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Call for Development of “Science, Technology and Innovation Basic Plan” that Contributes to Future Creation

- Second Proposal Toward Formulating the 5th Science and Technology Basic Plan -
(Overview)

March 17, 2015

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Basic Approach

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Industries have been appreciating the activities of the Council for Science, Technology and Innovation promoted under the Abe administration

Capture the science, technology and innovation policy as the national growth strategy and develop the 5th Science and Technology Plan* into a plan filled with conception abilities to create future toward the revitalization of Japan

* 5-year plan between FY2016 and FY2020

Necessity for Planning Based on National Vision

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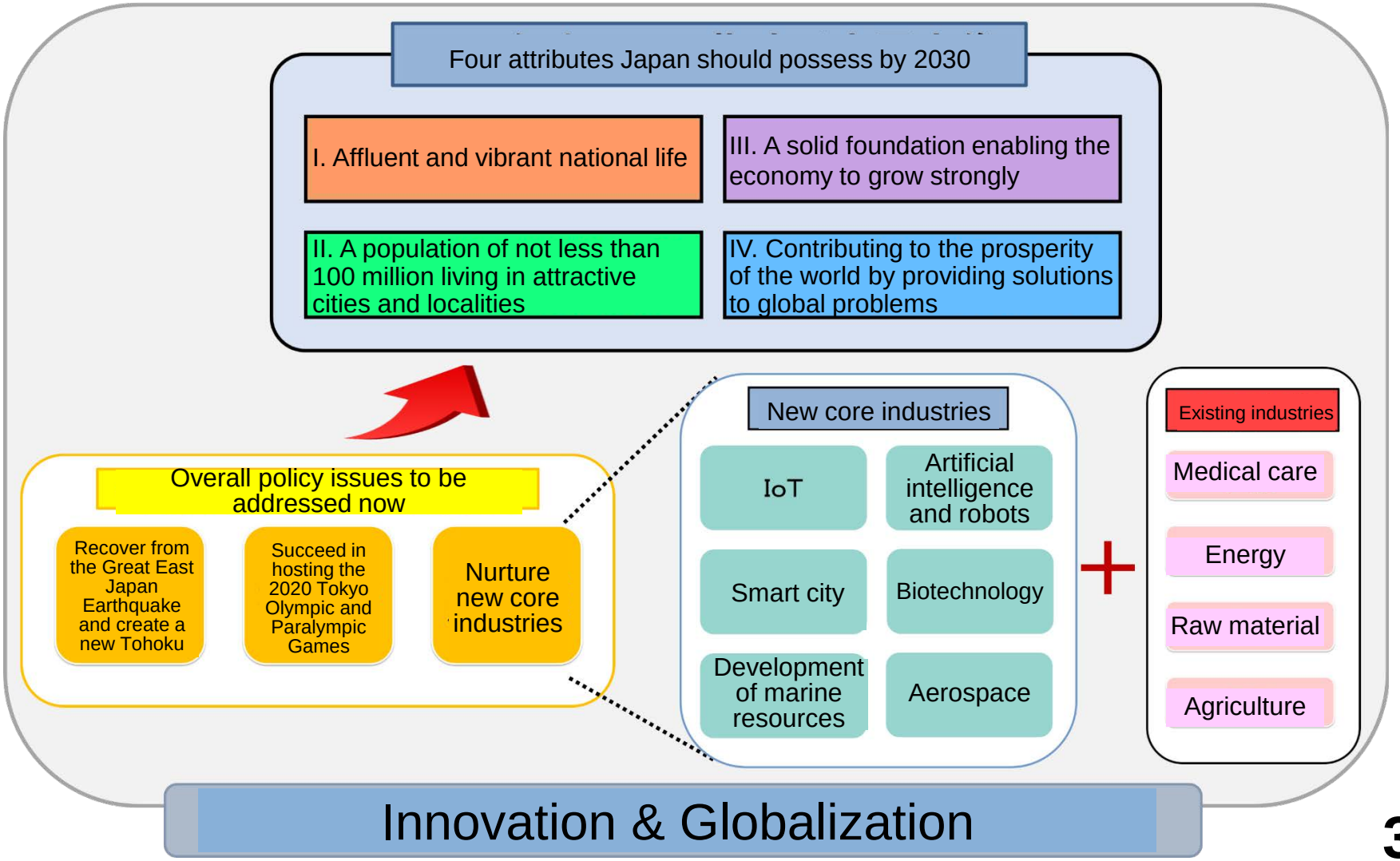
Toward the basic plan based on national attributes/long-term vision



