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Effective Innovation Policies for Development the Strategic Role of TTOs

1st Panel

International, Regional & National Strategies of Public Institutions on The Role of TTOs in Enhancing Academic IP Commercialization on International, Regional and National Scale

International Conference on
Managing Intellectual Property In Universities
Istanbul, October 15-16, 2015 Boğaziçi University
5th Annual

Boğaziçi University Technology Transfer Office
Adizes INSTITUTE WORLDWIDE
MIT Technology Licensing Office

Topics

- Knowledge Transfer and Innovation - WIPO *Global Innovation Index (GII) Report 2015*
- Innovation Policy Matters
- International IP Statistics and Trends
- The Role of the TTOs

The WIPO Global Innovation Index

Global Innovation Index 2015

- The Global Innovation Index (GII) aims to capture the multi-dimensional facets of innovation and provide the tools that can assist in tailoring policies to promote long-term output growth, improved productivity, and job growth. The GII helps to create an environment in which innovation factors are continually evaluated. It provides a key tool and a rich database of detailed metrics for **141** economies this year, which represent **95.1% of the world's population and 98.6% of global GDP.**

- Published annually since 2007, the GII is now a leading benchmarking tool for business executives, policy makers and others seeking insight into the state of innovation around the world. This year's study benefits from the experience of its Knowledge Partners: of A.T. Kearney and IMP³rove – European Innovation Management Academy, the Confederation of Indian Industry and du, as well as of an Advisory Board of 15 international experts.

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2015 Theme: Effective Innovation Policies for Development

- The GII 2015 looks at "Effective Innovation Policies for Development" and shows new ways that emerging economy policymakers can boost innovation and spur growth by building on local strengths in traditional sectors and ensuring the development of a sound innovation environment. The analysis in this year's edition identifies economies that outperform on an annual basis against countries with a similar level of development, both on the general innovation level as well as on the level of particular innovation inputs or outputs.

What is this Report?

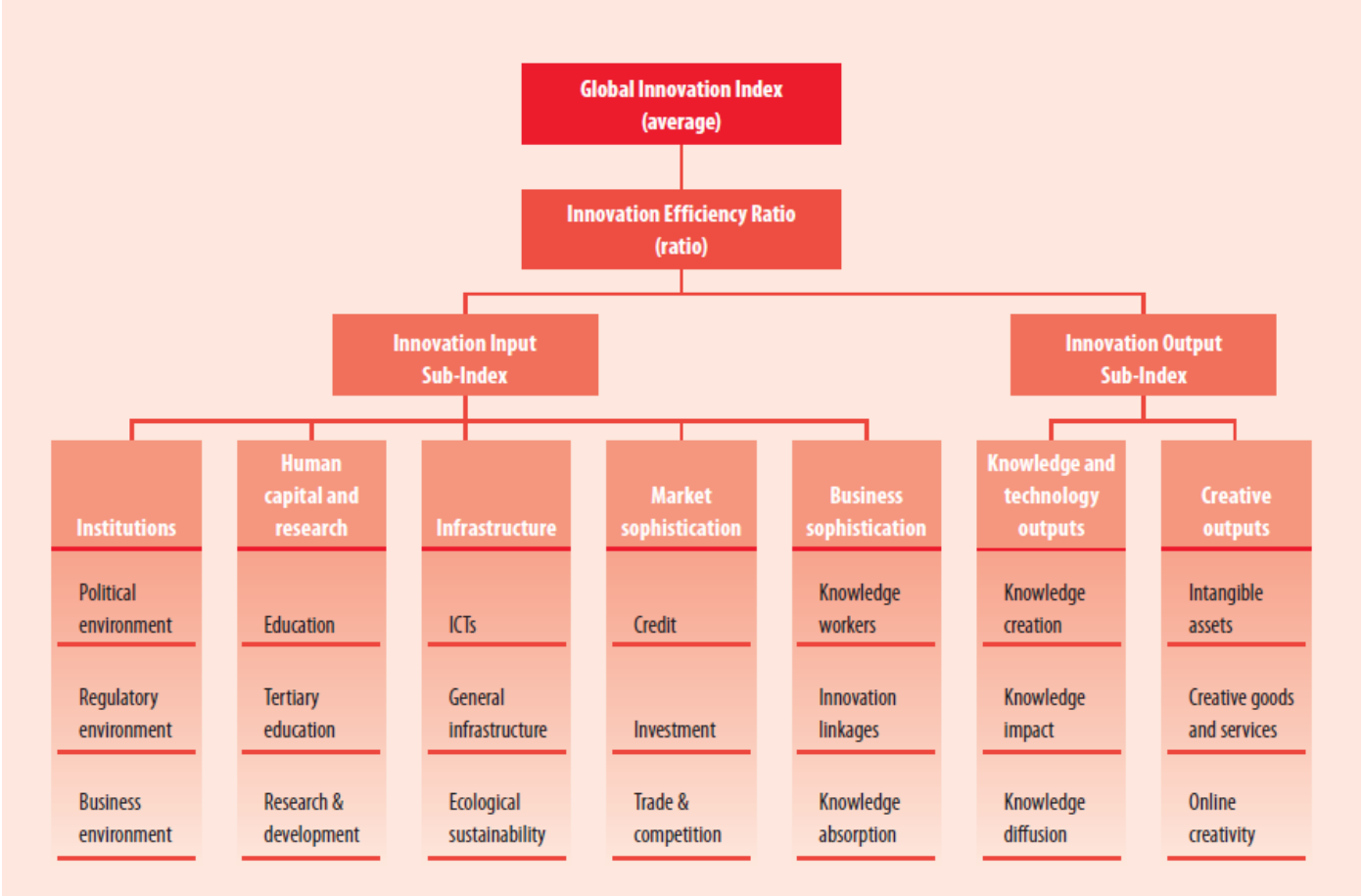
- The core of the GII Report consists of a ranking of world economies' innovation capabilities and results.
- Over the last eight years, the GII has established itself as a leading reference on innovation.
- Understanding in more detail the human aspects behind innovation is essential for the design of policies that help promote economic development and richer innovation-prone environments locally.
- Recognizing the key role of innovation as a driver of economic growth and prosperity, and the need for a broad horizontal vision of innovation applicable to developed and emerging economies, the GII includes indicators that go beyond the traditional measures of innovation such as **the level of research and development.**

Global Innovation Index Conceptual Framework

- The Global Innovation Index GII) relies on two sub-indices, the Innovation Input Sub-Index and the Innovation Output Sub-Index, each built around pillars.
- Five input pillars capture elements of the national economy that enable innovative activities: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication. Two output pillars capture actual evidence of innovation outputs: (6) Knowledge and technology outputs and (7) Creative outputs.
- Each pillar is divided into sub-pillars and each sub-pillar is composed of individual indicators (79 in total). Sub-pillar scores are calculated as the weighted average of individual indicators; pillar scores are calculated as the weighted average of sub-pillar scores.
- The framework is revised every year in a transparent exercise to improve the way innovation is measured.

Global Innovation Index Conceptual Framework

- To support the global innovation debate, to guide polices and to highlight good practices, metrics are required to assess innovation and related policy performance. The Global Innovation Index (GII) creates an environment in which innovation factors are under continual evaluation, including the following features:
- 141 country profiles, including data, ranks and strengths and weaknesses on 79 indicators
- 79 data tables for indicators from over 30 international public and private sources, of which 55 are hard data, 19 composite indicators, and 5 survey questions
- A transparent and replicable computation methodology including 90% confidence interval for each index ranking (GII, output and input sub-indices) and an analysis of factors affecting year-on-year changes in rankings
- The GII 2015 is calculated as the average of two sub-indices. The Innovation Input Sub-Index gauges elements of the national economy which embody innovative activities grouped in five pillars: (1) Institutions, (2) Human capital and research, (3) Infrastructure, (4) Market sophistication, and (5) Business sophistication. The Innovation Output Sub-Index captures actual evidence of innovation results, divided in two pillars: (6) Knowledge and technology outputs and (7) Creative outputs.
- The index is submitted to an independent statistical audit by the Joint Research Centre of the European Commission. To download the full report visit: www.globalinnovationindex.org



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Universities and Innovation Strategies

- Keep pace with the moving targets of new technologies and market opportunities
- Develop policies to attract international talents, young entrepreneurs and investors
- *"Even with the best ideas, speed and agility are paramount" - Kai Engel, Violetka Dirlea and Jochen Graff - Masters of Innovation.*
- *Consider the role of Universities and TTOs in the ever-shrinking innovation cycles*
- *Heavy and complex decision structures slow the process*

Top Rankings

- Switzerland (Number 1 in 2014)
- United Kingdom (2)
- Sweden (3)
- Netherlands (5)
- United States of America (6)
- Finland (4)
- Singapore (7)
- Ireland (11)
- Luxembourg (9)
- Denmark (8)

Top Rankings

- As a whole, the group of top 25 performers – all high income economies – remains largely unchanged from past editions, illustrating that the leaders' performance is hard to challenge for those that follow.

