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# Science and Technology Policies in Japan

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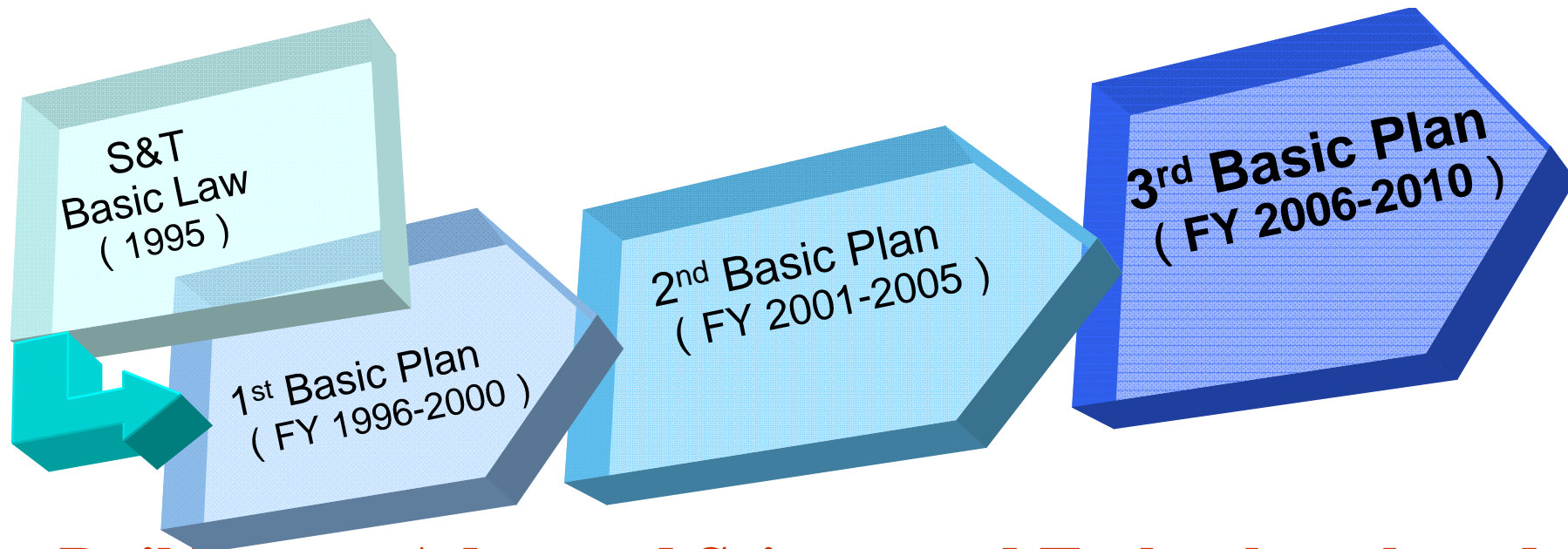
*President, Tokyo Institute of Technology*

# Thriving in a Dramatically Changing World

- **Dramatically Changing in the World**
  - **Enormously Progressed Science and Technology**
  - **Globally Interconnected and Knowledge-based**
  - **Fast Growth in Asia; China, India, . . . .**
  - **Extremely Intensified International Competitiveness**
  - **But Confronted with Global Issues; Environments, . . .**
- **Thriving in a Dramatically Changing World**
  - **Only “Innovation” can make it.**
  - **Contributing to Solve Global Issues for Sustainability**
  - **Empowering Engine of Innovation in Universities, . . .**
  - **Enhancing Competitiveness with Int. Collaboration**

# Innovation Strategy in Japan

- **The 3rd Science & Technology Basic Plan (2006-2010)**
  - **Building an Advanced S&T-based Nation**
- **Intellectual Property Strategic Plan 2007**
  - **Accelerating the Intellectual Creation Cycle**
- **Long-term Strategy “Innovation 25”**
  - **Comprehensive Strategy with Viewing Japan 2025**



## Building an Advanced Science and Technology-based Nation

- **Increasing R&D Budget**  
17 trillion yen (actual expenditure 17.6 trillion).
- **Structuring a new R&D system**  
Support plan for 10,000 post-doctoral fellows

- **Key Policies**
  - Prioritized R&D on national/social issues
  - Doubling competitive research funds
  - Total budget : \24 trill (actually \21.1 trill)

- **Key Policies**
  - ✓ How to nurture creative S&T human resources?
  - ✓ Further reform of S&T systems, leading to higher performance,
  - ✓ Strategic prioritization of R&D themes.

