

148. Trademark Law of the People's Republic of China, *supra* note 143.

149. *See* Nguyen, *supra* note 145, at 907.

150. *Id.*

Consistent with its goal of developing intellectual property law for its own national interest, China curbs bad faith trademark filings and bad faith trademark litigation.[151] In the 2020 revisions, China also enhanced statutory damages in trademark infringement actions and imposed punitive damages at five times actual damages.[152]

The latter two rounds of revisions in 2012 and 2020 coincided with the other intellectual property law revisions. Strategically, China's revisions of its patent, copyright, and trademark laws seem to be in lockstep. This demonstrates China's understanding of the interconnection of patents, copyrights, and trademarks in the marketplace. Modernization of the three laws, therefore, requires frequent revisions or amendments in response to the dynamic changes of technology and the market both domestically and globally.

4. *Trade Secrets and Revisions*

Trade secrets is one area of intellectual property law that China has recently revised after twenty years of neglect. China first created trade secrets law in 1993.[153] Provisions of trade secrets law are included in China's Anti-Unfair Competition Law (AUCL). In contrast to how China substantially revised its patent, copyright, and trademark laws in order to ascend to the WTO, China did not revise its trade secrets law in the early 2000s. It was not until 2013 that China revised its trade secrets law.[154] Subsequently, in 2020, China adopted its second round of revisions for trade secrets law.

The 2013 and 2020 revisions expand the definition of a trade secret, the misappropriation of trade secrets, and the remedies.[155] For instance, owners of trade secrets no longer bear the difficult burden of proving that the defendants engaged in trade secret misappropriation conduct.[156] Instead, the law requires the owners of trade secrets to establish a prima facie case of the defendant's access to the trade secret at issue and establish that the

---

151. Ann Xu & Vivian Chan, *China's Revision of Trademark Law and the Impact on CNIPA Practices*, MANAGING IP (Apr. 21, 2022), https://www.managingip.com/article/2a5d1aveddrlq9n8fqccg/chinas-revision-of-trademark-law-and-the-impact-on-cnipa-practices [https://perma.cc/JF5D-BVPP].

152. Xioping Wei, *New Trademark Law Enhances Trademark Protection in China*, MANAGING IP (Mar. 11, 2022), https://www.managingip.com/article/2a5d0zxo7uj1lvlhs7myo/new-trademark-law-enhances-trademark-protection-in-china [https://perma.cc/8537-A5A6].

153. Roberto Gilardino, *China: AUCL: Understanding China's Anti-Unfair Competition Law and Its Impact on Your Business*, MONDAQ (Apr. 7, 2022), https://www.mondaq.com/china/trademark/1180788/aucl-understanding-china39s-anti-unfair-competition-law-and-its-impact-on-your-business [https://perma.cc/TR5T-X7N7].

154. *Id.*

155. *Id.*

156. *Recent Changes to China's Trade Secret Protection Laws Ease the Challenge of Bringing Such Cases*, JONES DAY (Oct. 2020), https://www.jonesday.com/en/insights/2020/10/recent-changes-to-chinas-trade-secret-protection-laws [https://perma.cc/8B9R-2Q6Z].

defendant's trade secret is similar to the plaintiff's.[157] This lessens the burden and essentially acknowledges that notable cases of trade secret misappropriations often involve departing employees who had access to the employer's trade secrets.[158] The revisions allow the trade secrets law to be responsive to real problems faced by intellectual property owners.

In summary, with the modernization of its trade secrets law, China has demonstrated to intellectual property owners an understanding that misappropriation of trade secrets does not occur through strangers but through departing employees.[159] Trade secret thefts are serious concerns for Chinese businesses, as seen in the high-profile trade secret misappropriation cases.[160] In addition, innovators demand that the law protect their valuable trade secret assets, not just their patents, copyrights, and trademarks.

B. The Judiciary's Role in Manufacturing Intellectual Property

China's ability to manufacture intellectual property is, in part, a product of the judiciary, which has steadfastly shaped intellectual property law for clarity, consistency, and predictability. The judiciary actively engages in charting the contours of intellectual property law, beginning with the early stage of intellectual property law development and continuing throughout the subsequent decades.

With a systematic approach to administration of intellectual property cases, China's judiciary swiftly addresses a large volume of disputes.[161] The judiciary strategically targets main tech hubs with large numbers of intellectual property disputes and develops specialized intellectual property courts to exclusively handle intellectual property cases.[162] For instance, Beijing, Shanghai, and Guangzhou have each established their own intellectual property courts because each of the three major cities enjoy high concentrations of tech companies with greater demand for specialized

157. Article 32 of the Anti-Unfair Competition Law provides that "where the trade secrets owner provides prima facie evidence that he has taken measures to protect the confidentiality of the claimed trade secrets and that the trade secrets have been infringed, the alleged infringer must prove that the trade secrets claimed by the owner do not constitute trade secrets." Article 32 further provides that such prima facie evidence may take the form of:

- Evidence showing that the alleged infringer had access to the trade secrets or had an opportunity to obtain the trade secrets and that the information used is substantially the same as the trade secrets; and
- Evidence showing that the trade secrets have been disclosed or used, or are at risk of being disclosed or used by the alleged infringer.

Id.

158. *Id.*

159. *Id.*

160. *Id.*

161. *Judicial Administration Structure for IP Disputes*, WIPO, https://www.wipo.int/wipolex/en/judgments/j-admin/cn.html [https://perma.cc/UD3H-GGS3] (last visited Sept. 25, 2022).

162. *Id.*

expertise from the judiciary to decide the disputes.[163] The intellectual property courts maintain exclusive jurisdiction over technology-related civil and administrative intellectual property cases, well-known trademark cases, and administrative appeals relating to patent and trademark grants, invalidity, new plant varieties, layout-designs of integrated circuits, and compulsory intellectual property licenses.[164] Outside the three main tech hubs, China utilizes the general people's court at the lowest level to administer simple intellectual property cases, such as non-software copyright disputes; trademark disputes, excluding well-known trademarks; unfair competition, excluding technological trade secrets; and contracts related to intellectual property.[165] For complex intellectual property disputes involving patents, software, trade secrets, well-known trademarks, and monopolies, China bestows jurisdiction to the intermediate people's courts, which include twenty-one specialized intellectual property courts throughout the provinces.[166] In other words, China brings the judiciary system, with specialized intellectual property expertise, to certain localities, matching judicial experience with local demands.[167] On the other end of the spectrum, at the nation's highest court, the Supreme People's Court developed its own intellectual property court to hear patent, monopoly, and complex intellectual property appeals nationwide from the intermediate people's courts.[168]

A remarkable feature of China's Supreme People's Court is its proactive approach to statutory interpretations. When a new revision of a particular intellectual property law is enacted by the legislature, the Supreme People's Court does not wait until cases percolate to the highest level for final adjudication to render its interpretation and application of a statutory provision. Instead, the Supreme People's Court issues its interpretations before cases reach the Court. Consequently, all lower courts know in advance exactly what the Supreme People's Court's interpretations of statutory provisions are and can apply the interpretations to the cases filed in their respective jurisdictions. The Supreme People's Court's approach reduces disharmonious and conflicting rulings among the lower courts, minimizing unpredictability and uncertainty.[169]

---

163. *Id.*

164. *Id.*

165. *Id.*

166. *Id.*

167. *Judicial Administration Structure for IP Disputes, supra* note 161.

168. *Id.*

169. Examples of the Supreme People's Court's interpretations include: *The Interpretation II of the Supreme People's Court SPC and Supreme People's Procuratorate SPP of the Issues Concerning the Specific Application of Law in Handling Criminal Case of Infringement of Intellectual Property Rights* (Apr. 5, 2007), https://wipolex.wipo.int/en/legislation/details/6576 [https://perma.cc/3JKG-65P8]; *Interpretation by the Supreme People's Court SPC and the Supreme People's Procurate SPP on Several Issues of Concrete Application of Laws in Handling Criminal Cases of Infringing Intellectual Property* (Dec. 8, 2004), https://wipolex.wipo.int/en/legislation/details/6575; *Interpretation of the Supreme People's Court Concerning Some Issues on Application of Law for the Trial of Cases on Disputes*

For example, in 2020, the Supreme People's Court issued its interpretations concerning trade secret misappropriation disputes for "the purpose of correctly trying civil cases concerning the infringement upon trade secrets" and noted that it developed the interpretations "in accordance" with the new trade secrets law provisions in the "Anti-Unfair Competition Law" enacted in 2019 and "in light of the judicial practice."[170] Noting that the trade secrets law itself is embodied in only two simple articles, Articles 9 and 32 of the AUCL of 2019, the Supreme People's Court crafted extensive interpretations detailing what lower courts must consider in presiding over trade secret disputes.[171] The Supreme People's Court identified what constitutes trade secret subject matter, what information is relevant in determining whether a piece of information is known by the public, and what circumstances are considered sufficient confidentiality measures to prevent trade secret disclosure, among many others.[172]

Another example can be seen in the Supreme People's Court's Interpretations of Trademark Law in 2014.[173] The Supreme People's Court identified and listed twelve types of trademark disputes and a catch-all case in instructing lower courts how to determine if they are allowed jurisdiction over specific trademark disputes.[174] Recently, on March 3, 2021, the Supreme People's Court issued its interpretation on punitive damages in intellectual property disputes.[175] The Supreme People's Court also delineated the subject matters and types of trademark cases designated for specific level courts. In doing so, the Supreme People's Court installed both the hierarchy and order of judicial adjudications.[176] Consequently, the

---

Over Technology Contract (Nov. 30, 2004), https://wipolex.wipo.int/en/legislation/details/6592; *The Interpretation of the Supreme People's Court Concerning Several Issues on Hearing Cases in Internet Copyright Dispute* (Dec. 19, 2000), https://wipolex.wipo.int/en/legislation/details/7823.

170. *English Translation of Interpretation of the Supreme People's Court on Several Issues Concerning the Application of Law in the Trial of Civil Cases of Disputes over Infringement on Trade Secrets*, USPTO, https://chinaipr2.files.wordpress.com/2020/06/spc-ji-application-of-law-in-the-trial-of-civil-cases-involving-trade-secrets-embassy-translation.pdf (last visited Sept. 25, 2022).

