



COAR Annual Meeting & General Assembly 2016

Open Access in China

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National Science Library, Chinese Academy of Sciences

April 13, 2016



COAR Annual Meeting & General Assembly 2016

Open Access in China

- **1. Needs for Open Science & Innovation**
- **2. Strong Efforts of Open Access**
- **3. Challenges to Move Forwards**

1. Needs for Open Science & Innovation

(1) Innovation-Driven Development Strategy

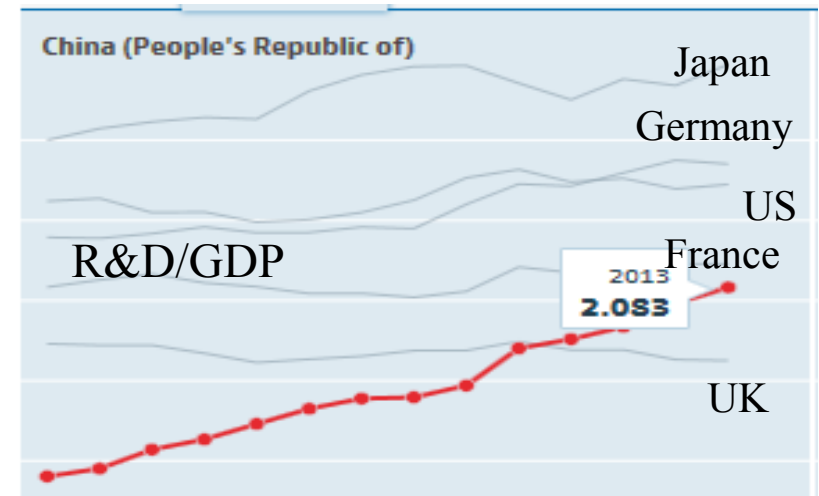
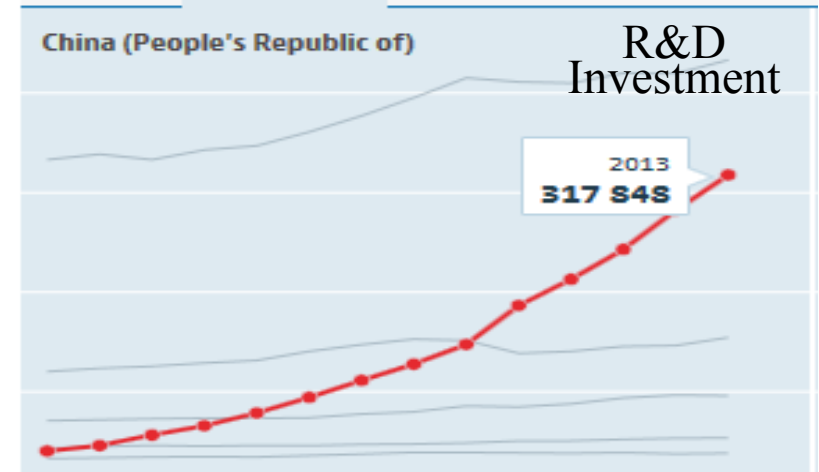
- CCP 18th Congress (2012):
 - To implement the Innovation-driven development strategy
 - To place scientific innovation as the key driver for social and economic development
- CCP Central Committee & State Council
 - *“Decisions to Deepen the Reform of Scientific Innovation Systems and to Expedite the Implementation of the Innovation-Driven Development Strategy” --2015.03.13*



1. Needs for Open Science & Innovation

(2) Striving for the world first class R&D

- **2013 R&D Investment**
 - 1184.6 Billion RMB
 - **15%** over 2012
 - 2.01% of GDP
 - 13.7% of the world R&D
- **Public R&D Investment**
 - 618.5 Billion RMB
 - **10.4%** over 2012
 - MoST Scientific Statistics
- **Forecast: R&D/GDP**
 - **2.2% in 2015**
 - 12th 5 Year Plan (-2015)
 - **2.5% in 2020**
 - National S&T Innovation
 - Conference 2012

