

PCT Yearly Review 2024





Patent Cooperation Treaty Yearly Review 2024

The International
Patent System

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Suggested citation: World Intellectual Property Organization (2024). *PCT Yearly Review 2024: The International Patent System*. Geneva: WIPO. DOI:[10.34667/tind.49533](https://doi.org/10.34667/tind.49533)

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First published 2024

World Intellectual Property Organization
34, chemin des Colombettes, P.O. Box 18
CH-1211 Geneva 20, Switzerland

ISBN: 978-92-805-3640-9 (print)
ISBN: 978-92-805-3641-6 (online)
ISSN: 2790-8933 (print)
ISSN: 2790-8941 (online)



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Cover: Getty Images/Pony Wang;
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WIPO Publication No. 901EN/24

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Acknowledgements

The *PCT Yearly Review* was produced under the direction of Daren Tang (Director General) in the IP and Innovation Ecosystems Sector led by Marco Alemán (Assistant Director General) and supervised by Carsten Fink (Chief Economist). The *Review* was prepared by Kyle Bergquist (Data Analyst), Carsten Fink, Bruno Le Feuvre (Senior Statistical Analyst) and Hao Zhou (Director of Statistics), all from the Department for Economics and Data Analytics.

Thanks go to colleagues from the Patents and Technology Sector for providing valuable support, comments and suggestions on drafts at various stages.

Samiah Do Carmo Figueiredo and Jovana Stojanović provided administrative support. Gratitude is also due to the Information and Digital Outreach Division for the editing and design and to staff in the Printing Plant for their services.

Finally, WIPO is grateful to national and regional patent offices for sharing their annual statistics.

Further information

Online resources

The electronic version of the *Review*, as well as the underlying data used to compile the figures and tables, can be downloaded at www.wipo.int/ipstats. This webpage also provides links to the IP Statistics Data Center – offering access to WIPO's statistical data – and the IP Statistical Country Profiles.

The following other patent resources are available on WIPO's website:

PCT homepage

WIPO's gateway to PCT resources for applicants, offices and the public.

PCT Newsletter

PCT monthly publication containing information about the filing of PCT applications and news about changes relating to the PCT.

PATENTSCOPE

Enables the search and download of published PCT applications and national/regional patent collections. Also provides access to related patent and technology information programs and services.

Contact information

Department for Economics and Data Analytics

Website: www.wipo.int/ipstats

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Key numbers for 2023

737,000 (+3.1%)
PCT national phase entries

272,600 (-1.8%)
PCT applications filed

127 (-7)
Countries of origin of PCT applications

59% (+0.2 percentage point)
Share of PCT national phase entries in worldwide non-resident patent application filings

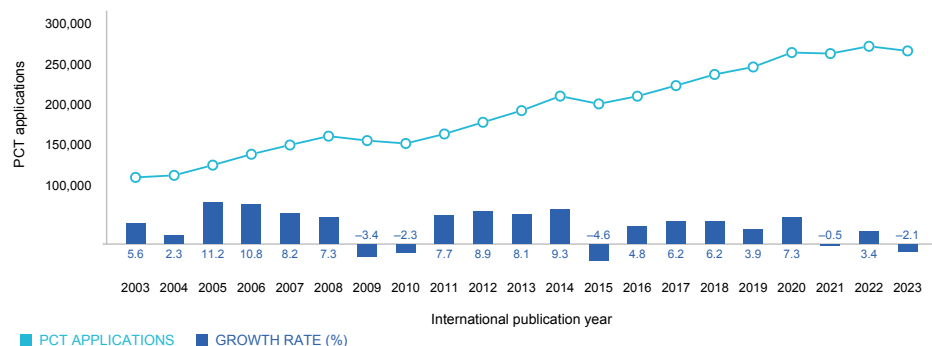
17.7% (+0.6 percentage point)
Share of women among inventors listed in PCT applications

Note: The latest available year for PCT national phase entry data is 2022.

Special theme: The technological composition of PCT applications

The utilization of the Patent Cooperation Treaty (PCT) System has grown significantly over the past two decades. The number of published PCT applications has more than doubled in the last 20 years, rising from nearly 110,000 in 2003 to about 266,500 in 2023 (figure S1).^{1,2} Beneath this headline growth, there have been notable shifts in the technological composition of PCT applications over time. These shifts carry implications for the patent system – most notably, they have increased demands for patent drafting and patent examination skills in certain technology fields more than in others. More broadly, the shifting technological composition of PCT filings reflects changes in the direction of innovation. These changes have occurred at the global level, largely propelled by emerging technological opportunities. But they have also taken place at the individual national economy level, with some economies aligning more closely with global trends than others, depending on their technological specialization.

S1. Trend in published PCT applications, 2003–2023



Source: WIPO Statistics Database, March 2024.

This Special theme analyzes the shifting technological makeup of PCT applications. It does so based on a concordance table developed by WIPO that matches International Patent Classification (IPC) codes to different areas of technology (figure S2). In total, this concordance table delineates 35 technological fields categorized into five overarching technological sectors. To keep the analysis accessible, this Special

- 1 On average, there was an annual increase of 4.5% in the number of publications of PCT applications over this period, with decreases occurring only in 2009, 2010, 2015, 2021 and 2023. The declines in 2009 and 2010 coincided with the repercussions of the 2008 financial crisis, while the drop in 2015 concurred with the entry into force of the Leahy-Smith America Invents Act in the United States of America (US), which led to a peak in PCT applications filed by US applicants in the previous years. Additionally, years 2003, 2008, 2014 and 2020 each had 53 weeks of publications instead of the usual 52, slightly impacting statistical trends. The decrease in 2023 is attributable to a slowdown in filing activity in the previous year among most of the top 20 origins.
- 2 For confidentiality reasons, data are based on published PCT applications and there is usually a time lag of six to 18 months between the filing and publication of an application. The analysis relies on published PCT applications data by date of publication. This approach allows inclusion of application data from recent years. The PCT application trend by date of filing can diverge from the date-of-publication trend, but the two converge in the medium- to long-term, as most PCT applications are eventually published.

theme mostly focuses on these five sectors, although it also offers some perspectives on the most dynamic technological fields within them. In addition, it focuses on the largest filing origins, which account for the bulk of total PCT applications.

S2. WIPO IPC technology concordance table

N°	Field
I	Electrical engineering
1	Electrical machinery, apparatus, energy
2	Audio-visual technology
3	Telecommunications
4	Digital communication
5	Basic communication processes
6	Computer technology
7	IT methods for management
8	Semiconductors
II	Instruments
9	Optics
10	Measurement
11	Analysis of biological materials
12	Control
13	Medical technology
III	Chemistry
14	Organic fine chemistry
15	Biotechnology
16	Pharmaceuticals
17	Macromolecular chemistry, polymers
18	Food chemistry
19	Basic materials chemistry
20	Materials, metallurgy
21	Surface technology, coating
22	Micro-structural and nano-technology
23	Chemical engineering
24	Environmental technology
IV	Mechanical engineering
25	Handling
26	Machine tools
27	Engines, pumps, turbines
28	Textile and paper machines
29	Other special machines
30	Thermal processes and apparatus
31	Mechanical elements
32	Transport
V	Other fields
33	Furniture, games
34	Other consumer goods
35	Civil engineering

Note: WIPO's IPC technology concordance table and its methodology are available at: www.wipo.int/ipstats.

Source: WIPO Statistics Database, March 2024.

PCT applications in the electrical engineering sector have tripled in 20 years

In 2023, electrical engineering accounted for by far the largest number of published PCT applications, with about 105,400 (figure S3). The three main fields of technology in this sector are computer technology, digital communication and electrical machinery. Electrical engineering is the sector that has seen the highest average annual growth rate (+6.4%) since 2003, with a tripling in the number of PCT applications in 20 years.

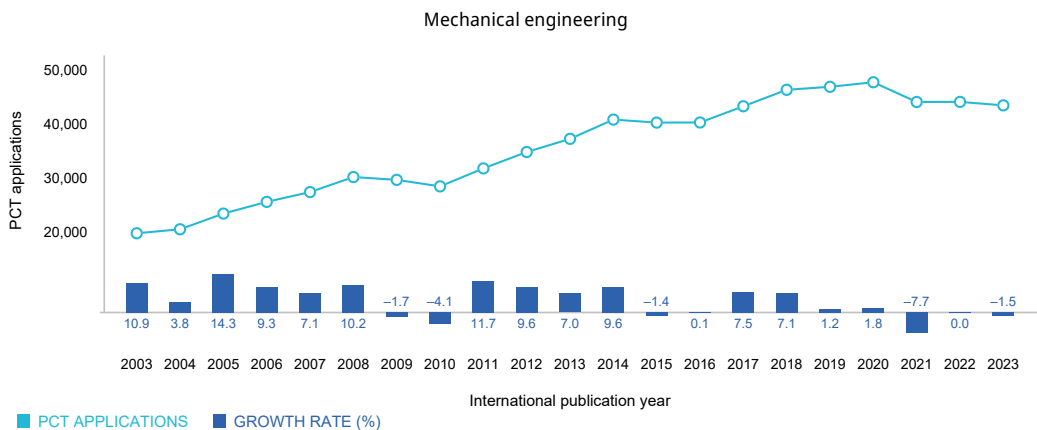
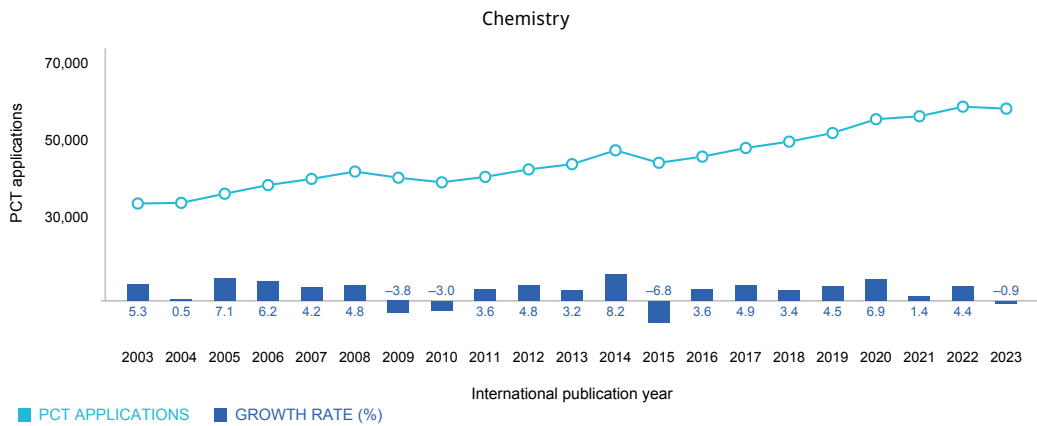
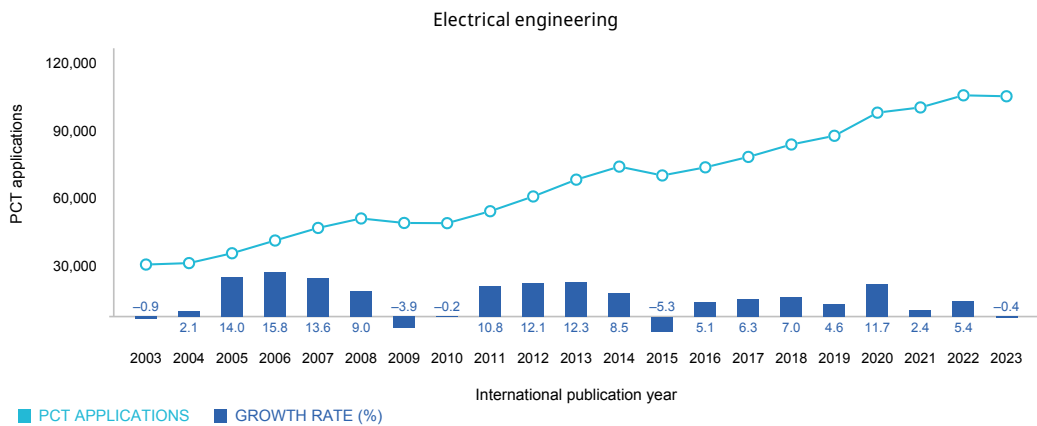
Chemistry constituted the second largest sector in 2023, with almost 58,100 applications. This sector includes fields traditionally well-represented in PCT applications, including pharmaceuticals, organic fine chemistry and biotechnology. Until 2005, chemistry was the sector with the largest number of PCT applications. This sector has seen a steady but moderate

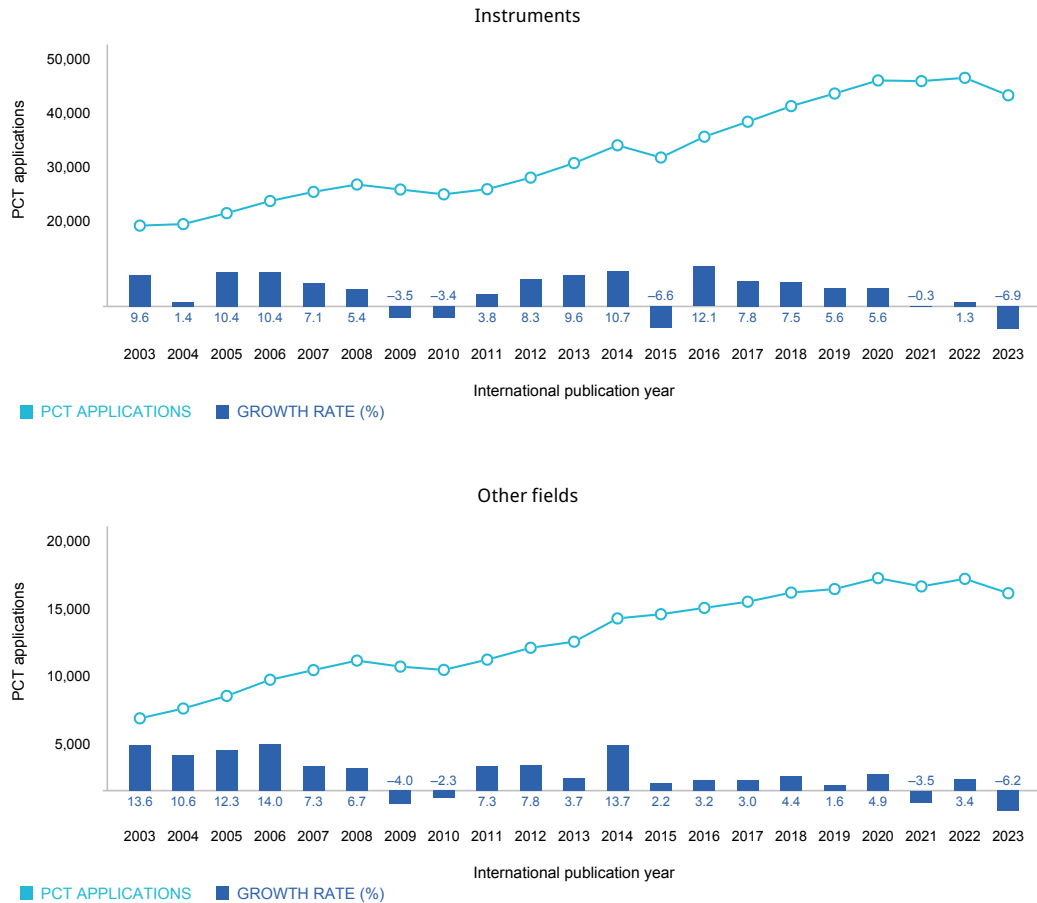
increase over time, making it the sector with the lowest average annual increase over the past two decades (+2.8%).

Ranking third in size, the mechanical engineering sector includes transport, which is among the top 10 fields overall. The number of published PCT applications in this sector peaked in 2020 at 47,729 before declining to almost 43,500 in 2023, with notable drops in 2021 (-7.7%) and 2023 (-1.5%).

The instruments sector includes medical technology and measurement, the fourth and sixth largest technology fields, respectively. Publications in this sector increased from approximately 19,200 applications in 2003 to a peak of 46,571 in 2022, before declining to about 43,300 in 2023.

S3. Published PCT applications by technology sector, 2003–2023





Source: WIPO Statistics Database, March 2024.

China and Japan have contributed most of the growth in each sector since 2003

For each of the five sectors, trends in published PCT applications over the past two decades show substantial variations across the top five origins (figure S4). In 2023, China emerged as the primary origin for PCT applications in two sectors (electrical engineering and other fields) and the second largest origin in the remaining three sectors. China notably drove growth in each sector, contributing between a third (32.9% for mechanical engineering) and half (49.7% for electrical engineering) of total growth since 2003. Japan has also played a substantial role, being the second largest contributor to growth in each sector, accounting for between 15.7% (other fields) and 28.2% (mechanical engineering) of total growth. Together, China and Japan jointly accounted for 60% to 70% of sectoral growth between 2003 and 2023. Notably, Japan led sectoral growth from 2003 to 2012, with China taking over from 2013 onwards. In mechanical engineering and other fields, China's contribution exceeded 90% during this period.

Among the top five origins, China has witnessed the most rapid total average annual growth (+23.4%) since 2003, followed by the Republic of Korea (+11.4%) and Japan (+6.1%). Notably, these three origins outpaced the overall average annual growth rate (+4.5%) for the period. Conversely, applications from the United States (US) (+1.5%) and Germany (+1%) demonstrated much lower increases.

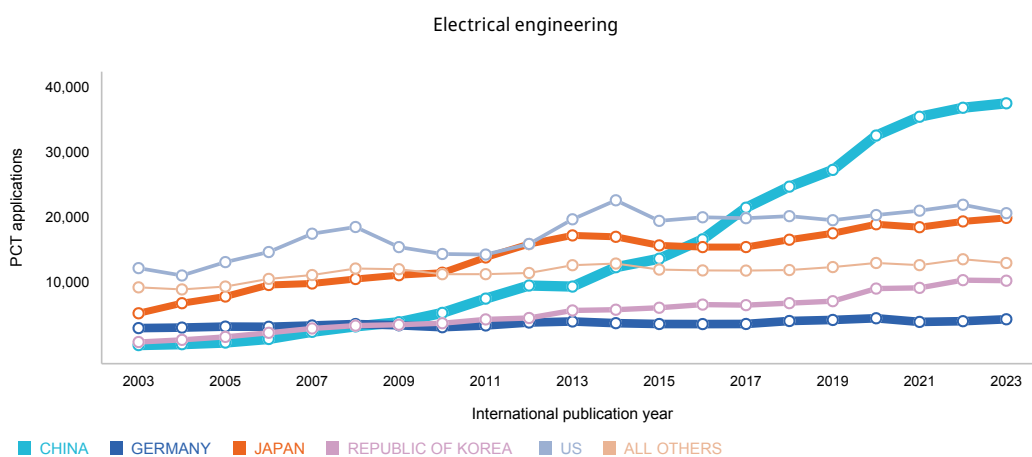
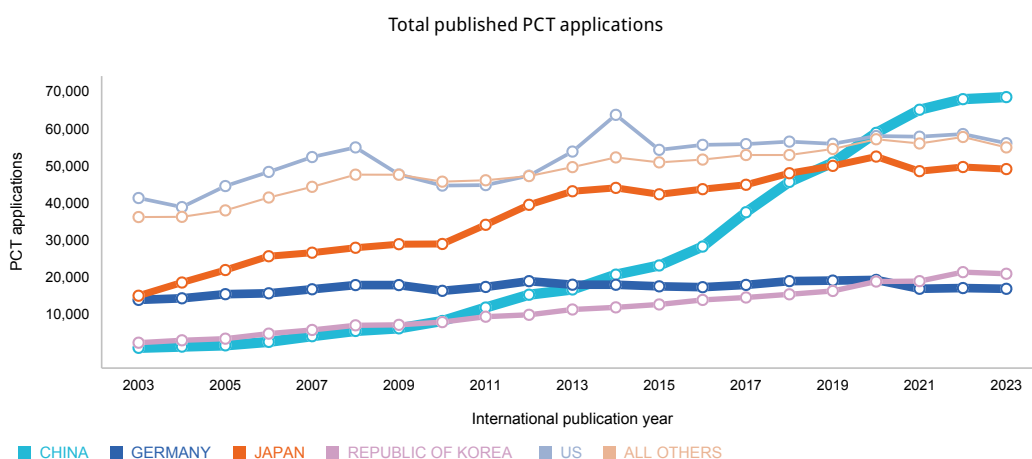
In the electrical engineering sector, PCT applications from China have surged by an average of 26.9% per year since 2003, contributing nearly half (49.7%) of that sector's growth. Japan follows, with 19.6% of growth, while the Republic of Korea and the US contributed 12.6% and 11.3%, respectively. China, which has led the sector since 2016, accounted for 35.6% of the sector's total in 2023.

Despite modest average annual growth of 1.1% since 2003, the US remains the primary origin for the instruments sector, with 10,886 applications in 2023. China has seen a sharp average growth rate of nearly 25% per year since 2003, moving up to the second spot in 2023. Japan peaked at approximately 10,100 applications in 2020 before falling to 8,398 in 2023. With an average annual growth of 11.1% over two decades, the Republic of Korea surpassed Germany in 2023 to rank fourth.

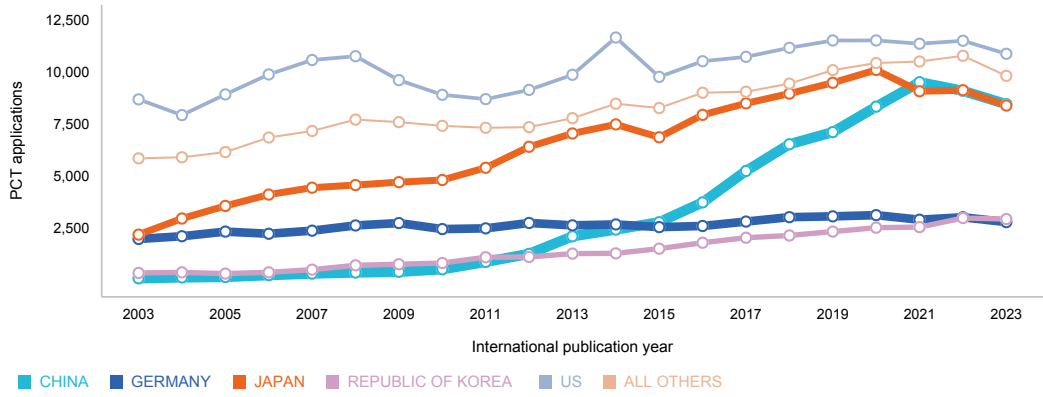
US applicants have dominated the chemistry sector since 2003, despite modest average annual growth of 0.9%. China emerged as the second largest origin in 2023, with applications growing by 19.3% per year, on average, since 2003. Japan's applications peaked in 2020, while Germany saw an overall decline over the period. The Republic of Korea surpassed Germany in 2021, with an average annual growth of 10.5% over the period.

Since 2011, Japan has led the mechanical engineering sector, followed by China which overtook the US in 2021. Between 2003 and 2023, Germany (+1.6%) and the US (+0.6%) recorded much lower average annual growth rate than either China (+21.3%), the Republic of Korea (+9.3%) or Japan (+6.6%).

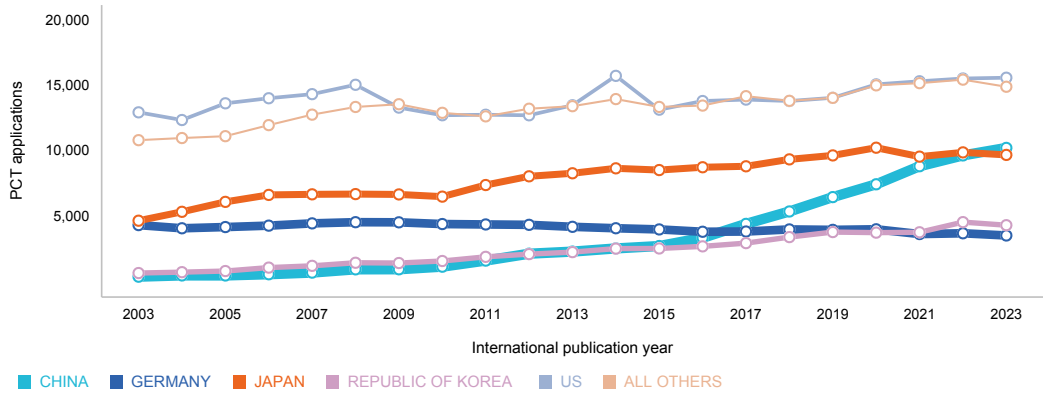
S4. Published PCT applications by technology sector for the top five origins, 2003–2023



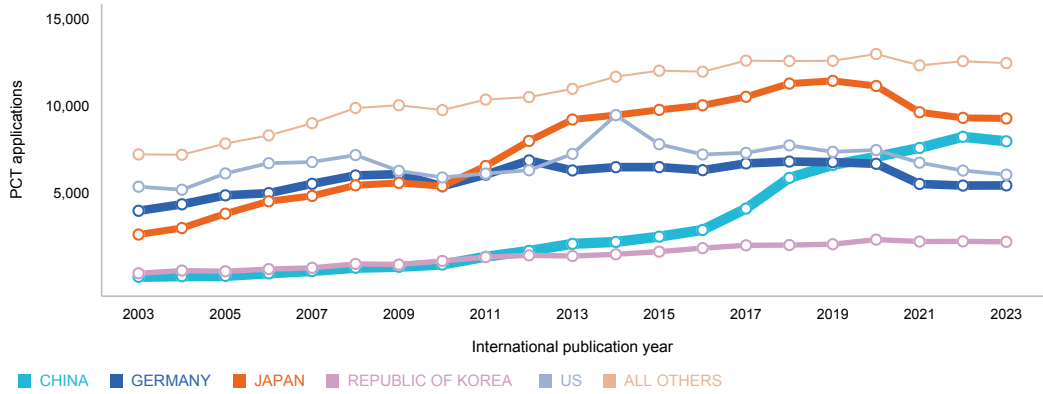
Instruments

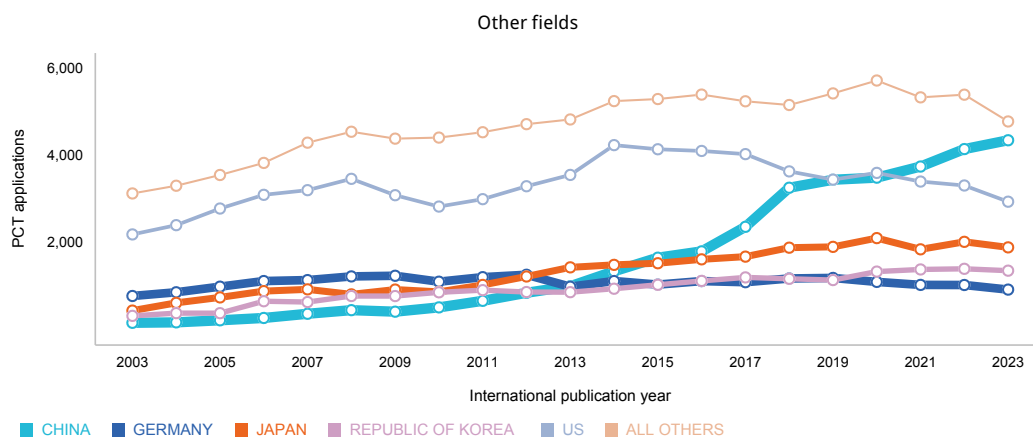


Chemistry



Mechanical engineering





Source: WIPO Statistics Database, March 2024.

Electrical engineering accounted for nearly 40% of total PCT applications in 2023

The distribution of PCT applications across technology sectors underwent marked changes from 2003 to 2023 (figure S5). In 2003, the chemistry sector represented 30.5% of total publications, followed by electrical engineering (27.9%), mechanical engineering (17.9%) and instruments (17.5%). By 2023, the electrical engineering sector accounted for almost 40% of publications, with chemistry at 21.8% and mechanical engineering and instruments each at 16.3%. Over this period, electrical engineering saw a notable increase in share by nearly 12 percentage points, while the chemistry sector experienced a decrease of almost 9 percentage points.

Technology sector shares vary widely among the top five countries.³ Since 2003, PCT applications from China in the electrical engineering sector have consistently accounted for the largest proportion of Chinese total publications, comprising nearly 55% of the total in 2023 – a 23.3 percentage point increase. Conversely, over the same period, the share of Chinese PCT applications in the chemistry sector nearly halved, dropping to 14.9%.

In 2003, chemistry (31.3%) was the main sector for US applicants. In 2023, electrical engineering topped the ranking, with 36.8% of the US total, gaining 7.4 percentage points. Meanwhile, all other sectors experienced a decline in share over this period.

For Japan, electrical engineering has remained the sector with the largest share of publications, rising from 34.7% in 2003 to 40.5% in 2023. Conversely, the chemistry sector saw a sharp loss of 10.9 percentage points over the same period, dropping to 19.7% of total applications published.

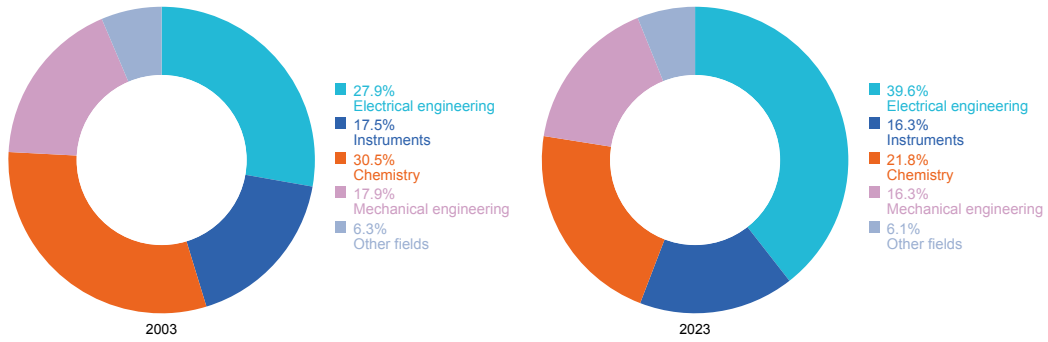
For applicants from the Republic of Korea, the electrical engineering sector accounted for nearly half (48.8%) of total applications published in 2023, marking a 15.6 percentage point increase since 2003. The other sectors, including mechanical engineering, experienced declines in their shares.

For German applicants, mechanical engineering led in 2023 with 32.2%, followed by electrical engineering (25.4%) and chemistry (20.5%). The chemistry sector, which held the top spot in 2003, with 30.6%, experienced a marked decline in its share by 10.1 percentage points over the period.

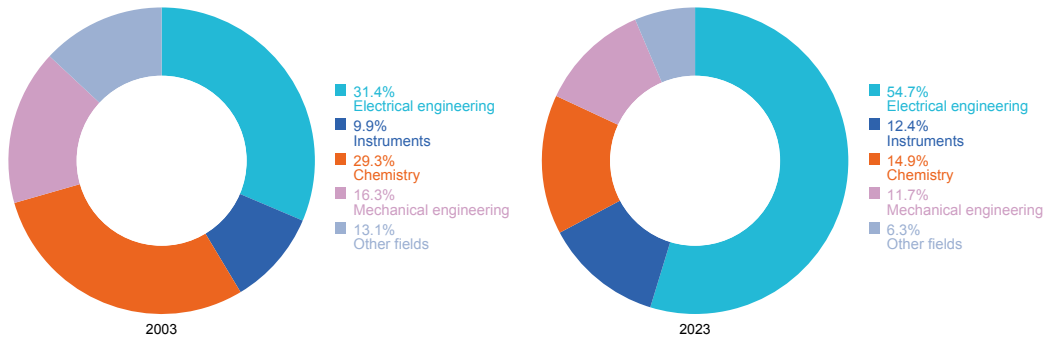
3 Figure S8 presents equivalent data for the top six to 10 origins.

S5. Share of published PCT applications by technology sector for the top five origins, 2003 and 2023

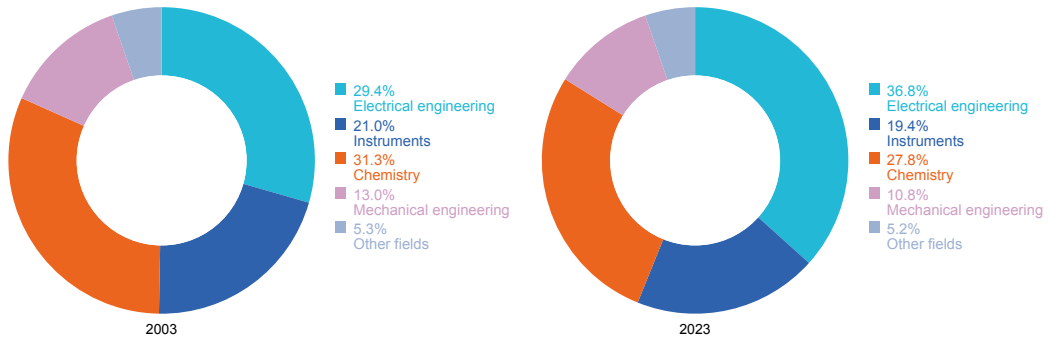
Overall total



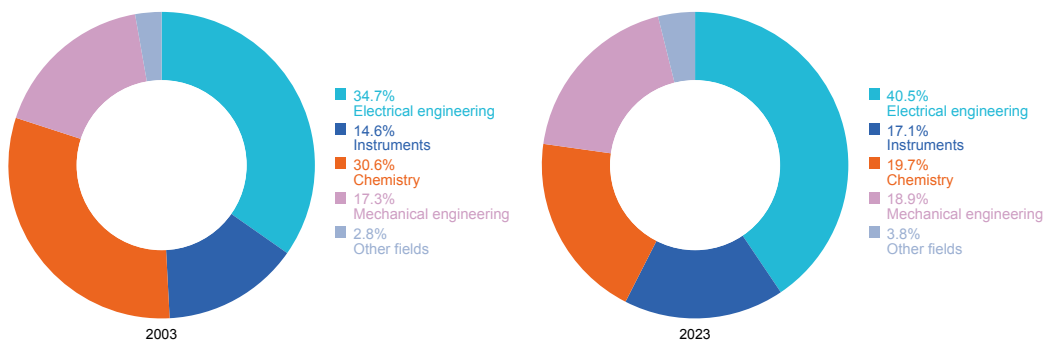
China

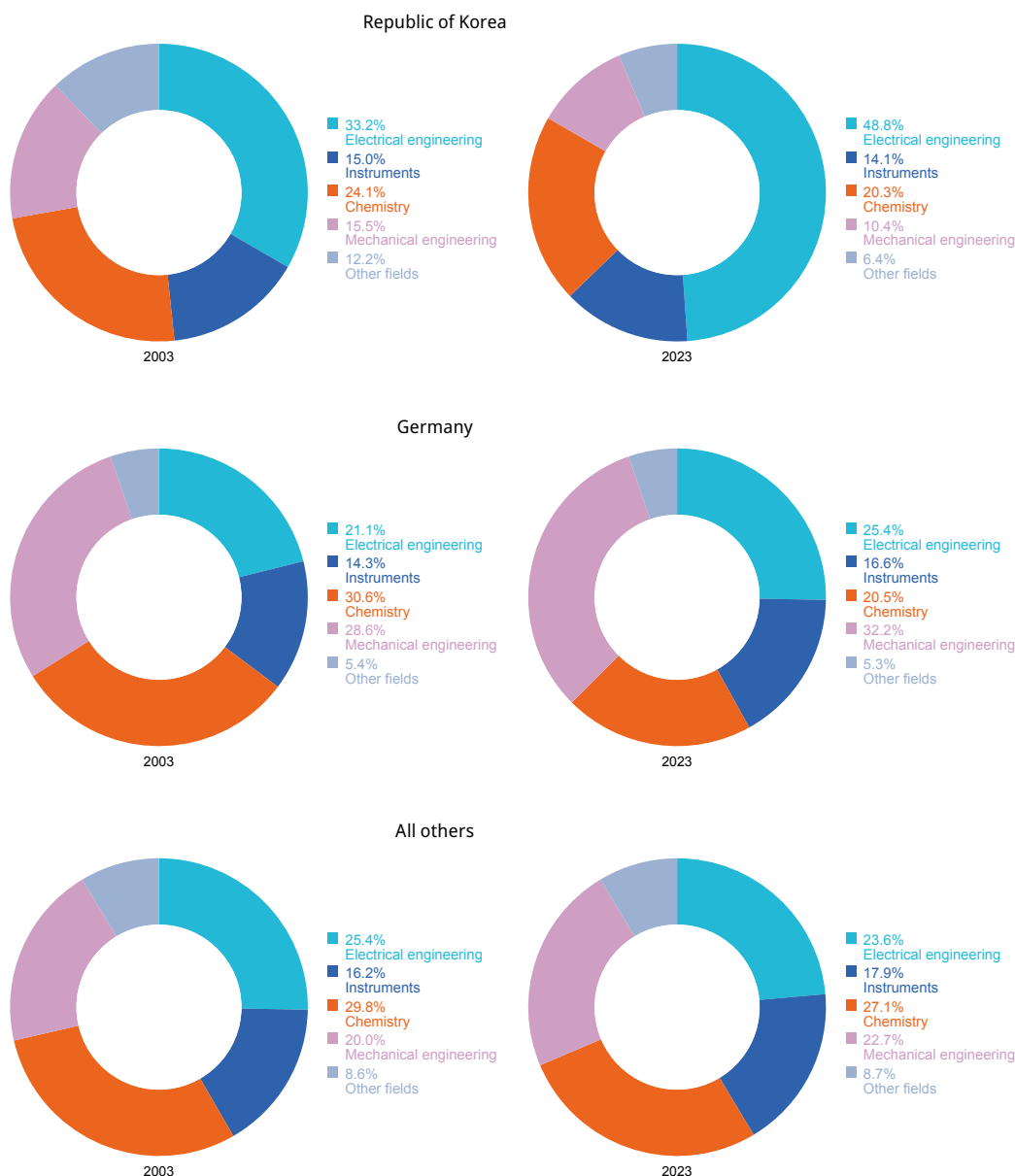


US



Japan





Source: WIPO Statistics Database, March 2024.

Half of the top 10 technology fields belonged to the electrical engineering sector in 2023

In 2023, five of the top 10 fields of technology belonged to the electrical engineering sector (figure S6). China was the most active country in each of these five fields, accounting for 42.5% of total published PCT applications in digital communication, 38.6% in audio-visual technology, 37.5% in computer technology, 36.9% in semiconductors and 28.5% in electrical machinery. The US ranked second in computer technology and digital communication, while Japan held this position for audio-visual technology, electrical machinery and semiconductors. Since 2003, Germany has shown notable growth in applications in electrical machinery, while the Republic of Korea has experienced sharp increases in applications in computer technology, digital communication, electrical machinery and semiconductors.