171. *Id.*

172. *Id.*

173. *Interpretations of the Supreme People's Court on Issues Concerning the Jurisdiction and Application of Law for Trademark Cases After the Implementation of the Decision on the Amending Trademark Law (Promulgated by Order No. 4 of March, 25, 2014, of the Judicial Committee of the Supreme People's Court* (Feb. 10, 2014), https://wipolex.wipo.int/en/legislation/details/15179 [hereinafter *Interpretations of the Supreme People's Court on Issues Concerning the Jurisdiction and Application of Law for Trademark Cases After the Implementation of the Decision on the Amending Trademark Law*].

174. *Id.*

175. *See* Aaron Wininger, *China's Supreme People's Court Issues Law Interpretation for Intellectual Property Infringement*, CHINA IP L. UPDATE (Mar. 3, 2021), https://www.chinaiplawupdate.com/2021/03/chinas-supreme-peoples-court-issues-law-interpretation-for-intellectual-property-infringement/ [https://perma.cc/E4DA-M27L].

176. *Interpretations of the Supreme People's Court on Issues Concerning the Jurisdiction and Application of Law for Trademark Cases After the Implementation of the Decision on the Amending Trademark Law*, *supra* note 173.

Supreme People's Court reduced filings and acceptances of cases in the incorrect forum concerning trademark disputes.

Administration of intellectual property disputes in a vast country like China requires innovative leadership in the Supreme People's Court to ensure clarity, consistency, and predictability. The Supreme People's Court annually reviews intellectual property cases decided by courts across China and selects a set of exemplary opinions as "Guiding Cases" (GCs).[177] This practice contributes to China's jurisprudence for intellectual property development on several fronts. First, GCs showcase the best examples of judicial decisions and reasoning for others to emulate. Second, GCs set precedent-like opinions for courts to follow. Third, GCs identify new issues and concerns arising across China relating to intellectual property rights.[178] Fourth, GCs unify courts in their approach to judicial drafting. Fifth, GCs impliedly encourage competition among judges for their decisions to be selected in the next set of guiding cases. Sixth, GCs exhibit China's ongoing excitement, growth, and maturity in intellectual property law. Seventh, GCs demonstrate that the courts are a legitimate body to review administrative decisions. Finally, GCs illustrate that intellectual property proves to be important assets that individuals and businesses fully rely on and embrace, which stems from judicial adjudications to determine rights versus wrongs.[179]

Moreover, litigants can quickly receive decisions from the courts. Intellectual property judicial adjudication is surprisingly fast in the highly efficient courts across China. A trademark dispute, after filing the complaint, is decided by the lower court on the merits after only four months.[180] If the case is on appeal, the appellate court will render a decision in two-and-a-half months.[181] If the case proceeds to the highest court, the Supreme People's Court will then typically render its opinion in six to twelve months.[182] In other words, adjudication of a trademark case from the lowest court to the highest court in China is less than two years.[183] For

177. Runhua Wang, *New Private Law? Intellectual Property "Common-Law Precedents" in China*, 89 UMKC L. REV. 353, 365-67 (2020) (discussing the SPC's Guiding Case system).

178. *Id.* at 366.

179. *See* Aaron Wininger, *China's Supreme People's Court Releases Typical Cases of Punitive Damages in Intellectual Property Infringement*, CHINA IP L. UPDATE (Mar. 20, 2021), https://www.chinaiplawupdate.com/2021/03/chinas-supreme-peoples-court-releases-typical-cases-of-punitive-damages-in-intellectual-property-infringement/ [https://perma.cc/3DCQ-ZA8N].

180. Fabio Giacopello, *Why CNIPA Doesn't Suspend Trademark Procedures in Case of Pending Prejudicial Procedure*, EUR. COMM'N (June 7, 2022), https://intellectual-property-helpdesk.ec.europa.eu/news-events/news/why-cnipa-doesnt-suspend-trademark-procedures-case-pending-prejudicial-procedure-2022-06-07_en [https://perma.cc/SK5E-2LHE].

181. Aimin Huo, *China: Legislative Framework and Causes of Action*, WORLD TRADEMARK REV. (Feb. 17, 2022), https://www.worldtrademarkreview.com/global-guide/trademark-litigation/2022/article/china.

182. *Id.*

183. Kenneth L. Wilton & Lauren M. Gregory, *United States: Legislative Framework and Causes of Action*, WORLD TRADEMARK REV. (Dec. 20, 2021), https://www.worldtrademarkreview.com/global-guide/trademark-litigation/2022/article/united-states.

comparison, a similar trademark infringement case in the United States will languish for ten years from the district court to the Supreme Court.[184]

Access to justice through swift access to courts and adjudications in China allows a large volume of cases to be decided each year. As such, owners of intellectual property can rely on the courts for their protection. In return, the courts in China see themselves as protectors and enforcers of intellectual property.[185] Indeed, on April 22, 2021, the Supreme People's Court issued the People's Court 5-Year Intellectual Property Judicial Protection Plan.[186] The Supreme People's Court identified areas where all courts across China will focus on in the next five years in order to strengthen judicial protections for intellectual property assets, specifically by improving trial qualities for patent cases, increasing punishments for bad faith trademark registrations, and intensifying damages, including punitive damages in certain intellectual property infringement cases.[187]

C. THE ADMINISTRATIVE AGENCY IN MANUFACTURING INTELLECTUAL PROPERTY

China's administrative agency plays a key role in manufacturing intellectual property. Recent initiatives and the restructuring of the agency overseeing intellectual property displays China's goal of elevating intellectual property production and protection.

1. *China National Intellectual Property Administration*

For several decades, China handled patents and trademarks through a patchwork of separate agencies: the State Intellectual Property Office (SIPO) for patents, the State Administration for Industry and Commerce (SAIC) for trademark registrations, and the General Administration of Quality Supervision, Inspection, and Quarantine (GAQSIC) for some trademark enforcement. Recognizing that both patents and trademarks are important to China's National Intellectual Property Strategy, in China 2025, China completely revamped the structure of intellectual property

184. Illustratively, the trademark infringement case, *Romag Fasteners, Inc. v. Fossil, Inc.*, 3:10-CV-1827 CFD, 2010 WL 4929267 (D. Conn. Nov. 30, 2010), began in the federal district court in 2010, and the Supreme Court rendered its decision in 2020. *See Romag Fasteners, Inc v. Fossil, Inc.*, 140 S. Ct. 1492 (2020). For a simple trademark registration case, the length from filing with the USPTO to disposition from the Supreme Court is almost nine years. *See U.S. Pat. & Trademark Off. v. Booking.com B. V.*, 140 S. Ct. 2298 (2020).

185. *Outline of the Judicial Protection of Intellectual Property in China*, SUPREME PEOPLE'S CT. PEOPLE'S REPUBLIC CHINA (Apr. 20, 2017), https://english.court.gov.cn/pdf/OutlineoftheJudicialProtectionofIntellectualPropertyinChina(2016-2020).pdf [https://perma.cc/ZJA5-EGXF].

186. Aaron Wininger, *China's Supreme People's Court Releases 5-Year Intellectual Property Judicial Protection Plan*, NAT. L. REV. (Apr. 22, 2021), https://www.natlawreview.com/article/china-s-supreme-people-s-court-releases-5-year-intellectual-property-judicial [https://perma.cc/TB9A-CTBA].

187. *Id.*

administration and administrative enforcement.[188] In March 2018, China dismantled both SAIC and GAQSIC,[189] brought both patents and trademarks under SIPO's control, and renamed SIPO to a new English name, China National Intellectual Property Administration (CNIPA).[190] CNIPA itself is under the supervision of the newly formed State Administration for Market Regulation (SAMR).[191]

CNIPA's main responsibility is to implement principles, policies, decisions, and plans related to intellectual property formulated by the Chinese Communist Party (CCP).[192] Specifically, CNIPA must strengthen the creation, protection, and application of China's patent and trademarks.[193] That means CNIPA devises plans and regulations to "rigorously protect trademarks and patents," including examination, registration, and administrative adjudication of intellectual property.[194] In addition, CNIPA is responsible for the administrative enforcement of trademarks and patents, handling local intellectual property disputes.[195] Further, CNIPA is in charge of fostering the use of intellectual property.[196] This responsibility covers CNIPA's new policies on promoting the transfer, licensing, and commercialization of intellectual property.[197] CNIPA will standardize the valuation of intellectual property assets for commercialization purposes and formulate policies and measures to develop and supervise intellectual property intermediary services related to the commercialization of intellectual property assets.[198]

With broad scope of authority in the management and enforcement of patents and trademarks, CNIPA is a powerful administrative agency in accelerating China's manufacturing of intellectual property. Among its many initiatives, CNIPA implemented fast-track intellectual property applications and shaming measures against infringers.

---

188. *See also* CHEN FULI, CHINA'S OUTLINE OF THE NATIONAL INTELLECTUAL PROPERTY STRATEGY (2008), http://mddb.apec.org/documents/2008/IPEG/IPEG2/08_ipeg2_020.pdf [https://perma.cc/G95D-8VYG].

189. Douglas Clark, *Intellectual Property Law in China § 7. IV Administrative Enforcement* (2d ed. 2021), Westlaw INPLC § 7.IV.

190. *Id. See also China to Restructure SIPO – A Step Toward Better IP Protection*, OBWB (Apr. 30, 2018), https://www.obwbip.com/newsletter/china-to-restructure-sipo-a-step-toward-better-ip-protection [https://perma.cc/9WTH-53P4].

191. *The Regulations on CNIPA Functions, Internal Departments and Staffing*, CHINA NAT'L INTELL. PROP. ADMIN., https://english.cnipa.gov.cn/col/col2068/index.html [https://perma.cc/TB4N-RCB9] (last visited Sept. 25, 2022) ("The China National Intellectual Property Administration (CNIPA) is a vice-ministerial-level state agency under the State Administration for Market Regulation of China.").

