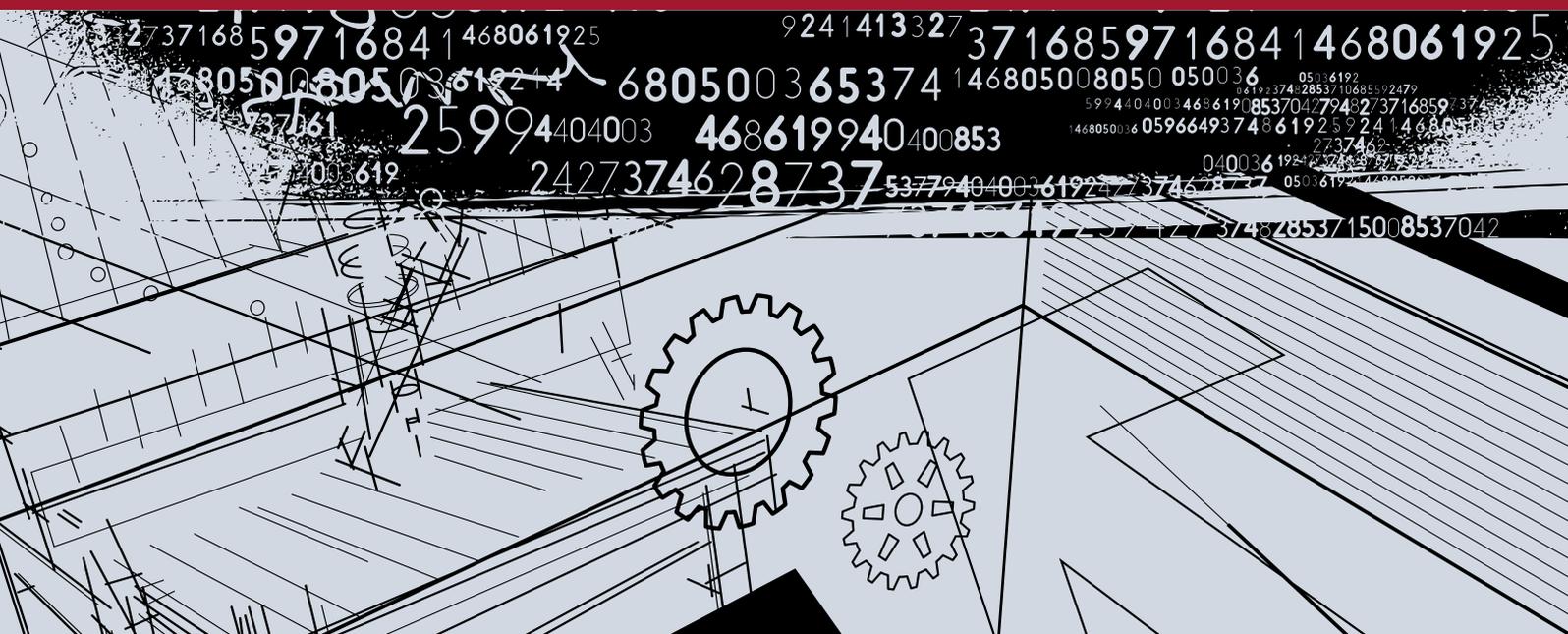


# Patent Cooperation Treaty Yearly Review

The International Patent System

Economics & Statistics Series



2015





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## Acknowledgements

The *PCT Yearly Review* was developed under the direction of Francis Gurry (Director General) and supervised by Carsten Fink (Chief Economist). The report was prepared by a team led by Bruno Le Feuvre and comprising Neha Deopa, Mosahid Khan, Ryan Lamb and Hao Zhou, all from the Economics and Statistics Division.

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Readers are welcome to reproduce the information provided in this review, but are requested to cite WIPO as the source. Tables and graphs can be downloaded at: [www.wipo.int/ipstats/en/statistics/pct/](http://www.wipo.int/ipstats/en/statistics/pct/)

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## 2014 Key numbers

Number	Trend <sup>1</sup>	Description
565,500	+4.3%	National phase entries <sup>2</sup>
214,500	+4.5%	Applications filed
49,621	+8.7%	Applicants <sup>3</sup>
148	0	Member states
124	0	Countries in which PCT applications were filed
55.3%	+0.3	Share of national phase entries in worldwide non-residents filings

<sup>1</sup> Trends correspond to annual growth rates in percentages or in volume.

<sup>2</sup> The latest available year for PCT national phase entry data is 2013.

<sup>3</sup> PCT applicants refer to first-named applicants in published PCT applications.

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## Highlights

### *PCT applications grew by 4.5% on account of China and the US*

An estimated 214,500 applications were filed in 2014, representing an increase of 4.5% on 2013 figures and marking the fifth consecutive year of growth. China and the United States of America (US) combined accounted for nearly 90% of total growth.

### *Japan recorded its first decrease in filings in 22 years*

With 61,492 PCT applications filed, the US saw a 7.1% growth on 2013. China, with 25,539 filings, saw the highest annual growth among the top 10 countries, with an increase of 18.7% on 2013 figures. The number of filings from Japan, the second largest PCT user, decreased for the first time since 1992; as a result of a 3% drop, a total of 42,459 filings.

Among the top 10 filing countries, 7 saw growth. Notable increases originated from the United Kingdom (UK) (+9%), the Republic of Korea (+6.2%) and France (+5.2%). The number of filings from Switzerland (-5.9%), Japan (-3%) and Sweden (-0.5%) decreased.

Other countries that saw notable increases included Saudi Arabia (+110.2%), Mexico (+21.9%), Barbados (+17.4%) and Singapore (+12.6%). In contrast, South Africa (-15.4%) and Brazil (-11.6%) saw sharp decreases.

### *China increased its presence among the top PCT applicants*

Two of the top three applicants were located in China. With 3,442 applications published, Huawei Technologies Co. Ltd. of China became the top PCT applicant. It also became the third company to have had more than 3,000 applications published in the space of one year. Qualcomm Inc. of the US and ZTE Co. of China ranked second and third, respectively. Both companies overtook Panasonic Co., the top 2013 filer, which moved down three places.

For the first time, over 10% of the top 50 PCT applicants were from China. Among the top 50 companies, the majority were from Japan (19), followed by the US (15) and China (6). The number of Chinese applicants ranking among the top 50 doubled between 2013 and 2014.

### *Computer technology became the technology field with the most applications*

Due to notable annual growth of 19.4%, computer technology became the field with the highest number of PCT applications published (17,653) in 2014. It was followed by digital communication (16,165) and electrical machinery (15,220). The latter, which was ranked in first position in 2012 and 2013, moved down two places, despite achieving 1.1% growth.

Among the 35 fields of technology, 13 saw double-digit growth; these fields included medical technology (+17.1%) and digital communication (+14.5%).

*National phase entries grew markedly,  
mainly due to the US and Japan*

National phase entries (NPEs) totaled 565,500 in 2013, representing an increase of 4.3% since 2012 and accounting for 55.3% of all patent applications filed abroad. The US (47%) and Japan (34.2%) accounted for the largest shares of total growth.

Applicants from the US remained the biggest filers of NPEs, with 157,943 applications and annual growth of 7.5% on 2012 figures. They were followed by applicants from Japan (120,839) and Germany (63,173), countries which saw annual growth of 7.1% and 5.3%, respectively.

Growth in the number of NPEs initiated was also notable in the case of applicants residing in South Africa (+22.1%), Singapore (+17.9%), India (+17.1%), Switzerland (+12.8%) and the Republic of Korea (+10.7%).

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## 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 for the Protection of Industrial Property — the Paris Convention — for pursuing patent rights in different countries. The PCT System makes it possible to seek patent protection for an invention simultaneously in a large number of countries by filing a single “international” patent application instead of filing several separate national or regional patent applications.

When it was first established, the PCT System comprised 18 members. By 2014, it comprised 148 contracting states (figure 1).

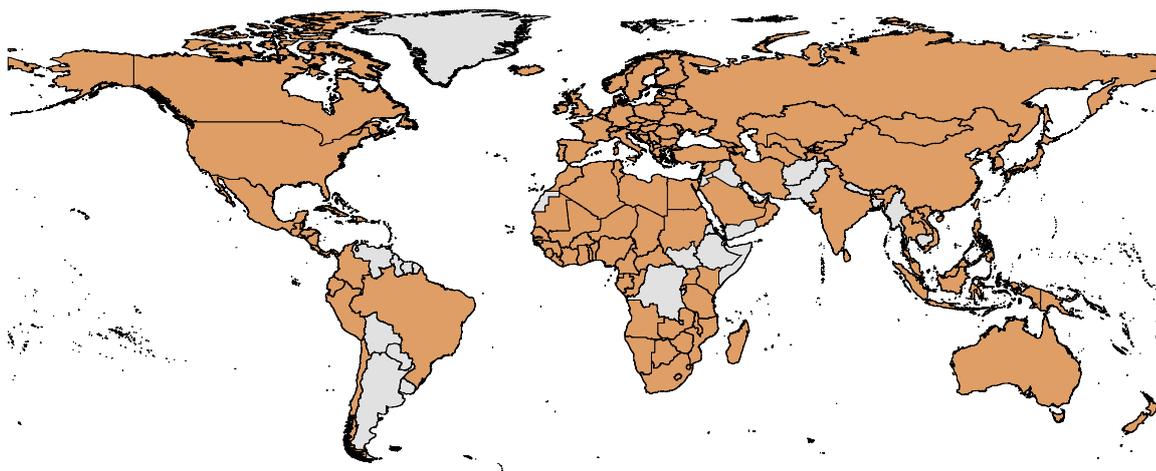
### Advantages of the Patent Cooperation Treaty

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.

Compared with the Paris Convention route, applicants can delay the 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 the invention and on the markets in which to seek patent protection.

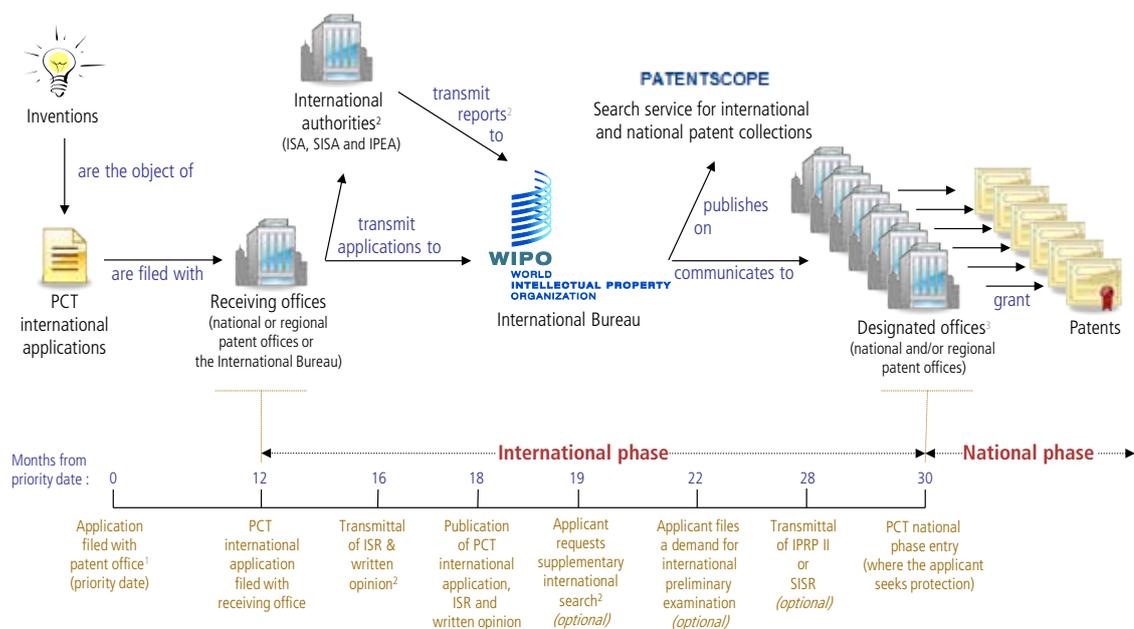
The reports that applicants receive during the international phase — about relevant prior art and the potential patentability of their inventions — help them make well-informed decisions. The PCT System is intended to reduce unnecessary duplication among patent offices and to support work sharing between those offices.

**Figure 1: Contracting states in 2014**



Source: WIPO, December 2014

Figure 2: Overview of the PCT System



<sup>1</sup> Generally, applicants first file a national or regional patent application with their patent office, and within 12 months from priority date, file a PCT application.  
<sup>2</sup> International searching authorities (ISA) transmit international search reports (ISRs) & written opinions; authorities specified for supplementary search (SISA) transmit supplementary international search reports (SISR); international preliminary examining authorities (IPEA) transmit international preliminary reports on patentability II (IPRP II).  
<sup>3</sup> Called elected offices for applicants having filed a demand for international preliminary examination.

Source: World Intellectual Property Organization (WIPO), February 2015

Under the PCT System, an applicant must file an application with a receiving office (RO) and choose an international searching authority (ISA) to provide an international search report and a written opinion on the potential patentability of the invention (figure 2). The International Bureau of WIPO then publishes the application in its online PATENTSCOPE search database. After receiving the international search report and written opinion, the applicant can choose to request a supplementary international search by a supplementary international searching authority, have an international preliminary examination undertaken on this application by an international preliminary examining authority (IPEA), or take no further action. The applicant generally has at least 30 months from the earliest filing (priority) date 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 supplementary international search and optional international preliminary examination. Published applications are accessible, free of charge, through WIPO's online PATENTSCOPE search system.

#### Filing applications

Typically, applicants seeking to protect an invention in more than one country first file a national or regional patent application with their national or regional patent office. Within 12 months from the filing date of that first application (a time limit set by the Paris Convention), they file an international application under the Patent Cooperation Treaty with a receiving office — the respec-

tive national or regional patent office, or the International Bureau — thus beginning the international phase. Only a national or resident of a PCT contracting state can file a PCT application.

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 the translation of the application into national languages.

The RO transmits a copy of the application to the International Bureau (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 one of the 18 functioning ISAs,<sup>4</sup> which identify the prior art relevant to the patentability of the invention, establish an international search report, and provide a written opinion on the invention's potential patentability. That opinion can assist the applicant in deciding whether to continue to seek protection for the invention. If the written opinion is unfavorable, the applicant may choose to amend the application to improve the probability of obtaining a patent, to withdraw the application before international publication and before incurring additional costs, or to do nothing.

#### *Supplementary international search*

Since January 1, 2009, the supplementary international search service has offered applicants the option to request 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 supplementary international search report by a supplementary ISA up to 19 months from the filing (priority) date.

#### *International preliminary examination*

After receiving the ISA's written opinion, applicants can request an optional international preliminary examination — 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 resulting international preliminary report on patentability further assists the applicant in determining whether to enter the national phase.

#### **National phase**

Applicants have at least 18 months from the filing date of their applications before entering the national phase at individual patent offices. This delay affords additional time—compared with that allowed under the Paris Convention—to evaluate the chances of obtaining a patent and to plan how to use the invention commercially in the countries in which protection is sought. In the national phase, each patent office is responsible for processing the application in accordance with its national patent laws, and for deciding whether to grant patent protection. The time required for that processing varies across patent offices.

<sup>4</sup> The Intellectual Property Office of Singapore and the State Intellectual Property Service of Ukraine have been appointed as international searching authorities (ISAs), bringing to 20 the total number of ISAs. However, these offices had not yet commenced operations in 2014.

*Patent prosecution highway*

The PCT patent prosecution highway (PCT-PPH) pilots comprise bilateral agreements between patent offices to enable applicants to request a fast-track examination procedure. Under these agreements, an applicant receiving a written opinion or an international preliminary report on patentability indicating that at least one claim in the PCT application has novelty, an inventive step and industrial applicability may request that the other patent office fast track the examination of corresponding claims in corresponding applications. The 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 from a reduced examination workload and additional knowledge sharing.

The Global Patent Prosecution Highway (GPPH) was launched on January 6, 2014. The GPPH pilot is a single multilateral agreement between a group of offices (a total of 17 at the end of 2014). It enables applicants to make a request for accelerated processing at any participating office, based on work products (including PCT reports) from any of the other participating offices, using a single set of qualifying requirements.

For more information on the PCT, please visit [www.wipo.int/pct/](http://www.wipo.int/pct/).

## Data description

In order to compile figures on the international phase of the PCT System, data were drawn from the WIPO Statistics Database. Due to the delay in transmitting PCT applications to WIPO, the figures for 2014 are estimates. For top filing countries, the estimates are made using several statistical and econometric models. For other countries, the estimates adjust actual received applications according to each country's share of the estimated total PCT filings.

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 2013. Data may be missing for some offices and may be incomplete for some origins. Data are available for the majority of larger offices. With the 2013 data supplied to WIPO corresponding to 99% of the world total, only a small proportion of the total is estimated. Missing data are estimated using such methods as linear extrapolation and averaging adjacent data points. The equivalent patent application concept is not used in this review. National phase entry data by country of origin may therefore differ slightly from other sources, such as the WIPO Data Center.

The income groups correspond to those used by the World Bank<sup>5</sup> and the groupings by region are based on the United Nations (UN) definition of regions.<sup>6</sup>

The figures in this review are subject to change.<sup>7</sup>

<sup>5</sup> Available at [data.worldbank.org/about/country-classifications/country-and-lending-groups](http://data.worldbank.org/about/country-classifications/country-and-lending-groups)

<sup>6</sup> Available at [unstats.un.org/unsd/methods/m49/m49regin.htm](http://unstats.un.org/unsd/methods/m49/m49regin.htm). Although the geographical terms used by WIPO may differ slightly from those defined by the UN, the composition of regions and subregions remains identical.

<sup>7</sup> Regular updates are available at [www.wipo.int/ipstats/](http://www.wipo.int/ipstats/)

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## Special theme

# The most active applicants in the PCT System

For multinational companies operating at global level, the management of IP portfolios is of strategic importance. Filing patent applications abroad is a central element of such management. The PCT System is one of two possible filing routes for multinational companies to obtain protection in foreign markets.

Indeed, large multinationals have been an important driver of the almost continuous growth of PCT filings. Large companies from Europe, Japan and the US have long used the PCT System to file applications abroad. More recently, multinationals from China have been filling record numbers of PCT applications.

This special theme takes a closer look at the most active applicants in the PCT System by analyzing longer-term trends and more recent developments. It provides information on the applicants with the most filings during the international phase of the PCT, during the national phase, and broken down by world regions.<sup>8</sup>

### The top 50 PCT applicants

The top 50 PCT applicants from 1995 to 2014 account for almost 18% of all PCT applications filed over this period. Approximately 240,000 corporate applicants have filed patent applications under the PCT since 1995. In order to rank among the top 50, applicants must have filed at least 3,370 applications.

Philips of the Netherlands was the top PCT applicant over this 20-year period, with 28,486 applications (table 1). It was followed by Panasonic of Japan, with only 262 fewer applications. Both companies filed applications mainly related to inventions in the field of audio-visual technology. Over this period, two other applicants filed more than 20,000 PCT applications, namely German companies Robert Bosch and Siemens.

Even though Huawei of China started using the PCT System only as recently as 2000, it ranks fifth among the top PCT applicants. Similarly, ZTE, also of China, ranks eighth, having only used the system since 2002.

Altogether, applicants from 10 countries are included in this top 50 list. Totalling 17, the US accounts for the largest number of applicants, followed by 15 from Japan and 7 from Germany.

For 9 of the top 50 applicants, digital communication is the main technology field followed by computer technology, which is the main field for 7 applicants. For 5 applicants, the following three fields saw the highest filing activity: audio-visual technology; electrical machinery, apparatus, and energy; and optics. Altogether, almost two-thirds (31) of the top 50 applicants primarily filed in one of these top 5 technology fields.

One university and two public research organizations (PROs) rank among the top 50 PCT applicants. In 27<sup>th</sup> position, the University of California of the US filed almost 6,000 applications, mainly in the field of biotechnology. The two PROs—the Commissariat à l’Energie Atomique of France and the Fraunhofer-Gesellschaft of Germany—rank 39<sup>th</sup> and 40<sup>th</sup>, respectively.

<sup>8</sup> The special theme uses statistics on PCT applications based on published PCT applications. Where data are taken from the WIPO Statistics Database, the analysis covers applications published between 1995 and 2014 based on their publication date. The latest available year for data from the European Patent Office (EPO) PATSTAT database is 2009 for published PCT applications and 2011 for national phase entries (NPEs). PCT application data rely on the first-named applicant’s information and exclude applicants who are natural persons. For ease of reference, applicant names are shortened in the text.

Table 1: Top 50 PCT applicants, 1995–2014

Rank	Name	Origin	Main field of technology	Published PCT applications
1	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	Audio-visual technology	28,486
2	PANASONIC CORPORATION	Japan	Audio-visual technology	28,224
3	SIEMENS AKTIENGESELLSCHAFT	Germany	Electrical machinery, apparatus, energy	21,695
4	ROBERT BOSCH CORPORATION	Germany	Engines, pumps, turbines	20,577
5	HUAWEI TECHNOLOGIES CO., LTD.	China	Digital communication	16,869
6	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	Sweden	Digital communication	15,789
7	QUALCOMM INCORPORATED	United States of America	Digital communication	15,326
8	ZTE CORPORATION	China	Digital communication	14,447
9	TOYOTA JIDOSHA KABUSHIKI KAISHA	Japan	Transport	12,326
10	SHARP KABUSHIKI KAISHA	Japan	Optics	12,179
11	BASF SE	Germany	Organic fine chemistry	11,853
12	NOKIA CORPORATION	Finland	Digital communication	10,668
13	PROCTER & GAMBLE COMPANY	United States of America	Basic materials chemistry	10,563
14	LG ELECTRONICS INC.	Republic of Korea	Digital communication	10,360
15	MITSUBISHI ELECTRIC CORPORATION	Japan	Electrical machinery, apparatus, energy	10,167
16	INTEL CORPORATION	United States of America	Computer technology	9,658
17	NEC CORPORATION	Japan	Computer technology	9,441
18	3M INNOVATIVE PROPERTIES COMPANY	United States of America	Optics	8,991
19	SAMSUNG ELECTRONICS CO., LTD.	Republic of Korea	Digital communication	8,501
20	SONY CORPORATION	Japan	Audio-visual technology	8,356
21	FUJITSU LIMITED	Japan	Computer technology	8,266
22	MOTOROLA, INC.	United States of America	Digital communication	8,009
23	E.I. DUPONT DE NEMOURS AND COMPANY	United States of America	Macromolecular chemistry, polymers	7,463
24	MICROSOFT CORPORATION	United States of America	Computer technology	7,191
25	INTERNATIONAL BUSINESS MACHINES CORPORATION	United States of America	Computer technology	6,821
26	HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.	United States of America	Computer technology	6,484
27	UNIVERSITY OF CALIFORNIA	United States of America	Biotechnology	5,935
28	HITACHI, LTD.	Japan	Computer technology	5,824
29	GENERAL ELECTRIC COMPANY	United States of America	Electrical machinery, apparatus, energy	5,056
30	FUJIFILM CORPORATION	Japan	Optics	4,886
31	THOMSON LICENSING	France	Audio-visual technology	4,696
32	HONEYWELL INTERNATIONAL INC.	United States of America	Measurement	4,680
33	HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN	Germany	Basic materials chemistry	4,513
34	KABUSHIKI KAISHA TOSHIBA	Japan	Electrical machinery, apparatus, energy	4,306
35	KIMBERLY-CLARK WORLDWIDE, INC.	United States of America	Medical technology	4,200
36	BOSCH-SIEMENS HAUSGERATE GMBH	Germany	Other consumer goods	4,183
37	DAIMLER AG	Germany	Transport	4,122
38	CANON KABUSHIKI KAISHA	Japan	Optics	4,115
39	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	Semiconductors	3,981
40	FRAUNHOFER-GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Germany	Measurement	3,951
41	APPLIED MATERIALS, INC.	United States of America	Semiconductors	3,745
42	NOVARTIS AG	Switzerland	Pharmaceuticals	3,712
43	PIONEER CORPORATION	Japan	Audio-visual technology	3,638
44	DAIKIN INDUSTRIES, LTD.	Japan	Thermal processes and apparatus	3,564
45	ALCATEL LUCENT	France	Digital communication	3,475
46	MURATA MANUFACTURING CO., LTD.	Japan	Electrical machinery, apparatus, energy	3,456
47	CORNING INCORPORATED	United States of America	Optics	3,453
48	DOW GLOBAL TECHNOLOGIES INC.	United States of America	Macromolecular chemistry, polymers	3,405
49	MITSUBISHI HEAVY INDUSTRIES, LTD.	Japan	Engines, pumps, turbines	3,390
50	MEDTRONIC, INC.	United States of America	Medical technology	3,373

Source: WIPO Statistics Database, March 2015

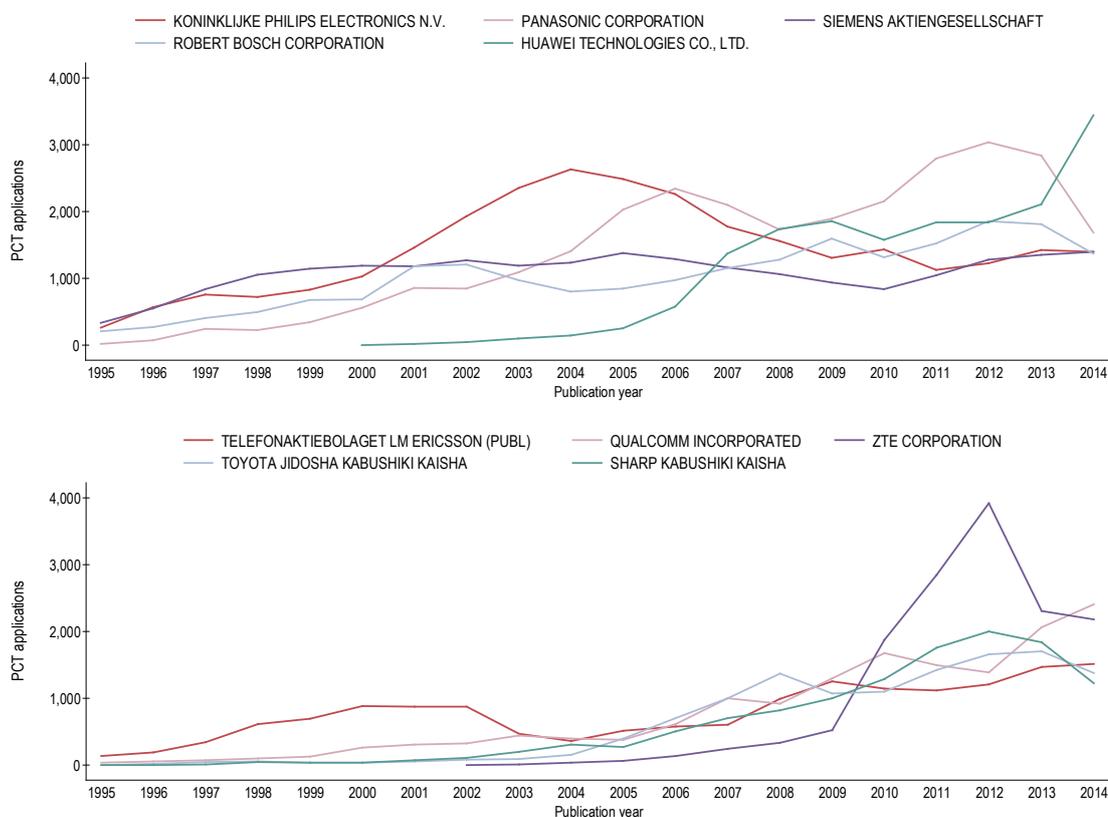
### Filing trends of the top 10 applicants

Half of the top 10 applicants for the period 1995-2014 also featured in the 2014 top 10 applicants list (see table A.3.3.1). Over this 20-year period, Philips is the only company to have continuously featured among the top 10 applicants. Robert Bosch has featured among the top 10 in 19 years—with the exception of 2014; and Panasonic has featured in 18 years.

Between 2009 and 2014, most of the top 10 applicants have filed between 1,000 and 2,000 applications per year (figure 1). Philips has filed at least 1,000 applications each year since 2000, reaching a peak of 2,634 applications in 2004. Since 2006, Panasonic has recorded higher application numbers than Philips; these numbers reached a peak in 2012, after which filings decreased

sharply. Panasonic has continually featured as one of the top three applicants since 2003. Huawei saw sharp increases in applications from 2006 to 2008 and again from 2012 to 2014. With more than 3,400 applications in 2014, Huawei recorded the second largest number of applications in a single year by one company. It also became the third applicant — after Panasonic and ZTE — to account for more than 3,000 PCT applications in a single year. Huawei's 3,442 applications in 2014 alone would have been sufficient to be included among the top 50 PCT applicants over the last 20 years. ZTE saw a sharp increase in the number of applications from 2009 to 2012. It accounted for 3,920 PCT applications in 2012, representing the largest number of applications filed by an applicant in a single year. Despite two consecutive years of sharp decreases, ZTE has featured as one of the top three applicants since 2010.

**Figure 1: Trend in PCT applications for the top 10 applicants**

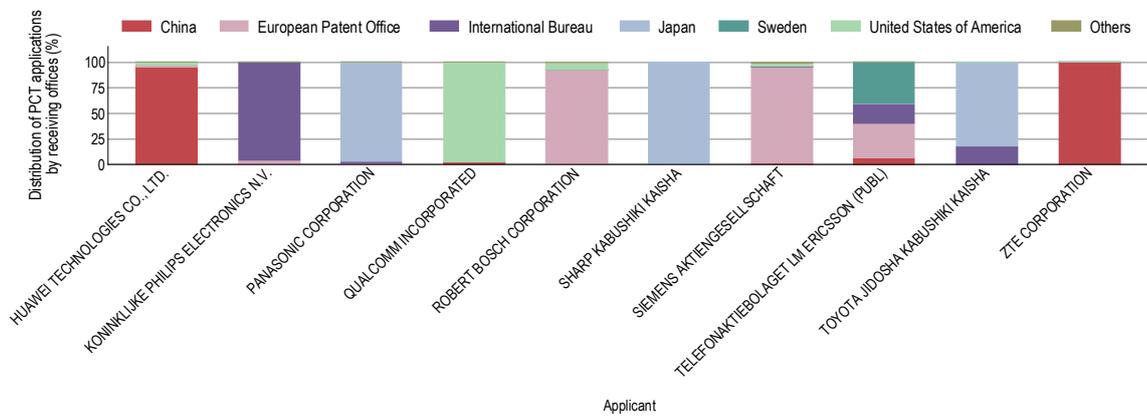


Source: WIPO Statistics Database, March 2015

Most applicants mainly use their local — national or regional — office to file PCT applications (figure 2). This is the case for 9 of the top 10 applicants. The only exception is Philips, which mainly uses the International Bureau (IB) acting as receiving office (RO). This reflects Rule 19 under the PCT Regulations, which requires applicants to file a PCT application with the national or regional office of the country of which the applicant is a resident or a national, or, alternatively, to file it with the IB.

Eight of the top 10 applicants filed at least 95% of their PCT applications with the same office. The small proportion of applications filed elsewhere may reflect research and development undertaken abroad. Ericsson is an exception, as it filed 40.2% of its PCT applications at the Swedish office; 34.6% at the European Patent Office (EPO), and 25.2% elsewhere, mainly at the IB. The second exception is Toyota, which filed 17.5% of its PCT applications at the IB.

