



**Asia-Pacific  
Economic Cooperation**

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**2016/SOM3/CSA/015**  
Agenda Item: Tour de Table

## **Major Facts and Events of Science and Technology in China (2015-2016)**

Purpose: Information  
Submitted by: China



**Fourth APEC Chief Science Advisors and  
Equivalents Meeting  
Lima, Peru  
18-19 August 2016**



4<sup>th</sup> Meeting of APEC Chief Science Advisors and Equivalents (CSAE), Lima, Peru, August 18-19, 2016  
Update from member economies on developments in science/policy interactions – tour de table

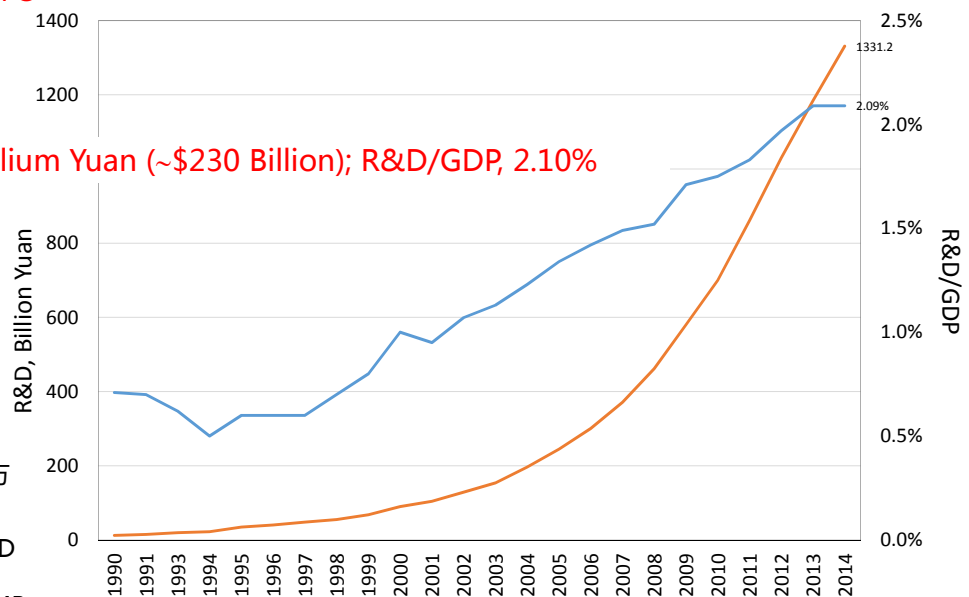
## Major Facts and Events of Science & Technology in China (2015-2016)

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### R&D expenditure

2015: R&D 1.4 Trillion Yuan (~\$230 Billion); R&D/GDP, 2.10%

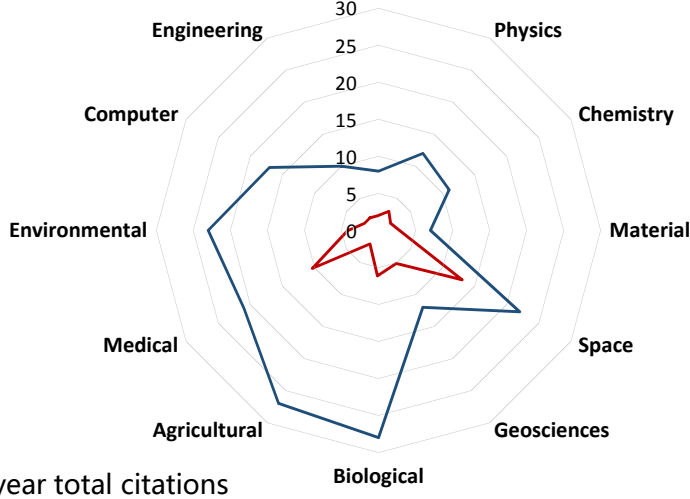
全时当量研发人员：371万  
人均R&D 38 万人民币  
Full time equivalent R&D  
personnel: 3.71 million  
R&D/capita: 385,000 RMB