# The 3rd Science and Technology Basic Plan

## 1. Fundamental Concept

- Recent situation revolving around S&T
- **Basic stance** toward the 3rd plan
- **Fundamental ideas and policy goals**
- **Total gov'tal R&D investment**

## 2. Strategic Priority Setting in S&T

- **Promotion of basic researches**
- **Prioritization of R&D** for policy-oriented
- **Promotion strategy for the prioritized areas**

## 3. S&T system reforms

- Fostering **S&T personnel** and providing opportunities
- Progress in science and leading to **innovation**
- Upgrading **infrastructures** for S&T promotion
- Strategic commitment on **international S&T activities**

## 4. Public Confidence and Engagement

- Responsible actions regarding ethical, legal and social issues
- Reinforcement of **accountability and public relations** of S&T activities
- Promotion of **public understanding** of S&T
- Facilitation of public engagement with S&T-related issues

## 5. Missions of the CSTP

- More **efficient and effective management** of governmental R&D
- **Break of institutional or operational bottle necks**
- Follow-up of the Plan and promotion of progress in S&T

< Goal 1 >

**Quantum Jump  
in Knowledge  
Discovery  
& Creation**

< Goal 3 >

**Sustainable  
Development**

< Goal 5 >

**Lifetime Good  
Health of the  
People**

**Science and Technology Policy Goals**

< Idea 1 >

**Create  
Human  
Wisdom**

< Idea 2 >

**Maximize  
National  
Potential**

< Idea 3 >

**Protect  
Nation's  
Health  
& Security**

**Science and Technology Policy Goals**

< Goal 2 >

**Breakthroughs  
in Advanced  
S&T**

< Goal 4 >

**Innovator,  
Japan**

< Goal 6 >

**The World's  
Safest Nation**

# Strategic Priority Setting in Science and Technology

**Basic Research**

**Steady Promotion**

**Policy Mission-oriented R&D**

**Further Prioritization**

**4 Priority Promotion Areas**

(Life science, IT, Environmental science, Nanotech & materials)

