



Destination IP Virtual Summit

# China's World Leadership in Patent Filings – Reasons and Implications

---

## Before We Get Started...



### Recording

A link to the recording and slides will be emailed to all registrants.



### Questions

Type in the question box and we will answer in real time or during the Q&A.



### Social

Follow us on LinkedIn or go to [slwip.com](http://slwip.com) to see upcoming and on demand webinars.

---

## Floating “Hallelujah Mountains” in “Avatar”



Image source: <https://www.avatar.com/explore/the-hallelujah-mountains-fragile-giants>

## Zhangjiajie Wulingyuan National Park



---

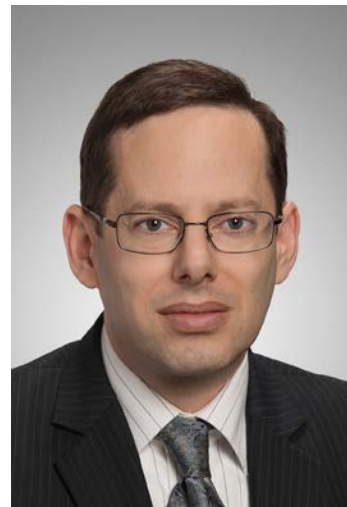
## Panel



**Lubing (Larry) Lian**  
Attorney-Advisor  
USPTO



**Annie Ying Wang**  
Senior IP Counsel  
Tencent America



**Aaron Winger**  
Schwegman  
Director of China  
Intellectual Property Practice



# Episode Overview

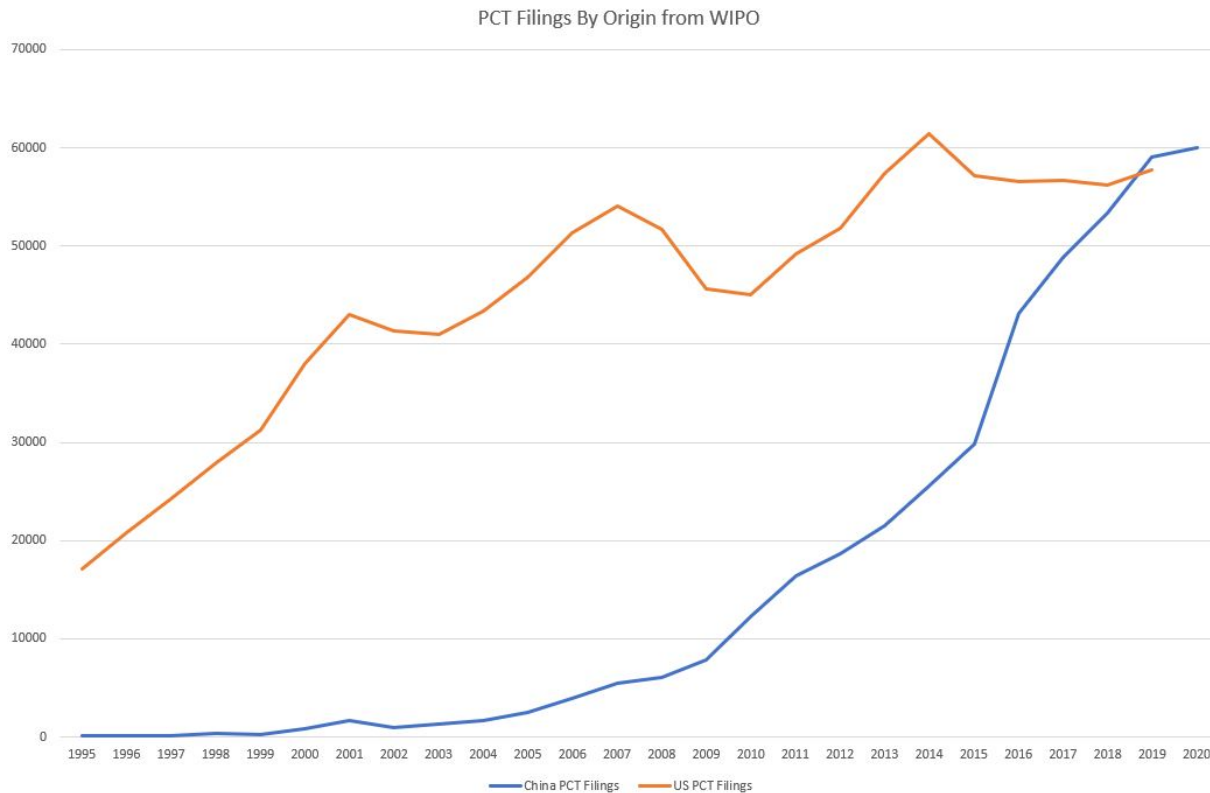
- Patent Cooperation Treaty (PCT) Filings: United States versus China
  - Why Increasing?
  - Implications
- China's Domestic Filings and the Effect of COVID-19
  - Why Increasing?
- In-House Perspective
- Chinese Filings at the USPTO



# Patent Cooperation Treaty (PCT) Filings: United States versus China



# Per WIPO, China was the top PCT user in 2019.



# Top PCT Applicants

2019 Rank	Applicant Name	Origin	2018	2019
1	HUAWEI TECHNOLOGIES CO., LTD.	CN	5405	4411
2	mitsubishi electric corporation	JP	2812	2661
3	samsung electronics co., ltd.	KR	1997	2334
4	QUALCOMM INCORPORATED	US	2404	2127
5	GUANG DONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD.	CN	1042	1927
6	BOE TECHNOLOGY GROUP CO.,LTD.	CN	1813	1864
7	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	SE	1645	1698
8	PING AN TECHNOLOGY (SHENZHEN) CO., LTD.	CN	336	1691
9	ROBERT BOSCH CORPORATION	DE	1525	1687
10	LG ELECTRONICS INC	KR	1697	1646