192. *Id.*

193. *Id.*

194. *Id.*

195. *Id.*

196. *Id.*

197. *The Regulations on CNIPA Functions, Internal Departments and Staffing, supra* note 191.

198. *Id.*

2. *Fast-Track Intellectual Property Applications*

China has implemented several measures to fast track patent applications. The fast-track program reflects China's focus on key industry sectors. In 2012, SIPO targeted invention patent applications related to environmentally friendly or green technology innovation in China.[199] Five years later, in 2017, SIPO expanded the fast-track program to other technology areas.[200] Specifically, the Administrative Measures for the Priority Examination of Patent Applications, which became effective on August 1, 2017, recognized industries involved in energy conservation and protection, new-generation information technology, biological sciences, high-end equipment, new materials, electric automobiles, and smart technologies.[201] The Administrative Measures also focus on fields related to the internet, big data, cloud computing, and any industries encouraged and supported by local governments.[202] Qualified applications will receive their first examination reports within forty-five days, and CNIPA will issue patents within one year.[203]

When COVID-19 hit Wuhan, CNIPA addressed new problems caused by the fast transmissions of the virus that brought Wuhan to a complete lockdown. The State Administration for Market Regulation, National Medical Products Administration, and CNIPA jointly promulgated the Ten Measures to Support the Resumption of Work and Production.[204] Among the Measures, patent and trademark applications related to the prevention and control of the COVID-19 pandemic are prioritized.[205]

---

199. *See* Xia Yu, *New Fast Tracking Patent Application Program in China*, HG.ORG LEGAL RES., https://www.hg.org/legal-articles/new-fast-tracking-patent-application-program-in-china-44498 [https://perma.cc/2FK7-A2PL] (Sept. 25, 2022).

200. Aaron Wininger, *Expedited Patent Examination in China Without the Patent Prosecution Highway (PPH)*, PERKINS COIE (Sept. 19, 2018), https://www.chinaiplegalreport.com/2018/09/expedited-patent-examination-china-without-patent-prosecution-highway-pph/ [https://perma.cc/D6MX-PCYP].

201. Xiaofan Chen, *How to Fast Track Patent Applications in China Through Prioritised Patent Examination*, AWA POINT (June 24, 2020), https://awapoint.com/how-to-fast-track-patent-applications-in-china-through-prioritised-patent-examination/ [https://perma.cc/8RBN-KPAU].

202. *Id.*

203. *Id.*; *see also* LUNG TIN IP ATTORNEYS, GREEN CHANNEL FOR INNOVATIVE MEDICAL DEVICES APPROVAL IN CHINA REQUIREMENTS ON INTELLECTUAL PROPERTY (2018), http://www.lungtinlegal.com/UpLoadFile/Files/2019/4/28/12032527ccd1a59-0.pdf [https://perma.cc/Y6PW-TMF4].

204. *See also* Sophia Liu, *Overview on Intellectual Property Protection Notes in China During the COVID-19 Outbreak*, GROWLING WLG (May 13, 2020), https://gowlingwlg.com/en/insights-resources/articles/2020/ip-protection-notes-in-china-during-covid-19/ [https://perma.cc/8HTS-DYKR] (identifying various measures provided by CNIPA during the early days of the COVID-19 pandemic in China).

205. *Id.*

3. *Enforcement of Intellectual Property Initiatives – Shaming Infringers and Fast-Tracking Infringement Proceedings*

Two other recent notable initiatives implemented by CNIPA relating to the enforcement of intellectual property are shaming infringers and accelerating administrative enforcement measures.

Individuals or entities that engage in intentional infringement of intellectual property face public shaming, in addition to court orders on damages and injunctions.[206] Such infringers are deemed "untrustworthy."[207] Their identities are then published by the State Administration for Market Regulation, which possesses supervisory authority over CNIPA.[208] This is the first time public shaming of intentional infringers by an administrative agency has materialized. Such measure confirms China's serious stance regarding intellectual property enforcement and sends a message to all infringers that intentional infringement of intellectual property will not be tolerated. Impliedly, China signals to companies that they should continue in their creation of intellectual property and trust that their intellectual property assets will be protected and enforced.

Indeed, with enforcement mechanisms, CNIPA devised a new and fast approach to adjudicating major patent infringement disputes.[209] The administrative adjudication is efficient in both time and cost. The entire infringement adjudication, from the filing date to the final decision, is only three months long.[210] Powerful injunctive remedies are available to the intellectual property owners who prevail. Losing parties may appeal the administrative decisions to a people's court.[211] The types of patent infringement qualified for fast-track adjudication include disputes involving major public interests seriously affecting the development of an industry, inter-provincial administrative disputes, and disputes with a significant impact.[212] This fast-track administrative adjudication for patent infringement is innovative and maintains no peers in other jurisdictions, including the United States, the European Union, and Japan. Again, such measure demonstrates that China has entered a new phase regarding intellectual property. China, the global manufacturer of intellectual

206. *See* Aaron Wininger, *China's State Administration for Market Regulation to Establish List of Untrustworthy Entities That Have Intentionally Infringed Intellectual Property*, CHINA IP L. UPDATE (Aug. 2, 2021), https://www.chinaiplawupdate.com/2021/08/chinas-state-administration-for-market-regulation-to-establish-list-of-untrustworthy-entities-that-have-intentionally-infringed-intellectual-property/ [https://perma.cc/6JMV-DYLD].

207. *Id.*

208. *Id.*

209. Aaron Wininger, *China Releases Administrative Adjudication Measures for Major Patent Infringement Disputes Effective June 1, 2021*, CHINA IP L. UPDATE (May 28, 2021), https://www.chinaiplawupdate.com/2021/05/china-releases-administrative-adjudication-measures-for-major-patent-infringement-disputes-effective-june-1-2021/ [https://perma.cc/7A4A-CLLW].

210. *Id.*

211. *Id.*

212. *Id.*

property, encourages the manufacturing of intellectual property through implementation of strong enforcement mechanisms, among other initiatives.

IV. Manufacturing Intellectual Property Through Subsidies

The United States has frequently criticized and berated China as an egregious violator of intellectual property rights and a pirate of counterfeit trademarked and copyrighted goods.[213] By providing filing subsidies, housing subsidies for intellectual property professionals, and other industrial subsidies, national and local governments in China strategically incentivize the production of intellectual property by Chinese individuals and entities both in China and worldwide.

A. Patent and Trademark Filing Subsidies

One of the most common subsidies provided by the Chinese government is a subsidy for patent and trademark filings. China's patent subsidies comprise part of the government's national policy to increase the number of patent filings for the last two decades.[214] Indeed, China announced the National Intellectual Property Strategy in 2008, initiating new developments in the creation, commercialization, protection, and administration of intellectual property.[215] Within this framework, China released the National Patent Development Strategy (Patent Strategy) in 2011, mapping how China would innovate and become competitive through the implementation of new incentive policies, including patent subsidies.[216]

The Patent Strategy, interestingly, affirmed the then-existing patent subsidies. For example, under the Interim Measures for the Administration of Special Funds for Subsidizing Foreign Patent Applications, effective August 28, 2009, for each invention, China authorized a maximum subsidy of 100,000 RMB, which covers five foreign applications.[217] If the invention is deemed a "major innovation," the filers could receive a higher sum.[218] In addition to the national reward, the filers could seek subsidies at the provincial and municipal levels. For instance, in 2007, the Shanghai government implemented subsidies of 30,000 RMB per country for foreign filings, with a maximum of three countries.[219] The Patent Strategy,

213. *See* David J. Kappos, *On Becoming an Even Stronger Patent Powerhouse, China's National Patent Development Strategy, 2011-2020*, Landslide vol. 3 no. 4, Mar.–Apr. 2011, at 8.

214. *Id.*

215. *Id.*

216. *Id.*

217. Aaron Wininger, *Understanding IP Law in China*, Aspatore, 2011 WL 2532951, at *1 (2011).

218. *Id.*

219. *Id.*

however, distinguished the new national patent subsidies from the existing programs by focusing on high-quality, deserving patents.[220]

Under the Patent Strategy, thirty-one of China's provinces and municipalities adopted some type of patent subsidies, and the subsidies continue to grow much larger.[221] For example, by 2019, the Beijing municipal government bestowed a filer with a maximum of twenty million RMB per year in subsidies for filing foreign patent applications and a maximum of two million RMB per year in subsidies for filing domestic patent applications.[222] The Shanghai municipal government followed by bestowing a filer with a maximum of ten million RMB per year in subsidies for filing foreign patent applications.[223] The Shanghai government also granted subsidies for filing domestic patent applications at a smaller amount.[224]

With respect to trademark filings, Chinese provincial governments formulated subsidy programs to encourage local businesses to obtain trademark registrations. For instance, in 2016, China disclosed to the WTO a list of subsidies provided by twenty of the thirty provinces.[225] Among the subsidies, the list revealed that three municipal governments extended monetary sums to local companies that register trademarks in the European Union, any single country, and through the Madrid System.[226] Per trademark registration, the government grants 5,000 RMB.[227]

By numerical measures, China has succeeded in its goal to be the top filing country in the world for patents and trademarks. China has much to celebrate as a result of its National Intellectual Property Strategy and Patent Strategy. Critics, however, offer different observations relating to the costs of China's policy. Some critics have charged that the trademark subsidies allow applicants to engage in bad faith registrations because the grant sum

220. *See National Patent Development Strategy (2011-2020)*, N.Y. TIMES, https://graphics8.nytimes.com/packages/pdf/business/SIPONatPatentDevStrategy.pdf [https://perma.cc/ZP4V-NU6R] (last visited Sept. 25, 2022) (regarding "optimiz[ing] [China's] patent subsidy policy and further defin[ing] the orientation to enhance patent quality"). *See also* William J. Murphy & John L. Orcutt, *Using Valuation-Based Decision Making to Increase the Efficiency of China's Patent Subsidy Strategies*, CARDOZO L. REV. DE NOVO 116, 121-23 (2013) (stating that China does not retreat from the use of patent fee subsidies; the Patent Strategy instead aims to enhance patent quality by using patent subsidies).