A third (33.5%) of published PCT applications in medical technology originated from the US in 2023, while China and Japan accounted for 14.7% and 12.3% of the total, respectively. Both China and Japan had a similar number of applications published in measurement, each accounting

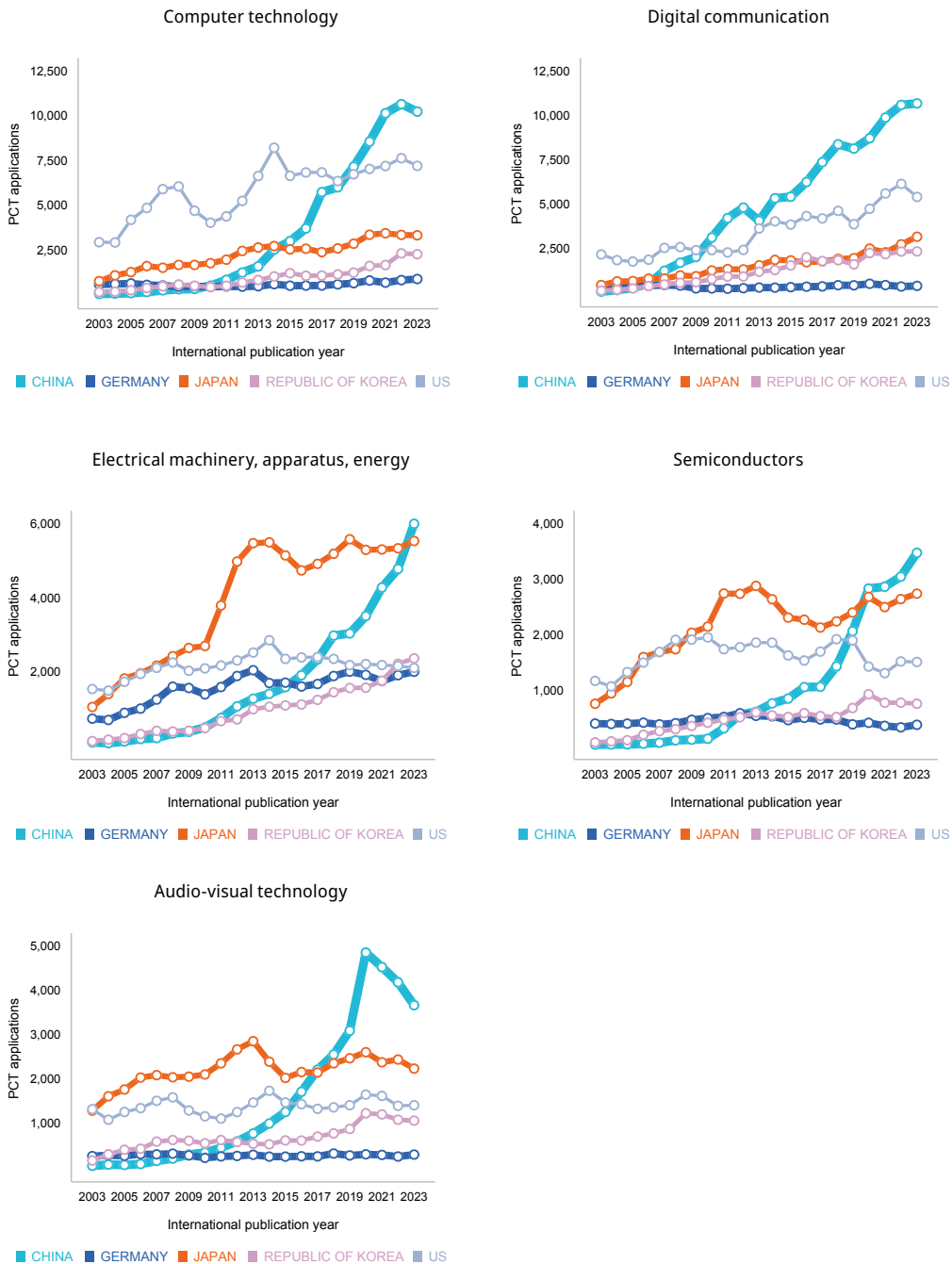
for about 22% of the total, while US applications, having peaked in 2014, accounted for 18.1% in 2023.

Within the chemistry sector, US applicants dominated pharmaceuticals and biotechnology, representing 38.4% of the total for each in 2023. Since 2015, publications in these fields have sharply increased for applicants from China and the US, with Chinese applications in biotechnology and pharmaceuticals showing a sustained average annual growth of 19.9% and 18.6%, respectively.

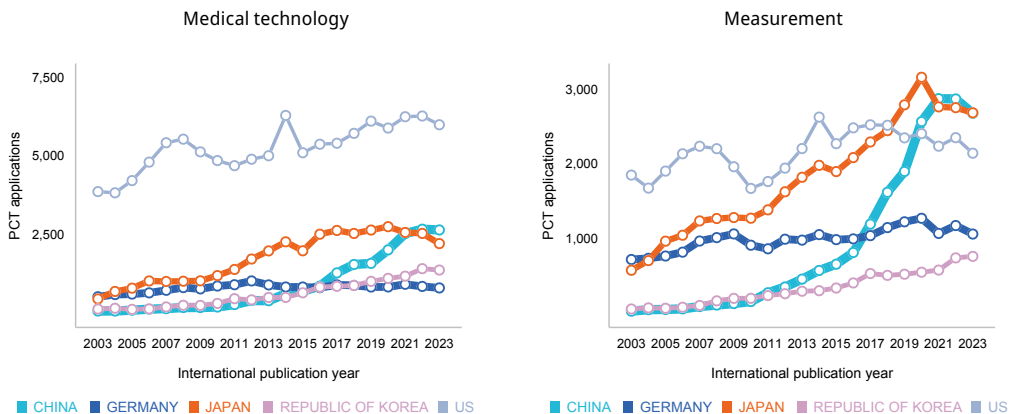
In 2023, applicants from China, Germany and Japan had a relatively similar number of applications published in the field of transport. While applications from Japan peaked in 2019 at 2,845 and from Germany in 2020 at 2,136, applications from China have almost quintupled since 2015.

S6. Published PCT applications for the top five origins for the top 10 technology fields, 2003–2023

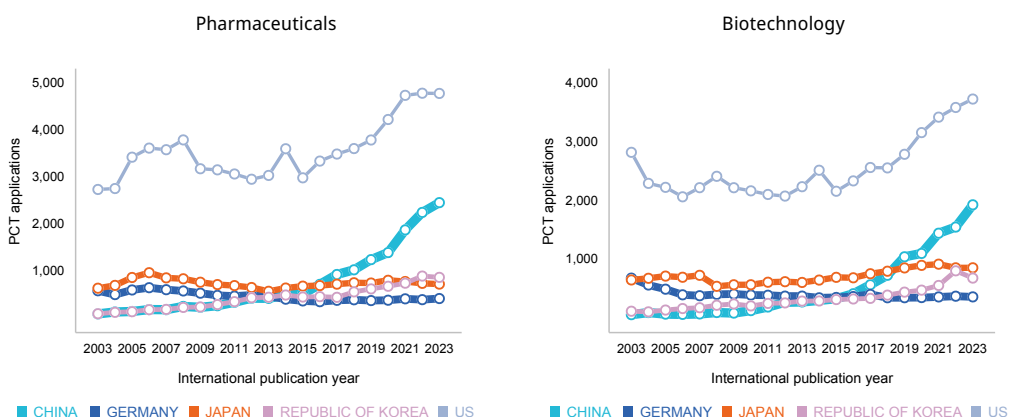
Electrical engineering sector



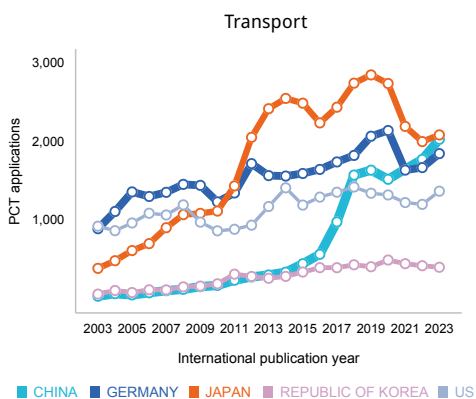
Instruments sector



Chemistry sector



Mechanical engineering sector



Source: WIPO Statistics Database, March 2024.

Panasonic and Samsung Electronics rank within the top 25 PCT applicants of four sectors in 2023

Analyzing the top 25 PCT applicants list for each of the five technology sectors reveals insights into their composition (table S7). Among the 102 applicants featured, 86 appear in one table, with 11 in two, 3 in three, and 2 in four. Notably, Panasonic of Japan and Samsung Electronics of the Republic of Korea are present in the top 25 applicants list for every sector, except chemistry. The majority of applicants originated from Japan (31), China (22), the US (20), Germany (9) and the Republic of Korea (5), with smaller representations from a few other countries.

In 2023, the top three PCT applicants for the electrical engineering sector were also the overall top three PCT applicants. Huawei Technologies of China (5,680 applications), Qualcomm of the US (3,213) and Samsung Electronics (3,172) had more than 80% of their total PCT applications published in the electrical engineering sector. Changxin Memory Technologies of China (+286.9%) had the fastest growth rate between 2018 and 2023, followed by Contemporary Amperex Technology of China (+77.9%) and Nippon Telegraph and Telephone of Japan (+64.8%). Within the top 25, only three applicants experienced a decline in publications over this period, namely Mitsubishi Electric Corporation of Japan (-5.4%), ZTE of China (-3.5%) and Microsoft Technology of the US (-1.6%). In 2023, the top 25 applicants accounted for 36.2% of total applications in the electrical engineering sector, combined. China (9) had the most applicants in the list, followed by Japan (7), the US (5), the Republic of Korea (3) and Sweden (1).

The applicants list for the instruments sector is headed by Huawei Technologies (571 applications) in 2023. It is followed by Koninklijke Philips Electronics (486) and Mitsubishi Electric Corporation (366). Fourteen of the top 25 applicants also feature in the top 25 applicants list for the other four sectors. This is the case for all top 10 applicants except Koninklijke Philips Electronics. Nippon Telegraph and Telephone (+65.3%), Shenzhen Institute of Advanced Technology (+31.9%) and Huawei Technologies (+24.3%) experienced the sharpest growth since 2018. The top applicants in this sector originated from Japan (10), the US (7), China (3), the Kingdom of the Netherlands (2), the Republic of Korea (2) and Germany (1).

BASF of Germany (371 applications) was the top applicant in the chemistry sector, followed by the University of California of the US (328) and L'Oréal of France (296). Suzhou University of China (+88.2%), Shenzhen Institute of Advanced Technology (+66.2%) and Denka Company of Japan (+24.8%) saw the sharpest increase in applications over 2018; whereas the US-based companies Procter & Gamble (-13.8%), 3M Innovative Properties (-11.2%) and Dow Global Technologies (-6.5%) experienced the steepest falls. In 2023, the top 25 applicants accounted for 8.2% of total applications in the chemistry sector, combined. Among the eight origins featured in the list, Japan (10) and the US (6) stand out, with a particularly large number of applicants.

In the mechanical engineering sector, Mitsubishi Electric Corporation (706 applications), Qingdao Haier Air Conditioner General Corporation of China (616), and Robert Bosch of Germany (443) lead the list. The China-based companies Contemporary Amperex Technology (+118.4%), Qingdao Haier Air Conditioner General Corporation (+58.1%) and Huawei Technologies (+36.2%) had the highest average annual rates of growth between 2018 and 2023. In contrast, of the 11 applicants to have seen a drop in applications, Michelin & Cie (-15.3%), Honda Motor Co. (-13.1%) and Denso Corporation (-12.1%) had the sharpest falls over this period. Of the top users in this sector, 11 applicants originated from Japan, five from Germany, four from China, three from France and two from the Republic of Korea. Notably, no applicant from the US featured among the top 25 applicants for the mechanical engineering sector.

Conclusion

Over the past two decades, the landscape of published PCT applications has undergone substantial changes, with notable growth trends observed across certain technological sectors and origins. Electrical engineering has emerged as the main sector, tripling in size since 2003 and constituting nearly 40% of total applications in 2023, driven by remarkable growth in computer technology, digital communication and electrical machinery. Chemistry, although the second largest sector, has experienced moderate growth over the past two decades, with low or decreasing activity in Germany, Japan and the US. The mechanical engineering sector ranked third in size in 2023, despite a substantial drop since 2020.

Among the top five origins of PCT applications, China, Japan and the Republic of Korea have experienced the highest average annual growth rates since 2003, well above the overall average. China has played a pivotal role in driving growth across all sectors, particularly in electrical engineering and instruments, contributing to the vast majority of growth from 2013 to 2023. Japan emerged as the main contributor to sectoral growth between 2003 and 2012. Conversely, applications from the US and Germany have shown modest increases, highlighting shifts in PCT filings toward Northeast Asia.

In 2023, China was the main origin for applications published in the electrical engineering and the other fields sectors, and the second largest origin in the remaining three sectors. The US remained the primary origin for the chemistry and instruments sectors and ranked second in electrical engineering and other fields. Japan led the mechanical engineering sector and emerged as the third largest origin in all the other sectors.

A small number of large companies, universities and public research organizations, mainly from China, Japan and the US, appeared as important filers of PCT applications across technology sectors, showcasing their innovation capabilities and market strategies. Of the 102 applicants featured in the top 25 PCT applicants lists for the five sectors sixteen appear in more than one list with Panasonic and Samsung Electronics listed in four. The top 25 applicants accounted for between 8.2% (chemistry) and 36.2% (electrical engineering) of the respective sector's total.

S7. Top 25 PCT applicants by technology sector, 2003–2023

Electrical engineering

Ranking	Applicant (origin)	Published PCT applications					2023 sector share (%)	Average annual growth rate from 2018 (%)
		2003	2008	2013	2018	2023		
1	HUAWEI TECHNOLOGIES CO., LTD. (China)	92	1,719	2,076	5,158	5,680	5.4	1.9
2	QUALCOMM INCORPORATED (US)	412	868	1,933	2,260	3,213	3.0	7.3
3	SAMSUNG ELECTRONICS CO., LTD. (Republic of Korea)	127	625	1,113	1,634	3,172	3.0	14.2
4	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL) (Sweden)	439	961	1,438	1,596	1,802	1.7	2.5
5	ZTE CORPORATION (China)	2	328	2,269	1,980	1,656	1.6	-3.5
6	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD (China)			18	1,025	1,647	1.6	9.9
7	BOE TECHNOLOGY GROUP CO., LTD. (China)			163	1,153	1,618	1.5	7.0
8	VIVO MOBILE COMMUNICATION CO., LTD. (China)				178	1,574	1.5	54.6
9	BEIJING XIAOMI MOBILE SOFTWARE CO., LTD. (China)				224	1,547	1.5	47.1
10	CONTEMPORARY AMPEREX TECHNOLOGY CO., LTD. (China)				85	1,505	1.4	77.9
11	LG ELECTRONICS INC. (Republic of Korea)	84	599	1,056	1,275	1,346	1.3	1.1
12	NIPPON TELEGRAPH AND TELEPHONE CORPORATION (Japan)	3	38	45	108	1,315	1.2	64.8
13	MICROSOFT TECHNOLOGY LICENSING, LLC (US)				1,343	1,238	1.2	-1.6
14	NEC CORPORATION (Japan)	138	719	1,045	726	1,171	1.1	10.0
15	LG ENERGY SOLUTION, LTD. (Republic of Korea)					1,097	1.0	n.a.
16	MITSUBISHI ELECTRIC CORPORATION (Japan)	203	258	696	1,328	1,004	1.0	-5.4
17	NTT DOCOMO, INC. (Japan)	60	223	319	443	990	0.9	17.4
18	SONY GROUP CORPORATION (Japan)	699	257	765	972	977	0.9	0.1
19	PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD. (Japan)				752	920	0.9	4.1
20	CHANGXIN MEMORY TECHNOLOGIES, INC. (China)				1	867	0.8	286.9

Ranking	Applicant (origin)	Published PCT applications					2023 sector share (%)	Average annual growth rate from 2018 (%)
		2003	2008	2013	2018	2023		
21	MURATA MANUFACTURING CO., LTD. (Japan)	14	198	422	733	842	0.8	2.8
22	INTERNATIONAL BUSINESS MACHINES CORPORATION (US)	245	626	637	201	784	0.7	31.2
23	GOOGLE INC. (US)		168	550	764	775	0.7	0.3
24	BEIJING ZITIAO NETWORK TECHNOLOGY CO., LTD. (China)					761	0.7	n.a.
25	APPLE INC. (US)	23	282	506	314	684	0.6	16.9

Instruments

Ranking	Applicant (origin)	Published PCT applications					2023 sector share (%)	Average annual growth rate from 2018 (%)
		2003	2008	2013	2018	2023		
1	HUAWEI TECHNOLOGIES CO., LTD. (China)	1	15	27	193	571	1.3	24.3
2	KONINKLIJKE PHILIPS ELECTRONICS N.V. (Netherlands (Kingdom of the))	348	518	576	631	486	1.1	-5.1
3	mitsubishi electric corporation (Japan)	46	68	189	378	366	0.8	-0.7
4	NIPPON TELEGRAPH AND TELEPHONE CORPORATION (Japan)	2	18	9	29	362	0.8	65.3
5	PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD. (Japan)				259	346	0.8	6.0
6	NEC CORPORATION (Japan)	12	82	117	161	329	0.8	15.4
7	SONY GROUP CORPORATION (Japan)	83	40	120	271	328	0.8	3.9
8	SAMSUNG ELECTRONICS CO., LTD. (Republic of Korea)	59	14	47	152	326	0.8	16.5
9	BOE TECHNOLOGY GROUP CO., LTD. (China)			173	530	301	0.7	-10.7
10	FUJIFILM CORPORATION (Japan)		52	430	354	295	0.7	-3.6
11	BOSTON SCIENTIFIC SCIMED, INC. (US)	1	100	146	161	199	0.5	4.4
12	SHENZHEN INSTITUTE OF ADVANCED TECHNOLOGY (China)			6	49	196	0.5	31.9
13	ROBERT BOSCH CORPORATION (Germany)	163	215	270	336	195	0.5	-10.3
14	ASML NETHERLANDS B.V. (Netherlands (Kingdom of the))	1	38	92	174	192	0.4	2.0
15	QUALCOMM INCORPORATED (US)	23	35	117	126	189	0.4	8.4
16	BECTON, DICKINSON AND COMPANY (US)	41	63	64	76	187	0.4	19.7
17	TERUMO KABUSHIKI KAISHA (Japan)	14	37	268	175	183	0.4	1.0
18	MEDTRONIC, INC. (US)	186	190	110	101	183	0.4	12.5
19	DENSO CORPORATION (Japan)	2	8	51	210	175	0.4	-3.5
20	EDWARDS LIFESCIENCES CORP. (US)	19	24	20	69	170	0.4	19.9
21	META PLATFORMS TECHNOLOGIES, LLC (US)					166	0.4	n.a.
22	HITACHI HIGH-TECH CORPORATION (Japan)	7	5	87	84	159	0.4	13.4

Ranking	Applicant (origin)	Published PCT applications					2023 sector share (%)	Average annual growth rate from 2018 (%)
		2003	2008	2013	2018	2023		
23	SONY SEMICONDUCTOR SOLUTIONS CORPORATION (Japan)				71	149	0.3	15.9
24	COVIDIEN LP (US)			90	74	145	0.3	14.4
25	LG ENERGY SOLUTION, LTD. (Republic of Korea)					141	0.3	n.a.

Chemistry

Ranking	Applicant (origin)	Published PCT applications					2023 sector share (%)	Average annual growth rate from 2018 (%)
		2003	2008	2013	2018	2023		
1	BASF SE (Germany)	468	616	570	472	371	0.6	-4.7
2	UNIVERSITY OF CALIFORNIA (US)	172	181	227	267	328	0.6	4.2
3	L'OREAL (France)	74	94	297	233	296	0.5	4.9
4	LG CHEM, LTD. (Republic of Korea)	27	104	110	348	279	0.5	-4.3
5	UNILEVER IP HOLDINGS B.V. (Netherlands (Kingdom of the))					248	0.4	n.a.
6	DOW GLOBAL TECHNOLOGIES INC. (US)	89	213	320	321	229	0.4	-6.5
7	JFE STEEL CORPORATION (Japan)	32	28	195	172	224	0.4	5.5
8	SHENZHEN INSTITUTE OF ADVANCED TECHNOLOGY (China)			2	16	203	0.3	66.2
9	FUJIFILM CORPORATION (Japan)		42	196	259	203	0.3	-4.8
10	NITTO DENKO CORPORATION (Japan)	12	68	180	110	196	0.3	12.2
11	NIPPON STEEL CORPORATION (Japan)	47	53			176	0.3	n.a.
12	AGC INC. (Japan)				67	168	0.3	20.3
13	HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN (Germany)	155	226	222	190	164	0.3	-2.9
14	SUMITOMO CHEMICAL COMPANY, LIMITED (Japan)	69	168	226	151	158	0.3	0.9
15	3M INNOVATIVE PROPERTIES COMPANY (US)	231	231	236	283	157	0.3	-11.2
16	DENKA COMPANY LIMITED (Japan)				50	150	0.3	24.8
17	SUZHOU UNIVERSITY (China)			0	6	149	0.3	88.2
18	BOARD OF REGENTS OF THE UNIVERSITY OF TEXAS SYSTEM (US)	62	104	70	83	145	0.2	11.8
19	DSM IP ASSETS B.V. (Netherlands (Kingdom of the))	135	208	144	115	136	0.2	3.3
20	SYNGENTA CROP PROTECTION AG (Switzerland)					132	0.2	n.a.
21	CORNING INCORPORATED (US)	51	81	115	118	129	0.2	1.8
22	PROCTER & GAMBLE COMPANY (US)	251	164	182	269	128	0.2	-13.8
23	KAO CORPORATION (Japan)	40	90	114	151	127	0.2	-3.4
24	mitsubishi chemical corporation (Japan)	60	42	43	80	126	0.2	9.6
25	DIC CORPORATION (Japan)		27	70	143	125	0.2	-2.7

Mechanical engineering

Ranking	Applicant (origin)	Published PCT applications					2023 sector share (%)	Average annual growth rate from 2018 (%)
		2003	2008	2013	2018	2023		
1	MITSUBISHI ELECTRIC CORPORATION (Japan)	95	160	393	985	706	1.6	-6.5
2	QINGDAO HAIER AIR CONDITIONER GENERAL CORP., LTD. (China)				62	616	1.4	58.1
3	ROBERT BOSCH CORPORATION (Germany)	573	678	904	641	443	1.0	-7.1
4	SCHAEFFLER TECHNOLOGIES AG & CO. KG (Germany)			297	522	300	0.7	-10.5
5	BAYERISCHE MOTOREN WERKE AG (Germany)	34	82	110	223	273	0.6	4.2
6	PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD. (Japan)				246	240	0.6	-0.5
7	DENSO CORPORATION (Japan)	5	10	133	443	232	0.5	-12.1
8	DAIKIN INDUSTRIES, LTD. (Japan)	79	242	173	185	221	0.5	3.7
9	HITACHI ASTEMO, LTD. (Japan)					216	0.5	n.a.
10	ZF FRIEDRICHSHAFEN AG (Germany)	50	193	131	231	201	0.5	-2.8
11	FANUC CORPORATION (Japan)					195	0.4	n.a.
12	SAMSUNG ELECTRONICS CO., LTD. (Republic of Korea)	2	1	12	83	178	0.4	16.5
13	PSA AUTOMOBILES S.A. (France)				158	178	0.4	2.3
14	HUAWEI TECHNOLOGIES CO., LTD. (China)		2	7	37	173	0.4	36.2
15	HONDA MOTOR CO., LTD. (Japan)	1	96	234	314	155	0.4	-13.1
16	KAWASAKI JUKOGYO KABUSHIKI KAISHA (Japan)	7	3	99	163	154	0.4	-1.2
17	CONTEMPORARY AMPEREX TECHNOLOGY CO., LIMITED (China)				3	149	0.3	118.4
18	HITACHI, LTD. (Japan)	22	30	81	115	141	0.3	4.2
19	LG ELECTRONICS INC. (Republic of Korea)	43	156	37	158	139	0.3	-2.6
20	MERCEDES-BENZ GROUP AG (Germany)					132	0.3	n.a.
21	COMPAGNIE GENERALE DES ETABLISSEMENTS MICHELIN - MICHELIN & CIE (France)			140	298	130	0.3	-15.3
22	CHINA FAW CO., LTD. (China)					128	0.3	n.a.
23	SAFRAN AIRCRAFT ENGINES (France)				80	119	0.3	8.3
24	BRIDGESTONE CORPORATION (Japan)	74	132	145	186	117	0.3	-8.8
25	KUBOTA CORPORATION (Japan)	2	8	13	35	112	0.3	26.5

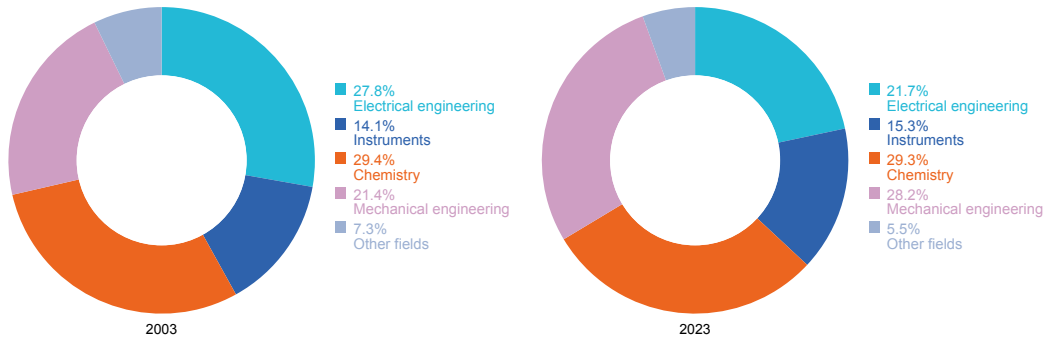
Other fields

Ranking	Applicant (origin)	Published PCT applications					2023 sector share (%)	Average annual growth rate from 2018 (%)
		2003	2008	2013	2018	2023		
1	JAPAN TOBACCO INC. (Japan)	20	11	49	49	349	2.2	48.3
2	LG ELECTRONICS INC. (Republic of Korea)	36	207	40	162	294	1.8	12.7
3	HALLIBURTON ENERGY SERVICES, INC. (US)	26	77	261	361	282	1.7	-4.8
4	QINGDAO HAIER REFRIGERATOR CO., LTD. (China)				3	253	1.6	142.9
5	NICOVENTURES TRADING LIMITED (UK)					250	1.5	n.a.
6	KT & G CORPORATION (Republic of Korea)		1	3	9	194	1.2	86.7
7	SAMSUNG ELECTRONICS CO., LTD. (Republic of Korea)			14	106	187	1.2	12.0
8	PHILIP MORRIS PRODUCTS S.A. (Switzerland)	14	44	67	145	169	1.0	3.1
9	JT INTERNATIONAL S.A. (Switzerland)			9	15	153	0.9	59.8
10	SHENZHEN SMOORE TECHNOLOGY LIMITED (China)				14	148	0.9	60.3
11	SCHLUMBERGER TECHNOLOGY CORPORATION (US)		5	6	81	146	0.9	12.6
12	TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED (China)		1		25	139	0.9	41.5
13	BAKER HUGHES, A GE COMPANY, LLC (US)				135	105	0.7	-4.9
14	PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD. (Japan)				122	99	0.6	-4.1
15	SHENZHEN FIRST UNION TECHNOLOGY CO., LTD. (China)			1		82	0.5	n.a.
16	DREAME INNOVATION TECHNOLOGY (SUZHOU) CO., LTD. (China)					81	0.5	n.a.
17	QINGDAO HAIER WASHING MACHINE CO., LTD. (China)				332	79	0.5	-24.9
18	KIEKERT AG (Germany)	2	5	25	41	73	0.5	12.3
19	BSH HAUSGERATE GMBH (Germany)				106	73	0.5	-7.2
20	DYSON TECHNOLOGY LIMITED (UK)	11	26	43	23	73	0.5	25.7
21	WUXI LITTLE SWAN ELECTRIC CO., LTD. (China)					70	0.4	n.a.
22	HAINAN MOORE BROTHERS TECHNOLOGY CO., LTD. (China)					70	0.4	n.a.
23	KOMATSU LTD. (Japan)	1	11	33	65	68	0.4	1.1
24	SHENZHEN MERIT TECHNOLOGY CO., LTD. (China)					66	0.4	n.a.
25	SAUDI ARABIAN OIL CO. (Saudi Arabia)	1	4	39	83	60	0.4	-6.2

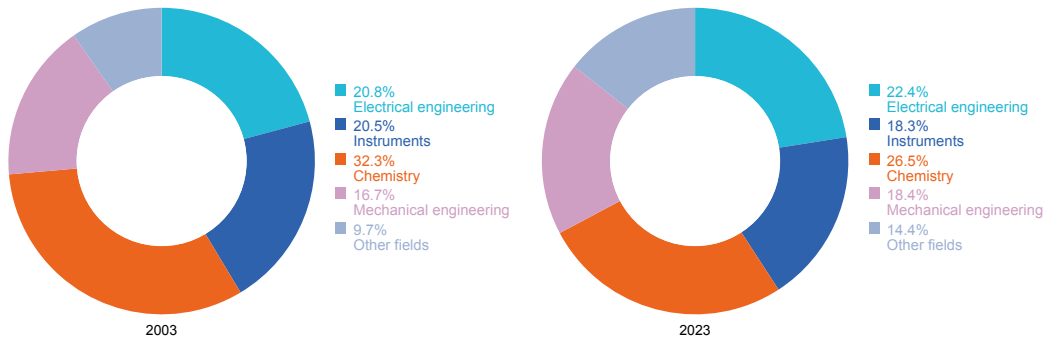
Source: WIPO Statistics Database, March 2024.

S8. Share of published PCT applications by technology sector for the top 6-10 origins, 2003 and 2023

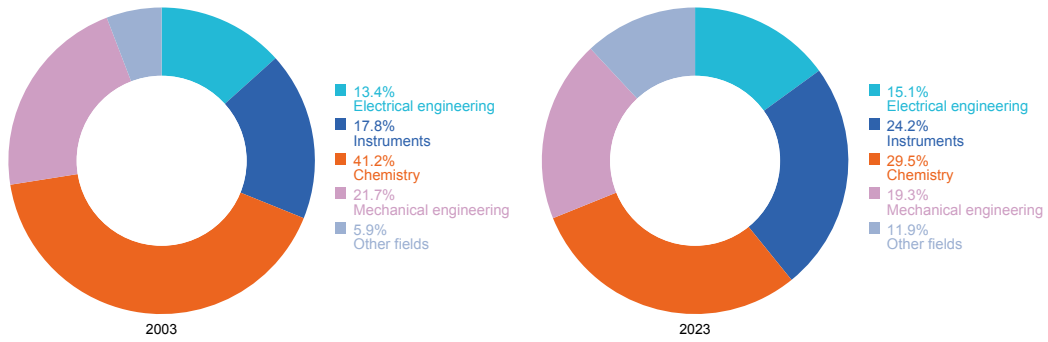
France



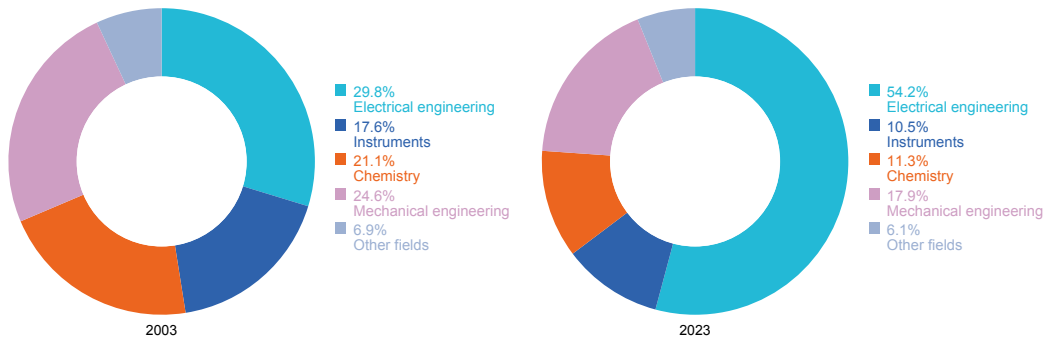
UK



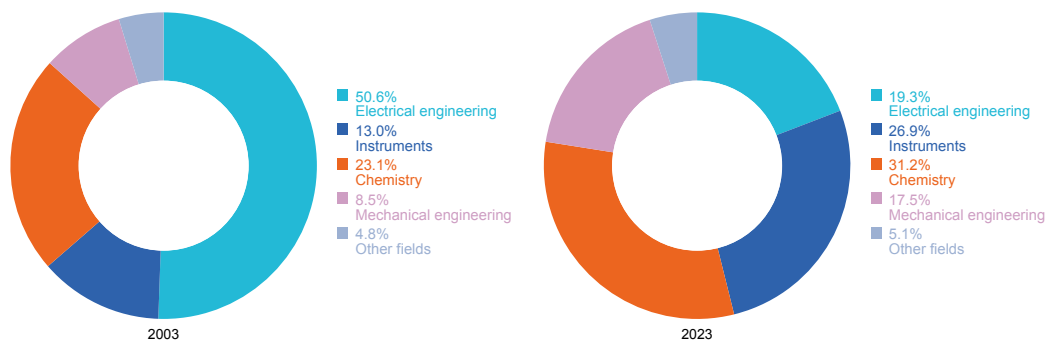
Switzerland



Sweden



Kingdom of the Netherlands



Source: WIPO Statistics Database, March 2024.

A. Statistics on the international phase: PCT applications

Highlights

PCT applications dropped by 1.8% in 2023

Approximately 272,600 international patent applications (PCT applications) were filed under WIPO's Patent Cooperation Treaty (PCT) in 2023 (figure A1). This marked a decline of 1.8% compared to the preceding year. This decrease in filings, which ends 13 years of consecutive growth, was primarily attributed to fewer filings of PCT applications from applicants based in Japan and the US.

The top 10 receiving offices accounted for almost 95% of PCT applications, combined

In 2023, 157 countries were members of the PCT, with applicants from 127 countries filing PCT applications across 83 receiving offices (ROs). Despite this broad geographical reach, filing activity was notably concentrated in a few economies.

Combined, the top 10 ROs received 94.8% of applications filed in 2023. With 73,812 filings, the China National Intellectual Property Administration (CNIPA) received the most PCT applications (figure A4). It was followed by the United States Patent and Trademark Office (USPTO) (52,940), the Japan Patent Office (JPO) (47,373), the European Patent Office (EPO) (38,636), the Korean Intellectual Property Office (KIPO) (22,165) and the International Bureau (IB) of WIPO (14,171).

The Republic of Korea was the only origin among the top five to see growth in 2023

In 2023, applicants residing in China filed the highest number of PCT applications, totaling 69,610 (figure A7). They were followed by applicants from the United States of America (US) (55,678) and Japan (48,879). The top five countries, including Germany and the Republic of Korea, collectively accounted for 78.3% of all PCT applications filed in 2023. Over the past decade, the combined share of the top five users of the PCT System has increased by 3.7 percentage points, primarily due to a notable surge in filings by applicants from China.

The top 20 origins comprised 17 high-income countries, predominantly European, along with three middle-income economies: China, India, and Türkiye (figure A8). Beyond this ranking, notable numbers of PCT applications were filed at other large middle-income economies such as Brazil, Chile, the Islamic Republic of Iran, Mexico, the Russian Federation and South Africa, with filings ranging between 150 and 550 (table A9). The seven PCT applications filed by applicants residing in low-income countries originated from Burkina Faso, the Democratic People's Republic of Korea, Liberia, Madagascar, Sudan, and Uganda (table A30).

Among the top 20 origins, only seven witnessed an increase in PCT applications in 2023 compared to the previous year. India (+44.6%), Austria (+9.1%) and Türkiye (+8.5%) experienced the sharpest increases in filing. Among the top five offices, the US (-5.3%), Germany (-3.2%), Japan (-2.9%) and China (-0.6%) observed a decline in filings, while the Republic of Korea saw a modest growth of 1.2%. Notably, China encountered its first drop in filings since 2002.

Among large middle-income economies not listed among the top 20 origins, Indonesia (+1,555.6%), Kenya (+340%), Barbados (+113.2%), Mauritius (+85.7%), Bermuda (+57.1%) and Morocco (+20.5%) experienced sharp increases in PCT filings, albeit from relatively low bases (table A9). In contrast, Egypt (-31.7%), Algeria (-27.8%), Mexico (-18.4%) and Argentina (-16.7%) saw a marked contraction in filings.

The majority of PCT applications were filed in Asia in 2023

In 2023, Asian countries accounted for 55.6% of all PCT applications filed (figure A2). This marks a notable increase from their 40.5% share in 2013, mainly due to higher filings from China and the Republic of Korea. Europe ranked as the second highest region, contributing to 21.8% of PCT applications, followed closely by Northern America at 21.3%. The combined share for Africa, Latin America and the Caribbean (LAC), and Oceania amounted to no more than 1.2% of total PCT filings.

The vast majority of PCT applications were filed by the business sector

In 2023, the IB published approximately 266,500 PCT applications, marking a decrease of 2.1% compared to 2022. Among the published PCT applications, the business sector accounted for 88.3% of the total, followed by the university sector (5.9%), individuals (3.9%) and the government and public research organization (PRO) sector (1.8%) (figure A11).

The business sector represented the largest proportion of published applications from each of the top 20 origins within the high-income group (figure A12). Specifically, the business sector's share constituted more than 96% of the total for Finland, Japan and Sweden. Among the top 20 origins in the middle-income group, the business sector constituted the majority of published applications in nine, while individuals accounted for the majority of applications in seven. Notably, individual applicants were responsible for three-quarters or more of applications in Egypt, the Islamic Republic of Iran and Ukraine.

The university sector contributed to over 20% of all applications in four of the top 20 origins among middle-income economies, with a notably high proportion of applications for Morocco (45.2%) and Peru (44%). The university sector also accounted for relatively high shares among several high-income economies, such as Israel, Singapore and Spain, whereas the government and PROs sector was responsible for a relatively large proportion of applications originating from Argentina (18.5%), France (7.5%) and Singapore (6.6%).