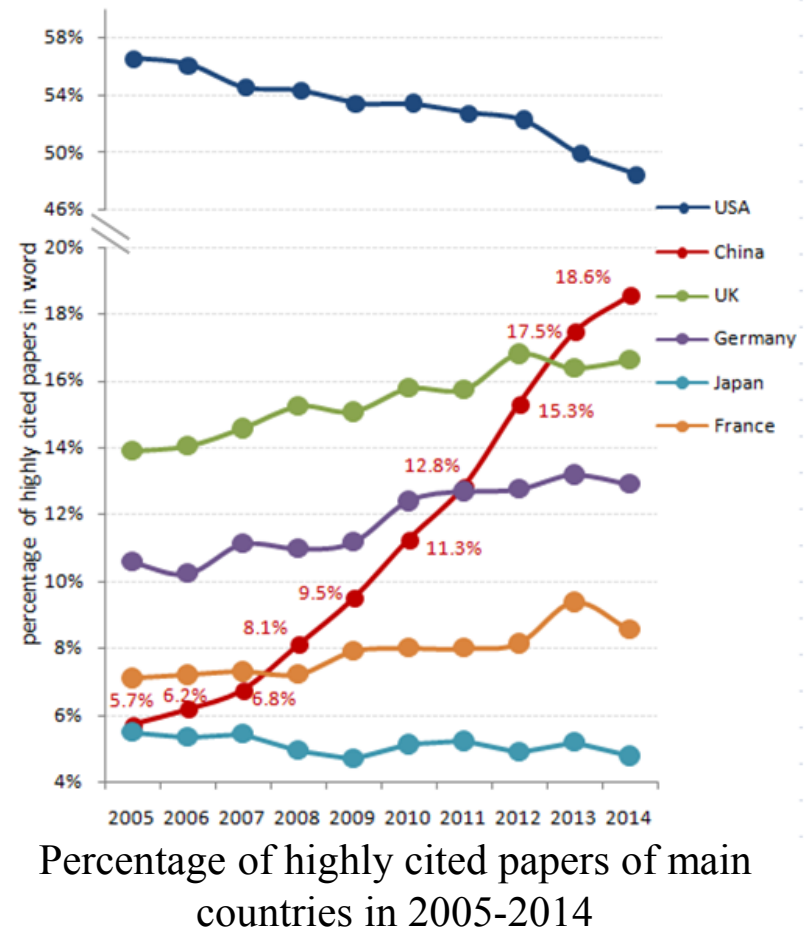
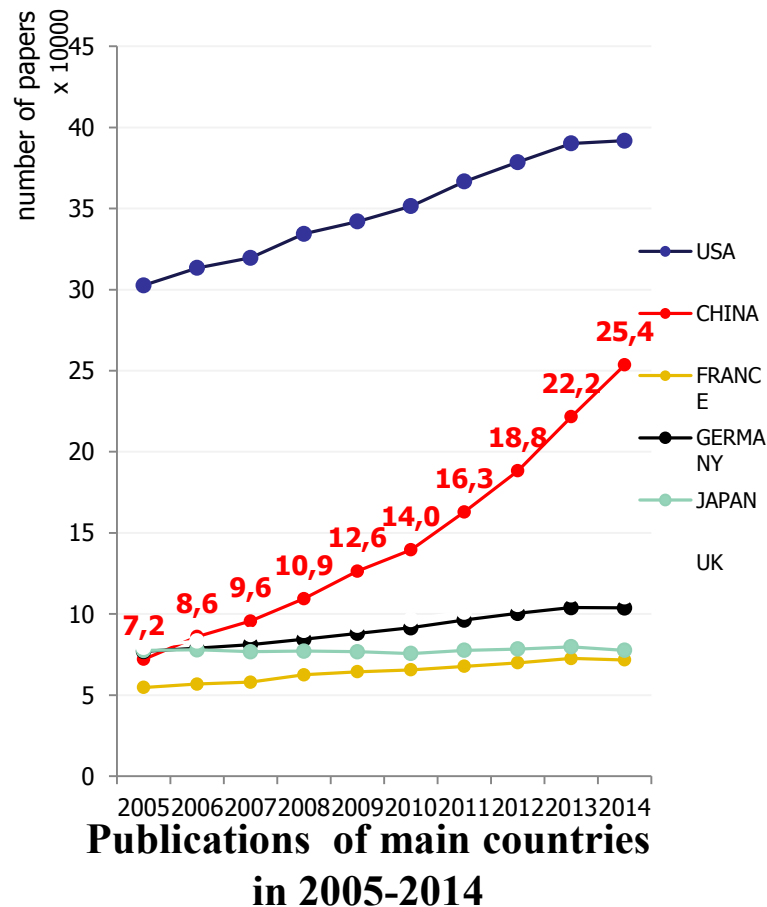


