RIETI-NISTEP Policy Symposium

Open Innovation as a Key Driver of Japan's Industrial Competitiveness

Handout

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http://www.rieti.go.jp/en/index.html

Promoting Innovation
What's specific to the Japanese Context

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SETTING THE TUNE

“Innovation” an evolving concept

- Macro-economic view
  - Innovation à la Arrow
    - Technological change
  - Innovation à la Romer
    - Endogenous growth
- System thinking
  - National Innovation System (NIS) à la Freeman & Lundvall
  - Regional Innovation System (RIS)
  - Innovation ecosystem
    - A la Silicon Valley (regional level)
    - A la Cambridge Innovation Center (district level)
- Actor-centric view
  - Entrepreneur-led innovation (start-ups, spin-offs, …)
  - Firm-led innovation
  - **Open Innovation** à la Chesbrough
  - Networked innovation
- As a tool for social transformation
  - Social innovation, Inclusive innovation, Frugal innovation, Citizen-led innovation…

Linking micro-level action to macro-level impact

- Shifting innovation
  - From an individual entrepreneurial action
  - To more concerted, collective, combinatory, networked action
- Shifting economic structure
  - Raise of Global Value Chains
  - "*How has the US technology sector changed since 1980?*" http://www.economist.com/techfirms
  - Backed by the rise of data-driven economy, Internet economy, on-demand economy,…

➡ Moving centers of gravity!

Challenging task!

Open Innovation as a key driver of Japan's Industrial Competitiveness

Japanese industry's strengths

- Perception from outside
  - Cumulated and consolidated technologies and know-how in the manufacturing sector
  - Tech-driven innovation (mostly in-house)
    - Process > Product, Incremental > Radical
  - Government-led consortium
  - In-situ teamwork (mostly inside border)
  - Continuing improvement (increased complexity)
- Remained a strength today?
  - Institutionally compatible with Open Innovation?
  - And with new trends in economy?

Institutional practices in Japan

- Labour market
  - Mobility
    - Internal > External
    - Passive > Active
  - Competencies required
    - To be discovered > Codified
- Bureau Pluralism à la Aoki
  - Incumbents > New entrants
- Value systems
  - Acculturation > Acceptance of diversity

Friendly for Open Innovation? Space for entrepreneurial actions?

Need to prepare the ground?

- Waiting for some invisible hand?
  - The Japanese institutional practices not facilitating the self-adjustment
- Revisiting the framework conditions of innovation?
  - Inducing institutional changes
- Or more proactive role for the government as suggested by Mazzucato?
  - Entrepreneurial State

POLICY ACTIONS

Where we stand now

- 20 years of experiences with Science & Technology Basic Plans
- From Science & Technology (S&T) to Science, Technology and Innovation (STI)
- Changing policy environment
  - Mainstreaming of innovation
    - ➡ Need for a better policy coordination!
- New trends in STI
  - “Science 2.0”, “Open science”, “Networked science”
  - “Internet of Things”, “Fourth industrial revolution”
  - “Data driven innovation”, “Inclusive innovation”, “Social innovation”

⇩

- New approach for preparing the 5th Basic Plan!
  - Enhancing preparedness for the unforeseeable future

1st Position Paper (October 2014)

- Context (2016-2020)
  - "Time of drastic changes"
    - Connectivity, Openness
    - Beyond existing borders, Co-(production, …)
    - Data-driven innovation
      - ➡ Unpredictable, Unforeseeable, Transformational
    - Increased global competition & cooperation
  - Preparedness is the key
- Directions
  - Consolidate "fundamentals"
  - Encourage and prepare the ground for cross-border co-production of knowledge
  - Nurture creative, collaborative and entrepreneurial mindsets
    - Providing spaces for experience, challenge and learning
  - Increase social tolerance vis-à-vis those who attempt to achieve a breakthrough

2nd Position Paper (April 2015)

- Three pillars
  1. Driving the change proactively
     ➡ Preparing ground for the “Future Industry and Society”
  2. Actively engaged for problem-solving
     ➡ Addressing “Socio-Economic Challenges”
  3. And consolidating STI capacity as a prerequisite
     ➡ Investing in “fundamentals”
- Going structural and institutional
  - Innovation (eco-)system sustaining mobility of people and flow of knowledge and capital
  - Reform of R&D funding system in association with the national university reform
  - Public research institutes acting as a innovation hub
  - Greater emphasis on regional innovation
- Articulation of Comprehensive STI Strategy with Basic Plan

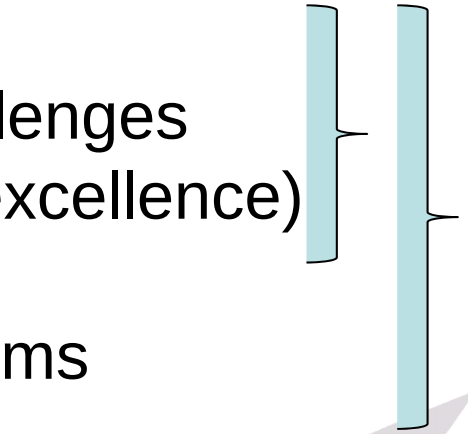
Table of contents of the 5th Basic Plan

1. Introduction
2. 20 years of S&T Basic Plans
3. Changing context and our goal

4. Future industry and society
5. Addressing socio-economic & global challenges
6. Investing in “fundamentals” (people and excellence)

7. Science, technology and innovation systems

8. Strategic international STI co-operation
9. STI and society
10. Leading effective STI Policy implementation



More precisely (1)

- Future industry and society
  - Encouraging transformative initiatives & experimentations coming from a large set of stakeholders, in particular next generation of leaders
  - Promoting innovation through system of systems & value chain approach
  - Enhancing enabling technologies to realize an “Ultra-Smart Society”
- Addressing socio-economic & global challenges
  - Sustained economic growth and innovation-led regional development
  - Achieving a safe and secure living standard
  - Addressing global challenges and contributing to global development

More precisely (2)

- Investing in “Fundamentals”
  - Incubating “knowledge professionals” and facilitating their mobility
  - Achieving excellence in knowledge creation
  - Promoting Open Science
- STI Systems
  - Building an innovation system which induces a virtuous cycle
  - Promoting reforms to universities and research funding as a whole
  - Reforming National Research and Development Agencies and enhancing their functions
  - Promoting scientific and technological innovation that contributes to regional vitality

Key message

Co-…