221. MICHAEL MANGELSON ET AL., USPTO, TRADEMARKS AND PATENTS IN CHINA: THE IMPACT OF NON-MARKET FACTORS ON FILING TRENDS AND IP SYSTEMS 7 (2021), https://www.uspto.gov/sites/default/files/documents/USPTO-TrademarkPatentsInChina.pdf [https://perma.cc/GS5S-ELK8].

222. *Id.*

223. *Id.*

224. *Id.*

225. Josh Gerben, *Massive Wave of Fraudulent US Trademark Filings Likely Caused by Chinese Government Payments*, GERBEN, https://www.gerbenlaw.com/blog/chinese-business-subsidies-linked-to-fraudulent-trademark-filings/ [https://perma.cc/28J6-LMRV] (last visited Sept. 26, 2022).

226. *Id.*

227. MANGELSON ET AL., *supra* note 221.

exceeds the actual filing fees, promoting individuals to "easily live off of the profits of the filings."[228] In fact, the bad faith trademark filings are so rampant that both the Chinese and United States systems are overwhelmed.[229] The USPTO voiced its frustration with the increase in fraudulent trademark filings by Chinese entities.[230] Consistent with the criticism of trademark subsidies, the USPTO suggested that China's patent subsidies encourage filers to seek patents in order to receive the subsidies but not to protect innovation.[231] Others also asserted that China's patent subsidies have led to an increase in "junk patents" that possess limited commercial value and impose burdens on the USPTO.[232]

In response to the USPTO report issued on January 13, 2021, China announced on January 27, 2021, that it would phase out patent subsidies by 2025.[233] The announcement, however, leaves other non-market incentives for patent filings intact.[234] The other non-market factors include lowering the corporate tax rate to fifteen percent, instead of the statutory twenty-five percent, via China's High and New-Technology Enterprise program; patent requirements for an IPO listing in the Shanghai Stock Exchange's Science & Technology Board; and reduced prison sentences, among others.[235]

---

228. Gerben, *supra* note 225.

229. China responded to the bad faith trademark filings by revising its trademark law to directly curb bad faith trademark filings. *See China's Trademark Law Amendments Tighten Restrictions on Bad-Faith Filing*, INT'L TRADEMARK ASS'N (May 15, 2019), https://www.inta.org/chinas-trademark-law-amendments-tighten-restrictions-on-bad-faith-filing/ [https://perma.cc/J8GU-NSBQ]. The USPTO also responded by documenting the fraudulent trademark filings by Chinese applicants and issued the report. *See* MANGELSON ET AL., *supra* note 221.

230. *See* MANGELSON ET AL., *supra* note 221, at 4 (discussing the implications of China's increase in trademark filings to the USPTO).

231. *Id.* at 7. *See also* ZHEN LEI ET AL., PATENT SUBSIDIARY AND PATENT FILING IN CHINA 2 (2013), https://funginstitute.berkeley.edu/wp-content/uploads/2013/12/patent_subsidy_Zhen.pdf [https://perma.cc/E9S7-AWP5] (demonstrating that firms receiving patent filing subsidies manipulated the rewards program, rendering the policy ineffective).

232. Daniel Filstrup, *China's Patent Subsidies and the U.S. Response*, 42 AIPLA Q.J. 605, 621 (2014). *See also* Josh Ye, *Chinese Government Subsidies Fuel Surge in Patents But Experts Warn It's Quantity Over Quality*, S. CHINA MORNING POST (Apr. 15, 2020, 6:00 AM), https://www.scmp.com/tech/enterprises/article/3079878/chinese-government-subsidies-fuel-surge-patents-experts-warn-its [https://perma.cc/593V-7DCL]; Brian J. Love et al., *Patent Litigation in China: Protecting Rights or the Local Economy?*, 18 VAND. J. ENT. & TECH. L. 713, 715 (2016) (noting that China provided incentives to encourage patent filings, not actually increase innovation).

233. *See* Aaron Wininger, *China to Cancel All Patent Subsidies*, NAT. L. REV. (Jan. 27, 2021), https://www.natlawreview.com/article/china-to-cancel-all-patent-subsidies [https://perma.cc/S7FK-AU4J].

234. *Id.*

235. *Id.* (identifying other non-market factors implemented by China to increase patent filings). *See also* Adrian Wan, *How to Get Out of Jail Early in China: Buy an Inventor's Idea and Patent It*, S. CHINA MORNING POST (Jan. 19, 2015), https://www.scmp.com/news/china/article/1681850/how-get-out-jail-early-china-buy-inventors-idea-and-patent-it (reporting that inmates can take advantage of a Chinese law, which permits a proven inventor's sentence to be commuted); *High and New Technology Enterprise*, PWC CHINA, https://www.pwccn.com/en/services/tax/china-rd-

B. Housing Subsidies for Intellectual Property Professionals

With eyes on maintaining the global lead on the number of patent and trademark filings, China adopts different types of subsidies to ensure that the manufacturing of intellectual property continues.[236] One of the constituents assisting the procurement of intellectual property is intellectual property professionals. Companies cannot obtain patents and trademarks without the intellectual property professionals' expertise in intellectual property law and practice. China, therefore, has recently targeted intellectual property professionals in its manufacturing of intellectual property.

Amid the rapid transmission of the COVID-19 Delta variant, when more countries imposed further lockdowns and restricted movement, China decidedly carved out a different direction. Indeed, on August 17, 2021, the People's Government of Huangpu District, Guangzhou, China, announced its new Administrative Measures for Intellectual Property Special Funds in Guangzhou High-tech Zone, Guangzhou Development Zone, Huangpu District, Guangzhou to lure intellectual property professionals to relocate to Guangzhou.[237]

Intellectual property professionals who are between the age of forty and fifty and mid-career, with more than fifteen years of work experience in the field of intellectual property, are qualified to receive 2.5 million RMB in housing subsidies if they are willing to relocate to Guangzhou.[238] The housing subsidy is generous, given that the salary of intellectual property professionals, as stated in the announcement, is merely 800,000 RMB.[239] This means that the housing subsidy is three times their annual salary. For junior intellectual property professionals below the age of forty, the housing subsidy is 500,000 RMB.[240] Comparatively, in the high-cost housing market

---

incentive-service/high-and-new-technology-enterprise.html [https://perma.cc/KG9Z-8BN5] (last visited Feb. 1, 2022); Mengmeng Yu & Xia Zheng, *How Patent Subsidies Boost R&D*, Managing IP (Mar. 16, 2016), https://www.managingip.com/article/b1kbpc44nxpxkl/how-patent-subsidies-boost-rampd (discussing tax breaks for tech companies with patents); Aaron Wininger, *Patents Required to List on the Shanghai Stock Exchange's Science & Technology Board*, China IP L. Update (Mar. 20, 2020), https://www.chinaiplawupdate.com/2020/03/patents-required-to-list-on-the-shanghai-stock-exchanges-science-technology-board/ [https://perma.cc/B257-XNVG] (reporting that entity applicants for IPO listings must own more than five invention patents that are responsible for the applicant's revenue or fifty plus invention patents that form the applicant's core technology and generate income).

236. Yu & Zheng, *supra* note 235 (discussing different types of intellectual property funds for patent utilization).

237. Aaron Wininger, *District in Guangzhou, China Proposes 2.5 Million RMB Housing Subsidy to Attract Intellectual Property Professionals*, Nat. L. Rev. (Aug. 20, 2021), https://www.natlawreview.com/article/district-guangzhou-china-proposes-25-million-rmb-housing-subsidy-to-attract [https://perma.cc/V3PT-ZZ26] (discussing China's housing subsidies for intellectual property professionals).

238. *Id.*

239. *Id.*

240. *Id.*

in Silicon Valley, local governments in San Jose, Palo Alto, and the vicinities do not offer any housing subsidies to attract intellectual property professionals to relocate to the areas.

The housing subsidies exemplify a local strategy adopted by municipalities known for developing innovation parks across China. Municipal governments compete against each other to attract talent for innovation in high-tech sectors. As intellectual property is "the bridge between innovation and value," municipal governments want to ensure that intellectual property professionals are available and ready to build the bridge.[241]

C. INDUSTRIAL SUBSIDIES

China's intellectual property is the end result of Chinese subsidies in favorite sectors of the economy.[242] In other words, China's intellectual property strategy is at the core of China's development in different economic sectors. Understanding China's intellectual property strategy requires a close reading of China's policy regarding the promotion of specific sectors.

The Chinese government's Made in China 2025 initiative plans to direct two trillion RMB through 800 funds for the distribution of subsidies to high-tech companies.[243] The initiative identifies ten key industries, including advanced information technology, aerospace and aeronautical equipment, automated machine tools and robotics, medicine and medical devices, and energy-saving and new-energy vehicles, among others.[244] The subsidies are meant to facilitate development and growth in the identified sectors in China by 2025. The initiative's ultimate goal, however, is to accelerate China's efforts to take over international high-tech companies.[245]

---

241. Rongxiang Zhao et al., *The Innovation Economy Calls for Proactive Growth of Intellectual Property by Various Innovation Carriers – A China Case*, 1 GLOB. TRANSITIONS PROC. 23, 26 (2020) (discussing and illustrating how intellectual property bridges innovation and value).

242. Mark Cohen, *Ox Herding, Industrial Policy and China IP*, CHINA IPR (Apr. 3, 2016), https://chinaipr.com/2016/04/03/ox-herding-industrial-property-and-china-ip/ [https://perma.cc/GQT7-UCGU].

243. *See* Shinya Matano, *The Impact of China's Industrial Subsidies on Companies and the Response of Japan, the United States, and the European Union*, MITSUI & CO. (Jan. 2021), https://www.mitsui.com/mgssi/en/report/detail/__icsFiles/afieldfile/2021/02/19/2101c_matano_e.pdf [https://perma.cc/AX7G-ZNK8].

244. U.S. CHAMBER OF COM., MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS 10 (2017), https://www.uschamber.com/sites/default/files/final_made_in_china_2025_report_full.pdf; *see also Made in China 2025 Explained*, CHINA INNOVATION PROJECT, https://projcts.iq.harvard.edu/innovation/made-china-2025-explained [https://perma.cc/W6L5-RVPN] (last visited Feb. 1, 2022).