OECD (2015), Gross domestic spending on R&D

1. Needs for Open Science & Innovation

(2) Striving for the world first class R&D

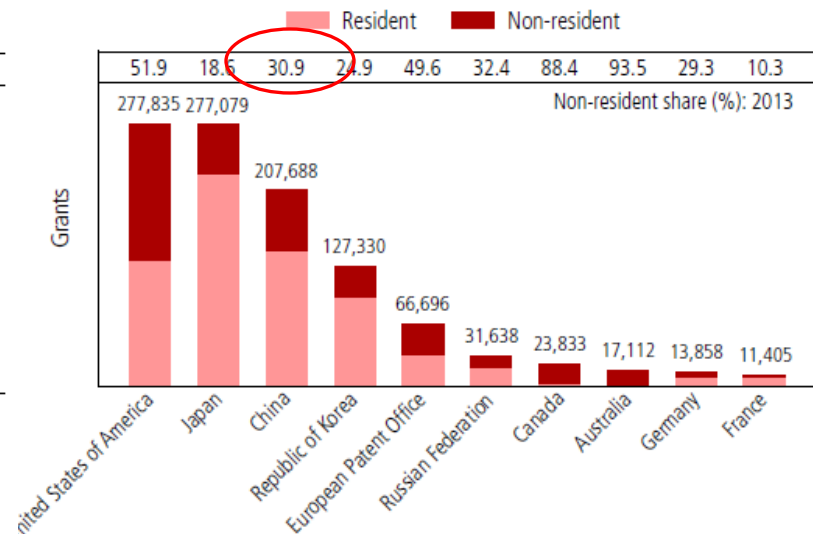
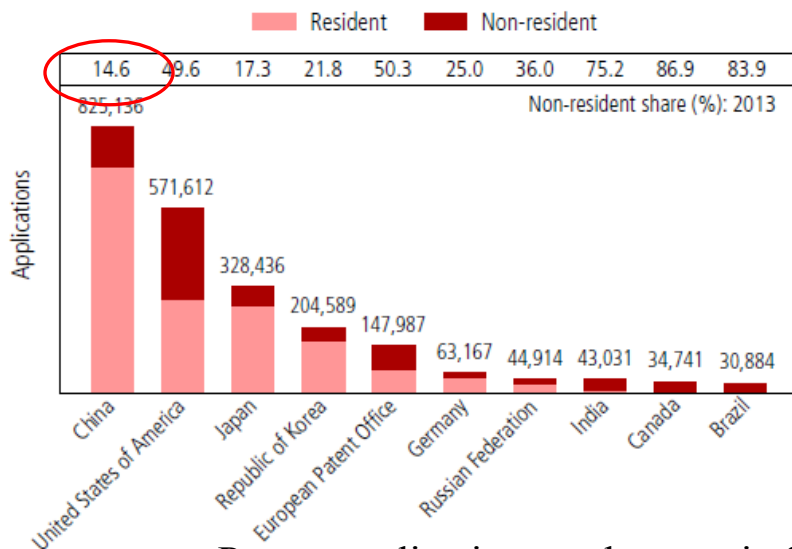
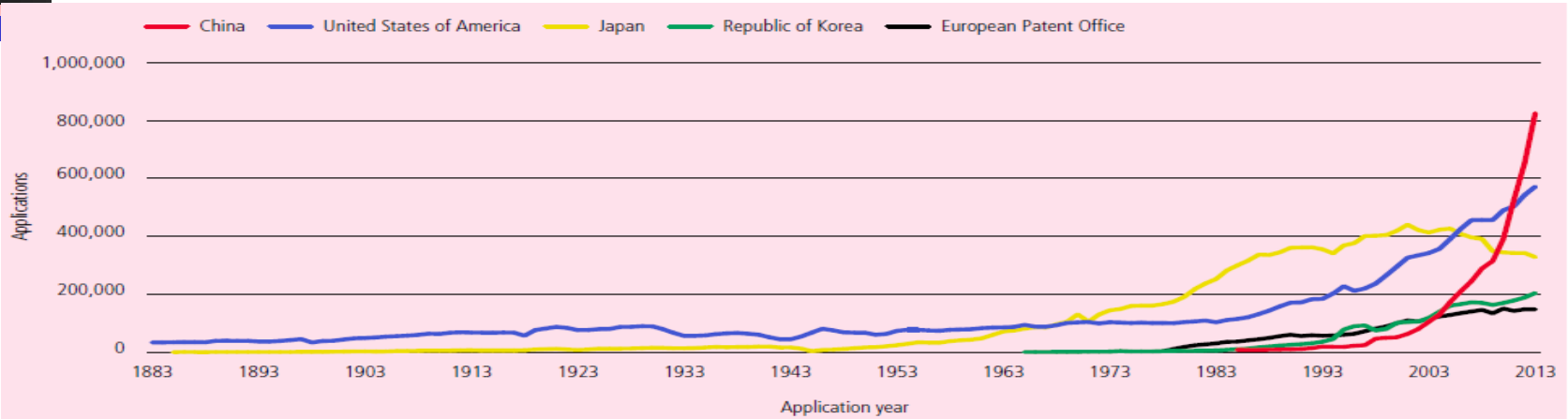
Chinese Research Papers in 2005-2014 from 72K to 254K, 7.6% to 17.3%
Highly cited papers: from 5.7% in 2005-2009 to 18.6% in 2010-2014



1. Needs for Open Science & Innovation

(2) Striving for the world first class R&D

◆ Fast increase in share of the world's patents



Patent applications and grants in 2013 Source: WIPO IP Indicators 2014

1. Needs for Open Science & Innovation

■ (2) Striving for the world first class R&D

■ Chinese basic research aims high

■ Dr. Wei Yang, President of NSFC

■ <http://www.nsfc.gov.cn/publish/portal0/tab88/info48185.htm>

■ *Shoulder by Shoulder with Major R&D Countries by 2020*

■ **Scale:**

■ Output close to USA

■ Citation per paper at 2nd place

■ **Contribution:**

■ Leading in more than 10% of fields

■ One leading team in almost every field

■ 10 milestone research yearly

■ **Original breakthroughs**

■ 3-5 by Chinese scientists yearly

1. Needs for Open Science & Innovation

(3) Support public entrepreneurship and innovation

State Council's Decision on Policies to Promote Public Entrepreneurship and Innovation. 2015.6.11



Web entrepreneurship and innovation

China Assoc of Employment Promotion 2015.7.27

• http://www.lm.gov.cn/InnovateAndServices/content/2015-07/28/content_1086215.htm

• 2014 Employment through online business

- 10.03 millions
- ages ≤ 24 : 21.9%; 25-34: 63.5%;
- 35-44: 12.9%; ≥ 45 岁: 1.7%
- By university grad: 6.18 millions
- Within 5 years of graduation: 2.31 m



1. Needs for Open Science & Innovation

■ (4) Uplifting the Whole National Innovation System

- Urgent needs outside the elite academic institutions
- source: China Statistical Yearbook on Science and Technology 2013

