The Thirty Years' History of NISTEP

Hideyuki Tsunoda
Deputy Director General
National Institute of Science and Technology Policy (NISTEP), Japan

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NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY POLICY

Contents

- **Outline of NISTEP**
- Main Researches
- International Conferences
- The Researchers with Nice Step

History of NISTEP

Jul 1988	The National Institute of Science and Technology Policy was established (restructured from the National Institute of Resources).
Jan 2001	The Ministry of Education, Culture, Sports, Science and Technology (MEXT) was formed due to administrative reform. NISTEP became an affiliated research institute within MEXT. The Science and Technology Foresight Center was established as a part of NISTEP.
Jul 2001	Relocated from Common Building for Government Offices at Nagata-cho to the Postal Services Agency Building at Kasumigaseki.
Jan 2004	Relocated to the Ministry of Education, Culture, Science, and Technology Building (Marunouchi, Chiyoda-ku).
Apr 2006	The Research Unit for Science and Technology Analysis and Indicators was established.
Jan 2008	Relocated to the Central Government Building No. 7 East Wing (Kasumigaseki, Chiyoda-ku).
Jul 2013	Reorganized the structure of NISTEP (Japanese organization name).
Apr 2016	Reorganized the structure of NISTEP (Group restructuring).
Jul 2018	NISTEP celebrated its 30th anniversary.

Activities of NISTEP

Mission of NISTEP

- To forecast future policy issues and investigate them through autonomous research
- To carry out research in response to requests from administrative agency
- To provide data that forms the basis of research and play key cooperative and contributing roles with other institutions and researchers

＜Key research themes＞

1. Collection and analysis of basic information of Science and Technology Policy
2. Issue-based research on human resources for Science, Technology and Innovation and industry-academia collaboration
3. Research on clarifying innovation process
4. Science and Technology foresight

Provision of evidence-based data for policy making to governmental agencies
Contribution to make administrative strategy of research institutes

Outline of NISTEP

Mission of NISTEP

The National Institute of Science and Technology Policy (NISTEP) is a think tank on science and technology (S&T) policy within the direct jurisdiction of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) in accordance with the National Government Organization Act in order to be engaged in the government's S&T policy planning processes.

Budget

Approx. 8 Hundred Million Yen ($7.3M US)

Organization and Personnel

Staff: 45+ (about 35 Research Staff incl. Visiting Researcher) [*As of FY 2018]

Director General
Dr. Tsuboi

Deputy Director General
Mr. Tsunoda

1st Theory-Oriented Research Group **Leader: Dr. Ijichi**
Fundamental surveys and research on effects of S&T on the economy and society

2nd Theory-Oriented Research Group **Leader: Mr. Tomizawa**
Fundamental surveys and research on R&D promotion systems of S&T

1st Policy-Oriented Research Group **Leader: Ms. Miki**
Issue-based surveys and research on conditions for promotion of S&T, such as personnel, relationship of S&T with people and society

2nd Policy-Oriented Research Group **Leader: Mr. Horita**
Issue-based surveys and research on industry-academia collaboration, academic start-ups, regional innovation

Science and Technology Foresight Center **Leader: Ms. Yokoo**
Theoretical / Empirical surveys and research on S&T trends and foresight

Research Unit for Science and Technology Analysis and Indicators
Leader: Dr. Igami
Theoretical / Empirical analysis and research on S&T activities of S&T policies

Research Support Sectors
・General Affairs Division Director, Mr. Kobayashi
・Planning Division Director, Mr. Ujihara

※Appointed Dr. Akaike as a senior fellow for cross-sectional work of NISTEP

Number of Issue Reports (As of July 2018)

NISTEP REPORT Results of research, survey analysis, etc., and policy proposals based on these, to announce to the outside to widely ask the society.
【177 volumes in total】

RESEARCH MATERIALS Materials collected as results of research, survey analysis, etc. 【272 volumes in total】

NISTEP NOTE Results, data, etc. regarding "Science of Science, Technology and Innovation Policy", and obtained in the process of the construction of data and information infrastructure etc.
【23 volumes in total】

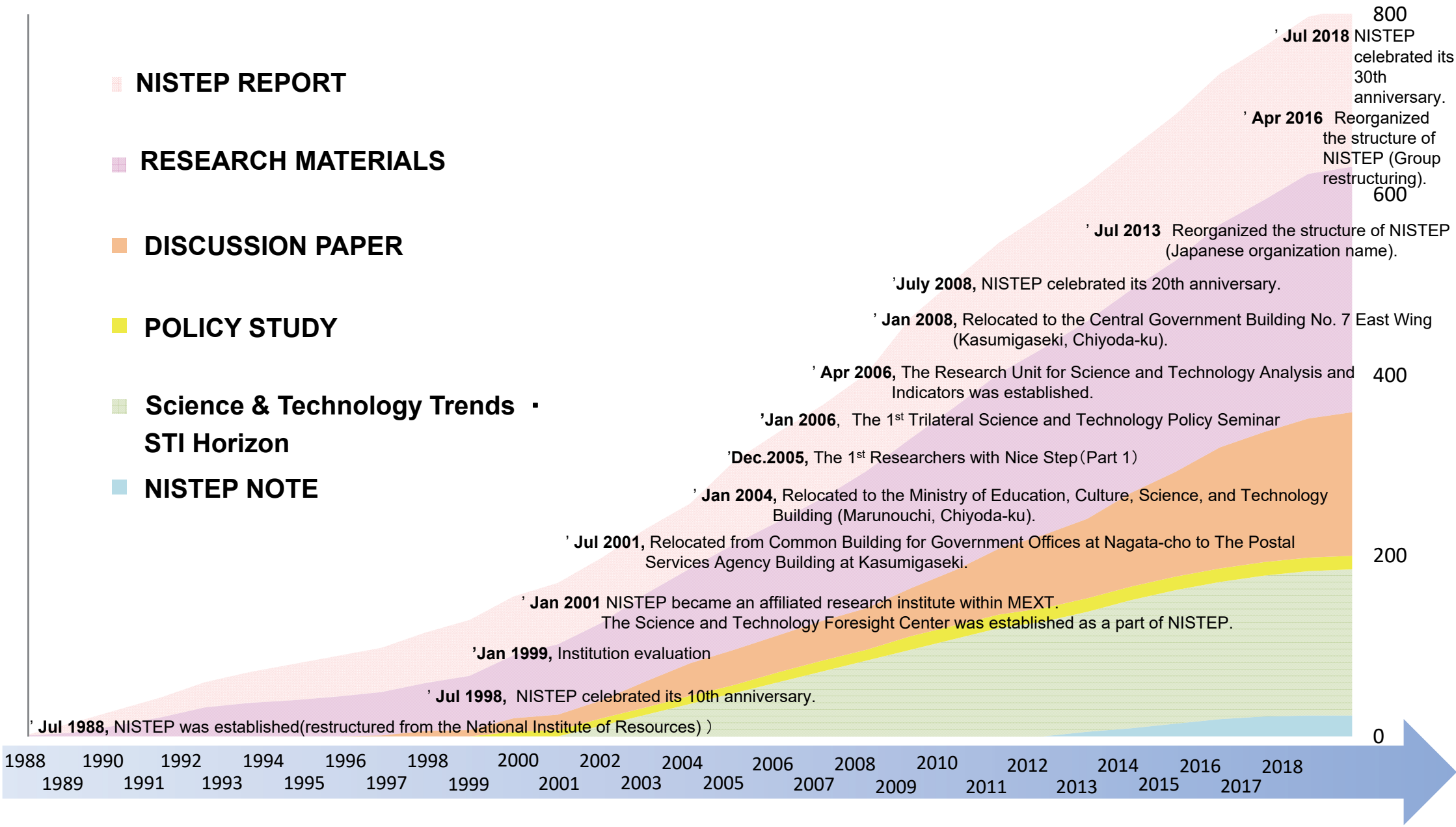
DISCUSSION PAPER Research results, survey analysis, etc. as outlined by the authors, mainly to listen opinions outside the company.【159 volumes in total】

POLICY STUDY Research results, survey analysis, etc., as an opinion of the author, summarized policy proposals, theoretically and systematically summarizes new concepts, methodology, etc. for policy analysis and formation. 【15 volumes in total】

STI Horizon Quarterly magazine on information of Science Technology and Innovation Policy especially Science and Technology's new trends 【11 volumes in total】

Science & Technology Trends （former "STI Horizon"）
Summarizing noteworthy of science and technology innovation policies and advanced scientific technological trends of Issue achievement type, etc. 【151 volumes in total】

Output of NISTEP



Cooperation with external parties（As of FY2017）

Domestic collaborating organizations

- The National Graduate Institute for Policy Studies (GRIPS)
- Japan Science & Technology Agency (JST)
- The Research Institute of Economy, Trade and Industry (RIETI)
- Graduate School and School of Engineering, Osaka University
- Graduate School of Information Science and Technology, University of Tokyo
- The Center for Science, Technology and Innovation Policy Studies (CSTIPS), Kyushu University
- Comprehensive Research Organization, Waseda University

Overseas collaborating organizations

- **USA** National Science Foundation (NSF), George Mason University, Georgia Institute of Technology, Massachusetts Institute of Technology, University of North Carolina at Chapel Hill
- **UK** University of Manchester
- **France** General Department of Research and Technology（DGRT）
- **Germany** Fraunhofer Institute for Systems and Innovation Research ISI
- **Finland** Business Finland (an innovation funding agency)
- **Russia** National Research University Higher School of Economics (HSE)
- **China** Institutes of Science and Development, Chinese Academy of Sciences (CASISD), Chinese Academy of Science and Technology for Development (CASTED)
- **South Korea** Korea Institute of S&T Evaluation and Planning (KISTEP), Science and Technology Policy Institute (STEPI)
- **Turkey** Scientific and Technological Research Council of Turkey (TUBITAC)
- **Egypt** Academy of Scientific Research and Technology (ASRT)

Knowledge / opinions from outside experts

Science and Technology expert network

The Science and Technology Foresight Center operates a network comprised of some 2,000 experts for use in S&T-related questionnaire surveys and other activities gathering their insights and interpretations concerning trends in the field.

Application example: Research results are utilized for Science and Technology White Papers

NISTEP TEITEN survey

To track the status of S&T and innovation system in Japan by means of the same questionnaire to the same respondents every year.

RESPONDENTS

University/Public Research Institution group（about 2,100 people）

Presidents of universities, inter-university research institute corporation, and public research institutions, managers responsible for R&D planning (directors of planning/university research administrators divisions), researchers (recommended by heads of departments), and PIs of big research development projects（SIP, ImPACT, COI）.

Innovation overview group（about 700 people）

Experts in industry and mediators between research development and innovation.

Opinions of the respondents

About 8,000 comments from surveys in 2016 and 2017 (about 920,000 Japanese words)

NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY POLICY

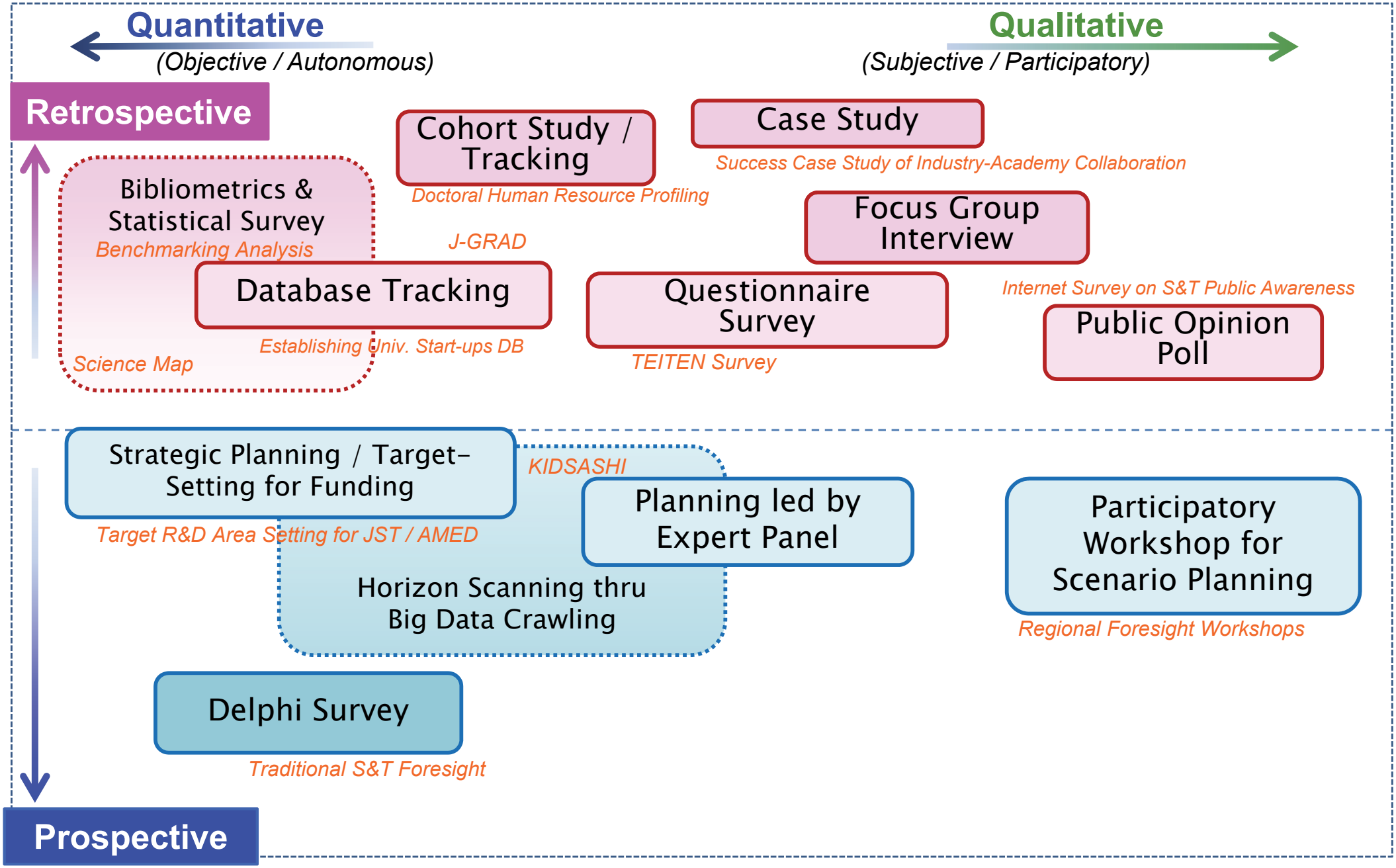
Contents

NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY POLICY

Main Researches

- Science and Technology Indicators
- Benchmarking Scientific Research
- Science Map
- NISTEP Experts Survey on Japanese S&T and Innovation System (NISTEP TEITEN survey)
- Japan Graduates Database (JGRAD)
- Japan Doctoral Human Resource Profiling : JD-Pro
- The 2015 Survey on Postdoctoral Fellows Regarding Employment and Careers in Japan<Governmental Statistics>
- Japanese National Innovation Survey <Governmental Statistics>
- Survey on Research Activities of Private Corporations<Governmental Statistics>
- Regional Science and Technology Indicators
- Science and Technology Foresight