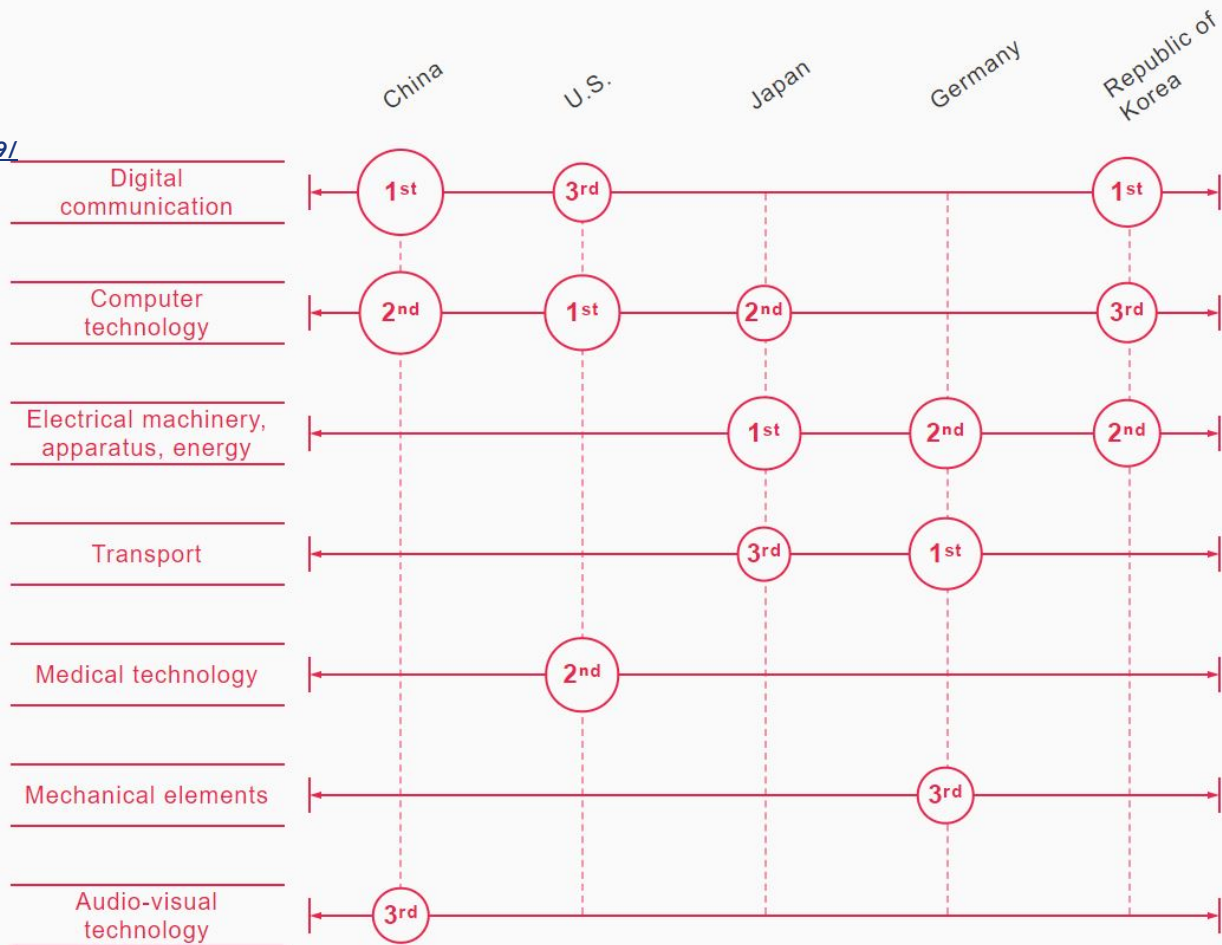
## PCT top tech fields

WHICH COUNTRIES SPECIALIZE IN WHICH TECHNOLOGIES?

# Top Technologies

Source:

<https://www.wipo.int/edocs/infogdocs/en/ipfactsandfigures2019/>



# Why the Increase in PCT Filings?

- Increasing Innovation
- 13<sup>th</sup> 5-Year Plan
- Government Financial Incentives
- Sophistication?

13<sup>th</sup> 5-Year Plan

## “十三五”知识产权保护和运用主要指标

指 标	2015年	2020年	累计增加值	属性
每万人口发明专利拥有量（件）	6.3	12	5.7	预期性
PCT专利申请量（万件）	3	6	3	预期性
植物新品种申请总量（万件）	1.7	2.5	0.8	预期性
全国作品登记数量（万件）	135	220	85	预期性
年度知识产权质押融资金额（亿元）	750	1800	1050	预期性
计算机软件著作权登记数量（万件）	29	44	15	预期性
规模以上制造业每亿元主营业务收入有效发明专利数（件）	0.56	0.7	0.14	预期性
知识产权使用费出口额（亿美元）	44.4	100	55.6	预期性
知识产权服务业营业收入年均增长（%）	20	20	-	预期性
知识产权保护社会满意度（分）	70	80	10	预期性
注：知识产权使用费出口额为五年累计值。				

# Government Financial Incentives

- Rewards and Subsidies at the City and City District Level
- Shanghai Example:

City Level:上海市专利资助办法

50,000 RMB (~\$7,100) subsidy for each foreign patent grant via PCT;

40,000 RMB subsidy for grants via Paris Convention

Shanghai Pudong District: 浦东新区科技发展基金知识产权资助资金操作细则

7,500 RMB subsidy for PCT filing;

50% subsidy for foreign patent filing up to 20,000 RMB

Pudong District: Zhangjiang Hi-Tech Park 上海市张江科学城专项发展资金支持知识产权发展实施细则 (removed from web)