■ R&D institutions: 3674

- Country-level: 710

- Provincial and local level: 3222

■ R&D active enterprises: 47204

- R&D institutes: 45937

- Personnel: 2.26 millions

- R&D investment: 5.23 b RMB

- New products: 323448

■ Patents application: 489945

■ High-tech Industrial Development Zones

- Enterprises: 63926

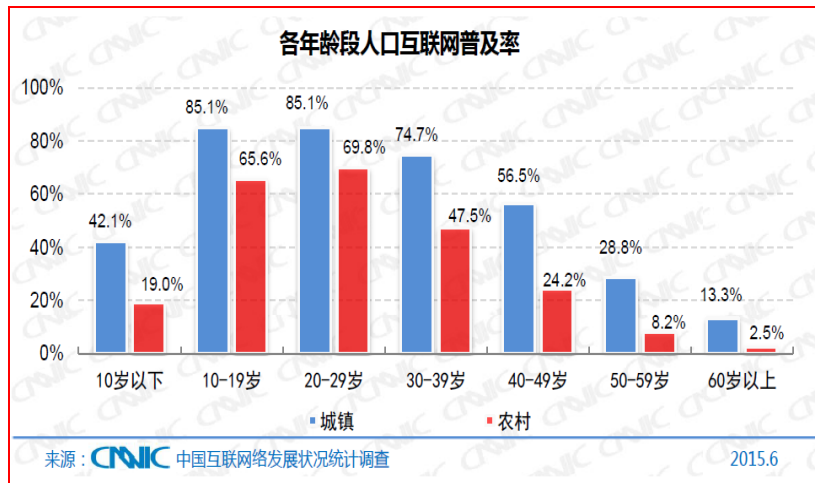
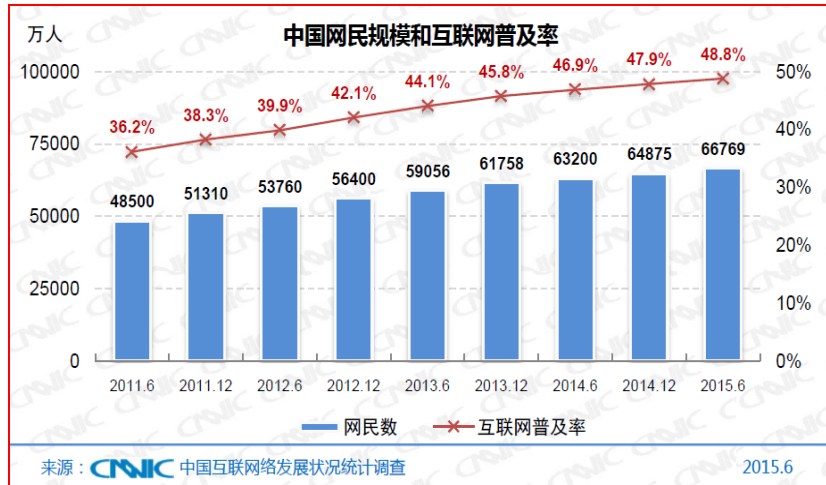
- Employed: 12.69 millions