Characteristics of NISTEP research



Science and Technology Indicators

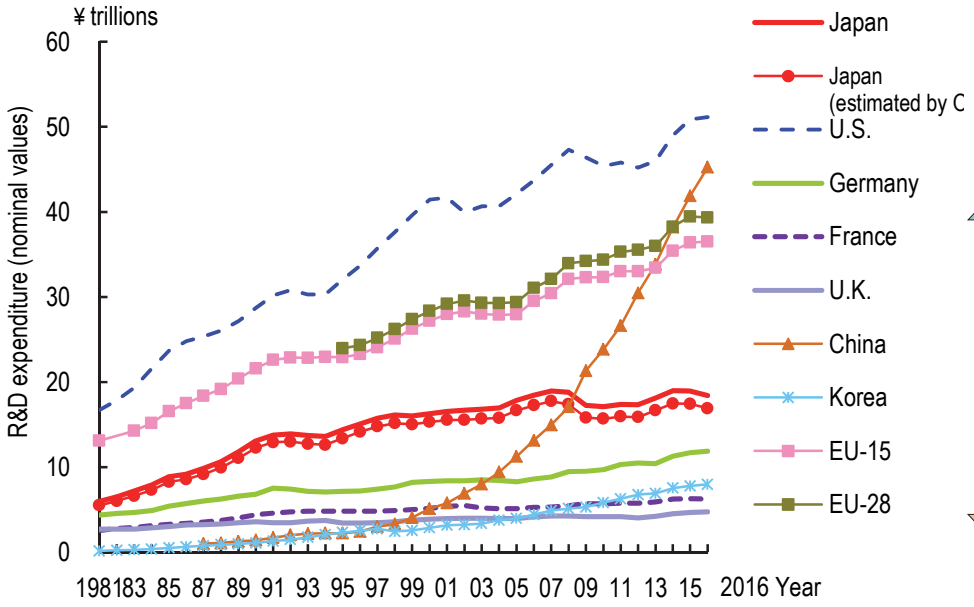
- Published for the first time in 1991. This survey is published every year since 2005.
- Science and technology activities are classified into five categories: R&D Expenditure, R&D Personnel, Higher Education and S&T personnel, Output of R&D, and Science, Technology, and Innovation.
- Status of Japanese science and technology activities are shown with approximately 160 indicators.
- Chronological data since 1980's (in the oldest case) is shown for grasping a long-term situation of Japan and benchmarking countries.
- In total, 21 indicators were newly introduced or visualization methods were revised in 2018 edition.

History of Science and Technology Indicators

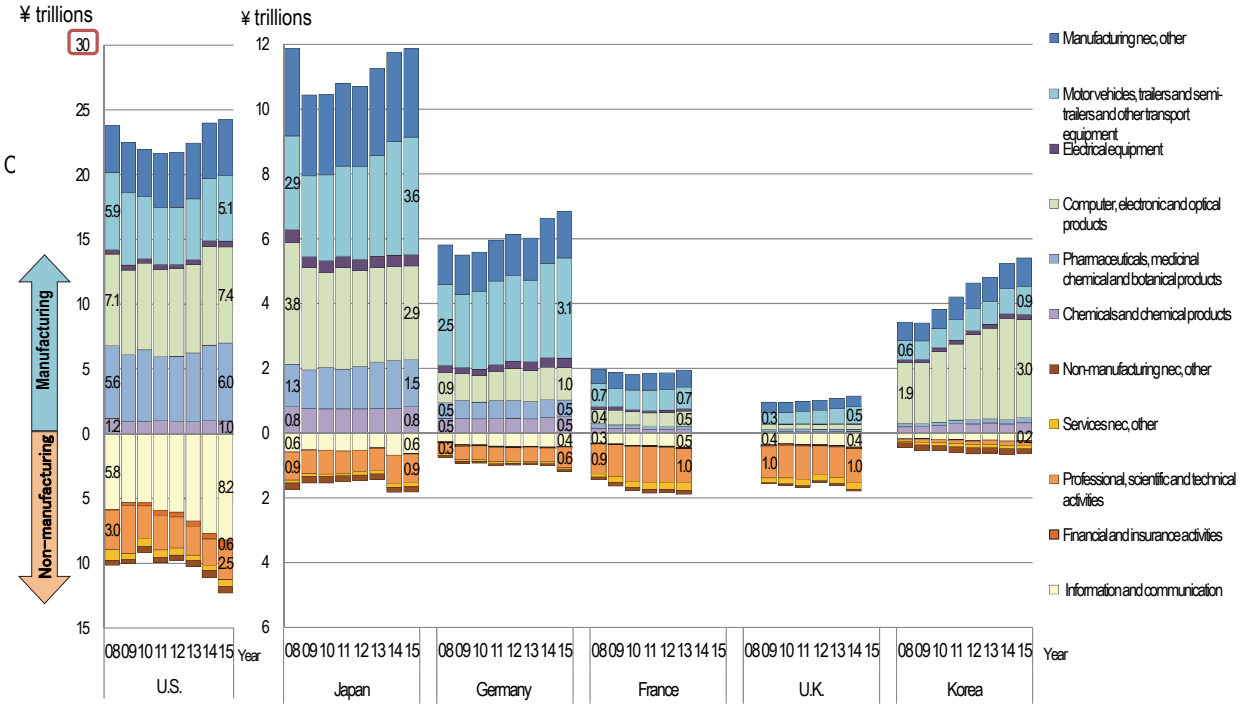
Science and Technology Indicators

Examples of indicators for research and development expenses

Changes in total R&D expenditure in the selected countries



Business enterprise R&D expenditure by industry in the selected countries

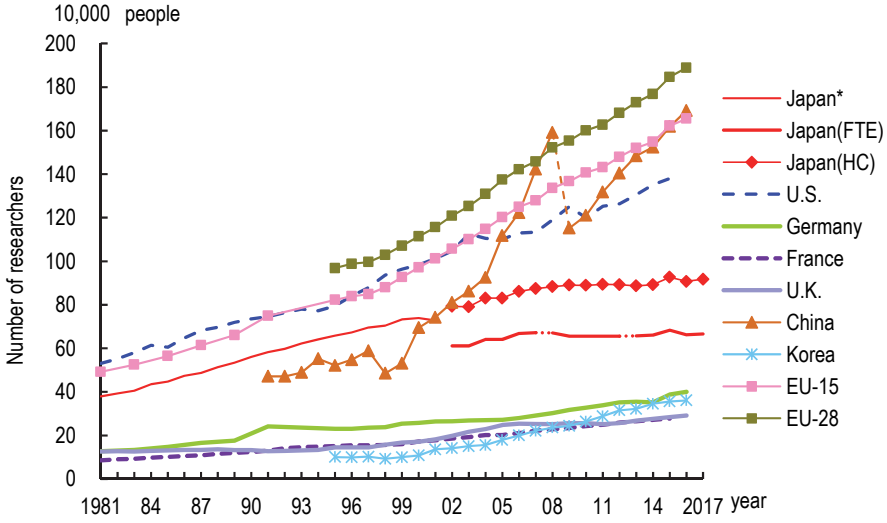


(Source) Science and technology indicators 2018, Research Material-274, published on August 2018

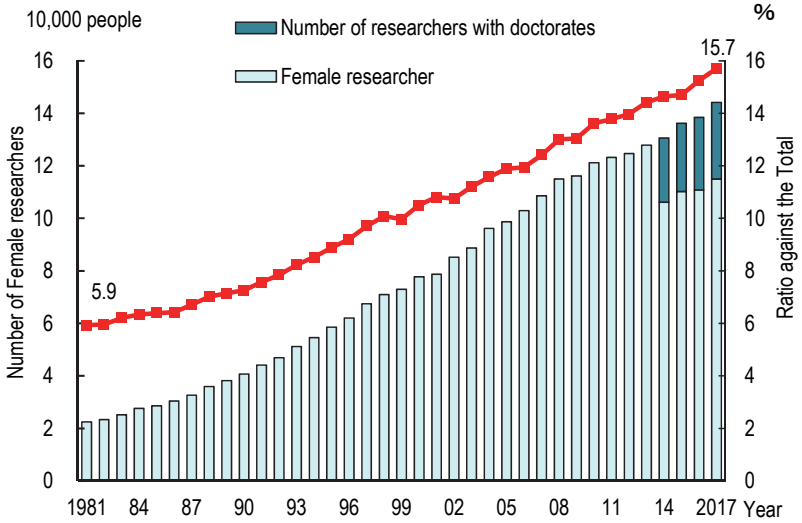
Science and Technology Indicators

Examples of indicators of research human resources

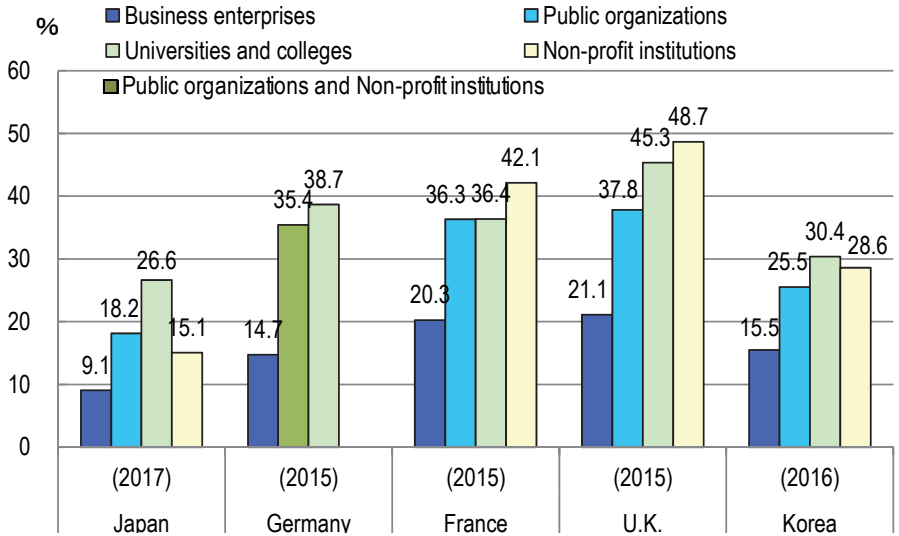
Changes in the number of researchers in the selected countries



The number of female researchers and their ratio against the total number of researchers (HC)



Shares of female researchers of the selected countries by sector



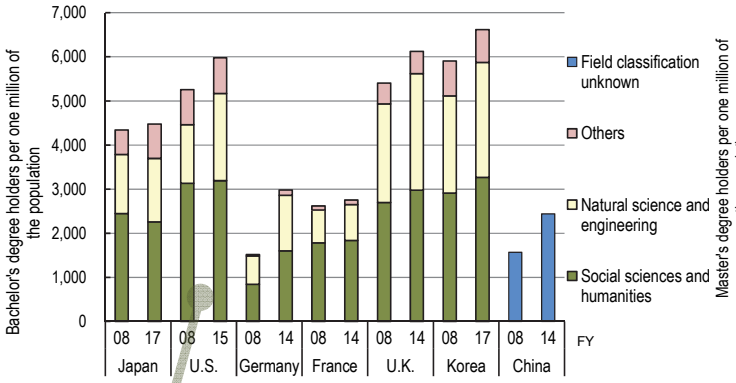
(Source) Science and technology indicators 2018, Research Material-274, published on August 2018

Science and Technology Indicators

Examples of indicators of higher education and science and technology human resources

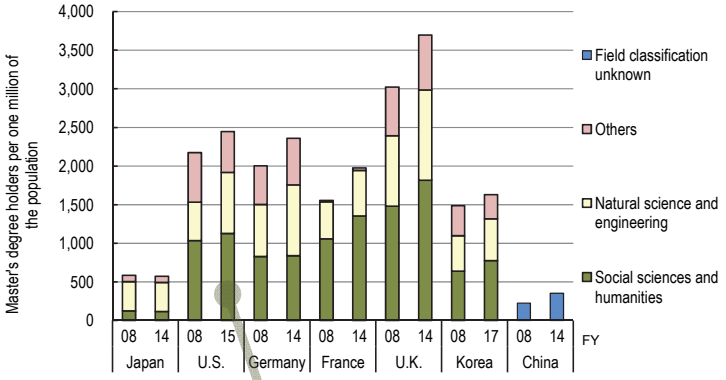
International comparison of academic degree recipients per one million of population

(A) New bachelor's degree recipients



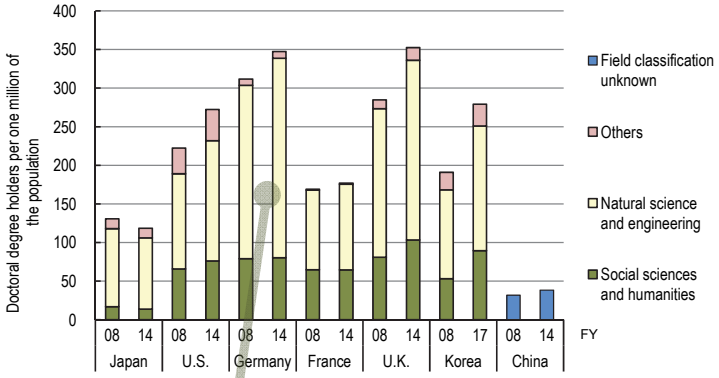
- New bachelor's degree recipients are the largest in "humanities and social sciences" in many of the countries concerned.