100,000 RMB Reward (~\$14,200) for each foreign patent grant

# Implications

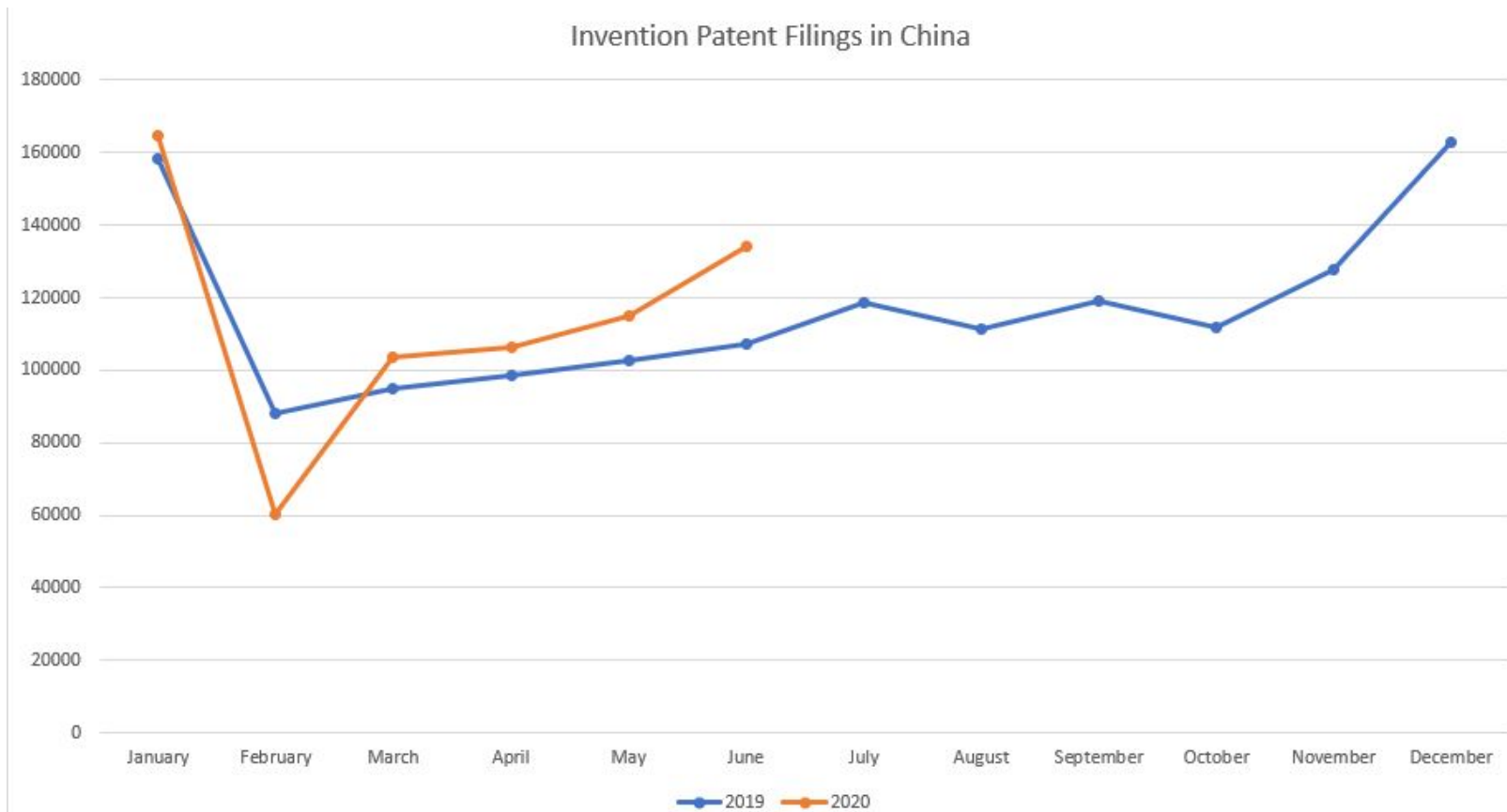
- China will own a significant number of 5G Standard Essential Patents (SEPs) worldwide
- Huawei currently largest self-declared 5G SEP owner
  - Start paying licensing fees to at least to Huawei and maybe OPPO and ZTE in addition to Qualcomm.
  - Huawei already sued Verizon for patent infringement in February 2020.
  - However, quantity is not quality.
- Stronger China IP Laws as China has a reason to protect IP
  - Trademark Law in 2019
  - Draft Patent and Copyright Laws in 2020