245. *See* Jost Wubbeke et al., *Made in China 2025, The Making of a High-Tech Superpower and Consequences for Industrial Countries*, MERICS PAPERS ON CHINA (Dec. 2016), https://merics.org/sites/default/files/2020-04/Made%20in%20China%202025.pdf [https://perma.cc/C9CL-KUQ6] (explaining how Made in China 2025 would allow China to control the global tech sectors).

In 2020 alone, China directed a staggering 213.6 billion RMB ($33 billion) in subsidies to several key sectors.[246] The government focuses on 113 companies in the semiconductor sector and provides payments totaling 10.6 billion RMB to these companies for the research and manufacture of computer chips.[247] This amount represents a fourteen percent increase from semiconductor subsidies in 2019 and a twelve-fold increase from the last decade.[248] A single chipmaker, Semiconductor Manufacturing International Corporation, received 2.5 billion RMB in subsidy payments, in addition to obtaining 2.25 billion RMB from state-owned funds, for its plan to build a new chip plant in Shenzhen.[249] China's heavy investment in the semiconductor sector positions the country to capture 19.4 percent of total demand for Chinese-made chips worldwide.[250] In addition to the semiconductor industry, China focuses on defense, aviation, ship building, and pharma as the favorite sectors for subsidies.[251] In the pharma sector, China has "drastically increased subsidies to drugmakers," extending subsidies to companies like CanSino Biologics and Shanghai Pharmaceuticals Holding.[252] Moreover, among the companies receiving subsidies, thirty percent are state-owned enterprises, but they seize sixty percent of the total subsidies.[253] In addition to the subsidies, China also provides low-interest loans and tax breaks to home-grown industries.[254]

Companies in the key industries receiving various subsidies and incentives obtain patents in record numbers. For instance, Huawei became a global telecom company after the Chinese government provided $46 billion in loans and credits, $25 billion tax breaks, and $1.6 billion in grants to the company over a decade.[255] As the largest telecom company in the world, Huawei also leads in the number of patents issued by CNIPA.[256] In the 5G

246. Yusho Cho, *Eyeing US, China Wields $33bn Subsidies to Bolster Chips, Defense*, NIKKEI ASIA (May 17, 2021, 4:27 AM), https://asia.nikkei.com/Politics/International-relations/US-China-tensions/Eyeing-US-China-wields-33bn-subsidies-to-bolster-chips-defense [https://perma.cc/X2V2-AJ56].

247. *Id.*

248. *Id.*

249. *Id.*

250. *Id.*

251. *Id.*

252. *Id.*

253. *Id.*; *see also* Matano, *supra* note 243 (detailing Chinese government support to high-tech industries).

254. *See* Cho, *supra* note 246.

255. Chuin-Wei Yap, *State Support Helped Fuel Huawei's Global Rise*, WALL ST. J. (Dec. 25, 2019), https://www.wsj.com/articles/state-support-helped-fuel-huaweis-global-rise-11577280736 [https://perma.cc/G53R-NRMC]; *see also* John VerWey, *Chinese Semiconductor Industrial Policy: Past and Present*, J. INT'L COM. & ECON. (July 2019), https://www.usitc.gov/publications/332/journals/chinese_semiconductor_industrial_policy_past_and_present_jice_july_2019.pdf.

256. James Kynge, *Huawei Records Biggest Jump in Patent Ownership in 2020*, FIN. TIMES (Mar. 16, 2021), https://www.ft.com/content/614c6149-2f6e-482f-b64a-97aa2496ac7f [https://perma.cc/KQ9K-5HQ6] (reporting that Huawei is the lead patent holder in China and, by

technology area, Huawei owns 3,007 patents, the highest among all patent holders worldwide.[257] Huawei garnered more than $1 billion in patent licensing fees from others between 2019 and 2021.[258]

V. Manufacturing Intellectual Property Through *Ex Post* Incentives

China has implemented various subsidies and tax breaks to encourage companies to conduct R&D and procure intellectual property. These are *ex ante* programs. Interestingly, China also cultivates a new ecosystem for manufacturing intellectual property through *ex post* incentives. These incentives recognize intellectual property as an important ingredient for obtaining capital and financing.

A. Patents and IPO-Listing Incentives

In order to encourage the production of patents by tech companies, China recognizes patents as the innovative requirement for listing in the Shanghai Stock Exchange's latest index. In 2019, the Shanghai Stock Exchange created the Science and Technology Innovation Board, or "STAR Board," as referred by Chinese authorities.[259] Applicants for the IPO listing are China's most promising tech companies attracting worldwide attention. The twenty-five companies listed on the first day of trading have fetched gains from eighty-four percent to four hundred percent.[260]

Notably, to be considered for listing on the STAR Board, an applicant must possess Chinese invention patents.[261] The applicant must own a minimum of five invention patents, and the patents must be responsible for the applicant's revenue.[262] The applicant is also required to spend a

---

year-end 2020, "the company held more than 100,000 active patents, up from just over 85,000 active patents at the end of 2019"); Ye, *supra* note 232 (reporting about Huawei "taking the top spot," with 4,411 patent applications in 2019).

257. Arjun Kharpal, *Huawei to Start Charging Royalties to Smartphone Makers Using Its Patented 5G Tech*, CNBC (Mar. 16, 2021, 5:30 AM), https://www.cnbc.com/2021/03/16/huawei-to-charge-royalties-to-smartphone-makers-using-its-5g-tech-.html [https://perma.cc/NMH6-HM98].

258. Cheng Ting-Fang & Lauly Li, *Huawei Shows Off Patent Progress Despite US Pressure*, Nikkei Asia (Mar. 16, 2021, 6:54 AM), https://asia.nikkei.com/Spotlight/Huawei-crackdown/Huawei-shows-off-patent-progress-despite-US-pressure#:~:text=IN%202020%20alone%2C%20Huawei%20continued,Property%20Organization%2C%20said%20at%20the [https://perma.cc/5R24-VMTP].

259. Mark Kolakowski, *What Is China's STAR Market?*, Investopedia (July 22, 2019), https://www.investopedia.com/what-is-china-s-star-market-4693703 [https://perma.cc/7K8B-NZD5].

260. Aaron Wininger, *Patents Required to List on the Shanghai Stock Exchange's Science & Technology Board*, China IP L. Update (Mar. 20, 2020), https://www.chinaiplawupdate.com/2020/03/patents-required-to-list-on-the-shanghai-stock-exchanges-science-technology-board/ [https://perma.cc/A2JF-ZTDW].

261. *Id.*

262. *Id.*

minimum of five percent of its operating income on R&D in each of the last three years.[263] In addition, the applicant's compound growth rate of operating income in the last three years must have reached twenty percent.[264] Alternatively, if the applicant cannot meet these requirements, the applicant must own more than fifty invention patents "that form the core technology of the applicant," the core technology must have been recognized nationally by national authorities, and the applicant must have won national technology invention awards, among other factors.[265] In other words, the listed companies are patent rich.

The requirements affirm the importance of patents, a signal that the applicants are highly regarded as innovative. The requirements link R&D spending to resulting patents and patents to the applicant's main income. Tech companies attempting to meet the requirements fiercely compete for the IPO opportunity on the STAR Board. Investors are enthusiastic in pouring their investments into the listed companies. In two years, the STAR Board listed more than 300 companies that together raised a total of 380 billion RMB ($58.8 billion) in IPOs.[266] The present market value of these listed companies was estimated at the time of STAR Board's second anniversary to be 4.95 trillion RMB.[267]

B. Patent and Trademark Pledge Incentives

Another incentive to manufacture intellectual property is the ability to use the intellectual property as collateral in pledge financing. During China's Five-Year Plan for the period of 2016-2020, patent pledge financing rose to 470 billion RMB, representing 3.1 times the financing obtained over the prior five-year period.[268]

Patent owners in China rely on the patents they have produced to subsequently obtain loans. In 2020 alone, Chinese patent owners registered 405,000 patent transactions that amounted to 155.8 billion RMB, an increase of 2.8 times from the previous year.[269] In other words, China encourages lenders to accept patents as collateral for issuing loans.[270] Nowadays, patent owners do not just manufacture patents to use and make

263. *Id.*

264. *Id.*

265. *See id.*

266. Zhu Shenshen & Huan Yixuan, *Sci-Tech Companies Bask in the Glow of the STAR Market*, Shine (Aug. 13, 2021, 6:53 PM), https://www.shine.cn/news/in-focus/2108133535/ [https://perma.cc/S3LP-TKMT].

267. *See id.*

268. *See Patent Commercialization Gains Momentum During Past Five Years*, China Nat'l Intell. Prop. Admin. (Feb. 24, 2021), https://english.cnipa.gov.cn/art/2021/2/24/art_2509_156880.html [https://perma.cc/G9AY-KW8H].