Contemporary Amperex Technology, Limited saw a sharp increase in applications in 2023

For the seventh consecutive year, Huawei Technologies, a telecommunications company based in China, remained the top PCT applicant, with 6,494 published applications in 2023 (table A15). Samsung Electronics of the Republic of Korea followed in second place, with 3,924 applications, trailed by Qualcomm of the US (3,410), Mitsubishi Electric of Japan (2,152) and BOE Technology Group of China (1,988).

Contemporary Amperex Technology, Limited (CATL) of China exhibited the fastest growth rate among the top 10 applicants, with an increase of 576.3%, propelling it 84 positions up to the eighth spot in the ranking. BOE Technology Group (+5.5%) and LG Electronics (+5.2%) also experienced growth. However, the remaining seven top 10 applicants saw a decline, with the sharpest decreases observed for Huawei Technologies (-15.5%), Ericsson (-13.7%) and Qualcomm (-11.5%). In addition to CATL, three companies within the top 50 doubled their number of published PCT applications in 2023, namely, Beijing Zitiao Network Technology of China, Meta Platforms Technologies of the US and Honor Device of China.

The top 50 applicants list for 2023 comprises companies from only eight origins. Japan led with 15 applicants, followed by China (14), the US (10), Germany (4) and the Republic of Korea (4). Additionally, Finland, the Kingdom of the Netherlands and Sweden each had one listed applicant.

Companies active in digital communication headed the list of top 50 PCT filers in 2023. Of the top 10 applicants, six filed mainly in digital communication, namely, Ericsson, Huawei Technologies, Oppo Mobile Telecommunications, LG Electronics, Qualcomm Inc. and Samsung Electronics (table A16).

Twenty-two of the top 50 universities are from the US

Among educational institutions, with 531 published applications, the University of California remained the largest user of the PCT System in 2023 (table A17). Suzhou University of China came second (332 applications), followed by the University of Texas (217).

Within the top 50 universities the sharpest increases in 2023 were for Yale University of the US (+92.5%), Nanjing University of Posts and Telecommunications of China (+71.4%) and Delft University of Technology of the Kingdom of the Netherlands (+48.8%). The Guangzhou Institute of Technology of China started using the PCT System in 2023.

Fifty-one universities from seven countries featured in the top 50. The US and China had 22 and 13 universities, respectively. Seven were in the Republic of Korea, five in Japan, two in Singapore and one each in Israel and the Kingdom of the Netherlands.

Shenzhen Institute of Advanced Technology remained the top PCT applicant in the government and PRO sector

With 696 published applications, the Shenzhen Institute of Advanced Technology of China remained the top government and PRO applicant in 2023. The German-based Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung was second, with 238 applications. It was followed by the Commissariat à l'Énergie Atomique et aux Énergies Alternatives (CEA) of France, the Institut National de la Santé et de la Recherche Médicale (INSERM) of France and the Agency for Science, Technology and Research of Singapore (table A18).

Applicants from 12 countries featured in the top 30 list for 2023. The US (7) had the highest number of applicants in the list, followed by the Republic of Korea (6), China (4), France (3), Germany (3) and Japan (3).

Applications in electrical machinery and transport grew sharply in 2023

In 2023, the electrical engineering sector comprised nearly 40% of all published PCT applications (figure A3). It was followed by the chemistry (21.8%), mechanical engineering (16.3%) and instruments (16.3%) sectors. Electrical engineering is the technology sector that has seen its share in total PCT applications increase the most over the past decade, growing from 35.5% in 2013 to 39.6% in 2023. The overall top three technical fields in 2023 belong to the electrical engineering sector.

For an eleventh consecutive year, the field of computer technology had the most PCT applications, with 27,280 published in 2023. It was followed by digital communication, electrical machinery, medical technology and pharmaceuticals (table A20). These top five technology fields, combined, accounted for 38.9% of all PCT applications published in 2023.

Only four of the top 10 technology fields grew in 2023, with electrical machinery (+8.8%) reporting the fastest rate of growth, followed by transport (+7.7%), semiconductors (+5.6%) and biotechnology (+3.8%). In contrast, measurements (-6.5%), audio-visual technology (-6.5%) and medical technology (-6%) experienced the steepest drops.

In 2023, only 17.7% of inventors listed in PCT applications were women

In 2023, women accounted for 17.7% of all inventors listed in PCT applications and men the remaining 82.3% (figure A22). Compared to 2022, the proportion of women inventors rose by 0.6 percentage points. Since 2009, the share of women inventors has exhibited an almost continuous increase gaining 6.8 percentage points over the period.

The share of women inventors has grown in each of the world's geographical regions over the past 10 years. In 2023, the LAC region (20.8%) had the largest proportion of women among PCT inventors, followed by Asia (18.6%), Northern America (17.7%), Africa (16.8%), Europe (15.4%) and Oceania (14.4%) (figure A24).

Almost 96% of PCT applications named at least one man as inventor in 2023, and 36.2% named at least one woman as inventor (figure A23). The share of PCT applications with at least one woman as inventor has risen from about one-fifth in 2009 to over 36% in 2023, while the share of PCT applications with at least one man as inventor has remained relatively stable within the same period, dropping only slightly from 97.6% to 95.9%.

The gender gap among PCT inventors varied considerably between countries. Of the top 20 origins of published PCT applications, Spain (26.9%), China (24.4%) and Türkiye (22.8%) had the largest proportion of inventors who were women in 2023 (figure A25). They were the only three origins among the top 20, with above one-fifth of women as inventors. In contrast, India, Japan and Germany had just slightly more than one-tenth of women inventors in PCT applications.

Technology fields relating to the life sciences had comparatively high shares of women among inventors listed in PCT applications published during 2021–2023 (table A26). Overall, women represented more than one-quarter of inventors in the fields of analysis of biological materials, biotechnology, food chemistry, organic fine chemistry and pharmaceuticals.

Biotechnology and food chemistry were the two technical fields with the largest proportion of women listed as inventors worldwide, as well as in Asia, Europe and Northern America. Biotechnology and food chemistry were among the top three fields for the LAC and Oceania.

The top 50 PCT geographical clusters accounted for almost 63% of PCT applications

Combined, the top 50 PCT clusters represented 62.6% of PCT applications published between 2019 and 2023 (table A28). Over this period, Tokyo–Yokohama remained the largest PCT cluster, with 134,769 PCT applications. Tokyo–Yokohama, which accounted for 10.5% of total PCT applications, was followed by Shenzhen–Hong Kong–Guangzhou (9%), Seoul (5.2%), San Jose–San Francisco (3.8%) and Beijing (3.3%). The number one cluster in Europe was Paris, ranked in 11th position globally.

Compared to 2018–2022, the position of the top five applicants remained unchanged. Shanghai–Suzhou moved up to the sixth position and Daejeon to the twelfth. More generally, 31 of the top 50 PCT clusters grew during 2019–2023, among which six – from China – saw a double-digit increase. The sharpest growth was in Hefei (+51%), Qingdao (+16%) and Shanghai–Suzhou (+13.8%).

Within the top 50 list, the highest number of clusters was in the US (16), China (10), Germany (7) and Japan (3). The Kingdom of the Netherlands, the Republic of Korea and the United Kingdom (UK) each had two. China and India were the only two middle-income countries to have had clusters among the top 50 in the 2019–2023 period, with Malaysia contributing to the cluster of Singapore.

Cluster composition can vary widely. Some clusters are composed mainly of a single applicant or are highly concentrated in a single technology field, while others feature a wide variety of filers and technology fields. Computer technology represented over 10% of applications in 10 of the top 20 clusters and was by far the main technology field for Seattle (43.1%), Hangzhou (27.2%) and San Jose–San Francisco (22.6%) (table A29). Digital communication accounted for over one-tenth of published applications in seven of the top 20 PCT clusters, notably in San Diego (45.5%), Beijing (26.7%) and Shenzhen–Hong Kong–Guangzhou (25.8%). Electrical machinery accounted for a high share of applications in Daejeon (30%) and pharmaceuticals in Boston–Cambridge (21%).

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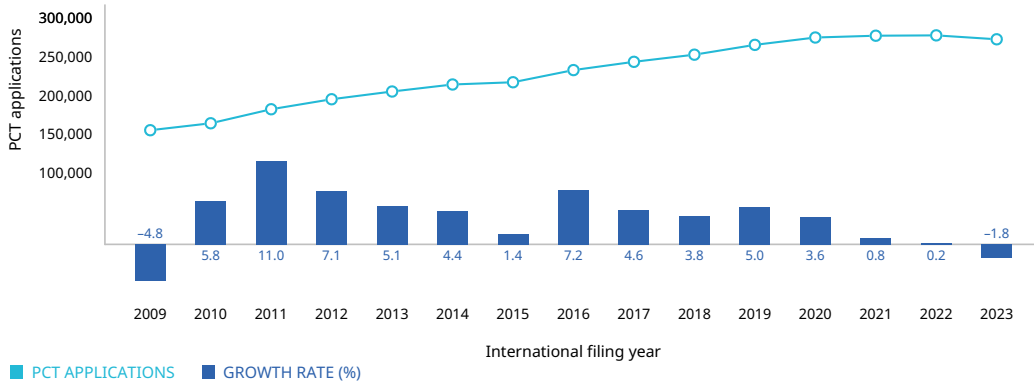
Statistical table

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Global trends in PCT applications

For the first time since 2009, PCT applications dropped by 1.8% in 2023.

A1. Trend in filings of PCT applications, 2009–2023

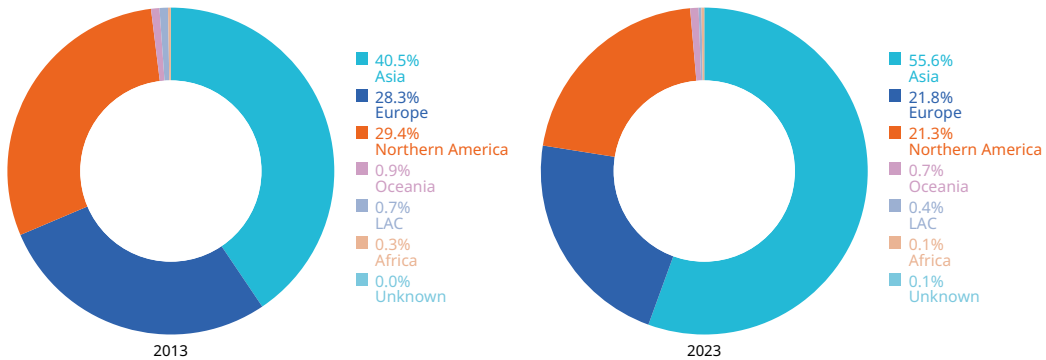


Note: Data for 2023 are WIPO estimates.

Source: WIPO Statistics Database, March 2024.

Most PCT applications originated from Asia in 2023.

A2. Distribution of PCT applications by region, 2013 and 2023

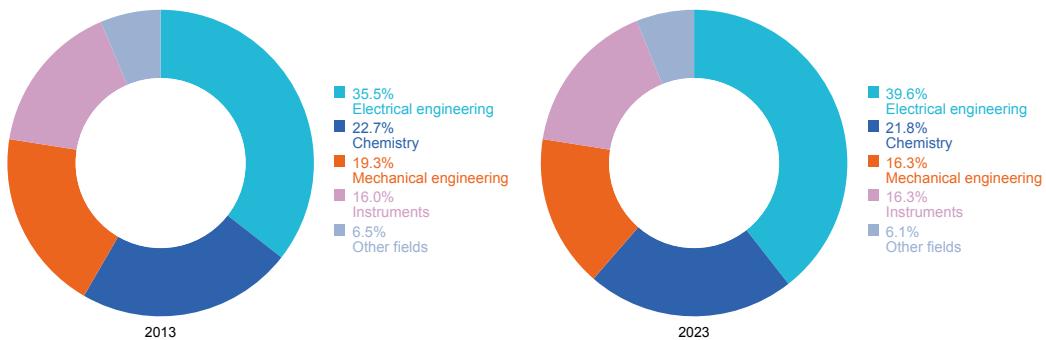


Note: Data for 2023 are WIPO estimates. Each region includes the following number of origins: Africa (21), Asia (35), Europe (44), Latin America and the Caribbean (LAC) (18), Northern America (3) and Oceania (5).

Source: WIPO Statistics Database, March 2024.

Electrical engineering accounted for nearly 40% of PCT applications in 2023.

A3. Distribution of PCT applications by technology sector, 2013 and 2023



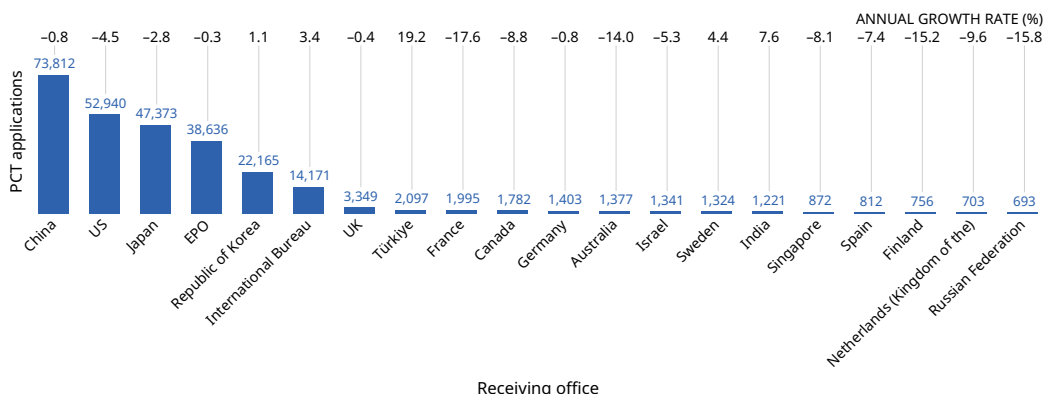
Note: For confidentiality reasons, data are based on published applications and on the publication date. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into five corresponding sectors of technology.

Source: WIPO Statistics Database, March 2024.

PCT applications by receiving office

Within the top 20 offices, Türkiye experienced the sharpest growth in 2023.

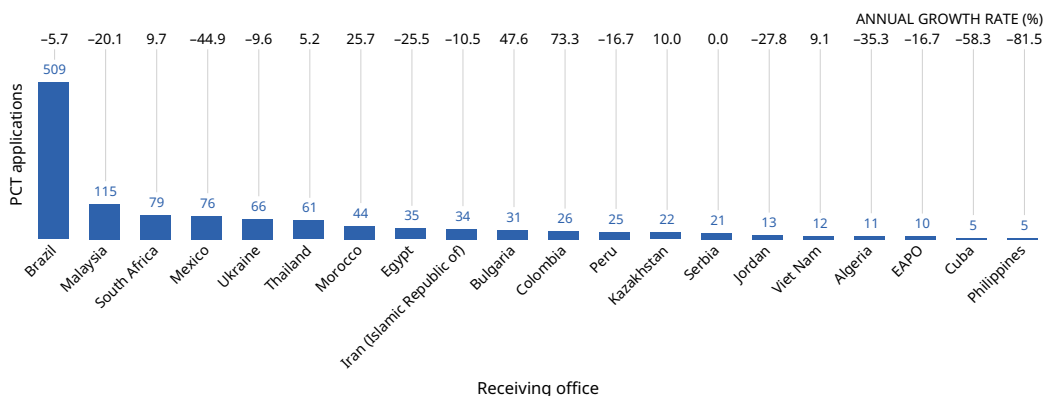
A4. PCT applications for the top 20 receiving offices, 2023



Note: Data for 2023 are WIPO estimates. EPO is the European Patent Office.
Source: WIPO Statistics Database, March 2024.

The office of Brazil received more than 500 PCT applications in 2023.

A5. PCT applications for selected receiving offices of low- and middle-income countries, 2023

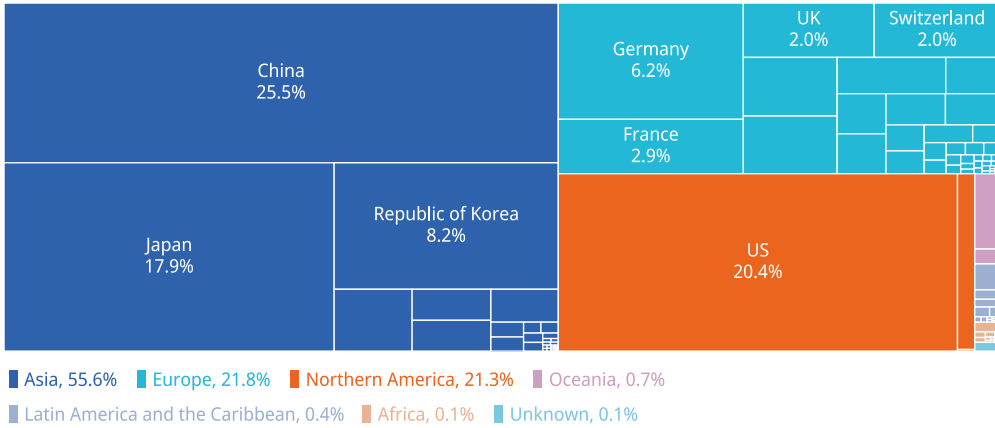


Note: Data for 2023 are WIPO estimates. EAPO is the Eurasian Patent Organization. The selected offices are the top receiving offices of low- and middle-income countries not to feature among the top 20 offices. Where available, data for all offices are presented in statistical table A30.
Source: WIPO Statistics Database, March 2024.

PCT applications by origin

PCT applications are highly concentrated in just a few origins.

A6. Distribution of PCT applications by region and origin, 2023

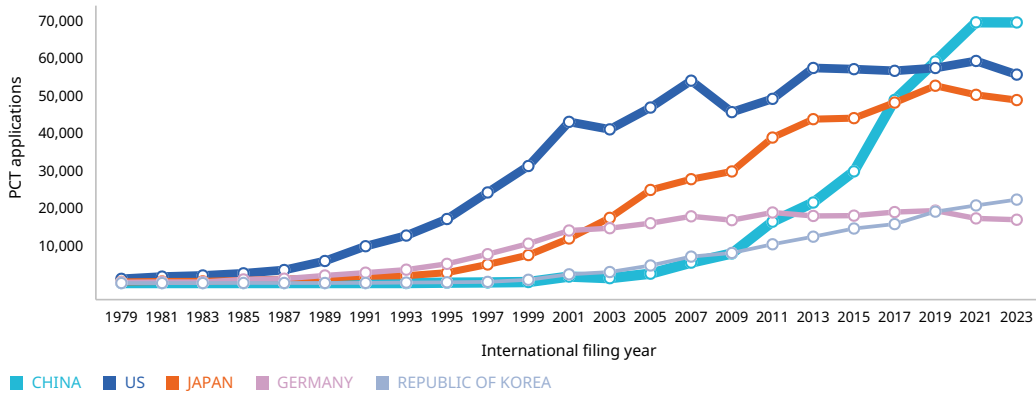


Note: Data for 2023 are WIPO estimates.

Source: WIPO Statistics Database, March 2024.

Every year since 2013, China, Japan and the US have filed the largest number of PCT applications.

A7. Trend in PCT applications for the top five origins, 1979–2023

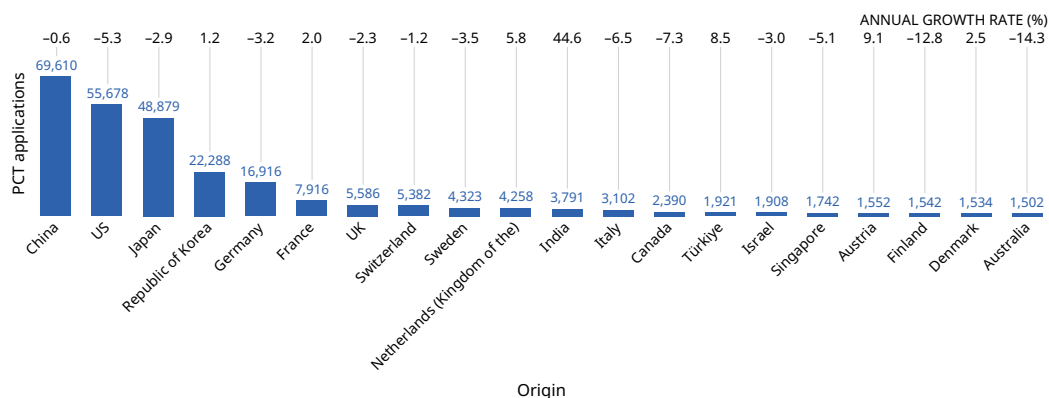


Note: Data for 2023 are WIPO estimates.

Source: WIPO Statistics Database, March 2024.

Among top 20 origins, India recorded by far the sharpest increase in PCT applications in 2023.

A8. PCT applications for the top 20 origins, 2023



Note: Data for 2023 are WIPO estimates.

Source: WIPO Statistics Database, March 2024.

Africa was the only region to have seen a growth in filings in 2023.

A9. PCT applications for the top countries by region, 2021–2023

Region	Origin	2021	2022	2023	Regional share 2023 (%)	Change from 2022 (%)	
Africa	South Africa	226	215	194	48.1	-9.8	
	Morocco	63	39	47	11.7	20.5	
	Egypt	53	60	41	10.2	-31.7	
	Mauritius	30	21	39	9.7	85.7	
	Kenya	9	5	22	5.5	340.0	
	Algeria	7	18	13	3.2	-27.8	
	Others	58	41	47	11.7	14.6	
	Total*		446	399	403	0.1	1.0
Asia	China	69,645	70,017	69,610	45.9	-0.6	
	Japan	50,277	50,351	48,879	32.2	-2.9	
	Republic of Korea	20,731	22,023	22,288	14.7	1.2	
	India	2,082	2,622	3,791	2.5	44.6	
	Türkiye	1,741	1,771	1,921	1.3	8.5	
	Israel	2,122	1,967	1,908	1.3	-3.0	
	Singapore	1,688	1,835	1,742	1.1	-5.1	
	Saudi Arabia	822	471	382	0.3	-18.9	
	Iran (Islamic Republic of)	362	354	362	0.2	2.3	
	Indonesia	9	9	149	0.1	1,555.6	
	Others	743	692	641	0.4	-7.4	
Total*		150,222	152,112	151,673	55.6	-0.3	
Europe	Germany	17,266	17,469	16,916	28.5	-3.2	
	France	7,325	7,761	7,916	13.3	2.0	
	UK	5,852	5,716	5,586	9.4	-2.3	
	Switzerland	5,471	5,446	5,382	9.1	-1.2	
	Sweden	4,440	4,481	4,323	7.3	-3.5	
	Netherlands (Kingdom of the)	4,093	4,025	4,258	7.2	5.8	
	Italy	3,564	3,317	3,102	5.2	-6.5	
	Austria	1,575	1,422	1,552	2.6	9.1	
	Finland	1,897	1,768	1,542	2.6	-12.8	
	Denmark	1,556	1,497	1,534	2.6	2.5	
	Others	7,982	7,353	7,186	12.1	-2.3	
	Total*		61,021	60,255	59,297	21.8	-1.6
	Latin America and the Caribbean	Brazil	616	547	517	44.5	-5.5
Chile		166	184	189	16.3	2.7	
Mexico		166	190	155	13.3	-18.4	
Colombia		98	116	114	9.8	-1.7	
Barbados		30	38	81	7.0	113.2	
Peru		38	31	27	2.3	-12.9	

Region	Origin	2021	2022	2023	Regional share 2023 (%)	Change from 2022 (%)
	Argentina	30	30	25	2.1	-16.7
	Ecuador	15	6	11	0.9	83.3
	Uruguay	5	6	11	0.9	83.3
	Others	57	71	33	2.8	-53.5
	Total*	1,221	1,219	1,163	0.4	-4.6
Northern America	US	59,328	58,823	55,678	95.8	-5.3
	Canada	2,597	2,577	2,390	4.1	-7.3
	Bermuda	9	14	22	0.0	57.1
	Total*	61,934	61,414	58,090	21.3	-5.4
Oceania	Australia	1,769	1,752	1,502	83.4	-14.3
	New Zealand	370	319	293	16.3	-8.2
	Others	2	5	5	0.3	0.0
	Total*	2,141	2,076	1,800	0.7	-13.3
Unknown		194	157	174	0.1	10.8
Total		277,179	277,632	272,600	n.a.	-1.8

Note: Data for 2023 are WIPO estimates. This table shows the top countries for every region (with a maximum of 10 per region) where applicants filed more than 10 PCT applications in 2022. Data for all origins are reported in statistical table A30.

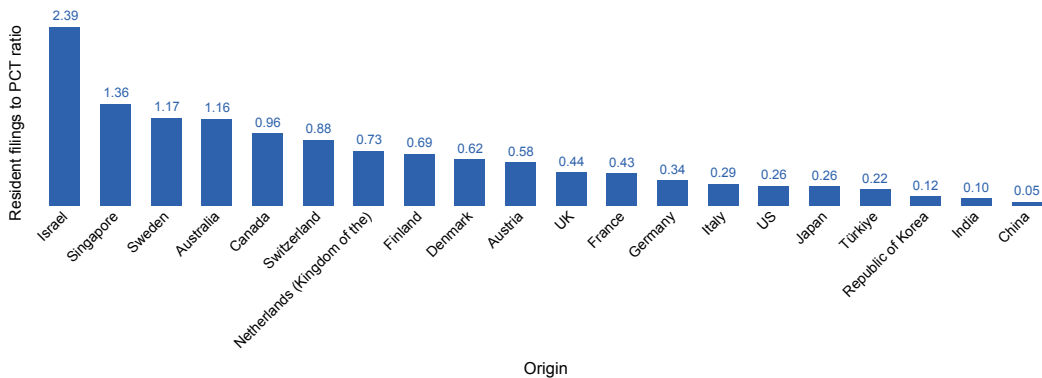
* indicates share of world total.

n.a. indicates not applicable.

Source: WIPO Statistics Database, March 2024.

Israel's conversion rate of resident patent applications into PCT applications was particularly high in 2023.

A10. Conversion ratio of direct resident patent applications to PCT applications for the top 20 origins, 2023



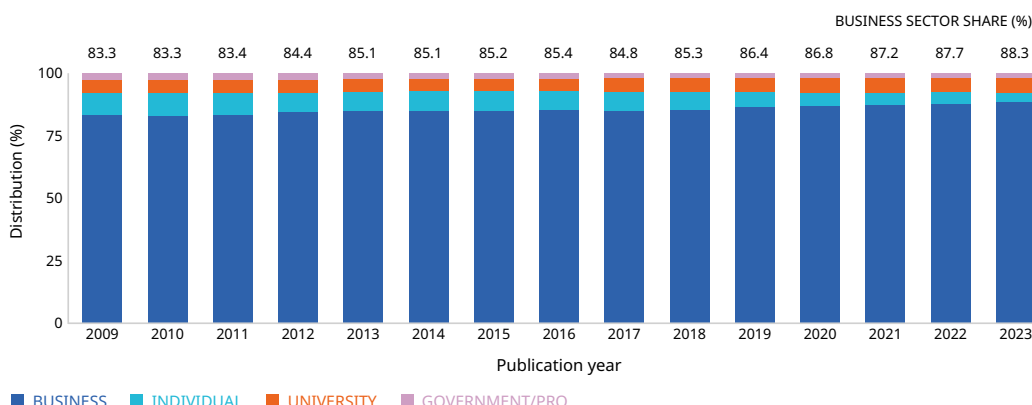
Note: Data for 2023 are WIPO estimates. This hypothetical "conversion ratio" reflects the proportion of direct resident patent applications converted into PCT applications. The ratio is defined for the top 20 origins in terms of PCT applications filed in 2023 divided by resident patent applications (including regional applications and excluding PCT national phase entries) filed in 2022. In theory, the conversion ratio ought to be between 0 and 1. However, it may exceed 1, because some applications do not have priority claims associated with prior resident filings. For example, an applicant from Israel may forgo filing an application at the Israel Patent Office and opt instead to file a first application at the USPTO, then convert that prior filing into a PCT application.

Source: WIPO Statistics Database, March 2024.

PCT applications by applicant type

Since 2017, the business sector share of applications has increased steadily.

A11. Distribution of PCT applications by applicant type, 2009–2023

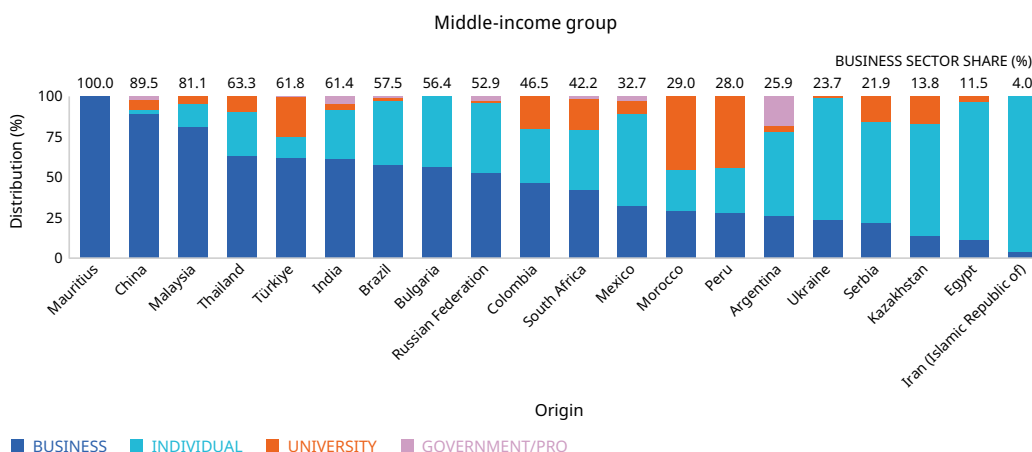
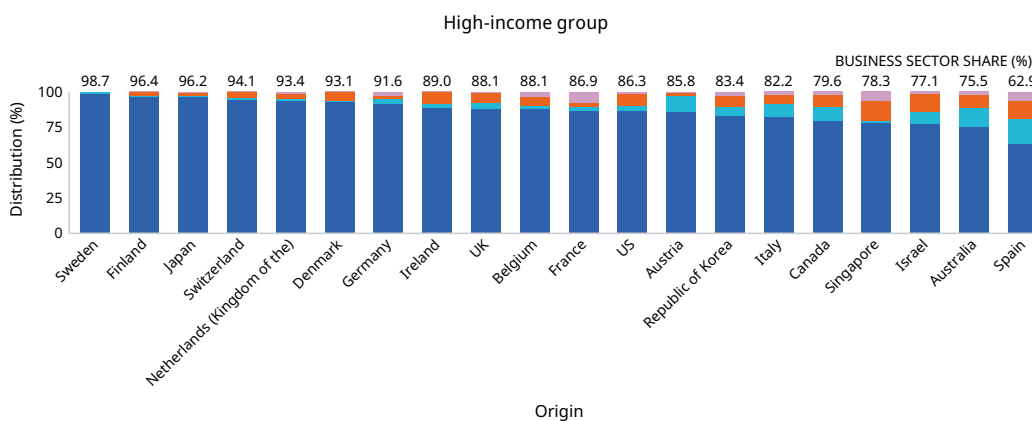


Note: The government and public research organization (PRO) sector includes private non-profit organizations and hospitals. The university sector includes all educational institutions. For confidentiality reasons, data are based on the publication date.

Source: WIPO Statistics Database, March 2024.

Almost 99% of all PCT applications originating in Sweden were filed by business.

A12. Distribution of PCT applications by applicant type for the top 20 origins by income group, 2023

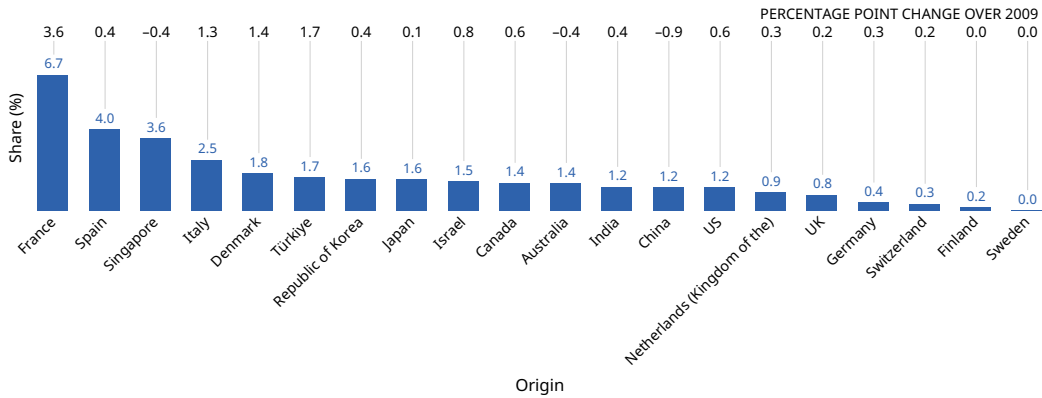


Note: The government and PRO sector includes private non-profit organizations and hospitals. The university sector includes all educational institutions. Lower and upper middle-income groups have been merged. Low-income countries are omitted due to insufficient data. For confidentiality reasons, data are based on published applications and on the publication date.

Source: WIPO Statistics Database, March 2024.

Collaboration between the business and public sectors was relatively high in France.

A13. Share of PCT applications with business and public sector co-applicants for the top 20 origins, 2023

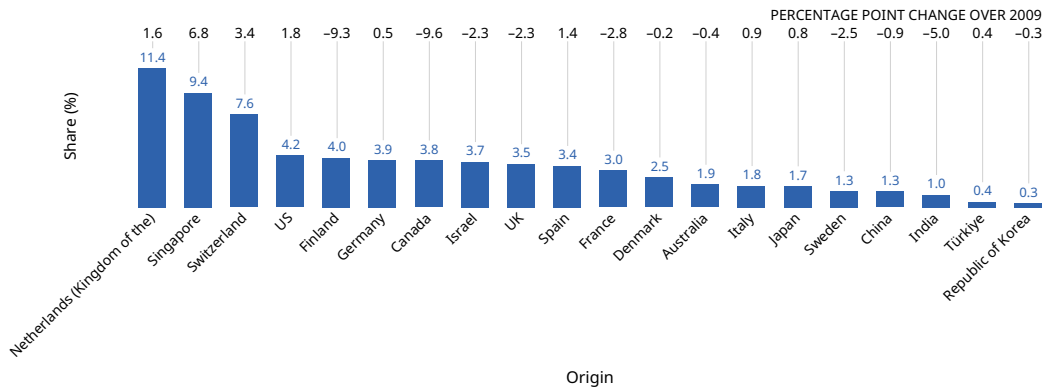


Note: The public sector comprises the university sector and the government and PRO sector. The government and PRO sector includes private non-profit organizations and hospitals. The university sector includes all educational institutions. For confidentiality reasons, data are based on published applications and on the publication date.

Source: WIPO Statistics Database, March 2024.

Applicants from the Kingdom of the Netherlands filed a comparatively large proportion of PCT applications together with foreign co-applicants.

A14. Share of PCT applications with foreign co-applicants for the top 20 origins, 2023



Note: Counts are based on corporate applicants only (excluding individual applicants) and on all applicants named in PCT applications (not only the first named applicant). For confidentiality reasons, data are based on published applications and on the publication date.

Source: WIPO Statistics Database, March 2024.

Top PCT applicants

Huawei Technologies remained by far the top PCT applicant in 2023.

A15. Top 50 business PCT applicants, 2021–2023

Ranking	Change in position from 2022	Applicant	Origin	Published PCT applications		
				2021	2022	2023
1	0	HUAWEI TECHNOLOGIES CO., LTD.	China	6,952	7,689	6,494
2	0	SAMSUNG ELECTRONICS CO., LTD.	Republic of Korea	3,041	4,387	3,924
3	0	QUALCOMM INCORPORATED	US	3,931	3,855	3,410
4	0	MITSUBISHI ELECTRIC CORPORATION	Japan	2,673	2,320	2,152
5	2	BOE TECHNOLOGY GROUP CO., LTD	China	1,980	1,884	1,988
6	3	LG ELECTRONICS INC.	Republic of Korea	2,885	1,793	1,887
7	-2	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	Sweden	1,878	2,158	1,863
8	84	CONTEMPORARY AMPEREX TECHNOLOGY CO., LIMITED	China	271	266	1,799
9	-3	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD.	China	2,209	1,963	1,766
10	-3	NIPPON TELEGRAPH AND TELEPHONE CORPORATION	Japan	1,508	1,884	1,760
11	2	ZTE CORPORATION	China	1,493	1,479	1,738
12	-2	PANASONIC INTELLECTUAL PROPERTY MANAGEMENT CO., LTD.	Japan	1,741	1,776	1,722
13	-2	VIVO MOBILE COMMUNICATION CO., LTD.	China	1,336	1,515	1,631
14	7	BEIJING XIAOMI MOBILE SOFTWARE CO., LTD.	China	473	913	1,603
15	-1	NEC CORPORATION	Japan	1,350	1,428	1,592
16	-4	SONY GROUP CORPORATION	Japan	1,789	1,513	1,433
17	0	LG ENERGY SOLUTION, LTD.	Republic of Korea	548	1,186	1,423
18	-2	MICROSOFT TECHNOLOGY LICENSING, LLC	US	1,303	1,271	1,350
19	-4	ROBERT BOSCH CORPORATION	Germany	1,213	1,290	1,307
20	-1	MURATA MANUFACTURING CO., LTD.	Japan	882	1,043	1,051
21	9	NTT DOCOMO, INC.	Japan	713	764	1,016
22	7	CHANGXIN MEMORY TECHNOLOGIES, INC.	China	281	786	954
23	2	GOOGLE INC.	US	763	830	901
24	3	INTERNATIONAL BUSINESS MACHINES CORPORATION	US	576	816	853
25	-7	FUJIFILM CORPORATION	Japan	1,095	1,181	825
26	-3	DENSO CORPORATION	Japan	915	857	814
27	58	BEIJING ZITIAO NETWORK TECHNOLOGY CO., LTD.	China	1	278	810
28	0	SONY SEMICONDUCTOR SOLUTIONS CORPORATION	Japan	732	789	781
29	-3	APPLE INC.	US	428	822	761
30	42	HONOR DEVICE CO., LTD.	China	97	304	753
31	0	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands (Kingdom of the)	758	737	749
32	21	QINGDAO HAIER AIR CONDITIONER GENERAL CORP., LTD.	China	356	470	706
33	17	SHENZHEN INSTITUTE OF ADVANCED TECHNOLOGY	China	396	486	696
34	-1	TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED	China	511	690	677
35	-11	APPLIED MATERIALS, INC.	US	571	856	638
36	9	KYOCERA CORPORATION	Japan	562	508	632
37	-5	NOKIA TECHNOLOGIES OY	Finland	655	718	628
38	-3	SIEMENS AG	Germany	623	656	589
39	7	BASF SE	Germany	552	507	545
40	8	BAYERISCHE MOTOREN WERKE AG	Germany	374	489	537
41	0	UNIVERSITY OF CALIFORNIA	US	551	552	531
42	-20	HEWLETT-PACKARD DEVELOPMENT COMPANY, L. P.	US	1,485	894	523
43	-3	HITACHI, LTD.	Japan	474	563	515
44	0	HITACHI ASTEMO, LTD.	Japan	410	517	501
45	-7	INTEL CORPORATION	US	209	591	500
46	9	BEIJING BYTEDANCE NETWORK TECHNOLOGY CO., LTD.	China	485	424	492
47	-5	DAIKIN INDUSTRIES, LTD.	Japan	449	536	460
48	-9	LG CHEM, LTD.	Republic of Korea	824	587	444
48	4	NITTO DENKO CORPORATION	Japan	497	473	444
50	121	META PLATFORMS TECHNOLOGIES, LLC	US		164	437

Note: For confidentiality reasons, data are based on published applications and on the publication date.