ZXE, Adapted from the National Bureau of Statistics of PRC

### China's rankings in respective research fields by total paper citations

#### 中国自然科学各领域论文被引用总数国际排位比较 (20年变化)

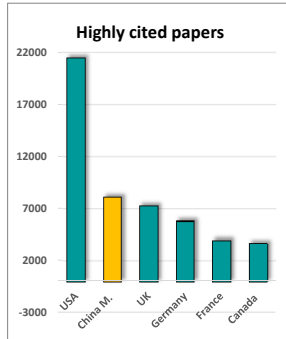
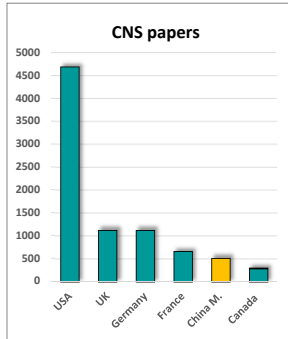
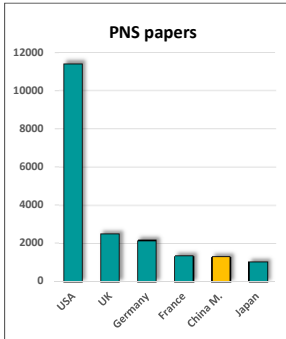
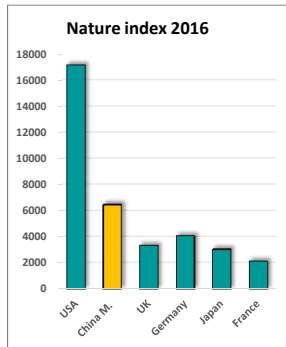
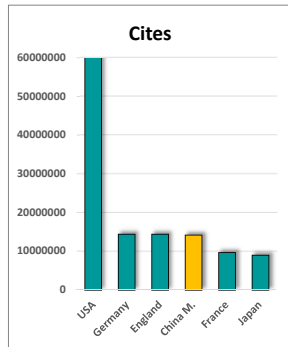
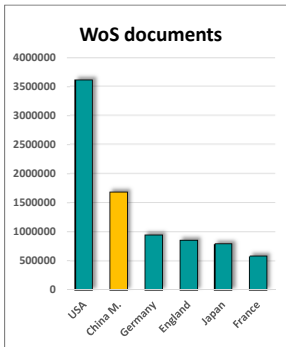


Research field	1994-2003	2003-2015
Math	8	2
Physics	12	3
Chemistry	11	2
Material Sci.	7	3
Space Sci.	22	13
Earth Sci.	12	5
Biological Sci.	28	6
Agri. Sci.	27	2
Med. Sci.	21	10
Environ. Sci.	23	4
Inform. Sci.	17	2
Eng. Sci.	10	2

10-year total citations

1994-2003 2003-2015

ZXE, Data source: Web of Science, Thomson Reuters



### Top-6 contributor economies in science papers (2015)

Mainland China has made a substantial gain in research quality and become one of the major contributors in science

Data sources:

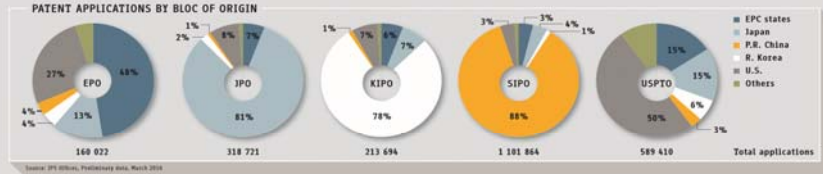
- Web of Science
- Nature Index

http://www.fiveipooffices.org/statistics/keyindicators2015.pdf

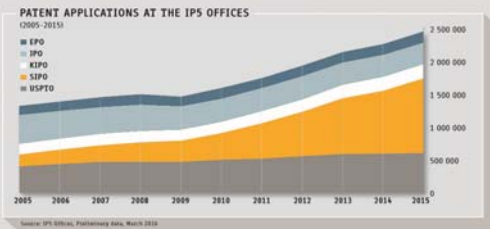
# KEY IP5 STATISTICAL INDICATORS 2015

All statistics herein are preliminary. The full IP5 Statistics Report 2015 will become available in the last quarter of 2016.

**2.4m**  
patent applications  
filed at the IP5 Offices in 2015



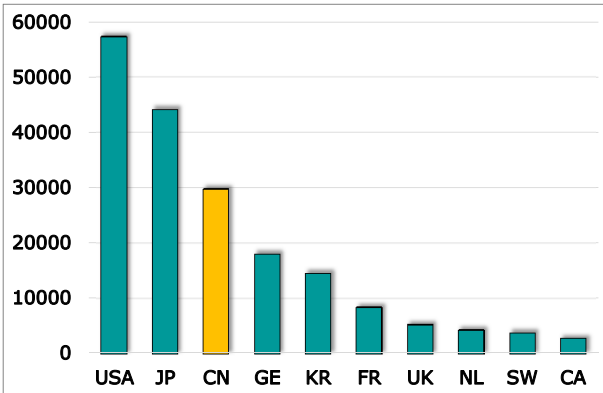
**+8.6%**  
Growth in patent applications