**Figure 2: Distribution of receiving offices selected by the top 10 applicants, 2010–14**

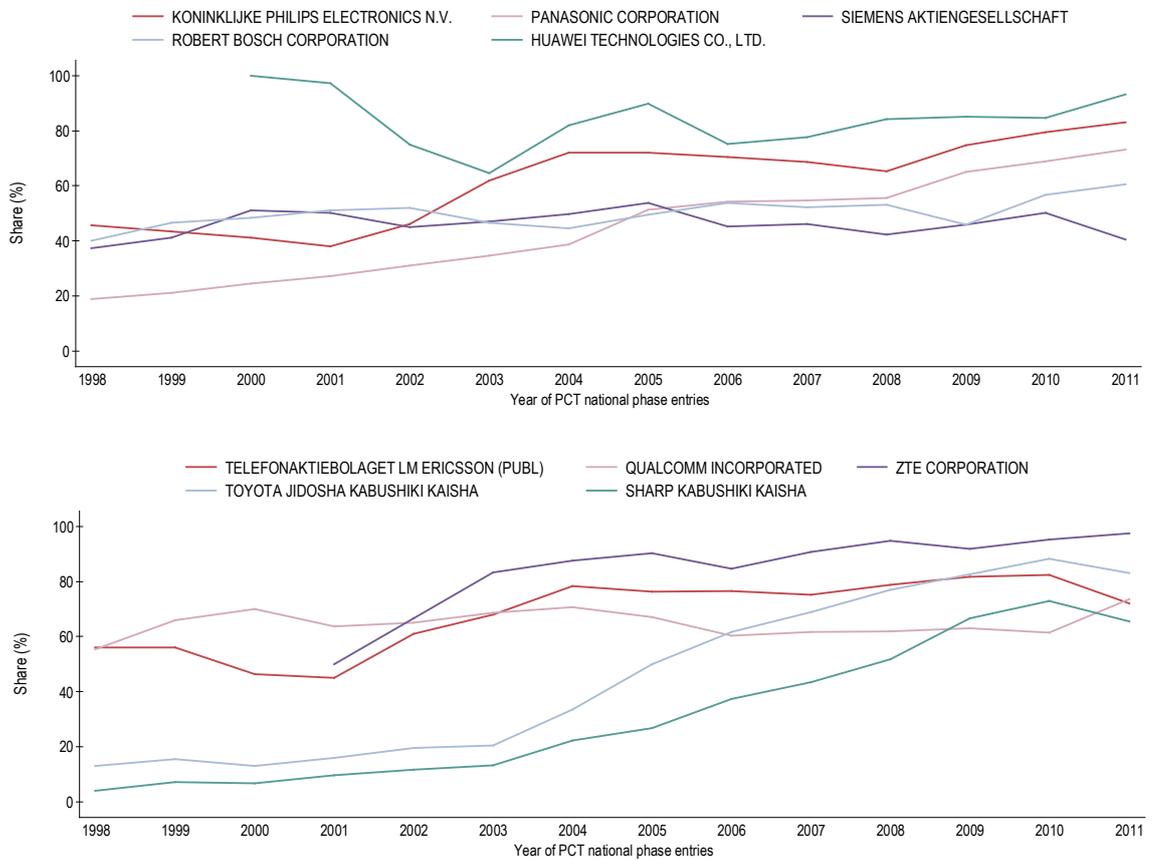


Source: WIPO Statistics Database, March 2015

Over time, the top 10 applicants have increased their use of the PCT System when filing abroad (figure 3), which is in line with the overall trend (see figure B.1.2). Siemens was the only company to have relied on the PCT route for less than half of its filings abroad in 2011. The shares of the remaining companies varied from 60.6% for Robert Bosch to 97.6% for ZTE.

In 2011, the two Chinese applicants accounted for the largest shares of applications filed abroad using the PCT route, whereas the two German companies accounted for the lowest shares. Since 2003, all three Japanese companies have rapidly increased their use of the PCT System.

**Figure 3: Share of PCT national phase entries in total non-resident filings for the top 10 applicants**

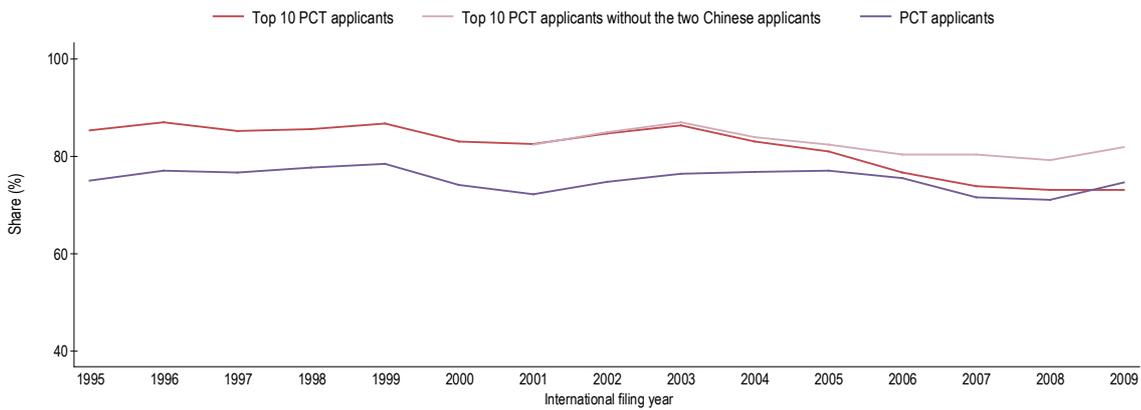


Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

The majority of PCT applications enter the national phase of the PCT System. The top 10 PCT applicants converted 73.1% of their PCT applications filed in 2009 into national phase entries (NPEs). This is slightly below the overall average of 74.6% for all PCT applications filed in 2009.

Between 1995 and 2003, the top 10 applicants converted about 85% of their PCT applications into NPEs. This share was nearly 10 percentage points higher than the share for all PCT applicants. Between 2004 and 2009, the share of PCT applications that resulted in NPEs decreased sharply for the top 10 applicants, from 83% to 73.1%. This was mainly due to Huawei and ZTE. In 2009, they converted only 51.4% and 44.5%, respectively, of their international filings into NPEs. When the figures for these two companies are excluded, the share for the top 10 applicants decreased to about 80% between 2006 and 2009.

**Figure 4: Share of PCT applications converted into PCT national phase entries**

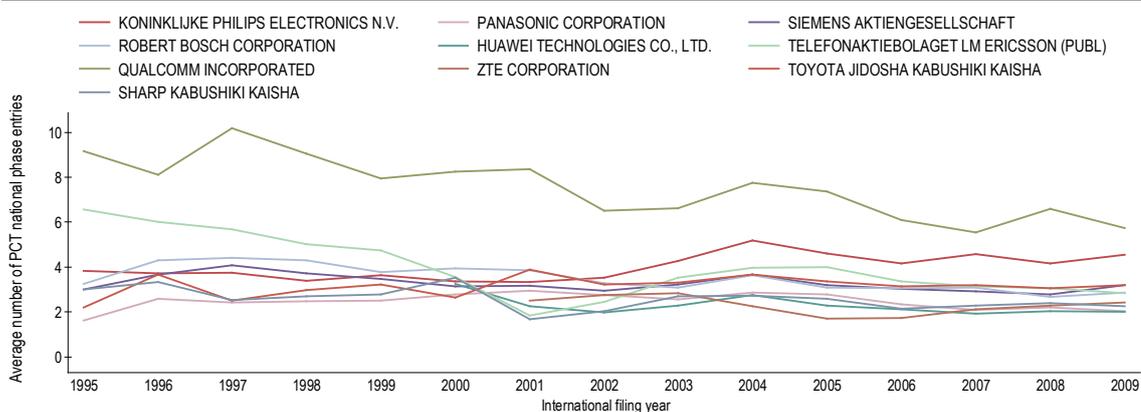


Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

On average, each PCT application filed by the top 10 applicants between 2006 and 2009 resulted in 3.2 NPEs.<sup>9</sup> The top 10 applicants mainly initiated between 3 and 4 national phases per PCT application filed between 1995 and 2009, with a peak of 4.5 NPEs in 1997.

With an average number of 5.5 NPEs per PCT application in 2009, Qualcomm initiated the highest number of NPEs per PCT application, despite its decreasing trend over time (figure 5). With 4.5 NPEs per PCT application, Philips also has a higher than average number of NPEs per application. All other top 10 applicants had between 2 and 3.2 NPEs per PCT application in 2009. Huawei and Panasonic recorded the lowest numbers of NPEs per PCT filing.

**Figure 5: Average number of PCT national phase entries per converted PCT application for the top 10 applicants**



Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

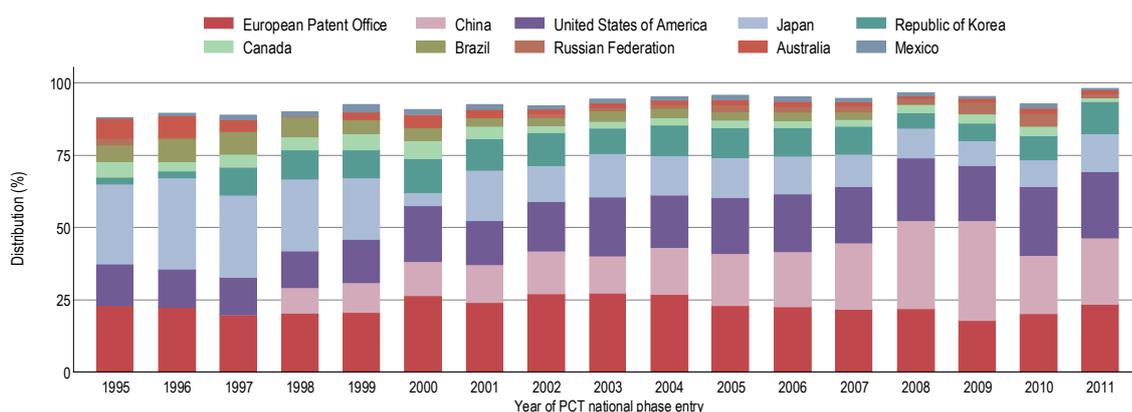
<sup>9</sup> This calculation excludes PCT applications which are not entering the national phase.

Since 1999, the 10 offices in which the top 10 PCT applicants initiated the most NPEs have accounted for 90% of these applicants' total NPEs (figure 6). Between 1995 and 2011, the top 10 applicants combined initiated 22.4% of their NPEs at the EPO, followed by 19.9% at the State Intellectual Property Office of the People's Republic of China (SIPO), 19.4% at the United States Patent and Trademark Office (USPTO), and 13.1% at the Japan Patent Office (JPO). Together, these four offices accounted for three-quarters of all NPEs made by the top 10 applicants over this period.

Between 2007 and 2009, SIPO accounted for the largest share of NPEs initiated by the top 10 applicants, whereas in 2010, the USPTO had the most NPEs. In 2011, the EPO, SIPO and the USPTO each accounted for about 23% of all NPEs.

Among the top 10 offices of destination, 3 are located in middle-income countries, namely Brazil, China and Mexico. The top 10 offices are situated in every geographical region except Africa.

**Figure 6: Distribution of the top 10 offices of destination for the top 10 applicants**

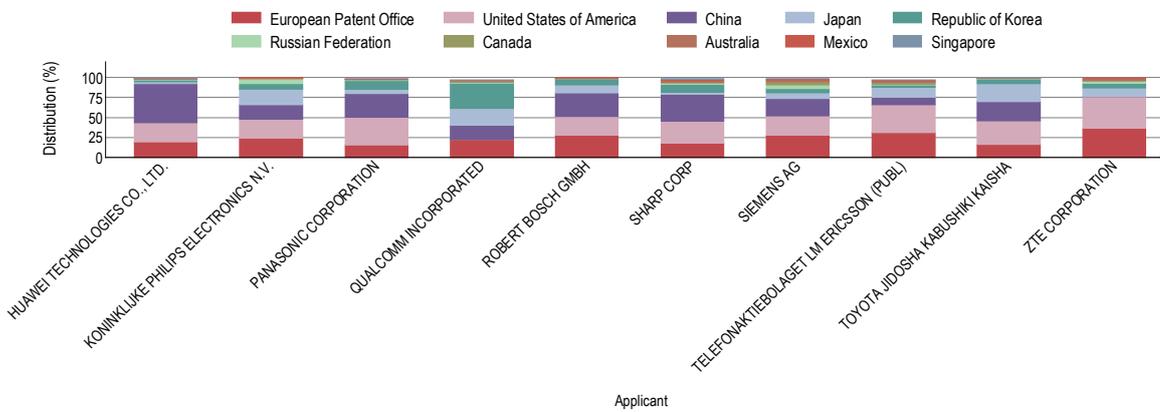


Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

An applicant’s choice of NPE offices depends on different factors, which include the office of first filing. For example, Qualcomm had almost no NPEs at the USPTO in 2011, as it primarily filed first with this office (figure 7). Interestingly, however, nearly half of all NPEs initiated by Huawei were at SIPO.

In 2011, all top 10 applicants initiated the majority of their NPEs at only 2 offices. ZTE initiated 75.2% of its NPEs at the EPO and the USPTO. Panasonic initiated 63.9% of its NPEs at SIPO and the USPTO. Qualcomm initiated 53.7% of its NPEs at the EPO and the Korean Intellectual Property Office (KIPO).

**Figure 7: Distribution of the top 10 offices of destination by applicant, 2011**



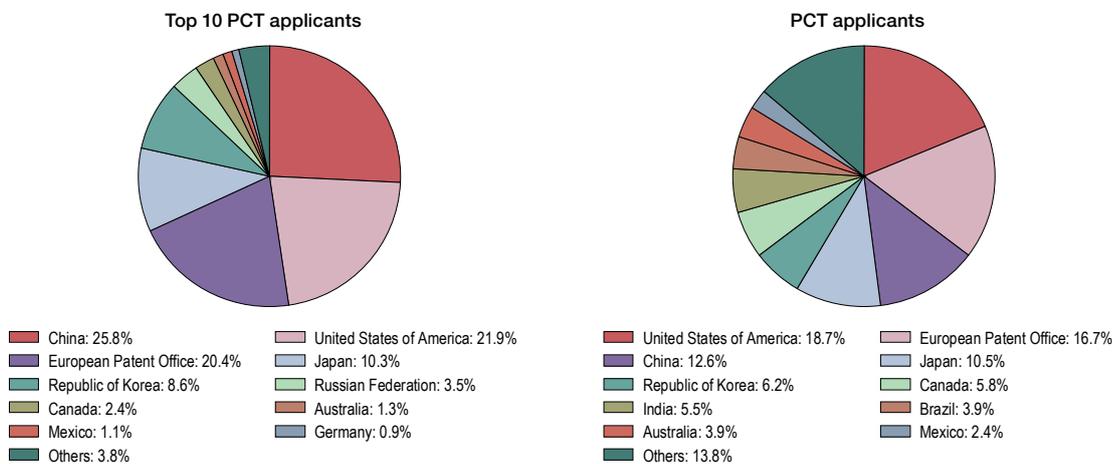
Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

For each of the top 10 applicants, the top 10 offices combined received more than 95% of their NPEs, varying from 96% for Qualcomm and Ericsson to 100% for Panasonic and Robert Bosch.

The top 10 applicants enter national phases at fewer offices than PCT applicants overall (figure 8). Between 2009 and 2011, the top 10 offices of destination for the

top 10 applicants accounted for 96.2% of their total NPEs, whereas all applicants combined initiated 86.2% of NPEs at their top 10 offices. The share of SIPO in total NPEs is lower for all applicants combined than it is for the top 10 applicants. By contrast, the shares of Brazil and India are higher for all applicants than they are for the top 10 applicants.

Figure 8: Distribution of the top 10 offices of destination, 2009–11



Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

**Applicants with more than 500 applications**

applications in a given year. Since 1995, 55 applicants have met this criterion. Of these, 37 feature among the top 50 applicants in the period 1995 to 2014 (table 2).

Another way to consider the main users in the PCT System is to identify and analyze the most active applicants, defined as those who saw more than 500

**Table 2: Applicants with more than 500 applications between 1995 and 2014**

Rank	Name	Origin	Among the most active applicants in					Number of years with more than 500 applications
			1995	2000	2005	2010	2014	
1	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	yes	yes	yes	yes	yes	19
2	PANASONIC CORPORATION	Japan	yes	yes	yes	yes	yes	15
3	SIEMENS AKTIENGESELLSCHAFT	Germany	yes	yes	yes	yes	yes	19
4	ROBERT BOSCH CORPORATION	Germany	yes	yes	yes	yes	yes	16
5	HUAWEI TECHNOLOGIES CO., LTD.	China				yes	yes	9
6	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	Sweden	yes	yes	yes	yes	yes	15
7	QUALCOMM INCORPORATED	United States of America				yes	yes	9
8	ZTE CORPORATION	China				yes	yes	6
9	TOYOTA JIDOSHA KABUSHIKI KAISHA	Japan				yes	yes	9
10	SHARP KABUSHIKI KAISHA	Japan				yes	yes	8
11	BASF SE	Germany			yes	yes	yes	13
12	3M INNOVATIVE PROPERTIES COMPANY	United States of America			yes	yes	yes	13
13	NOKIA CORPORATION	Finland			yes	yes	yes	14
15	LG ELECTRONICS INC.	Republic of Korea				yes	yes	9
16	MITSUBISHI ELECTRIC CORPORATION	Japan				yes	yes	9
17	INTEL CORPORATION	United States of America			yes		yes	7
18	NEC CORPORATION	Japan				yes	yes	8
19	SAMSUNG ELECTRONICS CO., LTD.	Republic of Korea				yes	yes	9
20	SONY CORPORATION	Japan					yes	6
21	FUJITSU LIMITED	Japan					yes	8
24	MICROSOFT CORPORATION	United States of America					yes	6
25	INTERNATIONAL BUSINESS MACHINES CORPORATION	United States of America					yes	6
26	HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.	United States of America				yes	yes	8
28	HITACHI, LTD.	Japan					yes	4
29	GENERAL ELECTRIC COMPANY	United States of America					yes	2
30	FUJIFILM CORPORATION	Japan					yes	3
34	KABUSHIKI KAISHA TOSHIBA	Japan					yes	2
46	MURATA MANUFACTURING CO., LTD.	Japan					yes	2
54	LG CHEM, LTD.	Republic of Korea					yes	1
55	HALLIBURTON ENERGY SERVICES, INC.	United States of America					yes	1
57	GOOGLE INC.	United States of America					yes	2
61	APPLE COMPUTER, INC.	United States of America					yes	2
75	NISSAN MOTOR CO., LTD.	Japan					yes	2
96	SHENZHEN CHINA STAR OPTOELECTRONICS TECHNOLOGY CO., LTD	China					yes	2
103	TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED	China					yes	1
113	UNITED TECHNOLOGIES CORPORATION	United States of America					yes	1
155	KONICA MINOLTA, INC.	Japan					yes	1
187	DENSO CORPORATION	Japan					yes	1
258	BOE TECHNOLOGY GROUP CO.,LTD	China					yes	1
14	PROCTER & GAMBLE COMPANY	United States of America	yes	yes				9
22	MOTOROLA, INC.	United States of America			yes			8
23	E.I. DUPONT DE NEMOURS AND COMPANY	United States of America						2
32	HONEYWELL INTERNATIONAL INC.	United States of America			yes			3

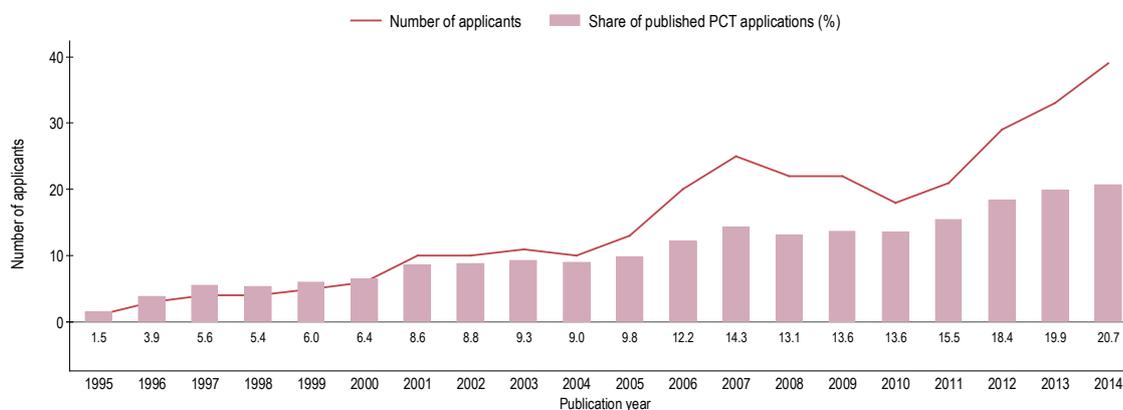
Rank	Name	Origin	Among the most active applicants in					Number of years with more than 500 applications
			1995	2000	2005	2010	2014	
37	DAIMLER AG	Germany			yes			1
38	CANON KABUSHIKI KAISHA	Japan						1
43	PIONEER CORPORATION	Japan						1
44	ALCATEL LUCENT	France						2
49	mitsubishi heavy industries, LTD.	Japan						1
52	SUMITOMO CHEMICAL COMPANY, LIMITED	Japan						1
53	INFINEON TECHNOLOGIES AG	Germany						2
64	EASTMAN KODAK COMPANY	United States of America			yes			1
67	SANYO ELECTRIC CO., LTD.	Japan						1
91	NXP B.V.	Netherlands						2
260	BIOWINDOW GENE DEVELOPMENT INC. SHANGHAI	China						1
477	MINNESOTA MINING AND MANUFACTURING COMPANY	United States of America						1

Source: WIPO Statistics Database, March 2015

The number of most active applicants has increased rapidly over time (figure 9). In 1995, Procter & Gamble was the only one in this category. Six years later, in 2001, there were ten times as many. In 2007, the number of applicants with more than 500 applications peaked at 25, but dropped to 18 in 2010, coinciding with the global economic downturn. Since then, the number has increased continually, reaching a record of 39 in 2014. Their share of total applications has followed a similar trend, growing from 1.5% in 1995 to 20.7% in 2014 — in line with a higher concentration of PCT filings among the largest applicants (see figure A.3.1.1).

The 55 most active filers originate from 9 countries. Prior to 2000, they all resided in Germany, the Netherlands, Sweden and the US. Subsequently, Panasonic of Japan became a large filer and was followed, in chronological order, by Biowindow Gene Development Inc. of China, Nokia of Finland and applicants from the Republic of Korea and France.

**Figure 9: Number of applicants with more than 500 applications and their share of total PCT applications**

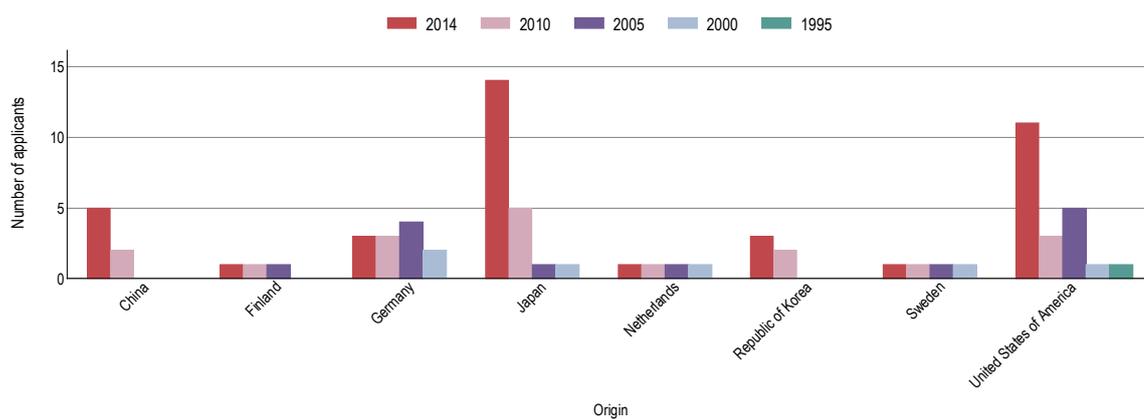


Source: WIPO Statistics Database, March 2015

In recent years, the number of large applicants from China, Japan and the US grew most (figure 10). Japan, with 19 companies, accounts for the highest proportion of applicants with over 500 filings (34.9%); this number has increased sharply since 2005, from 5 to 14. In 2014, there were as many large Japanese applicants as there were large applicants from all other countries except the US. The number of large US applicants (which represent 30.9% of such applicants) increased from 3 to 11 between 2010 and 2014. In 2014, China, with 5 companies, accounted for the third highest number of filers with more than 500 applications. It now exceeds the number of large applicants from Germany and the Republic of Korea.

The number of large European applicants has remained relatively stable over time. Philips of the Netherlands, Ericsson of Sweden and Nokia of Finland have been the only most active filers in their respective countries. The number of large applicants from Germany has increased modestly since 2000.

**Figure 10: Number of applicants with more than 500 applications by origin**



Source: WIPO Statistics Database, March 2015

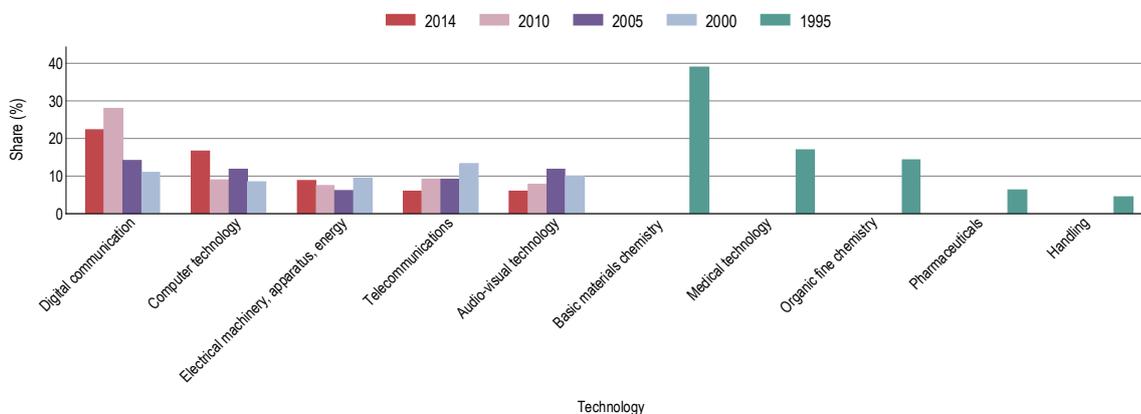
All applicants with more than 500 applications in 2000, 2005, 2010 and 2014 mainly filed in the same top five fields of technology (figure 11). These fields are digital communication, computer technology, electrical machinery, telecommunications and audio-visual technology. They represent between 52.2% (in 2000) and 61.5% (in 2010) of large applicants' total PCT applications. The five fields of technology for 1995 reflect the fields in which Procter & Gamble mainly filed that year.

Between 2000 and 2014, the shares of the top two technology fields increased. Digital communication is the field in which the most active applicants filed most frequently in 2005, 2010 and 2014. In 2014, its share stood at 22.3%. Despite a decrease compared to 2010, the

share of digital communication has markedly increased since 2000. Computer technology is the second largest field in which the most active applicants file. It accounted for 16.7% of their total applications in 2014, nearly twice its 2010 share.

The shares of the remaining three technology fields have decreased over time. The share of electrical machinery stood at 8.8% in 2014, which exceeds its 2005 and 2010 levels, but remains below its 2000 share. Telecommunications and audio-visual technology saw their shares decrease by around 6 percentage points each in 2014.

**Figure 11: The top five fields of technology for the PCT applicants with more than 500 applications**



Source: WIPO Statistics Database, March 2015

### The top five applicants per region

The top 50 PCT applicants of the last 20 years come from three of the six world regions— namely, Asia, Europe and North America. Indeed, all top five applicants from each of these three regions feature in the top 50 applicants list for the period 1995 to 2014 (table 3).

In Asia, Panasonic of Japan is the top applicant, and is followed by Huawei and ZTE, both of China. Three of the top five Asian applicants are from Japan. In Europe, the top three companies accounted for more than 20,000 applications each. Philips of the Netherlands—the top PCT applicant—is followed by three German applicants and one from Sweden. In North America, all top five applicants are from the US. Altogether, these 15 applicants mainly filed in 9 fields of technology, reflecting a relatively high degree of diversity.

Among the top five applicants from each of the regions of Africa, Latin America and Caribbean (LAC) and Oceania, nearly half are universities and PROs (8 out of 17). In Africa, all top five applicants are from South Africa, with Sasol Technology as the top applicant. Five of the six (there are two applicants ranked fifth) mainly filed in the chemistry sector. Among these six applicants, three are universities and one is a PRO. In LAC, the top two are from Barbados and the following four from Brazil. Boston Scientific of Barbados is the top LAC applicant. One university features among the top five LAC applicants. In Oceania, all five top applicants are from Australia. The top applicant is a PRO — the Commonwealth Scientific and Industrial Research Organization — mainly filing in biotechnology. Two universities are also included in this ranking.

**Table 3: The top five applicants per region, 1995–2014**

Region	Name	Country	Main field of technology	Published PCT applications
Africa	SASOL TECHNOLOGY (PROPRIETARY) LIMITED	South Africa	Basic materials chemistry	218
	CSIR	South Africa	Biotechnology	115
	ELEMENT SIX (PTY) LTD	South Africa	Materials, metallurgy	101
	STELLENBOSCH UNIVERSITY SOUTH AFRICAN SUGARCANE RESEARCH INSTITUTE	South Africa	Biotechnology	75
	UNIVERSITY OF CAPE TOWN	South Africa	Medical technology	66
	UNIVERSITY OF THE WITWATERSRAND	South Africa	Pharmaceuticals	66
Asia	PANASONIC CORPORATION	Japan	Audio-visual technology	28,242
	HUAWEI TECHNOLOGIES CO., LTD.	China	Digital communication	17,006
	ZTE CORPORATION	China	Digital communication	14,463
	TOYOTA JIDOSHA KABUSHIKI KAISHA	Japan	Transport	12,381
	SHARP KABUSHIKI KAISHA	Japan	Optics	12,250
Europe	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	Audio-visual technology	28,553
	SIEMENS AKTIENGESELLSCHAFT	Germany	Electrical machinery, apparatus, energy	21,755
	ROBERT BOSCH CORPORATION	Germany	Engines, pumps, turbines	20,625
	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	Sweden	Digital communication	15,845
	BASF SE	Germany	Organic fine chemistry	11,908
LAC	BOSTON SCIENTIFIC LIMITED	Barbados	Medical technology	1,559
	MARVELL WORLD TRADE LTD.	Barbados	Digital communication	712
	WHIRLPOOL S.A.	Brazil	Engines, pumps, turbines	304
	PETROLEO BRASILEIRO S.A. - PETROBRAS	Brazil	Basic materials chemistry	131
	UNIVERSIDADE FEDERAL DE MINAS GERAIS	Brazil	Pharmaceuticals	115
	EMPRESA BRASILEIRA DE COMPRESSORES S.A. - EMBRACO	Brazil	Engines, pumps, turbines	115
North America	QUALCOMM INCORPORATED	United States of America	Digital communication	15,428
	PROCTER & GAMBLE COMPANY	United States of America	Basic materials chemistry	10,587
	INTEL CORPORATION	United States of America	Computer technology	9,683
	3M INNOVATIVE PROPERTIES COMPANY	United States of America	Optics	9,021
	MOTOROLA, INC.	United States of America	Digital communication	8,015

Region	Name	Country	Main field of technology	Published PCT applications
Oceania	COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION	Australia	Biotechnology	993
	SILVERBROOK RESEARCH PTY LTD	Australia	Textile and paper machines	580
	UNIVERSITY OF QUEENSLAND	Australia	Biotechnology	408
	UNIVERSITY OF SYDNEY	Australia	Optics	345
	RESMED LIMITED	Australia	Medical technology	291

Source: WIPO Statistics Database, March 2015

## Conclusion

From 1995 to 2014, the top 50 PCT applicants accounted for nearly 18% of all PCT applications. Philips is the top PCT applicant, closely followed by Panasonic. Together with Robert Bosch and Siemens, Philips and Panasonic are the only applicants to have filed more than 20,000 applications. Huawei and ZTE are in fifth and eighth position, respectively, even though they only started using the PCT System in the early 2000s. Both recorded some of the highest numbers of applications for a company in a single year.

Since 2010, all top 10 applicants except Siemens mainly used the PCT route to file abroad. The two Chinese companies among the top 10 applicants have high shares of filings abroad via the PCT compared with the others in this group, especially those from Germany. Nearly three-quarters of all PCT applications filed in 2009 by the top 10 applicants entered the PCT national phase — similar to the share for all PCT applicants. On average, each of these PCT applications has resulted in 3.2 NPEs. In 2009, Qualcomm and Philips were the only top 10 companies with NPEs that exceeded this average. Since 1999, the top 10 offices of destination have accounted for more than 90% of all NPEs initiated by the top 10 applicants. Compared to the overall population of PCT applicants, the top 10 concentrate their NPEs in a smaller number of offices and initiate a higher proportion of NPEs at SIPO.

Between 1995 and 2014, there were 55 applicants with more than 500 applications in a given year. They came from nine countries. Their numbers and shares of total PCT applications have markedly increased over time. In 2014, Japan accounted for the highest number of most active applicants, followed by the US and China. As a whole, the most active applicants mainly file in digital communication and computer technology, and these two technology fields have shares increasing over time.

The top 5 applicants from Asia, Europe and North America all rank among the top 50 applicants over the last 20 years. Only 4 countries rank among the top 5 in each of the regions of Africa, LAC and Oceania — namely, Australia, Barbados, Brazil and South Africa. Nearly half of all applicants ranking among in the top 5 in Africa, LAC, and Oceania combined are universities and PROs.

## Section A

# Statistics on the international phase: PCT applications

Section A covers the international phase of the PCT procedure. It provides a brief overview of global trends and then focuses on PCT applications by receiving office (RO), country of origin and geographical region. It also contains data by type of applicant and field of technology—and for selected ROs and origins. The statistical annex provides data for all offices and origins.