Important Viewpoints Toward Future Creation

Challenge for “New Industrial Revolution” by ICT

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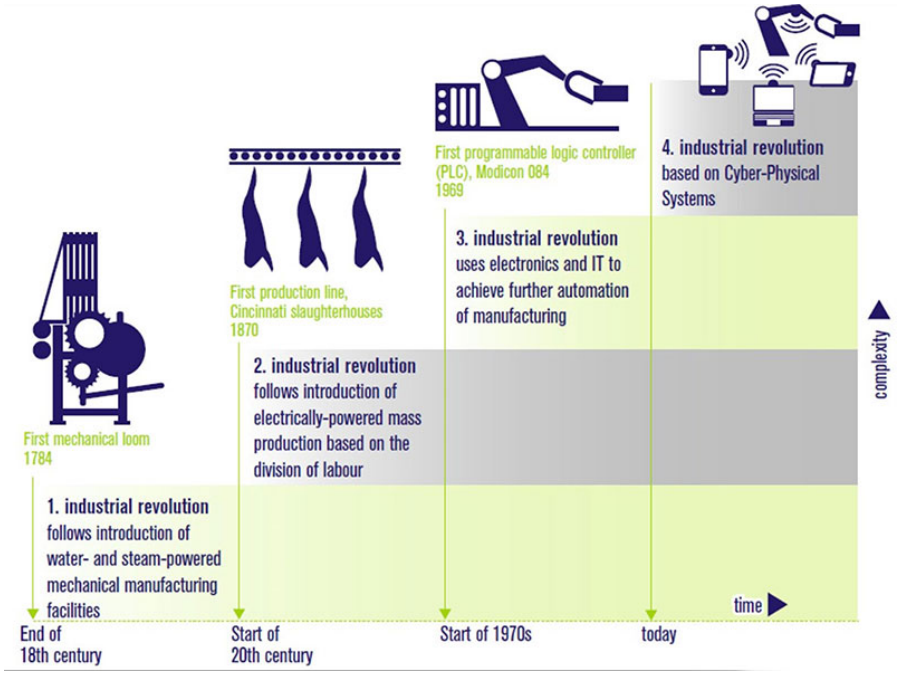
Advent of great innovation in social/industrial structure due to IoT

As all social issues are linked in a complicated manner, “focus on system” began to be important



German government has been promoting the revolution named “Industrie 4.0” (the 4th industrial revolution) on a public and private sector level

* IoT (Internet of Things): Refers to connecting all “objects” and “events” via networks and mutually exchanging information.