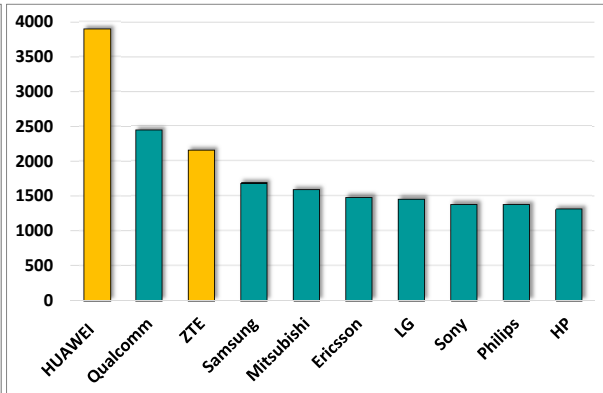
**APPROVED 1 000 000** patents  
granted by the IP5 Offices in 2015



## PCT patent applications (2015)

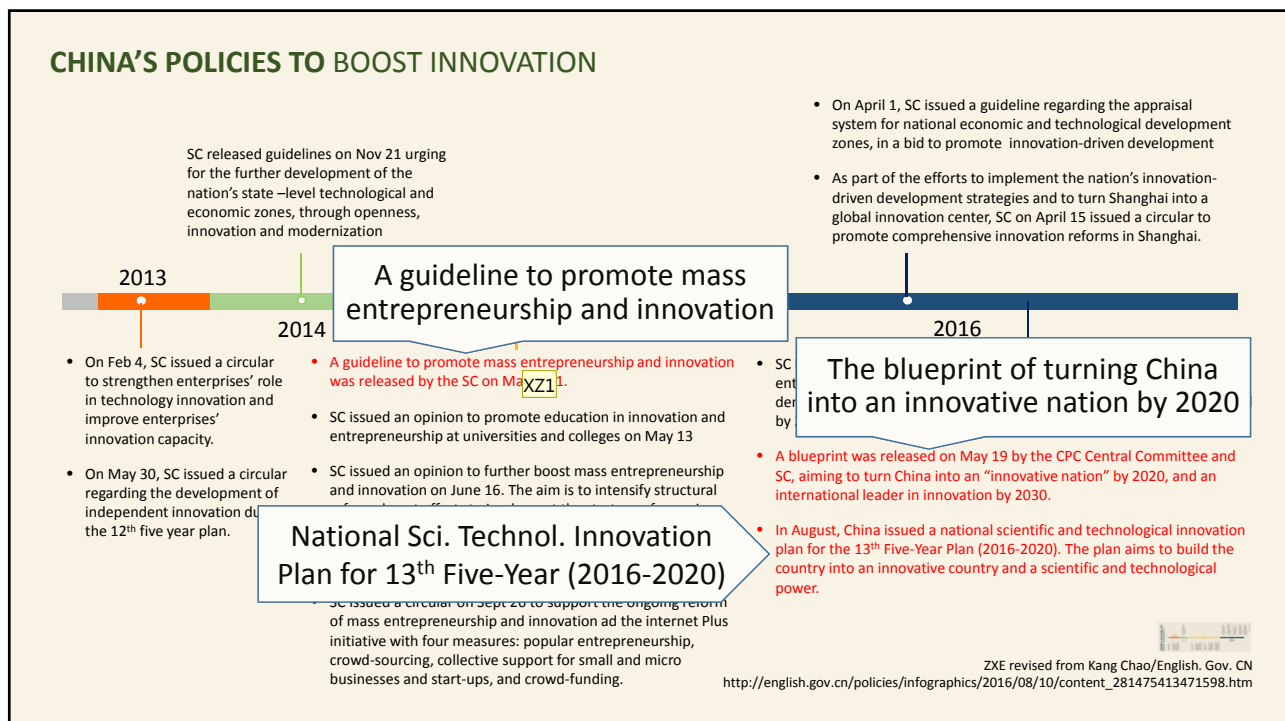
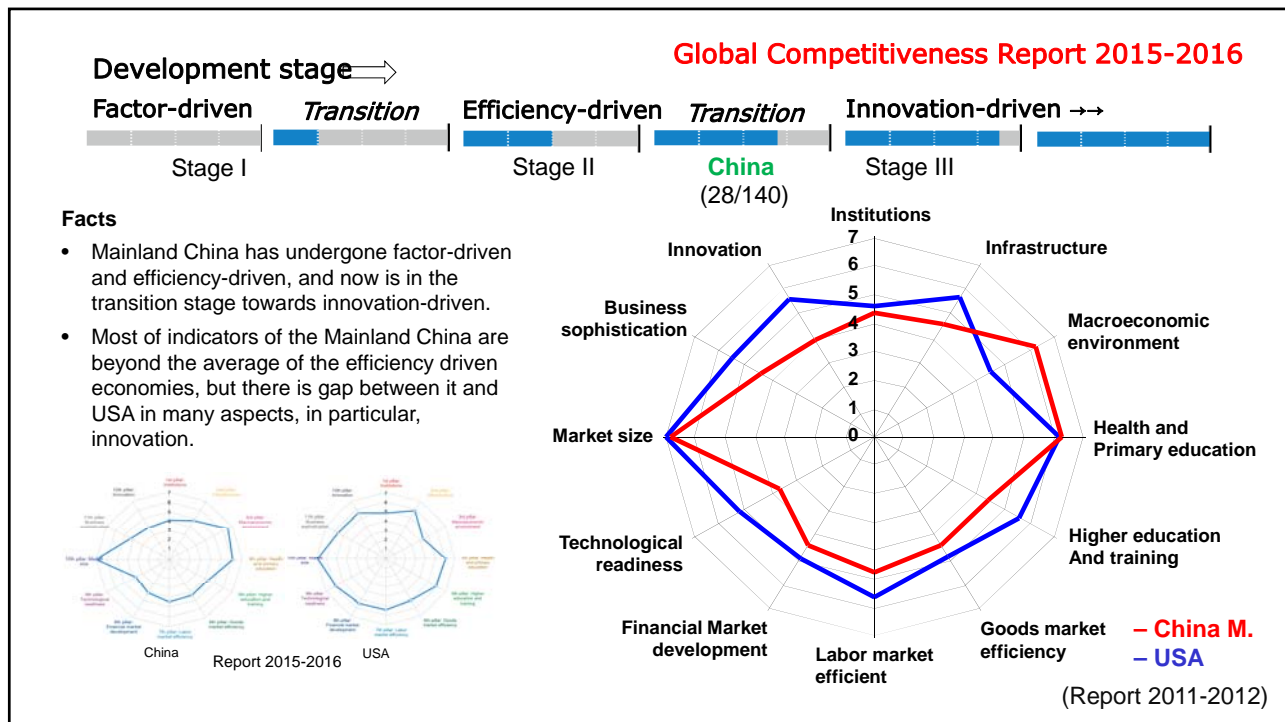