# China's Domestic Filings and the Effect of COVID-19

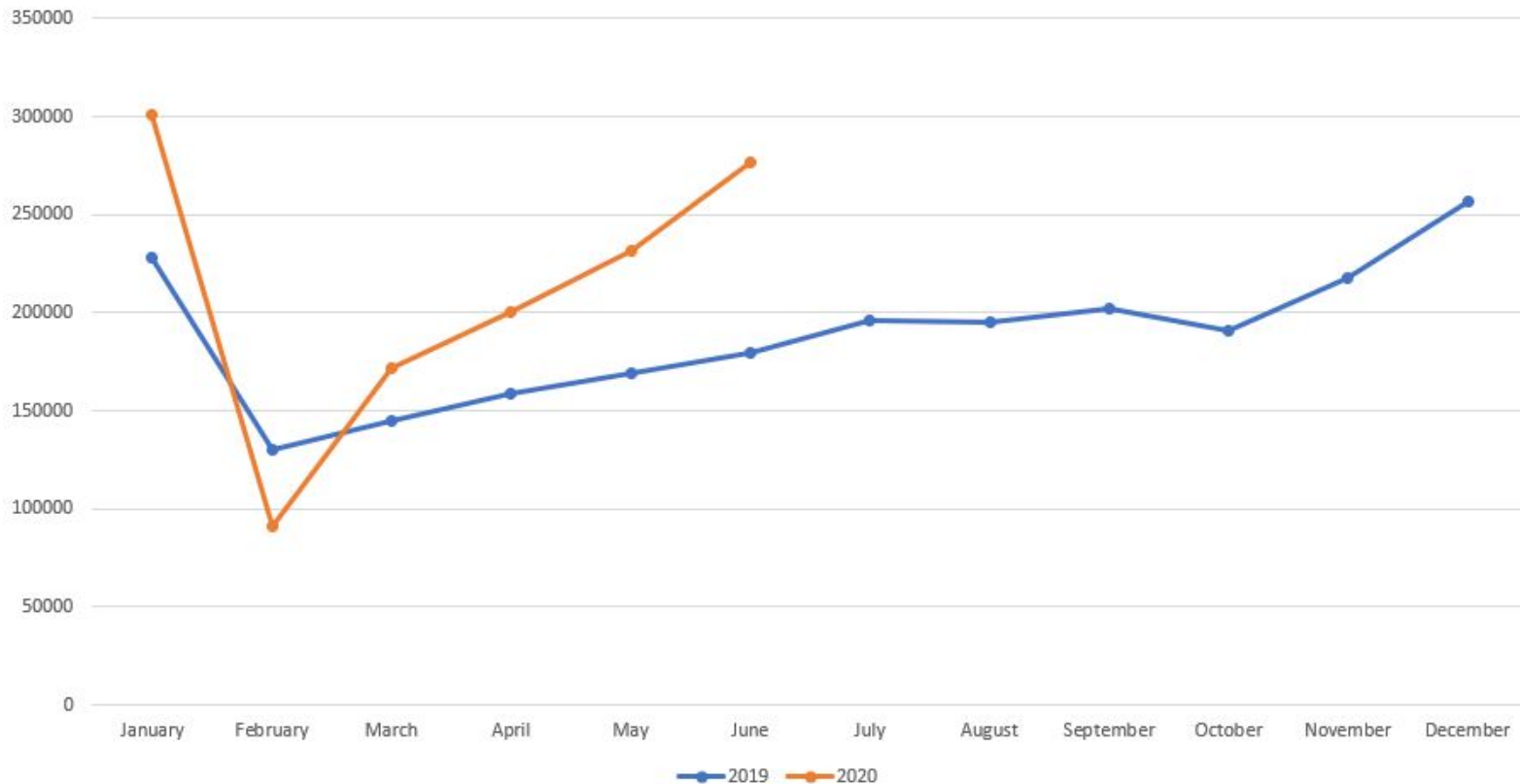


# Domestic Filings: Invention Patents



# Domestic Filings: Utility Models

Utility Model Filings in China





## Top Corporate Patentees in China

2019 Rank	Corporate Patentee	Number
1	Huawei Technologies Co., Ltd.	4525
2	State Grid Corporation	4150
3	China Petroleum and Chemical Corporation (Sinopec)	2951
4	OPPO Guangdong Mobile Communications Co., Ltd.	2620
5	BOE Technology Group Co., Ltd.	2546
6	Tencent Technology (Shenzhen) Co., Ltd.	2169
7	Samsung Electronics Co., Ltd.	1966
8	Midea Group Co., Ltd.	1814
9	Zhuhai Gree Electric Appliance Co., Ltd.	1800
10	Lenovo (Beijing) Co. Ltd.	1709
11	Qualcomm Technologies Inc.	1592

Source: Incopat

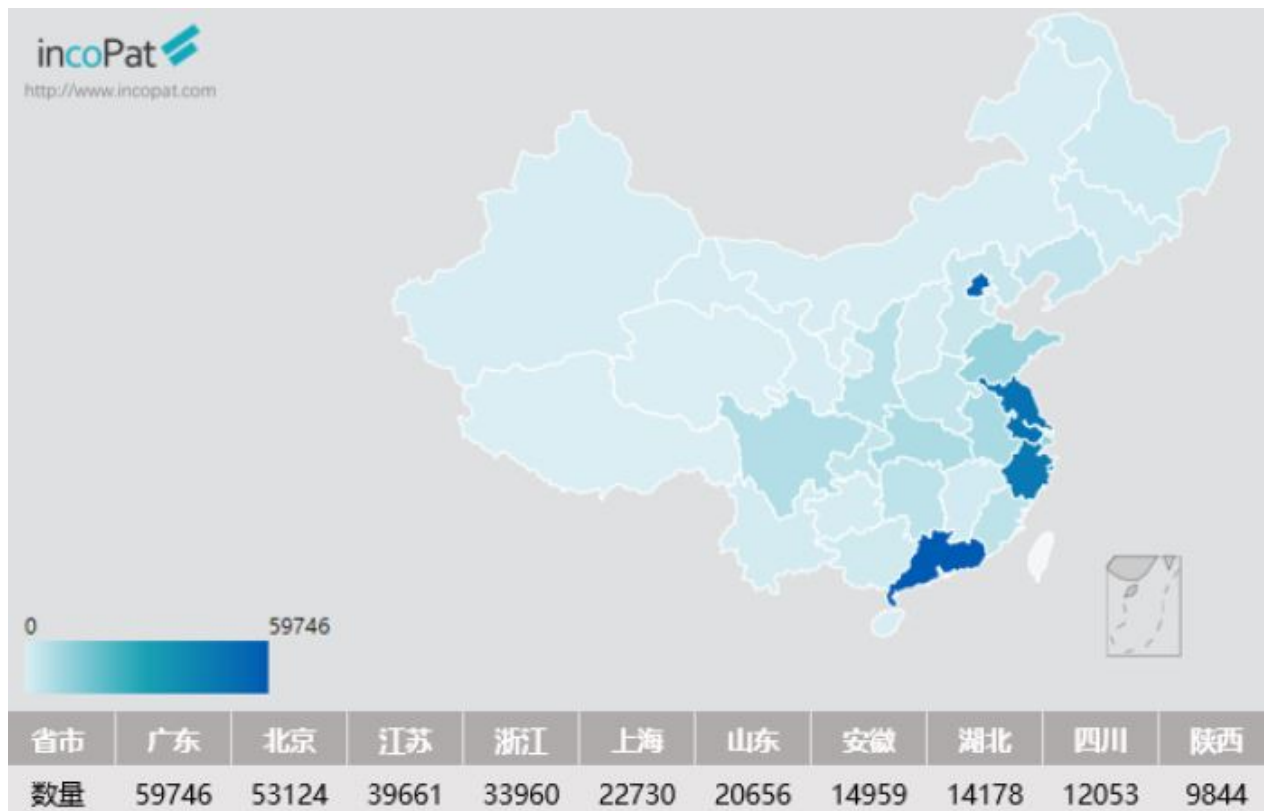
# Top International Patent Classifications for Granted Chinese Patents in 2019