Source: WIPO Statistics Database, March 2024.

Digital communication technologies accounted for the largest proportion of PCT applications for six of the top 10 applicants.

A16. Share of technology fields for the top 10 business applicants, 2023

Field of technology	Applicant									
	Huawei Tech.	Samsung Electr.	Qualcomm	Mitsubishi Electr.	BOE Tech. Group	LG Electr.	LM Ericsson	CATL	OPPO Mobile Tel. Corp	NIPPON Corp.
Electrical machinery, apparatus, energy	2.7	4.8	0.7	17.8	0.9	4.2	0.8	79.9	3.1	2.0
Audio-visual technology	5.1	10.4	3.3	2.2	23.8	11.0	2.3	0.2	12.6	3.7
Telecommunications	9.5	10.8	13.5	3.3	4.2	6.7	16.0	0.1	10.7	13.4
Digital communication	41.8	29.3	63.7	4.0	2.0	37.5	64.1	0.0	58.0	23.2
Basic communication processes	1.5	0.7	2.4	1.9	0.3	0.4	1.6	0.1	0.3	0.9
Computer technology	22.7	22.5	8.7	9.6	16.2	6.7	11.4	1.6	8.3	25.2
IT methods for management	0.4	0.9	0.0	3.3	0.9	0.5	0.3	0.2	0.1	4.5
Semiconductors	3.7	1.4	1.9	4.5	33.2	4.2	0.2	1.7	0.3	1.5
Optics	3.3	2.9	0.2	2.5	13.0	1.2	0.3	0.2	3.2	8.1
Measurement	3.7	2.8	4.5	7.0	0.9	1.2	1.7	3.8	1.3	6.3
Analysis of biological materials	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1
Control	1.2	0.6	0.8	6.3	0.6	0.4	0.7	0.3	0.3	2.4
Medical technology	0.6	2.0	0.1	1.2	0.6	1.4	0.1	0.1	0.3	3.7
Organic fine chemistry	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.2	0.0	0.0
Biotechnology	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.2
Pharmaceuticals	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0
Macromolecular chemistry, polymers	0.2	0.1	0.0	0.3	0.0	0.1	0.0	0.2	0.0	0.0
Food chemistry	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Basic materials chemistry	0.1	0.2	0.0	0.1	0.5	0.3	0.0	0.4	0.0	0.1
Materials, metallurgy	0.1	0.2	0.0	0.4	0.0	0.1	0.0	0.6	0.1	0.0
Surface technology, coating	0.1	0.4	0.0	0.2	0.2	0.2	0.0	1.3	0.0	0.9
Micro-structural and nano-technology	0.1	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.1
Chemical engineering	0.0	0.3	0.1	0.4	0.6	0.6	0.0	0.7	0.0	0.1
Environmental technology	0.0	0.3	0.0	0.8	0.1	0.2	0.0	0.3	0.0	0.1
Handling	0.1	1.0	0.0	3.9	0.1	1.1	0.1	1.6	0.1	0.1
Machine tools	0.1	0.1	0.0	2.1	0.1	0.1	0.0	1.6	0.0	0.1
Engines, pumps, turbines	0.1	0.4	0.0	3.0	0.0	1.3	0.1	0.2	0.0	0.2
Textile and paper machines	0.0	0.1	0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0
Other special machines	0.1	0.2	0.0	0.5	0.1	0.7	0.0	0.1	0.0	0.1
Thermal processes and apparatus	0.1	2.0	0.0	17.6	0.0	1.8	0.0	0.1	0.0	0.1
Mechanical elements	0.3	0.6	0.0	0.7	0.3	1.3	0.0	0.6	0.7	0.2
Transport	1.9	0.2	0.1	5.0	0.2	1.0	0.2	4.1	0.2	1.1
Furniture, games	0.1	1.6	0.1	0.2	0.1	5.1	0.2	0.0	0.2	0.5
Other consumer goods	0.3	2.8	0.0	0.7	0.1	10.0	0.1	0.0	0.2	0.4
Civil engineering	0.0	0.3	0.0	0.2	0.1	0.5	0.1	0.0	0.0	0.7

Note: NIPPON Corp. is the Nippon Telegraph and Telephone Corporation; CATL is Contemporary Amperex Technology, Limited. For confidentiality reasons, data are based on published applications and on the publication date. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into 35 corresponding technology fields.

Source: WIPO Statistics Database, March 2024.

Since 1993, the University of California has been the top PCT applicant from the university sector.

A17. Top 50 university PCT applicants, 2021–2023

Ranking	Change in position from 2022	Applicant	Origin	Published PCT applications		
				2021	2022	2023
41	0	UNIVERSITY OF CALIFORNIA	US	551	552	531
69	4	SUZHOU UNIVERSITY	China	153	303	332
120	23	BOARD OF REGENTS OF THE UNIVERSITY OF TEXAS SYSTEM	US	177	187	217
125	36	TSINGHUA UNIVERSITY	China	201	174	209
154	-30	LELAND STANFORD JUNIOR UNIVERSITY	US	194	217	180
159	17	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	US	227	161	170
162	15	SEOUL NATIONAL UNIVERSITY	Republic of Korea	110	160	168
203	-26	JOHNS HOPKINS UNIVERSITY	US	129	160	141
207	3	NATIONAL UNIVERSITY OF SINGAPORE	Singapore	163	138	139
225	84	OSAKA UNIVERSITY	Japan	111	95	132
227	-33	KOREA UNIVERSITY	Republic of Korea	138	147	131
230	18	UNIVERSITY OF TOKYO	Japan	150	118	128
232	-4	JIANGSU UNIVERSITY	China	92	125	127
247	48	SOUTHEAST UNIVERSITY	China	86	99	120
247	116	TOHOKU UNIVERSITY	Japan	60	82	120
256	17	SOUTH CHINA UNIVERSITY OF TECHNOLOGY	China	169	110	117
260	15	UNIVERSITY OF MICHIGAN	US	113	109	115
265	-75	HANYANG UNIVERSITY	Republic of Korea	121	149	112
287	-24	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	Republic of Korea	95	112	105
287	8	UNIVERSITY OF FLORIDA	US	110	99	105
297	-105	YONSEI UNIVERSITY	Republic of Korea	122	148	103
298	124	UNIVERSITY OF PITTSBURGH	US	81	71	102
305	-81	JIANGNAN UNIVERSITY	China	121	128	99
311	-69	NANYANG TECHNOLOGICAL UNIVERSITY	Singapore	54	119	97
313	109	JIANGSU UNIVERSITY OF SCIENCE AND TECHNOLOGY	China	33	71	96
330	42	CATHOLIC UNIVERSITY	Republic of Korea	75	80	90
336	-60	UNIVERSITY OF ARIZONA	US	84	108	89
336	7	UNIVERSITY OF PENNSYLVANIA	US	63	87	89
345	-9	HARVARD UNIVERSITY	US	104	88	87
356	22	KYOTO UNIVERSITY	Japan	103	79	85
356	56	PEKING UNIVERSITY	China	95	72	85
365	-16	COLUMBIA UNIVERSITY	US	89	85	83
379	-52	CORNELL UNIVERSITY	US	70	90	80
379	-18	UNIVERSITY OF WASHINGTON	US	63	83	80
386	66	SUN YAT-SEN UNIVERSITY	China	63	67	78
386	-8	UNIVERSITY OF COLORADO	US	66	79	78
394	-90	NORTHWESTERN UNIVERSITY	US	84	96	77
394	336	YALE UNIVERSITY	US	50	40	77
422	-59	DUKE UNIVERSITY	US	84	82	71
431	-46	DALIAN UNIVERSITY OF TECHNOLOGY	China	146	78	70
459	n.a.	GUANGZHOU INSTITUTE OF TECHNOLOGY	China			65
464	147	WISCONSIN ALUMNI RESEARCH FOUNDATION	US	49	48	64
473	49	ARIZONA BOARD OF REGENTS, ACTING FOR AND ON BEHALF OF ARIZONA STATE UNIVERSITY	US	61	57	63
473	25	PURDUE UNIVERSITY	US	1	61	63
481	58	KYUNGPOOK NATIONAL UNIVERSITY	Republic of Korea	54	55	62
481	-145	SHANGHAI JIAOTONG UNIVERISTY	China	87	88	62
489	223	DELFT UNIVERSITY OF TECHNOLOGY	Netherlands (Kingdom of the)	57	41	61
489	133	NATIONAL UNIVERSITY CORPORATION TOKAI NATIONAL HIGHER EDUCATION AND RESEARCH SYSTEM	Japan	76	47	61
489	68	TEL AVIV UNIVERSITY	Israel	37	53	61
498	336	NANJING UNIVERSITY OF POSTS AND TELECOMMUNICATIONS	China	39	35	60
498	66	UNIVERSITY OF MASSACHUSETTS	US	54	52	60

Note: The university sector includes all types of educational institutions. For confidentiality reasons, data are based on published applications and on the publication date.

n.a. indicates not applicable.

Source: WIPO Statistics Database, March 2024.

The Shenzhen Institute of Advanced Technology remained the top PCT applicant for the government and PRO sector in 2023.

A18. Top 30 government and PRO PCT applicants, 2021–2023

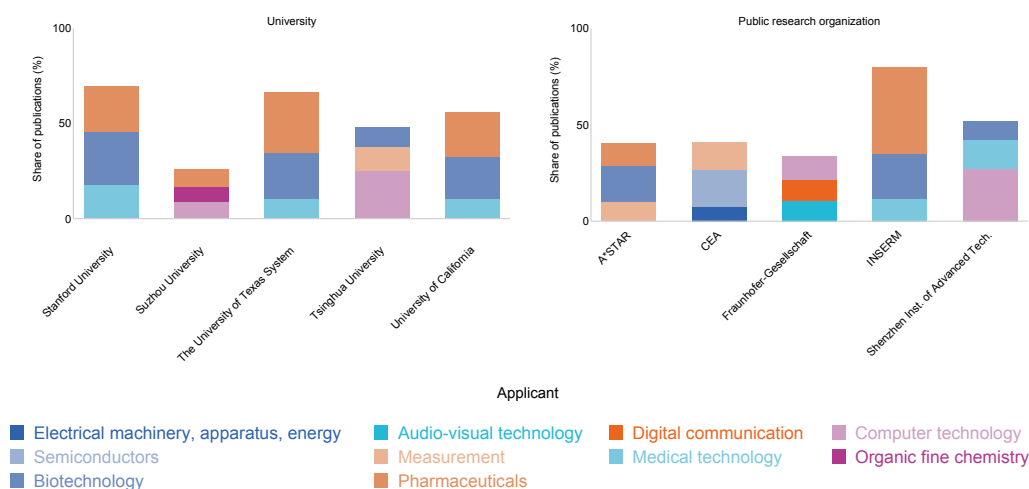
Ranking	Change in position from 2022	Applicant	Origin	Published PCT applications		
				2021	2022	2023
33	17	SHENZHEN INSTITUTE OF ADVANCED TECHNOLOGY	China	396	486	696
103	-43	FRAUNHOFER-GESELLSCHAFT ZUR FÖRDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Germany	343	366	238
135	-5	COMMISSARIAT À L'ÉNERGIE ATOMIQUE ET AUX ÉNERGIES ALTERNATIVES	France	182	209	202
204	16	INSTITUT NATIONAL DE LA SANTÉ ET DE LA RECHERCHE MÉDICALE (INSERM)	France	144	130	140
252	84	AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH	Singapore	104	88	118
265	-23	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	116	119	112
273	17	KOREA ELECTRONICS TECHNOLOGY INSTITUTE	Republic of Korea	74	103	110
313	21	NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY	Japan	87	89	96
367	45	KOREA RESEARCH INSTITUTE OF CHEMICAL TECHNOLOGY	Republic of Korea	48	72	82
373	79	MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH	US	60	67	81
398	-71	U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES	US	66	90	76
401	-29	MAX-PLANCK-GESELLSCHAFT ZUR FÖRDERUNG DER WISSENSCHAFTEN E.V.	Germany	57	80	75
414	8	CONSEJO SUPERIOR DE INVESTIGACIONES CIENTÍFICAS (CSIC)	Spain	72	71	73
431	77	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH	India	35	59	70
532	-66	SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH	US	66	65	56
611	119	SHANGHAI INSTITUTE OF MATERIA MEDICA, CHINESE ACADEMY OF SCIENCES	China	40	40	48
620	-137	RIKEN (THE INSTITUTE OF PHYSICAL AND CHEMICAL RESEARCH)	Japan	49	63	47
694	-121	INSTITUTE OF MICROELECTRONICS OF THE CHINESE ACADEMY OF SCIENCES	China	42	51	42
724	1,116	ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE OF KOREA	Republic of Korea	30	15	40
748	-184	BATTELLE MEMORIAL INSTITUTE	US	47	52	39
784	-146	DEUTSCHES ZENTRUM FÜR LUFT- UND RAUMFAHRT E.V.	Germany	34	46	37
784	-38	NATIONAL INSTITUTE FOR MATERIALS SCIENCE	Japan	28	39	37
844	-98	NATIONAL RESEARCH COUNCIL OF CANADA	Canada	37	39	34
891	-237	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST-NATUURWETENSCHAPPELIJK ONDERZOEK TNO	Netherlands (Kingdom of the)	78	45	32
949	387	KOREA INSTITUTE OF OCEAN SCIENCE & TECHNOLOGY	Republic of Korea	13	21	30
949	-115	KOREA INSTITUTE OF SCIENCE AND TECHNOLOGY	Republic of Korea	35	35	30
1011	388	CHILDREN'S HOSPITAL MEDICAL CENTER	US	27	20	28
1011	829	CHILDREN'S HOSPITAL OF PHILADELPHIA	US	24	15	28
1011	156	FONDAZIONE ISTITUTO ITALIANO DI TECNOLOGIA	Italy	21	24	28
1011	613	INSTITUTE OF MATERIAL TECHNOLOGY AND ENGINEERING, CHINESE ACADEMY OF SCIENCES, ZH	China	21	17	28
1011	156	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	Republic of Korea	35	24	28
1011	-281	SCRIPPS RESEARCH INSTITUTE	US	31	40	28

Note: The government and PRO sector includes private non-profit organizations and hospitals. For confidentiality reasons, data are based on published applications and on the publication date.

Source: WIPO Statistics Database, March 2024.

The two highest shares of PCT applications for the Suzhou University were for the computer technology and pharmaceutical fields.

A19. Share of the top three technology fields for the top five universities and PROs, 2023



Note: A*STAR is the Agency for Science, Technology and Research, CEA is the Commissariat à l'Énergie Atomique et aux Énergies Alternatives, Fraunhofer-Gesellschaft is the Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung, INSERM is the Institut National de la Santé et de la Recherche Médicale and Shenzhen Inst. of Advanced Tech. is the Shenzhen Institute of Advanced Technology. PROs include private non-profit organizations and hospitals. For confidentiality reasons, data are based on published applications and on the publication date. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into 35 corresponding technology fields.

Source: WIPO Statistics Database, March 2024.

PCT applications by technology field

Electrical machinery and transport both recorded fast growth rates in 2023.

A20. PCT applications by technology field, 2019–2023

Technical field	Publication year					2023 share (%)	Change from 2022 (%)
	2019	2020	2021	2022	2023		
I Electrical engineering							
1 Electrical machinery, apparatus, energy	17,194	17,367	18,230	19,361	21,064	7.9	8.8
2 Audio-visual technology	8,900	11,534	10,839	10,157	9,501	3.6	-6.5
3 Telecommunications	5,861	6,445	6,376	6,429	6,301	2.4	-2.0
4 Digital communication	19,050	22,079	23,609	25,666	25,124	9.4	-2.1
5 Basic communication processes	1,554	1,610	1,647	1,698	1,697	0.6	-0.1
6 Computer technology	21,496	24,344	26,109	28,233	27,280	10.2	-3.4
7 IT methods for management	5,747	5,891	5,298	5,374	5,038	1.9	-6.3
8 Semiconductors	8,048	8,862	8,346	8,914	9,414	3.5	5.6
II Instruments							
9 Optics	8,018	8,371	7,920	7,399	7,123	2.7	-3.7
10 Measurement	11,451	12,704	12,158	12,648	11,828	4.4	-6.5
11 Analysis of biological materials	1,917	2,062	2,154	2,250	1,990	0.7	-11.6
12 Control	5,363	5,457	5,181	5,254	4,534	1.7	-13.7
13 Medical technology	16,916	17,501	18,553	19,020	17,870	6.7	-6.0
III Chemistry							
14 Organic fine chemistry	5,888	6,351	6,155	6,496	6,382	2.4	-1.8
15 Biotechnology	7,404	7,985	8,747	9,336	9,690	3.6	3.8
16 Pharmaceuticals	9,786	10,767	12,160	12,561	12,425	4.7	-1.1
17 Macromolecular chemistry, polymers	4,425	4,656	4,479	4,655	4,542	1.7	-2.4
18 Food chemistry	2,215	2,383	2,469	2,579	2,519	0.9	-2.3
19 Basic materials chemistry	5,589	5,712	5,484	5,552	5,371	2.0	-3.3
20 Materials, metallurgy	4,417	4,685	4,314	4,636	4,866	1.8	5.0
21 Surface technology, coating	3,852	4,014	3,834	3,981	4,019	1.5	1.0
22 Micro-structural and nano-technology	390	456	440	424	388	0.1	-8.5
23 Chemical engineering	5,074	5,285	5,231	5,508	5,174	1.9	-6.1
24 Environmental technology	2,705	3,020	2,771	2,841	2,706	1.0	-4.8
IV Mechanical engineering							
25 Handling	5,954	6,413	6,258	6,579	6,091	2.3	-7.4

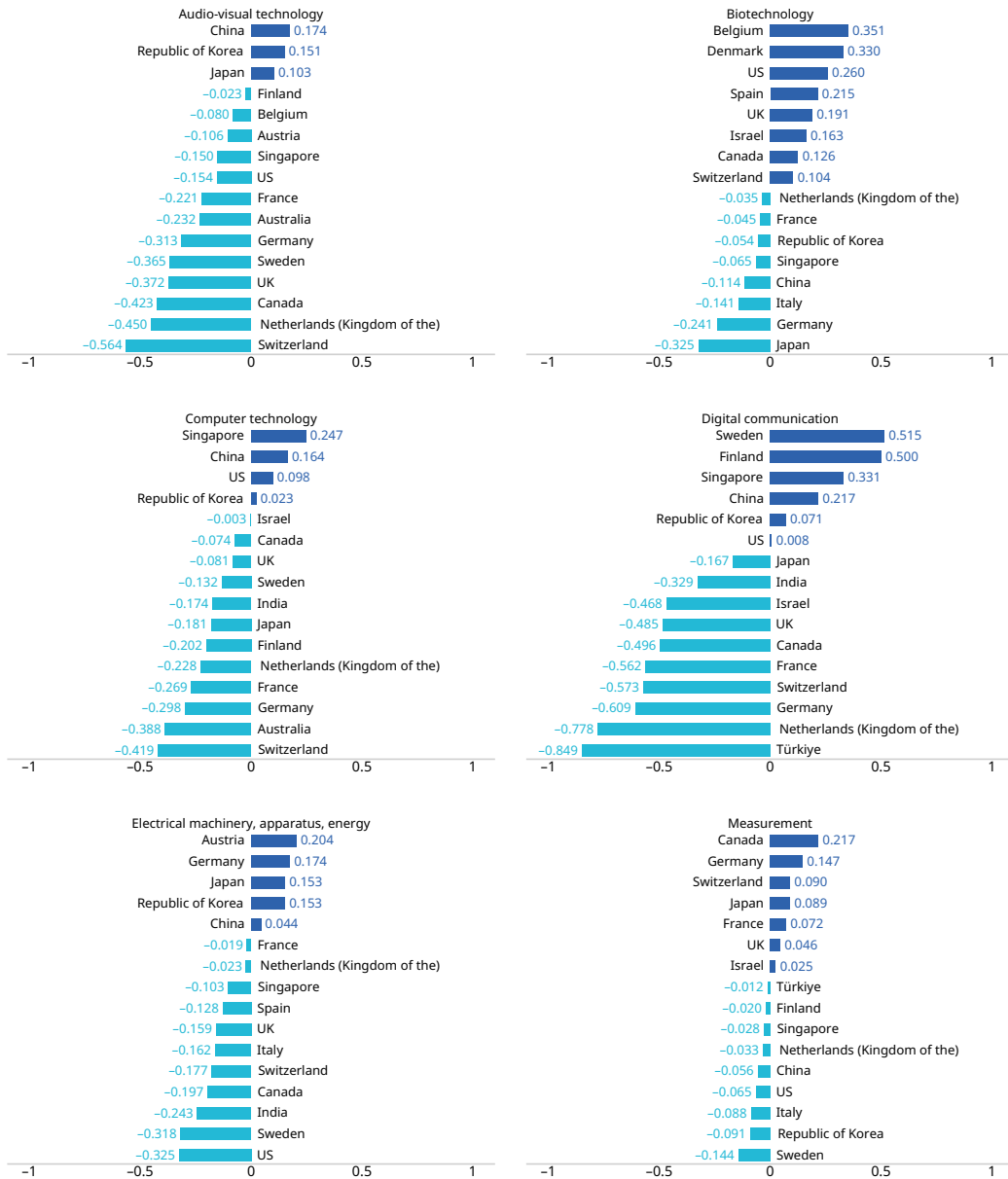
	Technical field	Publication year					2023 share (%)	Change from 2022 (%)
		2019	2020	2021	2022	2023		
26	Machine tools	4,300	4,315	4,308	4,283	3,908	1.5	-8.8
27	Engines, pumps, turbines	5,366	5,123	4,443	4,376	4,175	1.6	-4.6
28	Textile and paper machines	2,769	2,952	2,623	2,425	2,192	0.8	-9.6
29	Other special machines	7,236	7,483	7,232	7,278	6,929	2.6	-4.8
30	Thermal processes and apparatus	4,085	4,306	3,928	4,037	4,206	1.6	4.2
31	Mechanical elements	5,952	5,847	5,162	5,048	5,120	1.9	1.4
32	Transport	11,227	11,290	10,118	10,061	10,837	4.1	7.7
V	Other fields							
33	Furniture, games	4,625	4,718	4,491	4,932	4,548	1.7	-7.8
34	Other consumer goods	5,445	6,045	5,842	6,338	6,159	2.3	-2.8
35	Civil engineering	6,387	6,502	6,319	5,941	5,442	2.0	-8.4

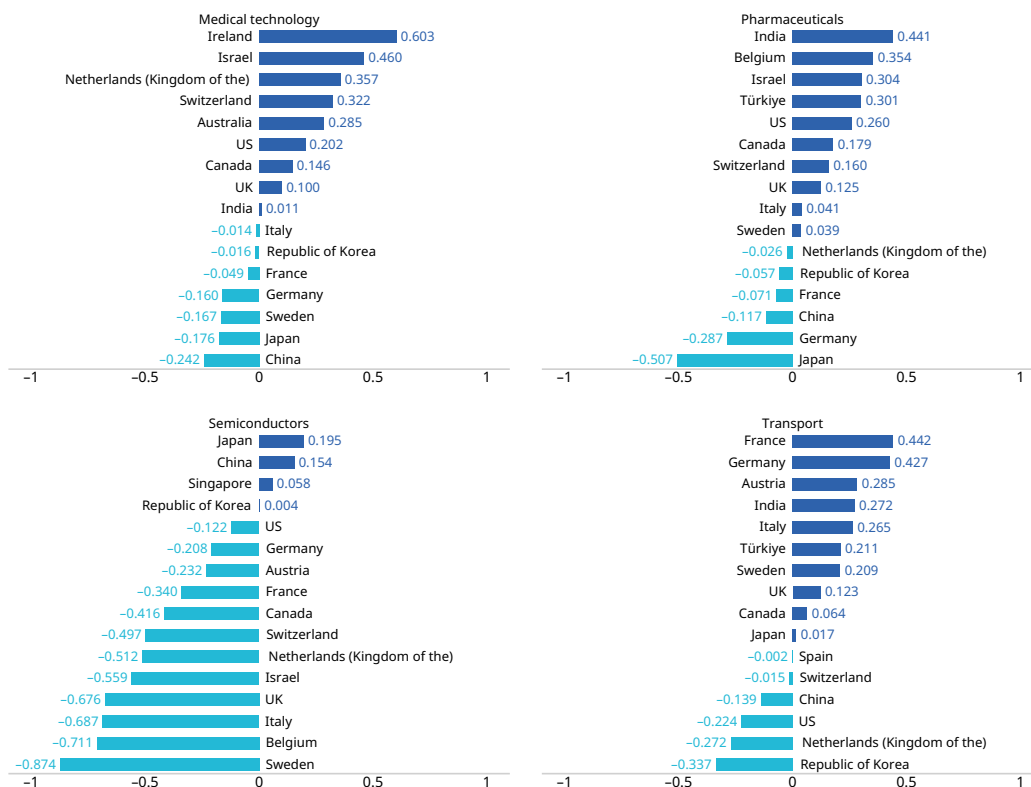
Note: For confidentiality reasons, data are based on published applications and on the publication date. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into 35 corresponding technology fields.

Source: WIPO Statistics Database, March 2024.

A large proportion of PCT filings from Finland and Sweden related to digital communication.

A21. Relative specialization index for the top 10 technology fields, 2023





Note: This index corrects for the effects of country size and focuses on concentration in specific technology fields; it captures whether applicants in a country tend to have a lower or a higher propensity to file in certain technology fields. It is calculated using the following formula:

$$RSI = \text{Log} \left(\frac{F_{cr} \sum F_{cr}}{\sum F_c \sum F_r} \right)$$

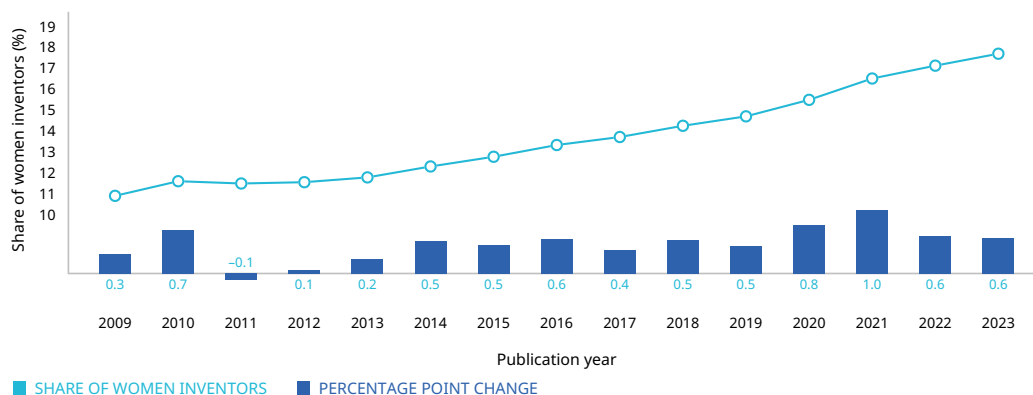
where F_c and F_r denote applications from country c and in a technology field r . A positive value for a technology indicates that a country has a relatively high share of PCT filings related to that technology field. For confidentiality reasons, data are based on published applications and on the publication date. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into 35 corresponding technology fields.

Source: WIPO Statistics Database, March 2024.

Participation of women inventors in PCT applications

In 2023, only 17.7% of inventors were women.

A22. Share of women among listed inventors in PCT applications, 2009–2023

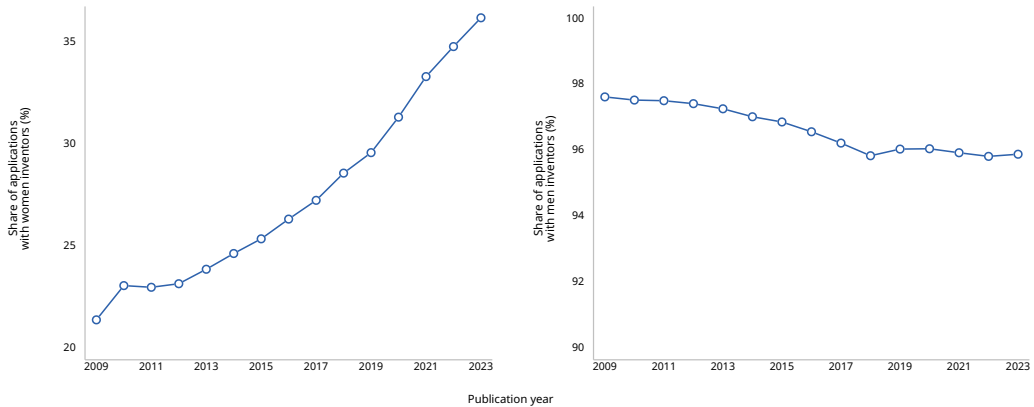


Note: Due to alterations in methodology, data may have changed compared to past reporting. For further details on methodology, refer to www.wipo.int/econ_stat/en/economics.

Source: WIPO Statistics Database, March 2024.

In 2023, about 96% of all PCT applications listed at least one man as inventor, whereas only 36.2% listed at least one woman as inventor.

A23. Share of PCT applications with at least one woman as inventor and with at least one man as inventor, 2009–2023

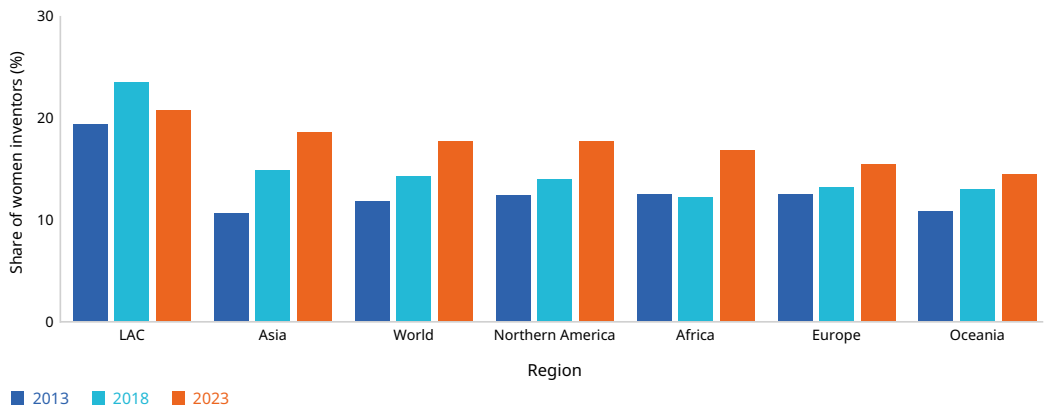


Note: Due to alterations in methodology, data may have changed compared to past reporting. For further details on methodology, refer to www.wipo.int/econ_stat/en/economics.

Source: WIPO Statistics Database, March 2024.

The share of PCT applications with women as inventors has grown in every region over the past decade.

A24. Share of women among listed inventors in PCT applications by geographical region, 2013, 2018 and 2023

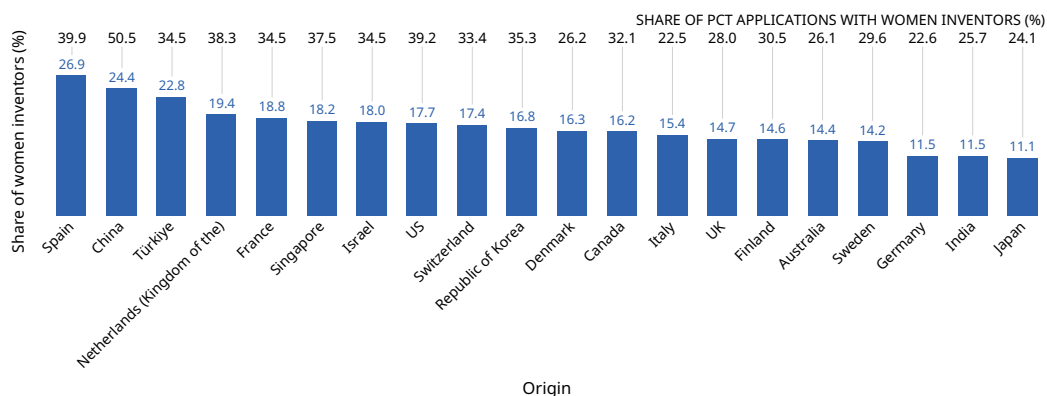


Note: LAC is Latin America and the Caribbean. Due to alterations in methodology, data may have changed compared to past reporting. For further details on methodology, refer to www.wipo.int/econ_stat/en/economics.

Source: WIPO Statistics Database, March 2024.

Almost 27% of inventors listed in PCT applications from Spain were women.

A25. Share of women among listed inventors and share of PCT applications with at least one woman as inventor for the top 20 origins, 2023



Note: Data are based on published applications and on the publication date. For further details on methodology, refer to www.wipo.int/econ_stat/en/economics.

Source: WIPO Statistics Database, March 2024.

Gender parity among inventors has not been achieved in any technological field or geographical region during the period 2021–2023.

A26. Share of women among listed inventors in PCT applications by geographical region and technology field, 2021–2023

Field of technology	Region						
	Africa	Asia	Europe	Latin America and the Caribbean	North America	Oceania	World
Electrical machinery, apparatus, energy	6.7	14.9	7.9	6.1	11.1	13.9	13.0
Audio-visual technology		16.1	7.3	7.4	13.5	9.7	14.8
Telecommunications	5.3	15.3	9.0	9.5	13.1	10.5	13.8
Digital communication	0.0	22.8	12.4	0.0	16.3	10.8	19.4
Basic communication processes		12.3	8.2		9.3	8.0	10.8
Computer technology	20.6	18.6	12.3	8.0	15.8	13.2	16.9
IT methods for management	17.6	19.6	13.3	10.2	18.2	14.8	18.4
Semiconductors		15.8	11.7		13.2	15.7	15.0
Optics		14.9	10.7	15.4	14.2	3.9	14.1
Measurement	17.6	16.1	9.9	14.0	14.3	8.1	14.2
Analysis of biological materials	45.5	28.8	28.3	41.5	28.2	25.4	28.5
Control	9.5	13.6	8.8	17.6	11.6	7.3	12.0
Medical technology	35.0	19.3	16.9	22.5	17.4	14.0	17.9
Organic fine chemistry	18.2	24.0	31.2	40.0	23.8	25.8	25.7
Biotechnology	38.8	30.2	35.0	41.5	29.7	27.9	31.0
Pharmaceuticals	34.8	29.5	35.0	44.7	27.2	26.2	29.8
Macromolecular chemistry, polymers	17.6	19.2	23.8	33.5	20.9	19.4	20.6
Food chemistry		30.9	35.6	42.4	31.4	28.4	32.4
Basic materials chemistry	22.3	19.0	26.8	29.1	22.6	10.9	22.1
Materials, metallurgy	10.0	15.4	17.0	17.5	16.3	17.4	15.9
Surface technology, coating	6.7	14.9	15.2	15.2	14.6	18.9	14.9
Micro-structural and nano-technology		23.0	14.2	29.3	18.7	19.5	19.9
Chemical engineering	12.5	17.9	15.4	17.0	16.4	10.6	16.7
Environmental technology	4.5	16.9	13.3	10.1	15.4	16.4	15.7
Handling	4.0	13.7	7.5	13.2	9.7	7.0	10.8
Machine tools		12.2	5.2	6.0	10.6	10.7	10.0
Engines, pumps, turbines	16.7	13.2	6.3	5.1	7.2	6.2	9.7
Textile and paper machines		18.0	16.9	23.2	19.0	29.0	18.0
Other special machines	8.2	16.6	13.3	14.6	14.1	14.4	15.0
Thermal processes and apparatus	13.8	15.1	8.6	7.4	9.1	4.6	13.0
Mechanical elements	5.3	11.8	5.0	7.7	8.4	4.8	8.9
Transport	6.5	13.2	6.5	6.6	8.7	5.1	10.0
Furniture, games	0.0	17.0	9.0	14.1	15.2	15.0	14.8
Other consumer goods	18.2	16.0	14.3	27.0	18.0	13.0	15.9
Civil engineering	0.0	15.6	7.0	7.9	9.8	4.1	11.4

Note: This table shows the share of women inventors for every region and each technical field in which at least 10 inventors are listed. For further details on methodology, refer to www.wipo.int/econ_stat/en/economics. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into 35 corresponding technology fields.

Source: WIPO Statistics Database, March 2024.

Women accounted for 42.2% of all inventors listed in PCT applications from applicants residing in France and active in the field of organic fine chemistry.