269. *See id.*

270. Wang Xin, *More IP Assets Used as Collateral for Loans*, China Daily (June 18, 2019, 7:26 AM), https://www.chinadaily.com.cn/cndy/2019-07/18/content_37492757.htm.

products; they leverage patents for financing purposes.[271] In order to popularize the patent pledge program, China implemented patent commercialization in thirty-seven key cities across the country in 2017.[272] Three years later, the thirty-seven key cities witnessed a drastic increase in patent pledge financing; they experienced significantly higher patent pledge transactions and loan amounts compared to the rest of the country without the program.[273]

For the combined patent and trademark pledges in 2020, China reported that financing reached 218 billion CNY, or a 43.9 percent increase from 2019.[274] The total number of patent and trademark pledge projects was 12,093, or a 43.8 percent increase from the prior year.[275]

Overall, the intellectual property pledge financing is part of China's policy to allow companies that have procured patents and trademarks to gain access to credit.[276] With the ease of access to loans, these companies can continue to survive and grow, "facilitating the high-quality development of the economy."[277] Also, recognizing that startups are small companies not having physical assets, possessing patents and trademarks, and often facing difficulty in securing loans, the intellectual property pledges broaden financing opportunities to these companies.[278] Understanding that some startups operate under liquidity pressure and need quick access to financing, China created a "green channel for fast-track financing" by reducing the number of working days for processing loans from seven days to three days for companies to apply and receive loans from patent pledges and two days for trademark pledges.[279]

C. Incentivizing Intellectual Property Creations Through a More Equitable Approach Between Employers and Employees

In the United States, inventors are obliged to assign inventions to their employers.[280] Even if there are no written contracts, the inventors must assign the inventions if the inventors are hired under obligations to assign.[281]

271. Alfred Radauer, *Opportunities to Finance Innovation With IP*, 2 WIPO Mag. 41, 42 (2021), https://www.wipo.int/wipo_magazine/en/2021/02/article_0007.html.
272. *See Patent Commercialization Gains Momentum During Past Five Years*, *supra* note 268.
273. *Id.*
274. *Patent and Trademark Pledge Financing in China Gains the Largest Increase in the 13th Five-Year Plan Period*, China Nat'l Intell. Prop. Admin. (Mar. 9, 2021), https://english.cnipa.gov.cn/art/2021/3/9/art_1340_157495.html [https://perma.cc/H922-Y7TL].
275. *Id.*
276. *Id.*
277. *See id.*
278. *Id.*
279. *Id.*
280. *Banks v. Unisays Corp.*, 228 F.3d 1357, 1359 (Fed. Cir. 2000).
281. Peter L. Brewer, *Who Owns the Invention? Addressing Ownership Claims of Employees and Contractors*, 42 Tenn. Bar J. 22, 24 (2006).

Employers do not provide extra compensation to the inventors upon assignments because the employers believe that they have already provided salaries and workplace benefits for the employees to invent.[282] Consequently, inventor-employees receive no profit sharing in the event that their employers exploit the inventions.[283] China takes a different approach to encourage innovations by inventor-employees.[284]

Indeed, in 2009, China revised its Patent Law to bestow remuneration rights on inventor-employees. While employers secure the right to apply for patents based on employee inventions, the employers must reward the employees.[285] Specifically, Article 16 of the Patent Law states that employers who have received patents from an employee's invention must "reward the inventor or designer" a "reasonable amount of remuneration according to the scope of application and the economic results."[286] The Chinese government then promulgated Implementing Regulations to further detail the scope of the reward to employees.[287] The Regulations set

---

282. Joshua L. Simmons, *Invention Made for Hire*, 2 N.Y.U. J. INTELL. PROP. & ENT. L. 1, 12-13 (2012).

283. *Id.*

284. Guanyu Jinyibu Jiaqiang Zhiwu Famingren Hefa Quanyi Baohu Cujin Zhishichanquan Yunyongshishi de Ruogan Yijian (关于进一步加强职务发明人合法权益保护 促进知识产权运用实施的若干意见) [Several Opinions on Further Strengthening the Protection of the Legitimate Rights and Interest of Inventors of Service Inventions to Promote the Application and Implementation of Intellectual Property Rights] (promulgated by St. Intell. Prop. Off., Ministry of Educ., Ministry of Sci. and Tech., Ministry of Indus. and Info., and nine other government authorities, Jan. 7, 2013, effective Jan. 7, 2013) (China).

285. Zhuanli Fa 2008 Nian Xiuzheng (专利法 2008年修正) [China Patent Law 2008 Amended] (promulgated by the Standing Comm. Nat'l People's Cong., Dec. 27, 2008, effective Oct. 1, 2009) art. 6, 2008 STANDING COMM. NAT'L PEOPLE'S CONG. GAZ (China).

> An invention-creation that is accomplished in the course of performing the duties of an employee, or mainly by using the material and technical conditions of an employer shall be deemed an employment invention-creation. For an employment invention-creation, the employer has the right to apply for a patent. After such application is granted, the employer shall be the patentee. For a non-employment invention-creation, the inventor or designer has the right to apply for a patent. After such application is granted, the said inventor or designer shall be the patentee. For an invention-creation that is accomplished by using the material and technical conditions of an employer, if the employer has concluded a contract with the inventor or designer providing the ownership of the right to apply for the patent or the ownership of the patent right, such provision shall prevail.

Id.

286. *Id.* art. 16 ("The unit that is granted the patent right shall reward the inventor or designer of an employment invention-creation. After such patent is exploited, the inventor or designer shall be given a reasonable amount of remuneration according to the scope of application and the economic results.").

287. Zhonghua Renmin Gongheguo Zhuanli Shishi Xize (中华人民共和国专利实施细则) [Rules for the Implementation of the Patent Law of the People's Republic of China] (promulgated by Guowuyuan, Jan. 9, 2010, effective Feb. 1, 2010) art. 76 (China), *translated in* CHINA DAILY, https://govt.chinadaily.com.cn/s/201902/20/WS5c219f6f498ee2f0291e46d2/rules-for-the-implementation-of-the-patent-law-of-the-peoples-republic-of-china.html.

forth a minimum "sum of money as prize" if the employer and inventor-employee fail to agree upon a reward within three months of the patent grant.[288] The then-monetary sum was a minimum of 3,000 RMB for invention patents and 1,000 RMB for utility model or design patents.[289] In addition to the prize money, the Implementing Regulations require the employer that profits from the exploitation of the patent to share profits with the inventor-employee for the duration of the patent's life.[290] The minimum percentage of the share of profits was to be not less than two percent for invention and utility model patents and not less than 0.2 percent for design patents.[291] Alternatively, the employer may opt for a lump sum payment instead of a percentage share of profits given to the inventor-employee.[292] In the event the employer enters into a licensing arrangement with others to exploit the patent, the employer must provide the inventor-employee a share of not less than ten percent of the fees received.[293]

In the recent revision of China's Patent Law, which became effective in June 2021, China continues to recognize the remuneration rights of inventor-employees and designers.[294] Most notably, Article 15 of the new Patent Law commands that the government "encourages" employers to "implement property right incentives" by sharing stock rights, options, and dividends and enabling inventor-employees or designers to "enjoy reasonably . . . the benefits of innovation."[295] In other words, whatever

---

288. *Id.* art. 77.

289. *See id.*; *see also* Xu Jing, *Notes on a Recent Inventor Remuneration Dispute*, CHINA L. INSIGHT (Sept. 11, 2020), https://www.chinalawinsight.com/2020/09/articles/intellectual-property/notes-on-a-recent-inventor-remuneration-dispute/ [https://perma.cc/U8JW-YSHP].

290. Zhonghua Renmin Gongheguo Zhuanli Shishi Xize (中华人民共和国专利实施细则) [Rules for the Implementation of the Patent Law of the People's Republic of China] (promulgated by Guowuyuan, Jan. 9, 2010, effective Feb. 1, 2010) art. 78 (China).

291. *See id.*

292. *Id.*

293. *See id.*

294. Zhuanli Fa 2020 Nian Xiuzheng (专利法 2020年修正) [China Patent Law 2020 Amended] (promulgated by the Standing Comm. Nat'l People's Cong., Oct. 17, 2020, effective June 1, 2021) art. 6, 2020 STANDING COMM. NAT'L PEOPLE'S CONG. GAZ (China) (providing that "[t]he entity may handle the right to apply for a patent or the patent rights for a service invention according to law, to facilitate implementation and exploitation of the related invention-creation."). *See also* Liaoteng Wang et al., *The Long Awaited Fourth Amendment to the Chinese Patent Law: An In-Depth Look*, IPWATCHDOG (Dec. 15, 2020), https://www.ipwatchdog.com/2020/12/15/long-awaited-fourth-amendment-chinese-patent-law-depth-look/id=128185/ [https://perma.cc/F3D5-GKGZ]. *See also* Zhuanli Fa 2020 Nian Xiuzheng (专利法 2020年修正) [China Patent Law 2020 Amended] (promulgated by the Standing Comm. Nat'l People's Cong., Oct. 17, 2020, effective June 1, 2021) art. 15, 2020 STANDING COMM. NAT'L PEOPLE'S CONG. GAZ (China) (stating that "[t]he entity that is granted the patent right shall award to the inventor or designer of a service invention-creation a reward and, upon the exploitation of the patented invention-creation, shall award to the inventor or designer an appropriate remuneration based on the extent of exploitation and application and the economic benefits yielded.").

295. *See* Zhuanli Fa 2020 Nian Xiuzheng (专利法 2020年修正) [China Patent Law 2020 Amended] art. 15 (China) (providing that "[t]he State encourages the entity that granted the

benefits from exploiting the patents the employer obtains, the employee holds the right to a reasonable share, and the employer should implement incentive programs to reward employees.[296] If the employer fails to implement an incentive program, the minimum amount of monetary prize, percentage of shares, and royalty from licensing fees prescribed by the Implementing Regulations govern.[297]

The 2021 Patent Law reflects China's new national desire to promote and encourage indigenous innovation through local talents.[298] By recognizing the importance of inventor-employee contributions in the procurement of patents, China aims to balance the employer's desire to hire and retain talents and the employee's desire to be compensated for their own innovations.[299] Employees often do not garner much protection.[300] The new law cements the protection of the employee's rights in inventions.[301]

Recognition for inventorship only is insufficient; monetary remuneration in the form of equity, options, and dividends, among others, is necessary.[302] Salary alone fails to demonstrate the value of the employee's patents when the employer is the only entity enjoying all the benefits.[303] Sharing two percent of the profits generated from a patent owned by the employer with the inventor-employee speaks to both the employer's recognition of the

---

patent right to implement property right incentives by means of for example stock rights, options and dividends, so that inventors or designers enjoy reasonably shares of the benefits of innovation.").

296. *Id.*

297. *See* Jing, *supra* note 289 (discussing China's Patent Law and explaining that the Implementing Rules of the Patent Law further provide the statutory remuneration in the absence of a contract); *see also Service Inventions in China*, COVINGTON (July 10, 2015), https://www.cov.com/-/media/files/corporate/publications/2015/07/service_inventions_in_china.pdf.

