

Note

This document is almost machine translated. If there are any discrepancies, inconsistencies, or contradictions between the translation provided and the Japanese version, the Japanese version shall take precedence.

Software Modernization Committee Interim Report

October 15, 2024

Software Modernization Committee

Introduction

We have entered an era in which software determines a company's competitiveness. We are moving to a “Software-Defined” society in which software realizes solutions to problems, and the effectiveness of these solutions is enhanced through continuous improvement while using the software.

In Japan, however, old practices and values remain, and international competitiveness is declining without an appropriate response to the problems it faces.

The Software Modernization Committee is examining ways to maximize software's value and achieve industrial competitiveness and sustainable social development.

This interim report provisionally outlines the desired direction and key themes.

Reference: What is Software-Defined?

"Software-Defined" is a concept that seeks to achieve more excellent value by continually updating the software that controls hardware to respond to uncertainty and changing needs. To tackle difficult social issues and create innovative technology, Software-Defined mechanisms must be used to repeatedly test hypotheses and derive solutions while interacting with the real world.

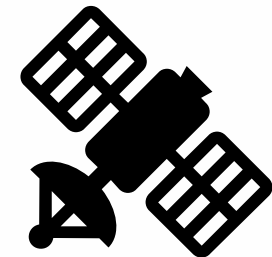
Example) Software-Defined Vehicle

Even after selling the car, the software can be updated remotely to add functions and improve performance. This makes it possible to improve performance, driving assistance, and accident prevention functions and increases the possibility of realizing new functions that were previously impossible.