- Gross output: 1286 billions

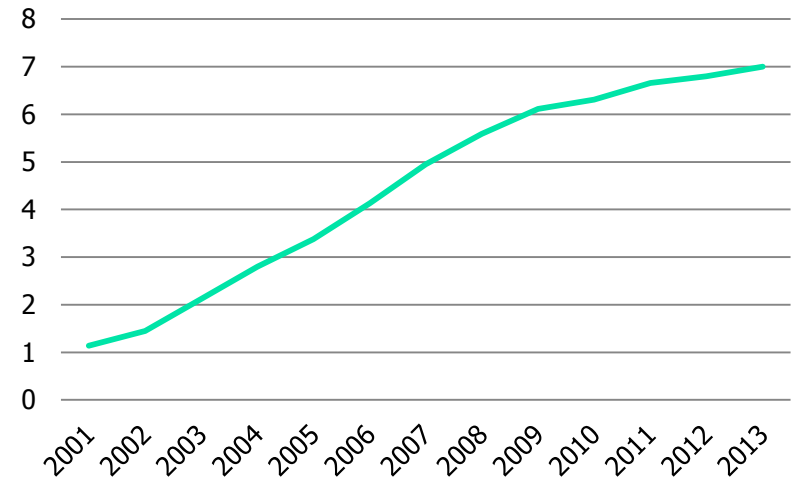
1. Needs for Open Science & Innovation

(5) Tapping the new innovation potentials

Growth & age distribution of Chinese Internet population, CNNIC, 2015.7



University Graduates in millions



2014 Univ. Graduates: 7.27 millions

2015 Univ. Graduates: 7.49 millions

Source: Ministry of Education



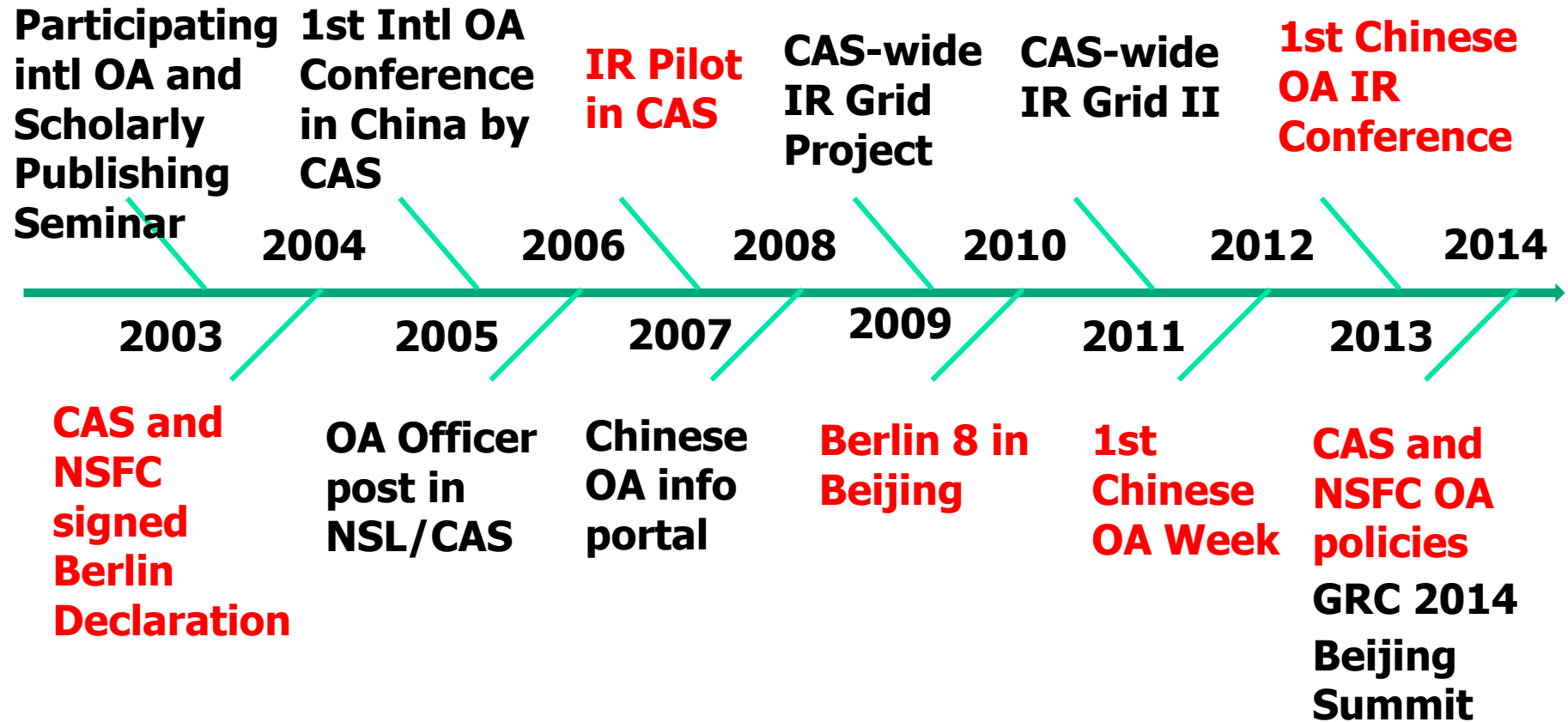
COAR Annual Meeting & General Assembly 2016

Open Access in China

- 1. Needs for Open Science & Innovation
- 2. Strong Efforts of Open Access
- 3. Challenges to Move Forwards

2. Strong Efforts of Open Access

(1) A long history to promote open access



2. Strong Efforts of Open Access

(2) National commitment

PM Li Keqiang: Knowledge is a public good. A more open environment will enable everyone share the fruits of knowledge and promote inclusive development. ... China will support open access to publicly funded research.

--GRC Annual Meeting 2014



PM Li: Strenuously promote deep fusion of S&T with public entrepreneurship and innovation. ...Public entrepreneurship and innovation needs the support and guide of the most advanced S&T.

--Forum for National S&T Strategy, 2015.7



2. Strong Efforts of Open Access

(3) Formal open access policies

■ NSFC Open Access Policy

--60+% Chinese International
Papers in 2014 and increasing



国家自然科学基金委员会关于受资助项目科研论文实行开放获取的政策声明

日期 2014-05-19 来源: 作者: 【大 中 小】 【打印】 【关闭】

公共资金资助科学研究, 是社会创造知识、支持创新、促进发展的重要手段。受资助项目所发表的科研论文是全社会的知识资源, 其在全社会的开放获取, 将促进知识传播利用, 推进科学事业的全球化进程, 并将公共投资所产生的知识迅速转化为全社会的创新发展能力, 让知识普惠社会发展。

为此, 特制定国家自然科学基金资助项目科研论文的开放获取政策:

自本政策发布之日起, 国家自然科学基金全部或部分资助的科研项目投稿并在学术期刊上发表研究论文的作者在论文发表时, 将同行评议后录用的最终审定稿, 存储到国家自然科学基金委员会的知识库, 不晚于发表后12个月开放获取。如果出版社允许提前开放获取, 应予提前; 如果论文是开放出版的, 或出版社允许存储最终出版PDF版的, 应存储论文出版PDF版, 并立即开放获取。

— CAS Open Access Policy

No.1 in Nature Asia Index



GRC 2014 Summit

Chinese Academy of Sciences Policy Statement on Open Access to Articles from Publicly Funded Scientific Research Projects

May 15, 2014

2. Strong Efforts of Open Access

(4) Open access repositories

NSFC Repository for Basic Research



CAS IR Grid of 102 IRs



MoST Tech Report Sharing System



CALIS IR Portal of 40 universities



2. Strong Efforts of Open Access

Personal Profiles
Knowledge Maps
Download statistics
Top Download Papers
Embedded ORCID services
Automatic ingest via iSwitch
Search IR full-text via WoS
Search citations from WoS

Repositories

知识库服务

Personal Repositories Grid

精确检索请加双引号

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re of zi..

olenoid for..

n for proton..