[Source] Recommendations for implementing the strategic initiative INDUSTRIE 4.0

Response to International Standardization with Focus on System

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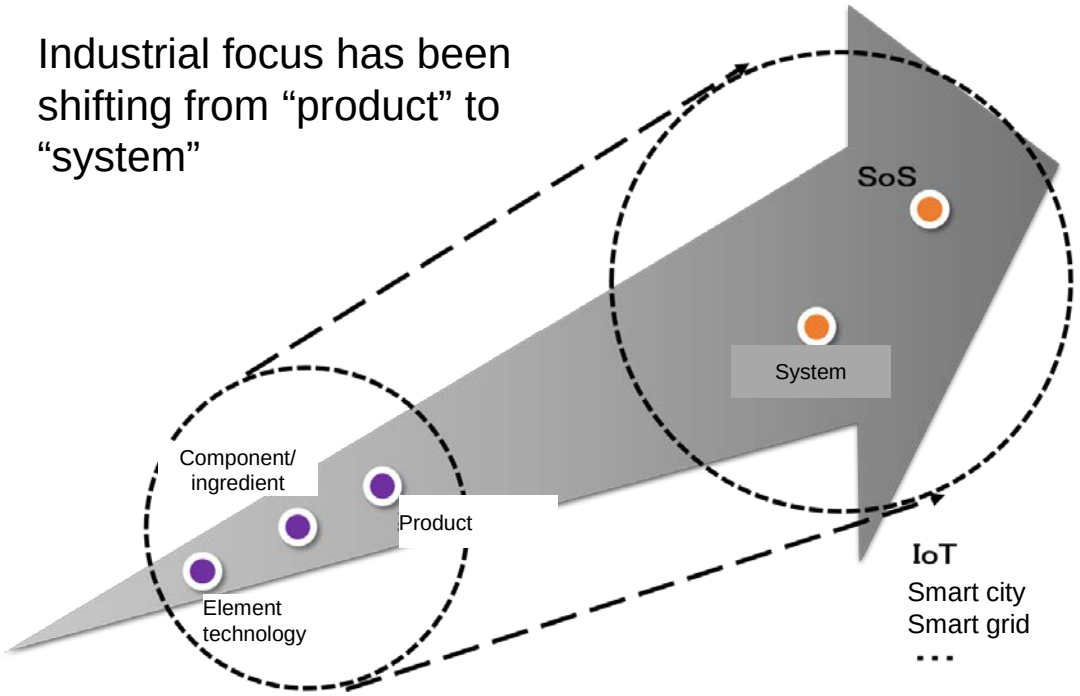
In order to possess competitiveness by “system”, international standardization is important.

It is necessary to respond through collaboration among government, industry and academia based on the trend shifting from product unit to system unit

Industrial focus has been shifting from “product” to “system”



The focus point in standard formulation has been shifting from individual products to system.
Especially in the IoT field, competitions for supremacy have been intensified internationally.

* SoS (System of Systems): System consisting of complicated systems

Full-scale Promotion for Open Innovation

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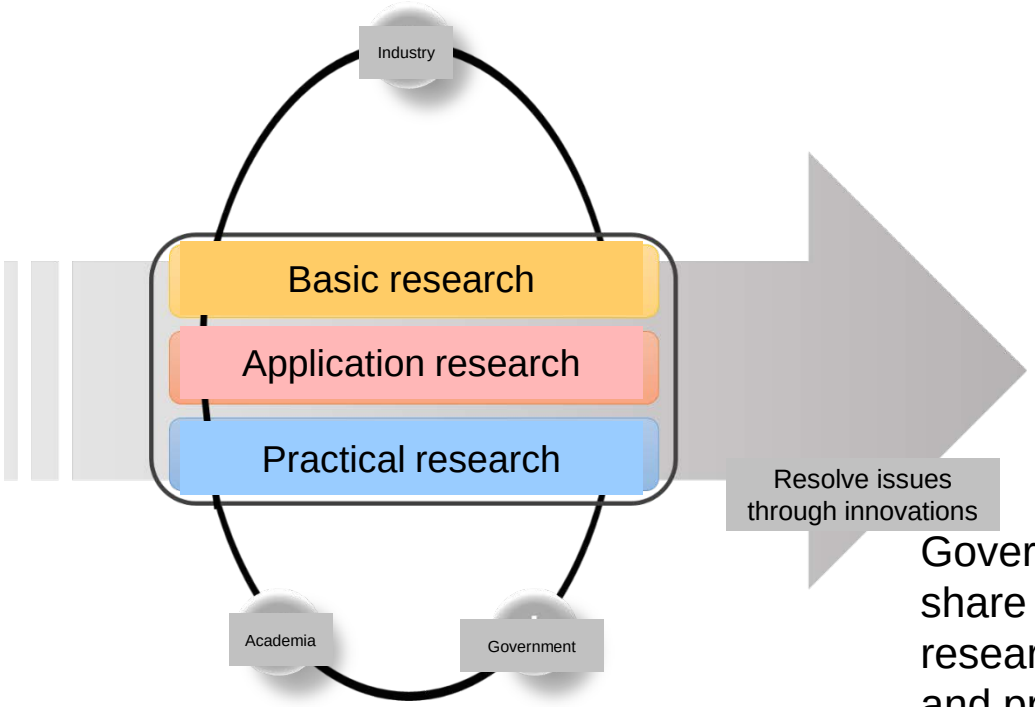
Due to advanced products/services, open innovation began to be important

In the collaboration among government, industry and academia, issues should be shared, and research phases, including basic/application/practical researches, should be promoted simultaneously and continuously



Government, industry and academia share the issues and promote the research phases of basic, application and practical researches.