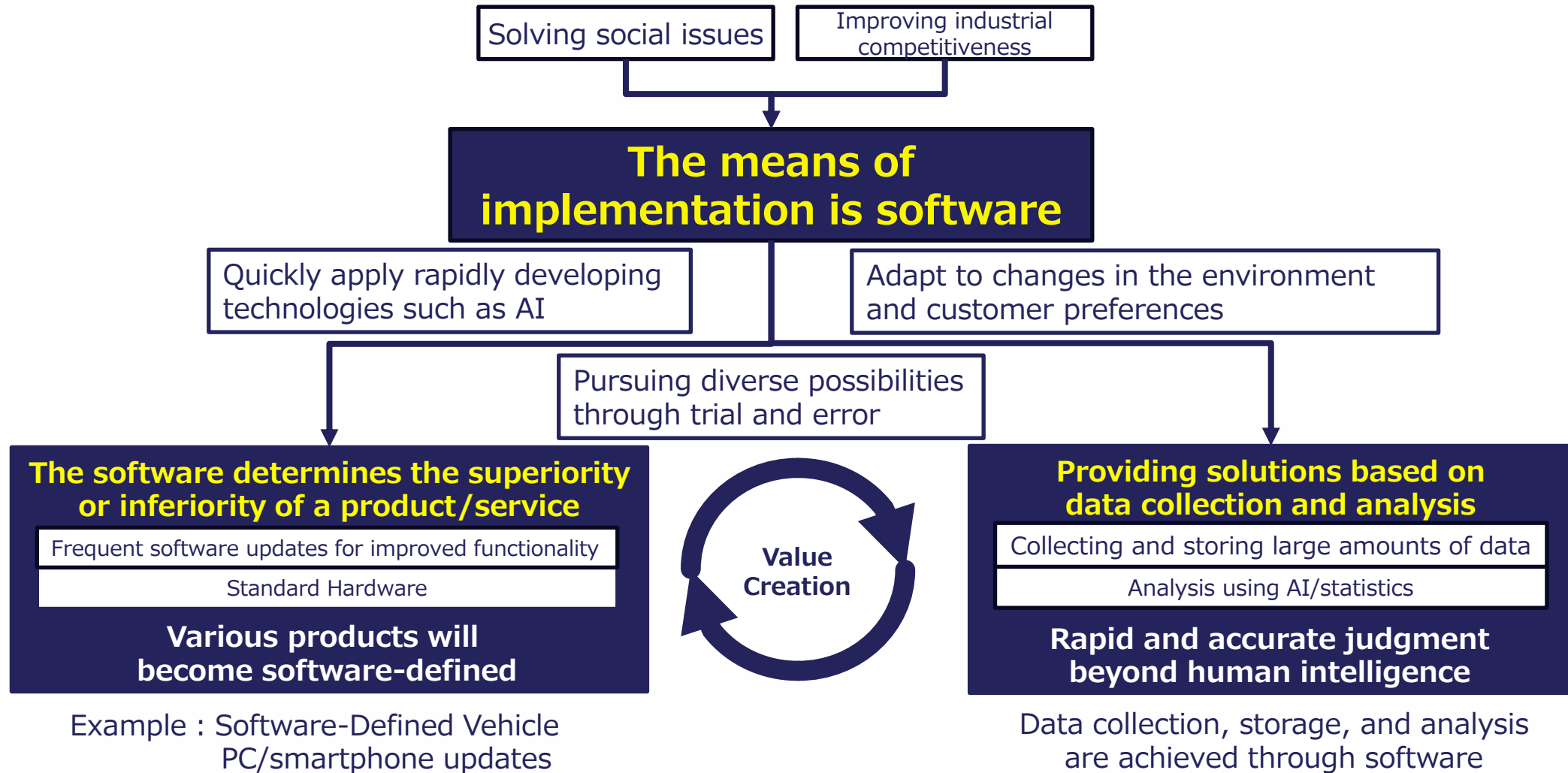
Example) Software-Defined Satellite

The Voyager spacecraft, launched in 1977, has been exploring beyond the solar system while undergoing software updates. Most recently, in October 2023, the fuel injection system was changed to extend the satellite's life.



Background: Shift to a Software-Defined Society

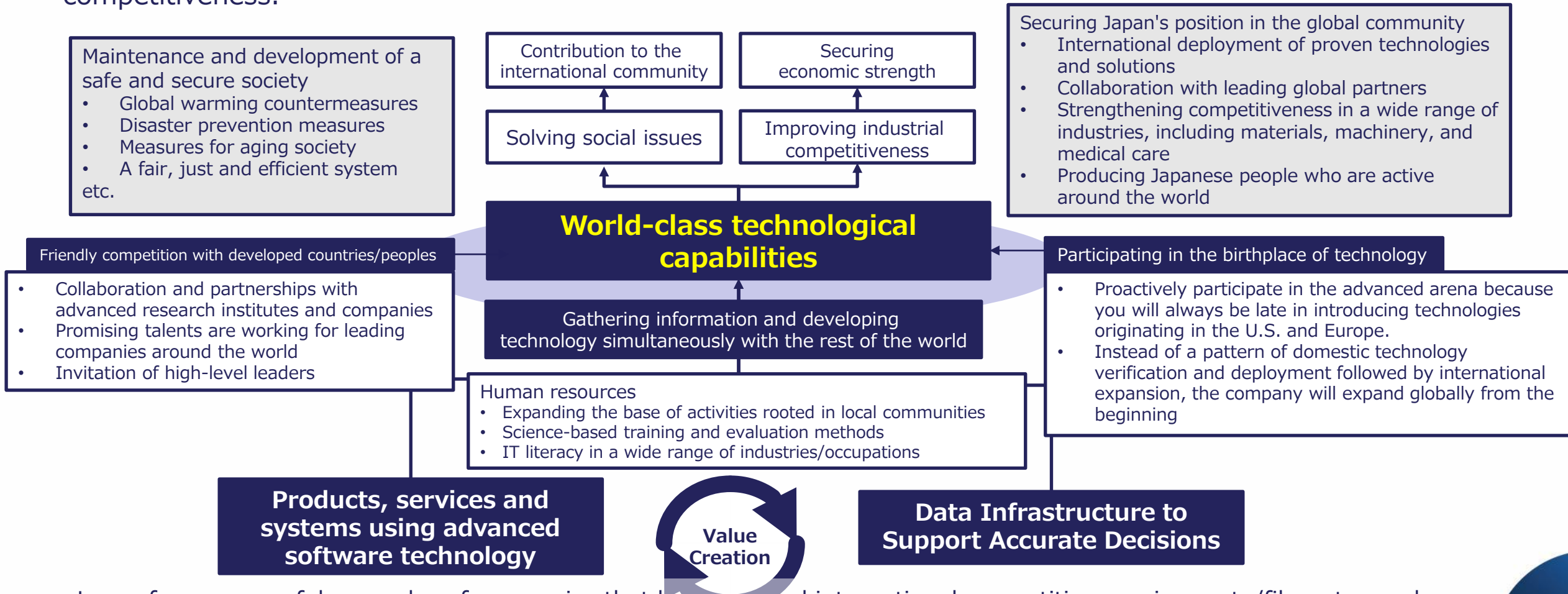
We are entering a Software-Defined society where value is created by software.