DS with a

CAS IR GRID 是定期
采集中国科学院研究
IR的数据建立的联合
知识库服务网络。

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英文数量: 276197

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院外浏览量: 111854518

国外浏览量: 20474634

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2. Strong Efforts of Open Access

■ (5) Open access journals

China Open Access Journals

COAJ 中国科技期刊开放获取平台
China Open Access Journals

期刊登录

中国科学院 主办

首页 期刊目录 平台简介 关于OA 收录须知 数据缴存 学术会议 资讯中心 联系我们 下载

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- 数理科学和化学 73
- 天文学、地球科学 97
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- 农业科学 65
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学科分类

主管单位

第一主办单位

出版单位

ISSN

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可检索论文的期刊数量: 337
论文数量: 1417358

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- 谷歌推出学术指标, 影响因子面...
- 开放存取: 走进学术期刊数字出...
- 谈谈欧美“绿色”开放获取和机...
- 大数据和开放获取政策: BYTE开...
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- 中科院学位论文开放获取资助又...
- 中国首个《自然》杂志冠名的期...
- 印度主要科学资助者支持开放获取
- 开放期刊《帕尔格雷夫·通讯》上线

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allow researchers to use
research funding to publish
Open Access articles

Institutional funding of OA publishing



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MoST full funding of SCOAP3 China

SCOAP³ – Sponsoring Consortium for Open Access Publishing in Particle Physics

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Welcome

SCOAP³ has started in January 1st 2014. These pages provide background information and news. SCOAP³ articles are available on the [SCOAP³ Repository](#). A summary of the first year of operation is available [here](#) and a regularly updated fact-sheet is available for download [here](#).

SCOAP³ is a one-of-its-kind partnership of thousands of libraries, key funding agencies and research centers in more than 40 countries. Working with leading publishers, SCOAP³ has converted [key journals](#) in the field of High-Energy Physics to Open Access at no cost for authors. SCOAP³ is centrally paying publishers for the costs involved in providing

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2. Strong Efforts of Open Access

■ (6) Open access to research data

MoST National Sharing Platform for Scientific Data

Health and Population



Earth Systems



Agriculture



Basic Sciences



Material Sciences



Meteorological data



2. Strong Efforts of Open Access

■ (7) Open access to government data

Open up governmental data for search, download, and application

National Data Portal

by National Bureau of Statistics

National Data mobile apps



数据中国手机客户端



2. Strong Efforts of Open Access

■ (7) Open access to government data

Open up governmental data for search, download, and application

State IP Office

Patent data download service

Downloadable data



国别/组织	数据编号	数据名称	更新周期	简要说明	数据手册	样例数据
国家知识产权局 (SIPO)	CN-IMGO-10-A	中国发明专利申请公布全文图像数据	周更新	发明专利申请全文图像数据, 图像数据为TIFF格式, 使用CCITT4压缩标准。		
	CN-IMGO-10-B	中国发明专利授权公告全文图像数据	周更新	发明专利授权公告全文图像数据, 图像数据为TIFF格式, 使用CCITT4压缩标准。		
	CN-IMGO-20-U	中国实用新型专利授权公告全文图像数据	周更新	实用新型专利授权公告全文图像数据, 图像数据为TIFF格式, 使用CCITT4压缩标准。		
	CN-IMGO-30-S	中国外观设计专利授权公告图片数据	周更新	外观设计专利授权公告图片数据, 图像数据为JPEG格式。		
	CN-TXTO-10-A	中国发明专利申请公布全文文本数据	周更新	数据内容包括著录项目、摘要、权利要求、说明书、序列表。其中已代码化得数字式分别用MathML、XML和CML表示; 未代码化得字符用外部引用的TIFF/PNG/GIF图像格式显示; 说明书附图同样用外部引用的TIFF/PNG/GIF图像格式显示。		
	CN-TXTO-10-B	中国发明专利授权公告全文文本数据	周更新	数据内容包括著录项目、摘要、权利要求、说明书、序列表。其中已代码化得数字式分别用MathML、XML和CML表示; 未代码化得字符用外部引用的TIFF/PNG/GIF图像格式显示; 说明书附图同样用外部引用的TIFF/PNG/GIF图像格式显示。		
	CN-TXTO-20-U	中国实用新型专利授权公告全文文本数据	周更新	数据内容包括著录项目、摘要、权利要求、说明书、序列表。其中已代码化得数字式分别用MathML、XML和CML表示; 未代码化得字符用外部引用的TIFF/PNG/GIF图像格式显示; 说明书附图同样用外部引用的TIFF/PNG/GIF图像格式显示。		
	CN-ABST-102030-ABUS	中国专利摘要英文翻译数据	月更新	数据为XML格式, 内容包括: 申请信息、公开信息、发明人、专利权人、分类号、名称、摘要等。		
	CN-BIBO-10-A	中国发明专利申请公布著录项目数据	周更新	数据为TXT格式, 内容包括: 申请信息、公开信息、分类号、申请人、发明人、优先权等。		
	CN-BIBO-	中国发明专利授权公告著	周更新	数据为TXT格式, 内容包括: 申请信息、公开信息、分类		

2. Strong Efforts of Open Access

■ (8) Open access to publicly funded R&D facilities

State Council's Decision on Opening up to the Society of Nationally Founded Research Facilities and Large Devices, 2015.1.26



2015: start the monitoring system
2016: all qualified are included
2017: evaluation for sharing

Unified information system
For devices more than 500,000 CNY
Cost recovery and non-profit making
Reward measures
Open & user –based evaluation
Owner institution responsibility