Rank	Classification	Patents
1.	H04 (Electric Communication Technique)	55,703
2.	G06 (Computing, Calculating or Counting)	50,499
3.	G01 (Measuring, Testing)	44,349
4.	H01 (Basic Electric Elements)	39,297
5.	A61 (Medical or Veterinary Science; Hygiene)	25,109

## Top Patentees of Chinese Patents in 2019 in H04

Rank	Patentees	Patents
1.	Huawei Technologies Co., Ltd.	3409
2.	Oppo Guangdong Mobile Communications Co., Ltd.	1391
3.	ZTE Corporation Ltd.	1278
4.	Qualcomm	1139
5.	Tencent Technology (Shenzhen) Co., Ltd.	1023
6.	Samsung Electronics Co., Ltd.	874
7.	Vivo Mobile Communications Ltd.	778
8.	LG Electronics Corporation	751
9.	China Mobile Communications Corporation	616
10.	Sony Corporation	616

# Patent Density in China in 2019



# Why the Increase?

- Increased Domestic Innovation
- High & New Tech Enterprise (HNTE) Program
  - Corporate Income Tax Rate Reduced from 25% to 15%
- Rewards & Subsidies
- Patent Requirement for Initial Public Offerings - 科创属性评价指引 ( 试行)
- Increased Value of Patents
  - 80 million RMB (~\$11.4 million) melamine patent litigation.
  - 40 million RMB (~\$5.7 million) damages award including punitive damages in Gree v. Aosheng (2020) 粤执复117号.
- New Draft Patent Law Amendments:
  - Increased statutory damages from 1 million to 5 million RMB
  - Punitive Damages up to 5X actual damages
  - Increase statute of limitations from 2 to 3 years



---

# Questions?

Thank you for your interest.

Visit [www.chinaiplawupdate.com](http://www.chinaiplawupdate.com) for more insights and the latest news on the Chinese intellectual property landscape.



Schwegman Lundberg & Woessner | [slwip.com](http://slwip.com)



These materials are for general informational purposes only. They are not intended to be legal advice, and should not be taken as legal advice. They do not establish an attorney-client relationship.



Schwegman Lundberg & Woessner | [slwip.com](http://slwip.com)

# In-house perspective

## Government

- **China Patent Law** – improved IP protection through many revisions (e.g., 1985, 1992, 2000, 2008, upcoming 4<sup>th</sup> Amendment).
- **Patent promoting policies (PPPs)** – provincial/local level; tax deductibles, tax refunds, subsidies, pledge financing to patent holders; 168 “China National High-Tech Industrial Development Zone”
- **“Technology Powerhouse”** - from enhancement over inbound licensing to freedom of operation on core technologies.

## Enterprise

- **Market Pressure** – big international patent filers (e.g., Huawei, OPPO, BOE etc.) need sophisticated global portfolio to support global market share.
- **Innovation Culture** – IP expenses less constrained compared to US companies; higher IDF approval rates; open source results (e.g., Alibaba/Tencent ranked top 10 in GitHub star ranking)
- **Lack of Sophisticated Strategic Counseling** – simplified filing pathways (rarely direct secondary filings); insufficient business intelligence, patent analytics, portfolio planning, etc.

## Academia

- **Wide Coverage of Technology Areas** – not coupled with licensing revenue; incl. EE, biotech, and more.
- **R&D Funding** – ~12 US univ. over \$1B USD annual R&D funding vs. ~10 Chinese univ., but labor/material costs are quite different.
- **Individual Incentives** - tenure promotion (SCI + patent); national winner receive >\$1.15M USD prize; etc.
- **Significant Contribution in Emerging Technologies** - ~72% of the academic patents in quantum computing from Chinese univ. vs. ~12% from US univ.