298. Ningling Wang, *Promoting Innovation With Enhanced Protection and Enforcement Measurements Under New Chinese Patent Law*, FINNEGAN (Oct. 23, 2020), https://www.finnegan.com/en/insights/blogs/prosecution-first/promoting-innovation-with-enhanced-protection-and-enforcement-measurements-under-new-chinese-patent-law.html.

299. *See* Zhuanli Fa 2020 Nian Xiuzheng (专利法 2020年修正) [China Patent Law 2020 Amended] arts. 6, 15 (China).

300. Zhonghua Renmin Gongheguo Zhuanli Shishi Xize (中华人民共和国专利实施细则) [Rules for the Implementation of the Patent Law of the People's Republic of China] (promulgated by Guowuyuan, Jan. 9, 2010, effective Feb. 1, 2010) art. 78 (China), *translated in* CHINA DAILY, https://govt.chinadaily.com.cn/s/201902/20/WS5c219f6f498ee2f0291e46d2/rules-for-the-implementation-of-the-patent-law-of-the-peoples-republic-of-china.html.

301. *Id.*

302. *See* Zhuanli Fa 2020 Nian Xiuzheng (专利法 2020年修正) [China Patent Law 2020 Amended] art. 15 (China) (providing that "[t]he State encourages the entity that granted the patent right to implement property right incentives by means of for example stock rights, options and dividends, so that inventors or designers enjoy reasonably shares of the benefits of innovation.").

303. Robert P. Merges, *The Law and Economics of Employee Inventions*, 13 HARV. J.L. & TECH. 1, 10-11 (1999).

employee's contribution and the employer's appreciation of the contribution.[304]

VI. Implications For the United States and China: What Manufacturing of Innovation Means to China and the World

China's transformation from a nation of manufacturing inexpensive goods to a nation of manufacturing innovation, as seen through the production of intellectual property assets, contains profound implications for the United States and the rest of the world.[305]

As the new and leading global powerhouse of intellectual property, China is not producing intellectual property assets like cheap goods for sale.[306] Intellectual property assets, such as patents, signify that Chinese individuals are no longer the factory workers but the inventors who create inventions that are of patentable subject matter, useful, new, inventive, and worthy of protection and competition.[307] In 2019, Chinese inventors filed 1.244 million patent applications in China and 61,000 international patent applications.[308] China tech companies like Huawei, Tencent, Lenovo, Gree, ZT, and Vivo have become global tech companies and lead the nation in the numbers of patents received by domestic and international enterprises annually.[309] With the increase in patent filings, Chinese inventors demonstrate that they are continuously engaging in innovation, building, and creation for the constantly changing technical environment.[310]

---

304. *See* Wang, *supra* note 298 (stating that "the new revisions endeavor to encourage and incentivize both employers and service inventors/designers to create more inventions/designs.").

305. MCKINSEY & CO., THE CHINA EFFECT ON GLOBAL INNOVATION 4 (2015), https://www.mckinsey.com/~/media/mckinsey/featured%20insights/innovation/gauging%20the%20strength%20of%20chinese%20innovation/mgi%20china%20effect_full%20report_october_2015.ashx.

306. *China's IP Journey*, 6 WIPO MAG. 25 (Dec. 2010), https://www.wipo.int/export/sites/www/wipo_magazine/en/pdf/2010/wipo_pub_121_2010_06.pdf.

307. Michael Martina, *China's Patent Targets Mask Weak Innovation-Study*, THOMSON REUTERS (Aug. 21, 2012), https://www.reuters.com/article/uk-china-patents-eu/chinas-patent-targets-mask-weak-innovation-study-idUKBRE87K0D320120821.

308. *See* CNIPA, INTELLECTUAL PROPERTY CREATION 33 (2019), https://english.cnipa.gov.cn/module/download/down.jsp?i_ID=152462&colID=2159 (detailing intellectual property creation in China).

309. Aaron Wininger, *Who Are the Top Grantees of Chinese Invention Patents in 2019?*, NAT'L L. REV. (May 28, 2020), https://www.natlawreview.com/article/who-are-top-grantees-chinese-invention-patents-2019 (presenting the top ten Chinese enterprises with the largest number of patents granted in 2019).

310. James L. Schoff & Asei Ito, *Competing With China on Technology and Innovation*, CARNEGIE ENDOWMENT FOR INT'L PEACE, https://carnegieendowment.org/files/ChinaRiskOpportunity-China_Tech.pdf (last visited Sept. 3, 2022).

The large numbers of patents issued each year also demonstrate that Chinse companies are heavily investing in R&D.[311] The works conducted by individuals in R&D yield large increases in patent filings and patent grants.[312] For instance, Huawei invested 20 billion CNY in R&D for 2020, and it continues to lead the telecommunication equipment sector worldwide.[313] Huawei received 6,371 patents, leading all domestic and international firms in their patent filings in China.[314] Tencent planned to invest $70 billion into emerging technology in the next five years, and the company's patent filings in blockchain technologies constituted 12.4 percent of 5,800 patent applications in this new niche.[315] In addition, Tencent captured the vision of digital inheritance and filed for a patent on how to let owners pass down digital items like in-game property and currency upon death.[316] In other words, manufacturing intellectual property reflects an increase in R&D spending and the seizing of new opportunities in new technologies.[317]

With respect to copyrights, China understands the importance of content and the associated soft power.[318] By rapidly revising its copyright law, China accommodates and encourages the explosive growth and distribution of digital content for entertainment and communication.[319] For instance,

311. Marius Zaharia, *Global R&D Spending Is Now Dominated by Two Countries*, WORLD ECON. F. (Apr. 24, 2018), https://www.weforum.org/agenda/2018/04/trade-war-or-not-china-is-closing-the-gap-on-u-s-in-technology-ip-race.

312. *Individual Inventors Better Aided in China*, CULTURE & SCI. (May 29, 2002), http://www.china.org.cn/english/MATERIAL/33461.htm.

313. *See* Phate Zhang, *Ren Zhengfei: Huawei's R&D Budget Exceeds $20 Billion This Year*, CNTECHPOST (Mar. 26, 2020, 11:13 AM), https://cntechpost.com/2020/03/26/ren-zhengfei-huaweis-rd-budget-exceeds-20-billion-this-year/ [https://perma.cc/R7UF-J4RZ]; David Kirton, *Huawei Posts 3.2% Rise in Profit in 2020, As Revenues Decline From Outside of China*, THOMSON REUTERS (Mar. 31, 2021), https://www.reuters.com/article/us-huawei-tech-results/huawei-posts-3-2-rise-in-profit-in-2020-as-revenues-decline-from-outside-of-china-idUSKBN2BN0XA [https://perma.cc/R5HW-YSAG].

314. Aaron Wininger, *China Utility Model Patent Application Filings Up 29% in 2020; Foreign-Originated Chinese Invention Patent Application Filings Down 3%*, NAT'L L. REV. (May 8, 2021), https://www.natlawreview.com/article/china-utility-model-patent-application-filings-29-2020-foreign-originated-chinese.

315. *See* Samuel Haig, *Chinese Tech Giant Tencent Files New Slew of Blockchain Patents*, COINTELEGRAPH (June 19, 2020), https://cointelegraph.com/news/chinese-tech-giant-tencent-files-new-slew-of-blockchain-patents [https://perma.cc/BW2B-U8N9].

316. *See* Ian Walker, *Tencent Patent Wants to Let You Pass Down Digital Items after Your Death*, KOTAKU (July 15, 2021, 2:45 PM), https://kotaku.com/tencent-patent-wants-to-let-you-pass-down-v-bucks-after-1847300631 [https://perma.cc/BNF2-HCJH].

317. Luis Hakim & Sonal Shah, *The Next Wave of Innovation*, DELOITTE INSIGHTS (Nov. 30, 2018), https://www2.deloitte.com/us/en/insights/industry/life-sciences/medtech-research-and-development-innovation.html.

318. Sean A. Pager & Eric Priest, *The Chinese Copyright Dream*, 49 PEPP. L. REV. 733, 740 (2022).

319. *See* Tim Doescher, *How China Is Taking Control of Hollywood*, HERITAGE FOUND. (Dec. 13, 2018), https://www.heritage.org/asia/heritage-explains/how-china-taking-control-hollywood; Nicole Laporte, *Hollywood Has a Growing China Problem—But It Won't Admit It*, FAST CO. (Oct.

China is among the largest digital publishing markets in the world.[320] This means that ancillary advertising revenue generates the financial resources necessary to propel both the development and growth of China's digital publishing industry.[321] Likewise, China's game sector, consisting of mobiles games, PC web games, and PC client games, just to name a few, had a market of $58 billion in 2020, which is expected to rise to $86 billion by 2027.[322] Top game publishers are all Chinese companies, as foreign games failed to reach Chinese players.[323] Moreover, China's domination in 5G technologies allows the growth of a mobile-based virtual reality gaming market.[324] China's successful games are made for Chinese audiences, with cultural appeals in the storylines and effects.[325] In addition, games have soft power: Chinese players enjoy playing social games to fulfill their desires to be inclusive.[326] Further, game companies like Tencent build platforms of digital content that allow players to go from playing games to listening to music streaming services and using educational apps to read books and learn English.[327]

7, 2020), https://www.fastcompany.com/90560480/hollywood-has-a-growing-china-problem-but-it-wont-admit-it [https://perma.cc/8CC8-78CS]; Lai Lin Thomala, *Film Industry in China—Statistics & Facts*, STATISTA (Feb. 3, 2022), https://www.statista.com/topics/5776/film-industry-in-china/#topicHeader__wrapper [https://perma.cc/6L4D-CL2S].

320. *See* Lai Lin Thomala, *Digital Publishing Industry in China—Statistics*, STATISTA (Oct. 19, 2021), https://www.statista.com/topics/4603/digital-publishing-industry/#dossierKeyfigures [https://perma.cc/6L4D-CL2S].

321. *China Leads in Global Digital Publishing Industry*, CHINA.ORG.CN (Mar. 23, 2022), http://www.china.org.cn/business/2022-03/23/content_78124263.htm.