(B) New master's degree recipients



- The number of master's degree recipients in "humanities and social sciences" in the largest in the selected countries rather than Japan.
- In comparison with 2008, the number of Japan only has been lowered.

(C) New doctoral degree recipients



- The number of doctoral degree recipients in "natural sciences" is highest in all the selected countries.
- In comparison with 2008, the number in Japan only has lowered.

(Source) Science and technology indicators 2018, Research Material-274, published on August 2018

Science and Technology Indicators

Examples of indicators of research and development output

Top 10 countries/regions in terms of the number of papers, the number of adjusted top 10% papers (based on the fractional counting method)

PY 2004 - 2006

All fields	2004 — 2006(PY) (Average)		
	The number of papers		
	Fractional counting		
Country/Region	Papers	Share	World rank
U.S.	228,849	25.7	1
Japan	67,696	7.6	2
China	63,296	7.1	3
Germany	53,648	6.0	4
U.K.	51,976	5.8	5
France	38,337	4.3	6
Italy	31,573	3.5	7
Canada	29,676	3.3	8
Spain	23,056	2.6	9
Korea	22,584	2.5	10

All fields	2004 — 2006(PY) (Average)		
	The number of adjusted top 10% papers		
	Fractional counting		
Country/Region	Papers	Share	World rank
U.S.	34,127	38.4	1
U.K.	6,503	7.3	2
Germany	5,642	6.4	3
Japan	4,559	5.1	4
China	4,453	5.0	5
France	3,833	4.3	6
Canada	3,392	3.8	7
Italy	2,731	3.1	8
Netherlands	2,146	2.4	9
Spain	2,093	2.4	10

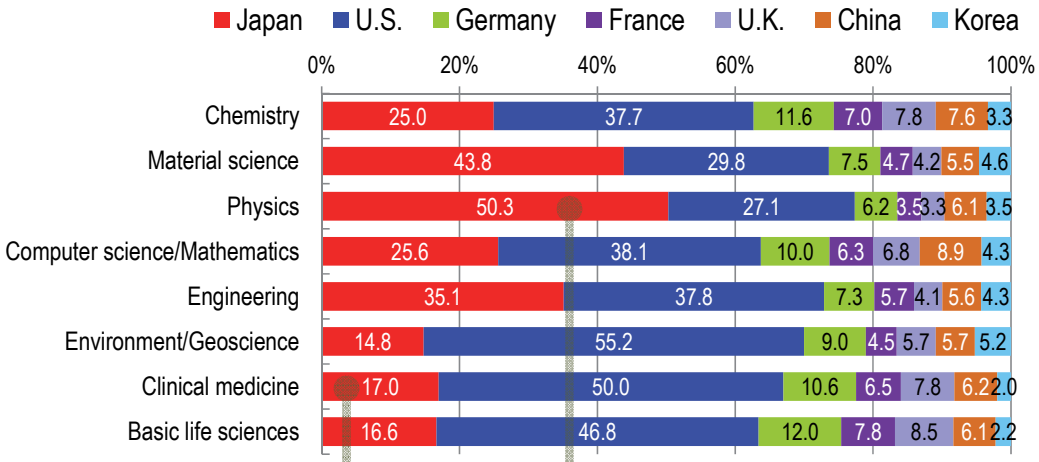
PY 2014 - 2016

All fields	2014 — 2016 (PY) (Average)		
	The number of papers		
	Fractional counting		
Country/Region	Papers	Share	World rank
U.S.	273,858	19.3	1
China	246,099	17.4	2
Germany	65,115	4.6	3
Japan	63,330	4.5	4
U.K.	59,688	4.2	5
India	52,875	3.7	6
France	46,522	3.3	7
korea	45,337	3.2	8
Italy	44,450	3.1	9
Canada	39,674	2.8	10

All fields	2014 — 2016 (PY) (Average)		
	The number of adjusted top 10% papers		
	Fractional counting		
Country/Region	Papers	Share	World rank
U.S.	38,736	27.4	1
China	24,136	17.0	2
U.K.	8,613	6.1	3
Germany	7,755	5.5	4
Italy	4,912	3.5	5
France	4,862	3.4	6
Australia	4,453	3.1	7
Canada	4,452	3.1	8
Japan	4,081	2.9	9
Spain	3,609	2.5	10

PY: Publication Year

Countries whose patent families cite Japanese papers



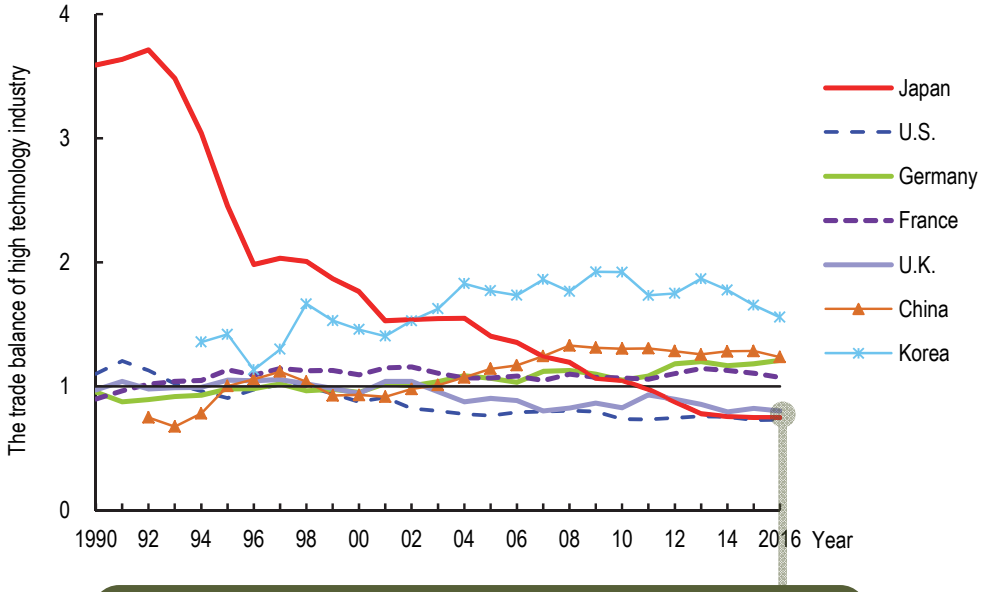
- A large number of Japanese papers in “physics” and “materials science” are cited for the use of Japan's own technologies.
- A large number of Japanese papers in “environment/geoscience,” “clinical medicine” and “basic life sciences” are cited for the use of other countries' technologies.

(Source) Science and technology indicators 2018, Research Material-274, published on August 2018

Science and Technology Indicators

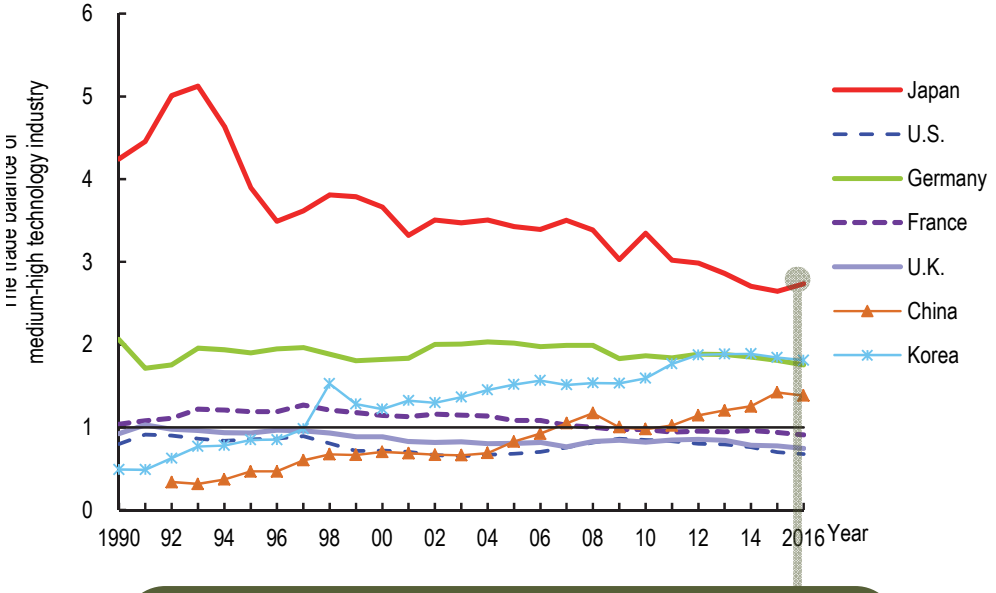
Examples of indicators of science and technology and innovation

Changes in the trade balance ratios for high-technology industries in the selected countries



- Japan's trade balance ratio in high-technology industries showed a continuous decline and it marked 0.75 in 2016.

Changes in the trade balance ratios for medium high-technology industries in the selected countries



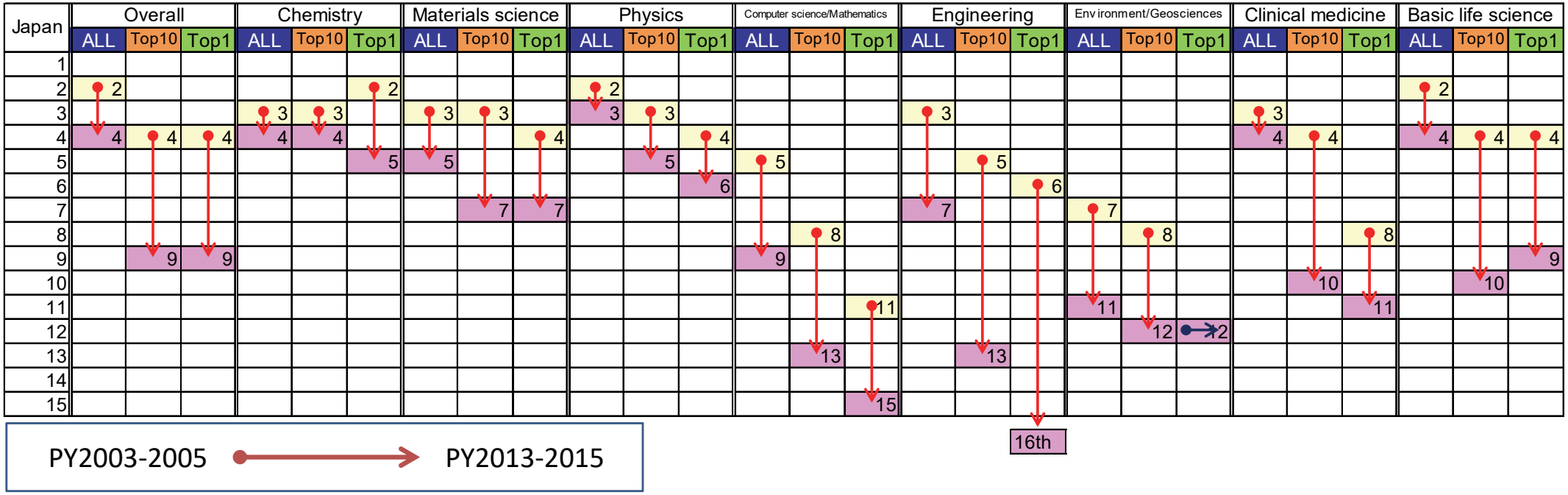
- Japan ranked first among the selected countries in trade balance ratio for medium-high-technology industries at 2.73. The trade balance ratio shows a gradual decline following a rapid drop in the mid-1990s.

(Source) Science and technology indicators 2018, Research Material-274, published on August 2018

Benchmarking Scientific Research

- Published for the first time in 2008. This survey is published almost every two years.
- Multi-faceted analyses on scientific publications in Japan and benchmarking countries including comparison by field use individual indicators and composite indicators.
- “Benchmarking Scientific Research 2017” presents the latest value and shows chronological analyses on structural shifts such as sector composition in Japan.

An Example of Survey Results:
The world rank of Japan in the number of papers and highly cited papers (top10% and top1%)



Note: ALL: the world rankings of the number of papers. Top 10: the world rankings of hot papers whose number of times cited is in the top 10% of the world. Top 1: the world rankings of particularly hot papers whose number of times cited is in the top 1% of the world. The ranking at the bottom of the arrow shows the position as of 2003–2005, and the ranking at the tip shows the position of 2013–2015.

