

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

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Contents

I. Introduction

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

- 1. Military technology situation in Global and Asia-Pacific region**
- 2. U.S. Response**

III. Threat & Risk for National Security of Japan

IV. Problems & Challenges for the future of Japan's security

V. Conclusion : Prospect for future advanced technology

- 1. Possible U.S.-Japan security cooperation in R&D for future advanced technologies**
- 2. Proposal for Japan's approach to Improve advanced R&D in U.S.-Japan alliance**

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”
 - ✓ “**A**cquisition, **T**echnology and **L**ogistics **A**gency” (**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