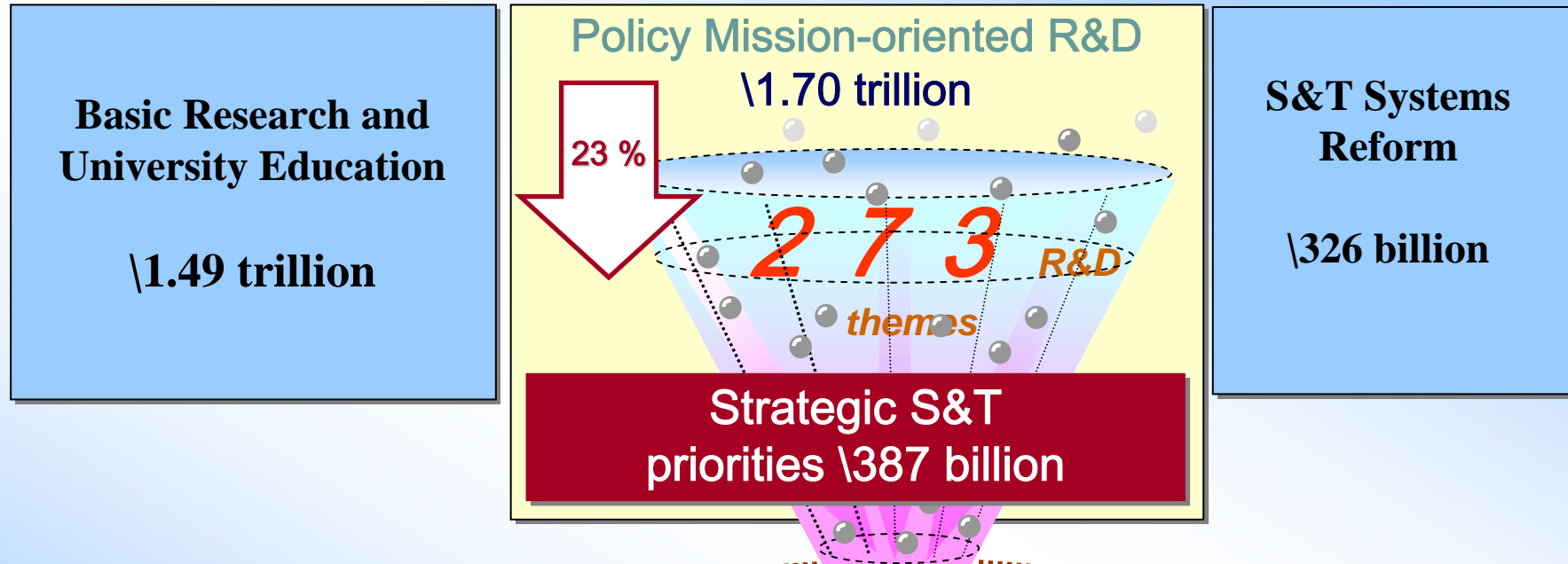
**4 Promotion Areas**

(Energy, MONODZUKURI-tech, Social infrastructure, Frontier)

**Promotion  
Strategies  
for R&D  
Areas**

- **Setting goals**
- **Important R&D themes**
- **Strategic S&T priorities**  
**including Key Technologies of National Importance**

# Total S&T Budget for FY2007 ¥3.51 trillion



## 62 Strategic S&T Priorities

### Condition

- ① Quick response to meet social and public concerns or needs that have been rapidly growing
- ② Indispensable for Japan to win in the global competition
- ③ Key Technology of National Importance

# Strategic Priority Setting Areas

Life science

Strengthening **translation research** such as the development of new drugs

*Bioinformatics*

IT

Winning international competition in **next generation super computers** and in the I T industry