## A.1

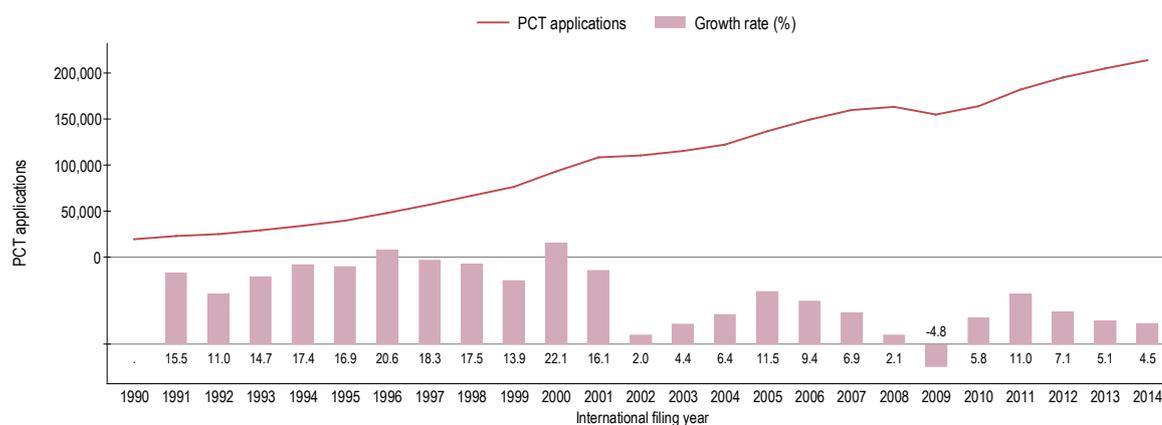
### Overview

#### A.1.1 Overall trend

In 2014, an estimated 214,500 PCT applications were filed, representing an increase of 4.5% on filings in 2013 (figure A.1.1). China and the US contributed, almost equally, to 87.5% of this growth.

In 2014, nearly two-thirds of ROs (79 of the 116 ROs) received at least one PCT application. Of these ROs, a majority (44) received more filings in 2014 than in 2013.

**Figure A.1.1: Trend in PCT applications**



Note: Data for 2014 are WIPO estimates.

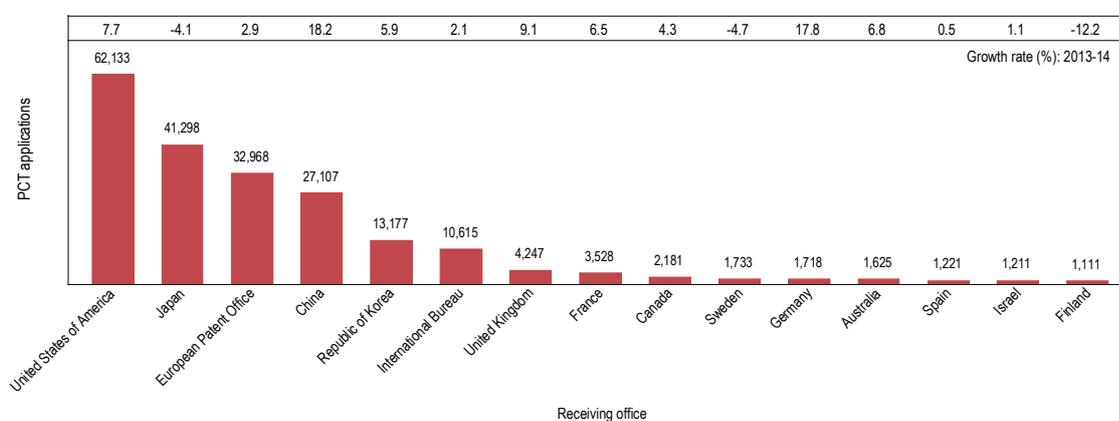
Source: WIPO Statistics Database, March 2015.

### A.1.2 Top receiving offices

The top 15 ROs accounted for 96% of all applications filed in 2014. With 62,133 filings, the United States Patent and Trademark Office (USPTO) received the highest number of PCT applications, followed by the Japan Patent Office (JPO) with 41,298 applications, and the European Patent Office (EPO) with 32,968 (figure A.1.2.1).

Filings increased for 12 of the top 15 ROs. The strongest annual growth rates were recorded at the State Intellectual Property Office of the People's Republic of China (SIPO) (+18.2%), the office of Germany (+17.8%), the office of the UK (+9.1%), and the USPTO (+7.7%). The numbers of filings decreased at the offices of Finland (-12.2%), Sweden (-4.7%) and at the JPO (-4.1%).

**Figure A.1.2.1: PCT applications for top 15 receiving offices, 2014**



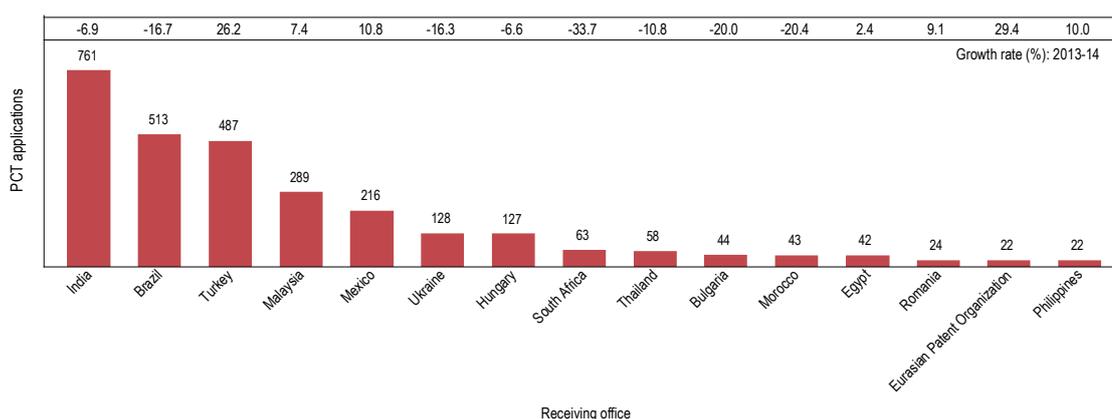
Note: Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

Among middle-income countries, the offices of India (761), Brazil (513) and Turkey (487) received the highest numbers of PCT applications in 2014 (figure A.1.2.2).<sup>10</sup> Filings increased at 7 of the listed 15 ROs, with the Eurasian Patent Organization (+29.4%), Turkey (+26.2%), Mexico (+10.8%) and the Philippines (+10%) showing double-digit annual growth rates. In contrast, the offices of South Africa (-33.7%), Morocco (-20.4%), Bulgaria (-20%), Brazil (-16.7%) and Ukraine (-16.3%) saw sharp decreases.

As is the case for all PCT applicants, those from low- and middle-income countries can choose to file their PCT applications with the International Bureau (IB) of WIPO acting as the RO. For certain countries, the IB is the only competent RO. In 2014, the IB as the RO received 1,514 applications from low- and middle-income countries, an increase of 6.8% on 2013 figures. Among applicants from the 63 low- and middle-income countries which filed at this RO, those from India (621 filings), China (255) and South Africa (232) filed the highest numbers of PCT applications.

**Figure A.1.2.2: PCT applications for selected offices of middle-income countries, 2014**



Note: Data for 2014 are WIPO estimates. China is not included in this figure because it appears in figure A.1.2.1, and also because of the significant difference between the number of PCT applications received by SIPO and by the ROs of other middle-income countries.

Source: WIPO Statistics Database, March 2015.

<sup>10</sup> This report uses the World Bank income classification based on gross national income per capita to refer to particular country groups. See Data Description section for further information.

## A.2

### PCT applications by country of origin

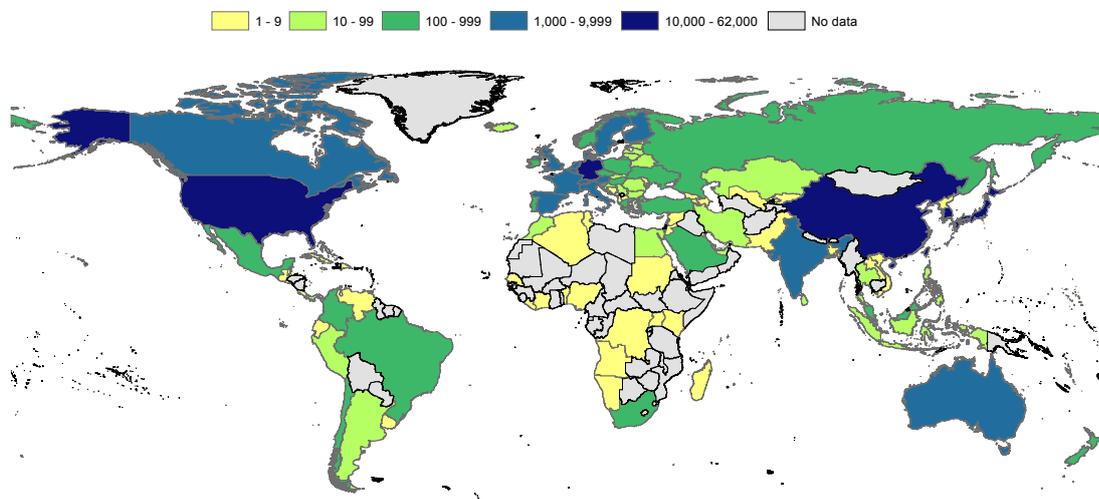
Counts are based on the international filing date and country of residence of the first-named applicant. A statistical table detailing all origins is provided in the annex.

#### A.2.1 World map

Even though applicants from 124 countries filed PCT applications in 2014, the bulk of these applications originated in just a few countries (figure A.2.1). Applicants from Japan and the US combined filed almost half the total number of applications (48.5%). When the numbers of filings from China, Germany and the Republic of Korea are included, these top five countries collectively filed the three-quarters of all PCT applications.

High-income countries accounted for 85.8% of total PCT filings, and middle-income countries accounted for 14.1% of filings. Among middle-income countries, applicants from China, with 25,539 applications filed in 2014, were by far the largest users of the PCT System. They were followed by applicants from India (1,394), Turkey (802), Brazil (581) and Malaysia (314). Applicants from low-income countries filed 24 PCT applications; of these, filings from Kenya (9), the Democratic People's Republic of Korea (4) and Uganda (4) accounted for the highest numbers.

**Figure A.2.1: PCT applications by country of origin, 2014**



Note: Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

### A.2.2 Filing trends

The top 10 origins accounted for 87% of total filings in 2014. Between 1990 and 2010, this share varied between 84.5% and 86%. This share has consistently increased since 2009.

The US filed the highest number of applications (figure A.2.2.1). When compared with 2013 figures, the number of filings from the US rose by 7.1%, reaching a total of 61,492 in 2014. Filings from the US grew steadily since 1990, except during two periods – 2002-03 and 2008-10 –, which coincided with economic downturns.

Filings from Japan (42,459) decreased by 3% in 2014, thus ending 22 consecutive years of growth, including a period of strong growth between 2010 and 2012.

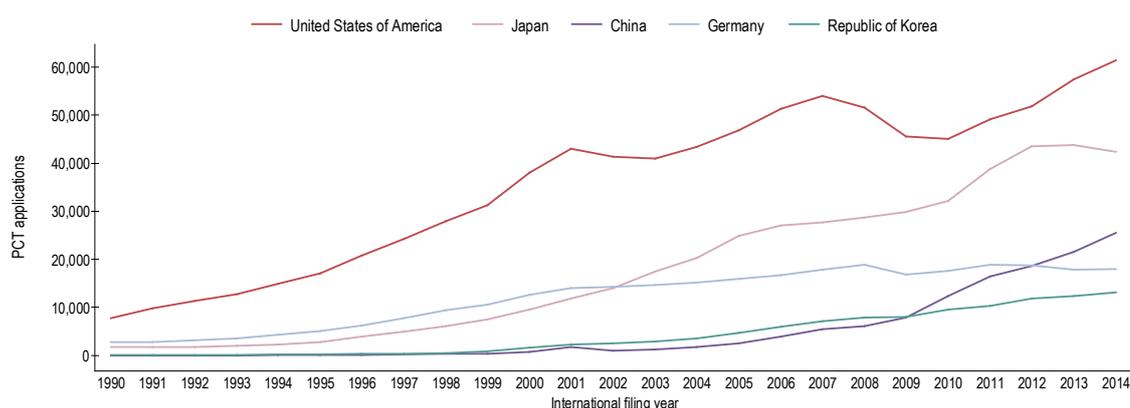
China saw the highest growth among the top 10 filing countries. With 25,539 applications filed – representing annual growth of 18.7% –, it recorded its 12<sup>th</sup> consecutive year of double-digit growth and has become the third largest filer in 2014.

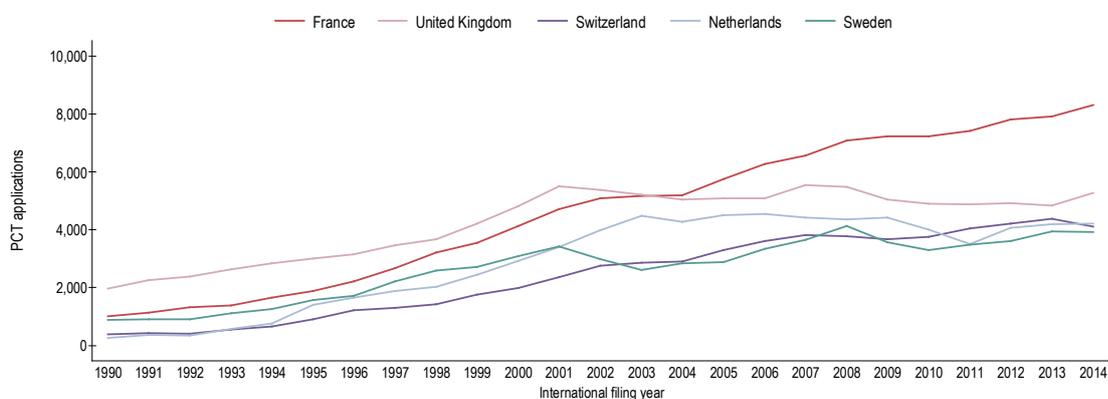
German applicants filed 18,008 applications; this represents 0.5% growth on 2013 figures, thus ending a period of two consecutive years of decreases. From 1990 onwards, German applicants increased their filings each year until the economic downturn of 2009. Since then, German filings have not exceeded their 2008 level.

Applications from the Republic of Korea rose by 6.2% in 2014 to reach 13,151. Among the top five origins, the Republic of Korea is the only country to have achieved virtually constant growth since 1990. The only decrease (-0.3%) recorded during this period dates back to 1997.

All five countries positioned between sixth place and tenth place are in Europe. France is the only country that has seen continuous growth in filings since 1990. The four other countries in this group have experienced several years of decreases since 2008, and Switzerland is the only one of these countries to have recovered its pre-2009 filing level.

**Figure A.2.2.1: Trend in PCT applications for the top 10 origins**





Note: Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

Table A.2.2.2 shows the top countries (up to 10) in each region that filed more than 20 PCT applications in 2014. These regions are based on the United Nations definitions of regions. In 2014, applications were filed by applicants from 124 countries. Altogether, 71 countries saw an increase in filings and 57 countries saw a decrease compared with 2013. In each region, the top three origins combined accounted for the majority of filings.

With the exception of Africa, filings in all regions recorded an increase on 2013 figures. The highest annual growth in numbers of applications was seen in Oceania (+7.6%), North America (+7.1%) and Asia (+4.7%). After three consecutive years of growth, Africa saw a sharp decrease of 13.3% in filings.

Applicants from Asia, Europe and North America filed the bulk of applications. Asian countries filed 40.6% of total applications in 2014, followed by North America (30.1%) and Europe (27.4%). Combined, Africa, Latin America and the Caribbean (LAC), and Oceania accounted for less than 3% of total filings.

In 2010, Asia overtook Europe as the region filing most applications. Since 2010, Asia has increased its share of total filings by 4.8 percentage points. Over the same period, Europe's share of total filings decreased by 5.7 percentage points, that is from 33.1% in 2010 to 27.4% in 2014.

Table A.2.2.2: PCT applications for the top countries by region

Region	Name	Year of international filing					Regional share 2014 (%)	Change from 2013 (%)
		2010	2011	2012	2013	2014		
Africa	South Africa	291	309	313	351	297	66.1	-15.4
	Egypt	47	32	45	50	48	10.7	-4.0
	Morocco	21	19	39	54	45	10.0	-16.7
	Others	65	73	55	63	59	13.1	-6.3
	<b>Total*</b>	<b>424</b>	<b>433</b>	<b>452</b>	<b>518</b>	<b>449</b>	<b>0.2</b>	<b>-13.3</b>
Asia	Japan	32,216	38,864	43,523	43,771	42,459	48.8	-3.0
	China	12,300	16,398	18,620	21,514	25,539	29.4	18.7
	Republic of Korea	9,604	10,357	11,787	12,381	13,151	15.1	6.2
	Israel	1,475	1,449	1,374	1,607	1,596	1.8	-0.7
	India	1,276	1,323	1,309	1,320	1,394	1.6	5.6
	Singapore	643	668	714	838	944	1.1	12.6
	Turkey	479	539	536	805	802	0.9	-0.4
	Saudi Arabia	82	147	286	187	393	0.5	110.2
	Malaysia	349	263	292	308	314	0.4	1.9
	United Arab Emirates	41	43	52	57	98	0.1	71.9
	Others	246	224	292	278	295	0.3	6.1
<b>Total*</b>	<b>58,711</b>	<b>70,275</b>	<b>78,785</b>	<b>83,066</b>	<b>86,985</b>	<b>40.6</b>	<b>4.7</b>	
Europe	Germany	17,559	18,847	18,750	17,913	18,008	30.7	0.5
	France	7,231	7,406	7,802	7,905	8,319	14.2	5.2
	United Kingdom	4,892	4,875	4,917	4,847	5,282	9.0	9.0
	Netherlands	4,011	3,511	4,077	4,188	4,218	7.2	0.7
	Switzerland	3,761	4,045	4,222	4,372	4,115	7.0	-5.9
	Sweden	3,303	3,476	3,600	3,946	3,925	6.7	-0.5
	Italy	2,655	2,686	2,845	2,868	3,061	5.2	6.7
	Finland	2,136	2,075	2,312	2,095	1,815	3.1	-13.4
	Spain	1,769	1,732	1,704	1,705	1,705	2.9	0.0
	Austria	1,144	1,343	1,319	1,262	1,387	2.4	9.9
	Others	5,857	6,307	6,632	6,940	6,902	11.8	-0.5
<b>Total*</b>	<b>54,318</b>	<b>56,303</b>	<b>58,180</b>	<b>58,041</b>	<b>58,737</b>	<b>27.4</b>	<b>1.2</b>	
Latin America & the Caribbean	Brazil	487	562	588	657	581	41.2	-11.6
	Mexico	191	226	188	233	284	20.1	21.9
	Barbados	86	111	168	149	175	12.4	17.4
	Chile	89	115	120	142	144	10.2	1.4
	Colombia	47	55	71	82	102	7.2	24.4
	Argentina	16	24	25	26	33	2.3	26.9
	Bahamas	21	9	14	10	20	1.4	100.0
	Others	70	94	104	86	72	5.1	-16.3
<b>Total*</b>	<b>1,007</b>	<b>1,196</b>	<b>1,278</b>	<b>1,385</b>	<b>1,411</b>	<b>0.7</b>	<b>1.9</b>	
North America	United States of America	45,090	49,210	51,859	57,441	61,492	95.2	7.1
	Canada	2,688	2,914	2,737	2,845	3,089	4.8	8.6
	<b>Total*</b>	<b>47,778</b>	<b>52,124</b>	<b>54,596</b>	<b>60,286</b>	<b>64,581</b>	<b>30.1</b>	<b>7.1</b>
Oceania	Australia	1,769	1,748	1,710	1,604	1,726	83.2	7.6
	New Zealand	309	329	303	320	346	16.7	8.1
	Others	6	2	2	4	2	0.1	-50.0
	<b>Total*</b>	<b>2,084</b>	<b>2,079</b>	<b>2,015</b>	<b>1,928</b>	<b>2,074</b>	<b>1.0</b>	<b>7.6</b>
Unknown		19	27	28	48	263	n.a.	447.9
<b>Total</b>		<b>164,341</b>	<b>182,437</b>	<b>195,334</b>	<b>205,272</b>	<b>214,500</b>	<b>n.a.</b>	<b>4.5</b>

Note: \* indicates share of world total, and n.a. indicates not applicable. Data for 2014 are WIPO estimates. Table A.2.2.2 shows the top countries in each region (with a maximum of 10 countries per region) that filed more than 20 PCT applications in 2014.

Source: WIPO Statistics Database, March 2015.

### A.2.3 PCT applications as a share of resident applications

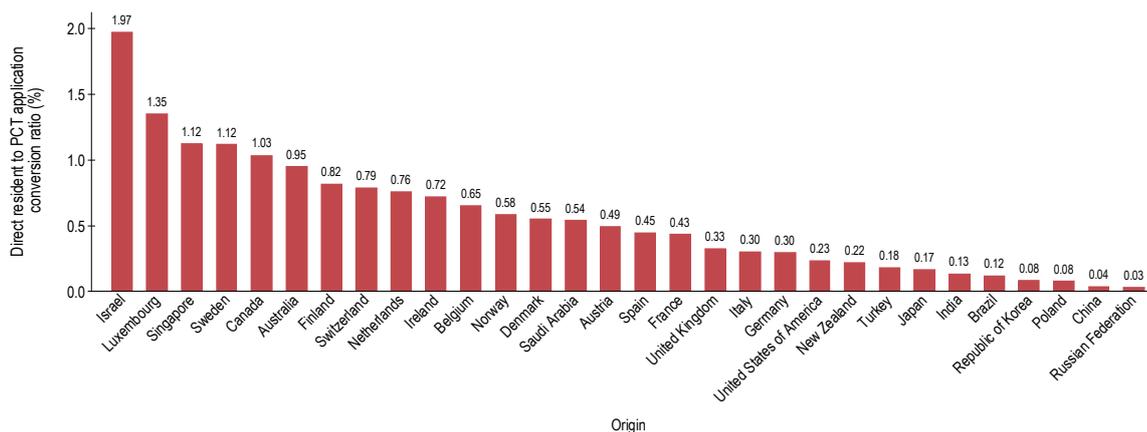
Figure A.2.3 presents a hypothetical “conversion ratio” which reflects the proportion of direct resident patent applications converted into PCT applications, defined as the total number of PCT applications divided by the total number of direct resident applications (including regional applications and excluding PCT national phase entries). Resident application data are lagged by one year because applicants have up to 12 months from the filing date of the earlier national filing to submit a PCT application.<sup>11</sup> For example, in order to derive the conversion ratio for Turkey, its 2014 PCT applications (802) are divided by the 2013 direct resident applications (4,337), which equals 0.18.

In theory, the conversion ratio should be between zero and one. However, it may exceed one because some applications do not have priority claims associated with prior resident filings. For example, an Israeli applicant may forego filing an application at the Israel Patent Office, but opt to file a first application at the USPTO, after which it is converted into a PCT application.

In 2014, applicants from Israel (1.97), Luxembourg (1.35), Singapore (1.12), Sweden (1.12) and Canada (1.03) had conversion ratios above one, reflecting numerous PCT filings with no prior resident filings. In contrast, few direct resident filings from the Republic of Korea (0.08), Poland (0.08), China (0.04) and the Russian Federation (0.03) were converted into PCT applications.

The conversion ratios of the top three filers — China (0.04), Japan (0.17) and the US (0.23) — are relatively low. This likely reflects high levels of filing activity by residents.

**Figure A.2.3: Conversion ratio of direct resident patent applications to PCT applications, 2014**



Note: The ratio is defined for the top 30 origins in terms of PCT applications filed in 2014, divided by resident patent applications (including regional applications and excluding PCT national phase entries) filed in 2013. Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

<sup>11</sup> Strictly speaking, the calculation of the conversion ratio should be based on “first” filings at national offices (excluding “subsequent” filings). However, the data collected from most patent offices do not distinguish between first and subsequent filings. The data in figure A.2.3 are therefore based on total resident patent filings.

## A.3

### PCT applicants

This subsection provides data on the distribution of applicants, applications by ownership type, share of applications with foreign co-applicants, and top applicants. Applications by type of applicant are based on international filing date and on the country of residence of the first-named applicant. For confidentiality reasons, the list of top applicants is based on the publication date.<sup>12</sup>

#### A.3.1 Distribution of applicants

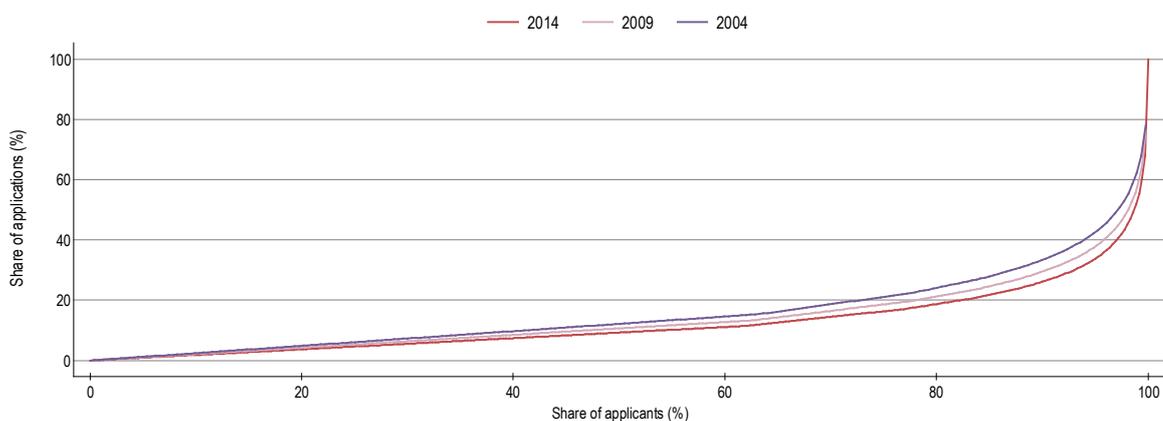
In 2014, 210,609 PCT applications were published by the IB and filed by 49,621 applicants. Exactly 20% of applicants accounted for 81.3% of applications published in 2014, representing an increase of 0.5 percentage point

on 2013. This latter percentage grew despite a sharp increase of 8.7% in the number of applicants, thus reflecting a higher concentration of publications over time among the largest PCT applicants. In 2004, 20% of applicants accounted for 75.9% of published applications.

Figure A.3.1.2 shows the distribution of PCT applications for the top 30 origins, broken down by four types of applicant: businesses, individuals, universities, and government and research institutions. In 2014, 85.1% of all published PCT applications belonged to business applicants, 7.8% to individuals, 4.8% to universities, and 2.3% to government or research institutions.

Individuals accounted for the majority of applications in the Russian Federation (58.2%). Universities accounted for a large share of applications in Singapore (18.6%) and Spain (16.3%). Government and research institutions were responsible for a high share of applications originating in Malaysia (41.4%) and Singapore (18.7%).

**Figure A.3.1.1: Distribution of PCT applicants and published PCT applications**

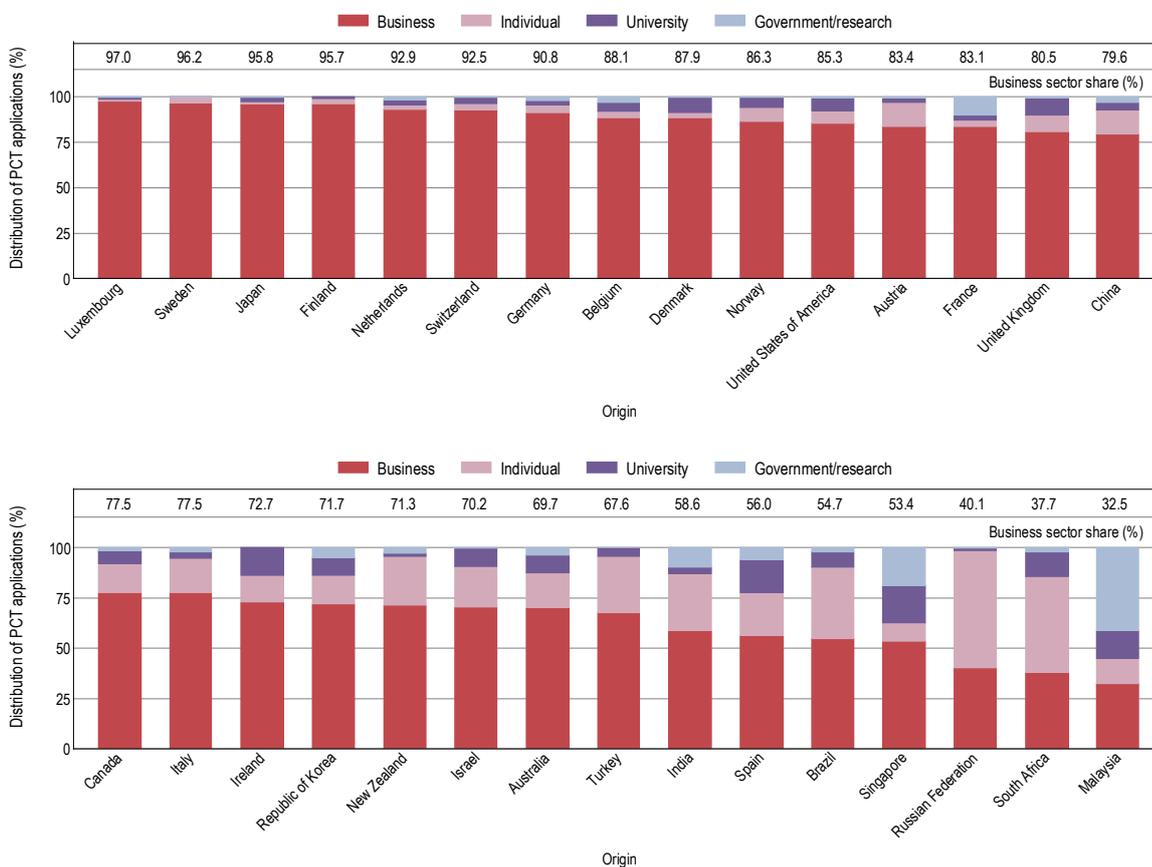


Note: Counts are based on corporate applicants only (excluding natural persons). For confidentiality reasons, data are based on the publication date.

Source: WIPO Statistics Database, March 2015.

<sup>12</sup> For the majority of PCT applications, the difference between the international filing date and the publication date is about six months.

Figure A.3.1.2: Distribution of PCT applications by type of applicant for the top 30 origins, 2014



Note: Government and research institutions include 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 2015.

### A.3.2 Share of PCT applications with foreign co-applicants

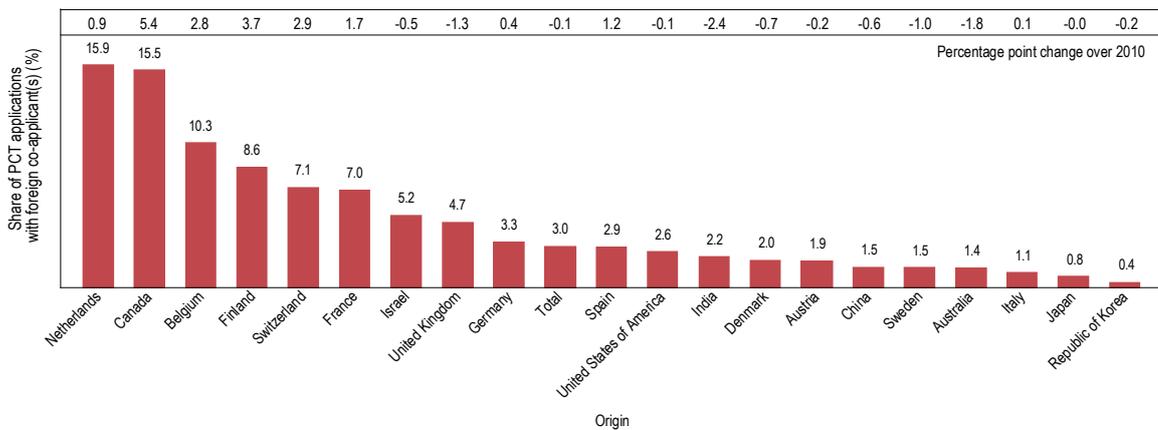
The share of applications jointly filed by applicants from different countries is calculated based on all applicants named in applications published in 2014 (not just first-named applicants) that are corporations (excluding applicants who are natural persons).

On average, international collaboration among applicants from different countries remained fairly low in 2014, with only 3% of applications having at least two joint corporate applicants from different countries (figure A.3.2). This share decreased slightly (-0.1 percentage point) on the 2010 figure.

Among the top 20 origins, the Netherlands recorded the largest share of foreign co-applicants, with 15.9% of its applications listing at least one foreign co-applicant. In second place was Canada with 15.5%, followed by Belgium (10.3%), Finland (8.6%) and Switzerland (7.1%). Only 0.8% of applications from Japan and 0.4% of applications from the Republic of Korea had foreign co-applicants.