A27. Share of women among listed inventors in PCT applications for the top 10 origins by technology field, 2023

Field of technology	Origin									
	China	US	Japan	Republic of Korea	Germany	France	UK	Switzerland	Sweden	Netherlands (Kingdom of the)
Electrical machinery, apparatus, energy	22.3	11.1	8.0	13.0	6.2	10.4	8.5	9.3	10.1	12.3
Audio-visual technology	23.3	13.8	8.7	14.3	4.6	9.0	8.1	7.8	13.0	12.0
Telecommunications	22.2	13.2	8.3	11.9	4.7	11.8	4.4	7.8	10.5	10.1
Digital communication	27.5	16.4	20.0	14.9	8.3	9.3	8.2	10.0	15.6	12.8
Basic communication processes	19.8	9.5	5.5	9.3	3.9	11.5	14.0	14.3	5.5	0.0
Computer technology	22.9	15.9	10.6	15.3	12.1	12.9	11.2	13.6	12.5	14.9
IT methods for management	25.7	18.4	13.9	22.4	14.3	16.3	14.8	14.6	6.4	14.9
Semiconductors	23.7	13.2	9.1	13.2	9.9	16.8	18.1	4.4	7.7	16.2
Optics	22.8	14.4	8.9	13.5	8.4	13.3	8.5	11.8	4.9	12.3
Measurement	23.5	14.2	8.9	11.8	7.6	12.6	10.6	7.0	10.1	14.6
Analysis of biological materials	36.3	28.2	19.6	26.0	24.0	30.2	21.0	28.4	19.0	31.7
Control	21.7	11.5	8.7	12.2	8.2	8.9	9.9	10.0	8.0	13.4
Medical technology	25.2	17.4	14.7	16.4	14.9	15.3	16.2	13.4	21.2	19.2
Organic fine chemistry	26.8	23.6	16.4	28.5	26.2	42.2	22.7	26.7	26.8	35.5
Biotechnology	34.3	29.8	19.8	30.4	32.2	38.8	29.8	33.9	28.1	33.6
Pharmaceuticals	31.9	27.1	19.4	32.4	31.0	40.0	28.6	32.3	31.7	30.8
Macromolecular chemistry, polymers	26.5	20.6	14.9	20.5	22.5	24.9	24.9	19.5	13.0	22.8
Food chemistry	36.4	31.5	24.6	33.5	26.2	39.0	32.0	39.5	37.3	35.9
Basic materials chemistry	27.7	22.4	14.0	20.5	26.1	29.4	22.0	26.6	18.6	29.4
Materials, metallurgy	23.8	16.4	9.4	13.5	13.3	22.3	18.2	15.4	12.2	17.4
Surface technology, coating	23.1	14.7	12.0	11.1	12.2	20.2	15.9	12.8	8.5	18.3
Micro-structural and nano-technology	28.5	19.1	12.5	17.8	10.8	15.8	0.0	28.6		15.0
Chemical engineering	24.6	16.4	11.0	14.6	11.8	19.7	14.6	15.1	11.1	18.7
Environmental technology	24.2	15.6	9.5	11.1	7.8	16.4	16.9	10.6	5.0	19.8
Handling	20.8	9.7	9.6	10.7	5.9	7.8	8.4	10.0	5.6	11.4
Machine tools	20.7	10.9	6.0	8.6	4.0	9.7	5.0	6.5	6.5	6.9
Engines, pumps, turbines	21.9	7.4	5.2	10.5	5.5	10.2	5.2	9.0	3.4	8.3
Textile and paper machines	27.8	19.0	12.9	15.8	13.7	26.2	19.2	16.3	14.5	23.1
Other special machines	23.4	14.0	11.2	17.0	11.5	16.7	10.9	16.8	5.4	17.7
Thermal processes and apparatus	22.0	9.1	8.0	10.1	9.5	10.3	3.9	9.0	5.0	13.6
Mechanical elements	19.4	8.5	6.1	9.7	4.7	7.0	3.3	5.0	3.0	6.7
Transport	20.7	8.7	7.2	9.4	4.8	9.8	6.9	5.3	7.8	8.7
Furniture, games	20.7	15.3	10.7	14.9	7.9	14.5	8.3	10.1	9.8	13.5
Other consumer goods	20.7	18.2	9.4	12.8	12.1	22.9	13.7	10.6	13.1	20.1
Civil engineering	21.0	9.9	6.5	11.7	5.6	12.1	4.2	6.9	6.3	11.1

Note: For further details on methodology, refer to www.wipo.int/econ_stat/en/economics. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into 35 corresponding technology fields.

Source: WIPO Statistics Database, March 2024.

Top geographical clusters of inventors in PCT applications

Tokyo-Yokohama remained the largest cluster of PCT applications during the period 2019–2023.

A28. Top 50 PCT clusters, 2019–2023

Ranking	Change in position from 2018–2022	Cluster	Origin	PCT applications	Share of total PCT applications (%)	Change from 2018–2022 (%)
1	0	Tokyo-Yokohama	Japan	134,769	10.5	0.7
2	0	Shenzhen-Hong Kong-Guangzhou	China / China, Hong Kong SAR	116,411	9.0	0.5
3	0	Seoul	Republic of Korea	67,082	5.2	5.7
4	0	San Jose-San Francisco, CA	US	49,299	3.8	3.9
5	0	Beijing	China	42,490	3.3	11.7
6	1	Shanghai-Suzhou	China	38,699	3.0	13.8
7	-1	Osaka-Kobe-Kyoto	Japan	38,478	3.0	1.6
8	0	San Diego, CA	US	24,555	1.9	5.6
9	0	Boston-Cambridge, MA	US	18,973	1.5	4.3
10	0	Nagoya	Japan	17,184	1.3	-3.7
11	0	Paris	France	15,648	1.2	2.5
12	1	Daejeon	Republic of Korea	14,021	1.1	9.8
13	-1	New York City, NY	US	13,945	1.1	0.7
14	0	Los Angeles, CA	US	11,847	0.9	2.2
15	1	Hangzhou	China	11,225	0.9	6.1
16	-1	Seattle, WA	US	11,165	0.9	-2.8
17	0	Munich	Germany	10,697	0.8	3.1
18	0	Stuttgart	Germany	9,346	0.7	0.4
19	4	Qingdao	China	8,442	0.7	16.0
20	-1	Houston, TX	US	8,066	0.6	-4.8
21	-1	Eindhoven	Netherlands (Kingdom of the)	7,893	0.6	-1.2
22	2	Nanjing	China	7,857	0.6	11.8
23	2	Wuhan	China	7,403	0.6	10.2
24	-2	Tel Aviv-Jerusalem	Israel	7,286	0.6	-1.4
25	-4	Cologne	Germany	7,024	0.5	-5.9
26	0	Minneapolis, MN	US	6,633	0.5	0.2
27	1	London	UK	6,558	0.5	7.8
28	-1	Stockholm	Sweden	6,044	0.5	-0.7
29	1	Washington, DC-Baltimore, MD	US	5,897	0.5	6.7
30	1	Philadelphia, PA	US	5,669	0.4	4.2
31	-2	Chicago, IL	US	5,571	0.4	-3.6
32	0	Frankfurt am Main	Germany	5,499	0.4	1.9
33	0	Singapore	Singapore / Malaysia	5,234	0.4	7.4
34	1	Bengaluru	India	4,654	0.4	6.9
35	1	Amsterdam-Rotterdam	Netherlands (Kingdom of the)	4,322	0.3	0.9
36	1	Heidelberg-Mannheim	Germany	3,929	0.3	-0.2
37	1	Taipei-Hsinchu	Taiwan, Province of China	3,887	0.3	-0.6
38	1	Zürich	Switzerland	3,862	0.3	1.9
39	15	Hefei	China	3,848	0.3	51.0
40	-6	Portland, OR	US	3,643	0.3	-23.5
41	-1	Berlin	Germany	3,483	0.3	-3.6
42	0	Dallas, TX	US	3,459	0.3	-0.3
43	-2	Nuremberg-Erlangen	Germany	3,397	0.3	-5.0
44	2	Denver, CO	US	3,264	0.3	5.8
45	-1	Copenhagen	Denmark	3,125	0.2	-0.8
46	-1	Cambridge	UK	3,124	0.2	-0.4
47	4	Macau-Zhuhai	China / China, Macao SAR	3,081	0.2	9.2
48	0	Raleigh, NC	US	3,046	0.2	-0.2
49	-2	Brussels-Antwerp	Belgium	3,045	0.2	-1.2
50	-7	Cincinnati, OH	US	3,029	0.2	-12.4

Note: For further details on methodology, refer to the Special theme of the 2020 edition of the *PCT Yearly Review*. Data presented in previous years may vary slightly due to constant improvements in geocoding.

Source: WIPO Statistics Database, March 2024.

Over one-quarter of PCT applications from Beijing related to digital communication in 2019–2023.

A29. Top 15 technology fields for the top 20 PCT clusters, 2019–2023

Rank	Cluster	Field of technology																
		Computer technology	Digital communication	Electrical machinery, apparatus, energy	Audio-visual technology	Medical technology	Measurement	Semiconductors	Pharmaceuticals	Optics	Transport	Telecommunications	Biotechnology	IT methods for management	Organic fine chemistry	Control	All other fields	
1	Tokyo-Yokohama	9.4	5.5	8.1	5.3	5.2	5.4	4.8	1.2	5.1	4.6	2.2	1.7	3.4	1.8	3.1	33.3	
2	Shenzhen-Hong Kong-Guangzhou	19.6	25.8	5.7	7.9	2.9	3.6	2.6	1.1	3.6	2.1	5.9	1.1	1.8	0.5	2.0	13.4	
3	Seoul	11.1	13.1	6.2	7.3	6.7	2.7	4.5	4.0	2.9	2.0	5.1	3.1	3.7	2.2	1.2	24.2	
4	San Jose-San Francisco, CA	22.6	11.4	4.0	5.2	7.4	4.5	5.8	5.6	4.2	1.8	2.3	6.2	3.2	1.7	1.6	12.6	
5	Beijing	17.6	26.7	3.0	8.8	2.7	3.7	8.4	2.5	4.0	1.5	2.6	2.3	2.3	1.3	1.6	11.0	
6	Shanghai-Suzhou	11.5	8.6	6.8	2.8	7.0	4.5	3.7	7.4	2.4	3.1	1.6	4.7	1.5	5.4	1.8	27.1	
7	Osaka-Kobe-Kyoto	3.7	1.8	13.4	4.3	5.0	6.7	6.6	2.5	4.3	2.1	2.5	2.2	1.3	1.9	2.6	39.1	
8	San Diego, CA	7.0	45.5	1.1	4.5	4.1	3.6	1.5	5.9	1.0	0.6	8.7	5.0	0.5	2.1	1.0	7.8	
9	Boston-Cambridge, MA	6.8	1.9	3.1	1.9	11.8	4.3	1.5	21.0	1.9	1.0	1.2	17.1	1.0	5.7	1.3	18.7	
10	Nagoya	2.7	2.5	20.3	6.1	3.5	6.6	3.1	0.7	1.9	11.7	0.9	1.1	0.7	0.7	3.4	34.5	
11	Paris	6.2	6.5	6.7	1.6	4.4	5.2	0.7	4.0	2.3	12.4	1.8	3.4	1.0	5.5	1.7	36.5	
12	Daejeon	2.9	1.4	30.0	1.7	2.4	5.6	4.4	3.1	2.5	2.2	0.8	2.6	0.9	4.9	0.6	33.7	
13	New York City, NY	13.7	4.3	1.9	1.1	9.8	3.2	1.9	16.2	1.2	0.8	1.5	8.1	5.1	8.4	1.4	21.4	
14	Los Angeles, CA	12.1	3.9	3.8	8.4	20.8	3.4	1.0	7.9	3.3	3.1	1.7	4.8	2.9	1.5	1.6	19.8	
15	Hangzhou	27.2	9.3	3.7	4.6	6.2	4.7	1.7	3.3	1.3	2.4	1.6	2.8	9.8	2.0	2.2	16.8	
16	Seattle, WA	43.1	12.7	1.9	3.9	3.5	2.1	0.9	4.6	2.6	0.9	2.5	4.4	6.1	0.8	1.0	8.9	
17	Munich	10.1	13.2	8.8	2.9	3.2	5.9	1.4	2.1	1.8	13.3	3.3	1.7	1.5	0.8	3.7	26.2	
18	Stuttgart	5.9	3.6	14.6	1.8	2.9	11.2	1.4	0.8	2.0	13.6	0.9	1.1	0.6	0.2	3.3	36.0	
19	Qingdao	7.1	4.7	2.7	3.6	1.0	4.0	0.6	0.6	5.1	2.4	0.8	0.8	1.4	0.7	1.5	63.0	
20	Houston, TX	7.2	1.0	1.7	1.1	3.8	8.1	0.4	4.3	0.6	1.1	0.5	3.3	1.0	3.4	1.0	61.5	

Note: For further details on methodology, refer to the Special theme of the 2020 edition of the *PCT Yearly Review*. WIPO's IPC technology concordance table (available at: www.wipo.int/ipstats) was used to convert IPC symbols into 35 corresponding technology fields.

Source: WIPO Statistics Database, March 2024.

Statistical table

A30. PCT applications by office and origin, 2022–2023

Name	PCT applications filed in 2023 (international phase)		PCT applications filed in 2022 (international phase)	
	At receiving office	By country of origin	At receiving office	By country of origin
African Intellectual Property Organization	4	n.a.	3	n.a.
African Regional Intellectual Property Organization	1	n.a.	0	n.a.
Albania	0	10	2	7
Algeria	11	13	17	18
Andorra	n.a.	5	n.a.	3
Angola (c)	0	0	0	0
Antigua and Barbuda	0	0	0	24
Argentina	n.a.	25	n.a.	30
Armenia	0	4	0	9
Australia	1,377	1,502	1,601	1,752
Austria	444	1,552	458	1,422
Azerbaijan	6	11	5	5
Bahamas	n.a.	3	n.a.	4
Bahrain	0	9	0	7
Bangladesh	n.a.	1	n.a.	0
Barbados (c)	0	81	0	38
Belarus	10	16	10	14
Belgium	0	1,342	0	1,324
Belize	0	0	0	1
Benin (d)	0	0	0	1
Bermuda	n.a.	22	n.a.	14
Bhutan	n.a.	1	n.a.	0
Bolivia (Plurinational State of)	n.a.	0	n.a.	1
Bosnia and Herzegovina	0	1	4	4
Botswana	0	0	0	0
Brazil	509	517	540	547
Brunei Darussalam	0	0	0	0
Bulgaria	31	43	21	36
Burkina Faso (d)	0	1	0	0
Cabo Verde	0	0	0	0
Cambodia	0	0	0	0
Cameroon (d)	0	5	0	4
Canada	1,782	2,390	1,955	2,577
Central African Republic (d)	0	0	0	0
Chad (d)	0	0	0	0
Chile	146	189	150	184
China	73,812	69,610	74,409	70,017
Colombia	26	114	15	116
Comoros (d)	0	0	0	1
Congo (d)	0	0	0	0
Costa Rica	1	5	0	3
Côte d'Ivoire (d)	0	0	0	1
Croatia	19	48	10	19
Cuba	5	5	12	12
Curaçao	n.a.	0	n.a.	2
Cyprus	0	67	2	48
Czech Republic	140	184	187	249
Democratic People's Republic of Korea	1	1	3	4
Democratic Republic of the Congo	n.a.	0	n.a.	1
Denmark	336	1,534	316	1,497
Djibouti	0	0	0	0
Dominica	0	0	0	0
Dominican Republic	3	3	3	6
Ecuador	1	11	1	6
Egypt	35	41	47	60
El Salvador	0	0	0	0
Equatorial Guinea (d)	0	0	0	0
Estonia	0	32	1	32
Eswatini (a)	0	0	0	0
Eurasian Patent Organization	10	n.a.	12	n.a.
European Patent Office	38,636	n.a.	38,761	n.a.
Finland	756	1,542	892	1,768

Name	PCT applications filed in 2023 (international phase)		PCT applications filed in 2022 (international phase)	
	At receiving office	By country of origin	At receiving office	By country of origin
France	1,995	7,916	2,421	7,761
Gabon (d)	0	1	0	4
Gambia (a)	0	0	0	0
Georgia	5	6	7	8
Germany	1,403	16,916	1,414	17,469
Ghana	0	2	0	0
Greece	64	118	75	135
Grenada	0	0	0	0
Guatemala	0	1	0	1
Guinea (d)	0	0	0	1
Guinea-Bissau (d)	0	0	0	0
Holy See	n.a.	4	n.a.	1
Honduras	0	0	0	1
Hungary	117	157	109	137
Iceland	7	43	9	39
India	1,221	3,791	1,135	2,622
Indonesia	12	149	4	9
International Bureau	14,171	n.a.	13,700	n.a.
Iran (Islamic Republic of)	34	362	38	354
Iraq	3	3	1	1
Ireland	9	781	9	784
Israel	1,341	1,908	1,416	1,967
Italy	336	3,102	403	3,317
Jamaica	1	4	1	2
Japan	47,373	48,879	48,719	50,351
Jordan	13	19	18	25
Kazakhstan	22	23	20	25
Kenya	16	22	4	5
Kuwait	0	1	0	4
Kyrgyzstan	0	0	0	0
Lao People's Democratic Republic (c)	0	0	0	1
Latvia	18	31	15	44
Lebanon	n.a.	2	n.a.	8
Lesotho	0	0	0	0
Liberia	0	1	0	2
Libya	1	2	0	3
Liechtenstein (b)	0	176	0	194
Lithuania	0	43	0	38
Luxembourg	0	303	0	284
Madagascar (c)	0	1	0	1
Malawi	0	0	0	0
Malaysia	115	131	144	152
Mali (d)	0	0	0	0
Malta	0	33	0	46
Marshall Islands	n.a.	3	n.a.	1
Mauritania (d)	0	0	0	0
Mauritius	0	39	0	21
Mexico	76	155	138	190
Micronesia (Federated States of)	n.a.	1	n.a.	1
Monaco	0	13	0	15
Mongolia	0	0	0	3
Montenegro (c)	0	11	0	4
Morocco	44	47	35	39
Mozambique (a)	0	0	0	0
Namibia (a)	0	7	0	4
Nepal	n.a.	1	n.a.	0
Netherlands (Kingdom of the)	703	4,258	778	4,025
New Zealand	152	293	180	319
Nicaragua	0	0	0	0
Niger (d)	0	0	0	0
Nigeria (c)	0	4	0	4
North Macedonia	4	6	1	4
Norway	295	686	320	793
Oman	2	3	7	8
Pakistan	n.a.	5	n.a.	2
Palau	n.a.	1	n.a.	0

Name	PCT applications filed in 2023 (international phase)		PCT applications filed in 2022 (international phase)	
	At receiving office	By country of origin	At receiving office	By country of origin
Panama	2	7	1	9
Papua New Guinea	0	0	0	0
Peru	25	27	30	31
Philippines	5	8	27	29
Poland	181	384	170	370
Portugal	46	236	34	218
Qatar	17	20	25	28
Republic of Korea	22,165	22,288	21,916	22,023
Republic of Moldova	4	6	5	4
Romania	29	43	29	38
Russian Federation	693	678	823	756
Rwanda	0	0	0	0
Saint Kitts and Nevis	0	4	0	0
Saint Lucia (c)	0	1	0	1
Saint Vincent and the Grenadines (c)	0	0	0	0
Samoa	0	0	0	3
San Marino	0	10	0	8
Sao Tome and Principe (c)	0	0	0	0
Saudi Arabia	25	382	23	471
Senegal (d)	0	2	0	0
Serbia	21	36	21	28
Seychelles	1	6	0	1
Sierra Leone (a)	0	0	0	0
Singapore	872	1,742	949	1,835
Slovakia	37	60	22	44
Slovenia	31	98	41	116
South Africa	79	194	72	215
Spain	812	1,457	877	1,476
Sri Lanka (c)	0	9	0	20
Sudan	0	1	2	2
Sweden	1,324	4,323	1,268	4,481
Switzerland	45	5,382	45	5,446
Syrian Arab Republic	0	0	2	2
Tajikistan	0	0	0	0
Thailand	61	149	58	162
Togo (d)	0	0	0	0
Trinidad and Tobago	0	0	2	4
Tunisia	4	8	3	7
Türkiye	2,097	1,921	1,759	1,771
Turkmenistan	0	5	0	1
Uganda	1	2	0	2
Ukraine	66	92	73	89
United Arab Emirates (c)	0	141	0	113
United Kingdom	3,349	5,586	3,363	5,716
United Republic of Tanzania (a)	0	0	0	0
United States of America	52,940	55,678	55,422	58,823
Uruguay	n.a.	11	n.a.	6
Uzbekistan	1	2	1	1
Viet Nam	12	19	11	26
Zambia	0	0	0	0
Zimbabwe	0	4	0	2
Others	0	174	0	157
Total	272,600	272,600	277,632	277,632

Note: Data for 2023 are WIPO estimates.

(a) The African Regional Intellectual Property Organization (ARIPO) is the competent receiving office.

(b) The Office of Switzerland is the competent receiving office.

(c) The International Bureau is the competent receiving office.

(d) The African Intellectual Property Organization (OAPI) is the competent receiving office.

n.a. indicates not applicable, as it is not an office of a PCT member state, or else the office does not act as a PCT receiving office.

Source: WIPO Statistics Database, March 2024.

B. Statistics on PCT national phase entries

Highlights

PCT national phase entries grew by 3.1% in 2022

About 737,000 PCT national phase entries (NPEs) were initiated worldwide in 2022 – the latest year for which data are available (figure B1). This represents a 3.1% increase on the previous year, mainly driven by an increase in filings from China and the US.

In 2022, non-resident applications accounted for 83.9% of all NPEs, a share that has remained almost stable since 2013. Most resident NPEs originated from the Japan Patent Office (JPO) and the United States Patent and Trademark Office (USPTO), which accounted for 37.2% and 21.6% of global resident NPEs, respectively (figure B11).

Asia accounted for nearly 36% of PCT NPEs initiated worldwide

In 2022, Asia retained its position as the leading region for PCT NPEs, initiating 35.8% of all NPEs (figure B2). This represents a notable rise from 2012, when Asia contributed 29.5% of global NPEs. Northern America and Europe were the subsequent largest regions in 2022, with each accounting for approximately 30% of all NPEs. Combined, Africa, Latin America and the Caribbean (LAC) along with Oceania, constituted 2% of global NPEs.

Of the top 20 offices, 17 received more NPEs in 2022 than in the previous year. Among those offices, Indonesia (+16%), India (+9.4%), the Republic of Korea (+7%), Thailand (+6.7%) and Mexico (+5.6%) saw the sharpest growth (figure B10). In contrast, the offices of the Russian Federation (-31.6%), China (-6.6%) and Malaysia (-2.9%) experienced a fall in NPEs.

Applicants from Japan and the US initiated nearly half of PCT NPEs globally

In 2022, applicants residing in the US initiated 215,569 NPEs, followed by applicants from Japan (132,966), China (68,840), Germany (54,163) and the Republic of Korea (39,551) (figure B5). Together, the US and Japan accounted for 47.4% of all NPEs initiated worldwide, representing 29.3% and 18.1% of total NPEs, respectively. Despite the concentration of NPEs among a few origins, applicants from over 130 countries initiated NPEs in 2022.

Among the top 20 origins that experienced growth in 2022, China (+11%), the Republic of Korea (+8.1%), India (+7.6%) and Switzerland (+7.5%) witnessed the most substantial increases in NPEs. Applicants from the US (+6.1%) also grew notably, while those from Germany (-5.9%) and Japan (-2.6%) experienced a decline.

Of the 175,641 NPEs received at the USPTO, applicants from the US (21.6% of the total), Japan (18.4%) and China (10.8%) initiated the largest shares (figure B11). Combined, these same three economies also accounted for the majority of NPEs initiated at all the top 20 offices except the Russian Federation. Applicants from the US accounted for the highest shares of NPEs at 16 of the top 20 offices, while applicants residing in Japan accounted for the highest shares at the other four offices. More specifically, US-

based applicants were responsible for more than one-third of all NPEs initiated at 10 of the top 20 offices, while Japan-based applicants initiated more than one-quarter of NPEs at four.

Since 2008, the PCT route has been more widely used than the Paris route for filing patent applications abroad

In 2022, the PCT route was used for 59% of non-resident patent applications worldwide, resulting in a total of 618,000 non-resident NPEs initiated (figure B12). This marks a 0.2 percentage point increase on the previous year. In comparison to the Paris route, where applicants filed 430,100 non-resident patent applications directly at offices in 2022, the PCT route has shown notably faster growth. Between 2008 and 2022, the PCT route maintained an average annual growth rate of 3%, whereas the Paris route had grown by 1.3%.

Out of the top 20 offices for non-resident patent applications, 17 received most non-resident filings through the PCT route (figure B14). Notably, the offices of Brazil, Israel and Thailand had PCT route shares of 90% or more. Conversely, the offices of Germany and the UK had shares of around 31%.

Among the top 20 origins for filing applications abroad, applicants from Australia (72.7%), the US (70.2%) and Sweden (70.1%) used the PCT route in greatest proportion (figure B13). Conversely, applicants from Canada, India, Israel and the Republic of Korea primarily filed their patent applications directly with foreign offices through the Paris route.

Applicants residing in Australia, Denmark, Switzerland and the UK initiated a high number of NPEs for every PCT application filed, averaging between 4.4 and 4.7 NPEs per PCT application (figure B7). In contrast, applicants from China and Türkiye averaged between 1 and 0.8 NPE per PCT application, respectively.

A majority of the top 50 applicants in foreign-oriented patent families mainly used the PCT System to protect their innovations internationally

Huawei of China maintained its position as the company that created the highest number of foreign-oriented patent families using the PCT route, with 10,763 such families established between 2018 and 2020 (figure B16). Following Huawei were Samsung Electronics, LG Electronics and BOE Technology Group, each with between 5,100 and 7,200 families. Among the top 10 companies, Nippon Telegraph & Telephone (+51.2%), LG Electronics (+40.8%), NEC (+19%) and Huawei (+18.4%) witnessed double-digit increases in foreign-oriented patent families created using the PCT compared to 2017–2019.

Between 2018 and 2020, 26 of the top 50 applicants in terms of foreign-oriented patent families relied primarily on the PCT System to protect their innovations abroad (table B17). Nippon Telegraph & Telephone and ZTE used the PCT route for over 99% of foreign-oriented patent families. Altogether, 10 of the top 50 applicants used the PCT route for over 90% of total foreign-oriented patent families. In contrast, several other applicants with a high number of foreign-oriented patent families relied very little on the PCT System, for instance, Ford Global Technologies, Seiko Epson and SK Hynix.

Global trends in PCT national phase entries

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National phase entries by origin

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Patent applications by filing route

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Top applicants in foreign-oriented patent families

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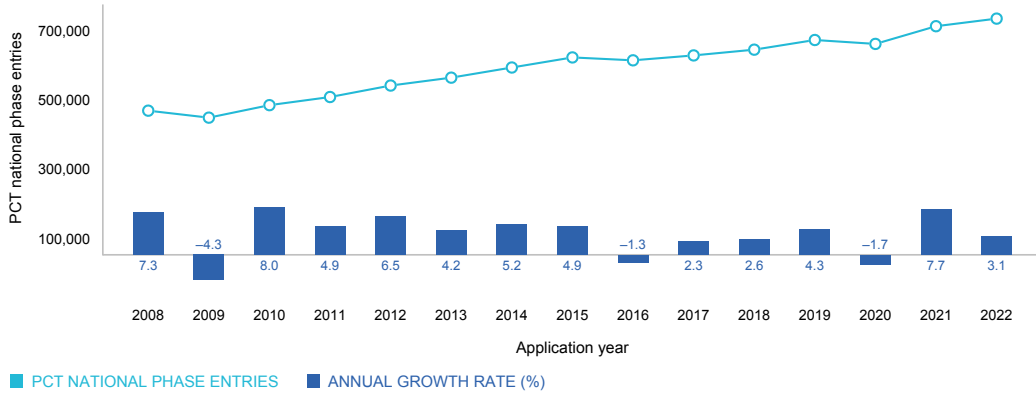
Statistical table

B18.	PCT national phase entries by office and origin, 2021–2022	67
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Global trends in PCT national phase entries

In 2022, PCT national phase entries grew by 3.1%, to 737,000 applications.

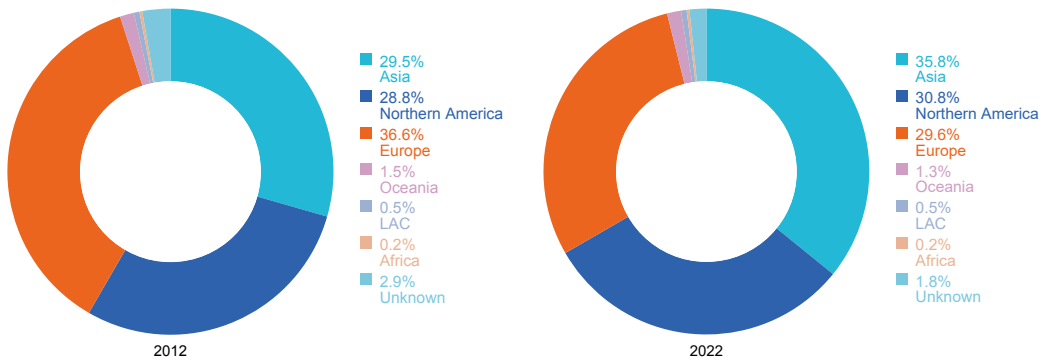
B1. Trend in PCT national phase entries, 2008–2022



Note: WIPO estimates. National phase data from patent offices are available up to 2022.
Source: WIPO Statistics Database, March 2024.

Asia accounted for the largest proportion of PCT national phase entries in 2022.

B2. PCT national phase entries by region, 2012 and 2022

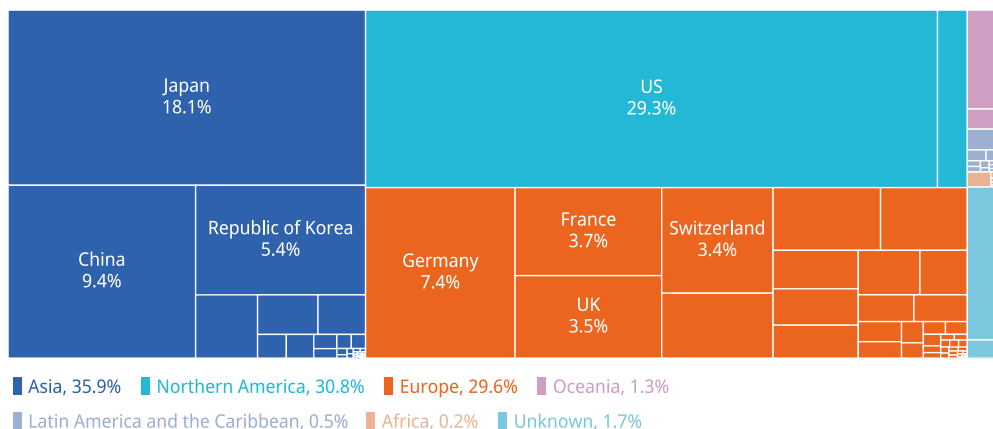


Note: Each region includes the following number of origins: Africa (27), Asia (40), Europe (46), Latin America and the Caribbean (LAC) (26), Northern America (3) and Oceania (6).
Source: WIPO Statistics Database, March 2024.

National phase entries by origin

Applicants from Japan and the US combined initiated 47.4% of all PCT national phase entries in 2022.

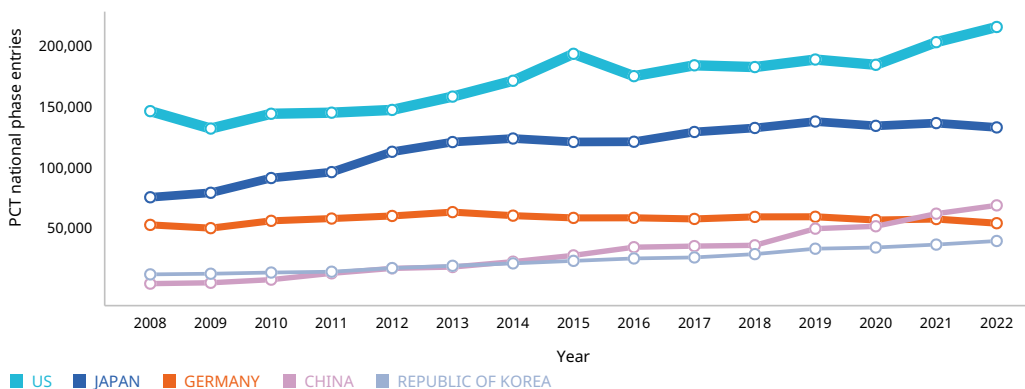
B3. Distribution of PCT national phase entries by region and origin, 2022



Source: WIPO Statistics Database, March 2024.

Since 2008, applicants from the US have initiated the highest number of PCT national phase entries worldwide.

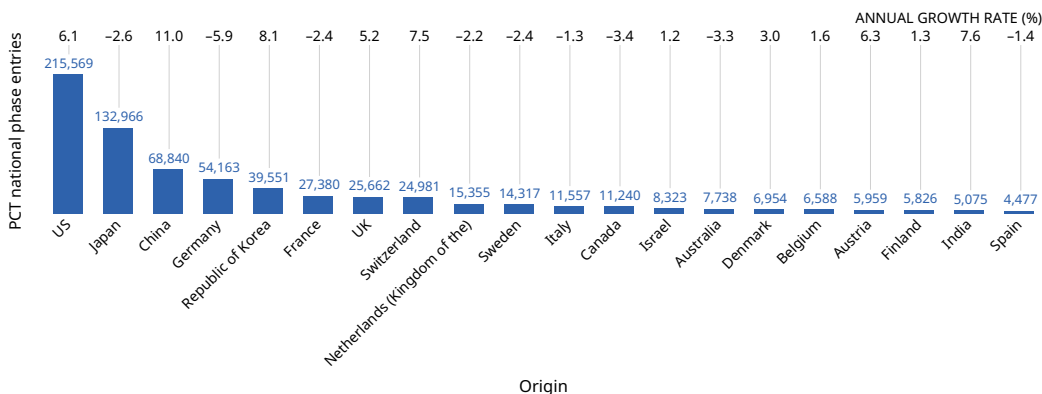
B4. Trends in PCT national phase entries for the top five origins, 2008-2022



Source: WIPO Statistics Database, March 2024.

China was the only top 20 origin to see double-digit growth in national phase entries.

B5. PCT national phase entries for the top 20 origins, 2022



Source: WIPO Statistics Database, March 2024.

Africa and Northern America were the regions with highest growth in PCT national phase entries in 2022.

B6. PCT national phase entries for the top origins by region, 2020–2022

Region	Origin	2020	2021	2022	Regional share 2022 (%)	Change from 2021 (%)
Africa	South Africa	730	761	751	67.6	-1.3
	Mauritius	39	42	178	16.0	323.8
	Egypt	48	42	44	4.0	4.8
	Morocco	40	70	36	3.2	-48.6
	Malawi		1	24	2.2	2,300.0
	Tunisia	11	11	15	1.4	36.4
	Namibia	3	0	12	1.1	n.a.
	Seychelles	8	23	12	1.1	-47.8
	Others	45	98	39	3.5	-60.2
	Total*	924	1,048	1,111	0.2	6.0
Asia	Japan	134,237	136,521	132,966	50.3	-2.6
	China	51,638	61,997	68,840	26.1	11.0
	Republic of Korea	34,192	36,575	39,551	15.0	8.1
	Israel	7,850	8,228	8,323	3.2	1.2
	India	4,333	4,716	5,075	1.9	7.6
	Singapore	3,177	4,197	4,002	1.5	-4.6
	Saudi Arabia	2,132	1,612	1,446	0.5	-10.3
	Türkiye	1,146	1,510	1,379	0.5	-8.7
	China, Hong Kong SAR	470	612	696	0.3	13.7
	Thailand	390	432	465	0.2	7.6
	Others	1,306	1,310	1,444	0.5	10.2
	Total*	240,871	257,710	264,187	35.9	2.5
Europe	Germany	56,780	57,568	54,163	24.9	-5.9
	France	26,226	28,040	27,380	12.6	-2.4
	UK	22,516	24,384	25,662	11.8	5.2
	Switzerland	20,138	23,247	24,981	11.5	7.5
	Netherlands (Kingdom of the)	15,530	15,702	15,355	7.0	-2.2
	Sweden	13,915	14,665	14,317	6.6	-2.4
	Italy	10,928	11,706	11,557	5.3	-1.3
	Denmark	6,119	6,752	6,954	3.2	3.0
	Belgium	6,063	6,482	6,588	3.0	1.6
	Austria	5,474	5,605	5,959	2.7	6.3
	Others	22,835	24,732	24,961	11.5	0.9
	Total*	206,524	218,883	217,877	29.6	-0.5
Latin America and the Caribbean	Brazil	1,297	1,538	1,623	48.4	5.5
	Chile	414	475	438	13.1	-7.8
	Mexico	540	466	419	12.5	-10.1
	Colombia	138	203	158	4.7	-22.2
	Argentina	119	133	153	4.6	15.0
	Cuba	100	75	129	3.8	72.0
	Barbados	128	176	78	2.3	-55.7
	Antigua and Barbuda	415	310	66	2.0	-78.7
	Peru	84	52	54	1.6	3.8
	Costa Rica	16	46	52	1.6	13.0
	Others	192	235	181	5.4	-23.0
Total*	3,443	3,709	3,351	0.5	-9.7	
Northern America	US	184,452	203,081	215,569	95.0	6.1
	Canada	9,483	11,640	11,240	5.0	-3.4
	Bermuda	34	97	84	0.0	-13.4
	Total*	193,969	214,818	226,893	30.8	5.6
Oceania	Australia	7,704	8,000	7,738	83.1	-3.3
	New Zealand	1,321	1,499	1,553	16.7	3.6
	Samoa	1	4	19	0.2	375.0
	Others	0	3	3	0.0	0.0
Total*	9,026	9,506	9,313	1.3	-2.0	
Unknown*	8,943	9,326	14,268	1.9	53.0	
World	663,700	715,000	737,000	n.a.	3.1	

Note: World totals are WIPO estimates. This table shows the top countries in each region (with a maximum of 10 countries per region) where applicants filed more than 10 PCT national phase entries in 2022. Data for all origins are reported in statistical table B18.

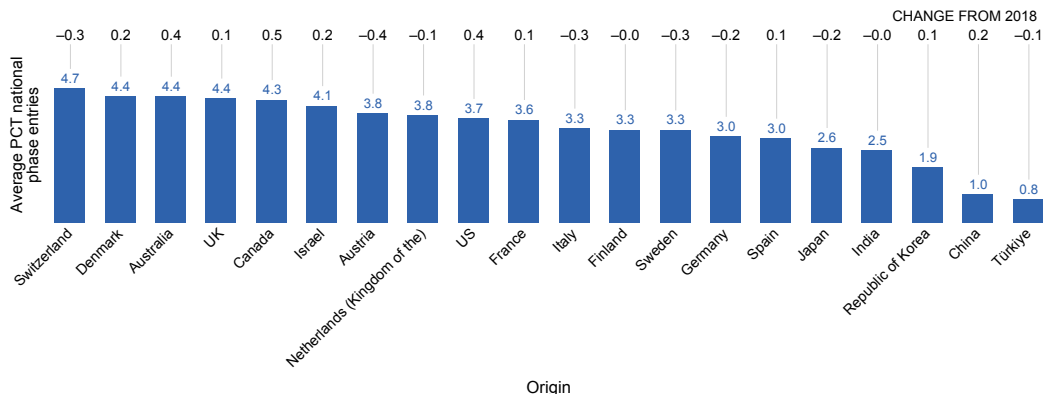
* indicates share of world total.

n.a. indicates not applicable.