322. *See China Online Gaming Market Report 2021: Market Was Valued $58 Billion in 2020 and Is Expected to Reach to $86 Billion by 2027 – Top Players are Tencent, NetEase, Kingsoft, Changyou, Shanda Online*, GLOBE NEWSWIRE (May 4, 2021, 6:58 AM), https://www.globenewswire.com/en/news-release/2021/05/04/2222088/28124/en/China-Online-Gaming-Market-Report-2021-Market-was-Valued-58-Billion-in-2020-and-is-Expected-to-Reach-to-86-Billion-by-2027-Top-Players-are-Tencent-NetEase-Kingsoft-Changyou-Shanda-.html [https://perma.cc/UUJ6-3WX3] [hereinafter GLOBE NEWSWIRE].

323. Dean Takahashi, *China Is Approving More Foreign Games, But Not So Many American Ones*, GAMESBEAT (Feb. 18, 2020), https://venturebeat.com/business/china-is-approving-more-foreign-games-but-not-so-many-american-ones/.

324. *See* GLOBE NEWSWIRE, *supra* note 322.

325. *See* Demetrius Williams, *Gaming in China: The Cultural Phenomenon of Tencent's Honor of Kings*, TOPPAN, http://toppandigital.com/us/blog-usa/gaming-china-cultural-phenomenon-honour-kings/ [https://perma.cc/Y69L-WLX9] (last visited Sept. 27, 2022).

326. *See id.* (stating that "[i]n China's collectivist society, people dislike being left out of popular phenomenon. It is considered dangerous rather than cool to be an outsider. Many players cite the fact that the game helps them connect with their friends as a reason to play in itself.").

327. Dean Takahashi, *Tencent Music Invests in Wave to Bring a Musical Metaverse to China*, VENTURE BEAT (Nov. 19, 2020), https://venturebeat.com/business/tencent-music-invests-in-wave-to-bring-a-musical-metaverse-to-china/.

On the opposite end of companies spending on R&D is trademark and brand acquisitions.[328] When companies file and obtain trademarks, they have reached a mature stage in the process.[329] These companies now have products to enter the marketplace and need to have names, logos, and symbols associated with their new products.[330] In other words, these companies have gone through R&D, as well as the building and testing of their products.[331] Filing for and obtaining a trademark registration signifies the readiness of companies to showcase the concrete results of their innovations.[332] Therefore, China being the global powerhouse of manufacturing trademarks suggests that many Chinese companies have continuously engaged in the innovative and creative process in order to introduce new products, under new trademark registrations, into the marketplace.[333]

In manufacturing innovation, China exerts domination over its vast domestic market, shutting out foreign competition.[334] Foreign companies have been vying for a share of China market.[335] But these companies face stiff competition and unwelcoming restrictions.[336] In sectors related to intellectual property, such as telecommunication, consumer electronics, hardware, software, and biopharma, among others, Chinese firms dominate the Chinese market.[337] This means that Chinese consumers and businesses

328. Vijay Govindarajan et al., *R&D Spending Has Dramatically Surpassed Advertising Spending*, HARV. BUS. REV. (Mar. 20, 2019), https://hbr.org/2019/05/rd-spending-has-dramatically-surpassed-advertising-spending.

329. *Trademark Process*, USPTO, https://www.uspto.gov/trademarks/basics/trademark-process# (last visited Sept. 27, 2022).

330. *IP & Business: Intellectual Property, Innovation and New Product Development*, 4 WIPO MAG. 6, 9 (July–Aug. 2005), https://www.wipo.int/export/sites/www/wipo_magazine/en/pdf/2005/wipo_pub_121_2005_07-08.pdf.

331. Maria del Coro Gutierez Pla & Lynn Burtchaell, *Managing Intellectual Property Rights in Innovation: The Key to Reaching the Market*, 1 WIPO MAG. 47, 48 (Mar. 2021), https://www.wipo.int/export/sites/www/wipo_magazine/en/pdf/2021/wipo_pub_121_2021_01.pdf.

332. CAROLINA CASTALDI ET EL., TRADEMARKS AND THEIR ROLE IN INNOVATION, ENTREPRENEURSHIP AND INDUSTRIAL ORGANIZATION, https://www.ibcnetwork.org/gestion/uploads/news_events/document_60.pdf.

333. *Improving Enterprise Value by Trademark and Brand Strategy*, CTPO, https://www.chinatrademarkoffice.com/blog/show/232.html (last visited Sept. 27, 2022).

334. Robert D. Atkinson, *What Is Chinese "Innovation Mercantilism" and How Should the UK and Allies Respond?*, WITA (June 28, 2021), https://www.wita.org/atp-research/chinese-mercantilism-uk-allies-respond/.

335. Evelyn Cheng, *As China Cracks Down, Foreign Companies Try to Figure Out Where They Fit In*, CNBC (Sept. 27, 2021), https://www.cnbc.com/2021/09/28/enticing-china-market-trickier-for-foreign-businesses-to-navigate.html.

336. *Id.*

337. Joanne Gray & Yi Wang, *China's Big Tech Problem: Even in a State-Managed Economy, Digital Companies Grow Too Powerful*, CONVERSATION (July 13, 2022), https://theconversation.com/chinas-big-tech-problem-even-in-a-state-managed-economy-digital-companies-grow-too-powerful-186722#:~:text=China's%20'big%20four'%20tech%20companies&text=Broadly%20speaking%2C%20Baidu%20is%20built,makes%20phones%20and%20other%20devices.

are no longer dependent on foreign goods and services that are based on intellectual property.[338] Indigenous innovations fuel the appetite of Chinese consumers.[339]

Consequently, without recognizing these implications and initiating appropriate responses, the United States will continue to face its own demise.[340] In many ways, the United States has lost its focus.[341] The political instability, Trump divisions, January 6th insurrection, racial and income inequality, health care insecurity, and pandemic crisis expose the United States' fragility and inability to match China's fast pace in innovation.[342] Further, the American exceptionalism hinders a willingness to recognize China for its transformation and innovation.[343] Hawkish policy pundits often demonize China as tech pirates; they ignore comprehensive policies implemented by China in the last twenty years, which have positioned the country to become the number one producer of intellectual property assets for the new information economy.[344] Manufacturing innovation means that China has already set up a new stage for the next global competition to determine which nation will reign in tech.[345] This means that corrections are needed to propel the United States for a position in the new tech war.[346] Still, effective corrections can only occur after the

338. William Weightman, *China's Progress on Intellectual Property Rights (Yes, Really)*, DIPLOMAT (Jan. 20, 2018), https://thediplomat.com/2018/01/chinas-progress-on-intellectual-property-rights-yes-really/.

339. *See generally* WILLIAM LAZONICK & YIN LI, CHINA'S PATH TO INDIGENOUS INNOVATION (2012), http://www.theairnet.org/files/research/lazonick/Lazonick-Li%20China's%20SASE%2020120601.pdf.

340. Paul Davidson, *Why China Is Beating the U.S. at Innovation*, USA TODAY (Apr. 17, 2017), https://www.usatoday.com/story/money/2017/04/17/why-china-beating-us-innovation/100016138/.

341. Kim Parker et al., *Looking to the Future, Public Sees an America in Decline on Many Fronts*, PEW RSCH. CTR. (Mar. 21, 2019), https://www.pewresearch.org/social-trends/2019/03/21/public-sees-an-america-in-decline-on-many-fronts/.

342. Katherine Schaeffer, *State of the Union 2022: How Americans View Major National Issues*, PEW RSCH. CTR. (Feb. 25, 2022), https://www.pewresearch.org/fact-tank/2022/02/25/state-of-the-union-2022-how-americans-view-major-national-issues/.

343. Einar Tangen, *American Exceptionalism: Pride, Power and Prejudice*, CHINA US FOCUS (Oct. 15, 2020), https://www.chinausfocus.com/society-culture/american-exceptionalism-pride-power-and-prejudice. *See also* Robin Mills, *How US Must Rise to China's Challenge*, ASIA TIMES (May 19, 2020), https://asiatimes.com/2020/05/how-us-must-rise-to-chinas-challenge/.

344. *China Becomes Top Filer of International Patents in 2019 Amid Robust Growth for WIPO's IP Services, Treaties and Finances*, WIPO (Apr. 7, 2020), https://www.wipo.int/pressroom/en/articles/2020/article_0005.html#:~:text=China%20in%202019%20surpassed%20the,adherence%20activity%20and%20revenue%20base.

345. The author is working on a companion article, *Tech Supremacy*, to highlight the new technological war between the United States and China.

346. Chris Anstey, *US Goes on the Offensive in Its China Tech War*, BLOOMBERG (Aug. 13, 2022), https://www.bloomberg.com/news/newsletters/2022-08-13/us-goes-on-offense-in-china-tech-war-new-economy-saturday [https://perma.cc/H6DT-VU23].

United States stops demonizing China and recognizes the multi-prong approach that China has implemented on manufacturing innovation.[347]

VII. Conclusion

Manufacturing innovation is a long and strategic process that China has embarked upon in the last two decades.[348] China is in position to compete for tech domination as the world moves into the new information age.[349] Time is of the essence for any serious competitors in the new era.[350] Recognizing the complex layers of China's approach to manufacturing innovation is the first step for the United States to position itself in the new tech war.[351]

347. Emily S. Weinstein, *Beijing's "Re-Innovation" Strategy Is Key Element of U.S.-China Competition*, BROOKINGS (Jan. 6, 2022), https://www.brookings.edu/techstream/beijings-re-innovation-strategy-is-key-element-of-u-s-china-competition/.

348. *Living in China's Technological Miracle*, GLOB. TIMES (July 29, 2021), https://www.globaltimes.cn/page/202107/1230033.shtml.

349. Sam Olsen, *China Is Winning the War for Global Tech Dominance*, HILL (Oct. 4, 2020), https://thehill.com/opinion/technology/518773-china-is-winning-the-war-for-global-tech-dominance/.

350. Mercy A. Kuo, *China-US Tech Race: Assessing Technological Emergences*, DIPLOMAT (July 11, 2022), https://thediplomat.com/2022/07/china-us-tech-race-assessing-technological-emergences/.

351. *See* Weinstein, *supra* note 347.