Compared to 2010, the share of applications with foreign co-applicants in 2014 has changed substantially for Canada (+5.4 percentage points), Finland (+3.7), Switzerland (+2.9) and Belgium (+2.8).

**Figure A.3.2: Share of PCT applications with foreign co-applicants, 2014**



Note: A methodology was used to compute the shares for 2014. Counts are based on corporate applicants only (excluding natural persons) and are also based on all applicants named in PCT applications. For confidentiality reasons, PCT data are based on the publication date.

Source: WIPO Statistics Database, March 2015.

### A.3.3 Top PCT applicants

#### Business sector

In 2014 Huawei Technologies of China became the top PCT applicant, with 3,442 applications published (table A.3.3.1). It advanced two places on its 2013 position, with more than 1,300 additional applications published. Since 2007, Huawei Technologies ranked among the top five applicants, and was also the top PCT applicant in 2008. Qualcomm, which is incorporated in the US, moved to second position, with 2,409 applications published. It gained two places on its 2013 position and overtook Panasonic Corporation and ZTE Corporation, which ranked, respectively, as the top one and top two applicants in 2013.

Most of the top 50 applicants (70%) increased their number of published applications in 2014, with Huawei Technologies (+1,332), Tencent Technology (Shenzhen) Company Limited (+727) and Microsoft Corporation (+652) recording the highest increases in publications. In contrast, Panasonic Corporation (-1,157), Sharp Kabushiki Kaisha (-612) and Robert Bosch Corporation (-438) recorded the largest decreases in applications published in 2013.

With 19 applicants, Japan had the highest number of applicants ranking among the top 50 applicants list, followed by 15 applicants from the US and 6 from China. The number of Chinese applicants ranking in the top 50 applicant's list of 2014 was double that in 2013. The year 2014 was the first that over one-tenth of the top 50 applicants originated in China.

#### University sector

The University of California remained the largest filer among educational institutions, with 413 published applications in 2014; it was followed by the Massachusetts Institute of Technology (234) and the University of Texas System (154) (table A.3.3.2). The University of California was the only educational institution that ranked among the top 50 PCT applicants.

The number of applications published in 2014 increased for 33 of the top 50 university applicants. The University of Texas System saw the largest increase in number (+35), followed by the China University of Mining and Technology (+33) and the Danmarks Tekniske Universitet (+33). The Korea Advanced Institute of Science and Technology (-37) and the Postech Foundation (-26) saw the sharpest decreases.

With the exception of the Seoul National University, 9 of the top 10 university applicants were from the US. The US, with 28 of the top 50 applicants, also dominates the list of top university applicants. It is followed by universities from the Republic of Korea (7) and Japan (5). Altogether, universities from 9 countries were ranked among the top 50 in 2014. This is one country more than in 2013 (Switzerland).

Table A.3.3.1: Top 50 PCT applicants: businesses, 2014

Overall rank	Changed position from 2013	Applicants	Origin	Applications	Change from 2013
1	2	HUAWEI TECHNOLOGIES CO., LTD.	China	3,442	1,332
2	2	QUALCOMM INCORPORATED	United States of America	2,409	351
3	-1	ZTE CORPORATION	China	2,179	-130
4	-3	PANASONIC CORPORATION	Japan	1,682	-1,157
5	7	mitsubishi electric corporation	Japan	1,593	280
6	-1	INTEL CORPORATION	United States of America	1,539	-332
7	2	TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)	Sweden	1,512	44
8	12	MICROSOFT CORPORATION	United States of America	1,460	652
9	2	SIEMENS AKTIENGESELLSCHAFT	Germany	1,399	51
10	0	KONINKLIJKE PHILIPS ELECTRONICS N.V.	Netherlands	1,391	-32
11	2	SAMSUNG ELECTRONICS CO., LTD.	Republic of Korea	1,381	183
12	-4	TOYOTA JIDOSHA KABUSHIKI KAISHA	Japan	1,378	-320
13	-6	ROBERT BOSCH CORPORATION	Germany	1,371	-438
14	-8	SHARP KABUSHIKI KAISHA	Japan	1,227	-612
15	-1	NEC CORPORATION	Japan	1,215	26
16	-1	LG ELECTRONICS INC.	Republic of Korea	1,138	-40
17	36	TENCENT TECHNOLOGY (SHENZHEN) COMPANY LIMITED	China	1,086	727
18	-2	FUJIFILM CORPORATION	Japan	1,072	69
19	31	UNITED TECHNOLOGIES CORPORATION	United States of America	1,013	643
20	-1	HITACHI, LTD.	Japan	996	141
21	-4	SONY CORPORATION	Japan	982	66
22	5	GOOGLE INC.	United States of America	914	284
23	-6	SHENZHEN CHINA STAR OPTOELECTRONICS TECHNOLOGY CO., LTD	China	904	-12
24	13	KABUSHIKI KAISHA TOSHIBA	Japan	856	412
25	-3	HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P.	United States of America	826	52
26	9	HALLIBURTON ENERGY SERVICES, INC.	United States of America	800	347
27	-4	BASF SE	Germany	780	82
28	0	3M INNOVATIVE PROPERTIES COMPANY	United States of America	696	91
29	37	DENSO CORPORATION	Japan	665	369
30	-9	NOKIA CORPORATION	Finland	630	-176
31	-6	NISSAN MOTOR CO., LTD.	Japan	620	-24
32	0	GENERAL ELECTRIC COMPANY	United States of America	604	86
33	0	MURATA MANUFACTURING CO., LTD.	Japan	588	75
34	2	LG CHEM, LTD.	Republic of Korea	553	104
34	20	BOE TECHNOLOGY GROUP CO.,LTD	China	553	200
36	-10	FUJITSU LIMITED	Japan	552	-85
37	-3	KONICA MINOLTA, INC.	Japan	519	52
38	-9	APPLE COMPUTER, INC.	United States of America	514	-71
39	-15	INTERNATIONAL BUSINESS MACHINES CORPORATION	United States of America	511	-179
40	-2	mitsubishi heavy industries, ltd.	Japan	487	44
41	7	PROCTER & GAMBLE COMPANY	United States of America	474	99
42	-3	KYOCERA CORPORATION	Japan	472	48
43	-1	DOW GLOBAL TECHNOLOGIES INC.	United States of America	470	69
44	11	YAZAKI CORPORATION	Japan	448	103
45	30	HUAWEI DEVICE CO., LTD.	China	420	144
46	21	EMPIRE TECHNOLOGY DEVELOPMENT LLC	United States of America	411	120
47	19	TERUMO KABUSHIKI KAISHA	Japan	405	113
48	7	APPLIED MATERIALS, INC.	United States of America	395	67
49	1	NITTO DENKO CORPORATION	Japan	390	29
50	-22	ALCATEL LUCENT	France	367	-173

Note: For confidentiality reasons, data are based on publication date.

Source: WIPO Statistics Database, April 2015

Table A.3.3.2: Top 50 PCT applicants: universities, 2014

Overall rank	Changed position from 2013	Applicants	Origin	Applications	Change from 2013
47	-4	UNIVERSITY OF CALIFORNIA	United States of America	413	15
83	12	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	United States of America	234	15
132	38	UNIVERSITY OF TEXAS SYSTEM	United States of America	154	35
145	19	HARVARD UNIVERSITY	United States of America	147	26
163	14	JOHNS HOPKINS UNIVERSITY	United States of America	135	19
201	11	LELAND STANFORD JUNIOR UNIVERSITY	United States of America	113	12
206	-59	COLUMBIA UNIVERSITY	United States of America	112	-21
225	10	CALIFORNIA INSTITUTE OF TECHNOLOGY	United States of America	103	12
249	54	UNIVERSITY OF PENNSYLVANIA	United States of America	94	22
253	16	SEOUL NATIONAL UNIVERSITY	Republic of Korea	92	12
275	-51	CORNELL UNIVERSITY	United States of America	87	-8
290	-2	NANYANG TECHNOLOGICAL UNIVERSITY	Singapore	82	7
293	-50	UNIVERSITY OF FLORIDA	United States of America	81	-8
293	69	KYOTO UNIVERSITY	Japan	81	23
293	150	DANMARKS TEKNISKE UNIVERSITET	Denmark	81	33
304	-18	UNIVERSITY OF TOKYO	Japan	79	3
305	2	UNIVERSITY OF MICHIGAN	United States of America	78	7
312	54	KOREA UNIVERSITY	Republic of Korea	77	20
314	-33	PEKING UNIVERSITY	China	76	-1
325	77	UNIVERSITY OF WASHINGTON	United States of America	74	21
325	-39	ISIS INNOVATION LIMITED	United Kingdom	74	-2
332	79	KYUSHU UNIVERSITY	Japan	72	20
336	17	TSINGHUA UNIVERSITY	China	70	10
347	-143	KOREA ADVANCED INSTITUTE OF SCIENCE AND TECHNOLOGY	Republic of Korea	67	-37
378	33	OSAKA UNIVERSITY	Japan	62	10
395	143	UNIVERSITY OF NORTH CAROLINA	United States of America	59	21
411	-150	POSTECH FOUNDATION	Republic of Korea	57	-26
411	229	UNIVERSITY OF ILLINOIS	United States of America	57	25
418	-107	NATIONAL UNIVERSITY OF SINGAPORE	Singapore	56	-13
418	-56	YONSEI UNIVERSITY	Republic of Korea	56	-2
422	-65	TOHOKU UNIVERSITY	Japan	55	-4
431	127	HANYANG UNIVERSITY	Republic of Korea	54	17
452	121	DUKE UNIVERSITY	United States of America	51	15
452	-78	NEW YORK UNIVERSITY	United States of America	51	-5
465	193	EIDGENOSSISCHE TECHNISCHE HOCHSCHULE ZURICH	Switzerland	50	19
488	170	KYUNGPOOK NATIONAL UNIVERSITY	Republic of Korea	48	17
521	162	ECOLE POLYTECHNIQUE FEDERALE DE LAUSANNE	Switzerland	45	15
526	32	NORTHEASTERN UNIVERSITY	United States of America	44	7
526	1202	CHINA UNIVERSITY OF MINING AND TECHNOLOGY	China	44	33
526	114	EMORY UNIVERSITY	United States of America	44	12
526	-99	UNIVERSITY OF UTAH	United States of America	44	-6
538	-62	UNIVERSITY OF MINNESOTA	United States of America	43	-1
558	-70	UNIVERSITY OF SOUTHERN CALIFORNIA	United States of America	41	-2
558	-82	UNIVERSITY OF PITTSBURGH	United States of America	41	-3
558	173	IMPERIAL INNOVATIONS LTD.	United Kingdom	41	13
558	-60	STATE UNIVERSITY OF NEW YORK	United States of America	41	-1
571	227	UNIVERSITY OF ROCHESTER	United States of America	40	14
584	-26	YEDA RESEARCH AND DEVELOPMENT CO. LTD.	Israel	39	2
608	821	UNIVERSITY OF HOUSTON	United States of America	38	24
608	-70	NORTHWESTERN UNIVERSITY	United States of America	38	0
624	-126	VANDERBILT UNIVERSITY	United States of America	37	-5

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

Source: WIPO Statistics Database, April 2015

### Government and research institutions sector

The Commissariat à l'Énergie Atomique et aux Énergies Alternatives of France accounted for the largest number (434) of published applications among government and research institutions (table A.3.3.3). It was the only government and research institution that ranked among the top 50 PCT applicants in 2014. It was followed by the Fraunhofer-Gesellschaft zur Förderung der angewandten Forschung e.v. of Germany.

The Republic of Korea – with 7 applicants – had the largest number of applicants, followed by the US (6), France (3) and Japan (3). One government or research institution from a middle-income country ranks among the top 30, namely Mimos Berhad of Malaysia.

**Table A.3.3.3: Top 30 PCT applicants: government and research institutions, 2014**

Overall rank	Changed position from 2013	Applicants	Origin	Applications	Change from 2013
45	-5	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES	France	434	15
63	21	FRAUNHOFER-GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG E.V.	Germany	318	70
107	-15	CHINA ACADEMY OF TELECOMMUNICATIONS TECHNOLOGY	China	196	-31
130	10	INSTITUTE OF MICROELECTRONICS OF CHINESE ACADEMY OF SCIENCES	China	156	17
136	76	AGENCY OF SCIENCE, TECHNOLOGY AND RESEARCH	Singapore	152	51
139	-21	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE (CNRS)	France	150	-15
161	23	INSTITUT NATIONAL DE LA SANTE ET DE LA RECHERCHE MEDICALE (INSERM)	France	136	22
191	73	MIMOS BERHAD	Malaysia	119	37
192	43	COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH	India	117	26
198	45	NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY	Japan	114	25
262	53	CONSEJO SUPERIOR DE INVESTIGACIONES CIENTIFICAS (CSIC)	Spain	90	22
290	-66	U.S.A., AS REPRESENTED BY THE SECRETARY DEPT. OF HEALTH AND HUMAN SERVICES	United States of America	82	-13
293	69	KOREA INSTITUTE OF ENERGY RESEARCH	Republic of Korea	81	23
352	39	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST-NATUURWETENSCHAPPELIJK ONDERZOEK TNO	Netherlands	66	12
374	-41	KOREA INSTITUTE OF INDUSTRIAL TECHNOLOGY	Republic of Korea	63	-1
378	13	KOREA ELECTRONICS TECHNOLOGY INSTITUTE	Republic of Korea	62	8
385	17	BATTELLE MEMORIAL INSTITUTE	United States of America	60	7
422	-20	JAPAN SCIENCE AND TECHNOLOGY AGENCY	Japan	55	2
422	-168	ELECTRONICS & TELECOMMUNICATIONS RESEARCH INSTITUTE OF KOREA	Republic of Korea	55	-32
437	73	CLEVELAND CLINIC FOUNDATION	United States of America	53	12
488	195	SLOAN-KETTERING INSTITUTE FOR CANCER RESEARCH	United States of America	48	18
501	139	KOREA RESEARCH INSTITUTE OF CHEMICAL TECHNOLOGY	Republic of Korea	47	15
538	-147	MAX-PLANCK-GESELLSCHAFT ZUR FORDERUNG DER WISSENSCHAFTEN E.V.	Germany	43	-11
550	71	UNITED STATES OF AMERICA AS REPRESENTED BY THE SECRETARY OF THE NAVY	United States of America	42	9
608	-197	COMMONWEALTH SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATION	Australia	38	-14
608	-98	MAYO FOUNDATION FOR MEDICAL EDUCATION AND RESEARCH	United States of America	38	-3
645	-115	KOREA INSTITUTE OF MACHINERY & MATERIALS	Republic of Korea	36	-3
645	-24	RIKEN (THE INSTITUTE OF PHYSICAL AND CHEMICAL RESEARCH)	Japan	36	3
680	522	CONSIGLIO NAZIONALE DELLE RICERCHE	Italy	34	17
680	-259	KOREA RESEARCH INSTITUTE OF BIOSCIENCE AND BIOTECHNOLOGY	Republic of Korea	34	-17

Note: Government and research institutions include private non-profit organizations and hospitals. For confidentiality reasons, data are based on publication date.

Source: WIPO Statistics Database, April 2015

## A.4

### PCT applications by fields of technology

PCT applications span a wide range of technologies. The tendency to file patent applications differs across technologies, as some technologies depend more on the patent system than others. This subsection shows the distribution of PCT applications across fields of technology by year and origin, as well as the relative specialization index.

For confidentiality reasons, statistics are based on the publication date rather than the filing date. Statistics based on the publication date have a delay of approximately six months compared with those based on international filing date. The breakdown of published PCT applications by field of technology is based on a concordance table that relates the International Patent Classification (IPC) symbols to 35 fields of technology.<sup>13</sup>

#### A.4.1 Overall trend

With a 19.4% annual growth and 17,653 applications, computer technology became the technical field in which the largest number of PCT applications was published in 2014; this field was followed by digital communication (+14.5%; 16,165) and electrical machinery (+1.1%; 15,220) (table A.4.1). The latter, which ranked number one in 2013 and 2012, moved down two places in 2014. Medical technology remained in fourth position.

Most fields (30 out of a total of 35) recorded growth in the number of published applications; among these, 13 fields recorded double-digit growth. Control (+21.4%), computer technology (+19.4%) and medical technology (+17.1%) recorded the largest increases on 2013 figures. The two fastest declining fields were optics (-5.2%) and semiconductors (-2%).

<sup>13</sup> The concordance table is available at [www.wipo.int/ipstats/en/statistics/patents/](http://www.wipo.int/ipstats/en/statistics/patents/).

#### A.4.2 Countries' specialization

The relative specialization index (RSI) measures how much a country specializes in a given technological field. The RSI corrects for the effects of country size and focuses on the concentration in specific technology fields; it seeks to capture whether applicants from a particular country tend to have a lower or a higher propensity to file in certain technology fields.<sup>14</sup>

Austria and Japan had a high concentration of applications in electrical machinery, apparatus and energy (figure A.4.2). RSI values for digital communication are skewed towards just a few origins (Canada, China, Finland, Malaysia, the Republic of Korea and Sweden), whereas those for measurement are more evenly distributed. In 2014, India had a high share of PCT applications in pharmaceuticals.

<sup>14</sup> The RSI is calculated using the following formula:

$$RSI = \text{Log} \left( \frac{FC}{\sum T} \cdot \frac{\sum C}{FT} \right)$$
 whereby FC and FT denote applications from country C and in technological field T, respectively. A positive RSI value for a technology indicates that a particular country has a relatively high share of PCT filings related to that field of technology.

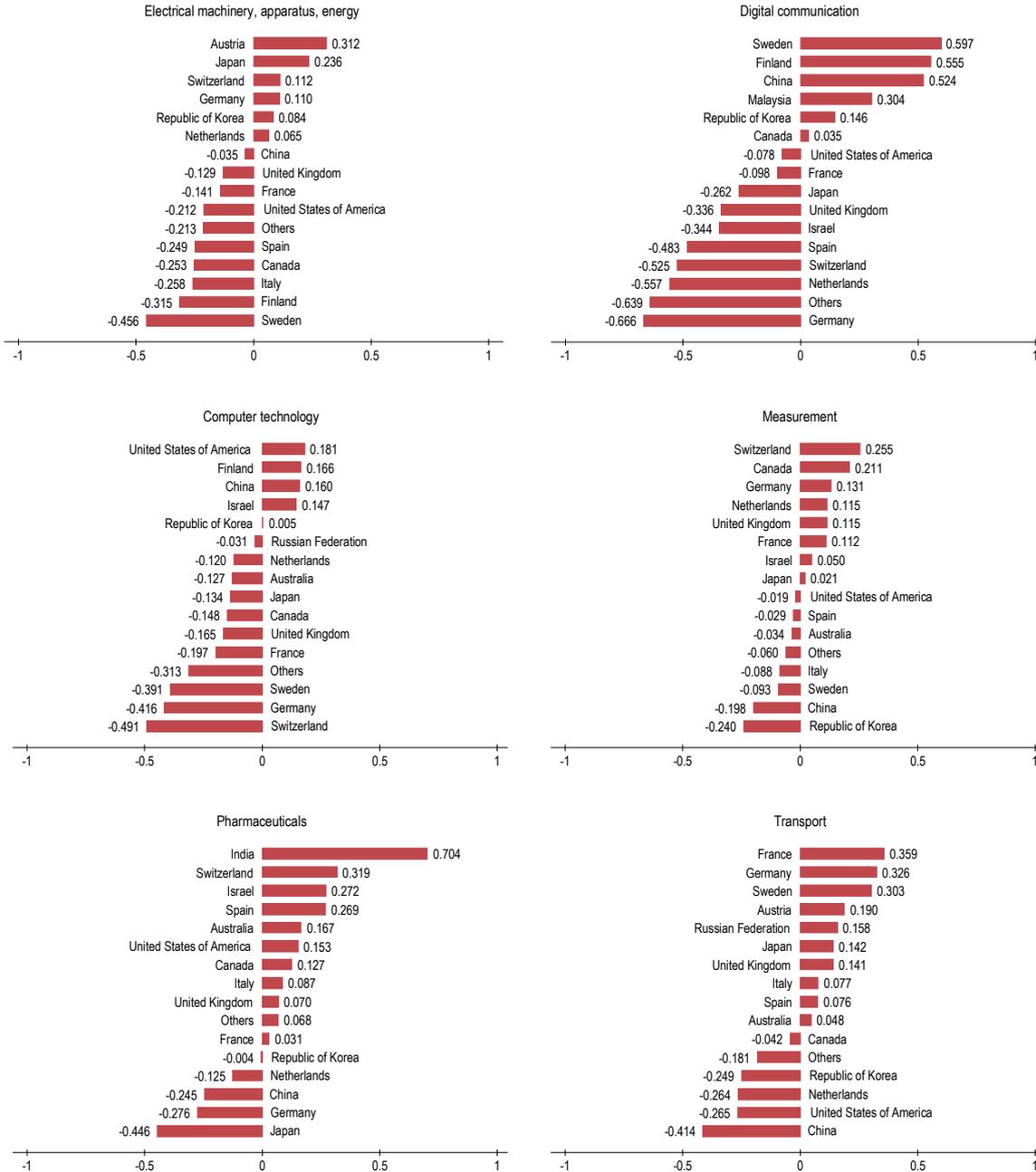
Table A.4.1: PCT applications by field of technology

	Technical field	Year					2014 share (%)	Change from 2013 (%)
		2010	2011	2012	2013	2014		
<b>I</b>	<b>Electrical engineering</b>							
1	Electrical machinery, apparatus, energy	9,172	11,355	13,455	15,049	15,220	7.3	1.1
2	Audio-visual technology	5,619	5,839	6,377	6,855	6,815	3.3	-0.6
3	Telecommunications	4,878	4,987	4,996	5,268	5,420	2.6	2.9
4	Digital communication	10,592	11,651	12,636	14,117	16,165	7.7	14.5
5	Basic communication processes	1,277	1,204	1,300	1,292	1,292	0.6	0.0
6	Computer technology	9,542	10,496	12,454	14,782	17,653	8.4	19.4
7	IT methods for management	2,084	2,363	2,936	3,768	4,114	2.0	9.2
8	Semiconductors	5,862	6,509	6,908	7,331	7,186	3.4	-2.0
<b>II</b>	<b>Instruments</b>							
9	Optics	4,192	4,551	5,118	6,302	5,976	2.9	-5.2
10	Measurement	6,430	6,571	7,312	7,992	9,000	4.3	12.6
11	Analysis of biological materials	1,790	1,786	1,724	1,854	1,839	0.9	-0.8
12	Control	2,131	2,161	2,346	2,575	3,126	1.5	21.4
13	Medical technology	10,484	10,767	11,375	11,950	13,996	6.7	17.1
<b>III</b>	<b>Chemistry</b>							
14	Organic fine chemistry	5,516	5,308	5,602	5,559	5,971	2.8	7.4
15	Biotechnology	5,222	5,245	5,316	5,526	5,874	2.8	6.3
16	Pharmaceuticals	7,836	7,715	7,815	7,734	8,568	4.1	10.8
17	Macromolecular chemistry, polymers	2,806	3,108	3,287	3,546	3,778	1.8	6.5
18	Food chemistry	1,516	1,582	1,735	1,759	1,872	0.9	6.4
19	Basic materials chemistry	4,641	4,896	4,975	5,120	5,698	2.7	11.3
20	Materials, metallurgy	2,868	3,225	3,425	3,762	4,054	1.9	7.8
21	Surface technology, coating	2,426	2,667	2,935	3,248	3,493	1.7	7.5
22	Micro-structural and nano-technology	347	358	436	402	411	0.2	2.2
23	Chemical engineering	3,586	3,860	4,234	4,293	4,580	2.2	6.7
24	Environmental technology	2,166	2,475	2,647	2,716	2,765	1.3	1.8
<b>IV</b>	<b>Mechanical engineering</b>							
25	Handling	3,648	4,073	4,020	4,264	4,779	2.3	12.1
26	Machine tools	2,715	3,049	3,381	3,510	3,762	1.8	7.2
27	Engines, pumps, turbines	4,309	5,058	5,586	6,169	6,884	3.3	11.6
28	Textile and paper machines	1,962	1,982	2,160	2,250	2,286	1.1	1.6
29	Other special machines	3,762	4,231	4,664	4,862	5,367	2.6	10.4
30	Thermal processes and apparatus	2,459	2,613	2,731	2,990	2,991	1.4	0.0
31	Mechanical elements	4,052	4,451	4,798	5,150	5,854	2.8	13.7
32	Transport	5,494	6,262	7,417	7,962	8,630	4.1	8.4
<b>V</b>	<b>Other fields</b>							
33	Furniture, games	3,100	3,208	3,335	3,568	3,798	1.8	6.4
34	Other consumer goods	3,004	3,173	3,363	3,411	3,990	1.9	17.0
35	Civil engineering	4,362	4,823	5,339	5,546	6,420	3.1	15.8

Note: Due to confidentiality requirements, data are based on publication date.

Source: WIPO Statistics Database, March 2015.

**Figure A.4.2: Relative specialization index for published PCT applications by selected fields of technology, 2014**



Note: The IPC technology concordance table (available at: [www.wipo.int/ipstats/en](http://www.wipo.int/ipstats/en)) was used to convert IPC symbols into 35 corresponding fields of technology. The data refer to published applications.

Source: WIPO Statistics Database, March 2015.

## Section B

# Statistics on PCT national phase entries

The PCT process starts with the international phase and concludes with the national phase.<sup>15</sup> The national or regional patent office at which an applicant enters the PCT national phase processes the application further with a view to either granting or refusing it, in accordance with the applicable law, taking into account the search result, and optional examination, from the international phase.

The analysis of national phase entry (NPE) data provides information on international patenting activities. Section B briefly describes the global trends, the use of the PCT or the direct filing route (Paris route), the origin of NPEs, and the main offices of destination.

The data reported here are based on data supplied to WIPO by patent offices several months after the end of each year; the latest available data refers to 2013. It should be noted that not all offices supply NPE data to WIPO.<sup>16</sup>

## B.1

### Overview

This subsection analyzes the global and latest trends in NPEs as well as their use relative to the Paris route.

#### B.1.1 Overall trend

The total number of NPEs is estimated to have been 565,500 in 2013, representing a 4.3% increase on 2012 (figure B.1.1). The year 2013 represented the fourth consecutive of annual growth, following a sharp drop in 2009—the height of the financial crisis. US applicants accounted for 47% of the total growth in NPEs followed by applicants from Japan (34.2%).

In 2013, about 84% of total NPEs were filed by non-residents (abroad) and 16% were filed by residents (at their country's home office). The share of NPEs by residents filing applications at their home office has increased from 11% in 1995 to 16% in 2013.

The long-term trend shows continuous year-on-year growth in NPEs since 1995, except for two years: 2003 and 2009. This growth partly reflects the increasing trend of protecting inventions abroad, as well as increasing PCT membership, thus making the system more attractive to its users. The 4.1% decrease in NPEs in 2009 was mainly due to a fall in NPEs originating in the US, Germany and the Netherlands.

#### B.1.2 Non-resident patent applications by filing route

To file a patent application abroad (seeking protection in a foreign country), applicants can decide either to file directly at an office (using the Paris route) or to use the PCT route and pursue the application through NPEs. In 2013, about 475,500 non-resident NPEs were initiated worldwide and about 384,200 applications were filed directly at offices by non-resident applicants (figure B.1.2). In 2013, non-resident NPEs increased by 3.2% on 2012, and non-resident Paris route filings increased by 2%.

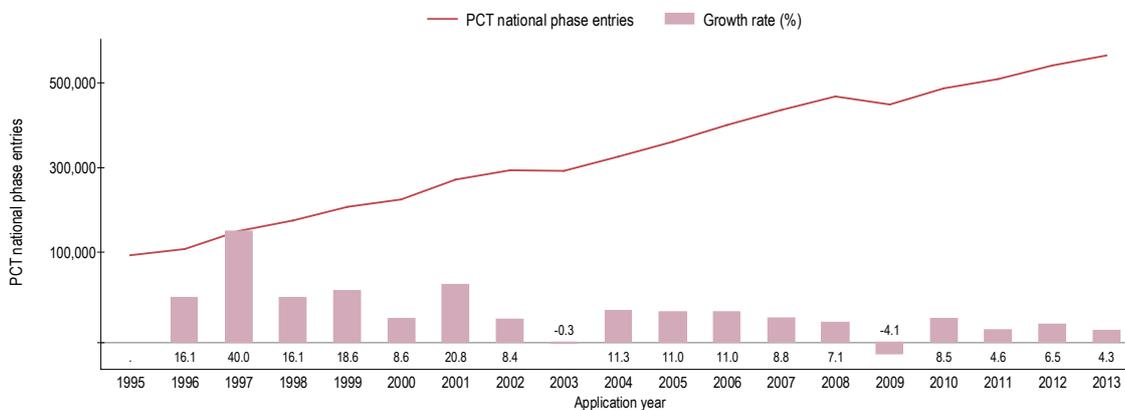
The long-term trend shows that since 1995 both routes trended upward, although the PCT route grew at a much faster rate. On average, the Paris route grew 2.1% a year from 1995 to 2013, but the PCT route grew much faster, by 10.3% a year. The trend for the Paris route also showed five years of decreases, compared with only two years of decreases for the PCT route. During the financial crisis and the economic downturn in 2009, Paris route filings decreased by 9.1%, compared with a 5.4% decrease for PCT NPEs.

In 1995, three-quarters of applications filed by non-residents were filed directly at offices. By 2007, over half of non-resident applications were filed via the PCT route and, in 2013, this share reached 55.3%.

<sup>15</sup> For further details, see *Introduction to the Patent Cooperation Treaty*.

<sup>16</sup> For further details, see *Data Description*.

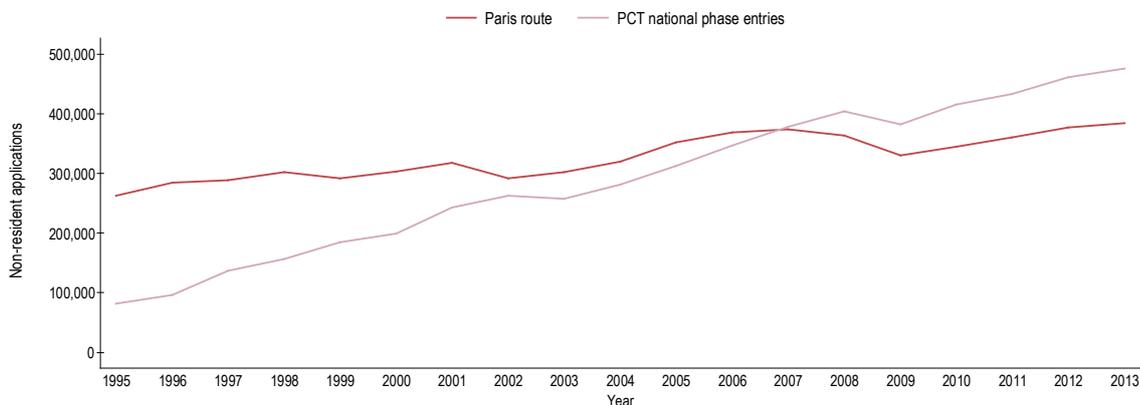
**Figure B.1.1: Trend in PCT national phase entries**



Note: These are WIPO estimates. Missing data for offices that do not provide statistics have been estimated by WIPO on an aggregate basis.

Source: WIPO Statistics Database, March 2015.

**Figure B.1.2: Trend in non-resident applications by filing route**



Note: These are WIPO estimates. Missing data for offices that did not provide statistics have been estimated by WIPO on an aggregate basis in order to present the figure.

Source: WIPO Statistics Database, March 2015.

## B.2

### National phase entries by country of origin

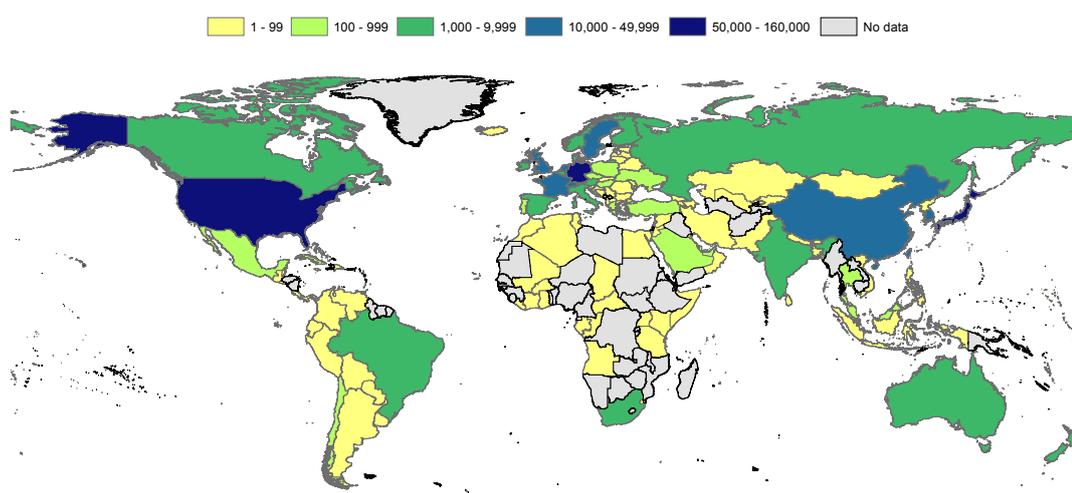
This subsection analyzes NPEs according to the applicant's origin. It also provides data by income group and further compares the use of the PCT System with that of the Paris route. It should be noted that the origin of an application is defined using the residence of the first-named applicant. Data by origin may be incomplete.<sup>17</sup> A statistical table listing all origins is provided in the annex.