Top-10 economies in PCT patent application  
PCT专利申请排名前十经济体 (2015)



Top-10 enterprises in PCT patent application  
PCT专利申请前名企业





## Slide 8

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**XZ1** Xian-En Zhang, 18/08/2016

## Main tasks

中央政府门户网站 www.gov.cn 2016-07-20 19:10 [http://www.gov.cn/premier/2016-07/20/content\\_5093151.htm](http://www.gov.cn/premier/2016-07/20/content_5093151.htm)

**to enhance the ability of original innovation**, strengthen basic research and cutting-edge technologies research, integrate and optimize the allocation of resources, layout and build a number of mega infrastructure and national R&D bases; improve the scale and quality of innovative talents; strengthen regional and international cooperation, significantly raise the ranking of national innovation capability.

**to focus on the national strategies and improvement of peoples' livelihood**, start a new batch of major research projects in fields of quantum communication, precise medical and other key areas; strengthen development of industrial technology such as seed breeding, clean coal, the fifth generation mobile communication, intelligent robot and so on; carry out destructive technology innovation and promote the transformation and upgrading of traditional industries.

**to strengthen the leading role of enterprises in technological innovation and create efficient collaborative innovation ecological chain** by relying on "Mass entrepreneurship and innovation", improve the technological innovation service system; build a unified and open technology market to guide more resources together to the innovation.

**to accelerate the pace of reform of the system of science and technology, and fully mobilize the enthusiasm of scientific and technological personnel**, set up new policies for better management and use of research funding, technology transfer and intellectual property protection; strengthen science popularization and the construction of innovative culture to promote the formation of advocating innovative social atmosphere.

## Main indicators of the 13th Five-Year science and technology

Indicator	2015	2020
1 Ranking of national comprehensive innovation capability	18*	15
2 Contribution rate of science and technology progress to economy growth	55.3%	60%
3 R&D/GDP	2%	2.5%
4 R&D personnel of every 10,000 employees	48.5	60
5 High/new tech enterprises operating income (trillion yuan)	22.2	34
6 Proportion of the knowledge intensive service industry to GDP	15.6%	20%
7 Ratio of R&D expenditure of industrial enterprises to the main business income	0.9%	1.1%
8 Ranking of citation of science papers	4	2
9 PCT patent application volume	30,500	Double
10 Invention patent per million population	6.3	12
11 Technical contract turnover (billion yuan)	983.5	2,000
12 Percentage of citizens with scientific quality	6.2 %	10 %

\* Chinese Academy of Science & Technology for Development, National Innovation Index 2015 (国家创新指数报告2015)

[http://www.most.gov.cn/mostinfo/xinxifenlei/gjkjgh/201608/t20160810\\_127174.htm](http://www.most.gov.cn/mostinfo/xinxifenlei/gjkjgh/201608/t20160810_127174.htm)