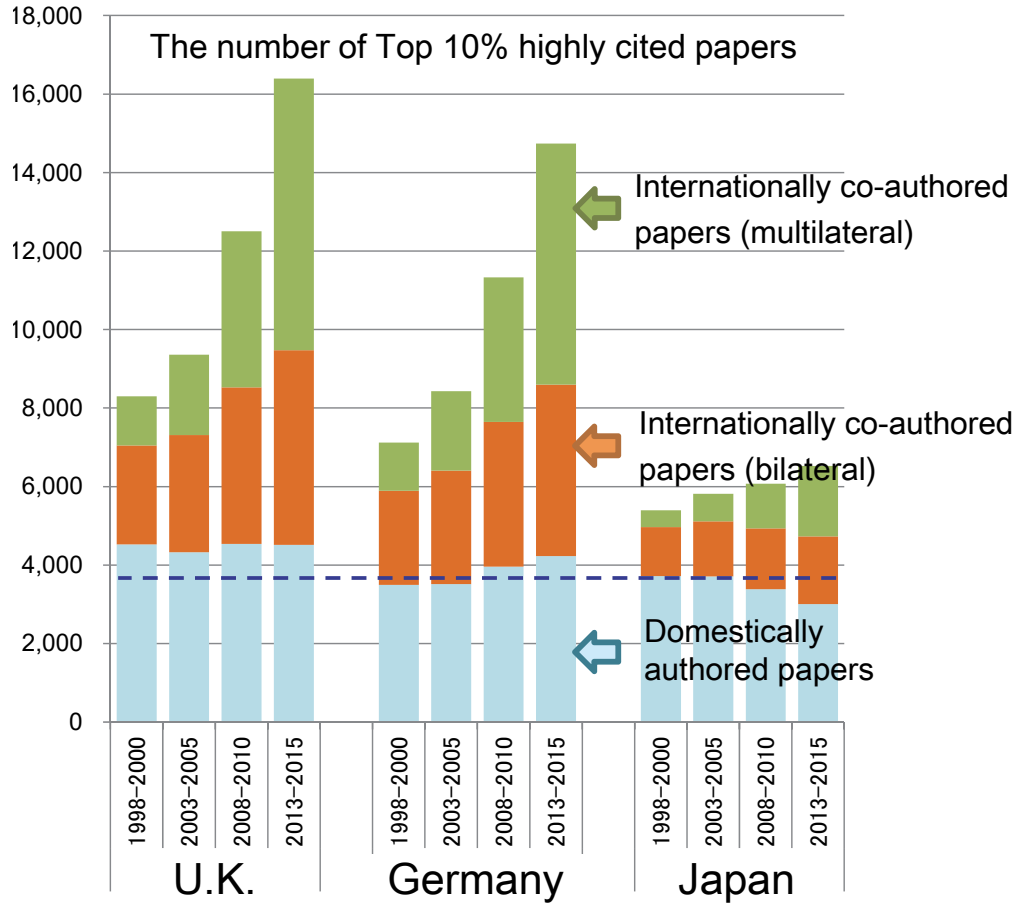
(Source) Benchmarking Scientific Research 2017, NISTEP Research Material-262, published on August, 2017

Benchmarking Scientific Research

An Example of Survey Results:
Number of papers and highly-cited papers (top 10% and top 1%)

Countries/ Regions	Total			Top 10% (adjusted)			Top 1% (adjusted)		
	PY2004-06 (average)	PY2014-16 (average)	Growth Rate	PY2004-06 (average)	PY2014-16 (average)	Growth Rate	PY2004-06 (average)	PY2014-16 (average)	Growth Rate
USA	228,849	273,858	↑20%	34,127	38,736	↑14%	4,088	4,686	↑15%
China	63,296	246,099	↑289%	4,453	24,136	↑442%	332	2,214	↑567%
Germany	53,648	65,115	↑21%	5,642	7,755	↑37%	524	764	↑46%
UK	51,976	59,688	↑15%	6,503	8,613	↑32%	695	973	↑40%
Japan	67,696	63,330	↓-6%	4,559	4,081	↓-10%	356	333	↓-6%
France	38,337	45,337	↑18%	3,833	4,862	↑27%	337	445	↑32%
Korea	22,584	46,522	↑106%	1,391	3,150	↑126%	103	247	↑139%
World	892,125	1,416,085	↑59%	88,830	141,603	↑59%	8,883	14,160	↑59%

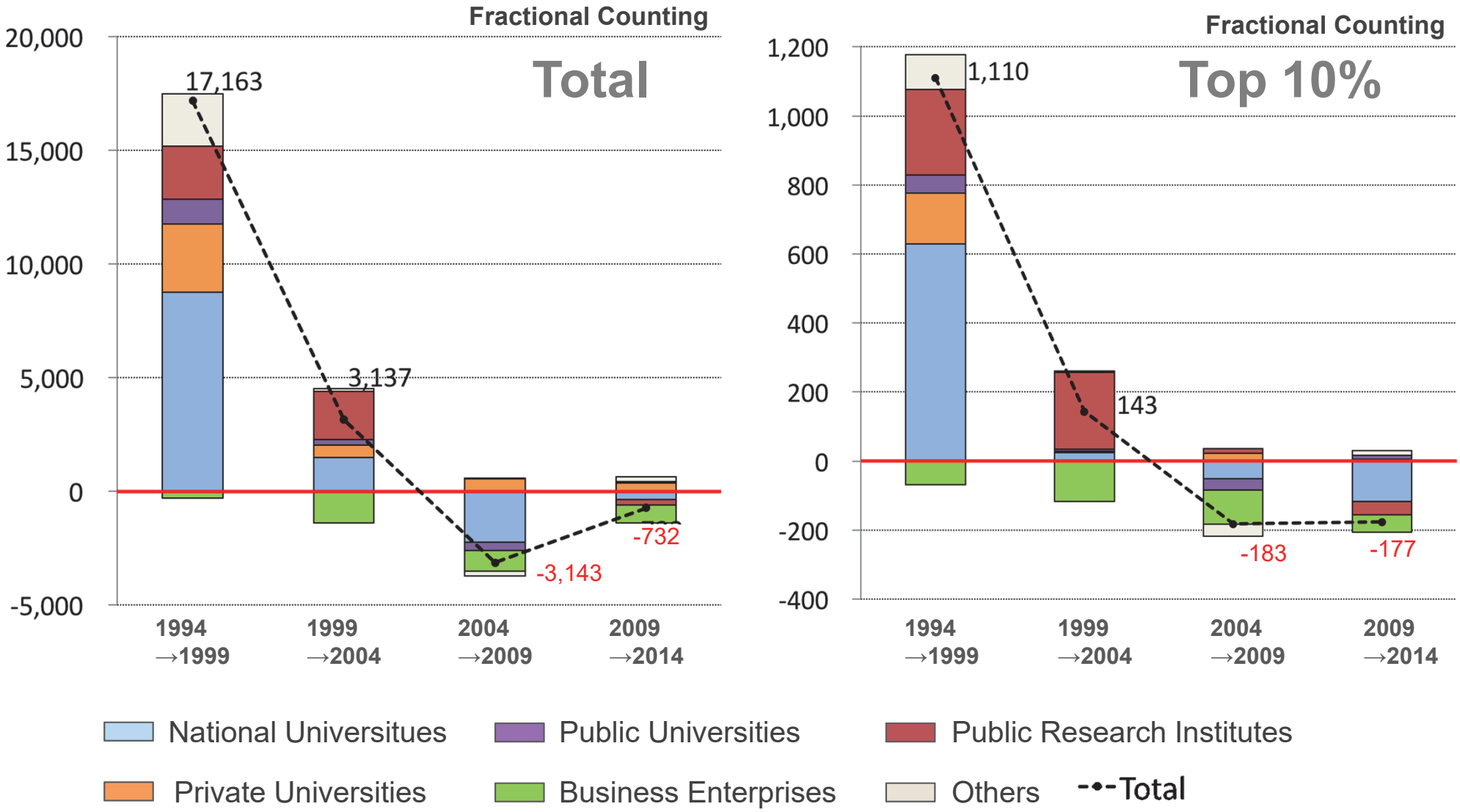
An Example of Survey Results:
Chronological change of the number of domestic papers and international co-authored papers (Top 10%)



(Source) Benchmarking Scientific Research 2017, NISTEP Research Material-262, published on August, 2017

Benchmarking Scientific Research

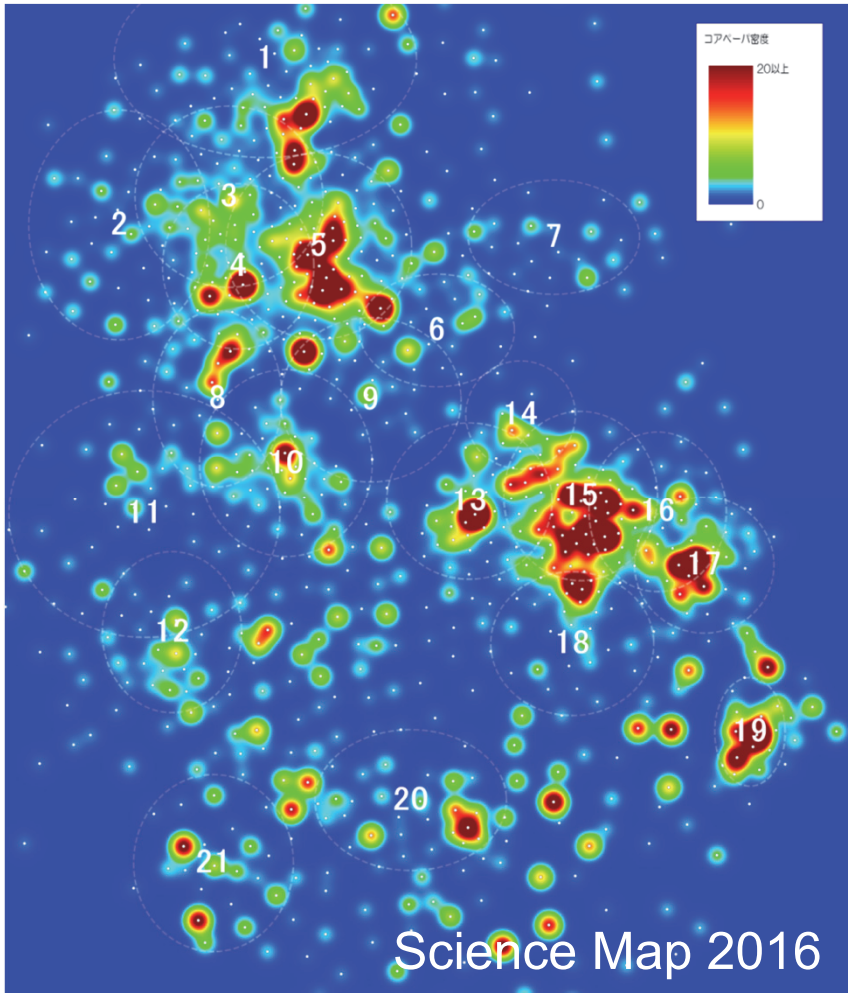
An Example of Survey Results:
Structural Shifts in Japan (Scientific papers by organization sector)

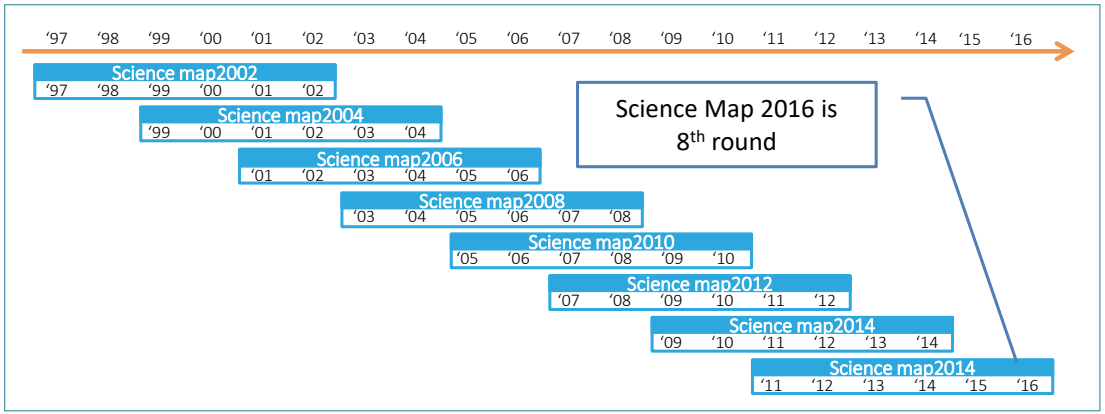


(Source) Benchmarking Scientific Research 2017, NISTEP Research Material-262, published on August, 2017

Science Map

- Published for the first time in 2005. This survey is published almost every two years.
- Shows the interrelationships among research areas (RAs) where there are active researches today.
- The RAs are generated by grouping the top 1% highly cited papers, using co-citation analysis. Science Map 2016, the latest map, covers papers published from 2011 to 2016.





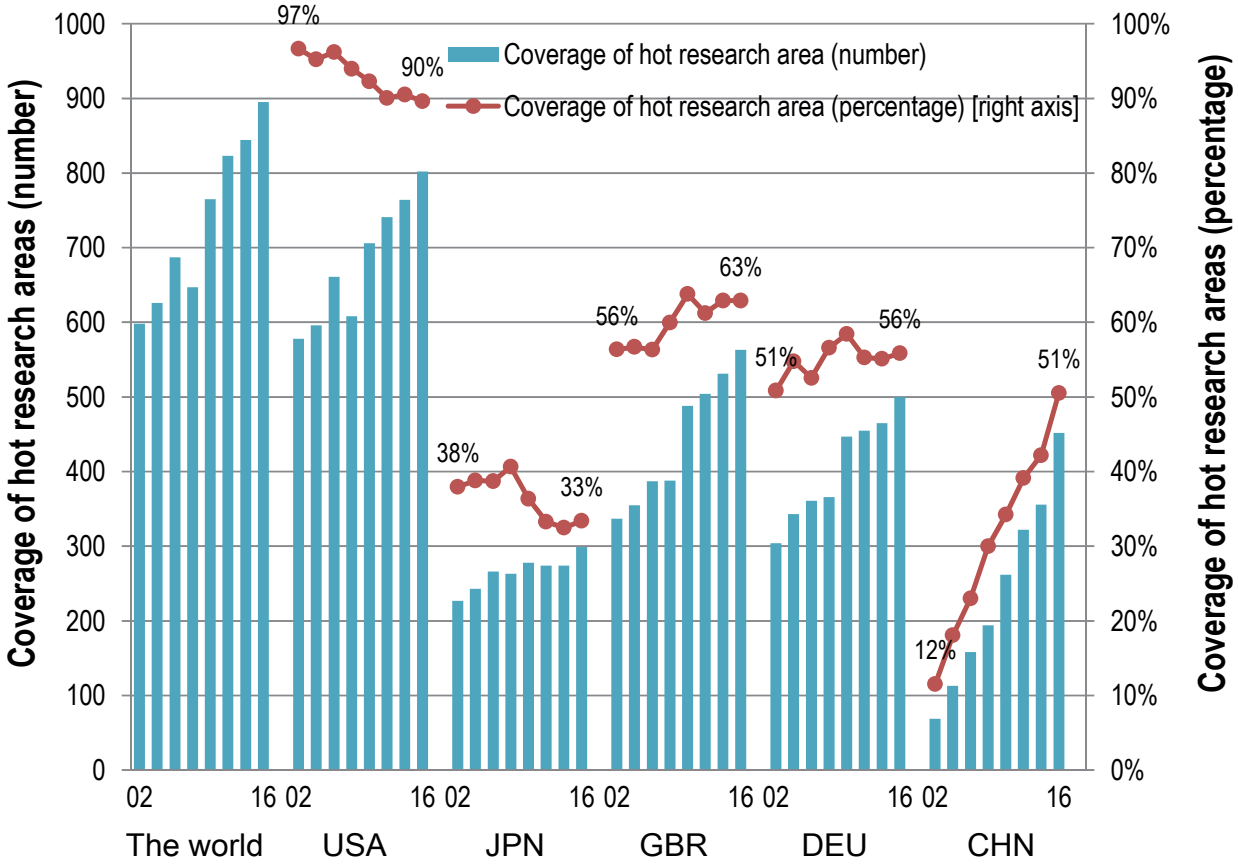
ID	Research area groups
1	Research on cardiovascular disease
2	Research on infectious diseases
3	Research on digestive system disease
4	Research on immunology
5	Cancer genome analysis & gene therapy, stem cell research
6	Research on brain and neurological diseases
7	Research on psychiatric disease
8	Research on viral infectious diseases
9	Gene expression control, life-nano bridge
10	Plant science research