Environment

Taking **international leadership** for overcoming global warming

*Nano  
-device  
sensors*

Nano &  
materials

**Making breakthroughs with innovative materials**

*\* Other various  
integrated areas  
of S&T exist*

Energy

**Breaking the dependency on oil** in transportation services

*Energy-saving  
MONODZUKURI-tech*

MONODZUKURI

**Further strengthening Japan's MONODZUKURI-tech**

Social  
infrastructure

**Minimizing damages** in case of a catastrophic disaster

Frontier

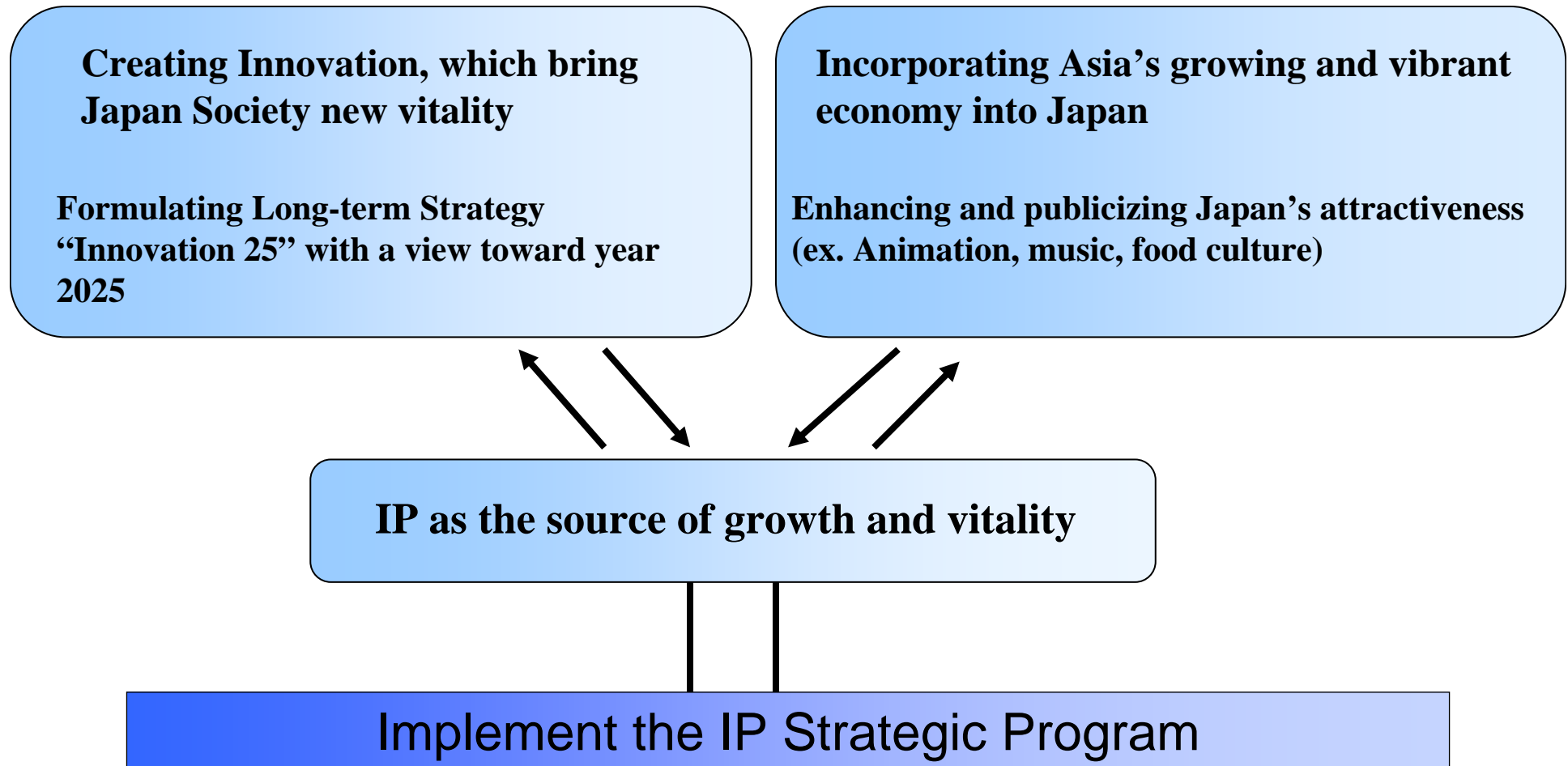
**Transportation systems** for outer-space and deep-sea utilization