- Some exceptions are: the Czech Republic (24th) is in the top 25 and Ireland (8th) in the top 10 this year. Also, China (29th) and Malaysia (32nd) show a performance which is similar to the one of top 25 high-income countries, including in areas such as human capital development and research and development funding.

New trends

- The GII 2015 introduces the idea that innovation-driven growth is no longer the prerogative of high-income countries alone, while providing tangible examples of effective innovation policies undertaken by developing countries with corresponding positive results in the GII rankings.

Effective Innovation Policies for Development

- Under this year main focus, Switzerland, the United Kingdom (UK), Sweden, the Netherlands, and the United States of America (USA) are the world's five most-innovative nations; at the same time, China, Malaysia, Viet Nam, India, Jordan, Kenya, Uganda, and a group of other countries are outpacing their economic peers.

Effective Innovation Policies for Development

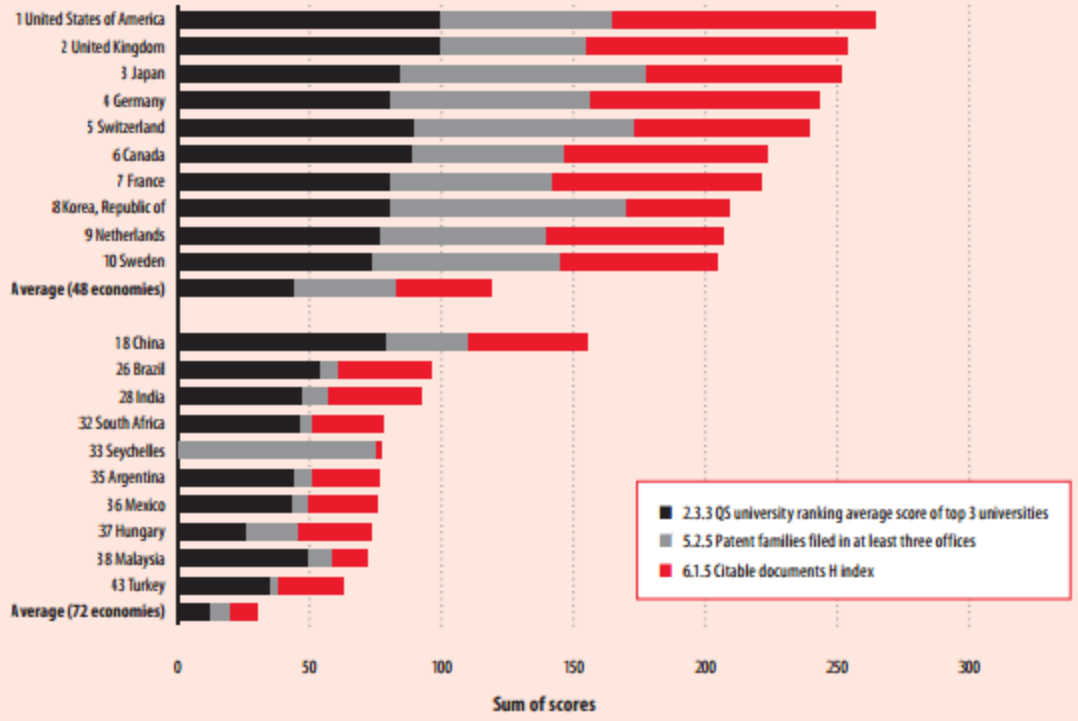
- The GII leaders have created well-linked innovation ecosystems where investments in human capital, combined with strong innovation infrastructures, contribute to high levels of creativity. In particular, the top 25 countries in the GII consistently score well in most indicators and have strengths in areas such as information and communication technologies and business sophistication, which includes knowledge workers, innovation linkages, and knowledge absorption; they also create high levels of measurable outputs including creative goods and services. •

Effective Innovation Policies for Development

- But innovation is not only about volume: Quality counts too
- In terms of innovation quality—as measured by university performance, the reach of scholarly articles, and the international dimension of patent applications—the USA holds the top place within the high-income group, followed by the UK, Japan, Germany, and Switzerland.
- Topscoring middle-income economies are narrowing the gap on innovation quality: China leads this group, followed by Brazil and India, fuelled by an improvement in the quality of higher-education institutions.

Innovation quality: USA and China at the top, with a large gap between them *(cont'd.)*

3.1: Metrics for quality of innovation: Top 10 high- and top 10 middle-income economies



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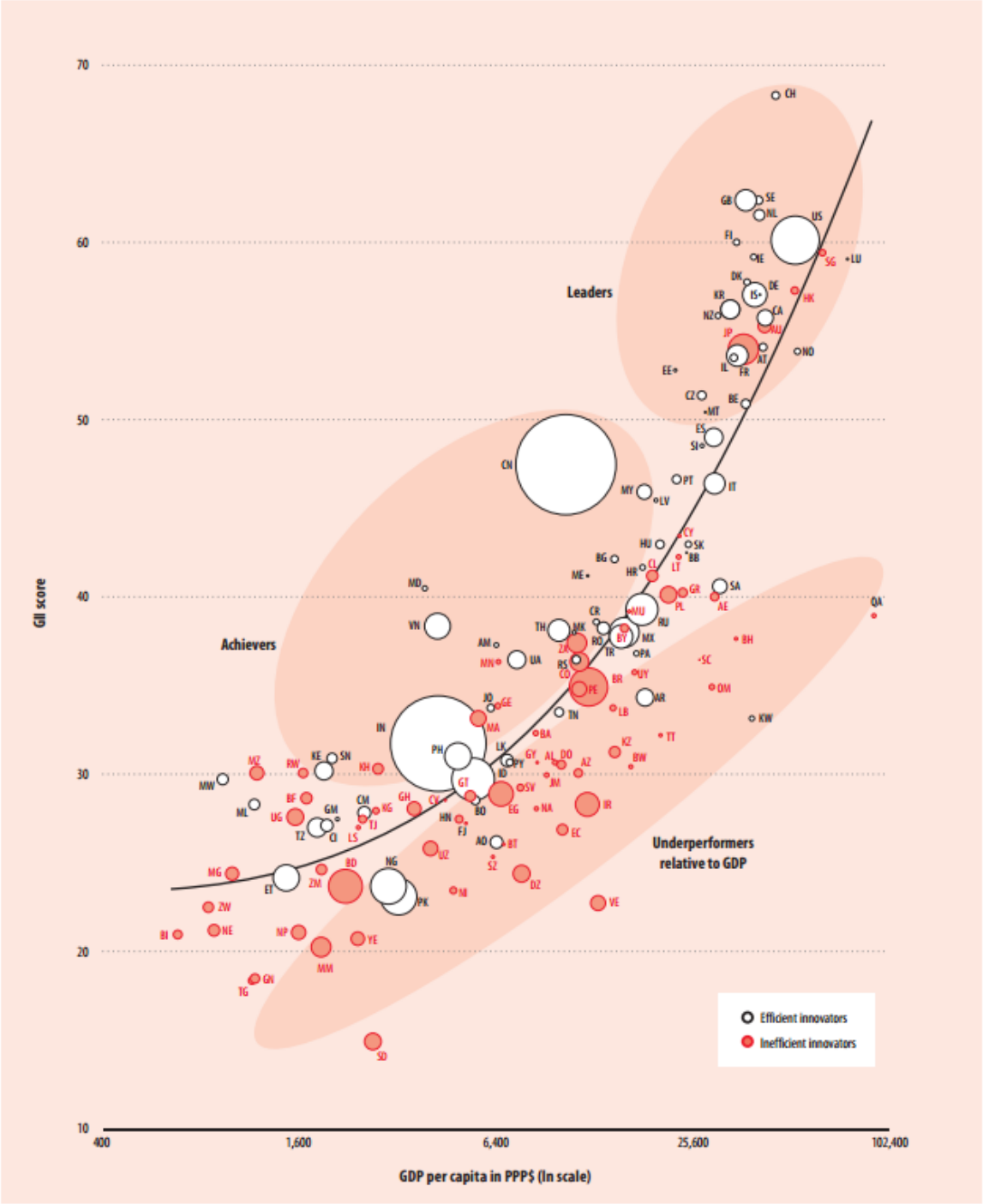
GII scores and GDP per capita in PPP$

(bubbles sized by population)



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Policy matters

- The key theme of GII 2015 is "Innovation Policies"

- Innovation requires the right policies to actively support and sustain it.