#### B.2.1 World map

In 2013, NPEs were initiated by applicants from 146 different origins, but most NPEs were concentrated among Germany, Japan and the US. Combined, these three countries were the origin of 60.5% of all NPEs initiated worldwide in 2013 (figure B.2.1). Levels are low for many countries. The top 20 origins accounted for 95% of total NPEs in 2013.

In 2013, high-income countries accounted for 93.7% of NPEs, whereas middle-income countries accounted for 5.1%. Low-income origins accounted for 0.2% of NPEs, which is similar to their 2012 share. China, with 18,016 NPEs, filed by far the highest number of NPEs among middle-income countries; it was followed by India (3,890), Brazil (1,250) and South Africa (1,140). Low-income countries filed 80 NPEs, with applicants residing in the Democratic People's Republic of Korea (28), Kenya (19) and Bangladesh (16) accounting for the largest number of such filings.<sup>18</sup>

**Figure B.2.1: PCT national phase entries by country of origin, 2013**



Source: WIPO Statistics Database, March 2015.

<sup>17</sup> For approximately 6,600 PCT NPEs initiated in 2013, WIPO has either received no notification of their origin or has received invalid country or origin details.

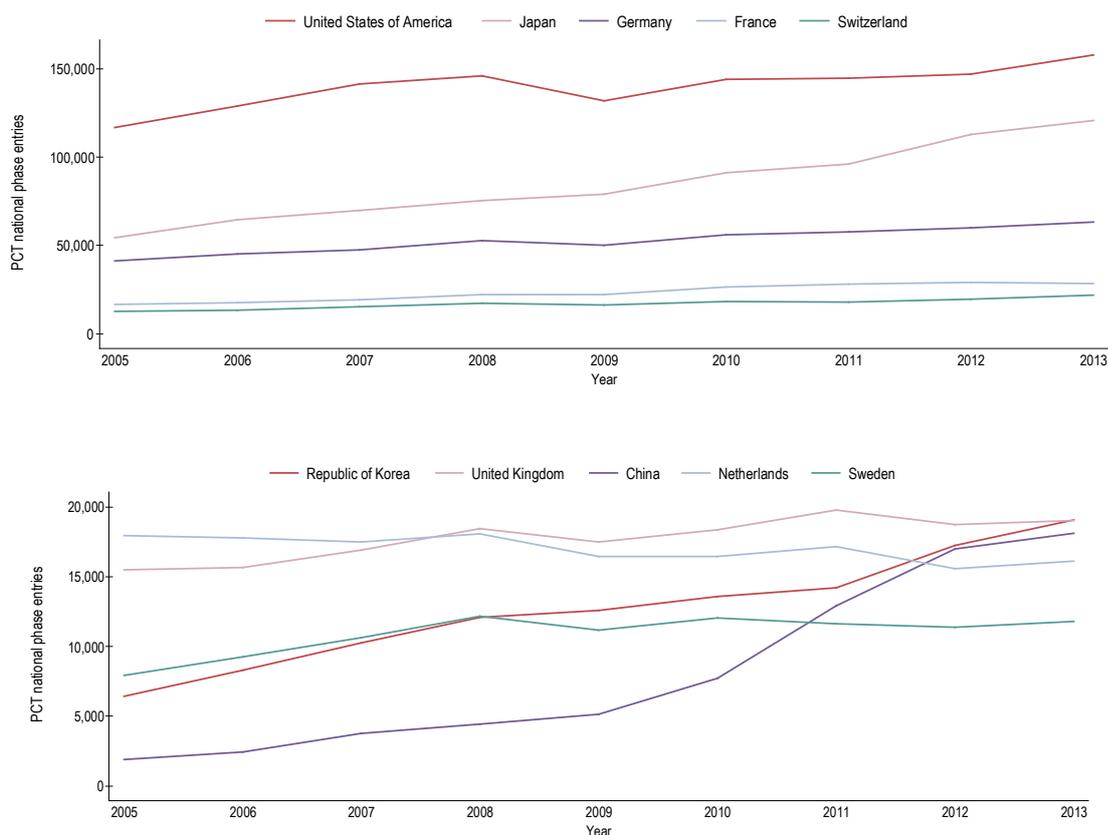
<sup>18</sup> Bangladesh is not party of the PCT, but its applicants can file PCT applications, under certain conditions.

### B.2.2 Filing trends

The top 10 origins represented 84% of total NPEs in 2013 (figure B.2.2.1). With almost 157,943 NPEs, applicants from the US remained the largest users of the PCT System; they were followed by applicants from Japan (120,839), Germany (65,173), France (28,534) and Switzerland (21,913). The Republic of Korea (19,086) overtook the UK (19,020) in 2013 to become the sixth biggest filer of NPEs. With the exception of China, which is an upper middle-income country, the top 10 origins are all high-income countries.

The share of the top 10 origins has increased from 81% in 1995 to 84% in 2013. With the exception of the Netherlands, all of the top 10 origins had a higher number of NPEs in 2013 compared to 2005. Furthermore, the three Asian origins, China (+32.5%), Japan (+10.5%) and the Republic of Korea (+10.6%) reported double-digit average annual growth. Europe accounted for a majority of countries within the top 10 origins (6 of 10). Among European origins, France (+7%) and Switzerland (+7.1%) experienced the highest average annual growth between 2005 and 2013. The Netherlands (-1.3%) was the only country among the top 10 that filed fewer NPEs in 2013 than in 2005.

**Figure B.2.2.1: Trends in PCT national phase entries for the top 10 origins**



Note: WIPO estimates

Source: WIPO Statistics Database, March 2015.

Table B.2.2.2 shows the top origins for each region. These data are based on the United Nations' definition of regions and 2013 totals.

Europe remained the region that initiated the highest number of NPEs worldwide; NPEs from Europe accounted for 36.4% of total NPEs in 2013. Due to a sharp increase in NPEs from China, Japan and the Republic of Korea, Asia (30.6%) was ranked in second position; it was followed by North America (29.5%). Asia was ranked the fastest-growing region in terms of NPEs, increasing its share from 23.6% in 2008 to 30.6% in 2013.

The share of NPEs within regions is skewed towards a few offices. For example, South Africa (82%) accounted for the bulk of NPEs originating from Africa. Similarly, the US (94.6%) and Japan (69.9%) accounted for the majority of NPEs in their respective regions.

The majority of the origins reported in table B.2.2.2 show growth in NPEs between 2012 and 2013. The top origin for each region shows growth in NPEs in 2013, with South Africa (+22.1%) experiencing the sharpest growth and Australia (+4.6%) experiencing the slowest.

Table B.2.2.2: PCT national phase entries for the top origins by region

Region	Name	Year of national phase entry					Regional share 2013 (%)	Change from 2012 (%)
		2009	2010	2011	2012	2013		
Africa	South Africa	854	804	984	934	1,140	82.0	22.1
	Seychelles	19	28	41	34	89	6.4	161.8
	Tunisia	11	8	2	28	59	4.2	110.7
	Egypt	16	12	42	24	36	2.6	50.0
	Others	76	62	111	85	67	4.8	-21.2
	<b>Total*</b>		<b>976</b>	<b>914</b>	<b>1,180</b>	<b>1,105</b>	<b>1,391</b>	<b>0.2</b>
Asia	Japan	79,134	91,240	96,101	112,862	120,839	69.9	7.1
	Republic of Korea	12,606	13,565	14,213	17,238	19,086	11.0	10.7
	China	5,145	7,724	12,913	16,978	18,106	10.5	6.6
	Israel	4,695	5,224	4,967	5,527	5,498	3.2	-0.5
	India	1,891	2,570	2,950	3,322	3,890	2.2	17.1
	Singapore	1,259	1,821	1,950	2,009	2,368	1.4	17.9
	Thailand	30	51	72	120	686	0.4	471.7
	Turkey	353	446	594	693	653	0.4	-5.8
	Malaysia	195	252	486	470	544	0.3	15.7
	Saudi Arabia	189	207	241	211	381	0.2	80.6
	Others	483	509	556	709	926	0.5	30.6
<b>Total*</b>		<b>105,980</b>	<b>123,609</b>	<b>135,043</b>	<b>160,139</b>	<b>172,977</b>	<b>30.6</b>	<b>8.0</b>
Europe	Germany	49,989	55,914	57,814	59,966	63,173	30.7	5.3
	France	22,169	26,552	28,039	28,943	28,534	13.8	-1.4
	Switzerland	16,426	18,245	17,971	19,428	21,913	10.6	12.8
	United Kingdom	17,470	18,367	19,771	18,748	19,020	9.2	1.5
	Netherlands	16,452	16,452	17,160	15,567	16,126	7.8	3.6
	Sweden	11,175	12,024	11,636	11,365	11,795	5.7	3.8
	Italy	7,628	8,476	8,841	9,368	9,895	4.8	5.6
	Denmark	4,216	4,788	5,255	4,975	5,550	2.7	11.6
	Finland	4,999	6,077	5,089	5,774	5,528	2.7	-4.3
	Belgium	4,327	5,049	5,135	5,272	5,193	2.5	-1.5
	Others	13,427	16,402	16,919	18,877	19,311	9.4	2.3
<b>Total*</b>		<b>168,278</b>	<b>188,346</b>	<b>193,630</b>	<b>198,283</b>	<b>206,038</b>	<b>36.4</b>	<b>3.9</b>
Latin America & the Caribbean	Brazil	775	1,016	1,169	1,167	1,250	40.5	7.1
	Mexico	320	448	569	576	545	17.6	-5.4
	Barbados	471	307	305	271	434	14.1	60.1
	Chile	50	127	239	316	279	9.0	-11.7
	Cuba	104	67	91	103	151	4.9	46.6
	Argentina	91	75	104	121	79	2.6	-34.7
	Colombia	73	69	145	115	79	2.6	-31.3
	Bahamas	119	122	73	69	63	2.0	-8.7
	Panama	75	41	40	11	47	1.5	327.3
	Uruguay	14	32	12	10	20	0.6	100.0
Others	97	125	117	120	141	4.6	17.5	
<b>Total*</b>		<b>2,189</b>	<b>2,429</b>	<b>2,864</b>	<b>2,879</b>	<b>3,088</b>	<b>0.5</b>	<b>7.3</b>
North America	United States of America	131,731	143,944	144,598	146,988	157,943	94.6	7.5
	Canada	7,396	8,006	8,563	8,947	8,894	5.3	-0.6
	Bermuda	163	177	71	61	95	0.1	55.7
	<b>Total*</b>	<b>139,290</b>	<b>152,127</b>	<b>153,232</b>	<b>155,996</b>	<b>166,932</b>	<b>29.5</b>	<b>7.0</b>
Oceania	Australia	6,096	6,831	6,675	6,941	7,261	85.7	4.6
	New Zealand	1,031	1,132	1,090	1,004	1,183	14.0	17.8
	Others	4	22	7	8	28	0.3	250.0
	<b>Total*</b>	<b>7,131</b>	<b>7,985</b>	<b>7,772</b>	<b>7,953</b>	<b>8,472</b>	<b>1.5</b>	<b>6.5</b>
Unknown		24,556	11,290	15,179	15,845	6,602	n.a.	-58.3
<b>Total</b>		<b>448,400</b>	<b>486,700</b>	<b>508,900</b>	<b>542,200</b>	<b>565,500</b>	<b>n.a.</b>	<b>4.3</b>

Note: World totals and unknown filings are WIPO estimates. \* indicates share of world total. n.a. indicates not applicable. The table shows the top countries of origin having filed more than 20 NPEs in 2013 for each region (with a maximum of 10 countries per region).

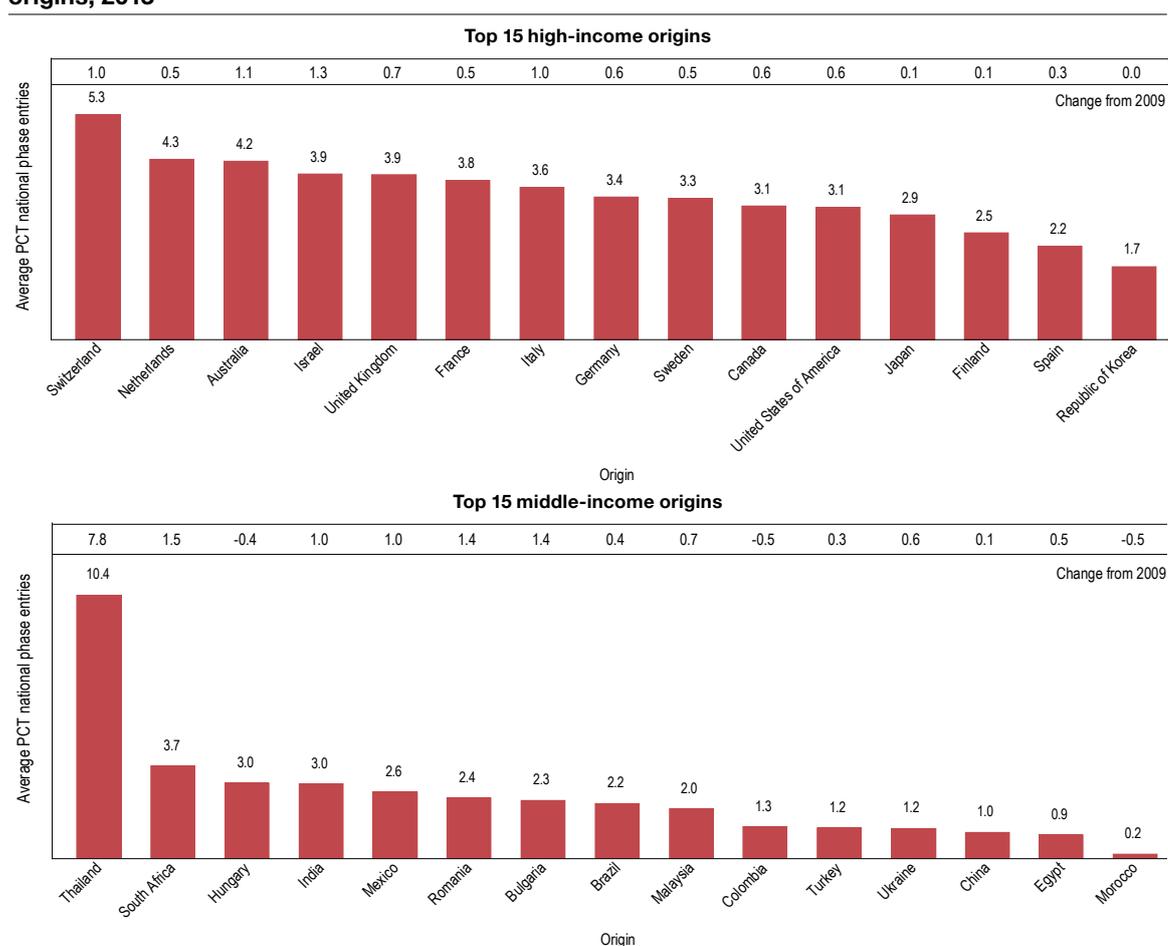
Source: WIPO Statistics Database, March 2015.

### B.2.3 PCT national phase entries per PCT application

Among high-income countries, applicants from Switzerland had the highest number of NPEs per PCT application (5.3); they were followed by applicants from the Netherlands (4.3) and Australia (4.2). Applicants from the Republic of Korea (1.7) and Spain (2.2) had the lowest number of NPEs per PCT application (figure B.2.3). The US and Japan recorded the largest number of NPEs (see figure B.2.2.1), but their respective average numbers of NPEs per PCT application is considerably lower than that of Switzerland.

With the exception of Thailand, the top 15 middle-income countries had lower average numbers of NPEs per PCT application than their high-income counterparts. Thailand, which joined the PCT System in 2009, saw considerable growth in NPEs in 2013. As a result, among the middle-income countries, Thailand recorded the highest number of NPEs per PCT application (10.4), followed by South Africa (3.7), Hungary (3.0) and India (3.0). Among the top 10 origins in terms of number of NPEs (figure B.2.2.1), China (1) had the lowest average number of NPEs per PCT application. The majority of the reported origins had a higher average number of NPEs per PCT application in 2013 than in 2009.

**Figure B.2.3: Average number of national phase entries per PCT application for selected origins, 2013**



Note: The average is defined as the number of PCT national phase entries (NPEs) initiated in 2013 divided by the average number of PCT applications filed in the two preceding years.

Source: WIPO Statistics Database, March 2015.

### B.2.4 Share of PCT national phase entries in total filings abroad

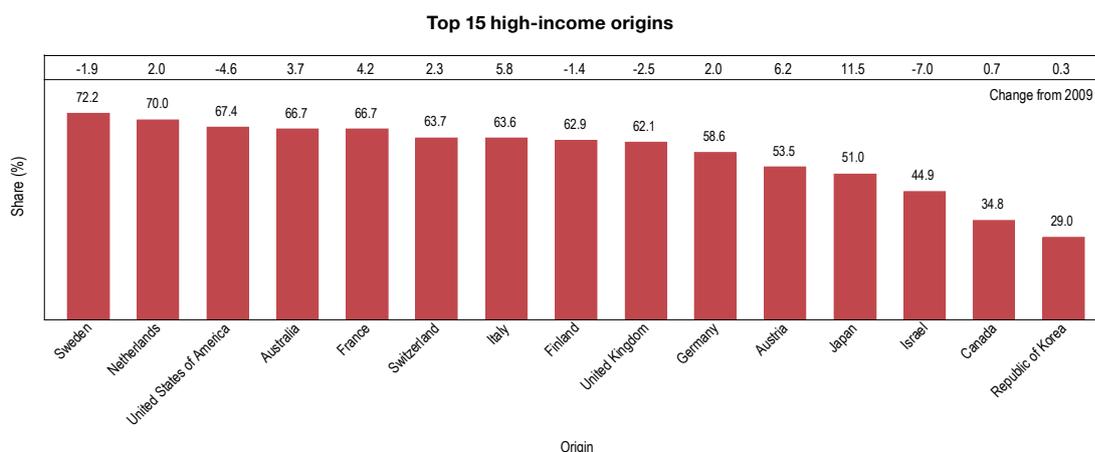
The top 15 origins are selected based on the total number of filings abroad.<sup>19</sup> In 2013, applicants in high-income countries – who accounted for around 57% of PCT NPEs initiated abroad – relied slightly more on the PCT System than did applicants in middle-income countries (51%).

The share of PCT NPEs in total filings abroad for the top 15 high-income origins ranged from 72.2% for Sweden to 29% for the Republic of Korea (figure B.2.4). Applicants from only three origins, namely Canada, Israel and the Republic of Korea, relied more on the Paris route than on

the PCT System. Since 2009, the share of NPEs in total filings abroad has raised for a majority of the high-income countries reported in figure B.2.4 (10 countries out of a total of 15), with Japan (+11.5 percentage points) and Austria (+6.2) recording the sharpest increases.

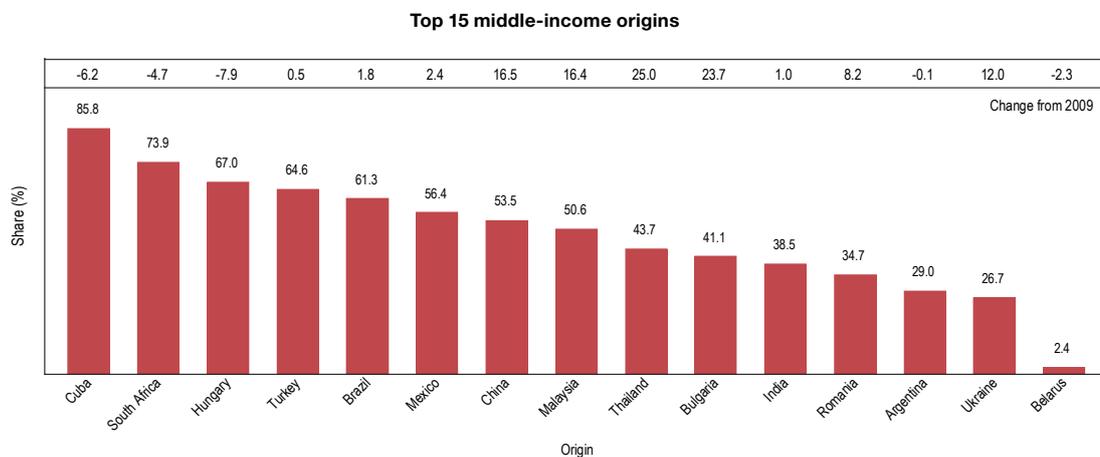
The use of the PCT System across middle-income countries ranged from 85.8% for Cuba to 2.4% for Belarus. Since 2009, the share of NPEs in total filings abroad increased most in the case of applicants residing in Thailand (+25 percentage points), Bulgaria (+23.7) and China (+16.5). Interestingly, applicants from Argentina filed 29% of their applications abroad using the PCT System despite the fact that Argentina is not a PCT member.<sup>20</sup>

**Figure B.2.4: Share of PCT national phase entries in total filings abroad, 2013**



<sup>19</sup> Here, PCT NPEs include only entries recorded at the patent offices of foreign countries—i.e., they exclude NPEs in an applicant's country of residence. However, PCT NPEs recorded at the EPO by applicants from European Patent Convention (EPC) member countries are included in the calculation of NPEs.

<sup>20</sup> Under certain conditions, a PCT application may be filed even if the first-named applicant is not a national of or does not reside in a country that is member of the PCT.



Note: The share is defined as the number of PCT NPEs initiated abroad divided by the total number of patent applications filed abroad. Both of these numbers are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

## B.3

### National phase entries by office

This subsection provides information on the destinations of NPEs, NPEs by office and origin, and the NPE share in total non-resident applications. A statistical table listing all offices is provided in the annex. Data for some offices do not exist.<sup>21</sup>

<sup>21</sup> For some offices, such as the Institut National de la Propriété Industrielle (INPI) of France, the "national route" via the PCT system is closed (see the PCT contracting states table in the annex). In such cases, PCT applicants must enter the national phase at a regional patent office in order to obtain patent protection in that contracting state via the PCT. For these offices, relevant NPEs are included in the figures for regional offices. An estimated 500 PCT NPEs were initiated in 2013; of these, WIPO has no indication for their office of destination.

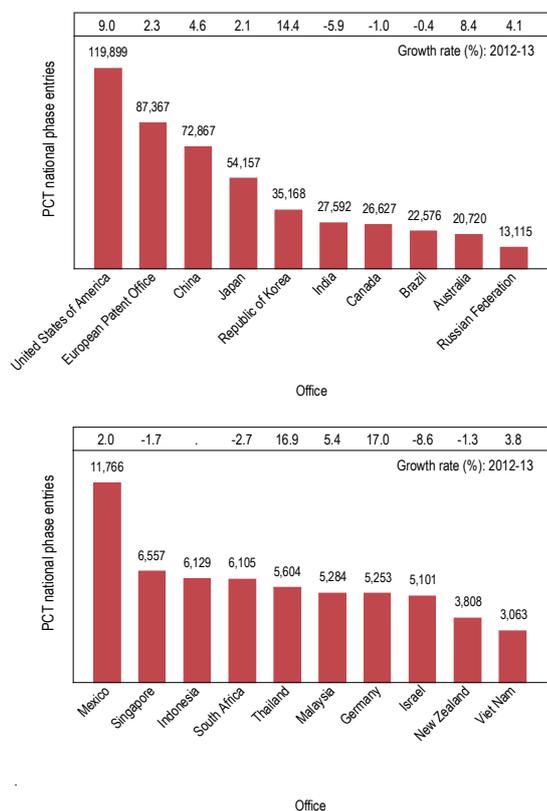
#### B.3.1 Top offices

The number of NPEs for the top 20 offices reflects the commercial attractiveness of the country or region represented by that patent office. The top 20 offices attracted 95% of all NPEs initiated in 2013, which is similar to the 2012 share. The USPTO, the most preferred patent office by destination in 2013, received almost 120,000 NPEs, 21.2% of all NPEs initiated (figure B.3.1.1). The USPTO was followed by the EPO (87,367) and China (72,867). The top 20 offices list includes a number of middle-income countries' offices, such as the offices of India, China, Brazil and Indonesia. Thailand, which joined the PCT System in December 2009, received more than 5,600 NPEs in 2013.

The majority of the top 20 offices reported growth in the number of NPEs in 2013, with Germany (+17%), Thailand (+16.9%) and the Republic of Korea (+14.4%) recording the sharpest increases. In contrast, Israel (-8.6%) and India (-5.9%) received fewer NPEs in 2013 compared to 2012.

In terms of volume, the biggest increases in the numbers of NPEs were recorded at the USPTO (+9,923), KIPO (+4,416) and SIPO (+3,174).

**Figure B.3.1.1: PCT national phase entries for top 20 offices, 2013**



Source: WIPO Statistics Database, March 2015.

Among the 119,899 NPEs initiated at the USPTO in 2013, about a quarter (29,971) originated from applicants resident in Japan and one-fifth (22,908) from US applicants. US applicants accounted for the largest share of NPEs at 13 of the top 20 offices, and applicants from Japan accounted for largest share at the remaining 7. The combined shares of these two origins ranged from 36% in the Russian Federation to 63% in Germany and Thailand (table B.3.1.2 captures the “flow of patents” between territories through the PCT System<sup>22</sup>). The PCT System is normally used to seek protection in foreign jurisdictions; however, applicants from some countries, such as Japan and the US, initiate a notable proportion of their NPEs at their respective national offices.

<sup>22</sup> A PCT applicant seeking patent protection in a European Patent Convention (EPC) member state (see list of PCT contracting states in the annex) can choose to enter the national phase at the national office (if the national route is not closed, as is the case for France) or at the EPO. As a result, the number of NPEs at some European national patent offices is lower than would otherwise be expected given the size of some of these countries' economies.

**Table B.3.1.2: National phase entries for top 20 offices and top 10 origins, 2013**

Office	Origin											Total
	China	France	Germany	Japan	Netherlands	Republic of Korea	Sweden	Switzerland	United Kingdom	United States of America	Others	
United States of America	5,404	6,672	14,545	29,971	2,780	6,112	2,871	2,278	5,953	22,908	20,405	119,899
European Patent Office	3,188	5,387	12,549	15,422	2,587	2,727	2,484	2,929	2,920	24,204	12,970	87,367
China	2,923	3,162	8,764	21,459	2,150	3,448	1,483	2,385	1,357	18,019	7,717	72,867
Japan	1,434	2,604	5,108	19,340	1,514	2,364	679	1,590	1,170	13,728	4,626	54,157
Republic of Korea	923	1,735	3,647	10,797	556	730	460	1,157	704	11,060	3,399	35,168
India	742	1,287	3,212	4,756	1,294	586	812	1,392	947	8,599	3,965	27,592
Canada	429	1,349	2,201	1,726	488	388	417	1,321	1,005	12,179	5,124	26,627
Brazil	444	1,524	2,599	2,242	1,220	356	517	1,506	645	7,668	3,855	22,576
Australia	456	691	1,419	1,348	526	422	402	1,051	952	8,996	4,457	20,720
Russian Federation	406	931	1,946	1,421	944	283	451	971	349	3,295	2,118	13,115
Mexico	150	529	1,149	912	400	173	182	930	319	5,241	1,781	11,766
Singapore	168	230	442	1,059	112	135	91	443	217	2,438	1,222	6,557
Indonesia	167	196	446	1,746	318	228	114	442	162	1,309	1,001	6,129
South Africa	130	312	653	303	134	62	144	603	346	2,075	1,343	6,105
Thailand	134	102	149	2,126	19	114	20	15	93	1,430	1,402	5,604
Malaysia	145	196	431	1,223	138	159	85	413	190	1,438	866	5,284
Germany	175	45	1,041	2,050	12	128	37	53	50	1,304	358	5,253
Israel	46	82	23	203	30	38	50	15	149	2,232	2,233	5,101
New Zealand	71	132	293	187	93	33	86	297	229	1,454	933	3,808
Viet Nam	4	114	195	1,001	115	212	40	180	63	734	405	3,063

Note: This table shows the top 20 offices for which NPE data by origin are available.

Source: WIPO Statistics Database, March 2015.

In 2013, NPEs initiated by the top 10 middle-income countries, excluding China which is reported in table B.3.1.2, represented one-third of all middle-income country NPEs initiated worldwide.<sup>23</sup>

The most attractive patent office for NPEs originating in middle-income country was the USPTO. For example, approximately 30% (1,176) of all NPEs originating in India were destined for the USPTO. Similarly, the majority of NPEs from Brazil (28.5%) and Hungary (33%) were destined for the USPTO. The EPO was the most attractive office for applicants from Turkey, whereas applicants from Thailand filed the majority of their NPEs at their national IP office.

<sup>23</sup> The share of the top 10 middle-income country origins, including China, is approximately 95%.

**Table B.3.1.3: National phase entries for top 20 offices and top 10 middle-income origins, 2013**

Office	Origin											Total
	Brazil	Cuba	Hungary	India	Malaysia	Mexico	South Africa	Thailand	Turkey	Ukraine	Others	
United States of America	356	22	150	1,176	130	106	235	29	96	37	244	2,581
European Patent Office	150	8	61	452	34	51	94	10	240	23	114	1,237
China	85	8	26	243	37	34	62	12	73	9	130	719
Thailand	8	4	4	96	26	2	1	538	0	0	4	683
Japan	79	7	19	222	23	20	34	11	32	7	57	511
Brazil	129	7	16	142	18	47	46	3	11	4	43	466
India	45	6	19	172	28	17	67	12	13	9	65	453
Australia	35	7	13	167	28	10	75	9	14	1	52	411
Canada	39	8	15	152	10	42	50	1	12	7	54	390
Republic of Korea	51	8	11	156	21	22	22	8	21	6	44	370
South Africa	21	9	7	78	5	6	158	2	7	1	23	317
Mexico	53	8	12	101	7	50	15	1	6	4	38	295
Russian Federation	25	6	17	61	3	14	29	3	18	18	21	215
Indonesia	18	2	7	74	43	6	19	7	1	2	26	205
Malaysia	8	5	3	76	32	4	18	5	0	0	19	170
Singapore	20	4	2	72	17	2	12	4	1	1	16	151
New Zealand	7	1	8	59	7	3	26	1	2	1	9	124
Colombia	21	4	0	23	9	24	6	1	0	2	23	113
African Regional Intellectual Property Organization	2	1	1	45	4	0	44	1	1	2	11	112
Eurasian Patent Organization	4	1	14	33	2	6	5	0	12	5	19	101

Note: This table shows the top 20 offices in terms of middle-income country filings for which NPE data by origin are available. China, a top 10 origin, is not reported in this table as it is included in table B.3.1.2.

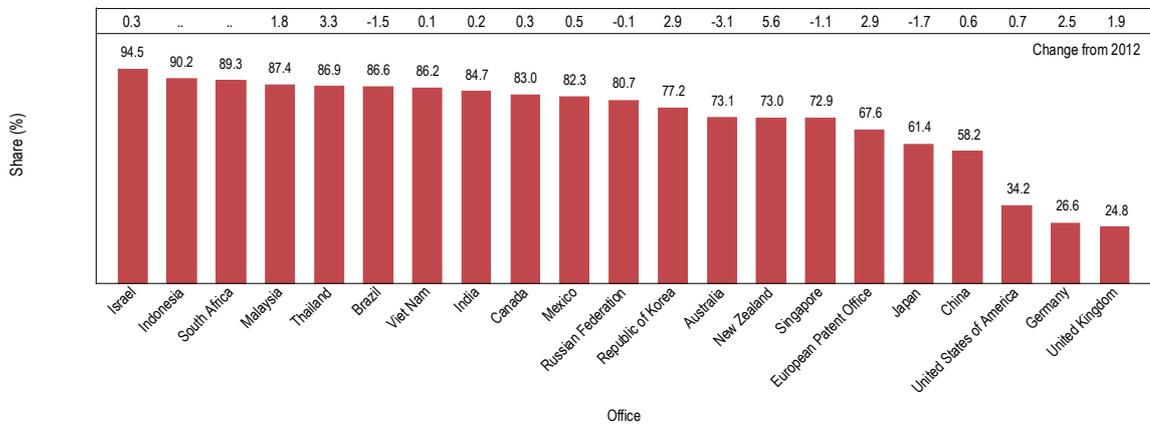
Source: WIPO Statistics Database, March 2015.