Source: WIPO Statistics Database, March 2024.

Applicants residing in Switzerland initiated 4.7 NPEs per PCT application, on average.

B7. Average number of national phase entries per PCT application for the top 20 origins, 2022

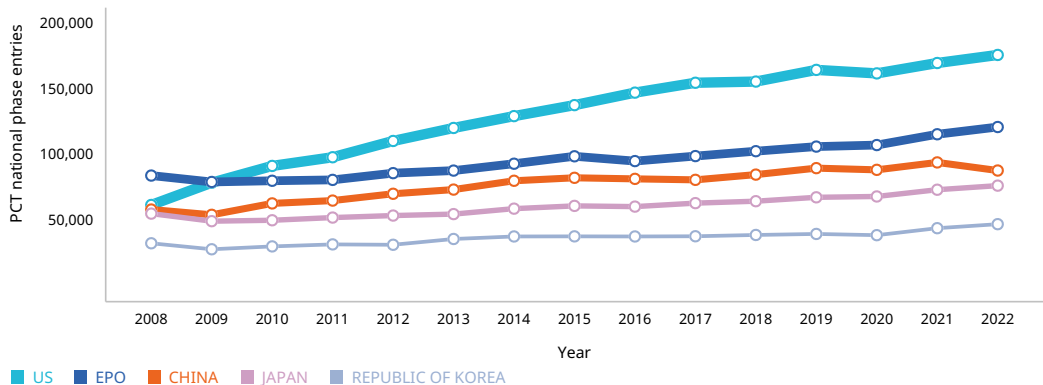


Note: The average is defined as the number of national phase entries initiated in 2022 divided by the average number of PCT applications filed in the two preceding years.
 Source: WIPO Statistics Database, March 2024.

National phase entries by office

Except for China, every top five office attracted more PCT national phase entries in 2022.

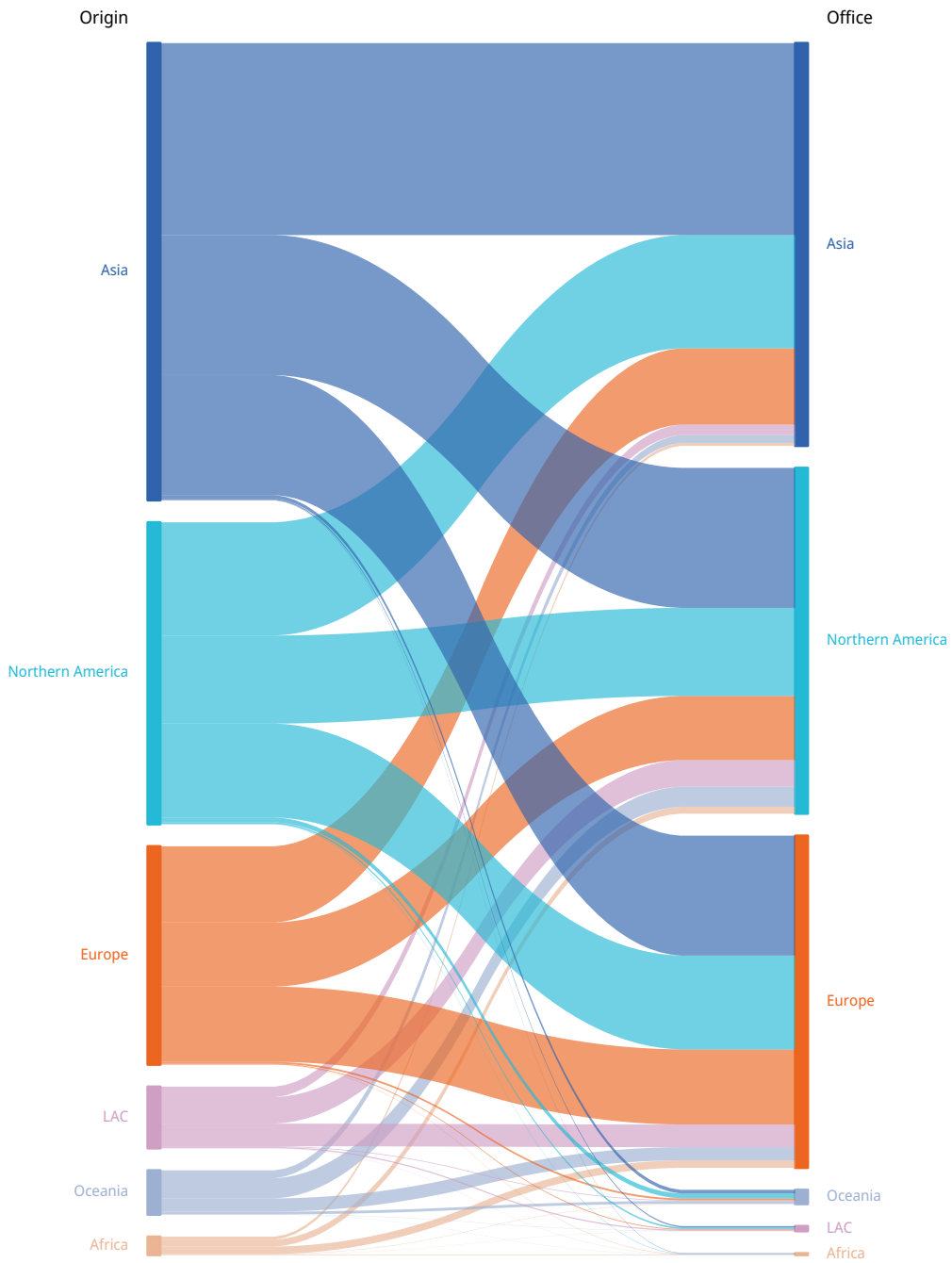
B8. Trends in PCT national phase entries for the top five offices, 2008-2022



Note: EPO is the European Patent Office.
 Source: WIPO Statistics Database, March 2024.

Applicants residing in Asia initiated a large proportion of national phase entries in their home region.

B9. Flow of national phase entries between regions of origin and regions of destination, 2022

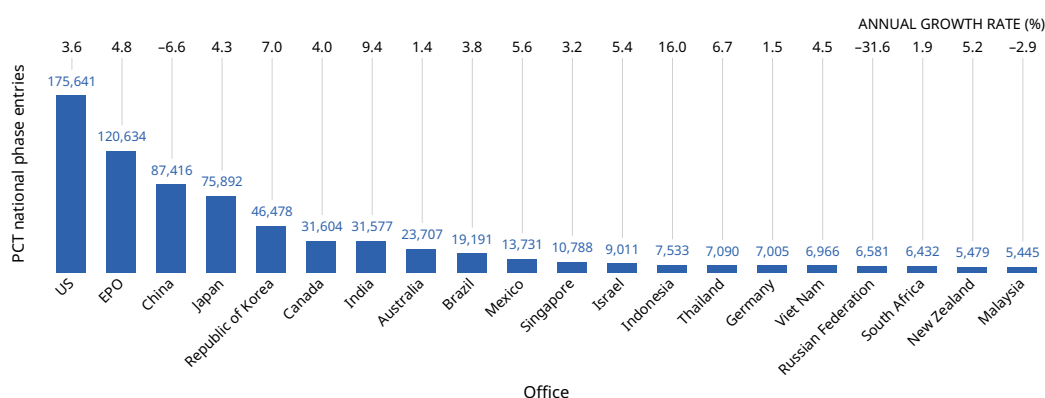


Note: LAC is Latin America and the Caribbean.

Source: WIPO Statistics Database, March 2024.

India and Indonesia saw the sharpest growth among top 20 offices in 2022.

B10. PCT national phase entries for the top 20 offices, 2022



Note: This table shows data for the 20 offices to receive the most PCT national phase entries. NPE data may not be available at some offices. EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

Applicants residing in Japan were responsible for a large proportion of PCT national phase entries initiated at the office of Japan, with 37.2% of the total.

B11. Flow of national phase entries for the top 20 offices and the top 10 origins as a percentage of total national phase entries at respective offices, 2022

Office	Origin										
	US	Japan	China	Germany	Republic of Korea	France	UK	Switzerland	Netherlands (Kingdom of the)	Sweden	Other origins
US	21.6	18.4	10.8	8.2	7.1	4.1	4.1	1.8	1.7	2.2	20.0
EPO	28.6	13.1	13.0	9.0	5.6	4.9	3.3	3.4	2.4	2.6	14.1
China	28.1	28.3	0.9	10.0	7.5	4.0	2.4	3.6	2.7	1.9	10.6
Japan	22.6	37.2	9.9	5.3	5.8	2.6	2.4	3.2	1.9	1.2	8.0
Republic of Korea	33.9	21.0	11.6	6.6	4.8	3.2	2.9	3.2	2.0	1.4	9.3
Canada	46.4	3.7	5.2	5.3	1.5	4.0	4.8	4.1	1.7	1.7	21.7
India	37.8	11.7	11.4	6.0	5.8	2.8	3.2	3.6	2.7	2.4	12.6
Australia	43.1	5.3	7.3	4.7	2.9	2.9	5.2	4.5	1.8	1.8	20.4
Brazil	37.6	5.3	8.2	7.4	2.3	4.2	3.7	6.6	2.7	2.5	19.7
Mexico	46.6	5.4	5.6	6.5	2.3	3.1	3.5	5.2	2.9	1.9	16.9
Singapore	38.1	12.2	13.7	4.5	2.4	2.9	4.2	4.3	1.2	1.0	15.5
Israel	49.8	3.2	2.7	4.8	1.1	3.6	4.5	5.8	2.5	1.1	20.9
Indonesia	24.2	22.0	15.9	4.4	5.7	1.8	2.4	4.0	3.7	1.0	14.9
Thailand	18.4	31.5	13.2	4.4	2.9	2.4	1.4	3.1	1.7	1.0	20.0
Germany	21.1	51.4	5.6	9.8	3.4	0.8	0.5	1.0	0.6	0.6	5.2
Viet Nam	26.4	19.7	18.1	3.5	10.8	1.8	2.2	2.4	1.4	1.5	12.2
Russian Federation	18.2	7.7	16.3	8.5	5.5	5.1	6.0	9.6	3.7	1.2	18.2
South Africa	37.2	2.1	11.9	6.8	1.8	3.5	4.0	2.7	2.3	3.5	24.2
New Zealand	42.9	4.9	4.7	4.9	2.0	2.3	6.2	4.4	1.9	1.8	24.0
Malaysia	26.7	17.4	17.0	4.8	3.5	1.9	3.9	5.5	1.9	1.9	15.5

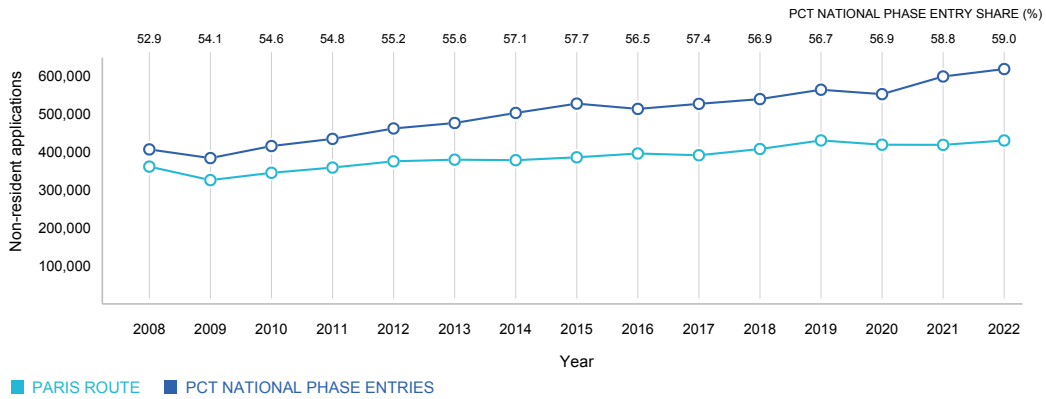
Note: This table shows data for the 20 offices to receive the most PCT national phase entries and the 10 origins to enter the most the PCT national phase. NPE data by origin may not be available at some offices. EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

Patent applications by filing route

The share of PCT national phase entries in all non-resident patent applications filed worldwide grew to 59% in 2022.

B12. Trend in non-resident patent applications by filing route, 2008–2022

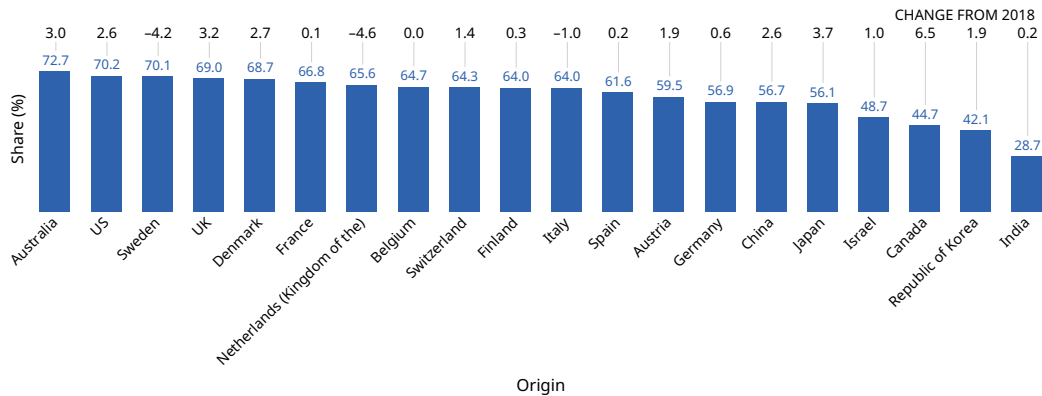


Note: These data are WIPO estimates.

Source: WIPO Statistics Database, March 2024.

Sixteen of the 20 origins that filed the most applications abroad were the most active PCT users in 2022.

B13. Share of PCT national phase entries in total filings abroad for the top 20 origins, 2022

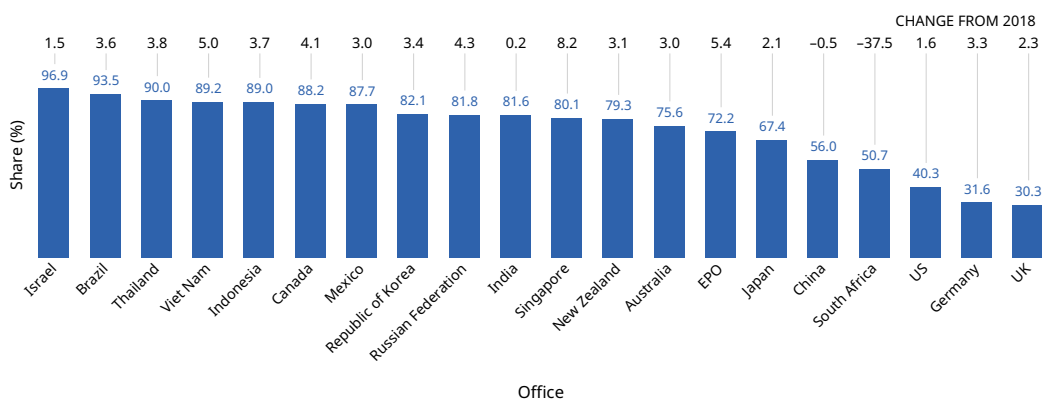


Note: Share is defined as the number of PCT national phase entries initiated abroad divided by the total number of patent applications filed abroad. It includes data from the 20 origins that filed the most applications abroad in 2022.

Source: WIPO Statistics Database, March 2024.

Brazil, Israel and Thailand received 90% or more of non-resident patent applications via the PCT route in 2022.

B14. Share of PCT national phase entries in total non-resident filings for the top 20 offices, 2022



Note: Share is defined as non-resident PCT national phase entries initiated divided by the total number of non-resident patent applications filed. It includes data from the 20 offices to receive the most non-resident filings in 2022; that is, data from countries that are members of the PCT System and who provided data broken down by filing route. EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

Applicants from the Kingdom of the Netherlands used the PCT route for all patent applications filed at the office of Israel.

B15. Share of PCT national phase entries in total non-resident filings for the top 10 origins and the top 20 offices, 2022

Office	Origin									
	US	Japan	China	Germany	Republic of Korea	France	UK	Switzerland	Netherlands (Kingdom of the)	Sweden
US	n.a.	42.9	38.5	52.0	30.2	63.6	54.3	56.3	66.7	69.9
China	57.0	54.6	n.a.	57.4	36.0	70.9	74.6	70.0	72.9	63.5
EPO	71.6	73.2	82.6	n.a.	65.1	n.a.	n.a.	n.a.	n.a.	n.a.
Japan	63.7	n.a.	76.2	70.2	61.5	76.8	75.1	71.0	77.6	69.1
Republic of Korea	89.2	70.5	85.2	83.2	n.a.	89.2	93.1	89.6	82.8	86.8
India	83.1	80.9	91.8	72.4	65.0	75.8	90.4	81.8	86.9	93.9
Canada	84.9	93.8	91.5	88.6	94.0	85.2	94.2	93.9	93.5	95.9
Australia	70.5	79.4	82.1	84.0	77.1	83.3	82.9	85.5	83.0	89.5
Brazil	93.1	90.1	97.4	88.9	97.1	90.2	94.5	98.6	98.1	97.0
Germany	21.6	56.8	56.0	n.a.	14.5	13.3	21.7	7.9	33.1	11.7
China, Hong Kong SAR	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mexico	83.4	93.3	92.4	88.4	94.6	95.2	94.4	91.9	96.3	93.7
Singapore	80.8	74.0	92.8	79.3	52.6	91.1	84.0	87.1	86.5	90.7
South Africa	89.6	93.6	13.3	91.8	86.7	91.8	93.8	91.1	91.4	98.3
Israel	96.7	97.3	95.2	96.2	97.1	94.7	99.3	99.1	100.0	97.1
Indonesia	98.8	80.4	85.9	96.5	91.3	93.2	96.8	98.7	98.9	100.0
UK	47.0	28.5	52.1	5.5	9.4	17.6	n.a.	2.1	19.3	5.1
Russian Federation	77.1	83.8	87.1	80.8	68.2	86.4	88.9	87.7	79.2	86.5
Thailand	97.8	82.8	94.2	94.8	83.3	96.0	93.3	95.3	99.2	97.4
Viet Nam	97.6	89.7	96.0	94.6	74.9	96.1	96.2	92.2	100.0	98.1

Note: This figure includes data from the 20 offices to receive the most non-resident filings in 2022, regardless of whether or not they accept applications for entry into the national phase. EPO is the European Patent Office.

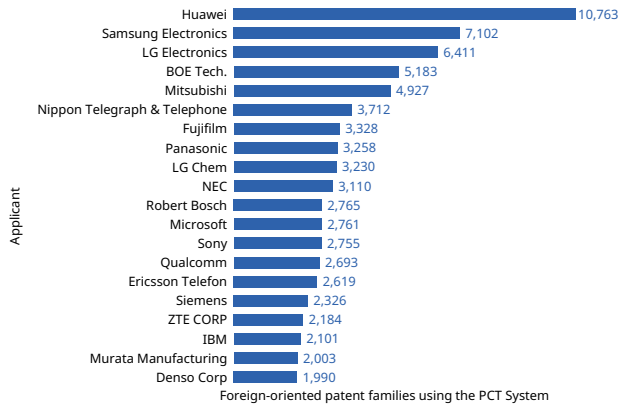
n.a. indicates not applicable.

Source: WIPO Statistics Database, March 2024.

Top applicants in foreign-oriented patent families

Huawei had by far the highest number of foreign-oriented patent families using the PCT route in 2018–2020.

B16. Top 20 applicants in foreign-oriented patent families using the PCT System, 2018–2020



Note: The number of patent applications in foreign-oriented patent families as reported in the autumn 2023 edition of PATSTAT may be incomplete for the most recent years. A patent family is a set of interrelated patent applications filed at one or more offices to protect the same invention. Patent applications in a family are interlinked by one or more of the following: priority claim, PCT national phase entry, continuation, continuation-in-part, internal priority, and addition or division. Foreign-oriented patent families have at least one filing at an office other than the applicant's home office.

Source: WIPO Statistics Database and EPO PATSTAT Database, March 2024.

Most top 50 applicants in foreign-oriented patent families in 2018–2020 relied primarily on the PCT System for the protection of their innovations abroad.

B17. Top 50 applicants in foreign-oriented patent families, 2015–2017 and 2018–2020

Rank	Applicant	Foreign-oriented patent families		Foreign-oriented patent families using the PCT route (%)	
		2015–2017	2018–2020	2015–2017	2018–2020
1	SAMSUNG ELECTRONICS CO LTD	13,786	13,968	36.3	50.9
2	HUAWEI TECH CO LTD	7,819	11,058	96.7	97.3
3	LG ELECTRONICS INC	3,739	9,223	54.4	69.7
4	CANON KK	9,539	8,503	10	11.2
5	BOE TECHNOLOGY GROUP CO LTD	7,726	7,991	68.9	65.2
6	TOYOTA MOTOR CORP	6,009	7,509	5.7	2.7
7	ROBERT BOSCH GMBH	6,276	6,518	47.4	42.5
8	HONDA MOTOR CO LTD	4,776	6,331	26.6	19.1
9	SAMSUNG DISPLAY CO LTD	5,311	6,292	0.1	7.2
10	mitsubishi electric corp	6,244	5,667	86.9	87
11	HYUNDAI MOTOR CO LTD	4,950	5,145	0.3	2.5
12	UNIV NORTHEASTERN	2,788	4,702	2.8	5.3
13	FORD GLOBAL TECH LLC	7,337	4,593	2.9	0.7
14	SEIKO EPSON CORP	4,642	4,244	8.8	0.8
15	FUJIFILM CORP	3,709	3,955	80.2	84.2
16	NIPPON TELEGRAPH & TELEPHONE	505	3,740	98	99.9
17	PANASONIC IP MAN CO LTD	3,589	3,735	68.6	87.3
18	SIEMENS AG	4,282	3,641	58.6	63.9
19	BAYERISCHE MOTOREN WERKE AG	4,040	3,629	28.8	31.8
20	NEC CORP	2,530	3,431	89.1	91.6
21	IBM	1,672	3,369	52.2	62.4
22	LG CHEMICAL LTD	3,307	3,364	92.7	96
23	DENSO CORP	4,010	3,254	59.6	61.2
24	MURATA MANUFACTURING CO	2,639	3,149	70.7	64.1
25	INTEL CORP	3,108	3,055	70.1	19.3
26	SONY CORP	4,610	3,031	93.3	91
27	RICOH CO LTD	3,177	2,857	13	11.4
28	ALIBABA GROUP HOLDING LTD	1,809	2,847	90.9	56.2
29	KIA MOTORS CORP	2,005	2,804	0.2	3.1
30	MICROSOFT TECHNOLOGY LICENSING LLC	2,289	2,800	96.7	98.6
31	SK HYNIX INC	2,454	2,780	0.2	0.3
32	QUALCOMM INC	1,877	2,743	98.7	98.2

Rank	Applicant	Foreign-oriented patent families		Foreign-oriented patent families using the PCT route (%)	
		2015–2017	2018–2020	2015–2017	2018–2020
33	ERICSSON TELEFON AB L M	2,042	2,671	96.3	98.1
34	MICRON TECHNOLOGY INC	659	2,648	75.9	43.9
35	SHARP KK	2,936	2,481	80.6	51.6
36	FUJITSU LTD	4,808	2,454	14.1	20.7
37	TOSHIBA CORP	2,975	2,374	9.7	10.2
38	KIA CORP	-	2,365	n.a.	1.7
39	HITACHI LTD	2,352	2,362	54.7	36.7
40	PANASONIC IP MAN CORP	2,991	2,272	33.6	40.4
41	ZTE CORP	1,460	2,196	99.4	99.5
42	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP LTD	1,142	2,172	98.4	88
43	SCHAEFFLER TECHNOLOGIES AG	1,944	2,160	51	46.5
44	TOKYO ELECTRON LTD	1,336	2,083	21.6	29.9
45	LG DISPLAY CO LTD	2,163	2,048	0.9	3.2
46	BEIJING XIAOMI MOBILE SOFTWARE CO LTD	658	1,959	69.9	66.1
47	SUMITOMO ELECTRIC INDUSTRIES	2,089	1,958	79.1	79.9
48	SONY SEMICONDUCTOR SOLUTIONS CORP	794	1,928	98.5	98.3
49	NOKIA TECHNOLOGIES OY	1,279	1,921	72.9	75.8
50	HKC CO LTD	802	1,900	68.8	44.3

Note: The number of patent applications in foreign-oriented patent families as reported in the autumn 2023 edition of PATSTAT may be incomplete for the most recent years. A patent family is a set of interrelated patent applications filed at one or more offices to protect the same invention. Patent applications in a family are interlinked by one or more of the following: priority claim, PCT national phase entry, continuation, continuation in part, internal priority, and addition or division. Foreign-oriented patent families have at least one filing at an office other than the applicant's home office.

Source: WIPO Statistics Database and EPO PATSTAT Database, March 2024.

Statistical table

B18. PCT national phase entries by office and origin, 2021–2022

Name	PCT national phase entries in 2022		PCT national phase entries in 2021	
	At designated office	By origin	At designated office	By origin
Afghanistan	n.a.	0	n.a.	1
African Intellectual Property Organization	380	n.a.	397	n.a.
African Regional Intellectual Property Organization	833	n.a.	791	n.a.
Albania	..	4	1	2
Algeria	627	5	569	8
Andorra	n.a.	12	n.a.	16
Angola	70	70	..	0
Antigua and Barbuda	5	66	..	310
Argentina	n.a.	153	n.a.	133
Armenia	7	9	1	22
Australia	23,707	7,738	23,381	8,000
Austria	420	5,959	458	5,605
Azerbaijan	40	2	15	1
Bahamas	n.a.	24	n.a.	32
Bahrain	469	4	306	2
Bangladesh	n.a.	3	n.a.	2
Barbados	60	78	73	176
Belarus	44	29	70	42
Belgium (c)	..	6,588	..	6,482
Belize	..	9	27	3
Benin (d)	..	4	..	0
Bolivia (Plurinational State of)	n.a.	1	n.a.	1
Bosnia and Herzegovina	10	14	8	2
Botswana	..	2	..	0
Brazil	19,191	1,623	18,496	1,538
Brunei Darussalam	149	0	131	2
Bulgaria	..	132	5	75
Burkina Faso (d)	..	3	..	0
Cabo Verde	..	0	..	0
Cambodia	71	10	..	1

Name	PCT national phase entries in 2022		PCT national phase entries in 2021	
	At designated office	By origin	At designated office	By origin
Cameroon (d)	..	3	..	1
Canada	31,604	11,240	30,383	11,640
Central African Republic (d)	..	0	..	0
Chad (d)	..	0	..	0
Chile	2,759	438	2,676	475
China	87,416	68,840	93,608	61,997
China, Hong Kong SAR	n.a.	696	n.a.	612
China, Macao SAR	n.a.	3	n.a.	1
Colombia	1,885	158	1,822	203
Comoros (d)	..	0	..	0
Congo (d)	..	0	..	1
Costa Rica	577	52	562	46
Côte d'Ivoire (d)	..	0	..	0
Croatia	3	56	3	111
Cuba	..	129	79	75
Curaçao	n.a.	10	n.a.	4
Cyprus (c)	..	135	..	192
Czech Republic	27	598	29	550
Democratic People's Republic of Korea	7	21	..	12
Denmark	74	6,954	58	6,752
Djibouti	7	1	10	0
Dominica	..	0	..	1
Dominican Republic	226	33	221	29
Ecuador	476	8	..	5
Egypt	1,298	44	1,313	42
El Salvador	146	2	130	0
Equatorial Guinea (d)	..	0	..	0
Estonia	4	87	1	116
Eswatini (a)	..	0	..	2
Ethiopia	n.a.	0	n.a.	2
Eurasian Patent Organization	2,867	n.a.	2,764	n.a.
European Patent Office	120,634	n.a.	115,103	n.a.
European Union	n.a.	25	n.a.	0
Fiji	n.a.	3	n.a.	0
Finland	34	5,826	37	5,751
France (c)	..	27,380	..	28,040
Gabon (d)	..	0	..	2
Gambia	88	0	91	0
Georgia	151	8	159	11
Germany	7,005	54,163	6,900	57,568
Ghana	14	1	..	0
Greece (c)	..	250	..	416
Grenada	6	0	3	0
Guatemala	282	1	242	1
Guinea (d)	..	0	..	1
Guinea-Bissau (d)	..	0	..	0
Guyana	n.a.	0	n.a.	16
Honduras	189	0	182	0
Hungary	69	423	6	599
Iceland	2	133	2	182
India	31,577	5,075	28,852	4,716
Indonesia	7,533	59	6,494	44
Iran (Islamic Republic of)	412	74	..	32
Iraq	..	0	..	1
Ireland (c)	..	3,163	..	2,884
Israel	9,011	8,323	8,549	8,228
Italy (c)	144	11,557	15	11,706
Jamaica	..	5	..	1
Japan	75,892	132,966	72,782	136,521
Jordan	299	9	299	10
Kazakhstan	107	16	..	19
Kenya	47	4	35	3
Kuwait	707	15	..	17
Kyrgyzstan	..	0	1	7
Lao People's Democratic Republic	45	0	..	0
Latvia (c)	..	81	..	69

Name	PCT national phase entries in 2022		PCT national phase entries in 2021	
	At designated office	By origin	At designated office	By origin
Lebanon	n.a.	14	n.a.	9
Lesotho	..	0	..	1
Liberia	..	0	..	0
Libya	..	3	..	0
Liechtenstein (b)	..	591	..	581
Lithuania (c)	..	108	..	74
Luxembourg	302	1,511	194	1,434
Madagascar	24	0	22	0
Malawi	..	24	..	1
Malaysia	5,445	434	5,610	383
Mali (d)	..	0	..	1
Malta (c)	..	164	..	130
Mauritania (d)	..	0	..	1
Mauritius	..	178	..	42
Mexico	13,731	419	13,003	466
Monaco (c)	..	78	..	69
Mongolia	76	17	70	1
Montenegro	..	3	..	6
Morocco	2,285	36	2,199	70
Mozambique	16	0	16	0
Namibia	3	12	..	0
Nepal	n.a.	0	n.a.	1
Netherlands (Kingdom of the) (c)	..	15,355	..	15,702
New Zealand	5,479	1,553	5,209	1,499
Nicaragua	..	0	..	0
Niger (d)	..	1	..	0
Nigeria	828	1	..	3
North Macedonia	..	11	1	17
Norway	516	3,037	559	2,937
Oman	438	5	453	20
Pakistan	n.a.	1	n.a.	6
Panama	..	31	310	28
Papua New Guinea	30	0	1	0
Paraguay	n.a.	0	n.a.	2
Peru	1,234	54	1,101	52
Philippines	3,982	16	3,663	68
Poland	39	984	58	909
Portugal	23	709	16	667
Qatar	..	38	81	52
Republic of Korea	46,478	39,551	43,419	36,575
Republic of Moldova	6	2	6	1
Romania	9	74	11	107
Russian Federation	6,581	1,844	9,621	1,921
Rwanda	1	0	..	0
Saint Kitts and Nevis	..	10	..	22
Saint Lucia	..	0	..	15
Saint Vincent and the Grenadines	1	0	11	0
Samoa	..	19	..	4
San Marino	..	14	..	13
Sao Tome and Principe	..	0	..	0
Saudi Arabia	3,902	1,446	2,875	1,612
Senegal (d)	..	4	..	8
Serbia	14	33	6	62
Seychelles	13	12	16	23
Sierra Leone	..	0	..	0
Singapore	10,788	4,002	10,458	4,197
Sint Maarten (Dutch Part)	n.a.	0	n.a.	1
Slovakia	6	156	9	111
Slovenia (c)	..	202	..	192
South Africa	6,432	751	6,311	761
Spain	87	4,477	73	4,541
Sri Lanka	249	69	257	30
Sudan	..	1	..	2
Sweden	68	14,317	49	14,665
Switzerland	83	24,981	84	23,247
Syrian Arab Republic	13	2	18	3

Name	PCT national phase entries in 2022		PCT national phase entries in 2021	
	At designated office	By origin	At designated office	By origin
Tajikistan	..	0	9	0
Thailand	7,090	465	6,647	432
Timor-Leste	n.a.	0	n.a.	10
Togo (d)	..	0	..	47
Trinidad and Tobago	148	0	149	10
Tunisia	166	15	..	11
Türkiye	334	1,379	320	1,510
Turkmenistan	..	3	..	3
Uganda	..	2	1	2
Ukraine	1,743	129	1,816	145
United Arab Emirates	2,620	425	2,240	306
United Kingdom	2,894	25,662	2,355	24,384
United Republic of Tanzania	..	2	..	12
United States of America	175,641	215,569	169,483	203,081
Uruguay	n.a.	45	n.a.	59
Uzbekistan	196	4	225	1
Vanuatu	n.a.	0	n.a.	3
Venezuela (Bolivarian Republic of)	n.a.	2	n.a.	5
Viet Nam	6,966	48	6,663	40
Zambia	9	1	13	0
Zimbabwe	3	1	..	1
Others	301	14,283	1,149	9,423
Total	737,000	737,000	715,000	715,000

Note: World totals are WIPO estimates. Offices of destination are designated and/or elected offices.

(a) The African Regional Intellectual Property Organization is the competent designated or elected office.

(b) The Office of Switzerland is the competent designated or elected office.

(c) The European Patent Office is the competent designated or elected office.

(d) The African Intellectual Property Organization is the competent designated or elected office.

.. indicates data are unknown.

n.a. indicates not applicable.

Source: WIPO Statistics Database, March 2024.

C. Statistics on the performance of the PCT System

Highlights

The International Bureau

In addition to its role as a receiving office (RO), the International Bureau (IB) of WIPO is responsible for functions relating to the international phase of the PCT System, including examining formalities, translating parts of PCT applications and patentability reports, and publishing PCT applications.

The share of PCT applications published in Chinese rose from 3.7% in 2009 to 24.3% in 2023

In 2023, PCT applications published in English accounted for 42.5% of the total. English was followed by Chinese (24.3%) and Japanese (17.8%) (figure C1). The other seven languages of publication combined accounted for 15.4% of the total. The share of applications filed in Chinese has increased sharply over the past 15 years, rising from 3.7% in 2009 to 24.3% in 2023. Conversely, the share of applications filed in English has dropped from 62.2% to 42.5% over the same period.

Nearly all PCT applications were filed electronically in 2023

Applicants filed 99.3% of PCT applications electronically and the remaining 0.7% on paper in 2023 (figure C2). Since electronic means of filing were first made available to applicants, their use has continuously increased.

The ePCT-filing service was used to file about 38% of PCT applications in 2023

In 2023, 87 ROs accepted ePCT filings and applicants filed 104,673 PCT applications using this online service (figure C3). This represents an increase of 11.6% on the previous year and corresponds to 38.4% of all PCT applications filed in 2023. Applicants from the US (39,020) filed by far the most applications using ePCT, followed by those from the Republic of Korea (22,175) and Germany (4,426) (figure C4). Among the 10 origins filing most actively via ePCT, India (+45.6%), France (+31.7%) and the Republic of Korea (+18.3%) recorded the sharpest increases compared to 2022.

The IB examined over 80% of PCT applications within one week of receipt

In 2023, the IB performed the PCT-required formalities examination for 80.9% of PCT applications within one week of receipt and 93.4% within two weeks (figure C5). Almost 78% of publications occurred during the week following the expiration of the 18-month period from the priority date and nearly all (99.8%) publications occurred within two weeks of that time limit (figure C6). When an international search report (ISR) is unavailable at the time of publication, an application is republished together with its ISR, once available. Nearly every application (99.6%) was republished within three months of receipt of an ISR (figure C7).

The receiving offices

A PCT application is filed with a RO, which can be a national or regional patent office or the IB. ROs are responsible for receiving PCT applications, examining compliance with PCT formality requirements, receiving payment of fees and transmitting copies

of an application for further processing to the IB and the appropriate International Searching Authority (ISA).

Eight of the top 20 ROs received over 90% of applications via ePCT in 2023

Of the top 20 ROs, Singapore and Türkiye received all PCT applications electronically in 2023 (figure C12). The share of electronic filings exceeded 90% at every one of the top 20 offices, except for that of the Russian Federation (47.8%).

Sixteen of the top 20 ROs received PCT applications via ePCT in 2023, of which eight received 92% or more of filings via this online service. Six offices received more than 99% of PCT applications via ePCT.

ROs transmitted PCT applications to the IB within 2.7 weeks

In 2023, on average, ROs transmitted PCT applications to the IB within 2.7 weeks of the international filing date (figure C14). Finland, Israel and the Republic of Korea transmitted all applications to the IB within four weeks of the filing date (figure C15). Among the top 20 ROs, 17 transmitted over 75% of PCT applications within this timeframe. Conversely, Singapore and Türkiye transmitted a majority of applications to the IB more than four weeks after the international filing date had passed.

The proportion of PCT applications transmitted by ROs to the ISAs within four weeks varied slightly from that transmitted to the IB (figure C16). It was above 99% for Japan and close to 5% for Singapore.

The International Searching Authorities

Each PCT application must undergo an international search by an ISA. Once the ISA has performed a search, the applicant receives an ISR containing a list of documents relevant to assessing the invention's patentability. The ISA also establishes a written opinion, providing a detailed analysis of the potential patentability of the invention in view of the documents found in the search.

Most ISAs issued fewer ISRs in 2023 than in the preceding year

In 2023, 266,566 ISRs were issued by the 24 existing ISAs. The EPO issued 84,082 ISRs and the office of China 70,496. Together, these two ISAs accounted for 58% of all ISRs issued (figure C17). The Eurasian Patent Organization (EAPO) (+360%), Singapore (+74.6%) and Türkiye (+24.8%) experienced the sharpest growth. In contrast, 18 ISAs saw a fall. Of the top five ISAs, the US (-6.9%), China (-6.1%), Japan (-3.7%) and the Republic of Korea (-2.2%) experienced drops, while the EPO saw zero growth.