- "As countries and regions develop economic growth strategies, the imperative to put innovation at the top of the agenda has never been stronger"

- Johan Aurik, Managing Partner and Chairman of the GII Board

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Some points to think about

- No surprises: Switzerland, the top-ranked country, is stable, has excellent universities, first-rate infrastructure, low taxes, and flexible labor laws, and leads in knowledge and technology outputs such as international patent applications.

- The #2-ranking UK remains highly attractive for foreign investors and is strong in university and industry research collaborations. Sweden, #3, is notable for its digital valley, Kista, and innovation clusters Lund and Uppsala. Remaining positions in the top 10 go, in descending order, to the Netherlands, U.S., Finland, Singapore, Ireland, Luxembourg, and Denmark.

- **The divide is closing:** There are already a number of low- and middle-income economies such as China, Malaysia, Vietnam, India, Jordan, Kenya, and Uganda that manage to outperform their peers when it comes to innovation capabilities. And this is not because their citizens have more ideas. These countries are making concerted efforts to improve their business environment by fostering collaboration between universities, research institutions, corporations, and small and medium-sized businesses, encouraging joint ventures and strategic alliances/collaborations, and attracting FDI (Foreign Direct Investment) inflows.

- **Quality, not quantity counts:** A number of countries were able to increase their spend in education, had more patent applications than in the past, and published more scientific or technical articles. However, the “more” did not result in an improvement of their overall innovation rating. Quality—as measured by the reach of scholarly articles and international dimension of patent applications—is crucial.

“**Institutions and policies matter:** It’s a long way from a “good idea” to a commercially successful initiative that creates jobs, has a positive impact on local supply chains, and opens up new markets locally and abroad. Far-reaching innovation needs support from policies—tax regulations that support start-ups, ventures, and venture funds or enabling focused allocation of entrepreneurs in hubs, educational support, and capital all unlock potential, as we are seeing in several European hubs, including Berlin and London. And I don’t just mean regulations and laws, but also a mindset among politicians and ministers that emphasizes the importance of innovation: it needs to become part of a country’s DNA if it is to encourage entrepreneurs and citizens.

What the ranking also shows is that there is no shortage of good ideas in any geography, and that digitization, with its opportunities for crowdsourcing, open innovation, and customer-driven innovation across borders, will make the pool of ideas even broader and deeper. The challenge lies in creating the right policies at the right speed to identify, manage, and develop the right ideas and help them transform into growth engines for their countries.”

Kai Engel, Partner and MD Germany, AT Kearney

Turkey

Key indicators

Population (millions)	75.8
GDP (US$ billions)	806.1
GDP per capita, PPP$	15,767.3
Income group	Upper-middle income
Region	Northern Africa and Western Asia

		Score 0–100 or value (hard data)	Rank	
Global Innovation Index (out of 141)		**37.8**	**58**	
Innovation Output Sub-Index		33.9	46	
Innovation Input Sub-Index		41.7	71	
Innovation Efficiency Ratio		0.8	23	●
Global Innovation Index 2014 (out of 143)		38.2	54	
1	**Institutions**	**55.8**	**84**	
1.1	Political environment	43.0	88	
1.1.1	Political stability*	34.6	125	○
1.1.2	Government effectiveness*	51.3	50	
1.2	Regulatory environment	55.7	101	
1.2.1	Regulatory quality*	59.1	55	
1.2.2	Rule of law*	49.8	59	
1.2.3	Cost of redundancy dismissal, salary weeks	29.8	126	○
1.3	Business environment	68.9	67	
1.3.1	Ease of starting a business*	86.9	67	
1.3.2	Ease of resolving insolvency*	40.0	101	
1.3.3	Ease of paying taxes*	79.8	47	
2	**Human capital & research**	**35.9**	**50**	
2.1	Education	47.7	58	
2.1.1	Expenditure on education, % GDP[a]	2.9	111	○
2.1.2	Gov't expenditure/pupil, secondary, % GDP/cap	n/a	n/a	
2.1.3	School life expectancy, years	14.5	49	
2.1.4	PISA scales in reading, maths, & science	462.3	40	
2.1.5	Pupil-teacher ratio, secondary	17.9	78	
2.2	Tertiary education	36.2	57	
2.2.1	Tertiary enrolment, % gross	69.4	26	●
2.2.2	Graduates in science & engineering, %	20.9	49	
2.2.3	Tertiary inbound mobility, %	0.9	85	
2.3	Research & development (R&D)	23.7	40	
2.3.1	Researchers, FTE/mn pop.	1188.7	45	
2.3.2	Gross expenditure on R&D, % GDP	0.9	37	
2.3.3	QS university ranking, average score top 3*	34.5	39	
3	**Infrastructure**	**41.0**	**63**	
3.1	Information & communication technologies (ICTs)	48.9	63	
3.1.1	ICT access*	58.3	67	
3.1.2	ICT use*	32.4	64	
3.1.3	Government's online service*	55.9	53	
3.1.4	E-participation*	49.0	64	
3.2	General infrastructure	33.9	59	
3.2.1	Electricity output, kWh/cap	3179.4	59	
3.2.2	Logistics performance*	68.3	29	●
3.2.3	Gross capital formation, % GDP	19.9	85	
3.3	Ecological sustainability	40.1	57	
3.3.1	GDP/unit of energy use, 2005 PPP$/kg oil eq	9.1	38	
3.3.2	Environmental performance*	54.9	60	
3.3.3	ISO 14001 environmental certificates/bn PPP$ GDP	1.2	57	
4.2	Investment	39.7	51	
4.2.1	Ease of protecting investors*	69.2	13	●
4.2.2	Market capitalization, % GDP	39.1	50	
4.2.3	Total value of stocks traded, % GDP	44.2	18	●
4.2.4	Venture capital deals/tr PPP$ GDP	0.0	69	○
4.3	Trade & competition	86.4	18	●
4.3.1	Applied tariff rate, weighted mean, %[a]	2.7	55	
4.3.2	Intensity of local competition†	82.2	9	●
5	**Business sophistication**	**26.3**	**117**	
5.1	Knowledge workers	32.6	85	
5.1.1	Knowledge-intensive employment, %	19.2	76	
5.1.2	Firms offering formal training, % firms	28.4	67	
5.1.3	GERD performed by business, % of GDP	0.5	34	
5.1.4	GERD financed by business, %	48.9	21	●
5.1.5	Females employed w/advanced degrees, % total	7.4	71	
5.2	Innovation linkages	23.2	110	
5.2.1	University/industry research collaboration†	44.8	59	
5.2.2	State of cluster development†	54.7	34	
5.2.3	GERD financed by abroad, %	0.8	91	○
5.2.4	JV–strategic alliance deals/tr PPP$ GDP	0.0	81	○
5.2.5	Patent families 3+ offices/bn PPP$ GDP	0.0	81	
5.3	Knowledge absorption	22.9	127	○
5.3.1	Royalty & license fees payments, % total trade	0.3	70	
5.3.2	High-tech imports less re-imports, % total trade	8.1	53	
5.3.3	Comm., computer & info. services imp., % total trade	0.1	120	○
5.3.4	FDI net inflows, % GDP	1.6	95	
6	**Knowledge & technology outputs**	**27.2**	**60**	
6.1	Knowledge creation	26.0	36	
6.1.1	Domestic resident patent app./bn PPP$ GDP	3.0	31	
6.1.2	PCT resident patent app./bn PPP$ GDP	0.5	38	
6.1.3	Domestic res utility model app./bn PPP$ GDP	2.4	13	●
6.1.4	Scientific & technical articles/bn PPP$ GDP	17.2	44	
6.1.5	Citable documents H index	237.0	36	
6.2	Knowledge impact	35.3	83	
6.2.1	Growth rate of PPP$ GDP/worker, %	-0.6	106	○
6.2.2	New businesses/th pop. 15–64	0.8	78	
6.2.3	Computer software spending, % GDP	0.7	8	●
6.2.4	ISO 9001 quality certificates/bn PPP$ GDP	5.0	63	
6.2.5	High- & medium-high-tech manufactures, %[a]	28.2	42	
6.3	Knowledge diffusion	20.4	108	
6.3.1	Royalty & license fees receipts, % total trade	n/a	n/a	
6.3.2	High-tech exports less re-exports, % total trade	1.1	63	
6.3.3	Comm., computer & info. services exp., % total trade	0.2	115	○
6.3.4	FDI net outflows, % GDP	0.4	70	
7	**Creative outputs**	**40.6**	**37**	
7.1	Intangible assets	57.7	17	●
7.1.1	Domestic res trademark app./bn PPP$ GDP	130.5	5	●
7.1.2	Madrid trademark app. holders/bn PPP$ GDP	0.9	34	
7.1.3	ICTs & business model creation†	62.1	42	
7.1.4	ICTs & organizational model creation†	56.2	56	
7.2	Creative goods & services	24.1	52	
7.2.1	Cultural & creative services exports, % total trade	0.5	35	
7.2.2	National feature films/mn pop. 15–69	1.6	63	
7.2.3	Global ent. & media output/th pop. 15–69	5.9	42	
7.2.4	Printing & publishing output manufactures, %[a]	1.1	68	