### B.3.2 Share of PCT national phase entries in non-resident filings

In 2013, the use of the PCT route (as opposed to the Paris route) for non-resident filings varied widely from one office to another, with shares ranging from 94.5% for Israel to 24.8% for the UK (figure B.3.2). The use of

the PCT System is, however, quite intense at the offices of middle-income countries. Nine of the top 10 offices are in the middle-income country category. By contrast, several offices in the high-income country category had a low share of NPEs; these include the patent offices of the UK (24.8%), Germany (26.6%) and the USPTO (34.2%).

**Figure B.3.2: Share of PCT national phase entries in total non-resident filings by office, 2013**



Note: ".." indicates not available. The share is defined as non-resident PCT NPEs initiated, divided by the number of non-resident patent applications filed. It includes data from the 20 offices that received the most non-resident filings in 2013, i.e., data from countries that are members of the PCT System and that provided data by filing route.

Source: WIPO Statistics Database, March 2015.

## Section C

# Performance of the PCT System

## C.1

### C.1.1 Electronic filing and processing

#### International Bureau

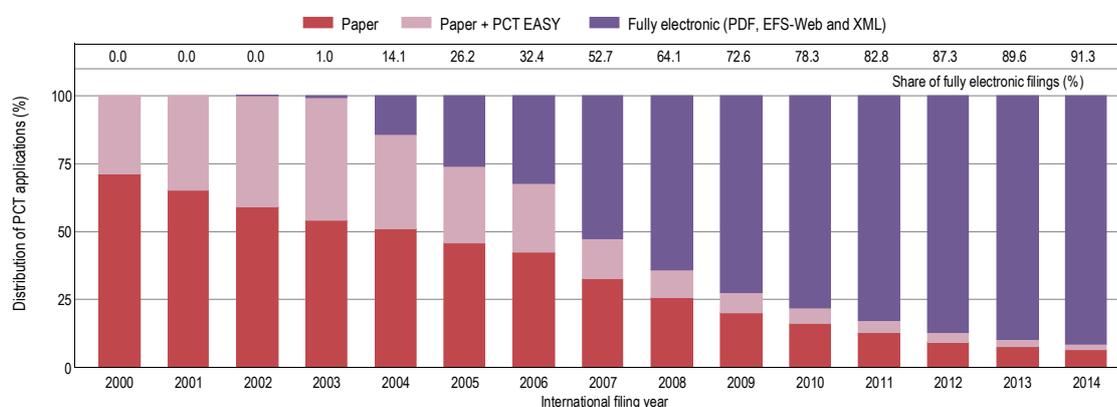
In addition to its role as a receiving office (RO), the International Bureau (IB) of WIPO is responsible for functions related to the international phase of the PCT System, including examining formalities, translating abstracts, titles and patentability reports, and publishing PCT applications.

#### Medium of filing

Every PCT application is filed using one of three methods: paper; paper plus PCT-EASY (the application is prepared electronically using WIPO-provided software known as PCT-SAFE); and fully electronic media in different formats, such as PDF or XML (figure C.1.1). Electronic filing is encouraged by way of fee reductions, as it offers benefits to applicants, offices and the IB.

The share of electronic filings continued to increase in 2014, rising to 91.3% of all applications filed. Following the introduction of fully electronic filing, the number of paper plus PCT-EASY filings dropped considerably—from 44.8% in 2003 to just 2.3% in 2014. Paper filings accounted for 71.3% of filings in 2000, but just 6.4% in 2014.

**Figure C.1.1: PCT applications by medium of filing**



Note: Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

## ePCT-filing

As highlighted above, electronic filings increased rapidly and accounted for a large majority of the PCT applications filed in recent years. Two challenges remain: first, the challenge of making it practical for the remaining applicants who have so far been unable to file electronically to do so; second, further improving the quality of data submitted. The ePCT System aims to address these challenges. Prior to 2014, ePCT-filing had been limited to filing at the IB acting as RO – which already accepted electronic applications filed using the PCT-SAFE software – in a limited number of languages. During 2014, the system was opened up to a wider number of offices, and permitted filing in any language, with the request form capable of being accepted in 9 out of 10 publication languages. Several of the offices concerned had not previously permitted electronic filing, but were able to benefit from services hosted by the IB. The ability to offer hosted services to any office opened the way to being able to announce the withdrawal of the PCT-EASY service with effect from July 1, 2015; it was hoped that these applications, which had previously provided only the bibliographic data in electronic format, would be replaced by fully electronic filings. Moreover, the improved range of checks, and the direct use of the IB's centralized reference data, means that the quality of electronic applications filed should be improved.

For details on other developments within the ePCT System, please see section D.1.

## Automation of XML documents

In 2014, the IB made substantial progress in automatically processing international search reports, declarations under Article 17(2)a, written opinions of the ISA and international preliminary reports on patentability (Chapter II of the PCT) received in Extensible Markup Language (XML) format from the EPO and SIPO acting as ISAs. The formality examination for more than 70% of these documents no longer requires human intervention. This has enormously improved productivity and timeliness in processing these documents (see figure C.1.3.3). In future years, the XML data contained in these documents will be used, and will also be made available to PATENTSCOPE. The procedure will also be extended to the same documents received from other ISAs in XML format.

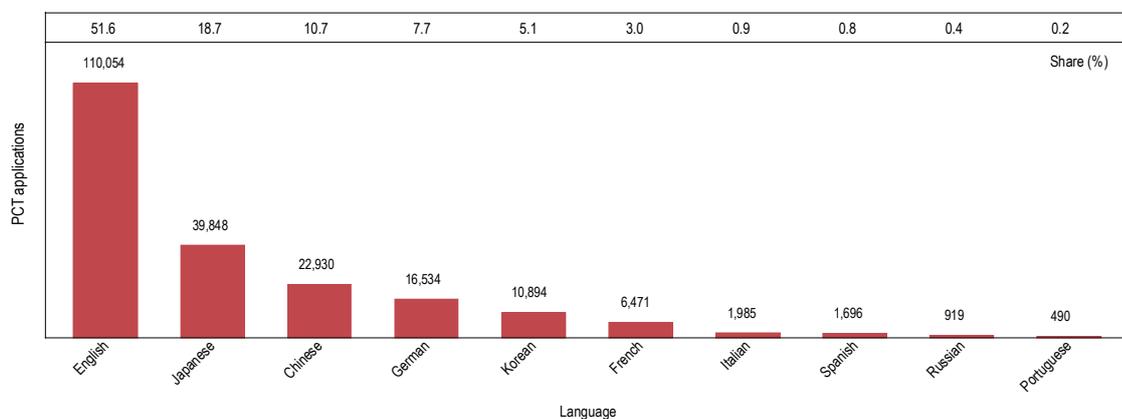
### C.1.2 Translation and terminology database

#### Languages of filing

In 2014, PCT applications were filed in 26 languages (figure C.1.2.1).<sup>24</sup> English remained by far the most frequently used language in 2014, accounting for approximately half (51.6%) of all languages of filing. Among the top five filing languages, Chinese (+18.7% annual growth), Korean (+6.5%) and English (+5.7%) were more frequently used in 2014 than in 2013. In contrast, the number of filings in Japanese (-3.4%) decreased and the number of applications filed in German remained almost unchanged.

<sup>24</sup> A PCT application may be filed in any language accepted by the relevant RO, but must be published in one of the 10 official publication languages. Among the top 10 filing languages listed in graph C.1.2.1, all languages with the exception of Italian are used to publish PCT applications.

**Figure C.1.2.1: PCT applications for top 10 filing languages, 2014**



Note: Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

**Translation**

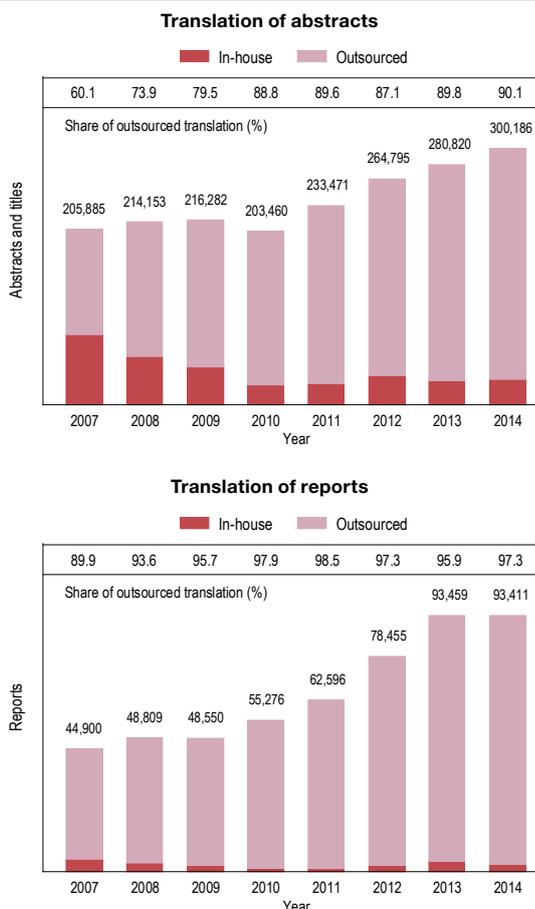
Translations by the IB are intended to enhance the patent system’s disclosure function by making the technological information in PCT applications accessible in languages other than the languages in which the original documents were filed. In order to meet this objective, the IB ensures that all titles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

Figure C.1.2.2 presents the distribution of in-house and outsourced translations since 2007 for both titles and abstracts (henceforth, abstracts) and international search and preliminary examination reports (henceforth, reports).

In 2014, the number of translated abstracts increased substantially and, for the first time, exceeded 300,000 translations. The year 2014 marked the fourth consecutive annual growth with an increase of 6.9% on 2013 figures. Following four years of double-digit growth, the number of translated reports remained almost the same as that recorded in 2013.

The increase in abstract translations was due mainly to higher numbers of translations from Asian languages.

**Figure C.1.2.2: Distribution of translation work**



Source: WIPO Statistics Database, March 2015.

External agencies and translators continued to translate the vast majority of abstracts (90.1%) and reports (97.3%).

Other important developments in 2014 included the following.

The IB continued its roll-out of the translation management system for carrying out workflow automation and translation distribution. This makes the translation process more efficient and ensures a higher level of security. In the past, translations were distributed to agencies, which then forwarded the files to individual translators. This made the tracking of the final destination of the translations difficult. Such an approach no longer applies. With the new system, translations can be tracked down to end-translators in translation agencies.

The increasing lengths of reports continue to have a substantial budgetary impact. The average length of a translated report increased from 602 words in 2013 to 685 words in 2014, with the biggest increases seen in the length of Korean, Chinese and French language reports.

A tender for Korean translation was concluded, and a tender for Japanese translation was used to refine the new structure of the tendering process put into operation in 2013, with great success. The new structure will be further refined in tenders planned for 2015.

The number of early translations of patentability reports increased from 763 in 2013 to 1,059 in 2014, which led to an increase the internal workload.

A new translation management system was selected specifically to handle localization translation, such as the translation of web application interfaces. This should enable more accurate and rapid creation of multilingual web application interfaces.

### **Terminology database**

In order to improve the quality of internally and externally produced translations, the IB continued to develop its

multilingual terminology database. Emphasis was placed on adding terms in languages that were underrepresented in the database, i.e., Arabic, Chinese, Japanese, Korean, Portuguese, Russian and Spanish. During 2014, 13,744 terms were added across all 10 publication languages, with the biggest growth in Portuguese, followed by Spanish and Chinese. At the end of 2014, the database contained 100,522 terms, 97% of which were validated. In September 2014, the validated content of the database was made freely available on the WIPO website as “WIPO Pearl”. For more details on WIPO Pearl, see the feature in subsection D.3.

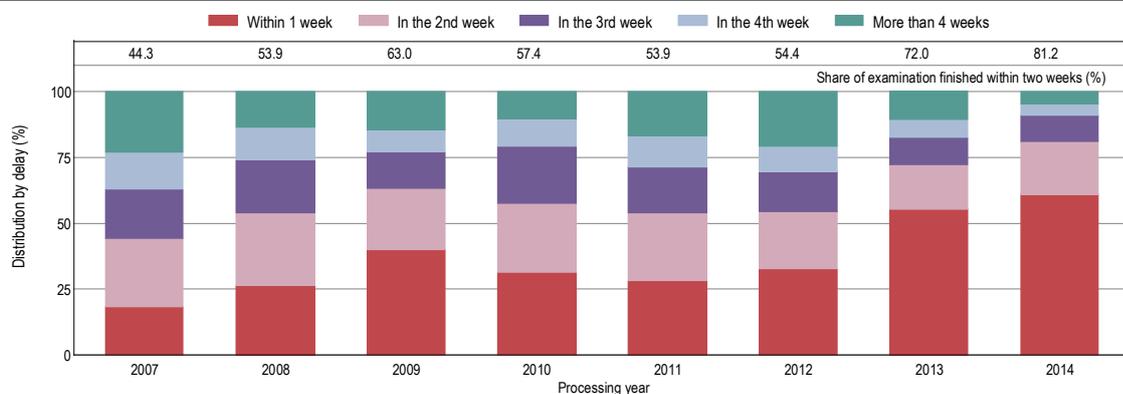
### **C.1.3 Timeliness in examining and publishing PCT applications**

The IB performs a formality examination of PCT applications and related documents promptly after their receipt. Once the formality examination of a PCT application is completed, the IB sends a form to the applicant acknowledging receipt of the application. In 2014, 81.2% of these forms were sent within 1 week after the date on which the PCT application was received, and 91% within 3 weeks (figure C.1.3.1). These are the highest shares observed since 2007.

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. In 2014, 74.9% of publications occurred within one week after the expiration of the 18-month period, and 97.1% of publications occurred within two weeks (figure C.1.3.2). Only 2.9% of PCT applications were published more than two weeks after the expiration of 18 months, mainly due to the late arrival of the translation in the publication language.

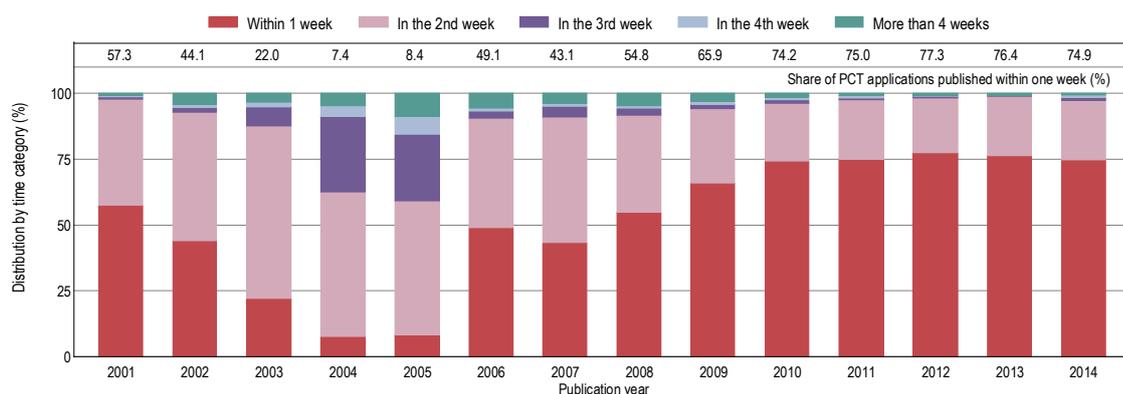
The IB is required to publish applications, even in the absence of an international search report (ISR). In such cases, the application is republished along with the ISR after the report is received (figure C.1.3.3).

**Figure C.1.3.1: Timeliness in formalities examination**



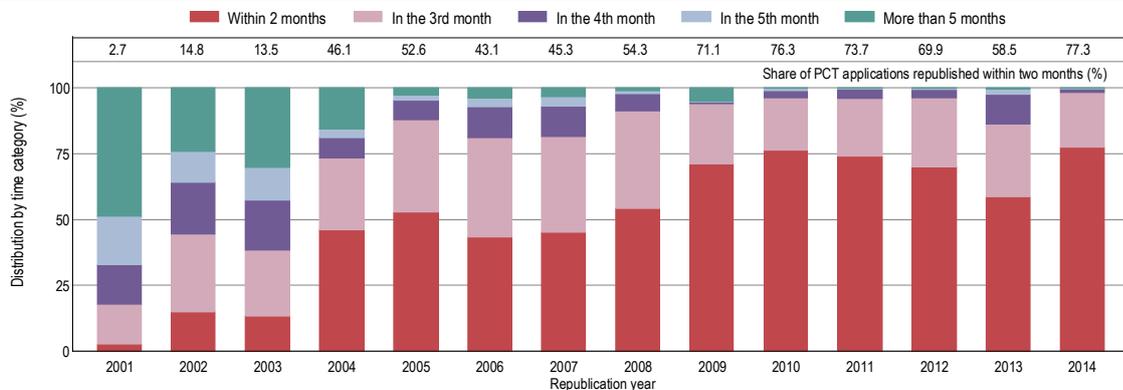
Note: Timeliness is calculated as the time elapsed between the date of receipt of the record copy of the PCT application and the date of issuance of form PCT/IB/301.  
Source: WIPO Statistics Database, March 2015.

**Figure C.1.3.2: Timeliness in publishing PCT applications**



Note: Timeliness is calculated as the time elapsed between the time limit of 18 months from the priority date and the actual publication date.  
Source: WIPO Statistics Database, March 2015.

**Figure C.1.3.3: Timeliness in republishing PCT applications with ISRs**



Note: Timeliness is calculated as the time elapsed between the date of the receipt of the ISR at the IB and the date of republication by the IB.  
Source: WIPO Statistics Database, March 2015.

In 2014, the share of applications republished within two months increased markedly on 2013, rising from 58.5% to 77.3%. This ended a period of three consecutive years of decreases. In 2014, 98% of republications occurred within three months of the IB receiving the ISR, and 99.6% of republications occurred within four months. These are the highest shares observed since 2001.

#### C.1.4 Quality in processing applications

##### Formalities examination

In order to measure the quality of the formalities examination by the 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: acknowledgement of receipt of the application; publication; and republication with ISRs. The fourth lead quality indicator reflects the PCT operation quality control error rate.

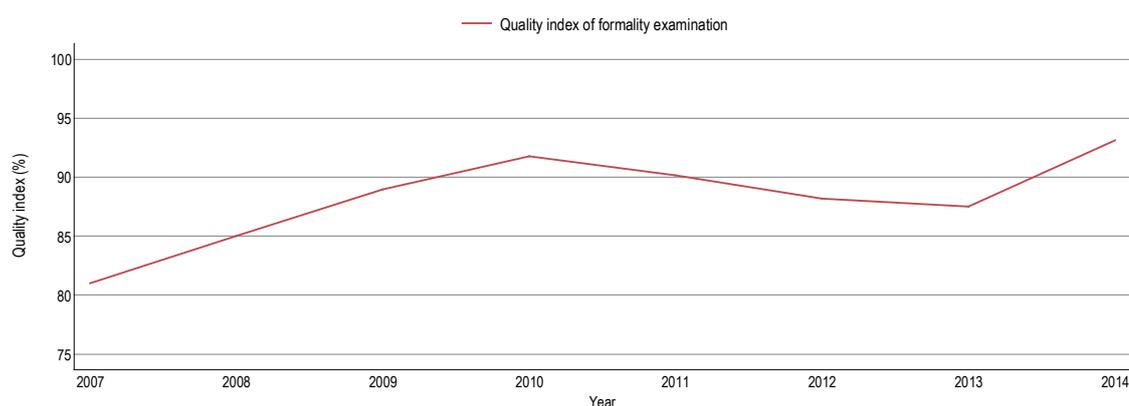
The overall quality rate, as measured by the aggregate index, was 93.1% in 2014, the highest level achieved since 2007 (figure C.1.4.1). The sharp increase in the quality level since 2013 was mainly due to improved timeliness in performing formalities examination as well as to reduced delays in republishing applications with the ISR (see subsection C.1.3).

##### Translation

The 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 IB's regular quality control (figure C.1.4.2).

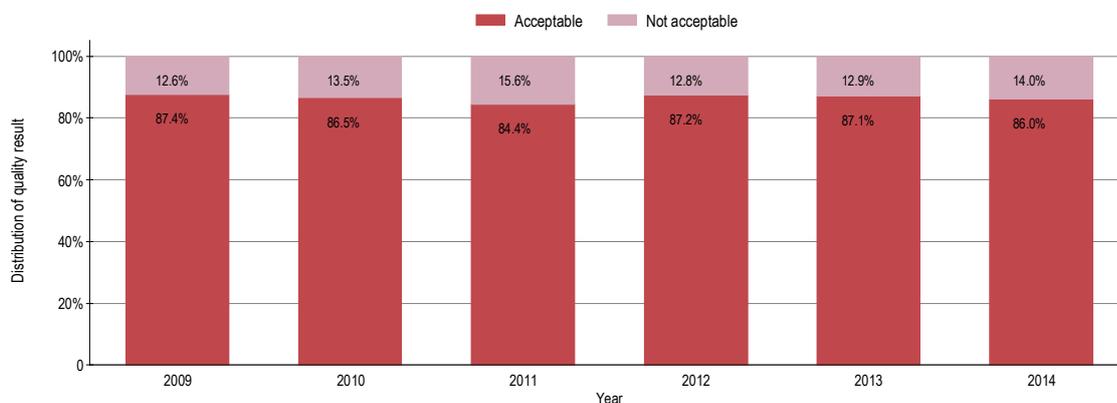
The share of acceptable translations has remained relatively unchanged since 2009, fluctuating within a margin of three percentage points over five years (with a minimum of 84.4% in 2011 and a maximum of 87.4% in 2009). In 2014, 86% of documents translated by the IB were considered acceptable and 14% were considered not acceptable; these percentages are close to the 2009–13 average for both acceptable and non-acceptable translation quality.

**Figure C.1.4.1: Formalities examination quality index**



Note: The quality index is the simple average of the (i) percentage of forms PCT/IB/301 (notification of receipt of a PCT application) sent within five weeks of the IB receiving a PCT application; (ii) percentage of PCT applications published within six months and three weeks after the international filing date; (iii) percentage of republications with ISRs within two months after the IB receives the ISR; (iv) percentage of corrections to bibliographic data in the published PCT application (from 2007 to 2011); and (v) PCT operation quality control error rate (from 2012 onwards).

Source: WIPO Statistics Database, March 2015.

**Figure C.1.4.2: Translation quality indicator**

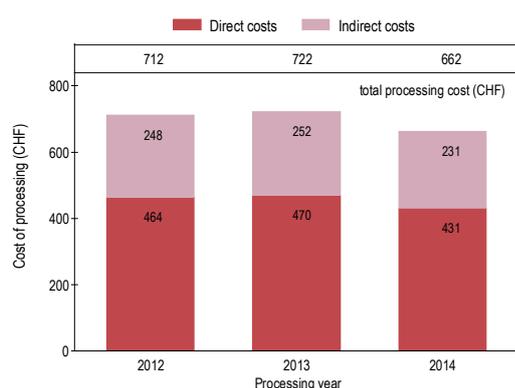
Source: WIPO, March 2015.

### C.1.5 Efficiency in processing applications

The 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.<sup>25</sup> Average total cost is determined by total PCT System expenditure, plus a proportion of expenditure on support and management activities. The unit cost thus includes the cost of all PCT activities, including translation, communication, management and others.

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 supporting activities (such as buildings and information technology). Indirect costs are weighted in order to take into account only the share that is attributable to the PCT System. The unit cost is calculated by dividing the total cost of production by the number of publications.

The average cost of processing a published PCT application was 662 Swiss Francs in 2014, down 8.3% on 2013 figures. On the one hand, this sharp decrease is due to the total cost of production, which remained almost unchanged compared with 2013. On the other hand, it is due to an increase of 9.3% in the number of published applications.

**Figure C.1.5: Unit cost of processing a published PCT application**

Note: The average cost of processing a published PCT application is an estimate that is calculated by dividing the total processing cost by the number of published PCT applications.

Source: WIPO Statistics Database, March 2015.

<sup>25</sup> The methodology used to compute the unit cost was revised in 2013 in order to align it with other WIPO unit and union cost calculations, and also in order to better capture a fast-changing environment.

## C.2

### Receiving offices

A PCT application is filed with an RO, which may be a national or regional patent office or the IB. In 2014, 116 ROs were responsible for receiving PCT applications, examining their compliance with PCT formality requirements, receiving the payment of fees, and transmitting copies of the application for further processing to the IB and the ISA. Subsection A.1.2 presents the number of PCT applications filed in 2014 at selected ROs. A statistical table in the annex shows the number of PCT applications for all offices and origins.

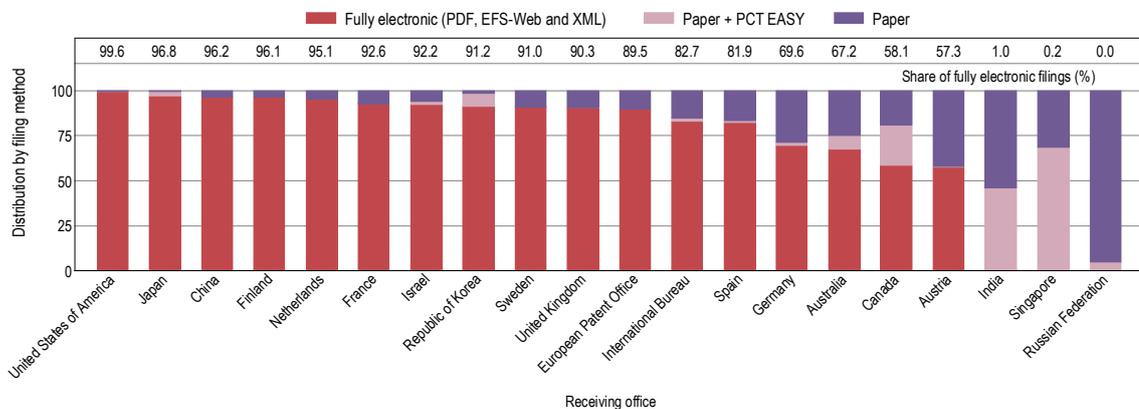
### C.2.1 Distribution of applications by medium of filing

Each RO determines the filing media that applicants are allowed to use. Fee reductions may apply for certain media. By the end of 2014, 32 ROs accepted the filing of PCT applications in fully electronic format.

In 2014, on average, 91.3% of PCT applications were filed using a fully electronic medium (see subsection C.1.1). This share varied considerably across the top 20 ROs, ranging from 0% for the Russian Federation to 99.6% for the US (figure C.2.1).

Paper remained the dominant filing medium for the Russian Federation (95.3%) and India (53.6%). Paper plus PCT-EASY filings accounted for the majority of filings in Singapore (68.5%).

**Figure C.2.1: Distribution of media of filing for top 20 receiving offices, 2014**



Note: Data for 2014 are WIPO estimates.

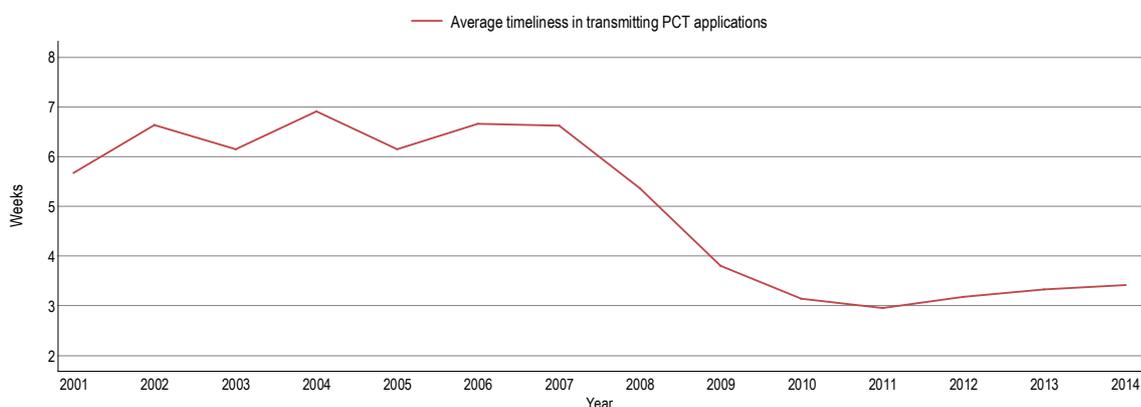
Source: WIPO Statistics Database, March 2015.

### C.2.2 Timeliness in transmitting applications

The copy of the PCT application sent by the RO must reach the IB before the expiration of the 13<sup>th</sup> month from the priority date.<sup>26</sup> 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.

In 2014, for the third consecutive year, the average transmittal time increased slightly to 3.4 weeks (figure C.2.2.1). Between 2001 and 2007, the average transmittal time fluctuated within about six or seven weeks from the international filing date. It then improved markedly, taking approximately three weeks in 2010. This is partly attributable to a shift to electronic filing, which made the exchange of information between ROs and the IB more efficient.

**Figure C.2.2.1: Average timeliness in transmitting PCT applications to the IB**



Note: 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 2015.

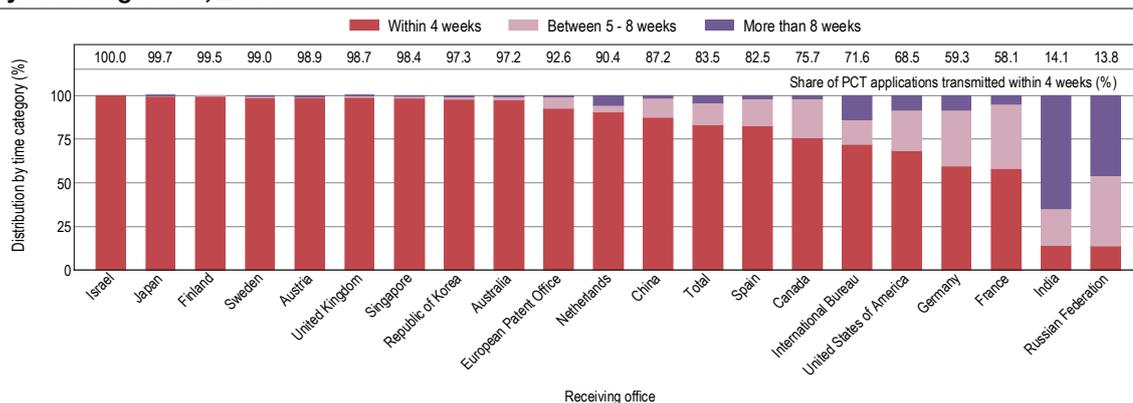
<sup>26</sup> A copy of the PCT application, known as the record copy, is transmitted to the IB by the RO for processing, publication and communication.

In 2014, offices transmitted, on average, 83.5% of their applications to the IB within four weeks. Finland, Israel and Japan transmitted more than 99% of their applications to the IB within this time frame (figure C.2.2.2).

Compared to 2013, the share of applications transmitted within four weeks increased most at the offices of Spain (+63.7 percentage points), the IB (+41.9) and the Russian Federation (+12.7). In contrast, this share decreased by 18.8 percentage points at the USPTO (from 87.3% in 2013 to 68.5% in 2014).

On average, in 2014, receiving offices transmitted 73.9% of their applications to ISAs within four weeks. The share of applications transmitted to ISAs within four weeks ranged from 98.3% at the JPO to 0.4% at the office of India (figure C.2.2.3). When compared with figures for 2013, the share of applications transmitted within four weeks to ISAs in 2014 improved most at the offices of Spain (+45 percentage points), the IB (+24.7) and the Netherlands (+12). In contrast, the share of applications decreased most at the USPTO (-20.4).

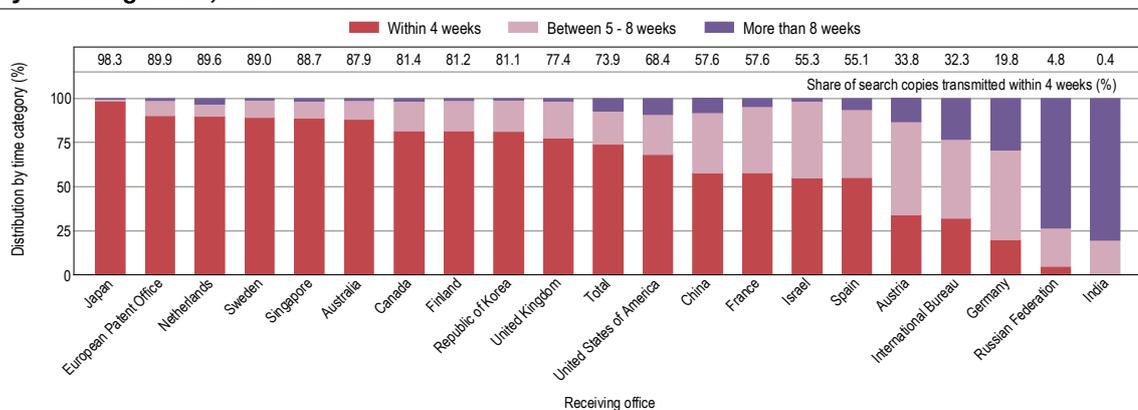
**Figure C.2.2.2: Timeliness in transmitting PCT applications to the IB by time category and by receiving office, 2014**



Note: 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 2015.