**UNITED STATES  
PATENT AND TRADEMARK OFFICE**



# Destination IP Virtual Summit

## China's Patent Filings

August 13, 2020

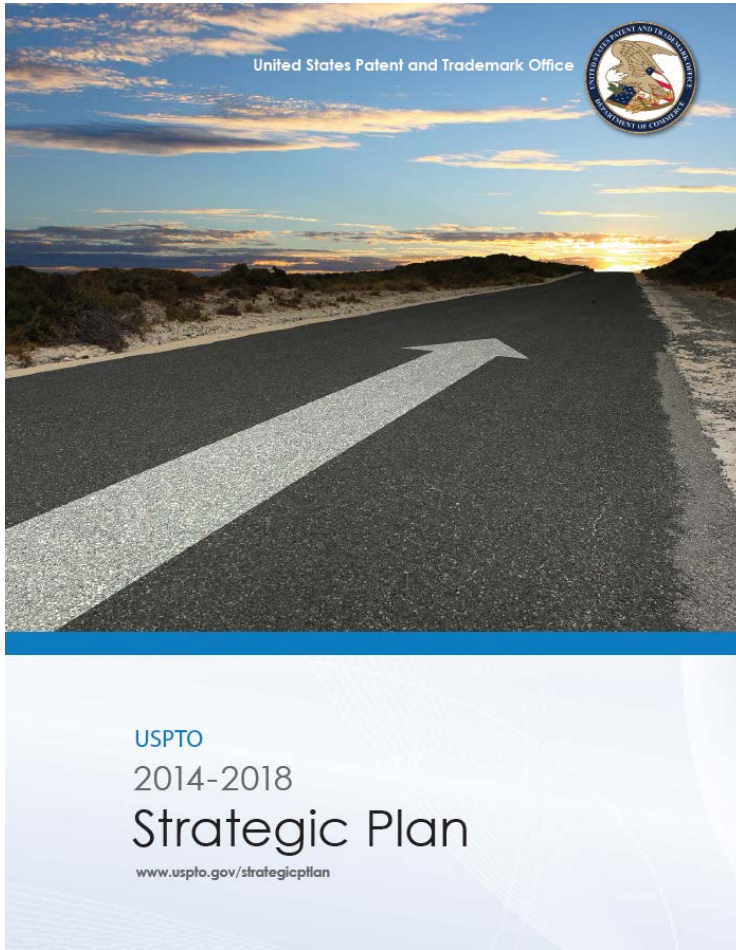
Larry Lian

Senior Attorney

Office of Policy and International Affairs/USPTO

UNITED STATES  
PATENT AND TRADEMARK OFFICE



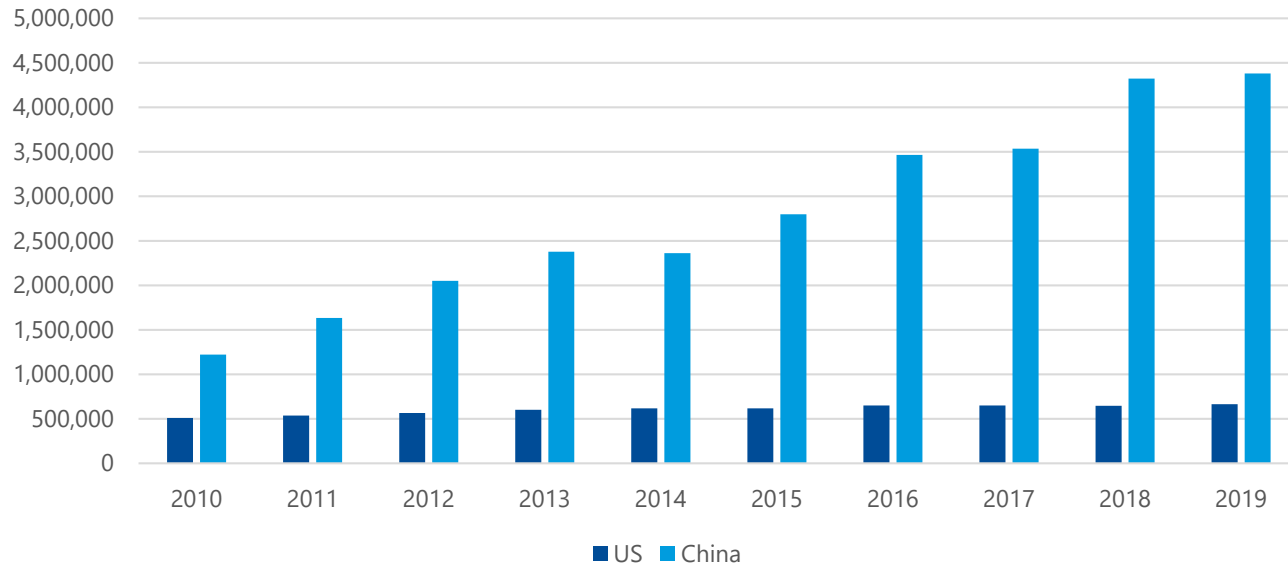


## China Resource Center

- Responds to the need to develop, aggregate and support more data and research-intensive alignment with China-related IP and innovation issues;
- Advocates for empirical data-driven decision and policy making;
- Works closely with the Office of Chief Economist of the USPTO;
- Seeks out collaborative relationships with other government agencies and the private sector.



# CNIPA\* receives six times as many patent applications as the USPTO



Source: USPTO Annual Performance and Accountability Report 2018 and CNIPA Annual Report 2018

\* China National Intellectual Property Administration



# Filings at CNIPA by type of patent

Year	Percentage of invention patents	Percentage of UMP	Percentage of design
2010	32.0%	33.5%	34.5%
2011	32.2%	35.9%	31.9%
2012	31.8%	36.1%	32.1%
2013	34.7%	37.5%	27.8%
2014	39.3%	36.8%	23.9%
2015	39.4%	40.3%	20.3%
2016	38.6%	42.6%	18.8%
2017	37.4%	45.6%	17.0%
2018	35.7%	47.9%	16.4%
2019	32.0%	51.8%	16.2%

# Filings at CNIPA – yearly growth

Year	Invention Patent	UMP	Design Patent	Total	Total Applications Yearly Change	Invention patent yearly change	UMP yearly change	Design yearly change
2010	391,177	409,836	421,273	1,222,286	30.8%	24.4%	31.9%	36.4%
2011	526,412	585,467	521,000	1,632,879	33.6%	34.6%	42.9%	23.7%
2012	652,777	740,290	658,000	2,051,067	25.6%	24.0%	26.4%	26.3%
2013	825,000	892,000	660,000	2,377,000	15.9%	26.4%	20.5%	0.3%
2014	928,177	868,511	565,000	2,361,688	-0.6%	12.5%	-2.6%	-14.4%
2015	1,101,864	1,127,577	569,000	2,798,441	18.5%	18.7%	29.8%	0.7%
2016	1,338,503	1,475,977	650,344	3,464,824	23.8%	21.5%	30.9%	14.3%
2017	1,382,000	1,687,000	629,000	3,698,000	6.7%	3.2%	14.3%	-3.3%
2018	1,542,000	2,072,000	709,000	4,323,000	16.9%	11.6%	22.8%	12.7%
2019	1,401,000	2,268,190	711,617	4,380,807	1.3%	-9.1%	9.5%	0.4%