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4	**Market sophistication**	**49.5**	**58**	
4.1	Credit	22.4	104	
4.1.1	Ease of getting credit*	45.0	80	
4.1.2	Domestic credit to private sector, % GDP	70.2	48	
4.1.3	Microfinance gross loans, % GDP	0.0	87	○
5.1.3	GERD performed by business, % of GDP	0.3	54	
5.1.4	GERD financed by business, %	48.9	21	●
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7.2.4	Printing & publishing output manufactures, %[a]	1.1	68	
7.2.5	Creative goods exports, % total trade	2.6	17	●
7.3	Online creativity	23.0	59	
7.3.1	Generic top-level domains (TLDs)/th pop. 15–69	14.7	36	
7.3.2	Country-code TLDs/th pop. 15–69	2.9	64	
7.3.3	Wikipedia edits/pop. 15–69	793.9	84	
7.3.4	Video uploads on YouTube/pop. 15–69	68.6	58	

NOTES: ● indicates a strength; ○ a weakness; * an index; † a survey question.
[a] indicates that the country's data are older than the base year; see Appendix II for details, including the year of the data.

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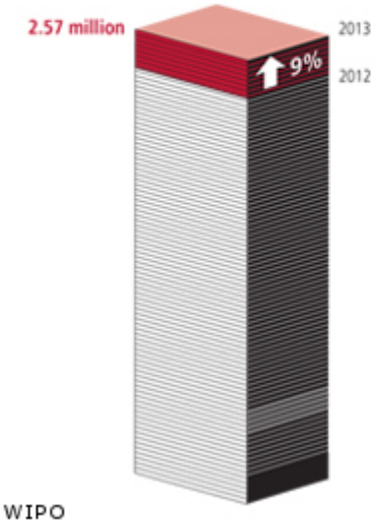
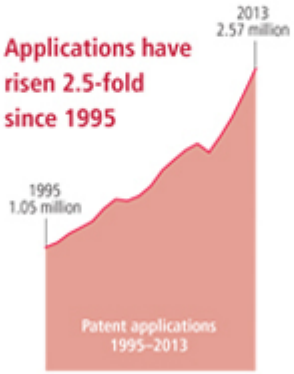
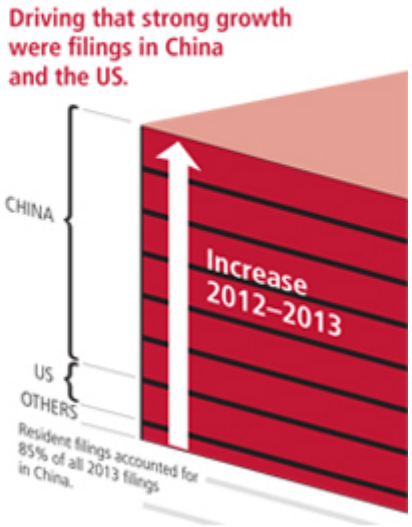
International IP Statistics and Trends

Patent applications surpass 2.5 million in 2013







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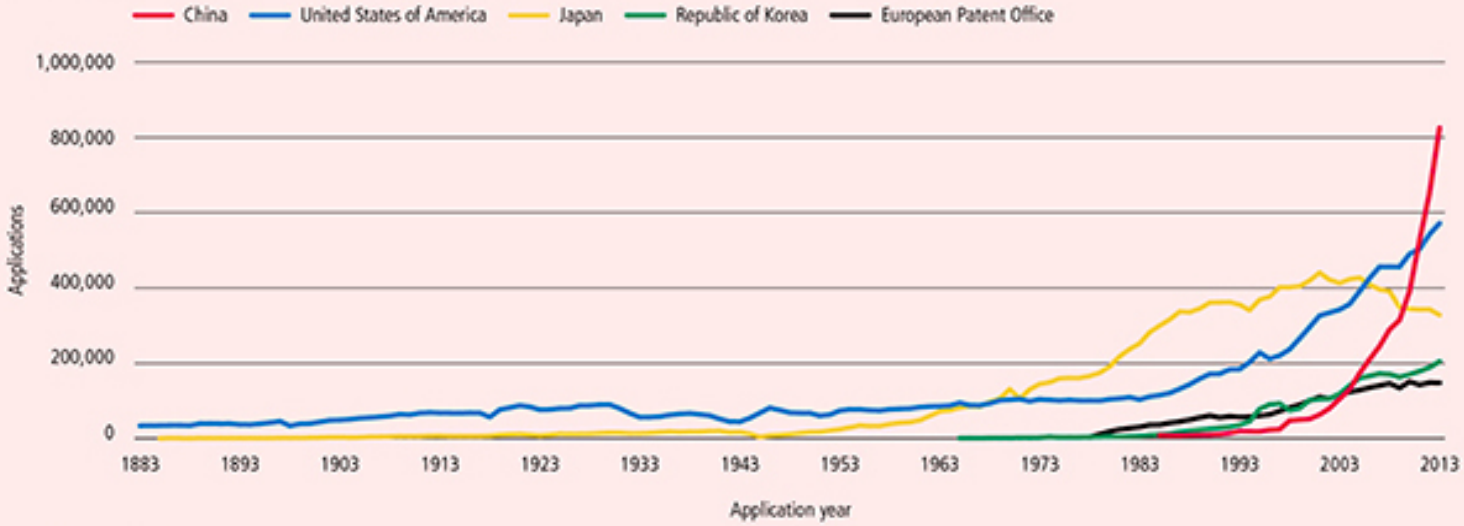
Trend in patent applications for the top five offices



Source: Standard figure A7.

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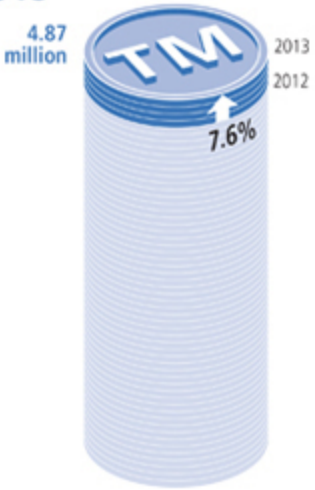
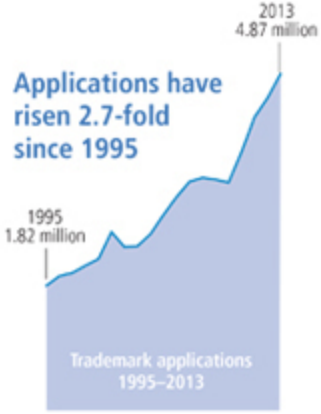
Trademark applications approach 5 million in 2013



Asia has significantly increased its world share

Applications have risen 2.7-fold since 1995



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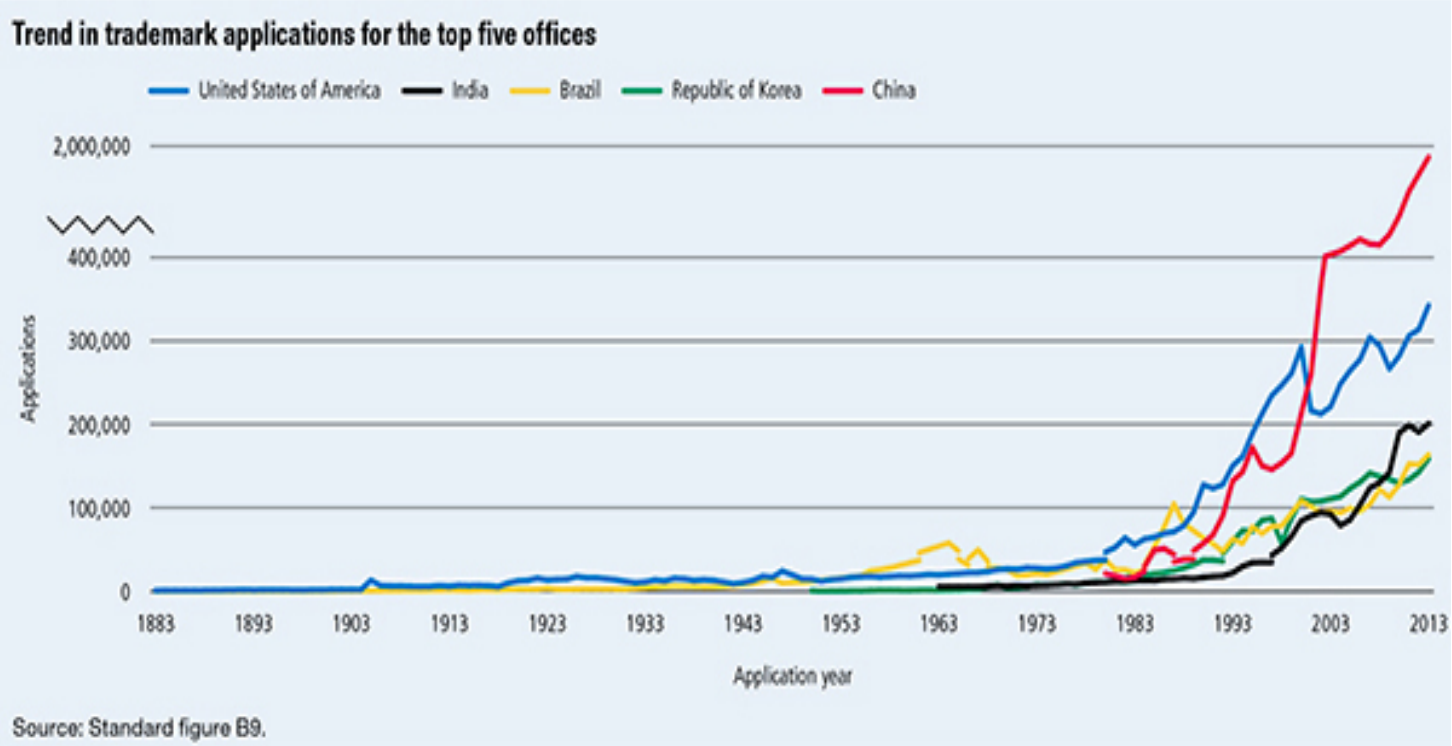