**Figure C.2.2.3: Timeliness in transmitting PCT applications to ISAs by time category and by receiving office, 2014**



Note: Timeliness is calculated as the time elapsed between the international filing date and the date on which the ISA received the PCT application (also called 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.

Source: WIPO Statistics Database, March 2015.

## C.3

### International searching authorities

Each PCT application must undergo an international search by an ISA. ROs have agreements with at least one (but sometimes several) ISAs that carry out international searches. If an RO has an agreement with multiple ISAs, the applicant selects one of them.

Once the ISA has performed the search, the applicant receives an ISR containing a list of documents relevant for assessing the patentability of the invention. The ISA also establishes a written opinion, providing a detailed analysis of the potential patentability of the invention in light of the documents found in the search. With the ISR and the written opinion, an applicant can make a more informed decision about whether or how to enter the PCT national phase.

Following the commencement of operations by the National Institute of Industrial Property (Chile) on October 22, 2014, the total number of national or regional offices acting as ISAs in 2014 was 18.<sup>27</sup>

#### C.3.1 International search reports by authority

In 2014, the EPO remained by far the most selected ISA, with 37.2% of all ISRs issued; it was followed by the JPO at 19.1% and KIPO at 14.3% (table C.3.1).

India, which began issuing ISRs in 2013, increased its volume almost fivefold in 2014. The USPTO (+30.7%) and SIPO (+16.9%) also recorded substantial growth. The Russian Federation (-31.6%), Finland (-25.5%) and Brazil (-10.4%) recorded the sharpest decreases.

<sup>27</sup> The Intellectual Property Office of Singapore and the State Intellectual Property Service of Ukraine have been appointed as ISAs (bringing to 20 the total number of ISAs). However, these offices had not yet commenced operations in 2014.

Table C.3.1: Distribution of international search reports by ISA and by origin

International searching authorities	Total plus the top three origins	International filing year					ISA share 2014 (%)	Change from 2013 (%)
		2010	2011	2012	2013	2014		
Australia	Australia	1,703	1,636	1,544	1,473	1,602	57.9	8.8
	Singapore	402	381	387	444	462	16.7	4.1
	New Zealand	270	283	253	261	250	9.0	-4.2
	<b>Total*</b>	<b>3,423</b>	<b>3,140</b>	<b>2,832</b>	<b>2,699</b>	<b>2,766</b>	<b>1.3</b>	<b>2.5</b>
Austria	South Africa	60	82	91	121	99	46.7	-18.2
	United Arab Emirates	9	8	10	25	30	14.2	20.0
	Republic of Korea	139	39	18	19	25	11.8	31.6
	<b>Total*</b>	<b>409</b>	<b>251</b>	<b>178</b>	<b>233</b>	<b>212</b>	<b>0.1</b>	<b>-9.0</b>
Brazil	Brazil	307	432	425	497	453	99.3	-8.9
	Colombia				5	3	0.7	-40.0
	<b>Total*</b>	<b>310</b>	<b>435</b>	<b>429</b>	<b>509</b>	<b>456</b>	<b>0.2</b>	<b>-10.4</b>
Canada	Canada	2,096	2,301	2,179	2,228	2,348	93.4	5.4
	United States of America	37	21	80	60	53	2.1	-11.7
	Barbados	4	11	6	4	45	1.8	1,025.0
	<b>Total*</b>	<b>2,208</b>	<b>2,396</b>	<b>2,339</b>	<b>2,324</b>	<b>2,515</b>	<b>1.2</b>	<b>8.2</b>
Chile	Chile					35	n.a.	n.a.
	El Salvador					2	n.a.	n.a.
	Mexico					1	n.a.	n.a.
	<b>Total*</b>					<b>38</b>	<b>0.0</b>	<b>n.a.</b>
China	China	12,118	16,207	18,273	21,126	25,188	90.9	19.2
	United States of America	293	583	1,023	1,101	1,261	4.6	14.5
	Japan	96	145	103	137	187	0.7	36.5
	<b>Total*</b>	<b>13,271</b>	<b>18,017</b>	<b>20,720</b>	<b>23,706</b>	<b>27,711</b>	<b>12.9</b>	<b>16.9</b>
Egypt	Egypt				14	14	93.3	0.0
	Saudi Arabia					1	6.7	n.a.
	<b>Total*</b>				<b>14</b>	<b>15</b>	<b>0.0</b>	<b>7.1</b>
European Patent Office	United States of America	16,980	17,593	18,661	20,996	21,756	27.3	3.6
	Germany	17,416	18,524	18,423	17,616	17,653	22.1	0.2
	France	7,039	7,194	7,528	7,681	8,112	10.2	5.6
	<b>Total*</b>	<b>68,937</b>	<b>71,633</b>	<b>75,147</b>	<b>77,412</b>	<b>79,716</b>	<b>37.2</b>	<b>3.0</b>
Finland	Finland	905	914	969	792	591	99.8	-25.4
	China					1	0.2	n.a.
	<b>Total*</b>	<b>921</b>	<b>928</b>	<b>977</b>	<b>795</b>	<b>592</b>	<b>0.3</b>	<b>-25.5</b>
India	India				108	484	95.7	348.1
	Iran (Islamic Republic of)					12	2.4	n.a.
	United States of America					5	1.0	n.a.
	<b>Total*</b>				<b>108</b>	<b>506</b>	<b>0.2</b>	<b>368.5</b>
Israel	Israel			332	815	811	92.6	-0.5
	United States of America			11	21	37	4.2	76.2
	Romania			1		4	0.5	n.a.
	<b>Total*</b>			<b>358</b>	<b>854</b>	<b>876</b>	<b>0.4</b>	<b>2.6</b>
Japan	Japan	30,670	36,964	41,388	41,890	40,491	98.7	-3.3
	United States of America	89	44	158	136	180	0.4	32.4
	Singapore	4	7	18	55	108	0.3	96.4
	<b>Total*</b>	<b>30,856</b>	<b>37,094</b>	<b>41,677</b>	<b>42,270</b>	<b>41,033</b>	<b>19.1</b>	<b>-2.9</b>
Nordic Patent Institute	Norway	189	118	130	115	129	55.6	12.2
	Denmark	97	134	128	101	101	43.5	0.0
	Spain		1			1	0.4	n.a.
	<b>Total*</b>	<b>299</b>	<b>275</b>	<b>278</b>	<b>223</b>	<b>232</b>	<b>0.1</b>	<b>4.0</b>
Republic of Korea	United States of America	13,018	15,963	14,876	17,252	16,230	53.0	-5.9
	Republic of Korea	9,346	10,234	11,736	12,312	13,094	42.8	6.4
	Canada	147	211	220	276	447	1.5	62.0
	<b>Total*</b>	<b>23,310</b>	<b>27,180</b>	<b>27,576</b>	<b>30,642</b>	<b>30,622</b>	<b>14.3</b>	<b>-0.1</b>
Russian Federation	United States of America	4	18	1,368	2,362	1,495	57.5	-36.7
	Russian Federation	760	930	996	1,069	760	29.2	-28.9
	Ukraine	77	113	96	126	118	4.5	-6.3
	<b>Total*</b>	<b>935</b>	<b>1,181</b>	<b>2,679</b>	<b>3,802</b>	<b>2,600</b>	<b>1.2</b>	<b>-31.6</b>
Spain	Spain	1,154	1,106	1,069	1,013	1,028	72.2	1.5
	Mexico	168	170	150	205	240	16.9	17.1
	Colombia	30	38	58	58	79	5.6	36.2
	<b>Total*</b>	<b>1,453</b>	<b>1,445</b>	<b>1,401</b>	<b>1,412</b>	<b>1,423</b>	<b>0.7</b>	<b>0.8</b>

International searching authorities	Total plus the top three origins	International filing year					ISA share 2014 (%)	Change from 2013 (%)
		2010	2011	2012	2013	2014		
Sweden	Sweden	1,388	1,402	1,217	1,272	1,163	84.6	-8.6
	Norway	126	131	82	100	106	7.7	6.0
	Finland	375	317	217	108	82	6.0	-24.1
	<b>Total*</b>	<b>2,074</b>	<b>1,942</b>	<b>1,577</b>	<b>1,522</b>	<b>1,375</b>	<b>0.6</b>	<b>-9.7</b>
United States of America	United States of America	14,162	14,541	15,291	15,168	20,048	91.9	32.2
	Israel	714	662	493	326	302	1.4	-7.4
	Japan	121	203	162	156	178	0.8	14.1
	<b>Total*</b>	<b>15,902</b>	<b>16,479</b>	<b>17,109</b>	<b>16,686</b>	<b>21,812</b>	<b>10.2</b>	<b>30.7</b>
Unknown		33	41	57	61	0	n.a.	n.a.
<b>Total</b>		<b>164,341</b>	<b>182,437</b>	<b>195,334</b>	<b>205,272</b>	<b>214,500</b>	<b>100.0</b>	<b>4.5</b>

Note: \* indicates share of total PCT applications, and n.a. indicates not applicable. Data for 2014 are WIPO estimates.

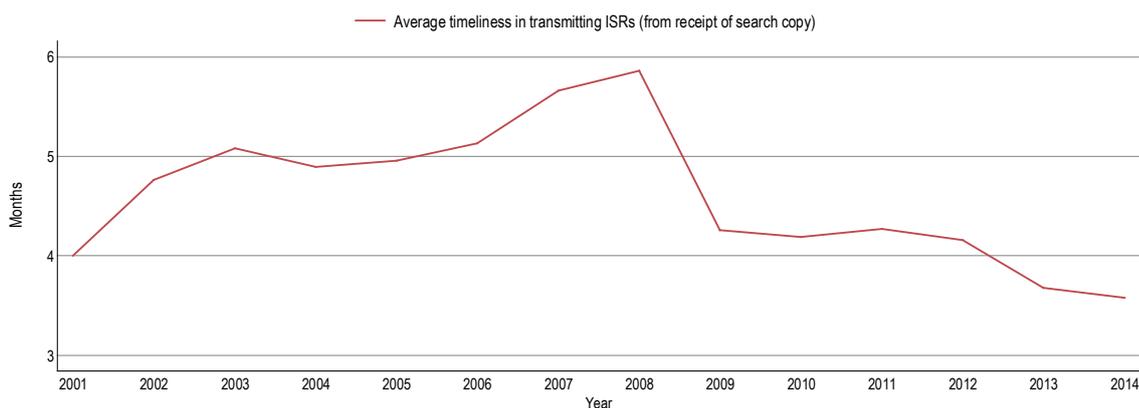
Source: WIPO Statistics Database, March 2015.

### C.3.2 Timeliness in transmitting reports

The ISA must establish the ISR within three months of receiving a copy of the application (the “search copy”), or nine months from the priority date (or, if no priority is claimed, from the international filing date), whichever expires later.

In 2014, the average timeliness to transmit ISRs to the IB was of 3.6 months (figure C.3.2.1). This is the shortest transmittal time achieved since 2001. From 2001 to 2008, the average transmittal time, measured from the date of receipt of search copy to the IB, increased by approximately two months (from four months to almost six months); however, since 2008, it has improved enormously. The electronic transmittal of numerous ISRs to the IB may have played an important role in this improvement.

**Figure C.3.2.1: Average timeliness in transmitting ISRs to the IB, measured from date of receipt of search copy**



Note: Timeliness is calculated as the time between the date when the ISA receives a copy of the PCT application and the date when the ISA transmits the ISR to the IB (or, if applicable, the date of receipt of the declaration under Article 17(2)(a)). The 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 2015.

In 2014, ISAs transmitted, on average, 67% of ISRs to the IB within three months from the date of receipt of the search copy (figure C.3.2.2). In 2013, this share improved most at the offices of the Republic of Korea (+23.8 percentage points), Austria (+11.8) and Finland (+11). By contrast, it decreased most at the USPTO (-25.8).

Figure C.3.2.3 presents the timeliness in transmitting ISRs to the IB for ISRs where the deadline is 9 months from the priority date. On average, the share of ISRs transmitted within 9 months from the priority date was 61.8% in 2014. The office of Egypt and Spain transmitted, respectively, 100% and 96.8% of ISRs within 9 months from the priority date.

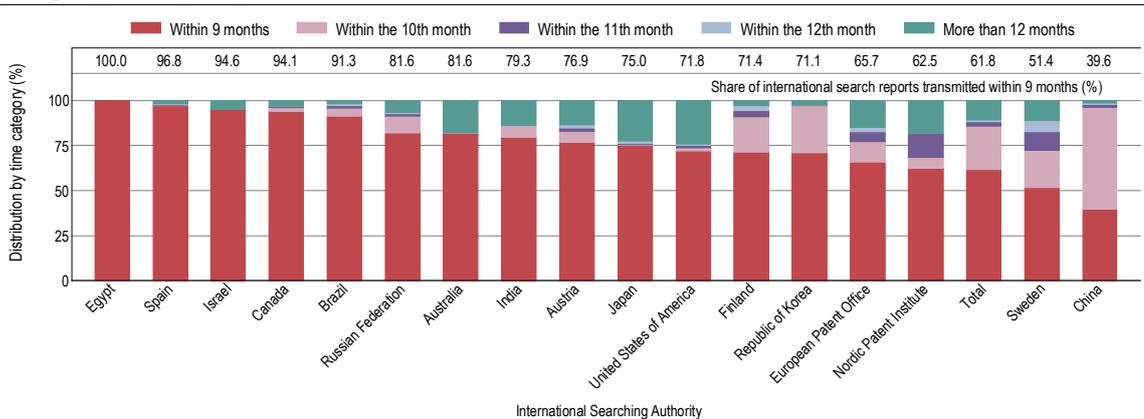
**Figure C.3.2.2: Timeliness in transmitting ISRs to the IB, measured from date of receipt of the search copy by time category and by ISA, 2014**



Note: Timeliness is calculated as the time between the date when the ISA receives a copy of the PCT application and the date when the ISA transmits the ISR to the IB (or, if applicable, the date of receipt of the declaration under Article 17(2)(a)). The 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.

Source: WIPO Statistics Database, March 2015.

**Figure C.3.2.3: Timeliness in transmitting ISRs to the IB, measured from priority date by time by category, and by ISA, 2014**



Note: Timeliness is calculated as the time elapsed between the priority date and the date on which the ISA transmits the ISR to the IB (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.

Source: WIPO Statistics Database, March 2015.

## C.4

### Supplementary international searching authorities

Since 2009, the supplementary international search (SIS) service has enabled PCT applicants to request searches in additional languages, thus complementing the search by the main ISAs.

#### C.4.1 Supplementary international search reports by authority

A total of 109 SIS requests were recorded in 2014, representing an increase of 42 requests on 2013 figures (table C.4.1). At the EPO, the number of SIS requests increased by 31, and at the office of the Russian Federation it increased by 14, collectively accounting for almost all (98.2%) requests made in 2014.

**Table C.4.1: Distribution of supplementary international search reports by SISA**

Supplementary International Searching Authority	Year				
	2010	2011	2012	2013	2014
Austria		1	2	2	2
European Patent Office	3	7	21	30	61
Finland			1		
Nordic Patent Institute	1		3		
Russian Federation	35	31	19	32	46
Sweden	2	2		3	
<b>Total</b>	<b>41</b>	<b>41</b>	<b>46</b>	<b>67</b>	<b>109</b>

Source: WIPO Statistics Database, March 2015.

## C.5

### International preliminary examining authorities

PCT applicants can request an optional international preliminary examination (IPE) from an international preliminary examining authority (IPEA), with competence based on negotiated agreements between ROs and IPEAs.

Once the IPE has been carried out, an International Preliminary Report on Patentability (IPRP) is sent by the IPEA to the applicant, who is then better placed to make an informed decision about whether or not to enter the PCT national phase. The report is also transmitted to national offices in their capacity as the “elected” office.<sup>28</sup> Patent offices, in examining the PCT application during the national phase, take into account the IPRP (as well as the ISR and the written opinion of the ISA) when considering the patentability of the underlying invention.

After the National Institute of Industrial Property (Chile) commenced operations on October 22, 2014, the total number of national or regional offices acting as IPEAs in 2014 was 18.<sup>29</sup>

<sup>28</sup> “Elected” offices are national or regional offices at which the PCT application has potential legal effect.

<sup>29</sup> The Intellectual Property Office of Singapore and the State Intellectual Property Service of Ukraine have been appointed as IPEAs (bringing to 20 the total number of IPEAs). However, these offices had not yet commenced operations in 2014.

**Table C.5.1: Distribution of IPRPs by IPEA**

International preliminary examining authority	2010	2011	Year 2012	2013	2014	2014 share (%)	Change from 2013 (%)
Australia	850	701	818	653	639	4.7	-2.1
Austria	60	28	14	28	16	0.1	-42.9
Brazil		15	45	47	48	0.4	2.1
Canada	258	184	360	255	249	1.8	-2.4
China	394	340	450	433	337	2.5	-22.2
Egypt					1	0.0	n.a.
European Patent Office	8,261	7,177	7,743	7,307	7,652	56.1	4.7
Finland	139	122	115	91	104	0.8	14.3
Israel				9	40	0.3	344.4
Japan	1,905	2,206	2,741	2,470	2,236	16.4	-9.5
Nordic Patent Institute	34	40	37	48	42	0.3	-12.5
Republic of Korea	308	248	254	254	261	1.9	2.8
Russian Federation	62	67	76	123	91	0.7	-26.0
Spain	109	149	107	85	75	0.6	-11.8
Sweden	408	357	332	249	251	1.8	0.8
United States of America	2,215	3,246	2,244	2,526	1,587	11.6	-37.2
<b>Total</b>	<b>15,003</b>	<b>14,880</b>	<b>15,336</b>	<b>14,578</b>	<b>13,629</b>	<b>100.0</b>	<b>-6.5</b>

Note: The figures for 2014 may be incomplete. n.a. indicates not applicable.

Source: WIPO Statistics Database, March 2015.

### C.5.1 International preliminary reports on patentability by authority

When compared with figures for 2013, the number of IPRPs issued in 2014 fell by 6.5%, reaching 13,629 (table C.5.1). The USPTO and the JPO accounted for most of this decrease (USPTO -939 reports, or -37.2%) and the JPO (-234 reports or -9.5%). Several IPEAs recorded growth; these included the EPO (+345 reports or +4.7%) and the office of Israel (+31 reports).

### C.5.2 Timeliness in transmitting reports

The PCT Regulations set a time limit for establishing the IPRP: 28 months from the priority date, six months from the start of the preliminary examination, or six months from the date of receipt of the translated application document by the IPEA (where relevant)—whichever time limit expires latest.

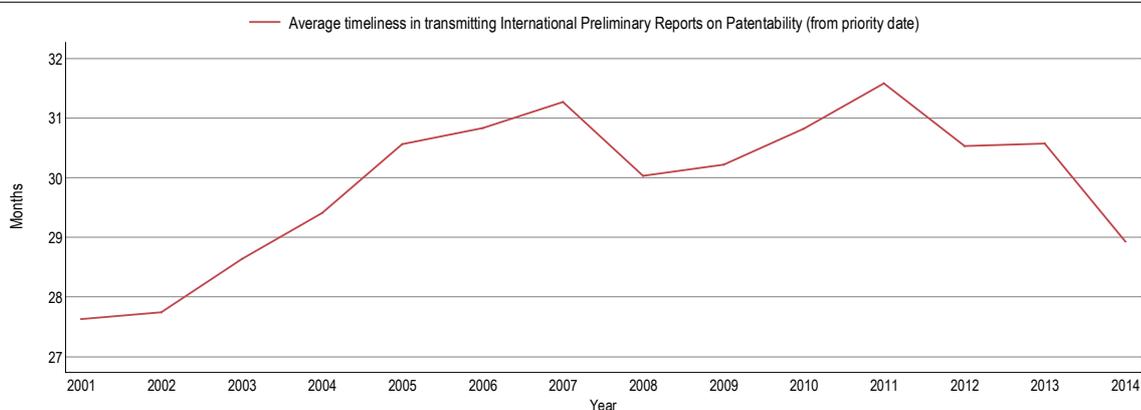
In practice, most applicants enter the national phase immediately before the expiration of the time limit set by the PCT—generally 30 months from the priority date. The establishment of IPRPs before 28 months from the priority date is therefore intended to give applicants two months, in principle, to evaluate the IPRP and consider its impact on the decision to enter the PCT national phase.

Timeliness is measured using the date the IB receives reports, rather than the date when the reports were established. The measurement may therefore be influenced by transmittal times.

Average time in transmitting IPRPs was 28.9 months in 2014 (figure C.5.2.1). Since 2001, the delay in transmitting IPRPs rose from 27.6 months, before peaking in 2011 at 31.6 months. Since then, it has decreased almost constantly each year, before reaching in 2014 a level similar to that observed in 2003.

In 2014, on average, 73.2% of IPRPs were transmitted to the IB within 28 months from the priority date (figure C.5.2.2). Egypt and the Nordic Patent Institute each transmitted more than 95% of IPRPs within 28 months from the priority date of the application. When compared with figures for 2013, this share improved most at the office of Austria (+33.9 percentage points) and Finland (+24.5), whereas it decreased most at SIPO (-33.4) and the office of Israel (-18.3).

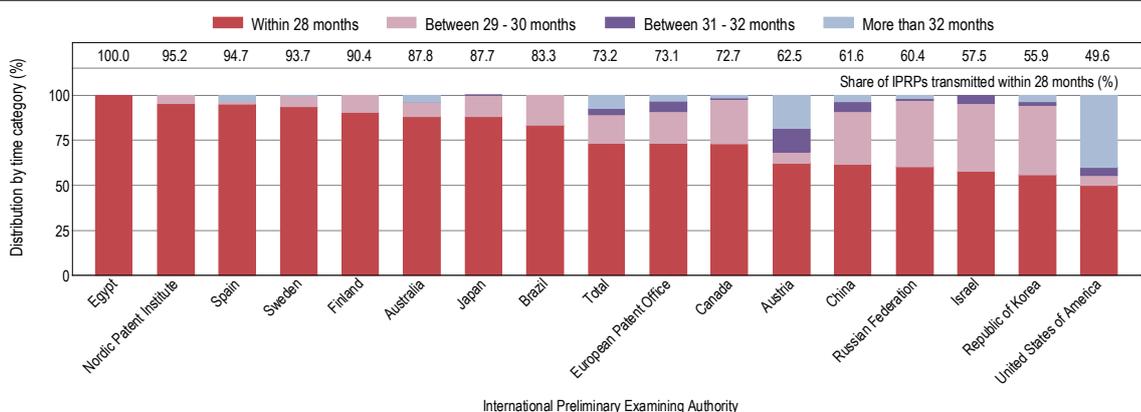
**Figure C.5.2.1: Average timeliness in transmitting IPRPs to the IB**



Note: Timeliness is calculated as the time elapsed between the priority date and the date on which the IB received the IPRP from the IPEA.

Source: WIPO Statistics Database, March 2015.

**Figure C.5.2.2: Timeliness in transmitting IPRPs to the IB by time by category and by IPEA, 2014**



Note: Figure C.5.2.2 presents the same timeliness information for 2014 as presented in figure C.5.2.1, but breaks down this information by IPEA. Timeliness is calculated as the time elapsed between the priority date and the date when the IB received the IPRP from the IPEA.

Source: WIPO Statistics Database, March 2015.

## C.6

### PCT-Patent Prosecution Highway pilots

Where a favorable written opinion or IPRP has been issued by the participating ISA and/or IPEA, use of the PCT-Patent Prosecution Highway (PCT-PPH) pilots enables applicants to fast-track patent examination procedures in the national phase and, generally, to obtain a patent-ability decision more quickly from participating offices.

In 2014, 63 PCT-PPH bilateral pilots were active, with the participation of 29 offices, including 14 international authorities. More comprehensive pilot programs with multilateral agreements, which also include PCT work products, were also active—namely, the Global PPH pilot program and the IP5 PPH pilot program. Between them, they included 21 participating offices at the end of 2014.

#### C.6.1 New PCT-PPH pilots

##### Bilateral and unilateral pilots

The following offices started bilateral one-way or two-way PCT-PPH pilots in 2014 (in chronological order):

- KIPO and Swedish Patent and Registration Office
- Israel Patent Office and KIPO
- KIPO and Spanish Patent and Trademark Office
- National Institute of Industrial Property (INPI) (Portugal) and SIPO
- INPI (Portugal) and KIPO
- Israel Patent Office and SIPO
- SIPO and Swedish Patent and Registration Office
- Icelandic Patent Office and SIPO
- Intellectual Property Office<sup>30</sup> (United Kingdom) and SIPO
- JPO and Superintendence of Industry and Commerce (Colombia)
- Intellectual Property Corporation of Malaysia and the JPO
- Patent Office of the Republic of Poland and the USPTO

<sup>30</sup> Intellectual Property Office is an operating name of the Patent Office.

### IP5 PPH pilot program

In January 2014, the group of IP5 offices, which comprises the world's five largest intellectual property offices (the EPO, the JPO, KIPO, SIPO and the USPTO), launched a comprehensive IP5 PPH pilot program which uses PCT products.

### Global PPH pilot program

In January 2014, 17 offices<sup>31</sup> joined the pilot program of a new Global PPH arrangement, whereby it is possible for a request for accelerated processing to be made at any participating office, based on work products, including a written opinion or IPRP under the PCT from any of the other participating offices. The pilot program uses a single set of qualifying requirements, and aims to simplify and improve the existing PPH network to make it more accessible to users.

#### C.6.2 Number of requests by office

Table C.6.2.1 presents the number of requests for PCT-PPH fast-track patent examination in 2014 by office of national phase entry and by ISA. Due to technical reasons, the USPTO, as the office of national phase entry – which accounted in 2013 for 54.8% of all requests –, did not communicate its 2014 statistics.

With the exception of the USPTO, offices of national phase entry received a total of 4,127 requests in 2014. This represents an increase of 44% on 2013 figures. All offices presented in the table experienced growth compared to previous years. The JPO saw the sharpest increase in the number of requests (+363 requests), followed by the EPO (+249) and KIPO (+213).

<sup>31</sup> The offices of Australia, Canada, Denmark, Finland, Hungary, Iceland, Israel, Japan, Norway, Portugal, the Republic of Korea, the Russian Federation, Spain, Sweden, the United Kingdom and the US, as well as the Nordic Patent Institute.

**Table C.6.2.1: Distribution of PCT-PPH requests by international authority and by office of PCT national phase entry, 2014**

Office of PCT national phase entry	International authority														Total
	Australia	Austria	Canada	China	European Patent Office	Finland	Israel	Japan	Nordic Patent Institute	Republic of Korea	Russian Federation	Spain	Sweden	United States of America	
Japan	4	0	11	56	256	3	3	1,212	0	63	3	0	6	18	1,635
China	-	1	-	-	183	2	0	569	-	146	8	0	3	41	953
Republic of Korea	1	2	2	28	153	8	0	189	0	86	1	0	5	33	508
European Patent Office	-	-	-	102	-	-	-	273	-	31	-	-	-	100	506
Canada	1	0	92	-	-	2	1	23	0	27	1	0	0	99	246
Australia	0	0	3	-	-	2	1	29	0	36	3	0	1	43	118
Russian Federation	0	0	5	3	-	1	0	29	0	3	0	1	0	21	63
Philippines	-	-	-	-	-	-	-	25	-	-	-	-	-	14	39
Mexico	-	-	0	1	0	-	-	9	-	-	-	7	-	-	17
Israel	0	0	0	0	-	0	5	1	0	3	1	0	0	5	15
United Kingdom	1	0	2	2	0	0	0	2	0	1	1	0	0	0	9
Spain	0	0	0	-	-	0	0	0	0	0	0	0	0	5	5
Sweden	0	0	0	-	-	0	0	2	0	0	3	0	0	0	5
Malaysia	-	-	-	-	-	-	-	4	-	-	-	-	-	-	4
Denmark	0	0	0	0	-	0	0	0	1	0	0	0	0	0	1
Finland	0	0	0	0	-	1	0	0	0	0	0	0	0	0	1
Norway	0	0	0	-	-	0	0	0	0	0	0	0	0	1	1
Iceland	0	0	0	-	-	0	0	1	0	0	0	0	0	0	1

Note: Data for USPTO acting as office of national phase entry are missing.

Source: WIPO, based on data from the JPO, March 2015

**Table C.6.2.2: Additional statistics on PCT-PPH applications, July to December 2014**

Additional statistics	Office of PCT national phase entry						
	Australia	Canada	Israel	Japan	Republic of Korea	Russian Federation	United Kingdom
<b>Grant rate (%)</b>							
PCT-PPH applications	100	90.0	33.3	73.3	78.8	98.0	100
All applications combined		65.0	42.0	69.8*	65.3		
<b>First action allowance rate (%)</b>							
PCT-PPH applications	52.6	44.0	66.6	15.9	21.2	98.0	16.6
All applications combined		4.5	47.6	8.2	9.5		

Note: \*January-December 2013.

Source: WIPO, based on data from the JPO, March 2015.

Table C.6.2.2 compares the July to December 2014 data for PCT-PPH applications with total patent applications for some key elements of the patent examination procedure. It should be noted that due to significant differences in patenting procedures among offices, a cross-office comparison is not relevant.

The grant rates and first-action allowance rates were almost always higher for PCT-PPH applications. The only exception was for the grant rate at the office of Israel, which was almost nine percentage points lower for PCT-PPH applications than for total applications.

## Section D

# Development of the PCT System

## D.1

### Electronic Filing and Processing of PCT Applications

By the end of 2014, 32 out of 116 PCT ROs accepted the filing of PCT applications in fully electronic format.

#### D.1.1 ePCT-Filing

Although electronic filing now accounts for a large majority of PCT applications filed, the outstanding challenge is to make online filing easily accessible and desirable for the remaining 8.5% of applicants, and to further improve the quality of the filings that are already made electronically.

ePCT-Filing aims to address these issues in four main ways: first, offer new tools to offices, such that any RO is able to accept fully electronic filings without maintaining a dedicated IT infrastructure; second, allow applicants to use electronic filing without having to install and keep updated dedicated local software, which may require regular maintenance by the company's IT administrators; third, provide easier tools to submit PCT applications in XML format; fourth, provide a wider range of checks and services prior to filing, based directly on the tools and databases used by the IB, in order to minimize the risk of errors in the application.

Prior to 2014, ePCT-Filing had been available for applications (in one of five languages) made to the RO of the IB only. During 2014, these restrictions were lifted. By the end of 2014, 10 other offices had begun to accept electronic filings from ePCT; 5 of these offices had not previously accepted online filing, and several more were preparing to accept this means of filing within a short time period. Since e-PCT was first introduced, 2,553 PCT applications were filed using this system. The main technical improvements made are set out in subsection D.1.2.

#### D.1.2 ePCT system

The ePCT system enables applicants to securely file and manage their PCT applications, and to access the bibliographic data and documents in real time throughout the lifetime of the PCT application, including prior to publication. The system comprises two modes: ePCT public services (submission of electronic documents, but no access to confidential data and documents) and ePCT private services (filing of PCT applications, real-time access to confidential data and documents and semi-automated 'Actions').

The system also provides services for offices—primarily for ROs, but also in roles as ISAs, IPEAs and designated or elected offices. By the end of 2014, 49 offices had accessed the system and several had been able to take up use to the extent that they could eliminate paper communications between their office and the IB.

New features were added to ePCT in 2014, among which the most notable were:

#### ePCT for applicants

- the possibility to attach the full application body in XML format or to attach a .DOCX version of the application body for real-time conversion to XML formatting ePCT-filing;
- Languages for the output of the request form in ePCT-Filing were extended to include Chinese, Japanese, Korean and Russian.
- the integration of an online payment system for paying fees directly online to the IB as RO; and
- the ability for applicants to save ePCT Actions as drafts prior to submission, permitting review and signature by other colleagues not having ePCT access rights.

## ePCT for offices

- ROs can enter bibliographic data for applications filed on paper, allowing access to more effective tools for generating correspondence to applicants.
- file segregation of documents relevant to different capacities (RO, international authorities, IB);
- significantly improved document processing capabilities, including document status handling, document routing and dedicated replacement sheet processing, thus reducing work required by the RO and eliminating potential sources of confusion for the IB in complex cases;
- significantly improved tools for generating and checking certain key forms;
- designated office functions, allowing access to files of unpublished applications in the case of national phase entry prior to publication and to certain documents never published on PATENTSCOPE;
- advanced search facility for searching PCT applications using multiple criteria; and
- enabled IB form distribution for the RO/ISA/IPEA as an alternative to paper and PCT-EDI.