ID	Research area groups
11	Environment (Research on ecological system)
12	Environment (Research on climate change)
13	Chemical synthesis
14	Nanoscience (Life sciences)
15	Nanoscience (Chemistry)
16	Nanoscience (Physics)
17	Quantum information & solid state research
18	Energy creation
19	Particle physics and cosmology
20	Soft computing related research
21	Social information infrastructure related research

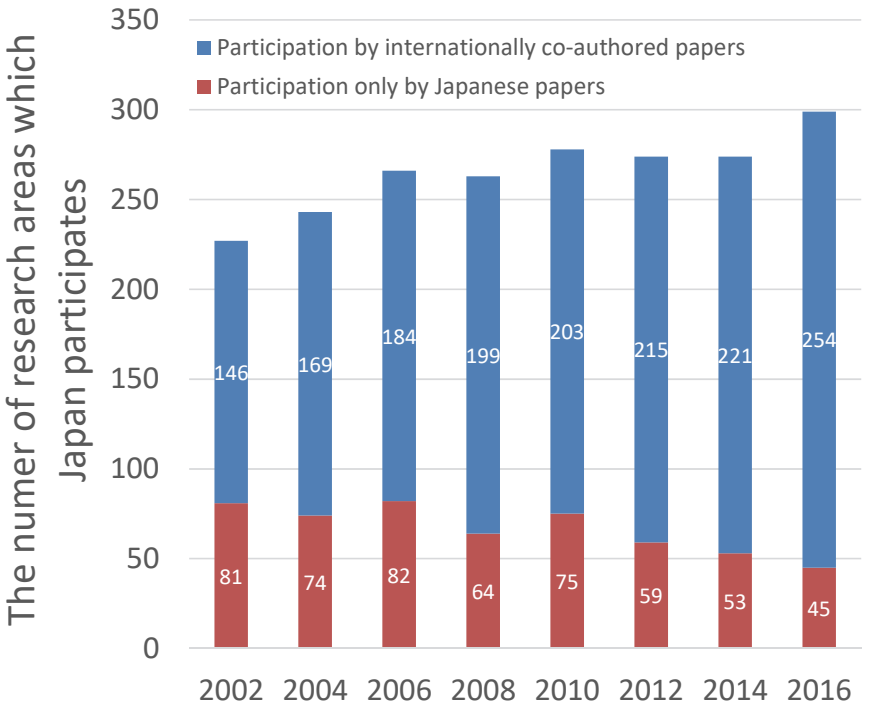
(Source) Science Map 2016, NISTEP REPORT No.178, published on October 2018

Science Map

An Example of Survey Results:
Changes in the coverage of Hot Research Areas (RAs) in selected countries



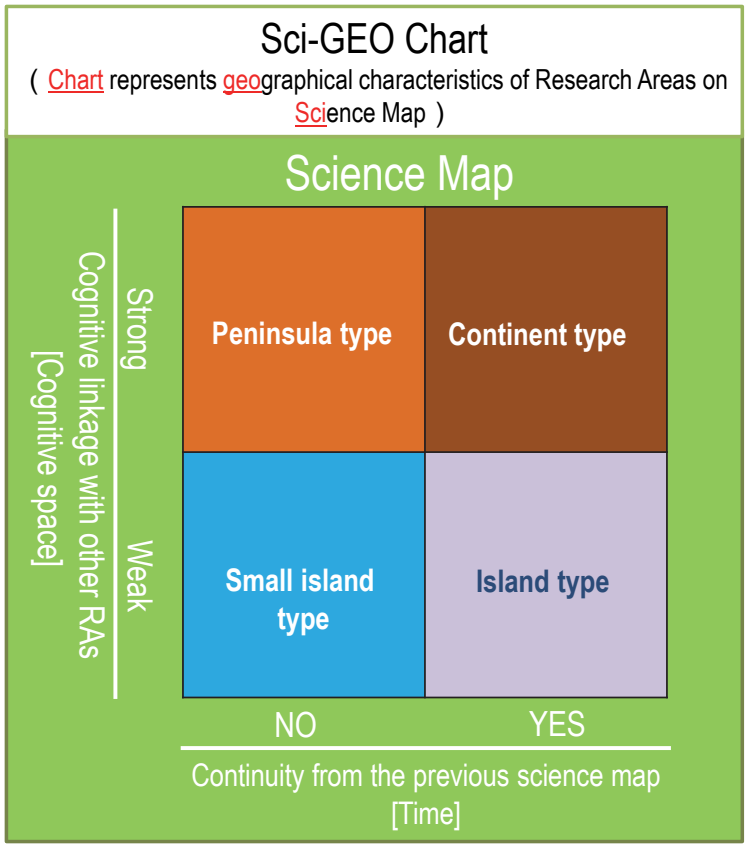
An Example of Survey Results:
Analysis of the coverage of Hot Research Areas (RAs) in Japan



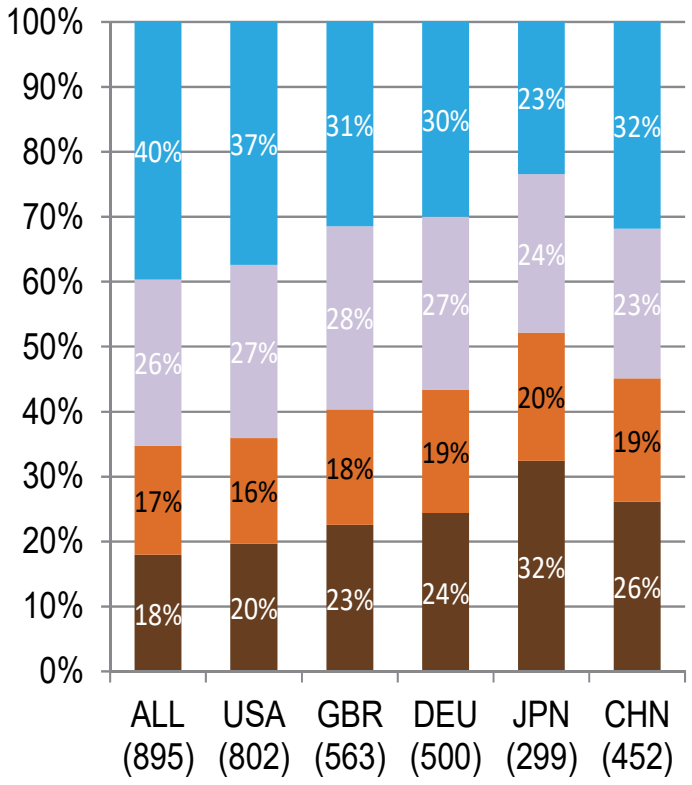
(Source) Science Map 2016, NISTEP REPORT No.178, published on October 2018

Science Map

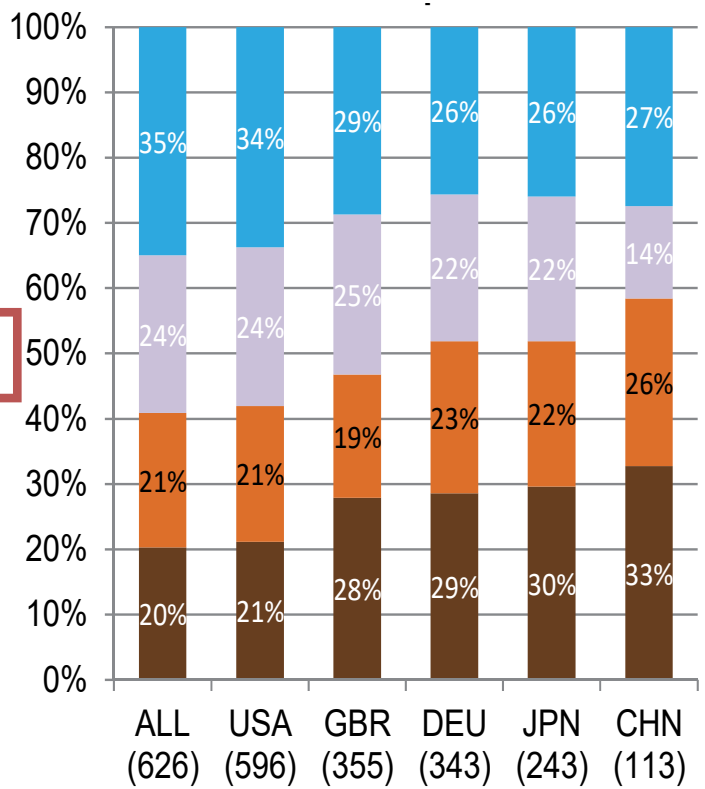
An Example of Survey Results:
Categorization of RAs by Sci-GEO chart



An Example of Survey Results:
Balance of each Sci-GEO type in Scinece Map 2016



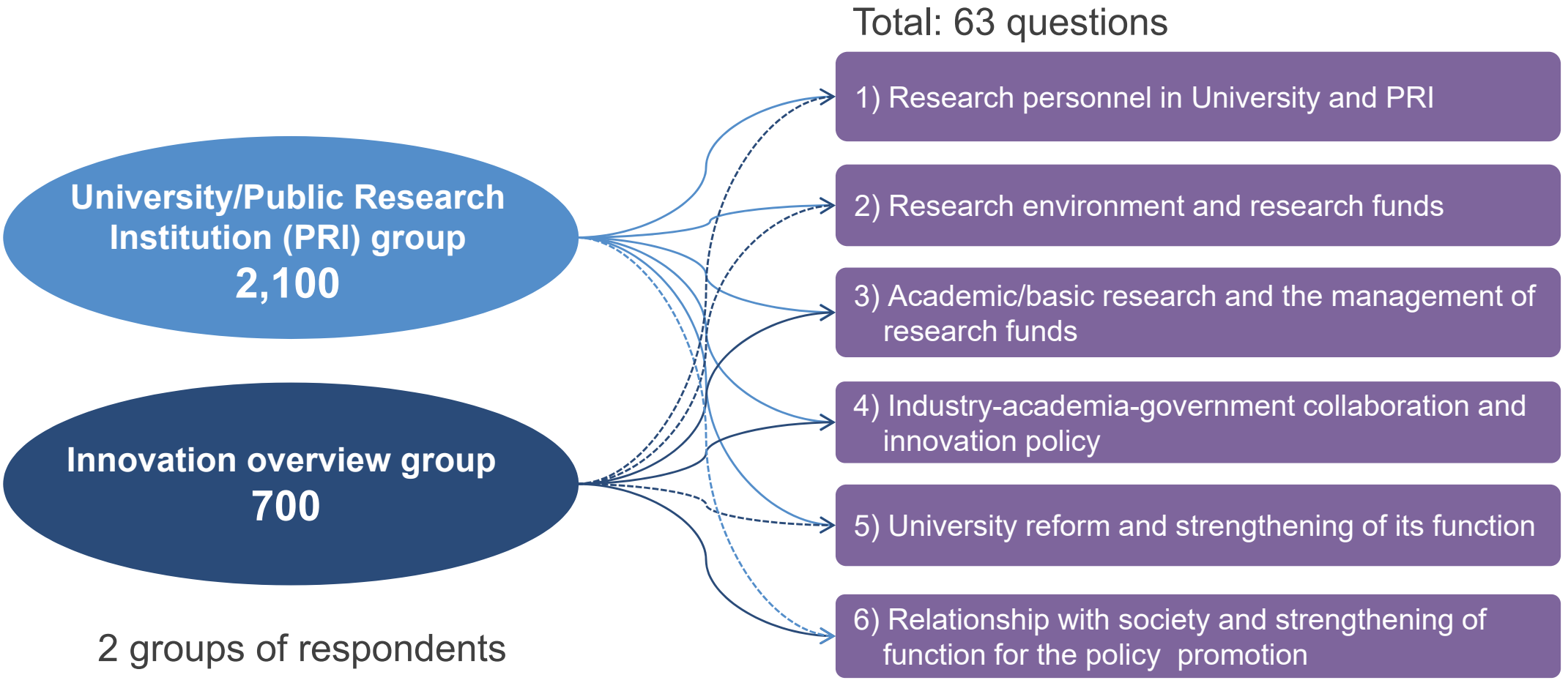
An Example of Survey Results:
Balance of each Sci-GEO type in Scinece Map 2004



(Source) Science Map 2016, NISTEP REPORT No.178, published on October 2018

NISTEP Experts Survey on Japanese S&T and Innovation System (NISTEP TEITEN survey)

- Published for the first time in 2007. This survey is published every year.
- Tracks the situation and trends of STI system in Japan through the survey to Japanese experts and leading researchers in universities, public research institutions, and private firms.
- Annual survey to the same respondents (fixed cohort)
- The current survey is the 3rd phase (2016 – 2020 FY).



Note: Questionnaires were composed in line with the 5th Science and Technology Basic Plan.