Device Sharing Platform



http://www.gov.cn/xinwen/2015-01/26/content_2809973.htm

2. Strong Efforts of Open Access

■ (9) Support of Open Innovation

General Office of State Council: Develop Makerspaces to Promote Public Entrepreneurship and Innovation. 2015.3.11



国务院 新闻 专题 政策 服务 问政 数据 国情

索引号: 000014349/2015-00018 主题分类: 科技、教育科技
发文机关: 国务院办公厅 成文日期: 2015年03月02日
标 题: 国务院办公厅关于发展众创空间推进大众创新创业的指导意见
发文字号: 国办发〔2015〕9号 发布日期: 2015年03月11日
主 题 词:

国务院办公厅关于发展众创空间
推进大众创新创业的指导意见
国办发〔2015〕9号

各省、自治区、直辖市人民政府，国务院各部委、各直属机构：

为加快实施创新驱动发展战略，适应和引领经济发展新常态，顺应网络时代大众创业、万众创新的新趋势，加快发展众创空间等新型创业服务平台，营造良好的创新创业生态环境，激发亿万群众创造活力，打造经济发展新引擎，经国务院同意，现提出以下意见。

一、总体要求

（一）指导思想。全面落实党的十八大和十八届二中、三中、四中全会精神，按照党中

Utilize internet and open source technologies
Develop open innovation infrastructure
Promote open sharing of scientific resources
Integrate global innovation resources
Stimulate collaborative innovation
Strengthen cross-board tech transfer.....

http://www.gov.cn/zhengce/content/2015-03/11/content_9519.htm



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Open Access in China

- 1. Needs for Open Science & Innovation
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3. Challenges for Moving Forward



(1) Contextual Challenges

- It becomes a national development strategy
- All sides are pushing towards better sharing
- It is part of bigger changes
 - Research funding and management systems reform
 - Increase R&D contribution to economy & development
 - Strengthen accountability of all involved in research
 - Fight against duplications, waste, and misconduct
 - Reform and development of Chinese STM journals
 - Development of elite journals
 - Increasing international impact of STM journals
 - Operational system reform (clusters, merges, and integrated platforms)
 - E-Science is coming big and fast

3. Challenges for Moving Forward

(2) However, nation-wide efforts still needed

- Need much stronger commitment for Green OA
 - Universities yet to have formal OA policies
 - MoST, MoE, MoH, MoA, etc., yet to have OA policies
 - Smooth ingest of Green OA papers are hampered by misunderstanding and uncertainty
 - PDF deposits are threatened by some publishers
 - Conformance measures needed even in CAS and NSFC
- Need vanguards and political will from higher up
- Need library community to take responsibility
 - It is not a library business?
 - Is OA library-friendly?
- Need coordinated actions across gov. and R&D sectors

3. Challenges for Moving Forward



(3) Flip or not, that is a question

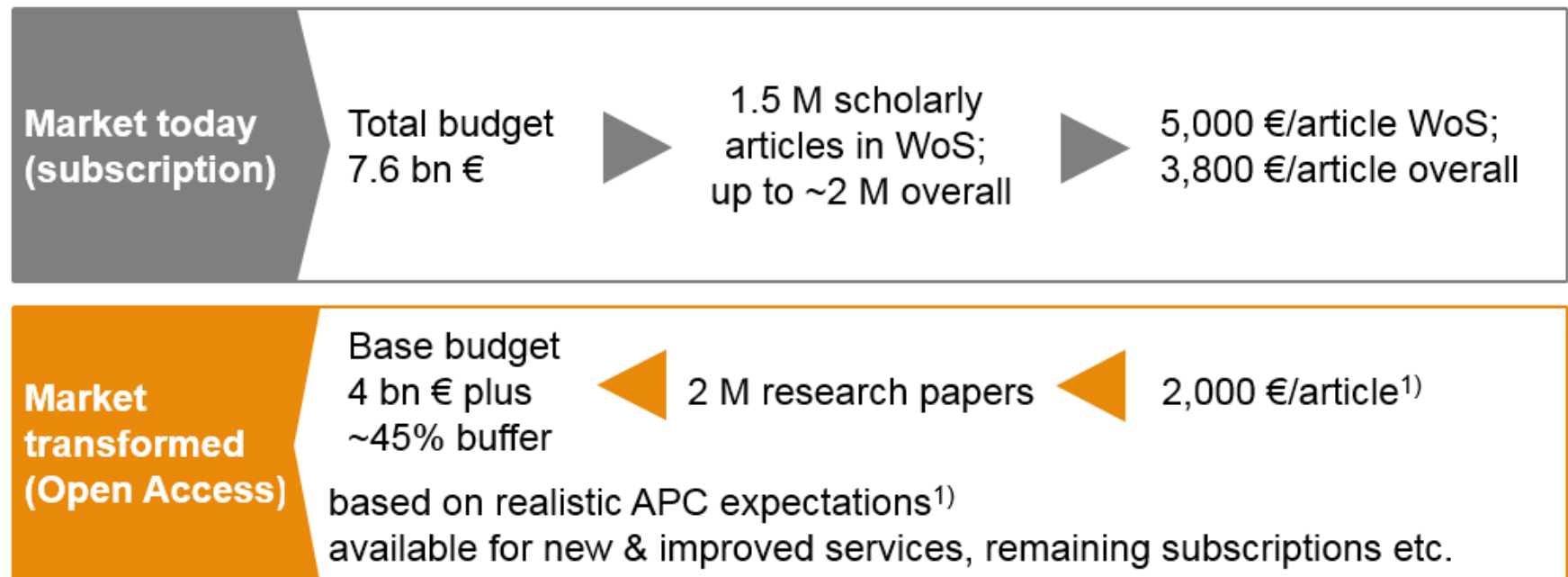
- Berlin 12 (MPDL Whitepaper on Transition)
- NWO workshop on transition to OA
- Chinese support in principle
 - Transformation of subscription fees to fund open publishing.
 - Experimentation with acquisition agreements that will fully cover OA papers authored by their researchers.
 - But transformation should maintain market competitiveness, reduce costs, and enable the affordable participation by all
 - But transformation should ensure effective monitoring and control of publication quality and APC prices.
 - Transformation should involve libraries as a key player
 - Ensure international collaboration