## D.2

### PATENTSCOPE Search System

The regional collection of the Eurasian Patent Office and the national patent collections of Canada, Germany and Portugal were added to PATENTSCOPE.<sup>32</sup> This brings to 39 the number of national (or regional) offices whose data are available in PATENTSCOPE; in addition, it is now possible to search over 46 million patent documents, including almost 2.6 million published PCT applications.

## D.3

### WIPO Pearl database

In September 2014, WIPO launched a new database that provides free access to a wealth of multilingual scientific and technical terminology found in PCT applications.<sup>33</sup> WIPO Pearl promotes accurate and consistent use of terms across the 10 publication languages of the PCT, and makes it easier to search and share scientific and technical knowledge. Legal terminology from the PCT is also included in WIPO Pearl.

Identifying the right term with the same scope of meaning in another language is a particular challenge faced by many stakeholders, such as patent drafters, patent searchers and examiners and attorneys. In offering validated equivalents across languages for the terminology found in PCT applications, and linking each term retrieved to the full PATENTSCOPE corpus, it is hoped that WIPO Pearl will prove to be a useful tool for the patent community. Users of the patent system in regions or countries that do not have a highly developed infrastructure for accessing patent information in different languages may also benefit from the database. In addition, since not only terminology in multiple languages is included in WIPO Pearl but also value-added information such as examples of term usage, definitions of terms, and links showing relationships between concepts, the resource can also be useful as a learning and information tool for scientific and technical terminology in a broader sense.

Some 15,000 concepts and over 90,000 terms have been entered and validated by IB translators and terminologists who have considerable experience of working with patent documents in multiple languages; the database has hitherto been used internally to help improve the quality of translations performed during the international phase of the PCT. Moreover, future plans envisage collaboration with technical experts in external institutions, in order to give the data a further degree of reliability.

<sup>32</sup> <https://patentscope.wipo.int/search/en/search.jsf>

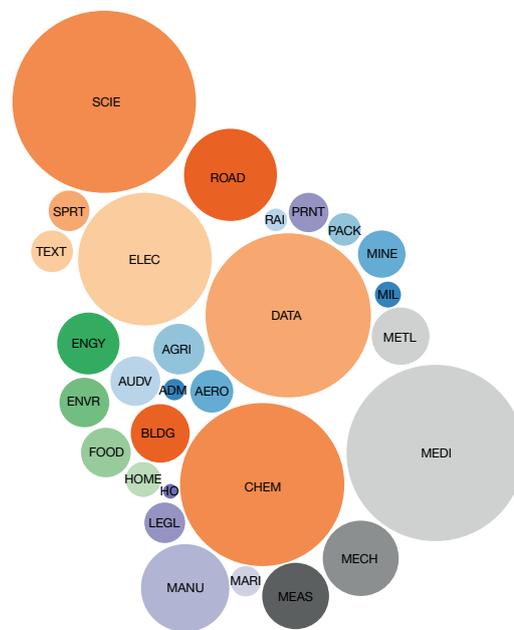
<sup>33</sup> [www.wipo.int/wipopearl](http://www.wipo.int/wipopearl)

Feedback on WIPO Pearl is welcomed, and can be sent to [wipopearl@wipo.int](mailto:wipopearl@wipo.int) or via the “Contact us” link on WIPO internet website.

### Some key features of WIPO Pearl

- All 10 PCT publication languages covered: Arabic, Chinese, English, French, German, Japanese, Korean, Portuguese, Russian and Spanish;
- Classification of concepts by 29 subject fields, each with associated subfields;
- Fully validated content with reliability scores;
- “Concept maps” that give an innovative graphical display of related concepts by language and subject field (figure D.3);
- Context and reliable source provided for all terms;
- Term labelling (for example, “recommended”, “standardized” or “avoid”);
- Integrated with PATENTSCOPE, so that all occurrences of a searched term or its equivalent can be retrieved in the PATENTSCOPE corpus;
- Integrated with PATENTSCOPE CLIR (Cross-Lingual Information Retrieval), so that an unvalidated proposal from WIPO’s patent-trained machine translation engine is offered, or can be obtained if the database does not contain an equivalent for the term searched; and
- Users can rate the quality of results.

**Figure D.3: WIPO Pearl – the concept map search**



Source: WIPO, March 2015

## D.4

### Legal Developments

Changes in the PCT Regulations that entered into force or were adopted by the Assembly of the International Patent Cooperation Union (PCT Assembly) in 2014 are presented below.

#### D.4.1 Amendments that entered into force in 2014

The amendments adopted by the PCT Assembly in October 2013 that entered into force on July 1, 2014 provided the inclusion, during international preliminary examination, of a "top-up" search, the main purpose of which is to find potentially relevant prior art documents that have become available since the international search was conducted (PCT Rules 66.1*ter* and 70.2(f)). They also provided for the availability of the written opinion of the ISA, in its original language, on PATENTSCOPE as from the date of international publication (instead of 30 months from the priority date) (PCT Rule 94 and deletion of PCT Rule 44*ter*).

As a consequence of the above-mentioned amendments to the Regulations under the PCT, modifications to the Administrative Instructions under the PCT and to the PCT International Search and Preliminary Examination Guidelines were made accordingly, with effect from the same date.

#### D.4.2 Amendments adopted in 2014

The amendments adopted by the PCT Assembly in October 2014 that will enter into force on July 1, 2015 included the introduction of a requirement, in the case of applicants making an express request for early national phase entry, to file any request for the restoration of the right of priority at the designated or elected office within one month from the date of receipt of the request for early national phase entry (rather than one month from the expiration of the normal period for entering the national phase) (amendment of PCT Rule 49*ter*:2 and 76.5). An

amendment was also made to enable the IB, in cases where it receives a notice of withdrawal together with a copy of the general power of attorney, to process the notice of withdrawal without requiring the agent to submit a separate original general power of attorney.

In view of the ceasing of PCT-EASY filings on July 1, 2015, the PCT Schedule of Fees was also revised with effect from that date to remove the fee reduction available for such filings. Furthermore, the eligibility criteria for the 90% reduction in the international filing fee, the supplementary search handling fee and the handling fee, which is available for applicants from certain countries, have been revised with effect from July 1, 2015, with the following effect: natural persons who are nationals and residents of Singapore and the United Arab Emirates will no longer benefit from the fee reduction, but natural persons who are nationals and residents of the Bahamas, Cyprus, Greece, Malta, Nauru, Palau, Portugal, Saudi Arabia, Slovenia and Suriname<sup>34</sup> will be able to benefit from it.

<sup>34</sup> Applicants from the Bahamas, Nauru, Palau and Suriname, which are not bound by the PCT, must file the PCT application together with an applicant who is a national of and/or resides in a PCT contracting state, and may only benefit from the fee reduction if that co-applicant is also entitled to a fee reduction.

## D.5

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### Meetings

Several meetings take place every year between the PCT international authorities, the IB, PCT member states and/or offices to ensure the regular operation of the system and to improve its performance and facilitate its use. The main developments in 2014 are described below.

#### D.5.1 Meeting of International Authorities under the PCT

The 21st session of the Meeting of International Authorities under the PCT was held in Tel Aviv, Israel, from February 11–13, 2014. The matters discussed at the meeting included the approval of recommendations for further work of the Meeting's Quality Subgroup, comprising: the provision of better information on the scope of the international search, the preparation of a pilot of feedback from designated offices to international authorities and the development of improved explanations and examples of complex cases of unity of invention. A report was provided on the current state of ePCT, which offered all the most essential services required for applicants and ROs, but which required more active participation by a wide range of offices in order for it to reach its full potential. Presentations of proposals were provided by the JPO, KIPO, the Federal Service for Intellectual Property (Rospatent)(Russian Federation) and the USPTO. International authorities expressed a desire to make progress towards permitting the filing and processing of color drawings in PCT applications.

#### D.5.2 PCT Working Group

The seventh session of the PCT Working Group was held in Geneva from June 10–13, 2014. The Working Group recommended proposed amendments to the PCT Regulations, which were later adopted by the PCT Assembly, as presented in subsection D.4.2. The Working Group endorsed proposed modifications to the third party observation system, which would be implemented when the necessary technical changes could be made, and also endorsed modifications to the Receiving Office Guidelines in relation to selecting a competent ISA and in relation to the correction by ROs of checklists of the contents of the PCT application. The Working Group also noted a report by the IB on the development of the ePCT system; it invited the IB to refine proposals concerning an arrangement to use ePCT to assist national phase entry, and it discussed color drawings.

#### D.5.3 PCT Assembly

The 46<sup>th</sup> session of the PCT Assembly was held in Geneva during the period September 22–30, 2014 as part of the meetings of the Assemblies of the Member States of WIPO. The PCT Assembly adopted amendments to the PCT Regulations which will enter into force on July 1, 2015, as outlined under subsection D.4.2. The Assembly also appointed the Intellectual Property Office of Singapore as an ISA and IPEA, effective from a future date to be notified by the office when it is ready to begin operations. The Assembly also approved new procedures for appointing ISAs and IPEAs, including the recommendation that offices seeking appointment obtain the assistance of an existing international authority to help assess the extent to which they meet the necessary criteria. Furthermore, the Committee for Technical Cooperation would meet to give expert advice on the application for appointment at least three months in advance of the session of the PCT Assembly where the application is to be considered.

## D.6

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### PCT Training

The IB offers training sessions and provides training materials on the PCT System to a wide range of interested parties worldwide.

#### D.6.1 Seminars

In 2014, the PCT Legal Division participated in 53 seminars for PCT users in 11 countries (China, France, Germany, Greece, Italy, Japan, Portugal, Spain, Sweden, the UK and the US) and at WIPO headquarters, which were delivered in five languages (Chinese, English, French, German and Japanese). In addition, 54 presentations on the PCT were given to users and potential users of the PCT.

#### D.6.2 Webinars

In 2014, 17 webinars, including “PCT update” webinars and webinars on the use of the ePCT system, were given in nine languages to a total of 715 participants. The recordings and accompanying PowerPoint presentations are available on the PCT website.<sup>35</sup>

In addition, 10 webinars were held on a number of topics related to the use of the PATENTSCOPE search system. The PowerPoint slides that were used for those webinars are also available on the WIPO website.<sup>36</sup>

#### D.6.3 Distance learning

The PCT distance learning course entitled “Introduction to the PCT”, available in all 10 PCT publication languages, was followed via the Internet by 2,688 participants.

#### D.6.4 International Cooperation

The PCT International Cooperation Division organized and participated in 43 events such as seminars and workshops mainly for offices of PCT member states and possible PCT member states as well as other stakeholders. These were held in 35 countries and at WIPO headquarters. Participants were more than 2,500 and from more than 50 countries.

<sup>35</sup> [www.wipo.int/pct/en/seminar/webinars/index.html](http://www.wipo.int/pct/en/seminar/webinars/index.html)

<sup>36</sup> [www.wipo.int/patentscope/en/webinar/](http://www.wipo.int/patentscope/en/webinar/)

## Statistical table

The table shows the number of PCT applications filed in 2014 and the number of PCT national phase entries in 2013 by office and by country or territory of origin.<sup>37</sup>

The following example may be of assistance in understanding the table below: the patent office of Australia received 1,625 PCT applications as a PCT receiving office in 2014 and 20,720 PCT national phase entries as a designated office in 2013; applicants residing in Australia filed 1,726 PCT applications in 2014 and initiated 7,261 PCT national phase entries worldwide in 2013.

Name	Code	PCT applications filed (international phase) in 2014		PCT national phase entries in 2013	
		at receiving office	by country of origin	at office of destination	by country of origin
African Intellectual Property Organization	OA	3	n.a.	426	n.a.
African Regional Intellectual Property Organization	AP	0	n.a.	637	n.a.
Albania	AL	1	1	3	1
Algeria	DZ	7	7	676	1
Andorra	AD	n.a.	1	n.a.	19
Angola	AO	IB	2	--	1
Antigua and Barbuda	AG	0	0	--	1
Argentina	AR	n.a.	33	n.a.	79
Armenia	AM	3	4	5	6
Aruba	AW	n.a.	0	n.a.	2
Australia	AU	1,625	1,726	20,720	7,261
Austria	AT	541	1,387	533	5,113
Azerbaijan	AZ	0	1	5	6
Bahamas	BS	n.a.	20	n.a.	63
Bahrain	BH	0	2	170	6
Bangladesh	BD	n.a.	2	n.a.	16
Barbados	BB	IB	175	39	434
Belarus	BY	10	13	105	4
Belgium	BE	71	1,197	EP	5,193
Belize	BZ	0	4	29	14
Benin	BJ	OA	1	OA	--
Bermuda	BM	n.a.	0	n.a.	95
Bhutan	BT	n.a.	0	n.a.	1
Bolivia (Plurinational State of)	BO	n.a.	0	n.a.	1
Bosnia and Herzegovina	BA	5	5	21	5
Botswana	BW	0	0	1	--
Brazil	BR	513	581	22,576	1,250
Brunei Darussalam	BN	0	0	--	8
Bulgaria	BG	44	51	8	70
Burkina Faso	BF	OA	0	OA	2

<sup>37</sup> A PCT applicant seeking protection in any of the European Patent Convention (EPC) member states can generally choose to enter the national phase at the relevant national office or at the EPO (see EPC member states indicated in the PCT contracting states table in the annex). This explains why the number of PCT national phase entries at some

European national offices is lower than would otherwise be expected. The PCT national phase route is closed for France, Italy, the Netherlands and several other countries (again, see the PCT contracting states table in the annex). A PCT applicant seeking protection in those countries must enter the PCT national phase at the regional office (the EPO).

Name	Code	PCT applications filed (international phase) in 2014		PCT national phase entries in 2013	
		at receiving office	by country of origin	at office of destination	by country of origin
Cabo Verde	CV	n.a.	0	n.a.	1
Cameroon	CM	OA	0	OA	--
Canada	CA	2,181	3,089	26,627	8,894
Central African Republic	CF	OA	0	OA	1
Chad	TD	OA	0	OA	1
Chile	CL	92	144	2,504	279
China	CN	27,107	25,539	72,867	18,106
China, Hong Kong SAR	HK	n.a.	0	n.a.	238
China, Macao SAR	MO	n.a.	0	n.a.	2
Colombia	CO	15	102	1,690	79
Comoros	KM	OA	0	OA	--
Congo	CG	OA	0	OA	3
Cook Islands	CK	n.a.	0	n.a.	1
Costa Rica	CR	5	9	567	18
Côte d'Ivoire	CI	OA	3	OA	2
Croatia	HR	49	54	10	91
Cuba	CU	4	4	137	151
Curaçao	CW	n.a.	0	n.a.	10
Cyprus	CY	1	38	EP	117
Czech Republic	CZ	166	189	41	357
Democratic People's Republic of Korea	KP	4	4	--	28
Democratic Republic of the Congo	CD	n.a.	1	n.a.	--
Denmark	DK	510	1,301	86	5,550
Dominica	DM	0	0	--	1
Dominican Republic	DO	3	3	240	6
Ecuador	EC	0	7	--	12
Egypt	EG	42	48	1,353	36
El Salvador	SV	2	3	--	7
Equatorial Guinea	GQ	OA	0	OA	--
Estonia	EE	9	29	14	76
Eurasian Patent Organization	EA	22	n.a.	2,796	n.a.
European Patent Office	EP	32,968	n.a.	87,367	n.a.
Fiji	FJ	n.a.	0	n.a.	1
Finland	FI	1,111	1,815	38	5,528
France	FR	3,528	8,319	EP	28,534
Gabon	GA	OA	0	OA	1
Gambia	GM	AP	0	--	--
Georgia	GE	1	1	199	4
Germany	DE	1,718	18,008	5,253	63,173
Ghana	GH	0	0	--	2
Greece	GR	68	133	EP	102
Grenada	GD	0	0	--	1
Guatemala	GT	1	1	308	1
Guinea	GN	OA	0	OA	--
Guinea-Bissau	GW	OA	0	OA	--
Honduras	HN	0	0	204	--
Hungary	HU	127	159	7	450
Iceland	IS	15	43	5	91
India	IN	761	1,394	27,592	3,890
Indonesia	ID	12	17	6,129	59
International Bureau	IB	10,615	n.a.	--	n.a.
Iran (Islamic Republic of)	IR	n.a.	35	n.a.	2

## ANNEXES

Name	Code	PCT applications filed (international phase) in 2014		PCT national phase entries in 2013	
		at receiving office	by country of origin	at office of destination	by country of origin
Ireland	IE	19	440	EP	1,427
Israel	IL	1,211	1,596	5,101	5,498
Italy	IT	337	3,061	EP	9,895
Jamaica	JM	n.a.	2	n.a.	5
Japan	JP	41,298	42,459	54,157	120,839
Jordan	JO	n.a.	3	n.a.	64
Kazakhstan	KZ	18	19	166	40
Kenya	KE	9	9	111	19
Kiribati	KI	n.a.	0	n.a.	10
Kuwait	KW	n.a.	3	n.a.	8
Kyrgyzstan	KG	0	1	2	1
Lao People's Democratic Republic	LA	IB	2	--	--
Latvia	LV	12	29	EP	66
Lebanon	LB	n.a.	4	n.a.	14
Liberia	LR	0	1	--	1
Liechtenstein	LI	CH	231	CH	225
Lithuania	LT	12	49	10	29
Luxembourg	LU	0	392	--	1,088
Madagascar	MG	IB	2	44	--
Malaysia	MY	289	314	5,284	544
Mali	ML	OA	0	OA	1
Malta	MT	0	58	EP	85
Marshall Islands	MH	n.a.	1	n.a.	6
Mauritania	MR	OA	0	OA	--
Mauritius	MU	n.a.	2	n.a.	14
Mexico	MX	216	284	11,766	545
Monaco	MC	0	33	EP	59
Mongolia	MN	0	0	125	2
Montenegro	ME	IB	1	--	--
Morocco	MA	43	45	775	5
Mozambique	MZ	AP	0	--	--
Namibia	NA	AP	3	--	--
Nepal	NP	n.a.	0	n.a.	3
Netherlands	NL	976	4,218	EP	16,126
Netherlands Antilles	AN	0	0	--	10
New Zealand	NZ	273	346	3,808	1,183
Nicaragua	NI	0	0	116	--
Niger	NE	OA	0	OA	--
Nigeria	NG	IB	4	--	--
Norway	NO	295	690	538	2,637
Oman	OM	IB	0	--	1
Pakistan	PK	n.a.	1	n.a.	11
Panama	PA	3	16	--	47
Papua New Guinea	PG	0	0	76	--
Paraguay	PY	n.a.	0	n.a.	6
Peru	PE	11	12	1,069	15
Philippines	PH	22	35	2,747	42
Poland	PL	243	349	80	706
Portugal	PT	83	158	10	401
Qatar	QA	0	18	314	8
Republic of Korea	KR	13,177	13,151	35,168	19,086
Republic of Moldova	MD	3	3	20	33

Name	Code	PCT applications filed (international phase) in 2014		PCT national phase entries in 2013	
		at receiving office	by country of origin	at office of destination	by country of origin
Romania	RO	24	26	18	67
Russian Federation	RU	920	890	13,115	1,815
Saint Kitts and Nevis	KN	0	2	--	8
Saint Lucia	LC	IB	0	--	--
Saint Vincent and the Grenadines	VC	IB	1	8	17
Samoa	WS	n.a.	0	n.a.	9
San Marino	SM	0	2	--	3
Sao Tome and Principe	ST	IB	0	--	--
Saudi Arabia	SA	n.a.	393	n.a.	381
Senegal	SN	OA	3	OA	--
Serbia	RS	12	14	13	44
Serbia and Montenegro (formerly Yugoslavia)	YU	n.a.	0	n.a.	1
Seychelles	SC	0	5	--	89
Sierra Leone	SL	AP	0	--	--
Singapore	SG	632	944	6,557	2,368
Slovakia	SK	47	65	9	89
Slovenia	SI	87	156	EP	204
Somalia	SO	n.a.	0	n.a.	2
South Africa	ZA	63	297	6,105	1,140
Spain	ES	1,221	1,705	111	3,794
Sri Lanka	LK	IB	21	--	81
Sudan	SD	0	4	--	--
Swaziland	SZ	AP	0	AP	4
Sweden	SE	1,733	3,925	67	11,795
Switzerland	CH	181	4,115	75	21,913
Syrian Arab Republic	SY	0	3	--	8
T F Y R of Macedonia	MK	3	4	--	5
Tajikistan	TJ	0	0	2	--
Thailand	TH	58	68	5,604	686
Togo	TG	OA	0	OA	--
Trinidad and Tobago	TT	0	1	--	2
Tunisia	TN	6	8	437	59
Turkey	TR	487	802	231	653
Uganda	UG	AP	4	5	1
Ukraine	UA	128	136	2,280	154
United Arab Emirates	AE	IB	98	1,334	108
United Kingdom	GB	4,247	5,282	2,381	19,020
United Republic of Tanzania	TZ	AP	0	--	5
United States of America	US	62,133	61,492	119,899	157,943
Uruguay	UY	n.a.	6	n.a.	20
Uzbekistan	UZ	4	6	249	6
Vanuatu	VU	n.a.	1	n.a.	1
Venezuela (Bolivarian Republic of)	VE	n.a.	1	n.a.	4
Viet Nam	VN	4	7	3,063	36
Zambia	ZM	0	0	10	--
Unknown		0	263	452	6,602
<b>Total</b>		<b>214,500</b>	<b>214,500</b>	<b>565,500</b>	<b>565,500</b>

-- indicates data are unknown;

n.a. indicates not applicable, as it is not an office of a PCT member state;

AP, CH, EP, IB and OA are the competent – designated, elected or receiving – offices for certain member states;

PCT national phase entries by origin, world totals and PCT application data are WIPO estimates; and

Offices of destination are designated and/or elected offices.

Source: WIPO Statistics Database, March 2015.

## Acronyms

EPC	European Patent Convention
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
NPE	national phase entry
PCT	Patent Cooperation Treaty
PCT-PPH	Patent Cooperation Treaty-Patent Prosecution Highway
PCT-SAFE	PCT-Secure Application Filed Electronically
PDF	portable document format
RO	receiving office
SAFE	secure application filed electronically
SIPO	State Intellectual Property Office of the People's Republic of China
SIS	supplementary international search
SISA	authority specified for supplementary search (supplementary international searching authority)
SISR	supplementary international search report
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization
XLM	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:** A set of legal documents submitted to a patent office requesting that a patent be granted for the applicant's invention. The patent office processes the application and decides whether to grant a patent or reject the application.

**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 that regulate the filing of PCT applications, the international searches and written opinions by ISAs, and the international publication of PCT applications—and that provide for the communication of PCT applications and related documents to designated offices.

**Chapter II of the PCT:** The provisions in the PCT that regulate the optional international preliminary examination procedure.

**Country of origin:** For statistical purposes, the country of origin of a PCT application is the country of residence (or nationality, in the absence of a valid residence) of the first-named applicant in the application.

**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 the invention is sought, as specified in the PCT application.

**Elected office:** The national or regional office of, or acting for, a state elected by the 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, a patent application filed by a resident of a given country with a patent office of a foreign country. For example, a patent application filed with the USPTO by an applicant residing in France is considered a filing abroad from the perspective of France. A filing abroad is the opposite of a non-resident filing, which describes a patent application by a resident of a foreign country from the perspective of the country receiving the application.

**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 authority:** A national or regional patent office or international organization that fulfills specific tasks, as prescribed by the PCT.

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

**International filing date:** The date on which the receiving office receives a PCT application (provided certain formality 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 patent applications. 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:

- Filing of a PCT application by the applicant and its processing by the receiving office.
- Establishment of an ISR and a written opinion by an ISA.
- Publication of the PCT application and related documents, as well as their communication to designated and elected offices by the IB.
- Optional establishment of an SISR by a SISA.
- Optional establishment of an IPRP by an IPEA.
- International preliminary examining authority (IPEA): A national or regional patent office appointed by the PCT Assembly to carry out international preliminary examination. 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 non-binding opinion established by an IPEA at the request of the applicant, on whether the claimed invention appears to be novel, to involve an inventive step (is not obvious) and to 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 the invention as claimed. The ISR also includes the classification of the subject matter of the 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 entry of a PCT application into the national phase before a national or regional patent office. National phase entry (NPE) involves the payment of fees and, where necessary, the submission of a translation of the PCT application. The entry must in general take place within 30 months from the priority date of the application, although longer time periods are allowed by some offices.

**National phase under the PCT:** Following the PCT international phase, the national phase consists of the processing of the application before each national or regional patent office in which the applicant seeks protection for an invention.

**Non-resident filing:** For statistical purposes, a patent application filed with a national patent office by an applicant from a foreign country. For example, a patent application filed with the USPTO by an applicant residing in France is considered a non-resident filing from the perspective of the US. A non-resident filing is the opposite of a filing abroad, which describes a patent application filed by the resident of a given country with a foreign patent office from the perspective of the applicant’s origin. A non-resident filing is also known as a foreign filing.

**Paris Convention:** An international convention (the Paris Convention for the Protection of Industrial Property) 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.

**Patent:** An exclusive right granted by law to an applicant for an invention for a limited period of time (generally 20 years from the time of filing). The patent holder has the right to exclude others from commercially exploiting the invention for the duration of the patent term. 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 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 are 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 (contracting states) by filing a single PCT international application. The decision whether to grant patent rights remains the prerogative of national and regional patent offices.

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

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

**PCT-Patent Prosecution Highway Pilots (PCT-PPH):** A number of bilateral agreements signed between patent offices enable applicants to request a fast-track examination procedure whereby patent examiners can use the work products of another office or offices. These work products can include the results of a favorable written opinion by an ISA, the written opinion of an IPEA or the IPRP issued within the framework of the PCT. By requesting this procedure, applicants can generally obtain patents more quickly from participating offices.

**Prior art:** All information disclosed to the public in any form about an invention before a given date. Information on the prior art can assist in determining whether the claimed invention is new and involves an inventive step (is not obvious) for the purposes of international searches and international preliminary examination.

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

**Publication of PCT application:** The IB publishes the PCT application and related documents promptly after the expiration of 18 months from the priority date. If the 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—with which the PCT application is filed. The role of the RO is to check and process the application in accordance with the PCT and its regulations.

**Resident filing:** For statistical purposes, an application filed with a patent office by an applicant having residence in the same country. For example, a patent application filed at the JPO by a resident of Japan is considered a resident filing for that office. A “resident filing” is also known as a “domestic filing.”

**Supplementary international searching authority (SISA):** See “Authority specified for supplementary international search”.

**Supplementary international search report (SISR):** A report, similar to the ISR, established during the supplementary international search, that allows the 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 that carries out the main international search. The SIS primarily focuses on the patent documentation in the language in which the SISA specializes.

**World Intellectual Property Organization (WIPO):** A specialized agency of the United Nations, WIPO is dedicated to developing a balanced and effective international IP system that rewards creativity, stimulates innovation and contributes to economic development while safeguarding the public interest. WIPO was established in 1967 with a mandate from its member states to promote the protection of IP throughout the world 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 the claimed invention appears to be novel, to involve an inventive step and to be industrially applicable.

## PCT contracting states

In 2014, 148 countries were contracting states of the PCT.

On September 4, 2014, Lithuania closed its national route, with the result that applicants desiring protection in Lithuania will only be able to enter the regional phase before the EPO.

Sao Tome became a member state of ARIPO on May 19, 2014 and the Harare Protocol entered into force with respect to that state on August 19, 2014, bringing the number of member states of ARIPO to 19 and the number of states party to the Harare Protocol to 18. PCT applications filed on or after August 19, 2014 include the designation of Sao Tome for an ARIPO patent, in addition to a national patent.

Albania (EP)	Dominica	Lithuania (EP)	Sao Tome and
Algeria	Dominican Republic	Luxembourg (EP)	Principe (AP) <sup>3</sup>
Angola	Ecuador	Madagascar	Saudi Arabia
Antigua and Barbuda	Egypt	Malawi (AP)	Senegal (OA) <sup>2</sup>
Armenia (EA)	El Salvador	Malaysia	Serbia (EP)
Australia	Equatorial Guinea (OA) <sup>2</sup>	Mali (OA) <sup>2</sup>	Seychelles
Austria (EP)	Estonia (EP)	Malta (EP) <sup>2</sup>	Sierra Leone (AP)
Azerbaijan (EA)	Finland (EP)	Mauritania (OA) <sup>2</sup>	Singapore
Bahrain	France (EP) <sup>2</sup>	Mexico	Slovakia (EP)
Barbados	Gabon (OA) <sup>2</sup>	Monaco (EP) <sup>2</sup>	Slovenia (EP) <sup>2</sup>
Belarus (EA)	Gambia (AP)	Mongolia	South Africa
Belgium (EP) <sup>2</sup>	Georgia	Montenegro <sup>1</sup>	Spain (EP)
Belize	Germany (EP)	Morocco	Sri Lanka
Benin (OA) <sup>2</sup>	Ghana (AP)	Mozambique (AP)	Sudan (AP)
Bosnia and Herzegovina <sup>1</sup>	Greece (EP) <sup>2</sup>	Namibia (AP)	Swaziland (AP) <sup>2</sup>
Botswana (AP)	Grenada	Netherlands (EP) <sup>2</sup>	Sweden (EP)
Brazil	Guatemala	New Zealand	Switzerland (EP)
Brunei Darussalam	Guinea (OA) <sup>2</sup>	Nicaragua	Syrian Arab Republic
Bulgaria (EP)	Guinea-Bissau (OA) <sup>2</sup>	Niger (OA) <sup>2</sup>	Tajikistan (EA)
Burkina Faso (OA) <sup>2</sup>	Honduras	Nigeria	Thailand
Cameroon (OA) <sup>2</sup>	Hungary (EP)	Norway (EP)	The former Yugoslav
Canada	Iceland (EP)	Oman	Republic of Macedonia (EP)
Central African	India	Panama	Togo (OA) <sup>2</sup>
Republic (OA) <sup>2</sup>	Indonesia	Papua New Guinea	Trinidad and Tobago
Chad (OA) <sup>2</sup>	Iran (Islamic Republic of)	Peru	Tunisia
Chile	Ireland (EP) <sup>2</sup>	Philippines	Turkey (EP)
China	Israel	Poland (EP)	Turkmenistan (EA)
Colombia	Italy (EP) <sup>2</sup>	Portugal (EP)	Uganda (AP)
Comoros (OA) <sup>2</sup>	Japan	Qatar	Ukraine
Congo (OA) <sup>2</sup>	Kazakhstan (EA)	Republic of Korea	United Arab Emirates
Costa Rica	Kenya (AP)	Republic of Moldova	United Kingdom (EP)
Côte d'Ivoire (OA) <sup>2</sup>	Kyrgyzstan (EA)	Romania (EP)	United Republic of
Croatia (EP)	Lao People's	Russian Federation (EA)	Tanzania (AP)
Cuba	Democratic Republic	Rwanda (AP)	United States of America
Cyprus (EP) <sup>2</sup>	Latvia (EP) <sup>2</sup>	Saint Kitts and Nevis	Uzbekistan
Czech Republic (EP)	Lesotho (AP)	Saint Lucia	Viet Nam
Democratic People's	Liberia (AP)	Saint Vincent and	Zambia (AP)
Republic of Korea	Libya	the Grenadines	Zimbabwe (AP)
Denmark (EP)	Liechtenstein (EP)	San Marino (EP)	

Note: 1 Extension of European patent possible. 2 May only be designated for a regional patent (the national route via the PCT has been closed). 3 Only PCT applications filed on or after August 19, 2014 will include the designation of Sao Tome and Principe for an ARIPO patent.

Where a state can be designated for a regional patent, the two-letter code for the regional patent concerned is indicated in parentheses (AP = ARIPO patent, EA = Eurasian patent, EP = European patent, OA = OAPI patent).

Source: WIPO, December 2014.

## Additional resources

The following patent resources are available on the WIPO website:

**PATENTSCOPE** — enables the search and download of published PCT applications and national/regional patent collections. It also provides access to related patent and technology information programs and services.

[www.wipo.int/patentscope/](http://www.wipo.int/patentscope/)

**ePCT Portal** — provides access to ePCT public and private services.

<https://pct.wipo.int/LoginForms/en/epct.jsp>

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

[www.wipo.int/pct/](http://www.wipo.int/pct/)

**PCT newsletter** — PCT monthly magazine containing information about the filing of PCT applications and news about changes relating to the PCT.

[www.wipo.int/pct/en/newslett/](http://www.wipo.int/pct/en/newslett/)

**PCT statistics** — provides access to the IP Statistics Data Center – the on-line service enabling access to WIPO's statistical data – and to the IP statistical country profiles. It also provides access to the top PCT applicants' list and to the underlying data used to compute the indicators included in this report.

[www.wipo.int/ipstats/](http://www.wipo.int/ipstats/)

**Law of patents** — includes current and emerging issues related to patents, information on WIPO-administered treaties, access to national/regional patent laws, patent law harmonization.

[www.wipo.int/patent/law/](http://www.wipo.int/patent/law/)





For more information  
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