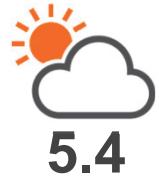
NISTEP TEITEN survey

An Example of Survey Results: Measuring recognition change during the implementation period of the 4th S&T Basic Plan (FY 2011-2015)

Positive changes

Usability of research expenses in Grants-in-Aid for Scientific Research. **0.79 ↑**

Fostering and recruitment of **research administrators** for the smooth execution of research activities. **0.35 ↑**



Negative changes

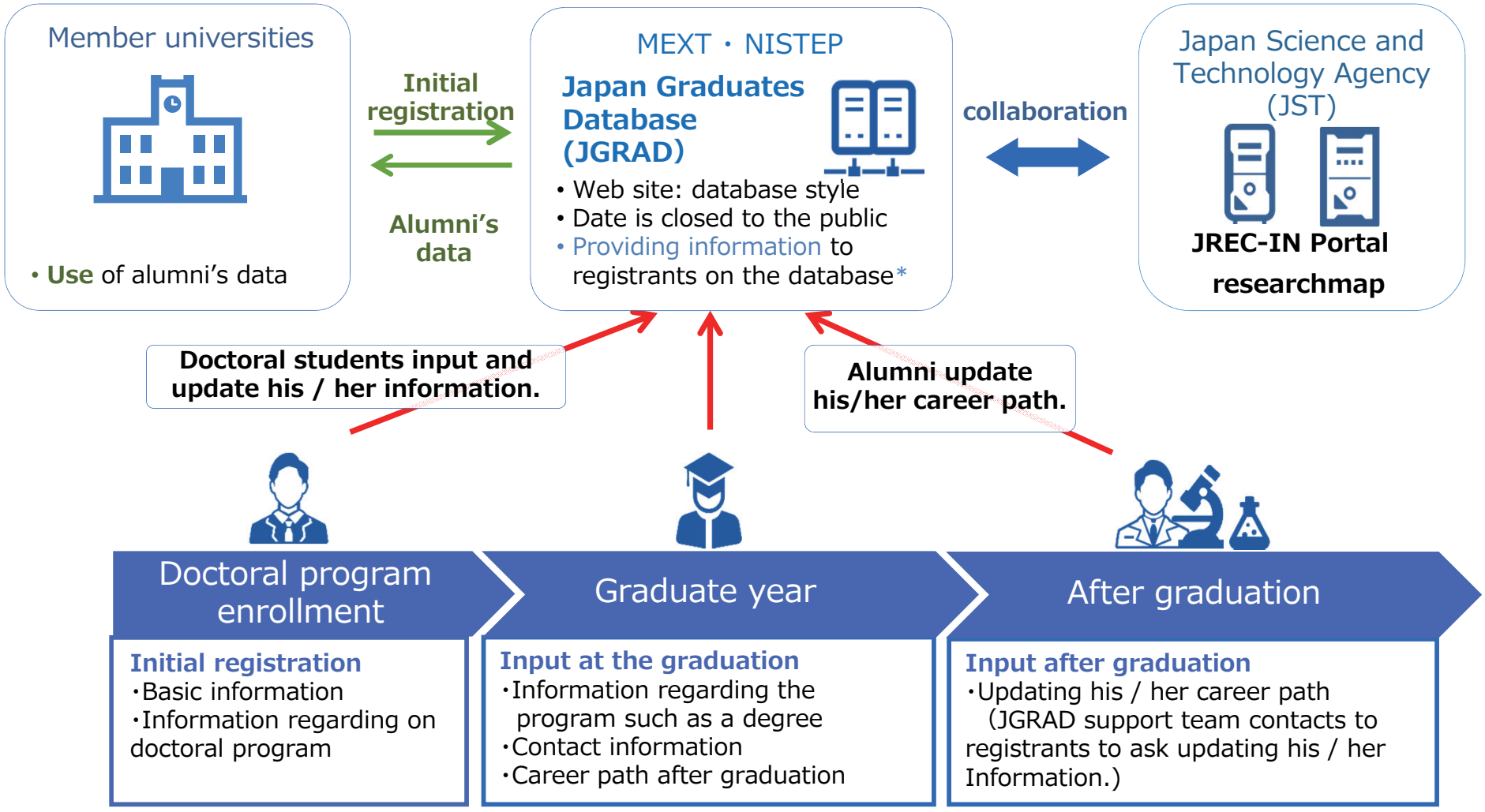
Baseline funding for executing baseline R&D at universities and PRIs. **0.62 ↓**

People with the required capabilities seeking to **enter doctoral programs**. **0.57 ↓**

(Source) NISTEP TEITEN Survey 2015, NISTEP REPORT No.166, published on March 2016

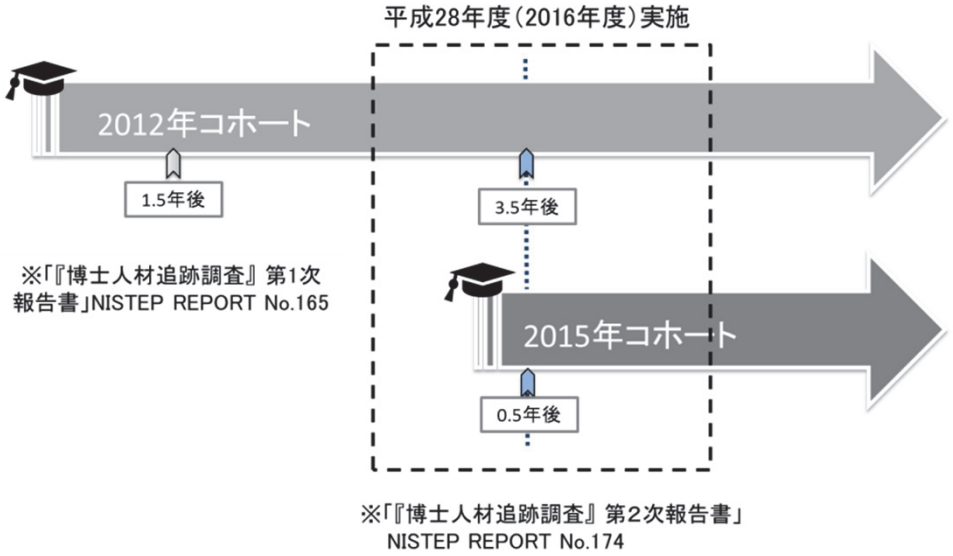
Japan Graduates Database (JGRAD)

- JGRAD aims to continuously capture information on the career path of doctoral holders.
- Pilot operation was began in 2014 and full-scale operation is started in 2017.
- By the end of Aug. 2018, over 14,000 registrants from 43 universities.

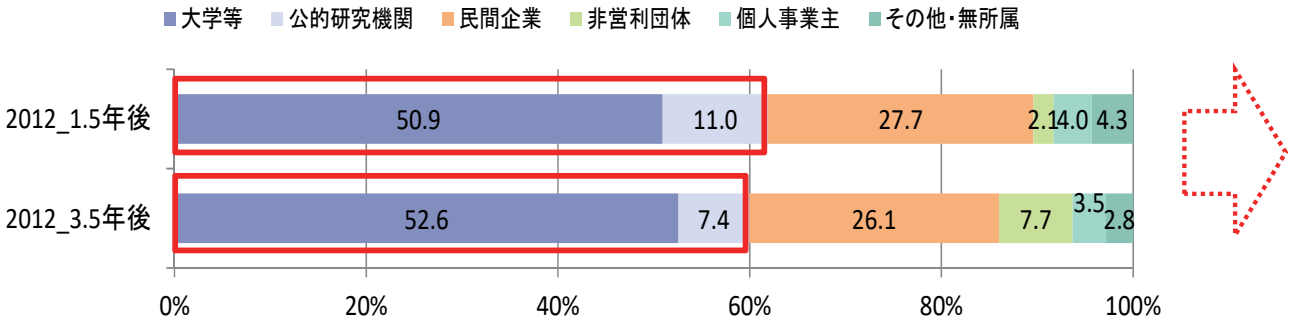


Japan Doctoral Human Resource Profiling : JD-Pro

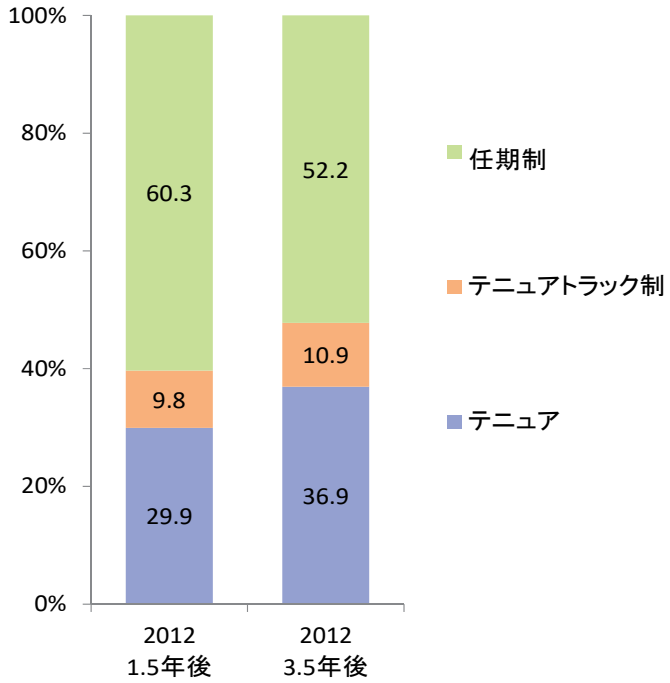
- Published for the first time in 2015. This survey is published every 3 years.
- The survey is conducted on doctoral graduates who completed their courses in the specific year. The goal is to grasp career paths of doctoral human resources by revealing their current status of employment and research activities.
- The 2nd survey targeted on graduates in 2012 (the 2012 cohort) and graduates in 2015 (the 2015 cohort) about their current employment status.



An Example of Survey Items：Status of Employment in organizations (2012 cohort)



An Example of Survey Items：Status of employment in academia (universities and public research institutes) (2012 cohort)

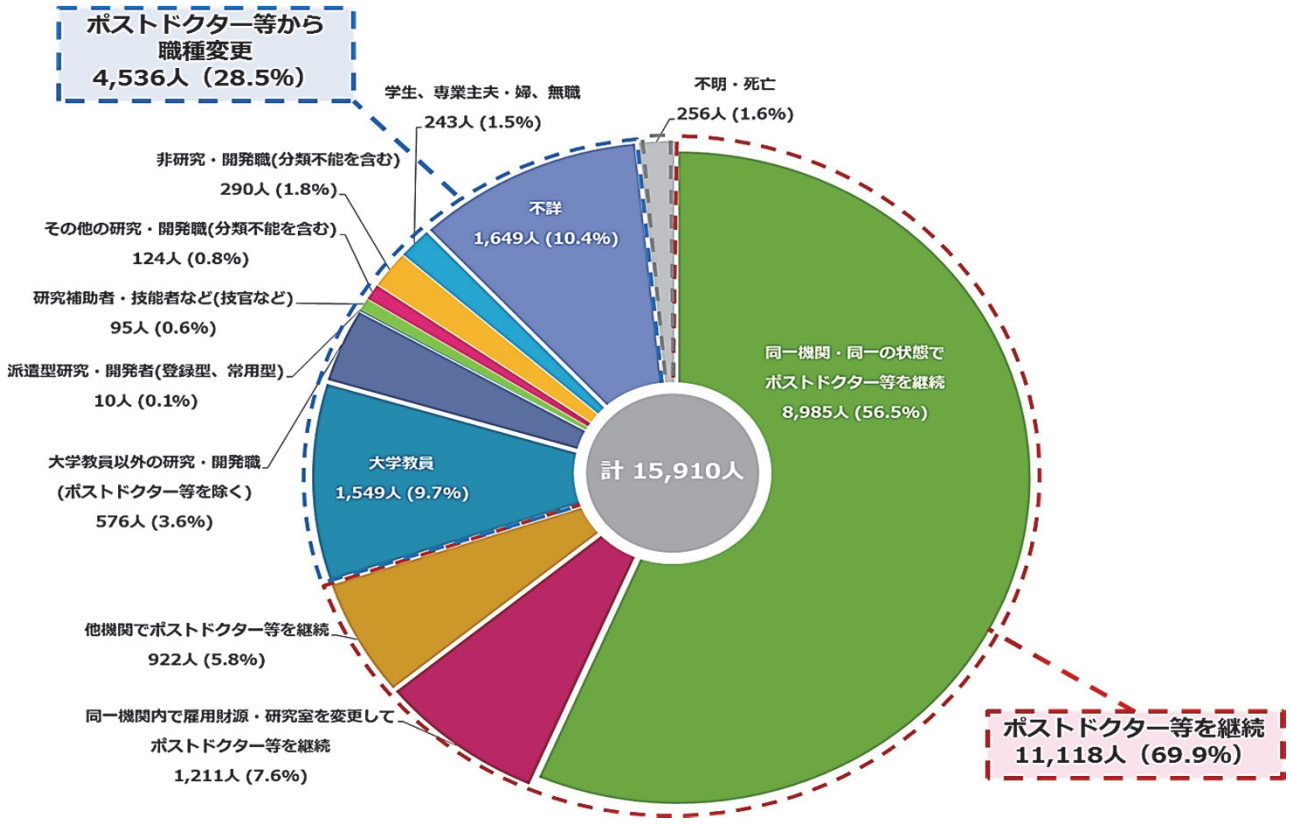


(Source) 2nd Report of "Japan Doctoral Human Resource Profiling, NISTEP REPORT No.174, published on February, 2018

The 2015 Survey on Postdoctoral Fellows Regarding Employment and Careers in Japan<Governmental Statistics>

- The aim of this study is analyzing young researchers' situation by grasping their employment status and career development focusing on postdoctoral fellows in universities and public research institutions.
- This survey is started in 2005 and has been conducted every year during 2004-2009, and is conducted by MEXT and NISTEP every three years. It became governmental statistics in 2015.
- 1,168 institutes cooperated for the latest survey in 2015.