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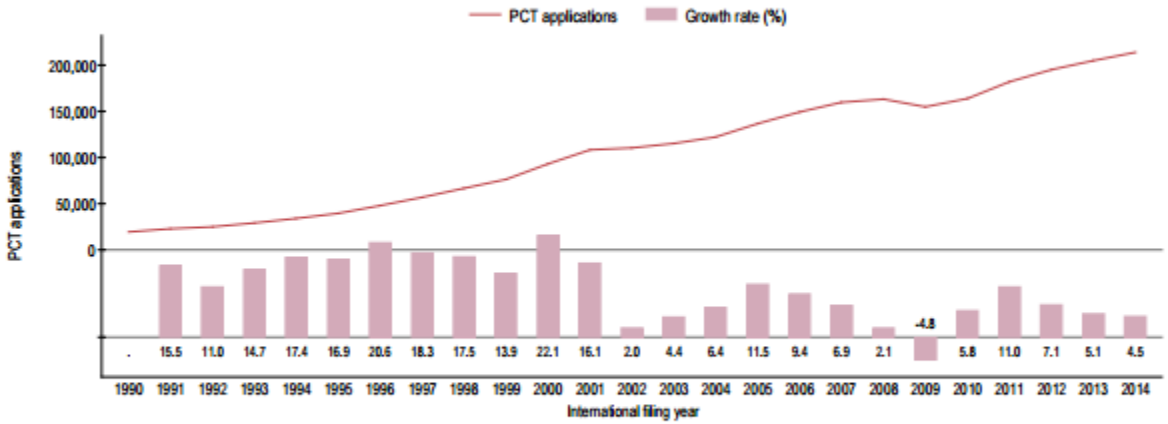
PCT Applications

Figure A.1.1: Trend in PCT applications



Note: Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

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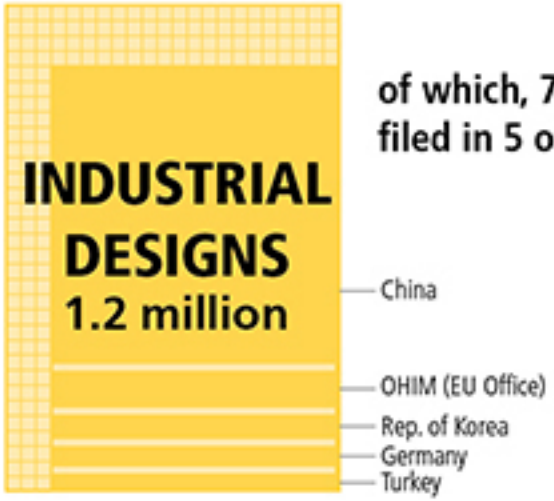
INDUSTRIAL DESIGN FILING ACTIVITY 2013



of which, 75% were filed in 5 offices

Industrial design offices with the highest **numbers of designs in applications**

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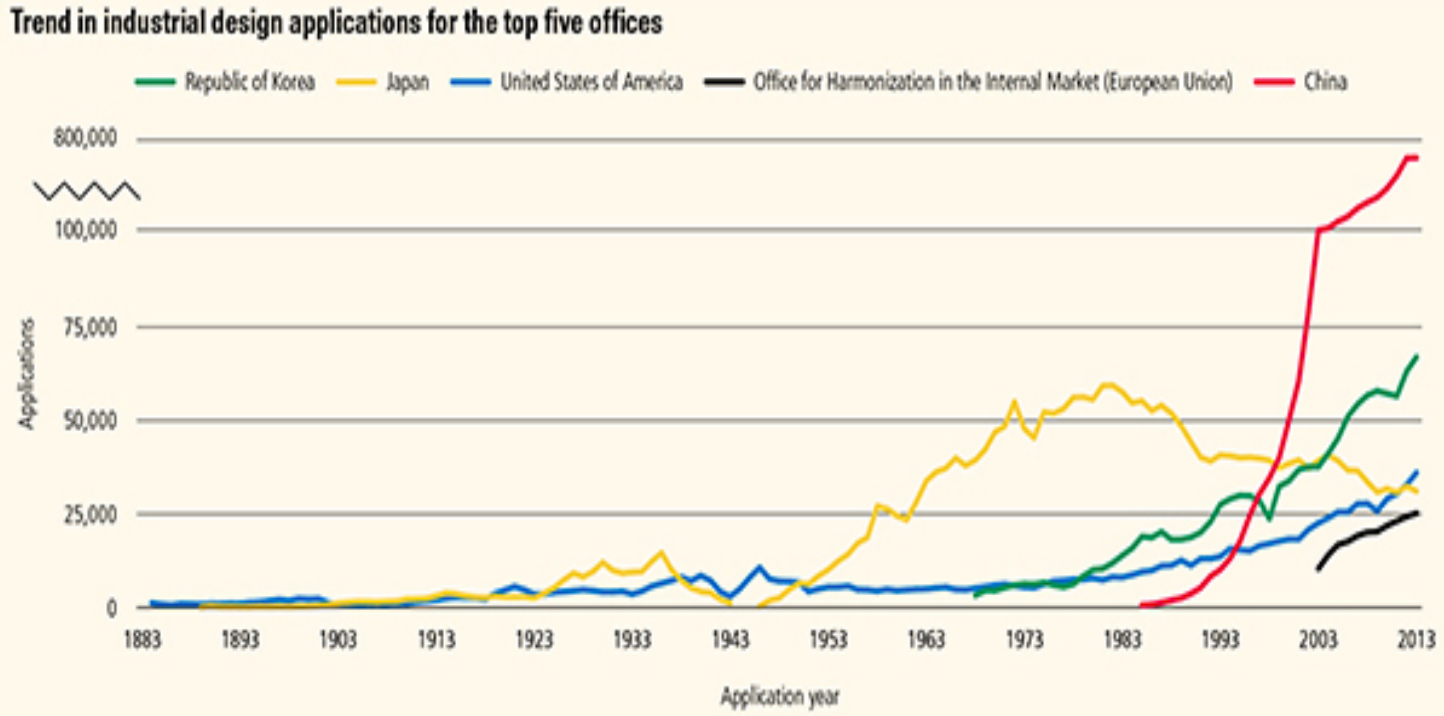

Source: Standard figure C9.