Of all the ISRs required to be transmitted to the IB within three months of the date of receipt of the application, 86.3% were transmitted within this timeframe in 2023 (figure C20). At 16 ISAs, more than 90% of ISRs were transmitted to the IB within the three-month deadline from the date of receipt of the search copy. As for those required to be transmitted within nine months of the priority date, 96.9% met this deadline in 2023 (figure C21). Ten ISAs transmitted over 99% of such ISRs within the required nine months, and 19 transmitted more than 90% within that timeframe.

PCT applications by publication language and filing medium	
C1. Distribution of PCT applications by language of publication, 2009–2023	75
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- | | |
|---|----|
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| C26. Average timeliness in transmitting international preliminary reports on patentability to the International Bureau, 2009–2023 | 88 |
| C27. Timeliness in transmitting international preliminary reports on patentability to the International Bureau by International Preliminary Examining Authority, 2023 | 88 |

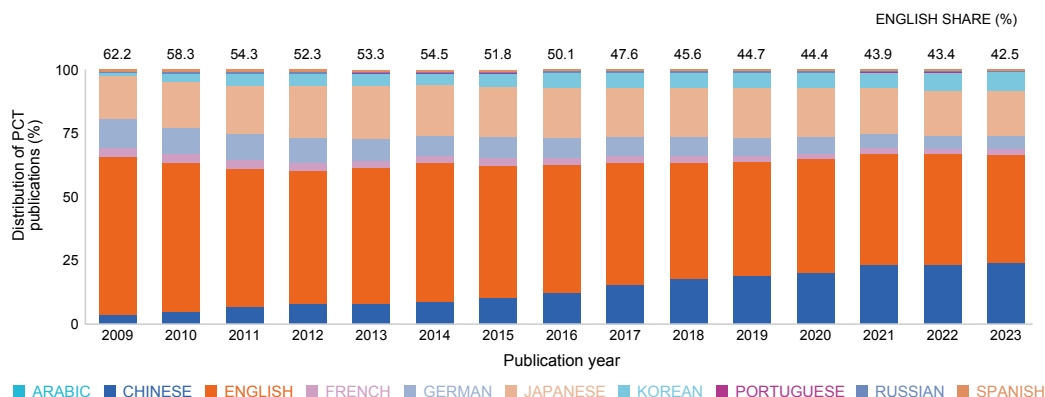
PCT-Patent Prosecution Highway pilots

- | | |
|--|----|
| C28. Distribution of PCT-PPH requests by office of earlier and later examination, 2023 | 89 |
|--|----|

PCT applications by publication language and filing medium

The share of PCT applications published in English fell to 42.5% in 2023.

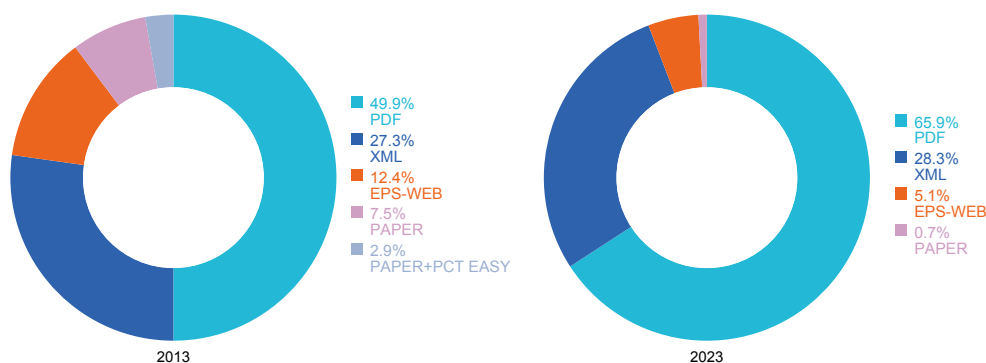
C1. Distribution of PCT applications by language of publication, 2009–2023



Source: WIPO Statistics Database, March 2024.

Over 99% of PCT applications were filed electronically in 2023.

C2. Distribution of PCT applications by filing medium, 2013 and 2023



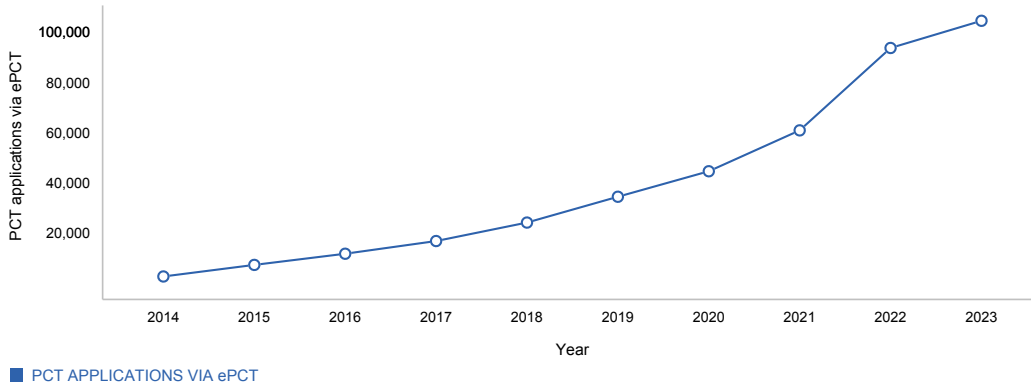
Note: PDF, EFS-WEB and XML are the three fully electronic filing mediums. Since 2015, PCT applications can no longer be filed using PCT-EASY.

Source: WIPO Statistics Database, March 2024.

PCT applications filed using ePCT

PCT applications filed using ePCT grew by 11.6% in 2023, to nearly 105,000 applications.

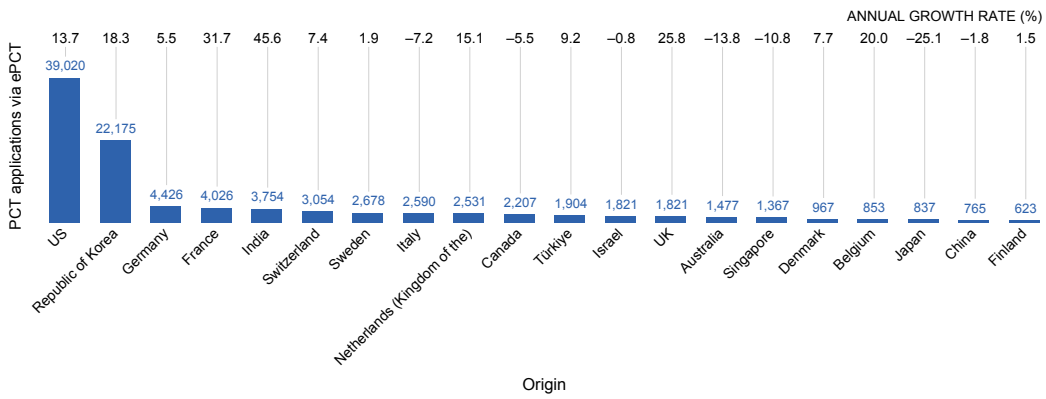
C3. Trend in PCT applications filed using ePCT, 2014–2023



Source: WIPO Statistics Database, March 2024.

Applicants from France and India increased the most the use of ePCT to file PCT applications in 2023.

C4. PCT applications filed using ePCT for the top 20 origins, 2023

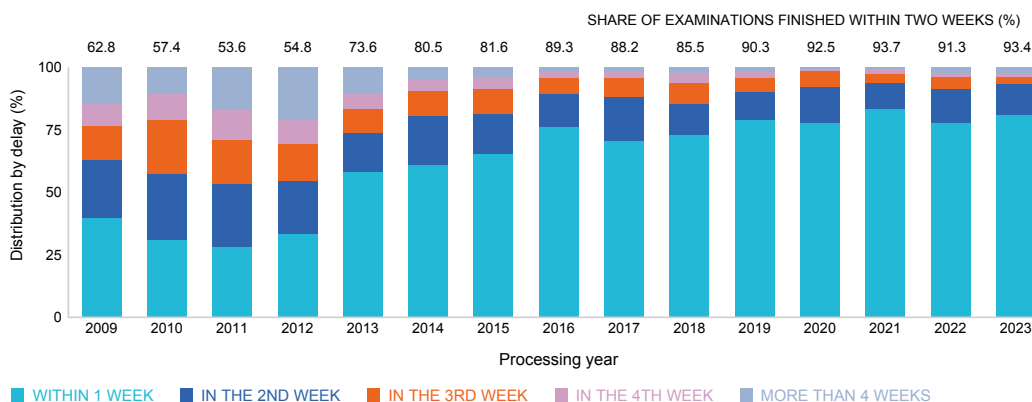


Source: WIPO Statistics Database, March 2024.

Timeliness in processing PCT applications by the International Bureau

In 2023, the International Bureau examined over 93% of PCT applications within two weeks of receipt.

C5. Timeliness of formalities examination, 2009–2023

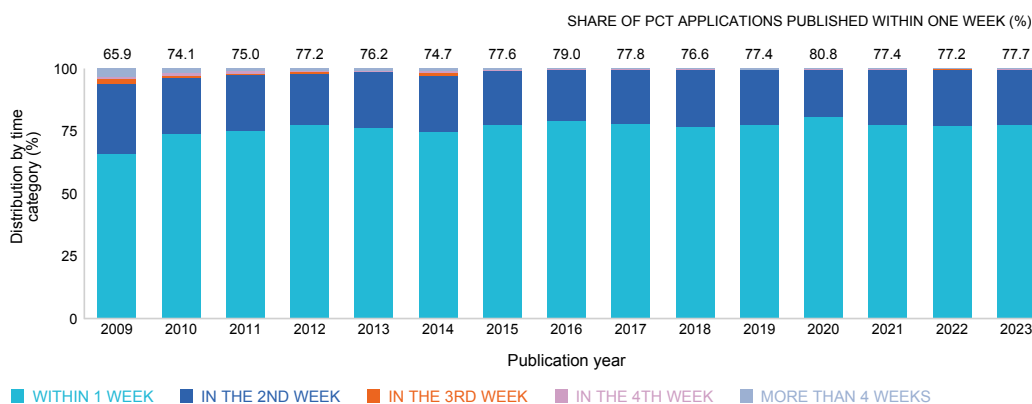


Note: The International Bureau (IB) performs a formality examination of PCT applications and related documents promptly upon receipt. Once the formality examination of a PCT application is completed, the IB sends a form to the applicant acknowledging receipt of the application. Timeliness is calculated as the time between the date of receipt of the record copy of the PCT application and the date of issuance of form PCT/IB/301.

Source: WIPO Statistics Database, March 2024.

Since 2021, between 77% and 78% of PCT applications have been published within one week of expiration of the 18-month limit.

C6. Timeliness in publishing PCT applications, 2009–2023

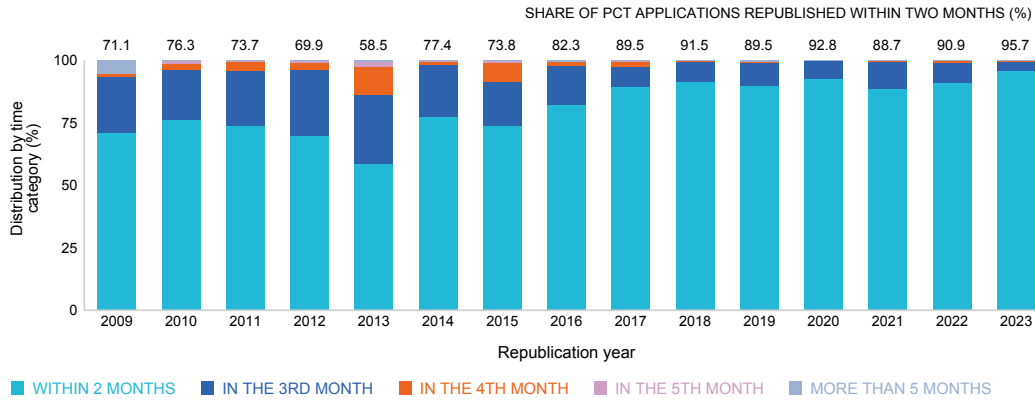


Note: PCT applications and related documents are to be published “promptly” after the expiration of 18 months from the priority date, unless the applicant requests early publication, or the application is withdrawn or considered withdrawn. Timeliness is calculated as the time between the time limit of 18 months from the priority date and the actual publication date.

Source: WIPO Statistics Database, March 2024.

In 2023, almost 96% of republishings occurred within two months of receipt of an ISR.

C7. Timeliness in republishing PCT applications with international search reports, 2009–2023



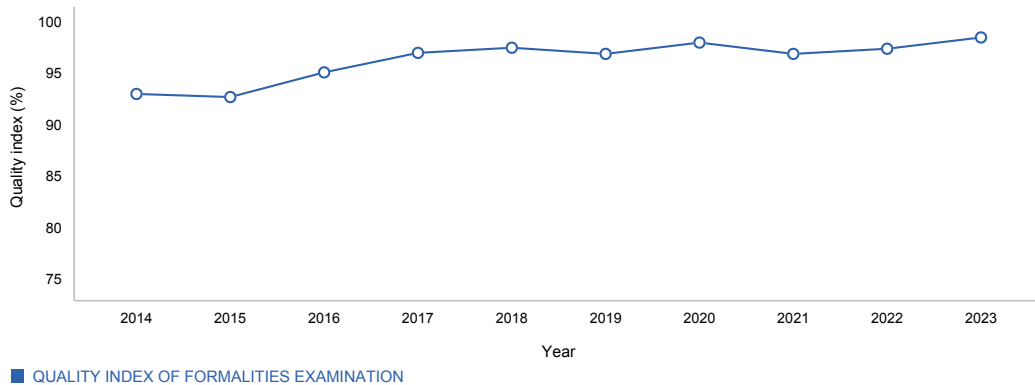
Note: The International Bureau (IB) is required to publish applications even in the absence of an international search report (ISR). In such cases, the application is republished along with an ISR once the report is received. Timeliness is calculated as the time elapsed between the date of receipt of the ISR at the IB and the date of republication by the IB.

Source: WIPO Statistics Database, March 2024.

Efficiency in processing PCT applications by the International Bureau

The overall quality of the formalities examination grew for a second consecutive year in 2023.

C8. Formalities examination quality index, 2014–2023

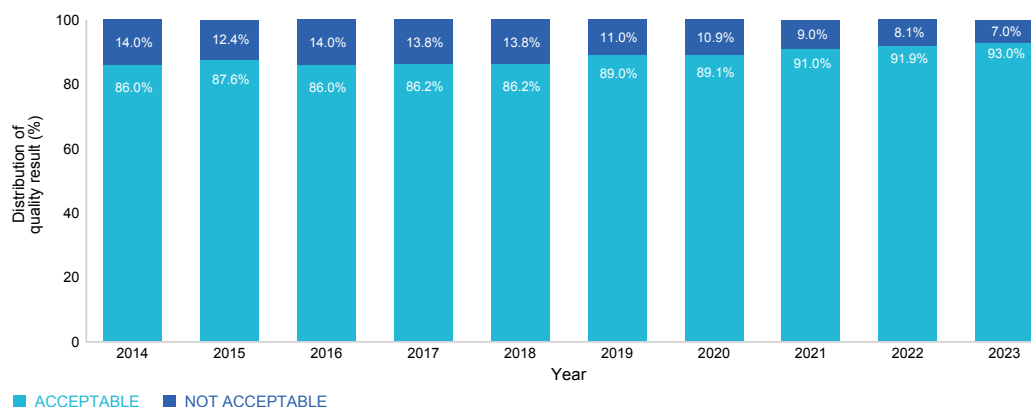


Note: In order to measure the quality of the formalities examination by the International Bureau (IB) in a simple and comprehensive manner, the IB has developed an aggregate quality index, calculated as the average of four lead quality indicators. Three of these are based on the timeliness of key transactions. The quality index is the simple average of: (i) the percentage of PCT/IB/301 forms (notification of receipt of a PCT application) sent within five weeks of the IB receiving a PCT application; (ii) the percentage of PCT applications published within six months and three weeks of the international filing date; (iii) the percentage of republishings with an international search report (ISR) within two months of the IB receiving the ISR; and (iv) the PCT Operations quality control error rate.

Source: WIPO Statistics Database, March 2024.

In 2023, the share of IB-provided translations of an acceptable quality grew to 93%.

C9. Translation quality indicator, 2014–2023

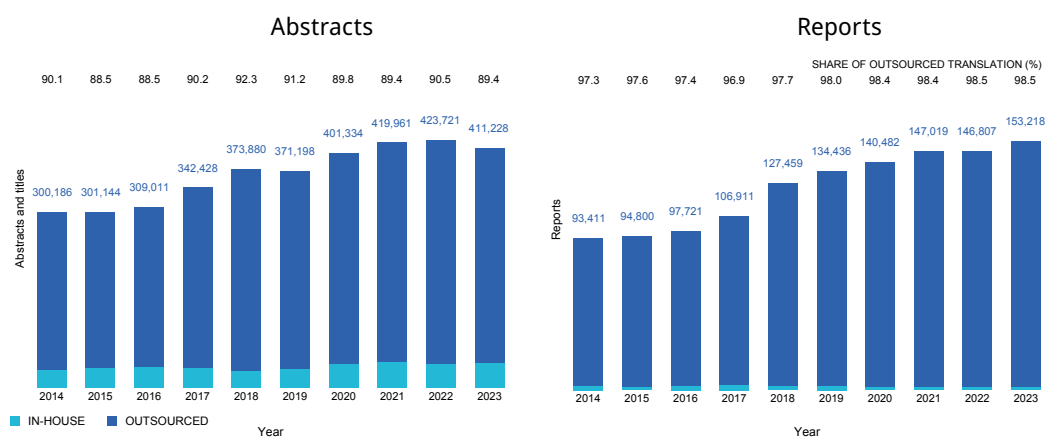


Note: The IB-provided translation quality indicator shows the average quality of abstracts and reports translated by external suppliers and in-house translators combined, based on the results of the International Bureau (IB)'s regular quality control checks. This indicator aggregates the results of quality control performed by the IB across all language combinations and document types.

Source: WIPO Statistics Database, March 2024.

Since 2019, at least 98% of report translations have been outsourced.

C10. Distribution of translation work, 2014–2023

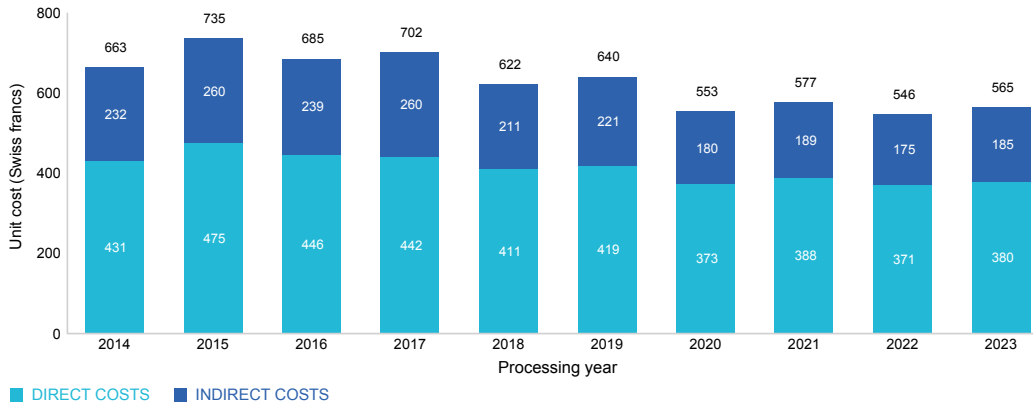


Note: Translations by the International Bureau (IB) are intended to enhance the patent system's disclosure function by making the technological information in PCT applications accessible in languages other than the language in which the original documents were filed. In order to meet this objective, the IB ensures that all titles and abstracts of PCT applications are available in English and French, and that all international search and preliminary examination reports are available in English.

Source: WIPO Statistics Database, March 2024.

The average cost of processing a published PCT application was 565 Swiss francs in 2023.

C11. Unit cost of processing a published PCT application, 2014–2023



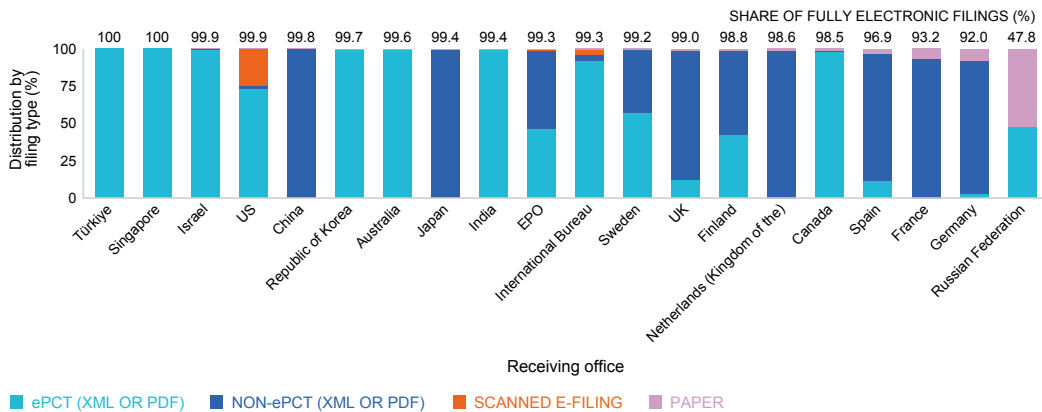
Note: The International Bureau (IB)'s efficiency in processing PCT applications can be measured by the unit cost of processing, defined as the average total cost of publishing a PCT application. Average total cost is determined by total PCT System expenditure, plus a proportion of expenditure on support and management activities. The unit cost includes the cost of all PCT activities, including translation, communication, management, and so on. Costs have direct and indirect components. Direct costs reflect expenditure incurred by the IB in administering the PCT System and related programs. Indirect costs reflect expenditure for support activities, such as buildings and information technology. Indirect costs are weighted in order to take into account only that share attributable to the PCT System. The unit cost is calculated by dividing the total cost of production by the number of PCT applications published.

Source: WIPO Statistics Database, March 2024.

Receiving offices

Over 90% of PCT applications were filed electronically at every top 20 office, except that of the Russian Federation.

C12. Distribution of PCT applications by filing medium, top 20 receiving offices, 2023

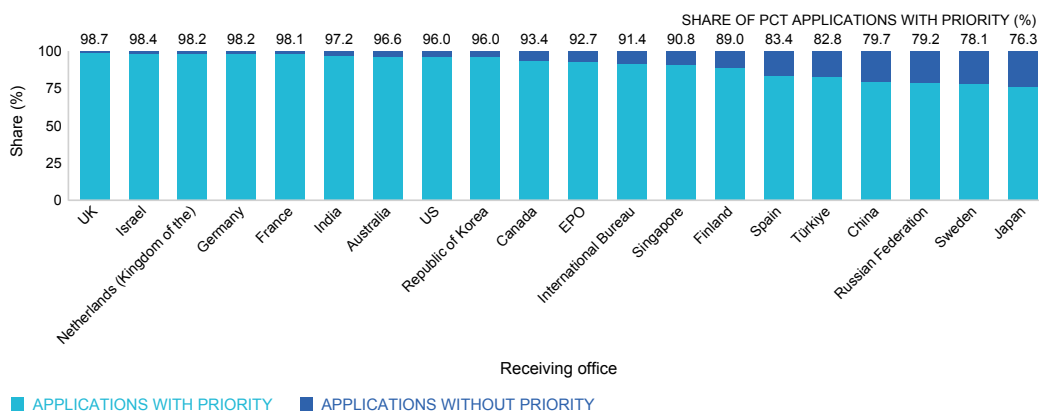


Note: EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

More than three-quarters of PCT applications filed at the top 20 offices were based on priority filings.

C13. Share of PCT applications with priority filings, top 20 receiving offices, 2023

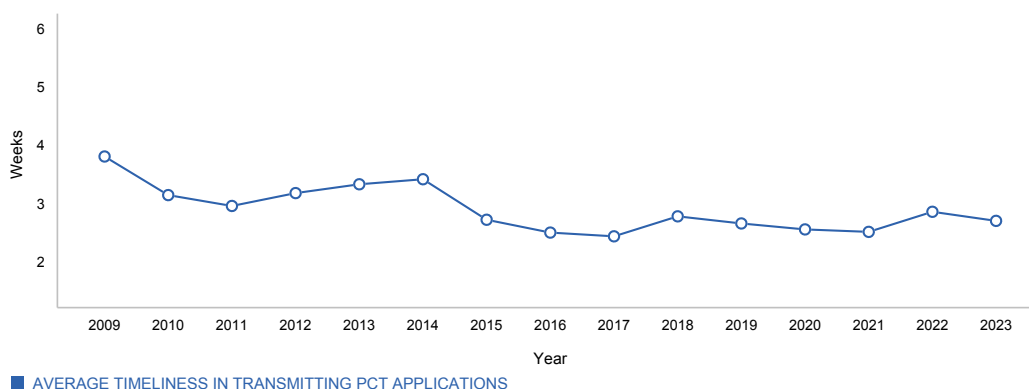


Note: EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

In 2023, offices transmitted PCT applications to the International Bureau within 2.7 weeks, on average.

C14. Average timeliness in transmitting PCT applications to the International Bureau, 2009–2023

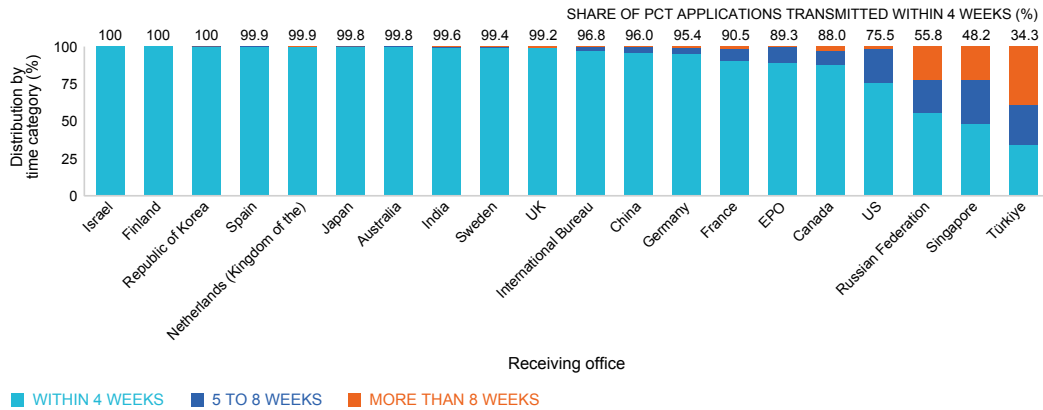


Note: The copy of the PCT application – known as the record copy – sent by the receiving office (RO) must reach the International Bureau (IB) before expiration of the 13th month from the priority date. PCT applications are usually filed before the expiration of 12 months from the priority date. Where this occurs, the IB should receive the application within one month of the international filing date. Timeliness is calculated as the time elapsed between the international filing date and the date on which the IB received the PCT application from the RO. Applications transmitted under PCT Rule 19.4 are excluded.

Source: WIPO Statistics Database, March 2024.

The offices of Finland, Israel and the Republic of Korea transmitted all PCT applications to the International Bureau within four weeks.

C15. Timeliness in transmitting PCT applications to the International Bureau, top 20 receiving offices, 2023

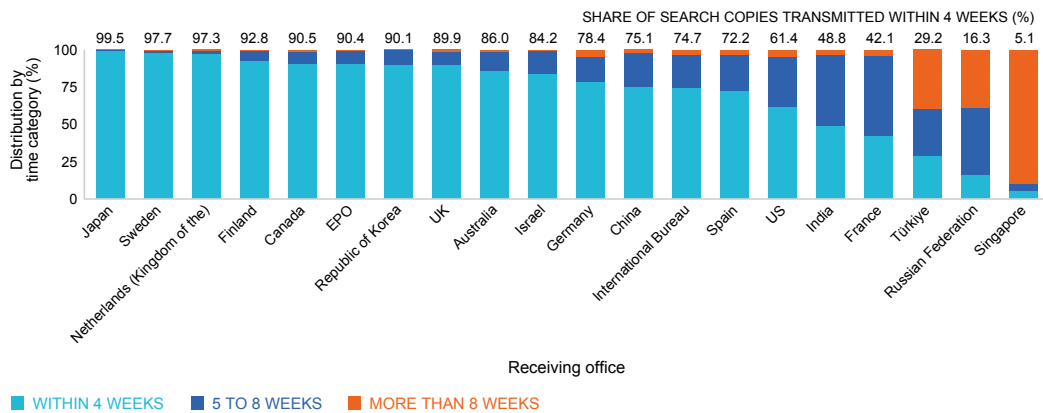


Note: The copy of the PCT application – known as the record copy – sent by the RO must reach the IB before expiration of the 13th month from the priority date. PCT applications are usually filed before the expiration of 12 months from the priority date. Where this occurs, the IB should receive the application within one month of the international filing date. Timeliness is calculated as the time elapsed between the international filing date and the date on which the IB received the PCT application from the RO. Applications transmitted under PCT Rule 19.4 are excluded. EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

Fifteen of the top 20 offices transmitted the majority of PCT applications to International Searching Authorities within four weeks.

C16. Timeliness in transmitting PCT applications to International Searching Authorities, top 20 receiving offices, 2023



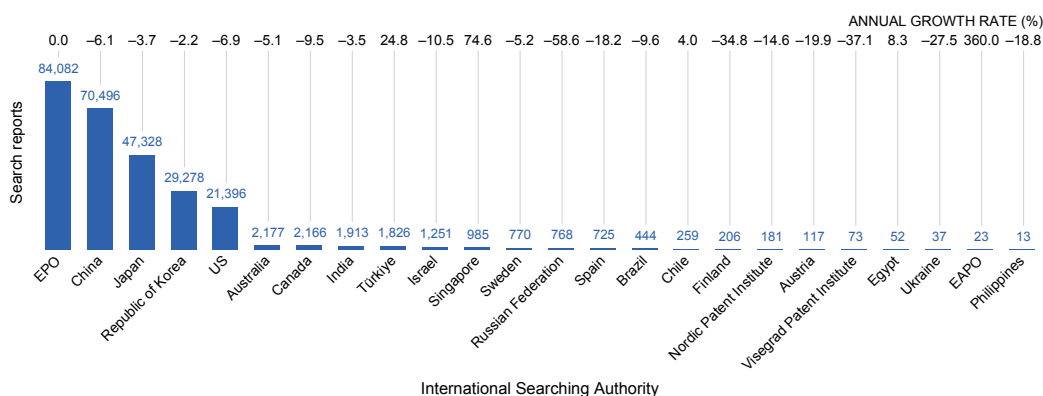
Note: Timeliness is calculated as the time elapsed between the international filing date and the date on which the International Searching Authority (ISA) received the PCT application – known as the search copy – from the receiving office. Dates of search fee payments are not used, due to the unavailability of data. Applications transmitted under the terms of PCT Rule 19.4 are excluded. EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

International Searching Authorities

Eighteen of the 24 International Searching Authorities issued fewer international search reports in 2023 than in the previous year.

C17. International search reports issued by International Searching Authority, 2023

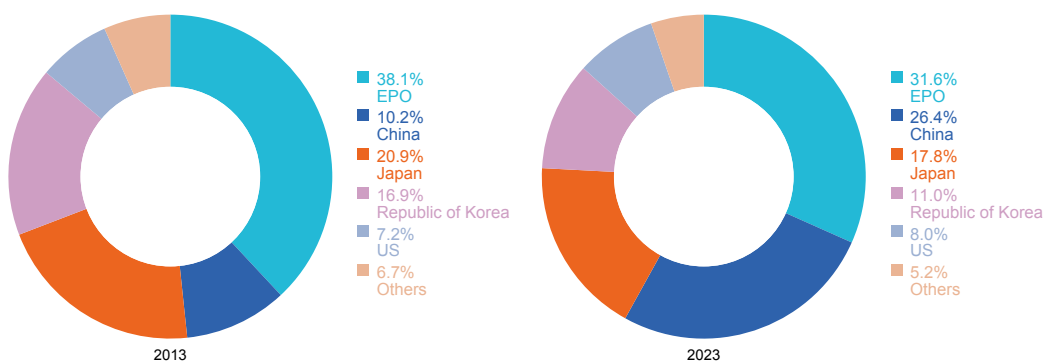


Note: EAPO is the Eurasian Patent Office and EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

The share of international search reports issued by the office of China has grown by 16.2 percentage points over the past decade.

C18. Distribution of international search reports issued by International Searching Authority, 2013 and 2023

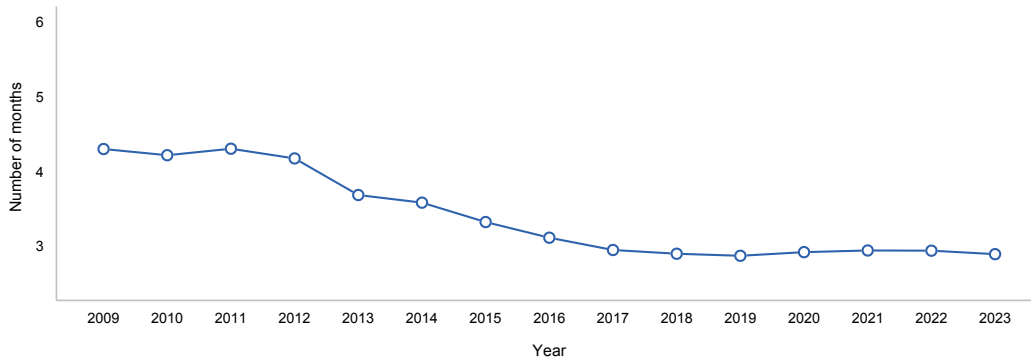


Note: EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

Since 2009, the average timeliness in transmitting international search reports to the International Bureau has improved sharply.

C19. Average timeliness in transmitting international search reports to the International Bureau, measured from the date of receipt of the search copy, 2009–2023



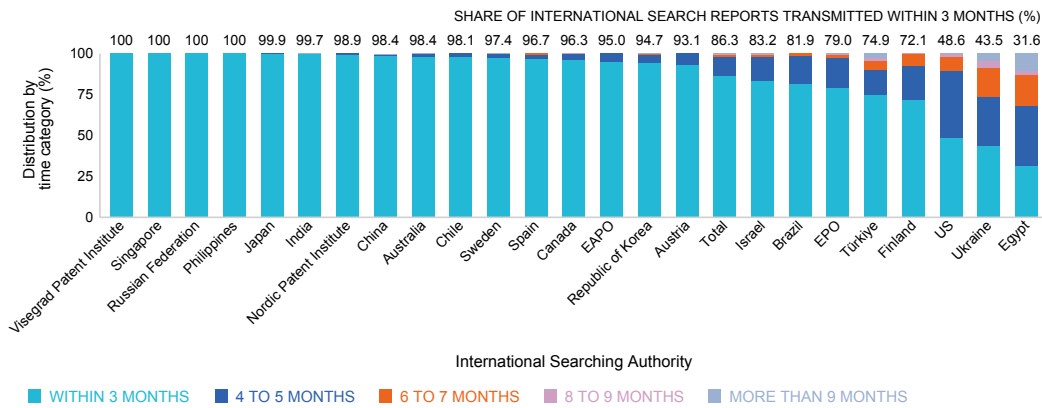
AVERAGE TIMELINESS IN TRANSMITTING INTERNATIONAL SEARCH REPORTS (FROM RECEIPT OF SEARCH COPY)

Note: The International Searching Authority (ISA) must establish an international search report (ISR) within three months of receiving a copy of an application – known as the search copy – or nine months from the priority date (or, if no priority is claimed, from the international filing date), whichever expires later. Timeliness is calculated as the time between the date the ISA receives a copy of the PCT application and the date when it transmits the ISR to the International Bureau (or, if applicable, the date of receipt of the declaration under Article 17(2)(a)). This figure shows timeliness in establishing the ISR where the applicable time limit for establishing the ISR under Rule 42 is three months after the date of receipt of the search copy.

Source: WIPO Statistics Database, March 2024.

All international search reports that ought to be transmitted to the International Bureau within three months of the date of receipt of the search copy met this deadline at four International Searching Authorities.

C20. Timeliness in transmitting international search reports to the International Bureau, measured from date of receipt of the search copy by International Searching Authority, 2023



Note: The International Searching Authority (ISA) must establish the international search report (ISR) within three months of receiving a copy of the application – known as the search copy – or nine months from the priority date (or, if no priority is claimed, from the international filing date), whichever expires later. Timeliness is calculated as the time between the date when the ISA receives a copy of the PCT application and the date when it transmits the ISR to the International Bureau (or, if applicable, the date of receipt of the declaration under Article 17(2)(a)). This figure shows timeliness in establishing the ISR where the applicable time limit for establishing the ISR under Rule 42 is three months from receipt of the search copy. When the date of receipt of the search copy is unknown and the ISA is the same office as the receiving office, we consider the search copy to have been received on the international filing date and calculate the timeliness accordingly. EAPO is the Eurasian Patent Office and EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

At seven International Searching Authorities, all international search reports required to be transmitted to the International Bureau within nine months of the priority date met the deadline.

C21. Timeliness in transmitting international search reports to the International Bureau, measured from priority date by International Searching Authority, 2023

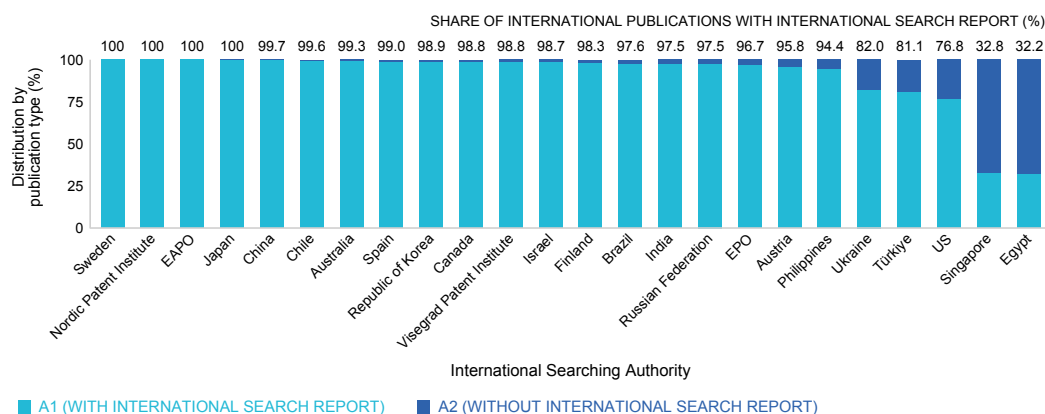


Note: The International Searching Authority (ISA) must establish the international search report (ISR) within three months of receiving a copy of the application – known as the search copy – or nine months from the priority date (or, if no priority is claimed, from the international filing date), whichever expires later. Timeliness is calculated as the time elapsed between the priority date and the date on which the ISA transmits the ISR to the International Bureau (or, if applicable, the date of receipt of the declaration under Article 17(2)(a)) for ISRs where the deadline is nine months from the priority date. This figure shows timeliness in establishing the ISR where the applicable time limit for establishing the ISR under Rule 42 is nine months from the priority date (or international filing date if no priority is claimed). ISRs are excluded when the date of receipt of the search copy is unknown and the ISA is not the same office as the receiving office. EAPO is the Eurasian Patent Office and EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

The International Bureau published more than three-quarters of PCT applications together with an international search report for 22 of the 24 International Searching Authorities.