An Example of Survey Results: Employment status of postdoctoral fellows as of FY2015



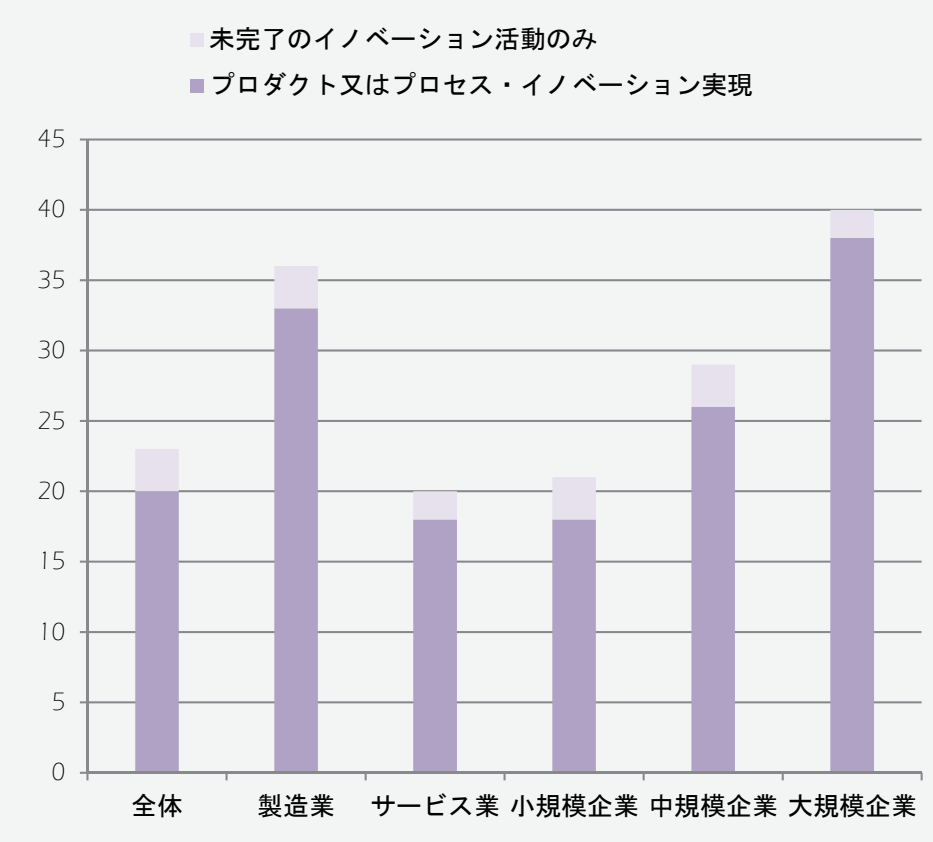
※Postdoctoral Fellows
Out of the persons with a doctorate or persons who obtained the required credits and then withdrew from the doctoral course (i.e., coursework completed without a degree), persons who are employed with fixed-term contracts and 1) who are engaged in research activities in universities or inter-university research institutes and are not engaged in education/research jobs based on Article 92 of the School Education Act, including professors, associate professors, assistant professors, assistants, and others, or 2) who are not engaged in management jobs, including leaders, principle researchers, and others of the research group the person belongs to, out of those who are engaged in research activities in public research institutions, including incorporated administrative agencies (including national research institutes and municipal research institutes).

(Source) The 2015 Survey on Postdoctoral Fellows Regarding Employment and Careers in Japan, NISTEP Research Material-270, published on January, 2018

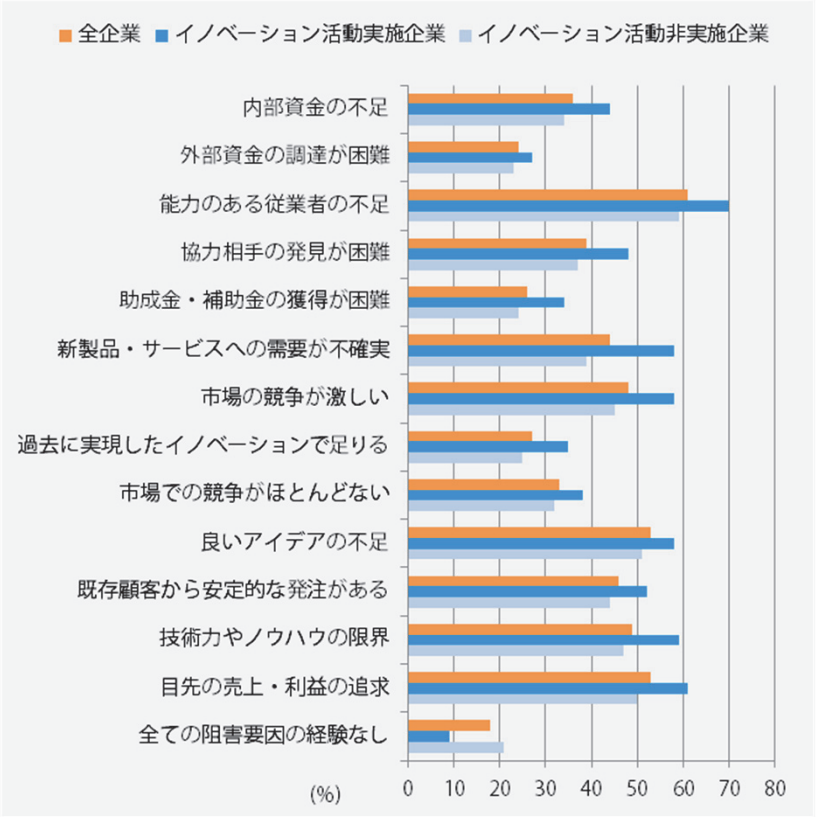
Japanese National Innovation Survey <Governmental Statistics>

- The first round implemented in 2003, followed in every several years. The results of the fifth round (J-NIS 2018) to be published in FY2019.
- A governmental statistical survey for enterprises (sample size: more than 30,000 enterprises) to capture and analyze the status and trends of realizing innovations and innovation activities in firms as well as those of the national innovation system.
- The survey results indicate, e.g. the situations of realizing innovations and the open innovation in a country. They are also used as data for internationally comparable innovation indicators by OECD etc.

An Example of Survey Results: Ratios of Innovating Firms (to All the Firms) by Manufacturing/Services and Enterprise Size Class



An Example of Survey Results: Key Factors of Hampering Innovations

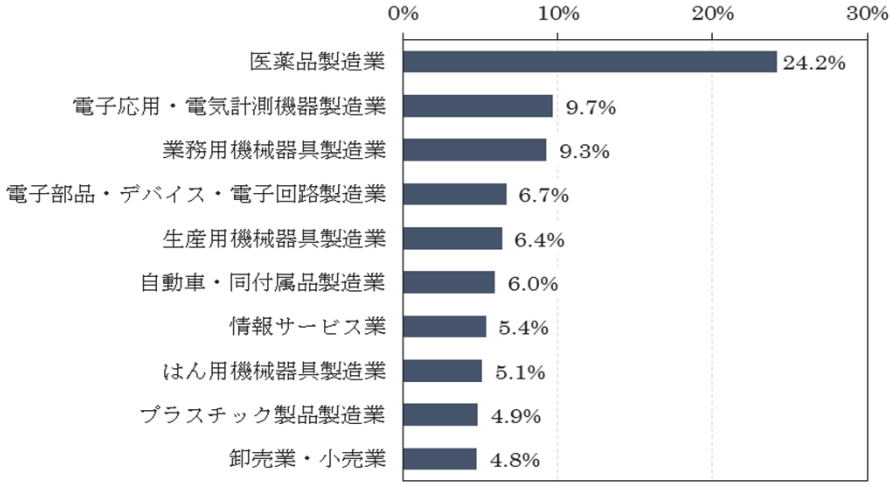


(Source) Report on the Fourth Round of the Japanese National Innovation Survey (J-NIS 2015), NISTEP REPORT No.170, published on November 2016.

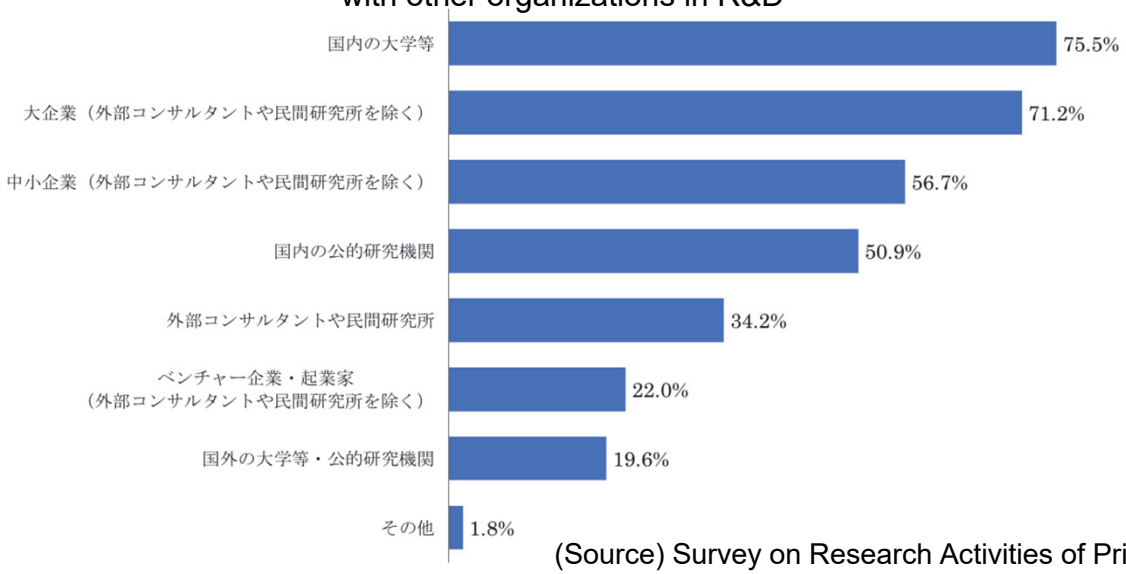
Survey on Research Activities of Private Corporations<Governmental Statistics>

- Is transferred from MEXT in 2008, and published every year.
- Analyzes qualitative data on corporate research and development trends, related strategies and organizational changes, etc., for private companies (capital of 100 million Yen or more).

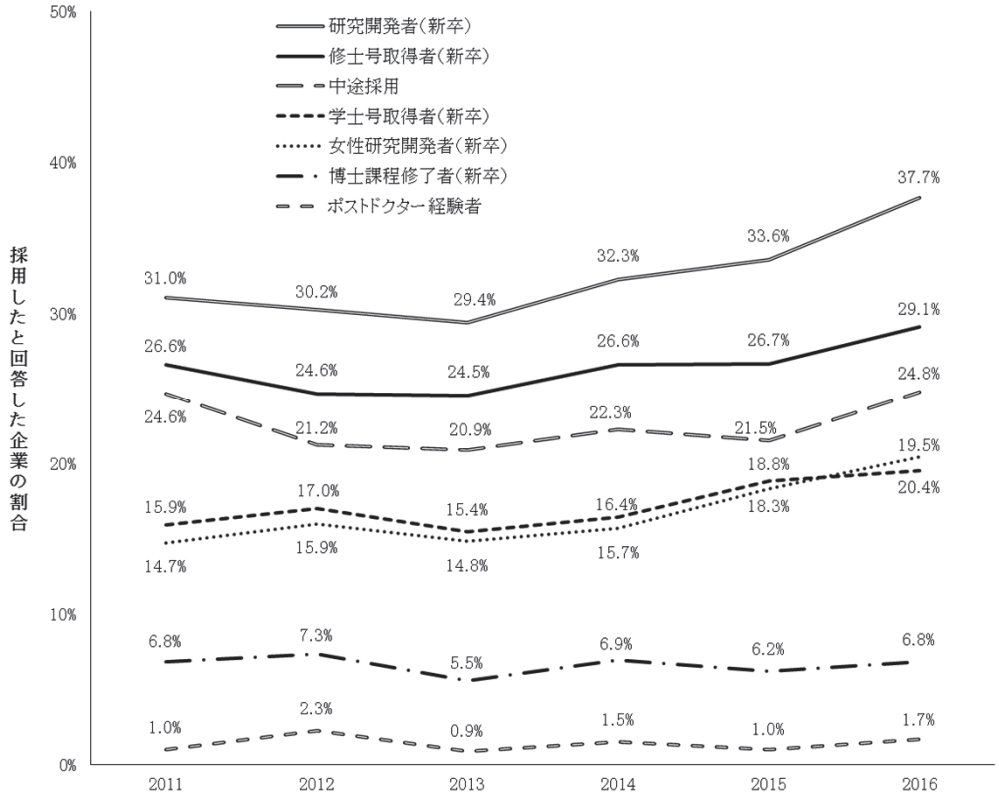
An Example of Survey Results: Research and development intensity of major industries



An Example of Survey Results: Types of organizations in collaboration with other organizations in R&D



An Example of Survey Results: Trend of recruitment of R&D personnel by academic degree or category of career