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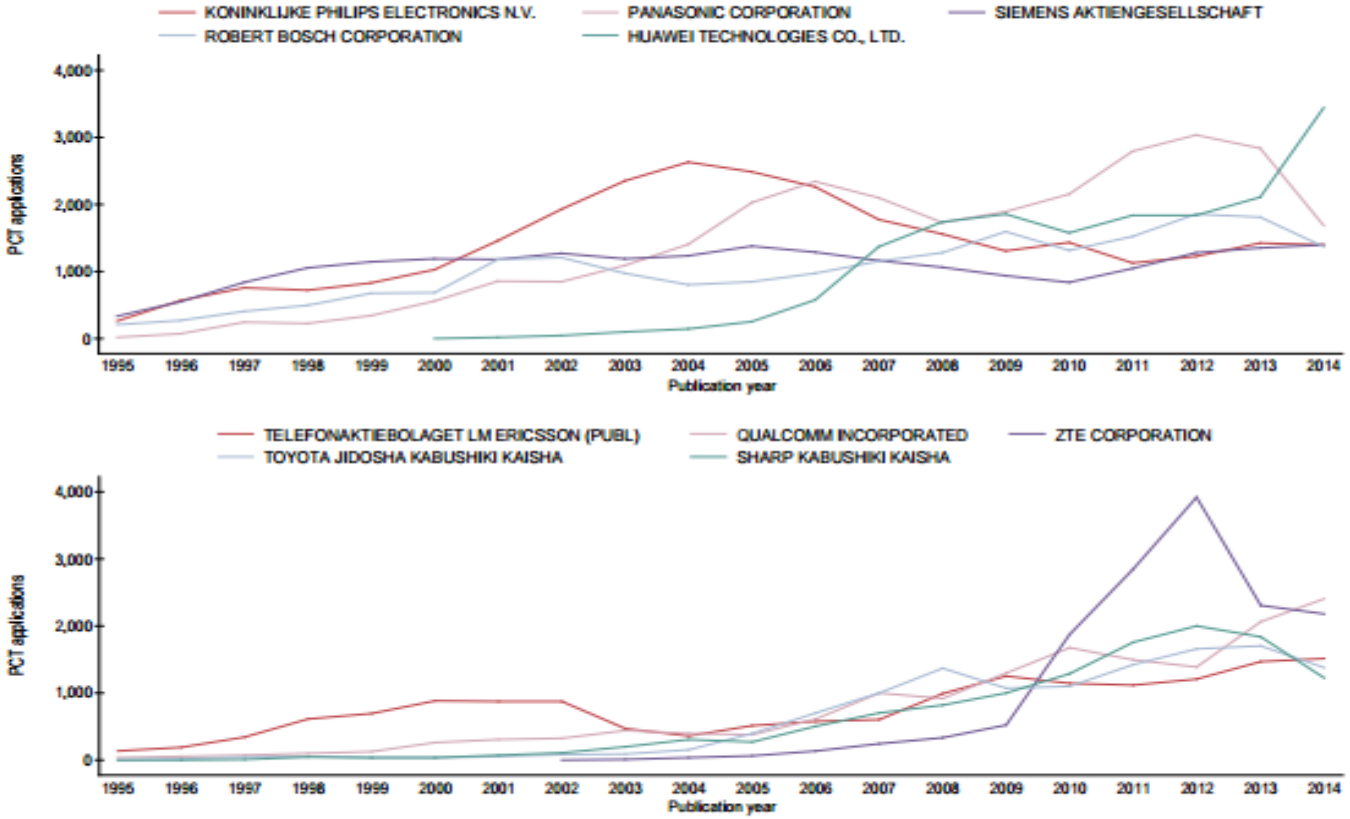
Figure 1: Trend in PCT applications for the top 10 applicants



Source: WIPO Statistics Database, March 2015

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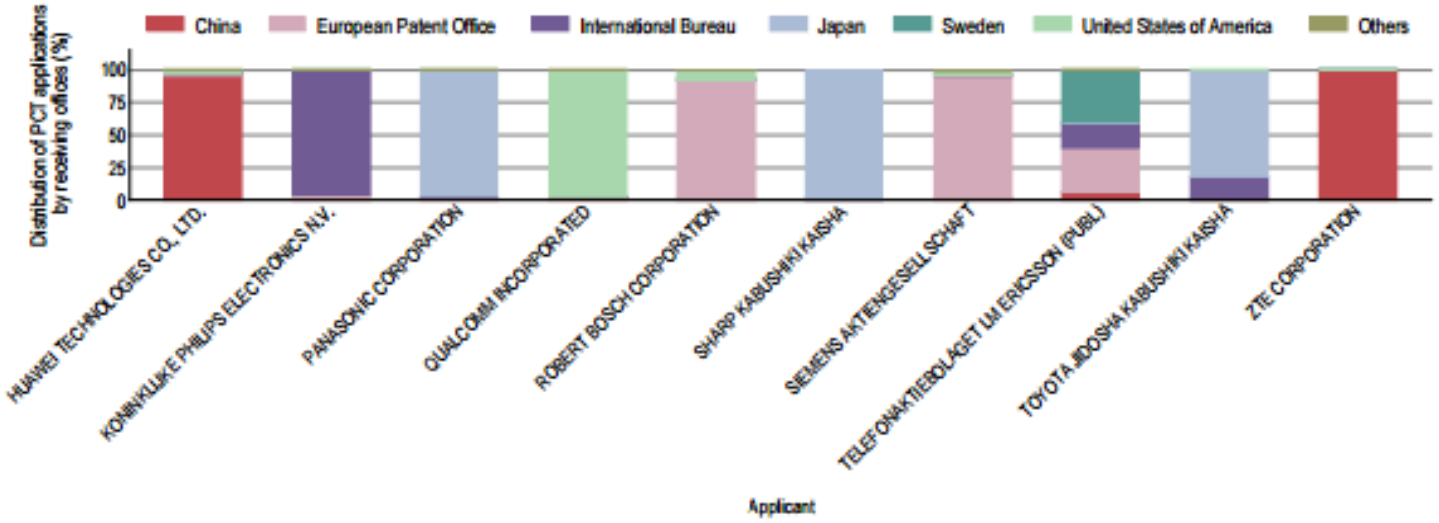
PCT Statistics: 2013

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



Source: WIPO Statistics Database, March 2015

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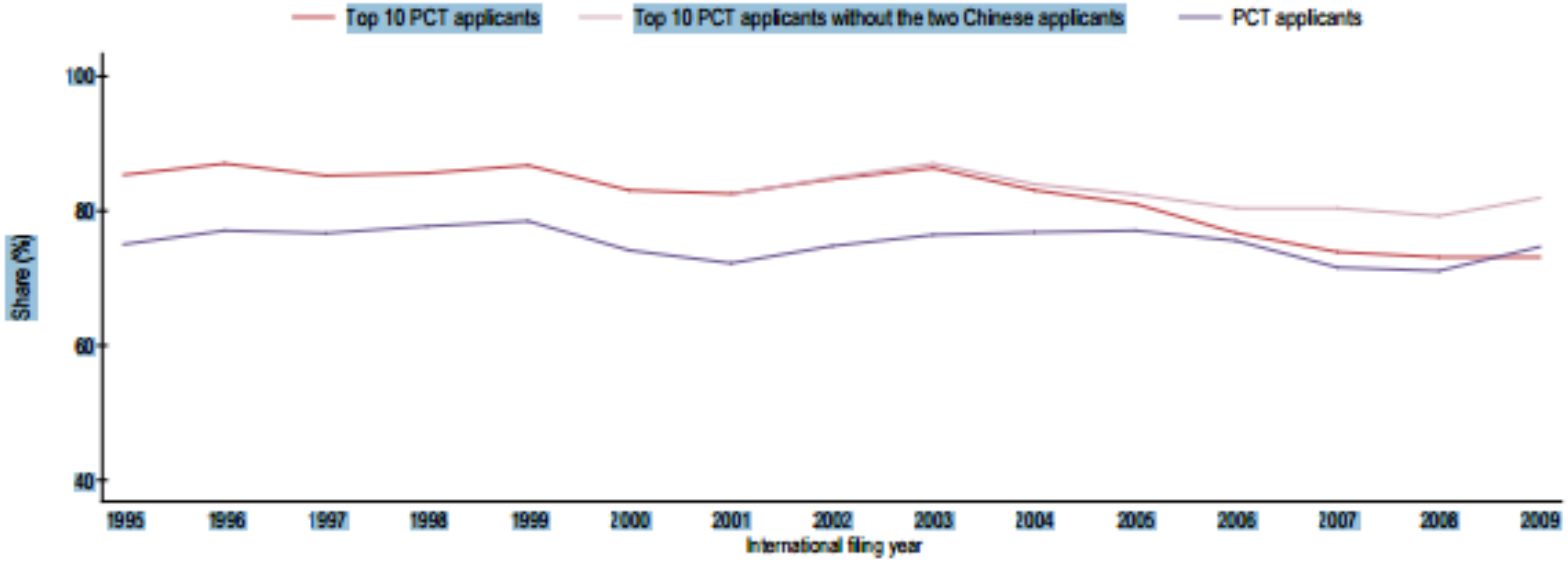
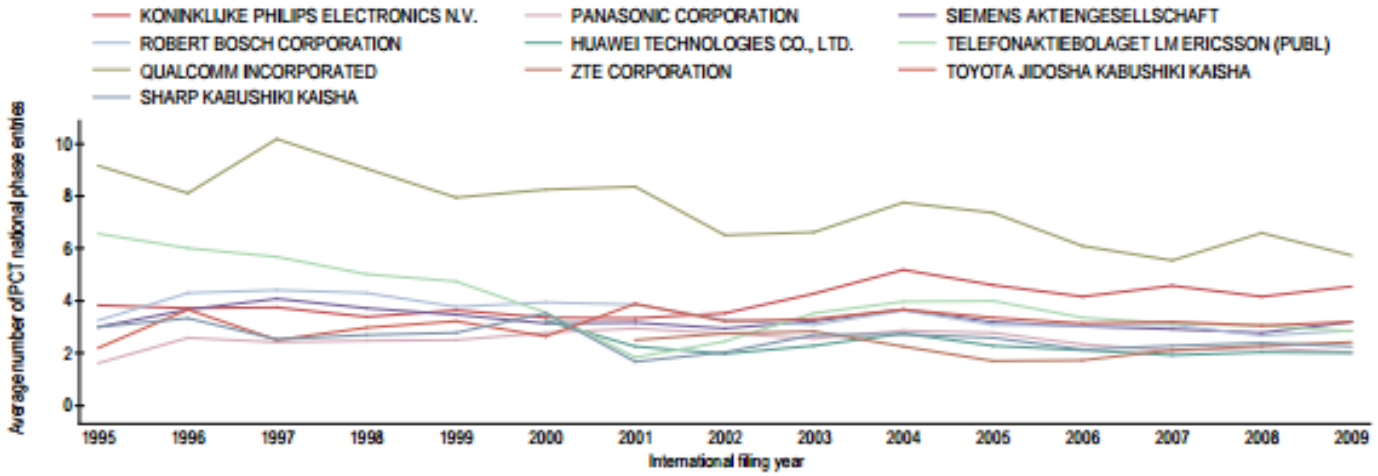
Figure 4: Share of PCT applications converted into PCT national phase entries