# Filings by foreign applicants at CNIPA and at USPTO

## Contrast

Patent Filing at **CNIPA** Percentage by Foreign Applicants

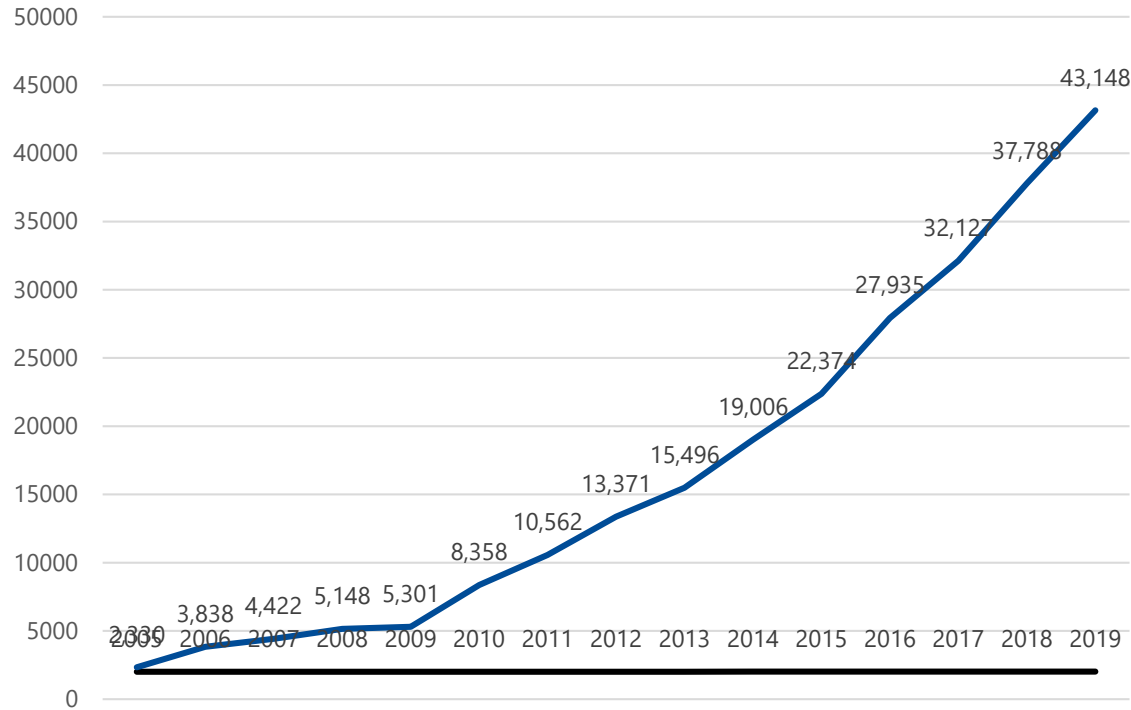
Year	Foreign applicants	Total	Percentage of filing by foreign applicants
2004	74,864	353,807	21.2%
2005	93,107	476,264	19.5%
2006	102,836	573,178	17.9%
2007	107,419	693,917	15.5%
2008	111,184	828,328	13.4%
2009	99,075	976,686	10.1%
2010	112,858	1,222,286	9.2%
2011	128,677	1,633,347	7.9%
2012	138,498	2,050,649	6.8%
2013	142,501	2,377,061	6.0%
2014	150,627	2,361,243	6.4%
2015	159,054	2,798,500	5.7%
2016	159,599	3,464,824	4.6%
2017	161,512	3,697,845	4.4%
2018	176,340	4,322,799	4.1%
2019	185,364	4,380,468	4.2%

Patent Filing at **USPTO** Percentage by Foreign Applicants

Year	Foreign applicants	Total	Percentage of filing by foreign applicants
2004	159,504	378,984	42.1%
2005	191,060	409,532	46.7%
2006	209,601	445,613	47.0%
2007	220,432	468,330	47.1%
2008	239,068	496,886	48.1%
2009	239,722	486,499	49.3%
2010	255,165	510,060	50.0%
2011	270,928	537,171	50.4%
2012	283,100	565,566	50.1%
2013	295,051	601,464	49.1%
2014	310,472	618,457	50.2%
2015	313,411	618,062	50.7%
2016	331,710	650,411	51.0%
2017	332,522	650,350	51.1%
2018	335,118	643,349	52.1%
2019	335,559	665,231	50.4%



# USPTO patent filings by Chinese residents



Based on USPTO data





# USPTO patent filings by Chinese residents

Year	Patent Filing at USPTO by Residents of China	Yearly Growth of Filing by Residents of China	Total USPTO Applications Received	Proportion of Applications Filed by Residents of China
2005	2,330		409,532	0.6%
2006	3,838	64.7%	445,613	0.9%
2007	4,422	15.2%	468,330	0.9%
2008	5,148	16.4%	496,886	1.0%
2009	5,301	3.0%	486,499	1.1%
2010	8,358	57.7%	510,060	1.6%
2011	10,562	26.4%	537,171	2.0%
2012	13,371	26.6%	565,566	2.4%
2013	15,496	15.9%	601,464	2.6%
2014	19,006	22.7%	618,457	3.1%
2015	22,374	17.7%	618,062	3.6%
2016	27,935	24.9%	650,411	4.3%
2017	32,127	15.0%	650,350	4.9%
2018	37,788	17.6%	647,572	5.8%
2019	43,148	14.2%	665,231	6.5%