C22. Share of published PCT applications with or without an international search report by International Searching Authority, 2023

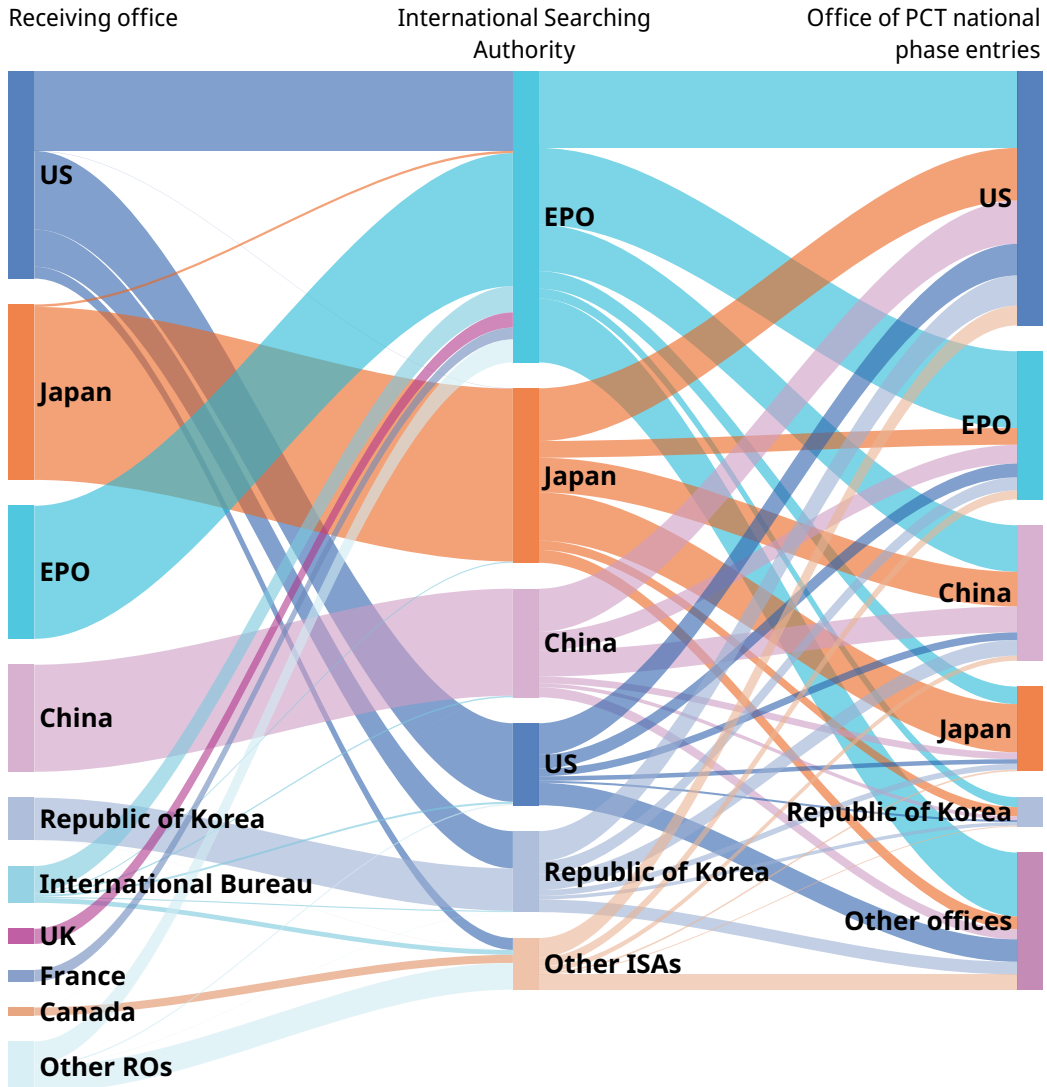


Note: A further measure of the performance of an ISA is the proportion of ISRs transmitted to the IB in time for publication with the PCT application, known as A1 publication. EAPO is the Eurasian Patent Office and EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

A large proportion of PCT applications filed at the office of the US had an international search report produced by the European Patent Office. This latter office also issued such reports for nearly half of national phase entries at offices other than the top five.

C23. Flow of PCT applications transmitted from the top nine receiving offices to the top five International Searching Authorities and the top five offices of PCT national phase entries, 2018–2020



Note: The 2018–2020 period refers to the years of PCT national phase entry and corresponds to the latest available data. National phase entry (NPE) data may be incomplete. This figure shows the flow of PCT applications between selected receiving offices (ROs), International Searching Authorities (ISAs) and offices of NPEs. Data for the offices of NPEs are based on fractional counts of PCT applications. Each RO may specify one or more ISA as competent for PCT applications filed with it. EPO is the European Patent Office.

Source: WIPO Statistics Database and EPO PATSTAT Database, March 2024.

Supplementary International Searching Authorities

The European Patent Office issued the vast majority of supplementary international search reports.

C24. Distribution of supplementary international search reports by Supplementary International Searching Authority, 2021–2023

Supplementary International Searching Authority	Year		
	2021	2022	2023
Austria	1		3
European Patent Office	48	48	28
Nordic Patent Institute	1		
Russian Federation	3		
Singapore		3	
Sweden	1	1	1
Ukraine		1	
Total	54	53	32

Note: Data for 2023 may be incomplete.

Source: WIPO Statistics Database, March 2024.

International Preliminary Examining Authorities

The number of international preliminary reports on patentability issued dropped by a further 5.7% in 2023.

C25. Distribution of international preliminary reports on patentability by International Preliminary Examining Authority, 2021–2023

International Preliminary Examining Authority	Year			2023 share (%)	Change from 2022 (%)
	2021	2022	2023		
Australia	505	421	448	5.3	6.4
Austria	11	4	2	0.0	-50.0
Brazil	80	87	93	1.1	6.9
Canada	173	145	154	1.8	6.2
Chile	12	17	7	0.1	-58.8
China	412	372	255	3.0	-31.5
Egypt	2	0	8	0.1	n.a.
Eurasian Patent Organization	0	1	3	0.0	200.0
European Patent Office	5,302	5,177	4,957	58.8	-4.2
Finland	39	38	27	0.3	-28.9
India	67	59	53	0.6	-10.2
Israel	76	75	90	1.1	20.0
Japan	1,562	1,399	1,412	16.8	0.9
Nordic Patent Institute	33	32	47	0.6	46.9
Philippines	0	1	0	0.0	-100.0
Republic of Korea	133	108	114	1.4	5.6
Russian Federation	59	45	29	0.3	-35.6
Singapore	109	80	66	0.8	-17.5
Spain	51	53	34	0.4	-35.8
Sweden	74	69	62	0.7	-10.1
Türkiye	57	53	34	0.4	-35.8
Ukraine	7	9	2	0.0	-77.8
United States of America	966	688	528	6.3	-23.3
Visegrad Patent Institute	5	1	1	0.0	0.0
Total	9,735	8,934	8,426	100.0	-5.7

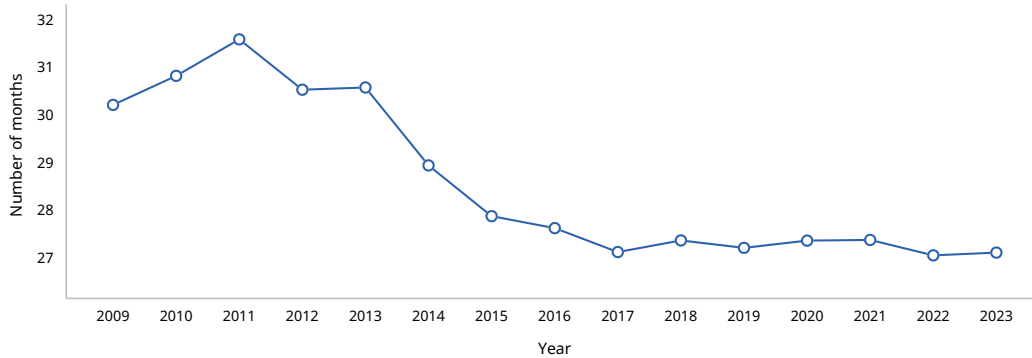
Note: Data for 2023 may be incomplete.

n.a. indicates not applicable.

Source: WIPO Statistics Database, March 2024.

In 2023, the average timeliness in transmitting international preliminary reports on patentability to the International Bureau remained 27.1 months.

C26. Average timeliness in transmitting international preliminary reports on patentability to the International Bureau, 2009–2023



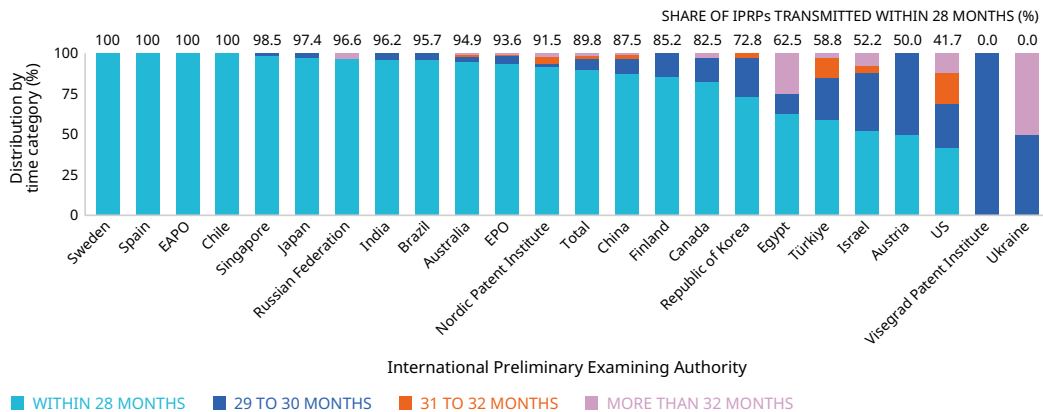
AVERAGE TIMELINESS IN TRANSMITTING INTERNATIONAL PRELIMINARY REPORTS ON PATENTABILITY

Note: Timeliness is calculated as the time elapsed between the priority date and the date on which the International Bureau received an international preliminary report on patentability (IPRP) from an International Preliminary Examining Authority (IPEA).

Source: WIPO Statistics Database, March 2024.

Four offices transmitted all international preliminary reports on patentability to the International Bureau within 28 months of the priority date.

C27. Timeliness in transmitting international preliminary reports on patentability to the International Bureau by International Preliminary Examining Authority, 2023



Note: This figure presents the same timeliness information for 2023 as that presented in figure C26, but breaks it down by International Preliminary Examining Authority (IPEA) and time category. Timeliness is calculated as the time elapsed between the priority date and the date when the International Bureau received an international preliminary report on patentability (IPRP) from an IPEA. EAPO is the Eurasian Patent Office and EPO is the European Patent Office.

Source: WIPO Statistics Database, March 2024.

PCT-Patent Prosecution Highway pilots

Japan was by far the main office of later examination for PCT-Patent Prosecution Highway (PPH) requests in 2023.

C28. Distribution of PCT-PPH requests by office of earlier and later examination, 2023

Office of later examination	Office of earlier examination															Total
	Japan	EPO	US	China	Republic of Korea	Canada	Israel	Australia	Singapore	Spain	NPI	Finland	Sweden	Others		
Japan	1,205	478	63	119	55	12	7	5	1	1	2	1	0	0	1,949	
China	310	649	148	0	97	17	9	0	11	0	0	5	5	6	1,257	
Canada	36	214	286	34	30	71	5	13	1	0	3	4	0	1	698	
Republic of Korea	138	169	73	73	83	7	5	5	1	0	0	1	0	18	573	
EPO	146	0	117	129	46	15	2	12	2	0	0	0	0	0	469	
Australia	25	120	97	0	18	6	1	0	1	0	7	0	1	3	279	
Israel	11	112	59	7	4	0	47	0	2	0	0	0	0	0	242	
Singapore	24	56	34	13	6	2	13	7	0	0	2	0	0	3	160	
Philippines	64	14	47	0	5	0	0	0	0	0	0	0	0	0	130	
Brazil	8	72	20	4	3	0	0	0	0	1	0	0	3	10	121	
Mexico	10	55	14	2	2	1	0	0	0	14	0	0	0	0	98	
Colombia	4	13	39	0	1	0	0	6	0	0	0	0	0	3	66	
UK	19	0	12	15	1	0	0	0	0	0	0	0	0	0	47	
New Zealand	3	0	10	0	0	2	0	14	0	0	0	0	0	0	29	
Hungary	0	0	0	10	0	0	0	0	0	0	0	0	0	0	10	
France	5	0	0	0	0	0	0	0	0	0	0	0	0	0	5	
Others	0	3	0	0	0	0	0	0	0	0	0	0	1	2	6	
Total	2,008	1,955	1,019	406	351	133	89	62	19	16	14	11	10	46	6,139	

Note: EPO is the European Patent Office and NPI is the Nordic Patent Institute. Data for several offices of later examination, such as those of Germany, Indonesia and the US, are unavailable.

Source: WIPO, based on data from the Japan Patent Office, March 2024.

Annexes

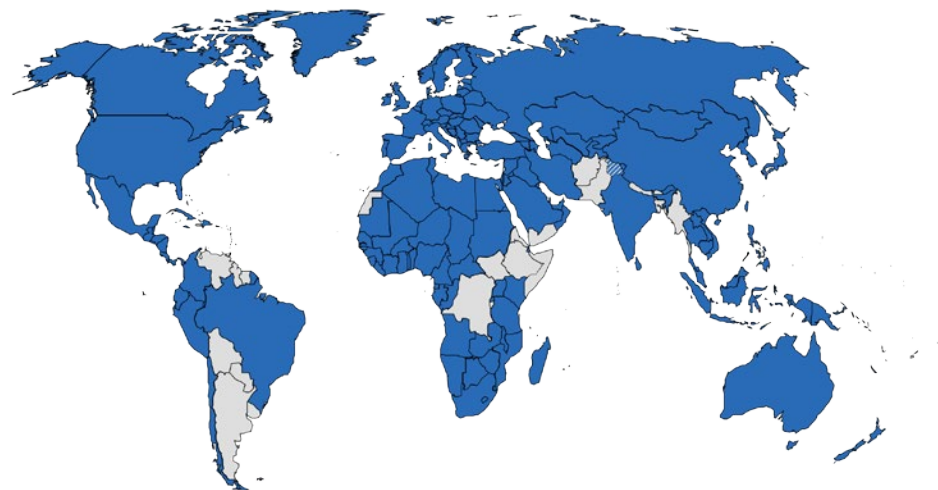
A brief presentation of the Patent Cooperation Treaty

The Patent Cooperation Treaty (PCT) is an international treaty administered by the World Intellectual Property Organization (WIPO). Since entering into force in 1978, the PCT has served as an alternative to the Paris Convention route for pursuing patent rights in different countries. The PCT System makes it possible to seek patent protection for an invention simultaneously in multiple countries by filing a single “international” patent application instead of filing several separate national or regional patent applications. When first established, the PCT System comprised 18 members. By the end of 2023, it comprised 157 Contracting States, as shown on the map below. A table listing all PCT Contracting States is provided at the end of this review.

Advantages of the Patent Cooperation Treaty

Applicants and patent offices of Contracting States benefit from uniform formality requirements, international search, supplementary international search and preliminary examination reports, and centralized international publication. Unlike the Paris Convention route, applicants can delay examination procedures at national patent offices, as well as the payment of associated legal fees and translation costs. By deferring national and regional procedures, applicants gain time to make decisions on the potential commercialization of their invention and the markets in which to seek patent protection. The reports produced by the international authorities which applicants receive during the international phase – about relevant prior art and the potential patentability of their inventions – help them make well-informed decisions.

Contracting States in 2023



Source: WIPO, March 2024.

In addition, the PCT System is intended to reduce unnecessary duplication and support work sharing between offices. Under the PCT System, an applicant must file a patent application with a receiving office (RO) and choose an International Searching Authority (ISA) to provide an international search report (ISR) and a written opinion on the potential patentability of the invention in question. The International Bureau (IB) of WIPO then publishes the application in PATENTSCOPE, its online database. Following receipt of the ISR and a written opinion, the applicant can choose to request a supplementary international search (SIS) by a Supplementary International Searching Authority (SISA), have an international preliminary examination (IPE) of the application undertaken by an International Preliminary Examining Authority (IPEA) or take no further action. The applicant generally has a minimum of 30 months from the earliest filing (priority) date during which to decide whether to enter the national phase in the countries or regions in which protection is sought.

International phase

The international phase usually continues for a period of 18 months and mainly involves the filing and formal examination of the application, international search, international publication, optional SIS and optional IPE.

Filing applications

Typically, applicants seeking protection for an invention in more than one country first file a national or regional patent application at their national or regional patent office. Within 12 months of the filing date of that first application (a time limit set by the Paris Convention), applicants must file an international application under the PCT with an RO – the respective national or regional patent office, or the IB – thereby beginning the international phase. Only a national or resident of a PCT Contracting State can file a PCT application. Where several applicants are named in a PCT application, only one need comply with this requirement. Because the application has legal effect in all Contracting States, applicants can effectively postpone the requirement to pay certain substantial fees and costs, such as that of translating the application into national languages.

The RO transmits a copy of the application to the IB, which is responsible for:

- receiving and storing all application documents;
- performing a second formalities examination;
- translating the title and abstract of the application and certain associated documents into English and/or French, where necessary;
- publishing the application and related documents in PATENTSCOPE; and
- communicating documents to offices and third parties.

International search

Applications are subject to an international search by an ISA, which identifies the prior art relevant to the patentability of the invention, establishes an ISR and provides a written opinion on the invention's potential patentability. The opinion provided can assist the applicant in deciding whether to continue seeking protection for the invention. If the written opinion is unfavorable, the applicant can choose to amend the application in order to improve the probability of obtaining a patent, or withdraw the application before international publication and before incurring additional costs or do nothing.

Supplementary international search

Since January 1, 2009, the SIS service has afforded applicants the option of requesting additional searches from ISAs other than the one that carried out the initial search. This service aims to give applicants the option of obtaining a more complete overview of the prior art in the international phase by allowing them to have an additional search performed in an ISA's specialty language. Applicants can request a SIS report by a SISA up to 22 months from the filing (priority) date.

International preliminary examination

After receiving the ISA's written opinion, applicants can request an optional IPE – a second evaluation of the invention's patentability – to be carried out by an IPEA, usually on an amended version of the application (all ISAs are also IPEAs). The resultant international preliminary report

on patentability (IPRP) can further assist the applicant in determining whether to enter the national phase and contains useful information for elected offices in the national phase.

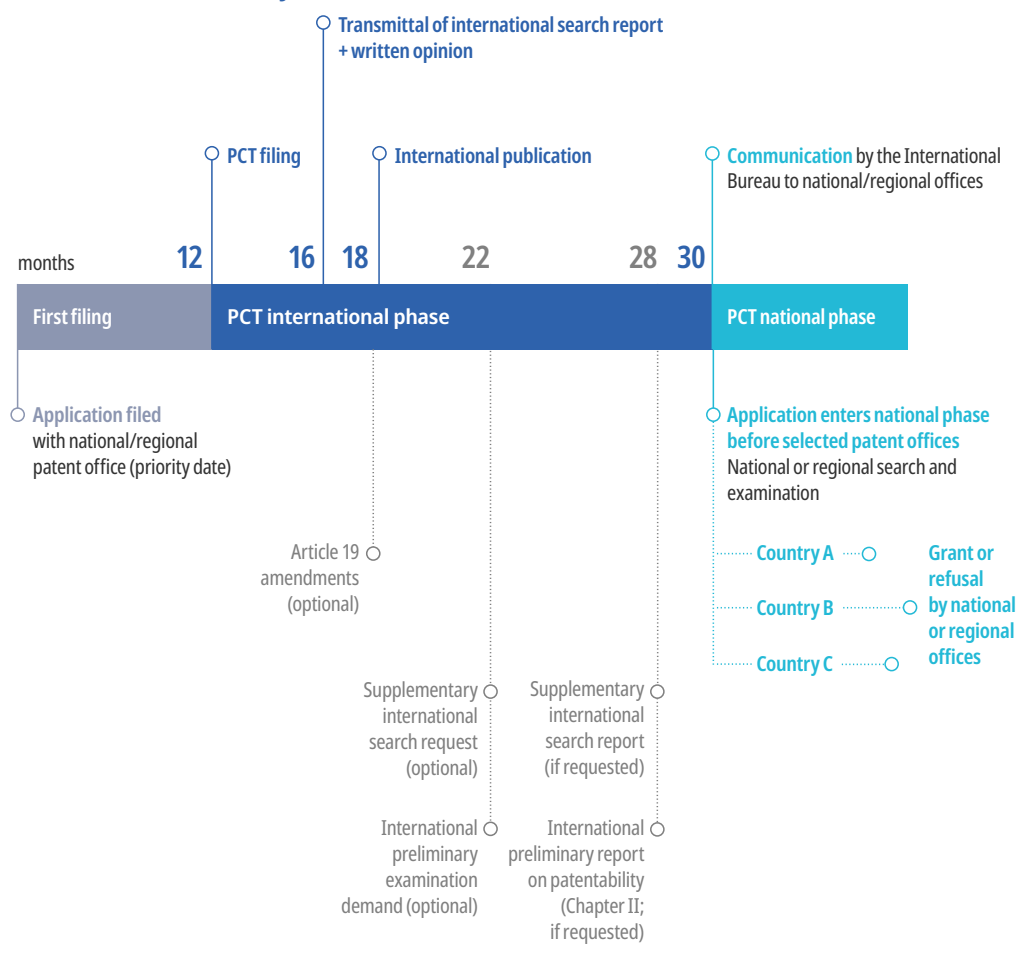
National phase

Applicants have at least 18 months from the international filing date before an application needs to enter the national phase at individual patent offices. This delay affords additional time – compared to that allowed under the Paris Convention – to evaluate the chances of obtaining a patent and plan how to use the invention commercially in those countries in which protection is sought. In the national phase, certain PCT protections continue to apply. During this phase, the particular patent office processes the application in accordance with its national patent laws and decides whether to grant patent protection. The time required for processing varies between patent offices.

Patent Prosecution Highway

PCT-Patent Prosecution Highway (PCT-PPH) pilots comprise bilateral agreements between patent offices that enable applicants to request accelerated processing of national phase applications. Under these agreements, an applicant receiving a written opinion or an IPRP indicating that at least one claim in the PCT application has novelty, an inventive step or industrial applicability may request that other participating patent offices take up the processing of the application out of turn. An applicant may request the PCT-PPH procedure when entering the national phase of the PCT in a participating designated state. The advantage for PCT applicants is that patent applications are processed faster and more efficiently by designated (or elected) offices. Participating offices also benefit through having a reduced examination workload and the additional knowledge sharing.

Overview of the PCT System



Benefits

- One PCT application with legal effect in all PCT Contracting States
- Harmonized formal requirements
- Receive patentability information to support strategic decision-making
- Postpone significant costs for national processing by 18 months

For more information on the PCT, please visit www.wipo.int/pct.

Data description

Data presented in this review were drawn from the WIPO Statistics Database. Due to a delay in transmitting PCT applications to WIPO, the figures for the international phase of the PCT for 2023 are estimates.

Publication of PCT applications usually takes place every Thursday. The years 2014 and 2020 each had 53 Thursdays instead of 52 as in other years, which slightly affects trends in statistics based on published PCT applications.

For the national phase of the PCT System, statistics are based on data supplied to WIPO by national and regional patent offices – data which WIPO often receives six months or more after the end of the year in question. Therefore, the latest year for which data are available is 2022. Data may be missing for some offices and incomplete for some origins. Data are available for most of the larger offices, if not all. With the 2022 data supplied to WIPO corresponding to 99.7% of the world total, only a very small proportion of the total is estimated. Missing data are usually estimated using linear extrapolation and averaging adjacent data points.

Due to its minor impact on data, the equivalent patent application concept for patent statistics by origin is not used in this review. National phase entry data by origin may therefore differ slightly from other sources, such as WIPO's IP Statistics Data Center.

Income groups correspond to those used by the World Bank and groupings by region are based on the United Nations (UN) definition of regions.

The figures in this review are subject to revision. Regular updates are available at WIPO's IP Statistics Data Center and Statistical Country Profiles at: www.wipo.int/ipstats.

Acronyms

ARIPO	African Regional Intellectual Property Organization
CNIPA	China National Intellectual Property Administration
EAPO	Eurasian Patent Organization
EPO	European Patent Office
GPPH	Global Patent Prosecution Highway
IB	International Bureau of WIPO
IP	intellectual property
IPC	International Patent Classification
IPE	international preliminary examination
IPEA	International Preliminary Examining Authority
IPRP	international preliminary report on patentability
ISA	International Searching Authority
ISR	international search report
JPO	Japan Patent Office
KIPO	Korean Intellectual Property Office
LAC	Latin America and the Caribbean
NPE	national phase entry
OAPI	African Intellectual Property Organization
PCT	Patent Cooperation Treaty
PCT-PPH	Patent Cooperation Treaty-Patent Prosecution Highway
PDF	portable document format
PRO	public research organization
RO	receiving office
SIS	supplementary international search
SISA	Supplementary International Searching Authority (authority specified for supplementary search)
SISR	supplementary international search report
UK	United Kingdom
US	United States of America
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization
XML	extensible markup language

Glossary

Applicant: An individual or legal entity that files a patent application. There may be more than one applicant in an application. For PCT statistics, the place of residence of the first named applicant is used to determine the origin of a PCT application.

Application: The procedure for requesting IP rights at a patent office which then examines the application and decides whether to grant protection. Also refers to a set of documents submitted to an office by an applicant.

Authority specified for supplementary international search (SISA): An International Searching Authority (ISA) that provides a supplementary international search service – also known as a Supplementary International Searching Authority (SISA).

Chapter I of the PCT: The provisions in the PCT regulating the filing of PCT applications, the international searches and written opinions of ISAs, and the international publication of PCT applications – and which provide for the communication of PCT applications plus related documents to designated offices.

Chapter II of the PCT: The provisions in the PCT regulating the optional international preliminary examination (IPE) procedure.

Designated office: A national or regional office of, or acting for, a state designated in a PCT application under Chapter I of the PCT.

Designated state: A Contracting State in which protection for an invention is sought, as specified in the PCT application.

Elected office: The national or regional office of, or acting for, a state elected by an applicant under Chapter II of the PCT where the applicant intends to use the results of the international preliminary examination.

Filing abroad: For statistical purposes, an application filed by a resident of a given state or jurisdiction at an IP office of another state or jurisdiction. For example, an application filed at the Japan Patent Office (JPO) by an applicant domiciled in Lithuania is considered an application abroad from the perspective of Lithuania. This differs from a “non-resident application,” which describes an application filed by a resident of a foreign state or jurisdiction from the perspective of the office receiving the application; so, the example above would be a non-resident application from the point of view of the JPO.

Foreign-oriented patent families: A patent family is a set of interrelated patent applications filed at one or more offices to protect the same invention. The patent applications within a family are interlinked by one or more of the following: priority claim, PCT national phase entry, continuation, continuation-in-part, internal priority, and addition or division. Foreign-oriented patent families have at least one filing at an office other than the applicant’s home office.

Global Patent Prosecution Highway (GPPH): The GPPH pilot is a single, multilateral agreement between a group of offices. It allows applicants to make a request for accelerated processing at any participating office, based on work products from any of the other participating offices (including PCT reports), using a single set of qualifying requirements.

International application: See “PCT application.”

International authority: A national or regional patent office or intergovernmental organization that undertakes specific functions, as prescribed by the PCT.

International Bureau (IB) of WIPO: In the context of the PCT, the IB of WIPO handles certain processing tasks for all PCT applications filed at receiving offices worldwide. It also acts as a receiving office for all PCT applications from Contracting States.

International filing date: The date on which a receiving office receives a PCT application, provided certain formal requirements have been met.

International Patent Classification (IPC): An internationally recognized patent classification system, the IPC has a hierarchical structure of language-independent symbols and is divided into sections, classes, subclasses and groups. IPC symbols are assigned according to the technical features in a patent application. A patent application that relates to multiple technical features can be assigned several IPC symbols.

International phase of the PCT: The international phase consists of five main stages:

1. Filing of a PCT application by an applicant and its processing by the receiving office;
2. Establishment of an ISR and a written opinion by an ISA;
3. Publication of the PCT application and related documents, as well as their communication to designated and elected offices by the IB;
4. Optional establishment of an SISR by a SISA;
5. Optional establishment of an IPRP by an IPEA.

For further details on the international phase, see annex, A brief presentation of the Patent Cooperation Treaty.

International Preliminary Examining Authority (IPEA): A national or regional patent office or intergovernmental organization appointed by the PCT Assembly to carry out international preliminary examinations (IPEs). Its task is to establish the IPRP (Chapter II of the PCT).

International preliminary report on patentability (Chapter II of the PCT) (IPRP): A preliminary, nonbinding opinion established by an IPEA at the request of an applicant as to whether a claimed invention appears to be novel, involve an inventive step (i.e., is not obvious) and be industrially applicable. Prior to January 1, 2004, this report was known as the "International Preliminary Examination Report."

International search report (ISR): A report established by an ISA containing citations of documents (prior art) considered relevant for determining in particular the novelty and inventive step of an invention as claimed. The ISR also includes a classification of the subject matter of an invention and an indication of the fields searched, as well as any electronic databases searched.

International Searching Authority (ISA): A national patent office or intergovernmental organization appointed by the PCT Assembly to carry out international searches. ISAs establish ISRs and written opinions on PCT applications.

Invention: A new solution to a technical problem. To obtain patent rights, an invention must be novel, involve an inventive step and be industrially applicable, as judged by a person skilled in the art.

National phase entry (NPE): The national phase under the PCT follows the international phase of the PCT procedure and consists of the entry and processing of an international application in those individual countries or regions in which the applicant seeks protection for an invention. An entry must in general take place within 30 months from the priority date of the application, although longer time periods are afforded by some offices. NPE involves the payment of fees and, where necessary, the submission of a translation of the PCT application.

Non-resident application: For statistical purposes, a "non-resident" application refers to an application filed at the IP office of, or acting for, a state or jurisdiction in which the first named applicant in an application is not domiciled. For example, an application filed at the Japan Patent Office (JPO) by an applicant residing in Senegal is considered a non-resident application from the perspective of the JPO. Non-resident applications are sometimes referred to as foreign applications.

Origin: For statistical purposes, the origin of an application means the country or territory of residence (or nationality, in the absence of a valid residence) of the first named applicant in an application.

Paris Convention: The Paris Convention for the Protection of Industrial Property is an international convention signed in Paris (France) on March 20, 1883. It is one of the first and most important intellectual property treaties. The Paris Convention establishes, among other things, the “right of priority” principle, which enables a patent applicant to claim a priority of up to 12 months when filing an application in countries other than the original country of filing.

Paris route: Applications for patent protection filed directly with the national/regional office of, or acting for, the relevant state or jurisdiction (as opposed to the “national phase under the PCT”). The Paris route is also called the “direct route” or “national route.”

Patent: An exclusive right granted by law to an applicant for an invention for a limited period of time (generally 20 years from the date of filing). The patent system is designed to encourage innovation by providing innovators with time-limited exclusive legal rights, enabling them to appropriate returns from their innovative activity. In return, the applicant is obliged to disclose the invention to the public in a manner that enables others skilled in the art to replicate it. The patent system is also designed to balance the interests of applicants (exclusive rights) with the interests of society (disclosure of the invention). Patents are granted by national or regional patent offices and limited to the jurisdiction of the issuing authority. Patent rights can be sought by filing an application directly with the relevant national or regional office(s), or by filing a PCT application.

Patent Cooperation Treaty (PCT): An international treaty administered by WIPO, the PCT allows applicants to seek patent protection for an invention simultaneously in a large number of countries (PCT Contracting States) by filing a single PCT international application. The decision as to the granting of patents, which remains under the control of national or regional patent offices, takes place during what is called the “national phase under the PCT.”

PATENTSCOPE: Provides access, free of charge, to all published PCT applications along with related documents, and to the national or regional patent collections from numerous offices worldwide. Since April 2006, the PATENTSCOPE search system has been the authentic publication source for PCT applications.

PCT application: A patent application filed through the WIPO-administered PCT, also known as an international application.

PCT route: The procedure outlined in the PCT, as opposed to the Paris route.

PCT System: The PCT, an international treaty administered by WIPO, facilitates the acquisition of patent rights in a large number of jurisdictions. The PCT System simplifies the process of multiple national patent filings by making it unnecessary to file a separate application in each jurisdiction within the 12-month period under the Paris Convention. However, the decision on whether to grant patent rights remains the prerogative of national and regional patent offices, and patent rights remain limited to the jurisdiction of the patent-granting authority. The PCT application process starts with the international phase, during which an international search and, possibly, a preliminary examination are performed, and concludes with the national phase, during which a national or regional patent office decides on the patentability of an invention according to national law.

PCT-Patent Prosecution Highway pilots (PCT-PPH): A number of bilateral agreements signed between patent offices that enable applicants to request an accelerated examination procedure, because of positive patentability findings made by the International Searching and/or International Preliminary Examining Authority, in the written opinion of an International Searching Authority, the written opinion of an International Preliminary Examining Authority or the international preliminary report on patentability.

Prior art: All information disclosed to the public about an invention, in any form, before a given date. Information on prior art can assist in determining whether a claimed invention is new and

involves an inventive step (i.e., is not obvious) for the purposes of international searches and international preliminary examination (IPE).

Priority date: The filing date of an application on the basis of which priority is claimed.

Publication of PCT application: The IB publishes a PCT application and related documents promptly after the expiration of 18 months from the priority date. If a PCT application is withdrawn or considered withdrawn before the technical preparations for publication are completed, the application is not published. An applicant can request early publication of a PCT application.

Receiving office (RO): A patent office – or the IB – at which a PCT application is filed. The role of the RO is to check and process an application in accordance with the regulations governing the PCT.

Resident application: For statistical purposes, a resident application refers to an application filed with the IP office of, or acting for, the state or jurisdiction in which the first named applicant in the application has residence. For example, an application filed with the Japan Patent Office (JPO) by a resident of Japan is considered a resident application by the JPO. Resident applications are sometimes referred to as “domestic applications.”

Supplementary international search report (SISR): A report, similar to the ISR, established during the supplementary international search, that allows an applicant to request, in addition to the main international search, one or more supplementary international searches, each to be carried out by an international authority other than the ISA undertaking the main international search. The SISR primarily focuses on the patent documentation in the language in which that ISA specializes.

Supplementary International Searching Authority (SISA): See “Authority specified for supplementary international search.”

World Intellectual Property Organization (WIPO): A United Nations specialized agency dedicated to the promotion of innovation and creativity for the economic, social and cultural development of all countries through a balanced and effective international intellectual property (IP) system. Established in 1967, WIPO’s mandate is to promote the protection of IP globally through cooperation among states and in collaboration with other international organizations.

Written opinion of the ISA (WOSA): For every PCT application filed on or after January 1, 2004, an ISA establishes, at the same time that it establishes the ISR, a preliminary and non-binding written opinion on whether a claimed invention appears to be novel, involve an inventive step and is industrially applicable.

PCT Contracting States

In 2023, the number of member states was 157.

Albania	Germany	Oman
Algeria	Ghana	Panama
Angola	Greece	Papua New Guinea
Antigua and Barbuda	Grenada	Peru
Armenia	Guatemala	Philippines
Australia	Guinea	Poland
Austria	Guinea-Bissau	Portugal
Azerbaijan	Honduras	Qatar
Bahrain	Hungary	Republic of Korea
Barbados	Iceland	Republic of Moldova
Belarus	India	Romania
Belgium	Indonesia	Russian Federation
Belize	Iran (Islamic Republic of)	Rwanda
Benin	Iraq	Saint Kitts and Nevis
Bosnia and Herzegovina	Ireland	Saint Lucia
Botswana	Israel	Saint Vincent and the Grenadines
Brazil	Italy	Samoa
Brunei Darussalam	Jamaica	San Marino
Bulgaria	Japan	Sao Tome and Principe
Burkina Faso	Jordan	Saudi Arabia
Cabo Verde	Kazakhstan	Senegal
Cambodia	Kenya	Serbia
Cameroon	Kuwait	Seychelles
Canada	Kyrgyzstan	Sierra Leone
Central African Republic	Lao People's Democratic Republic	Singapore
Chad	Latvia	Slovakia
Chile	Lesotho	Slovenia
China	Liberia	South Africa
Colombia	Libya	Spain
Comoros	Liechtenstein	Sri Lanka
Congo	Lithuania	Sudan
Costa Rica	Luxembourg	Sweden
Côte d'Ivoire	Madagascar	Switzerland
Croatia	Malawi	Syrian Arab Republic
Cuba	Malaysia	Tajikistan
Cyprus	Mali	Thailand
Czech Republic	Malta	Togo
Democratic People's Republic of Korea	Mauritania	Trinidad and Tobago
Denmark	Mauritius	Tunisia
Djibouti	Mexico	Türkiye
Dominica	Monaco	Turkmenistan
Dominican Republic	Mongolia	Uganda
Ecuador	Montenegro	Ukraine
Egypt	Morocco	United Arab Emirates
El Salvador	Mozambique	United Kingdom
Equatorial Guinea	Namibia	United Republic of Tanzania
Estonia	Netherlands (Kingdom of the)	United States of America
Eswatini	New Zealand	Uzbekistan
Finland	Nicaragua	Viet Nam
France	Niger	Zambia
Gabon	Nigeria	Zimbabwe
Gambia	North Macedonia	
Georgia	Norway	

Source: WIPO, March 2024.