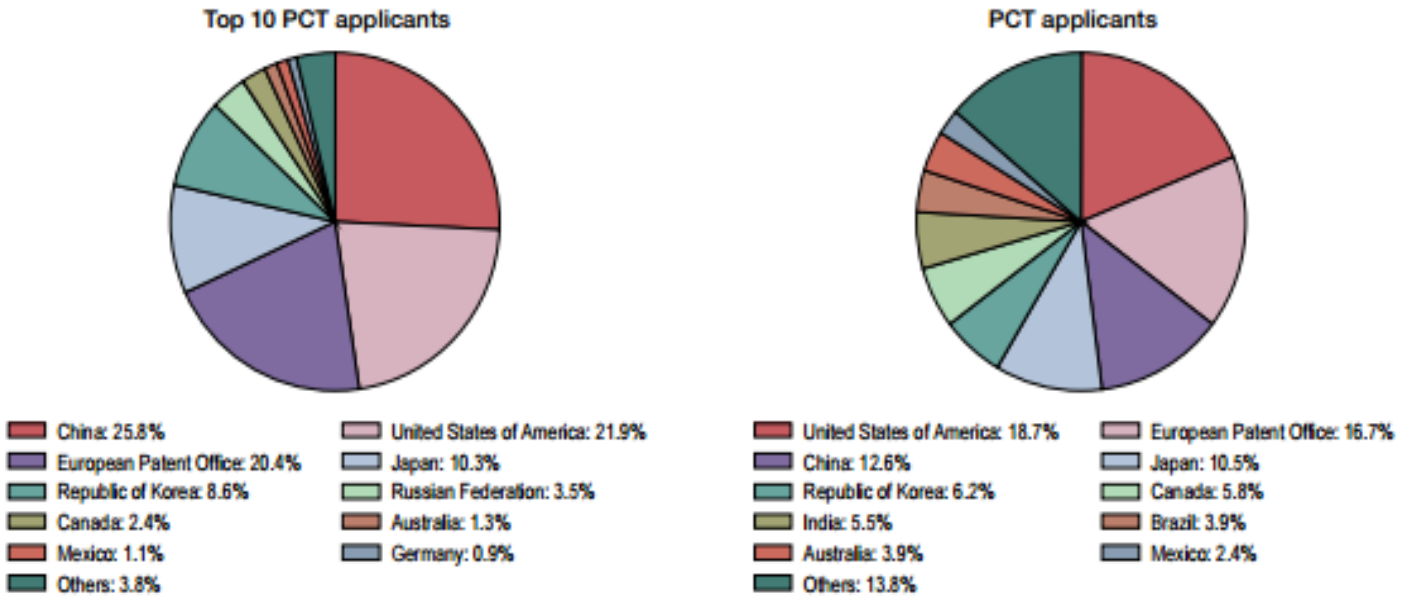
Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

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

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



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

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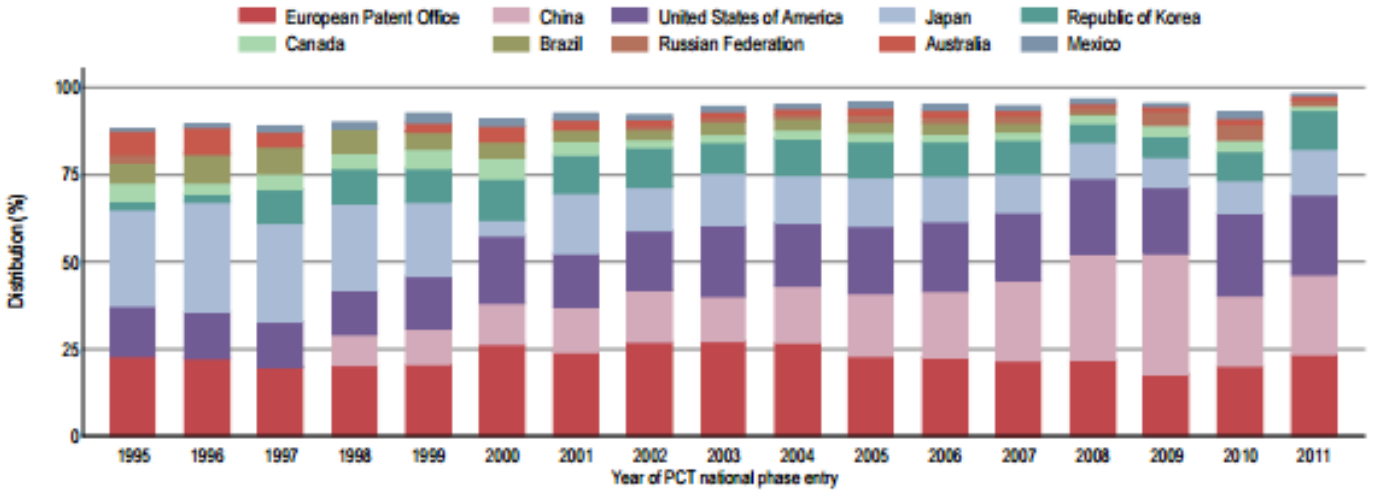
Figure 6: Distribution of the top 10 offices of destination for the top 10 applicants