# Science and Technology Systems Reform

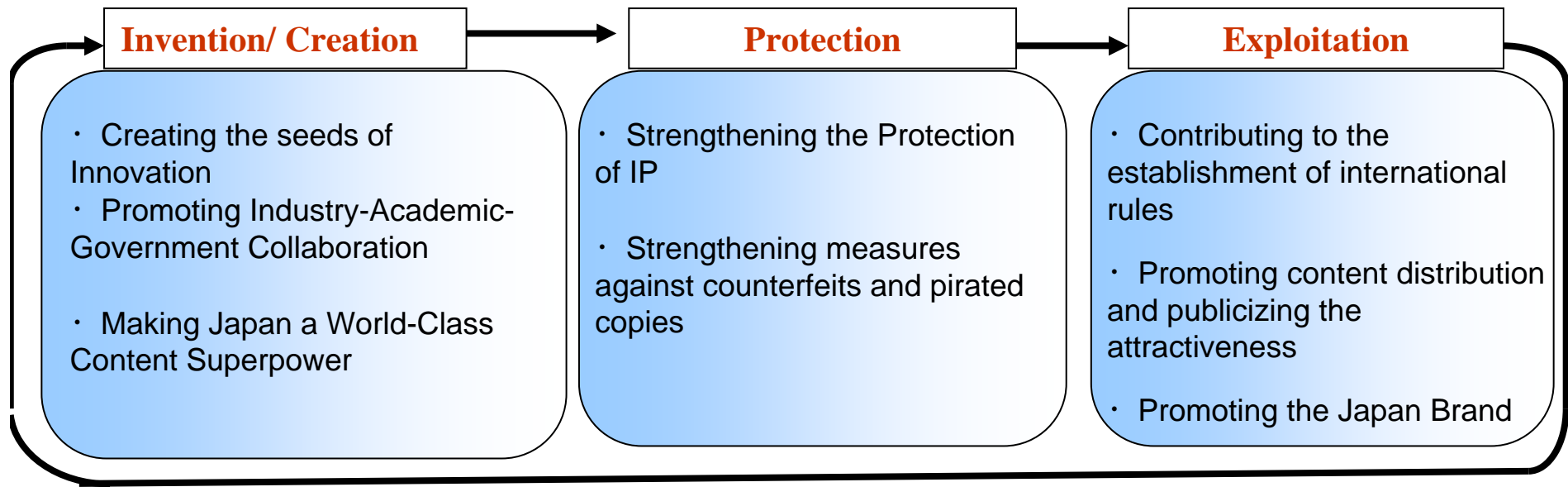
- **Encourage Young Researchers.**
- **Expand Opportunities for Female Researchers.**
  - **Setting a target of 25 % share**
- **Attract Foreign Researchers to Japan.**
- **Further University Reform for Stronger Competitiveness**
  - **Producing 30 world-class research centers of excellence**
- **Enhancing Industry-Academia-Government Collaboration**

# Developing IP Strategic Program

## - Creating Innovation and Disseminating Information -



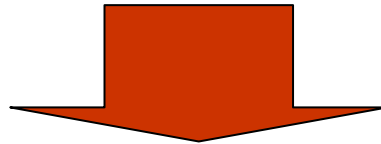
# The Intellectual Creation Cycle



- Promoting activities relating to IP management
- Supporting SMEs and venture company
- Developing Local Areas with the use of IP
- Developing human resources related to IP

## Long-term Strategy 'Innovation 25'

- Long term strategy with a view toward 2025
- Comprehensive strategy of both social systems reform and technology renovation
- Strategy through Cabinet decision on 1 June, 2007



**Create a innovative Japanese society even in the advent of a declining population and aging society.**

# Japan 2025 through Innovation (1)

\*Society in 2025 based on the prospect of the technology by expert

## Long Healthy Society

- Personalized preventive medical care every- and anywhere.
- Overcoming three major diseases, namely cancer, cardiac infarction and stroke.

## Safe and Secure Society

- Sensing and monitoring in the residence and other structures providing household and community safety, allowing families, children, elderly and disabled people a safe everyday life.
- Robust materials and technologies with self-repairing functions that enable many building structures to last for a long time.
- Intelligent Transport Systems (ITS) that integrates cars, streets and city blocks with little traffic congestion and almost no car accidents and casualties. Major reduction in CO2 emission and in distribution costs.

# Japan 2025 through Innovation (2)

\*Society in 2025 based on the prospect of the technology by expert

## **Society with Multiple Career Paths in Life**

- Sophisticated lifelong learning systems allowing people to continue building own capacity and prepare for a job according to their need and life stage.
- Well developed people-oriented society for 'tele-work' (working at home) systems, barrier-free and universal designs, working close from home, automatic translation machines, friendly to disabled, elderly people etc