3. Challenges for Moving Forward

(3) Flip or not, that is a question

Ralf Schimmer: Transformation Baseline and Mechanics: Financial Feasibility & Output Analysis

Scenario of transformation based on current global operating numbers per year



An OA transformation seems to be possible without financial risks

3. Challenges for Moving Forward

(3) Flip or not, that is a question

- Ralf Schimmer: Transformation Baseline and Mechanics: Financial Feasibility & Output Analysis

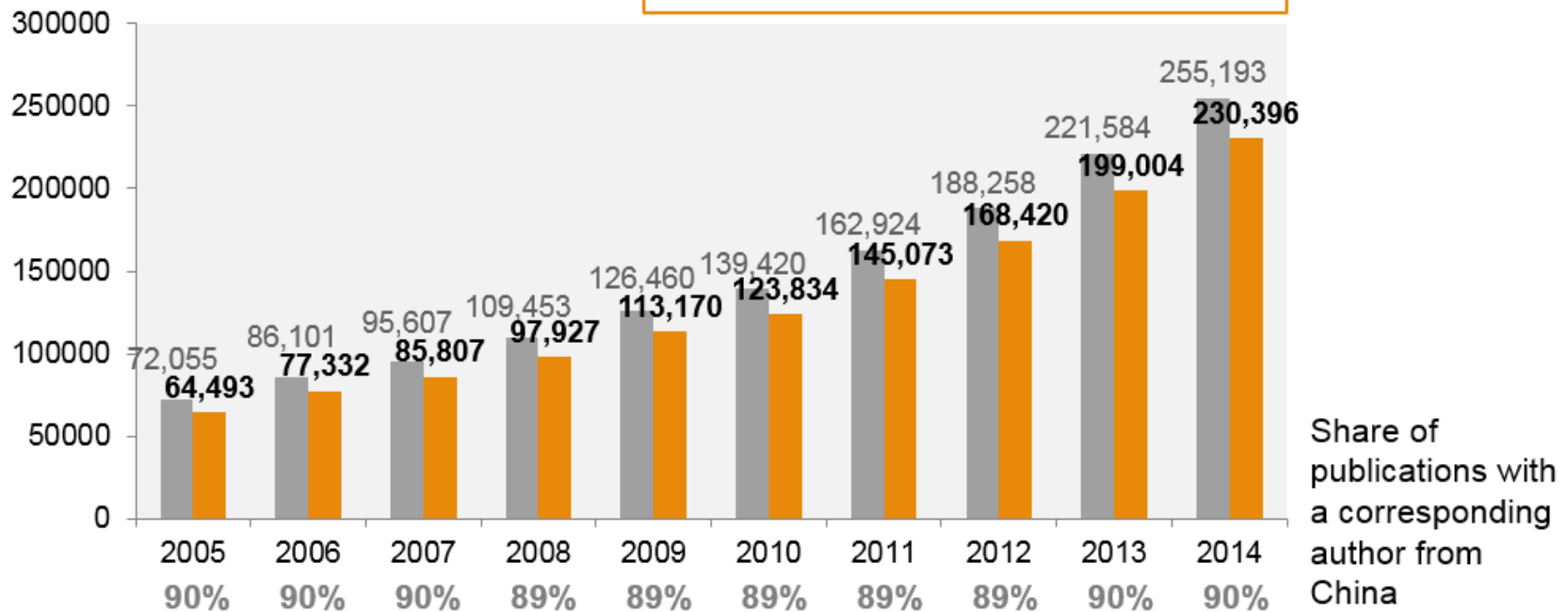
Publication volumes and corresponding author shares
Articles and reviews in Web of Science



OA Transformation, 2014 calculation span

230,396 papers x 1,300 € = ~ 299.5m €
230,396 papers x 2,000 € = ~ 460.8m €

Number of articles p.a.



3. Challenges for Moving Forward



(3) Flip or not, that is a question

Cost:

Substantial increase of cost?

With the current increase rate of publications?

Funding:

Multiple channels of funding

Lack of strong coordinating mechanisms

Ecosystem:

Are we just passively accept what it is now?

How much saying can research communities will have in shaping the future scholarly communication ecosystem?

So more concerns and reservations, more needs to experiment, and more needs to discuss with international communities

3. Challenges for Moving Forward



(4) Current moves?

- Spread and Strengthen Green OA policies
- Support Gold OA publishing with research funds and even possible library funds
- Experiment with flipping or offsetting arrangements when the cost can be controlled
- Rethink the funding structure for providing access to scholarly publication
- Get our teams united
-

Open Access in China

Thanks!

- zhangxl@mail.las.ac.cn
- National Science Library, Chinese Academy of Sciences