The role of advanced R&D in the U.S.-Japan alliance: prospects & challenges

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The role of advanced R&D in the U.S.-Japan alliance: prospects and challenges

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I. **Introduction**

- **The United States** 🇺🇸
  - Military technology advantage is declining
    China, Russia and others: building a modern & powerful military
  - Trying to sustain and advance military dominance
    DII, LRRDP, 3rd offset strategy

- **Japan** 🇯🇵
  - Promoting qualitative improvement of **Japan Self Defense Force**
    in severe situation in defense budget
  - Potential issues
    - For acquiring advanced defense equipment
      Increasing: procurement from overseas
      Not increasing: domestic R&D budget
  - Positive aspect
    - The revision of “3P on Transfer of Defense Equipment and Technology”
    - “Defense Equipment and Technology Cooperation” is specified
      in the revised “Guidelines for U.S.-Japan Defense Cooperation”
    - “**Acquisition, Technology and Logistics Agency**” (ATLA)

- **Advanced R&D between U.S. & Japan**
  - has the potential to reinforce U.S.-Japan alliance

- There are challenges....
II. Implications of military technology diffusion for Global security and Asia-Pacific security

1. Military technology situation in Global and Asia-Pacific region

(1) Rapid progress in technological innovation

- Significant advances in internet technology in private sector
- The rapid spread of the internet & Information Communication Technology (ICT) has made a digital information society and accelerated globalization.

- The expansion and rise in importance of cyber; computer, big data, etc.
- Advanced communication technology, sensor networks technology, outer space, etc.
- Defense equipment computerized, autonomous, network, precision guidance, unmanned vehicles, stealth capability, etc.

- Increase importance of cyber space, outer space.
II. Implications of military technology diffusion for Global security and Asia-Pacific security

1. Military technology situation in global and Asia-Pacific region

(2) Technological innovation for global security

- Commercial technology is now leading military technology. Innovation cycle is very fast in private sector.

- The technology information: leakage & diffusion
  Disclosure / leakage of sensitive advanced technology may impact national security & global security.

Keys for military technology superiority

- Coordination between military and private sector
- Protection of military and private sector’s technology
II. Implications of military technology diffusion for Global security and Asia-Pacific security

1. Military technology situation in global and Asia-Pacific region

(3) Enhancement of military force and its impact on Asia-Pacific security

- Shifting power balance in Asia-Pacific region
  - Military modernization and improvements in China, Russia and North Korea.
- China
  - Large increases in defense spending
  - Military has been reinforced broadly and rapidly, especially A2/AD capability.
    - Investing asymmetric capability to match or counter U.S. capability
    - Modernizing weapons to develop A2/AD intended to prevent the U.S. military from operating close in.
  - S & T has been invested strategically.
  - The Chinese defense industry has increased its capacity by using cyber espionage to steal American and western technology and reverse engineering weapons and systems.

- As China’s technology grow rapidly, military technological advantage of the U.S. and its allies and partners may be in a continuous relative decline.
II. Implications of military technology diffusion for Global security
and Asia-Pacific security

2. U.S. Response

- U.S. military’s superiority is relatively eroding.
  U.S. is trying to sustain & advance U.S. military’s superiority for the 21c
- Innovations in commercial technologies
  U.S. military is focusing to work more closely with the private sector.
- Internet: made by U.S. military
  Private sector has turned the internet into the hugely capable tool.
  ICT, internet technology, has been diverted for military use.

  ➢ Military: Technological Revolution
  ➢ Private Sector: Technological Evolution

- Defense sector identifies key technology as game-changers for the
  strategy, and progresses technical innovation with the private sector.

 U.S. government must work more closely with the private sector
to keep the advantage of advanced military technological
superiority.
III. Threat & Risk for National Security of Japan

- China & other neighboring countries: modernizing / reinforcing military
- In this regard, there are risks of
  - security challenges for Japan,
  - destabilizing factors in the Asia-Pacific region,
  - impeding the international order,
  - impeding the use of & free access global commons

There is potential threat

- Japan is trying to improve defense capability

- Size of Chinese military > Size of USFJ and JSDF
- The trend line for China’s military technological progress is positive.
- There is a possibility
  - Chinese military may overtake U.S. military and JSDF in Asia-Pacific region.
  - In this case, regional defense capability with USFJ and JSDF may not provide effective deterrence and response.

- Japan should maintain effort toward further enhancement & progress of defense equipment quality.
- But, cannot expect dramatic increase in R&D budget anytime soon.
- We may face some difficulty to sustain & advance future defense capability.
IV. Problems & Challenges for the future of Japan’s security

- Losing defense technology foundation
  - Decreasing the R&D budget
  - Acquisition of defense equipment: increasing the ration of FMS & DCS
  Japanese defense industry is losing a opportunity to manufacture and access to advanced technology equipment

- Japanese defense sector needs to cooperate in U.S. defense sector in advanced R&D

- There are still challenges on Japan side to accelerate advanced R&D in U.S.-Japan alliance
  - The lack of defense technology transfer measures
    - Japanese defense sector has less experience in transferring
    - MOD doesn’t have much experience to identify and protect sensitive indigenous technology, and analyze the impact of technologies transfer for national security of Japan
    - Insufficient protection of “intellectual property rights” of Japanese companies.
  - Difficulty of cross-cutting coordination among defense-private-academia
    - The sense of avoidance toward military and JSDF is still strongly pervasive in private sectors, academia.
V. Conclusion : Prospect for future advanced technology

1. Possible U.S.-Japan security cooperation in R&D for future advanced technologies

- Achieving accelerated advanced R&D in U.S-Japan alliance will contribute to
  - the **technological improvement of the defense capabilities**
  - the technological improvement of both the **defense & private sectors**
  - the **revitalization of the industries & economies**
  - the **higher level of strategic collaboration in U.S.-Japan alliance**

- To accelerate advanced R&D and overcome any challenges,
  - Japanese government
    - MOD have to take a leadership
      - Take a responsibility to move forward
        - Should not be handled solely by the private sector
    - Government agencies and defense sector should coordinate closely.

- **3-step approach for Japan**
  1. Formulate national technology strategy
  2. Build-up of technology information protection
  3. Learn from U.S. about defense equipment export mechanism
V. Conclusion : Prospect for future advanced technology

2. Proposal for Japan’s approach to improve advanced R&D in U.S.-Japan alliance

(1) Formulate national technology strategy

- Technology : can change security environment
  : is foundation of national strategy
- To progress the process : close coordination is necessary

Effect
- Japan can request advanced R&D with U.S. positively
- MOD can identify potential sensitive technology
- For defense industry : help to find valuable investment technology

(2) Build-up of technology information protection

- “Leaking Japanese advanced technology” prevents
  - International competitiveness both defense and private sector
  - Promoting advanced R&D in U.S.-Japan alliance

Effect
- MOD can reinforce the protection and management capability of technology information.
V. Conclusion: Prospect for Future Advanced Technology

2. Proposal for Japan’s approach to improve advanced R&D in U.S.-Japan alliance

(3) Learn from U.S. about defense equipment export mechanism

- MOD should learn from DoD
- MOD and DoD, and defense industries between Japan and U.S., effectively use cooperative relationship.

Expectation Effect
- It may assuage concern in U.S. against sharing its advanced technology with Japan, if Japan will adopt U.S. export system for improving its ability.

Through these ((1), (2) & (3)) efforts, Japan will

- improve the multilayered cooperation with the technology field
- establish a properly functioning and global level mechanism for defense technology transfer

U.S. & Japan will

- reinforce alliance
- acquire advanced defense technology superiority for future Asia-Pacific and global security
Thank you for listening