## **Japan Contributing to the Global Issues**

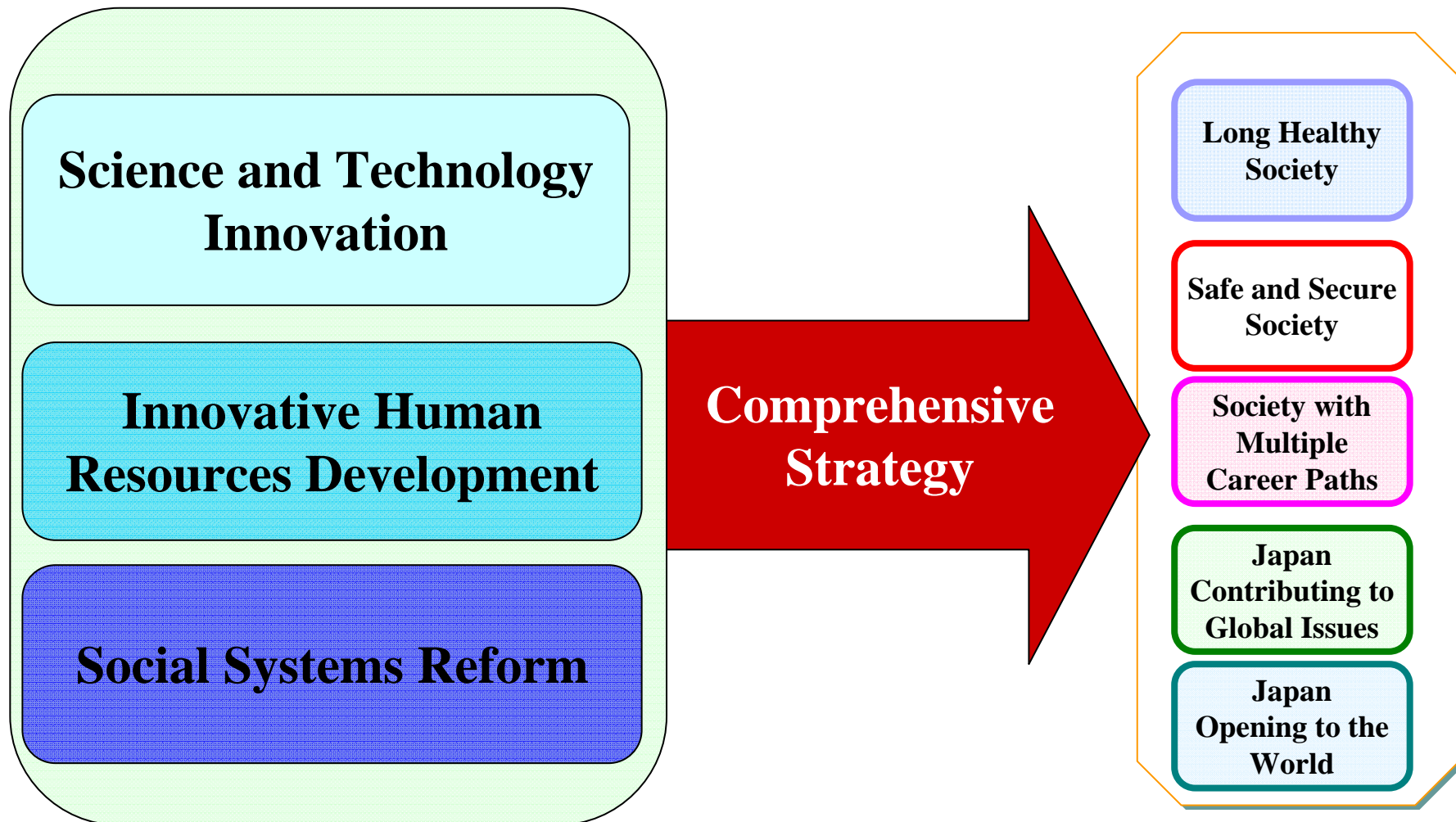
- Japan as a role model of sustainable and environ friendly society of the world. Various programs at educational and research institutions nurturing young leaders in Asia and elsewhere on the environment and energy efficiency helping many countries for capacity building on the global issues with economic growth

## **Japan Opening to the World**

- The publicity of Japanese people, products, technologies, tradition and culture so that Japan could share them with many friends in the world.
- Virtual reality technology enabling Japanese people to get a real sense of the cultures and historical heritages of other countries and the reverse is true for people overseas to see and feel more of Japan.

# Long Term Strategy “Innovation 25”

## Japan 2025 through Innovation



# S&T Basic Plan and Long Term Strategy Innovation 25