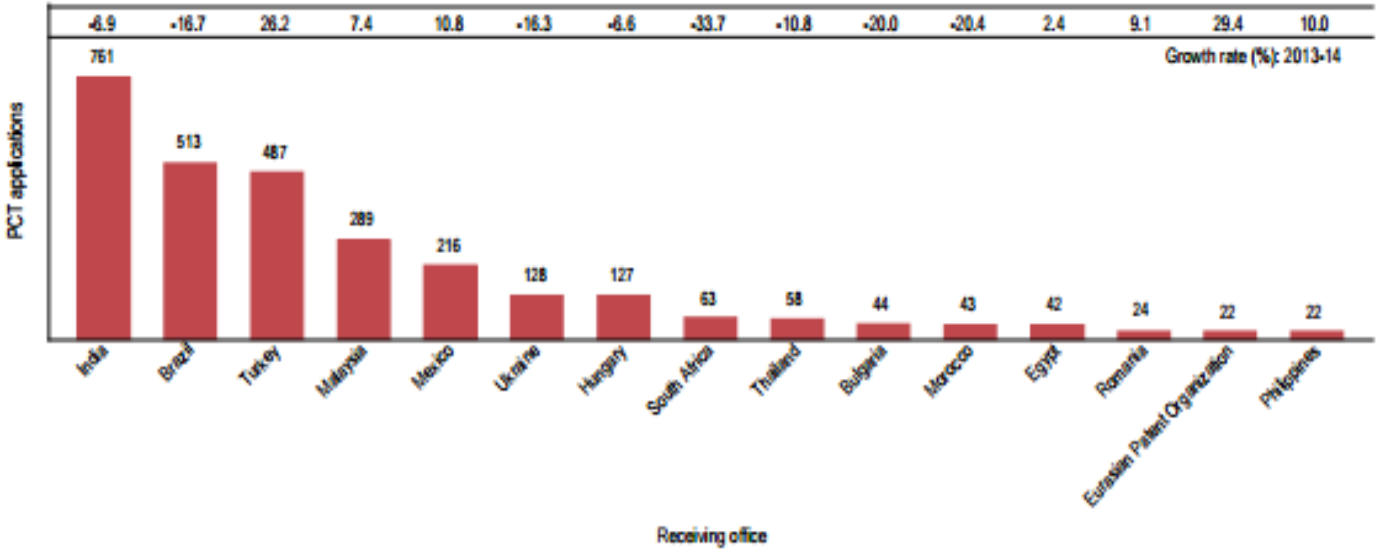


Source: WIPO Statistics Database and EPO PATSTAT database, March 2015

New PCT Service - Indication of Availability for License

- PCT applicants can indicate in relation to their published applications that the invention is available for license
  - How? Applicants may submit a “licensing request” (see PCT Form PCT/IB/382) directly to the IB
  - When? At the time of filing or within 30 months from the priority date
  - Free of charge
  - Applicants can file multiple licensing requests or update previously submitted ones (within 30 months from the priority date) and such requests may be revoked by the applicant at any time, that is, also after 30 months from the priority date
- Submitted licensing indications made publicly available after international publication of the application on PATENTSCOPE under “*Bibliographic data*” tab with a link to the submitted licensing request itself
- International applications containing such licensing indication requests can be searched in PATENTSCOPE
- Most use thus far from universities/research institutions

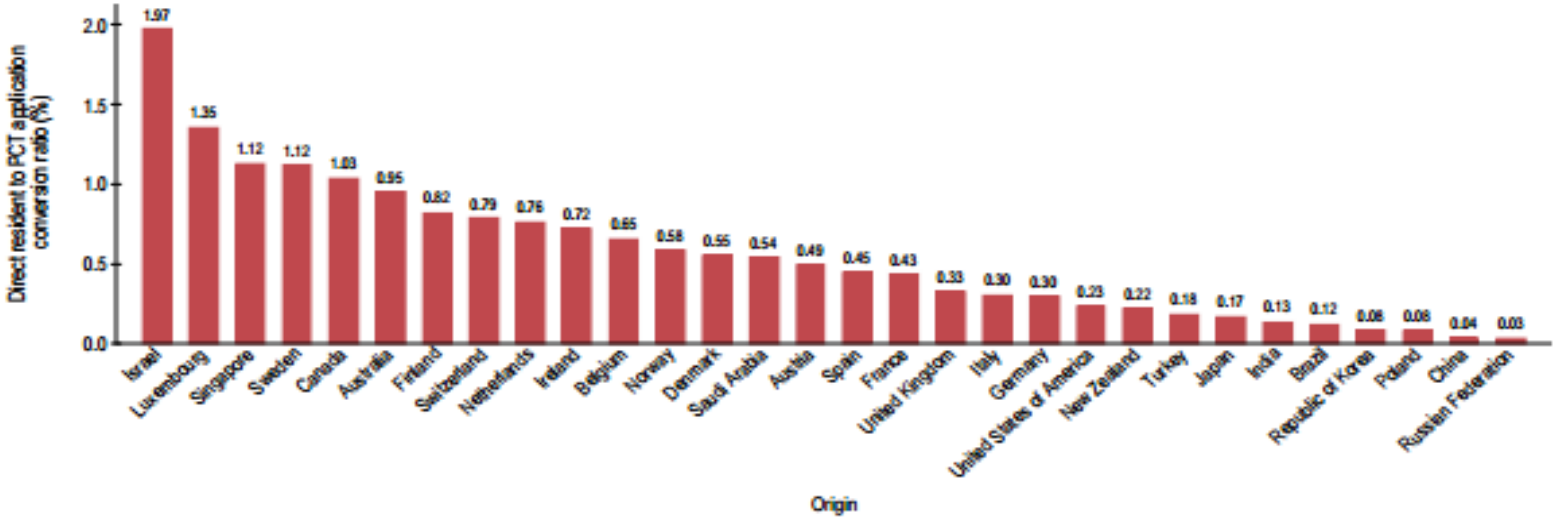
Figure A.1.2.2: PCT applications for selected offices of middle-income countries, 2014



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.

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

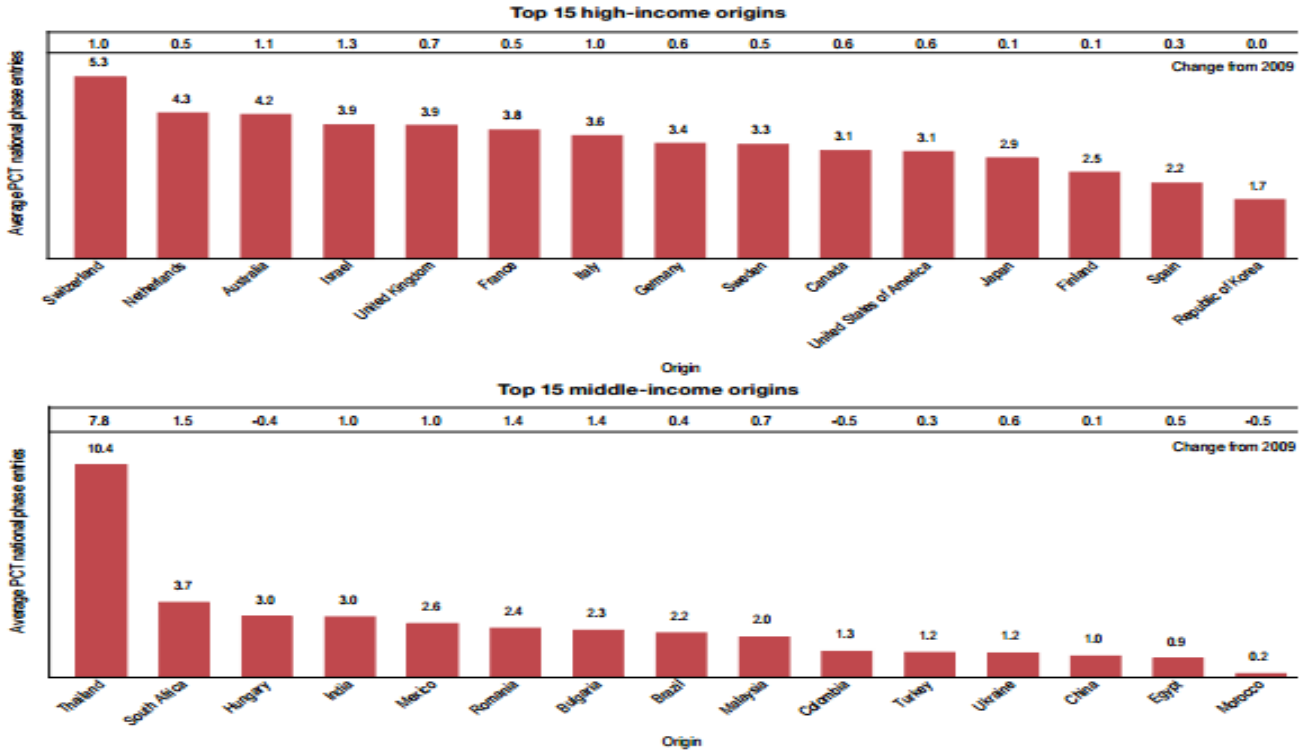


Note: The ratio is defined for the top 30 origins in terms of PCT applications filed in 2014, divided by resident patent applications (including regional applications and excluding PCT national phase entries) filed in 2013. Data for 2014 are WIPO estimates.

Source: WIPO Statistics Database, March 2015.

11 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.

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.

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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 TECHNOLGY	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

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.

The Role of the TTOs

Role of TTOs

- To assist university / R&D institution to implement its mandate and respond to expectations of society;
- To take the technology out of the shelves
- To find an acceptable balance between:
  - IP growing importance and need for vigilant IPR management – including litigation;
  - New business models – «free IP»;
  - Funding decrease for R&D projects;
  - «Publish or perish»;
  - Social responsability – education of new talents and creation of jobs to retain and integrate them;
  - Attracting talents from outside;
  - Competitiveness and reputation of university.

Role of TTOs

- Is there a model of policy that can be used as a “best practice” to support TTOs in this complex role?
- Local or global / regional policy?
- There is no model that fits all;
- Policy / strategy has to be adapted to specific culture, development, context and situation on all levels – institutional, national, regional…
- Aligned with other innovation pillars (in particular market and business sophistication) - in order to create sustainable impact;
- With mesurable performance indicateurs;
- Monitored and evaluated;
- Flexible and adjustable to changing environment.

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Thank you !

Patricia Simao Sartorius

Innovation Structures Section

SMEs and Entrepreneurship Support Division

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