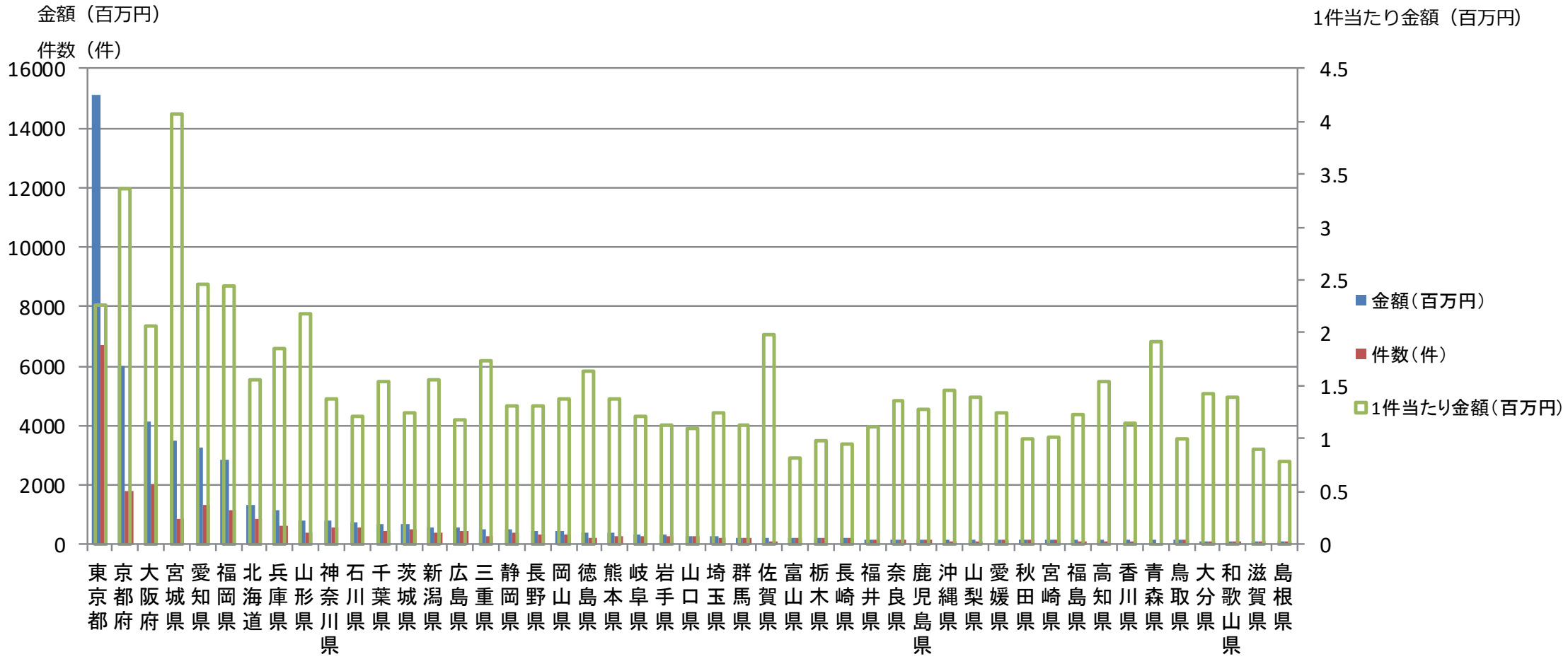


(Source) Survey on Research Activities of Private Corporations 2017, NISTEP REPORT No.177, published on May 2018.

Regional Science and Technology Indicators

- Published for the first time in 2000. The 2018 edition will be published in the end of this year.
- Analysis current situations of regional science and technology infrastructure and activities, utilizing analysis of eight items such as companies, research institutes, universities, local municipalities, Grants-in-Aid for Scientific Research, university-industry collaboration, patents and journal articles.

An Example of Survey Results: Accepted amount and number of cooperation between universities and private enterprises by prefecture（2012）



(Source) Regional Science and Technology Indicators 2016, NISTEP Research Material-246, published on March 2016.

Historical Development of STI Policy and Foresight

1970-80's
- Catch-up process
- Bottom-up decision making
- Consensus among sectors

1990's
- Transition phase
- Moderate link of foresight surveys to comprehensive S&T policy

2000-
- Prioritization
- Top-down decision making/prioritization
- Link S&T policy to foresight surveys

2010-
- Shift to problem-solving, backcasting approach

2015-
- Integration of S&T policy and innovation policy

S&T BASIC PLAN

Japan is the pioneer of S&T foresight surveys. Its method has been adopted in many countries.

1995 S&T Basic Law

1996-2000 The 1st S&T Basic Plan

2001-2005 The 2nd S&T Basic Plan

2006-2010 The 3rd S&T Basic Plan

Innovation 25

2011-2015 The 4th S&T Basic Plan

Japan Vision 2020

2016-2020 The 5th S&T Basic Plan

Foresight

Technology Development centered Seeds type

Shift to Needs driven type

Shift to Problem-solving type

Social vision Development type

1971-1997
The 1st– 6th Technology Foresight
- Delphi

2001 The 7th Technology Foresight
- Delphi
- Needs analysis

2005 The 8th S&T Foresight
- Delphi
- Scenario
- Study on emerging technologies
- Needs analysis

2010 The 9th S&T Foresight
- Delphi
- Scenario
- Regional workshops

2015
The 10th S&T Foresight
- Future vision
- Scenario
- Delphi

Summary of the 11th Science and Technology Foresight

<Part 1> Horizon Scanning

<Objective>
Understand the current situation and capture weak signals.

<Contents>
・Organize and order societal trends regarding science and technology by utilizing related literature
・Capture emerging science and technology that will make a future impact

<Part 2> Visioning

<Objective>
Envision the desirable future.

<Contents>
・Consider what kind of desirable society can be created while keeping social changes in mind, as well as the results from current trends obtained from Horizon Scanning.

<Part 3> Delphi Survey

<Objective>
Assess science and technology topics.

<Contents>
・Extract those science and technology topics that are expected to be realized in the future
・Questionnaire survey will be implemented with expert investigators to assess their importance, feasibility, etc.

<Part 4> Scenario planning

<Objective>
Describe the scenarios and strategies required to realize the desirable society.

<Content>
・Consider the scenario themes.
・Draw future scenarios based on the desired future and the trends in science and technology.

Contribution to S&T Policies

Science and Technology Basic Plan / Future Consideration

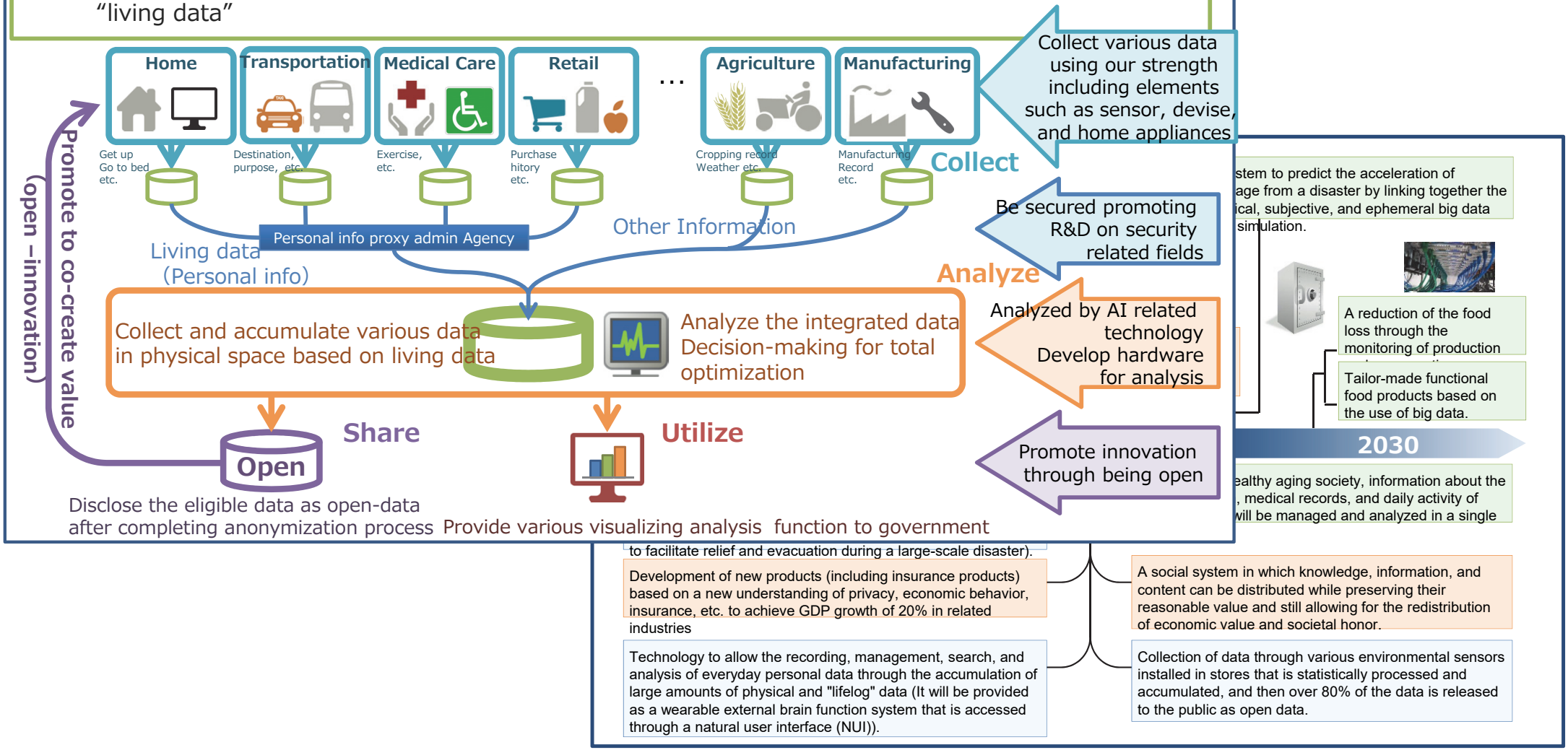
Research & Development Assistance Data

Continuous Horizon Scanning Activity

Result Image（An Example of Survey Items:10th STI Policy and Foresight Surveys）

Leadership Scenario through Centralized Information Collection and Analysis based on “Manufacturing Ability”

- Consider the technology development for IoT/IoE that Japan had strength and the progress on social challenge resulting from declining workforce
- Lead advanced information society by centralized collecting and analyzing various data such as “living data”



（Source）The 10th Science and Technology Foresight: Future Perspectives on Science and Technology by Field, NISTEP Research Material-240, published on September, 2015

NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY POLICY

Contents

- Outline of NISTEP
- Main Researches
- **International Conferences**
- The Researchers with Nice Step

International Conference on Foresight

- NISTEP discusses and exchanges opinions with experts in Japan and abroad by organizing international conferences in carrying out survey research.
- Representative conferences: international Conference on foresight started in March 2000 (8 times)

The 1st International Conference on Foresight（March 2000)
The approach to and the potential for New Technology Foresight

The 2nd International Conference on Foresight（February 2003)
The Third Generation Foresight and Prioritization in Science and Technology Policy

The 3rd International Conference on Foresight（November 2007)

The 4th International Conference on Foresight（March 2011)
Foresight for Future Society: Diversified Development of Activities

The 5th International Conference on Foresight（February 2014)
Foresight Activities for Solving Societal Issues

The 6th International Conference on Foresight（March 2015)
Thinking about the Future Possibility of Foresight toward Contribution to Policy Making

The 7th International Conference on Foresight（March 2016)
Prospects for the Disaster Risk Reduction and Aging Society in the World

The 8th International Conference on Foresight（November 2017)
Foresight for Strategic Planning
Session 1: Strategy and Foresight toward the future
Session 2: New Dimensions of Foresight: Stakeholder Involvement for Consensus Building
Session 3: Foresight in Digitalization: Best Practices

The 7th International Conference on Foresight

The 8th International Conference on Foresight

Trilateral Science and Technology Policy Seminar

- This seminar aims to deepen research exchanges with 4 governmental think tanks on S&T policy in China and Korea, started in 2006. The 13th seminar will be held on November 14 and 15 in Sendai.
- Member institutes: NISTEP, Institutes of Science and Development, the Chinese Academy of Sciences (CASISD), Chinese Academy of Science and Technology for Development (CASTED), Korea Institute of S&T Evaluation and Planning (KISTEP), and the Science and Technology Policy Institute (STEPI in South Korea)

Outline the 12th Trilateral Science and Technology Policy Seminar

October 2017(China)

Session 1 :2017 Highlights of Research Activities
Session 2: Policy Practice on Cultivating New Momentum for Economic Development through Science, Technology and Innovation
Session 3 :Developing Innovation Community under International STI Cooperation
Session 4: Entrepreneurship and Employment in the context of Globalization or De-Globalization
Session 5: Technology Foresight: Methodology and Results

The12th Trilateral Science and Technology Policy Seminar


The12th Trilateral Science and Technology Policy Seminar

NATIONAL INSTITUTE OF SCIENCE AND TECHNOLOGY POLICY

Contents

NISTEP Selection (The Researchers with Nice Step)

- Since 2005, NISTEP has selected researchers who made outstanding contributions to S&T as “NISTEP Selection (the Researchers with Nice Step)”.（153 selected researchers in total）

✓ Professor Shinya Yamanaka (Kyoto University, selected in 2006) and Professor Hiroshi Amano (Meijo University then, selected in 2009) are researchers with Nice Step, and were lately awarded the Nobel Prize.

✓ In 2017, researchers leading new fields, researchers promoting co-creation with science and technology and society, researchers developing internationally, foreign researchers active internationally based in Japan, developers of innovative research methods and tools, researchers connecting research results to innovation are selected.

＜2017＞

○Dr. Arisa EMA（33） Project Assistant Professor, of Arts and Sciences, College of Arts and Sciences, The University of Tokyo

○Dr. Shinpei KATO(35) Associate Professor, Department of Computer Science, Graduate School of Information Science and Technology, The University of Tokyo/ CET・CTO, Tier Ⅳ, Inc

○Dr. Tenkai KIN（38） Associate Professor, Department of Systems Innovation Engineering/CTO, AISing Ltd.

○Dr. Hiroshi TAKAGI（43） Associate Professor, School of Environment and Society, Tokyo Institute of Technology

○Dr. Daichi CHIBA（39） Associate Professor, Department of Applied Physics, Graduate School of Engineering Science, The University of Tokyo

○Dr. Keiji NISHIDA（38） Professor, Graduate School of Science, and Technology and Innovation, Kobe University/ Director, Bio Palette Co., Ltd.

NISTEP Selection 2017

○Dr. Toshihide HIGE（36）Research Scientist, Janelia Research Campus, Howard Hughes Medical Institute

○Dr. Kyoko MIURA（37） Associate Professor, Department of Aging and Longevity Researches, Faculty of Life Sciences, Kumamoto University

○Dr. Junichiro YAMAGUCHI（38） Associate Professor, Department of Applied Chemistry, School of Advanced Science and Engineering, WASEDA University

○Dr. Francois Le Gall(39） Associate Professor, Graduate School of Informatics Department of Communication and Computer Engineering

○Dr. Yoshihide WADA（37） Deputy Director, Water Program, International Institute for Applied Systems Analysis(IIASA)

[*As of November 2017]