Important Challenges Toward Future Creation

Important Challenges Toward Future Creation

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Take on challenges for cross-ministerial/innovative issues of the nation

Continuance of SIP and ImPACT should be clearly stated and realized

System	Features
FIRST *1	• R&D program for multiple fiscal years and with unprecedented budget scale • Supports research and development by 30 representative researchers of Japan (3 of them are from the industry) • Total of 100 billion yen [FY2009 supplemental budget]
SIP *2	• Cross-ministerial R&D promotion program • Provides PDs appointed by CSTI with authority to promote total of 10 issues (For 5 of them, appointed PDs from the industry) • Total of 50 billion yen [FY2014 initial budget] (including health/medical care-related issues)
ImPACT *3	• High-risk and high-impact R&D promotion program • Selected 12 people from among the public. Provided them with dynamic authority to plan and carry out research and development (For 5 of these themes, appoint PMs from the industry) • Total of 55 billion yen [Created fund from FY2013 supplemental budget]

*1: Funding Program for World-Leading Innovative R&D on Science and Technology
*2: Cross-ministerial Strategic Innovation Promotion Program
*3: Impulsing PAradigm Change through disruptive Technologies

Important Challenges Toward Future Creation

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Overcome constraints on resources/ environment/energy, etc.

Constraints on resources/ environment/energy, etc. are important issues inside and outside of Japan.

We should refine our proud cutting-edge technologies and lead the world.

Respond to super-aged society

Our country is a “country of advanced issues”, which will become a super-aged society soon

Reduce future social-security burden through science, technology and innovation
Overcome issues by developing cutting-edge technologies and spreading them in the society, resulting in a model of the world

Important Challenges Toward Future Creation

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Security/safety and national existence

Ensuring security/safety is an important foundation for the public.

Protect daily lives of the public by enhancing national resilience and cyber security

Enhance common fundamental technology

Promote research and development for important fundamental technologies to many industries

ICT **Robot** **Bio** **Space**

etc.

Enhancement of Innovation/National System

Enhancement of Innovation/National System

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Further enhance the control tower function of CSTI

- Optimize overall science and technology funding
- Enhance the capability to get an overview under collaboration with other headquarters

National university reforms

- Create unique universities by separating functions
- Management innovation by enhancing governance

[National University Reforms (overview)]

International standard educational research university	Core regional innovation university	Core specific area university
University which conducts the world's best educational researches. Designate especially excellent universities as "designated research universities", and provide special support.	University which places emphasis on community contribution and strives to transmit from the region to the world, resulting in contribution to regional revitalization	University which conducts world level of educational researches in the specific areas as a core university in the country
Designate the graduate schools which have the world's best doctorial course program as "excellent graduate schools".		
Appoint excellent young researchers as "excellent researchers" who can conduct unique researches for a fixed period.		

Enhancement of Innovation/National System

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Research and development agency reforms

- Activities in line with national goals
  Function as the platform for collaboration among government, industry and academia

Funding system reforms

- Reform fundamental cost and competitive resource holistically
  Review allocation of governmental funds and promote private investments

Form new cluster that contributes to regional revitalization

- Collect government, industry and academia and establish clusters for “aiming for the world from the region” based on the regional strengths (industrial clusters, etc.)

Enhancement of Innovation/National System

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Human resource development and understanding and support from the public

- Improve education through collaboration with companies
  Provide correct information to the public

Ensure science and technology budget without fail

- Clearly state and achieve targets for “raising the government's investment in research and development programs to 1% of Japan's GDP” (raise government ratio to 30%)

Initiatives as an Industry

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Leading roles in innovation are played by companies
Efforts toward private sector-led innovation creation are inevitable

- "Proactive management" by taking on challenges for bold research and development and technology development and creating new markets

- Cooperate in governmental R&D programs
  Cooperate in enhancement of CSTI Secretariat functions

- Collaborate with not only different industries but also universities and R&D corporations
  Through university reforms, make efforts to enhance joint studies, etc. with domestic universities