Based on USPTO data



# USPTO patent filings by Chinese residents – fields of technology

USPTO Technology Center	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Percent of Total (2019)	Average Annual Growth	Fields
1600	200	200	251	302	546	689	777	865	1183	1345	1173	1449	1660	2017	2289	5.3%	20.5%	Biotechnology and Organic fields
1700	209	310	311	446	685	652	872	1279	1743	1850	1944	2255	2555	2994	3560	8.3%	23.9%	Chemical and Materials Engineering fields
2100	169	373	344	401	604	670	819	1081	1554	2017	2079	2174	2113	2448	2945	6.8%	25.7%	Computer Architecture Software and Information Security
2400	136	315	539	684	1393	1953	1812	2458	2823	3466	3852	4385	4079	4501	6143	14.2%	36.0%	Computer Networks, Multiplex, Cable and Cryptography/Security
2600	438	664	747	729	1143	1338	1423	2083	2448	3240	3843	4596	4970	5463	6094	14.1%	21.9%	Communications
2800	571	1003	944	1076	1345	1487	2011	3598	4299	4627	5786	6020	6881	8110	8451	19.6%	23.3%	Semiconductors, Electrical and Optical Systems and Components
2900	539	614	722	688	671	729	1044	1072	1176	1650	1784	2847	4744	6120	7717	17.9%	22.7%	Designs
3600	186	303	300	353	559	622	644	954	1150	1150	1385	1789	2198	2711	3112	7.2%	23.7%	Transportation, Electronic Commerce, Construction, Agriculture, Licensing and Review
3700	302	461	482	496	655	734	860	1211	1450	1432	1597	1877	2420	2524	2837	6.6%	18.2%	Mechanical Engineering, Manufacturing and Products

Based on USPTO data



# Some targets identified in China's *National IP Strategy*

Targets	2013	2015	2020
Per 10,000 patent ownership rate	4	6	14
Patent applications filed under PCT (10,000)	2.2	3	7.5
Domestic invention patent average maintenance duration (years)	5.8	6.4	9
Copyright registration volume (10,000)	84.5	90	100
Computer software copyright registrations (10,000)	16.4	17.2	20
Total technology based contracts (Trillion Yuan)	0.8	1	2
IP financing annual amount (100 million Yuan)	687.5	750	1800
Patent royalty revenue to foreign companies (100 million US Dollars)	13.6	20	80
IP services revenue annual growth rate (%)	18	20	20
IP protection satisfaction rate (points)	65	70	80
Average length of substantive examination of invention patent application (months)	22.3	21.7	20.2
Average length of trademark registration review period (months)	10	9	9

# Subsidies for IP

- 244 subnational patent subsidy measures and 77 trademark subsidy measures
- In a substantial number of cases, decisions to file patent and trademark applications may be motivated principally by an interest in receiving a subsidy

# Recent developments - subsidies

- On January 6, 2020, CNIPA announced that China plans to “clean-up” IP subsidies by focusing on PCT and domestic invention patents, and by discontinuing subsidies for utility model patents, design patents and trademarks
- Shanghai’s new program likewise eliminates subsidies for design patents and UMPs
  - Domestic subsidies limited to “stable” invention patents that remain valid for 8 years or are commercialized through transfer, license or pledge

# Subsidies for PCT application

Name	Effective Date	Domestic	International (PCT)	International (non-PCT)	Other
Beijing Patent Subsidies *	12/9/2019	invention grant ¥1,000; design grant ¥150 ; cap ¥2m/applicant	¥50,000 per grant by US,JP,EU; ¥30,000 grant by other countries; international cap ¥20m/applicant/year	¥40,000 US,JP,EU; ¥20,000 other countries;	extra ¥5m if > 2,000PCT + 1,000 invention last year (extra ¥1m ¥0.5m ¥0.1m for lower numbers)
Shanghai Patent Subsidies **	1/1/2019	invention grant ¥2,500 (higher for award-winning patents and "stable" or implemented patent) maintenance fee ¥1,500 cap per applicant not mentioned	¥50,000 per grant (max 5 countries)  international cap ¥10m/applicant/year	¥40,000 per grant (max 5 countries)	¥400k pilot patent enterprise; ¥600k model patent enterprise,
Shenzhen Patent Subsidies ***	11/5/2019	invention grant ¥2,500:	¥10k per PCT upon publication (not grant); PCT subsidy cap up to ¥10m/applicant/year	¥40k per grant by US, JP and EU; ¥20k per grant other countries;  international cap up to ¥20m/applicant/year	subsidy for patent service firms ¥1k per invention grant; cap ¥2m/firm/year; ¥200k/ excellent patent enterprise (20 max) ¥500k/model patent enterprise (3 max) ¥50k for passing various IP management certifications up to ¥2m for patents winning various national awards; ¥500k IP associations formed by enterprises (3 max) ¥500k IP analysis project (5 max) ¥200k IP landscaping/navigation project (3 max) ¥1m IP work of special importance (3 max) ...additional subsidies omitted...

\* <http://kw.beijing.gov.cn/module/download/downfile.jsp?classid=0&filename=fe7d074d028148498dd669c1dec78a0c.pdf>

\*\* <http://www.sipa.gov.cn/zscqj/xgkml/20180920/8415.html>

\*\*\* [http://www.fzb.sz.gov.cn/gfxwj/201607/t20160711\\_4122681.htm](http://www.fzb.sz.gov.cn/gfxwj/201607/t20160711_4122681.htm)

# China – IPR Toolkit

**Intellectual Property**

and Assignee hereby accept  
properties created during the term  
shall include, among other things,  
trademark material  
devi



UNITED STATES  
PATENT AND TRADEMARK OFFICE



**STOP**fakes.gov

[www.uspto.gov/ip toolkit](http://www.uspto.gov/ip toolkit)

**Questions?**





# Thank you!

**Larry Lian**

**Senior Attorney**

[Lubing.lian@uspto.gov](mailto:Lubing.lian@uspto.gov)

[www.uspto.gov](http://www.uspto.gov)