Goal: Prosperous Japanese society that shines on the world



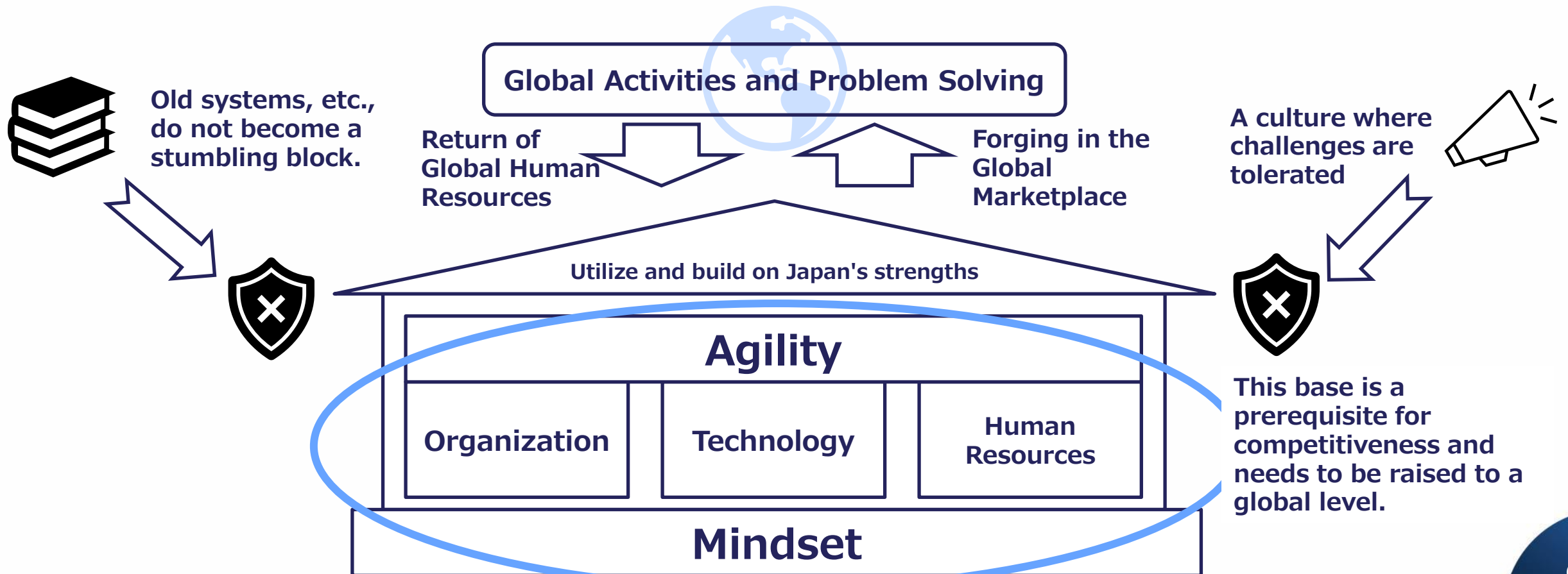
We aim to create a society where companies and human resources have global-level technological capabilities, move at the same speed as the rest of the world, solve social issues, and continue improving Japan's competitiveness.



Learn from successful examples of companies that have secured international competitiveness in sports/film, etc., and transform your organization and mindset by targeting the global market from the beginning.

What is expected of companies in the coming years

It is necessary for companies to acquire competitive strengths such as global standard “organization”, “technology,” and “human resources” and to be prepared to throw themselves fully into global competition.



What is expected of individuals in the coming years

“Spirit of Challenge”, “Global-Oriented”, and “Skill Development” will be required in the coming years.

Global-Oriented

- ✓ Global perspective, not domestic
- ✓ Direct collection of information not only from domestic sources but also from overseas media and educational materials
- ✓ International experience and participation in the international community

Spirit of Challenge

- ✓ A spirit of challenge for new initiatives and improvements
- ✓ Recognizing that even failure is an “accomplishment” if we can learn from it
- ✓ Out-of-the-box thinking

Skill Development

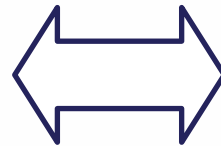
- ✓ Acquire new skills and techniques in response to changes in the environment, not just what is required by the company
- ✓ Self-directed skill development
- ✓ Consciousness of output as well as input

Comparison of international and domestic trends

- ♦ Japan's IT is lagging in some areas compared to other countries.
- ♦ Urgent need to grasp the situation at home and abroad and bring Japan up to the global level.

International Trends

Model-Based Development
Building Blocks, OSS utilization
Use of Agile and DevOps
Skills-based talent management
AI utilization, data maintenance and handling
Promote Digital Engineering, Cloud/Edge/IoT
Balance of security, high reliability
Promote visualization and modeling of rules (LegalTech)



Domestic Trends

Document-Based Development (office software based)
Scratch development
Agile, DevOps implementation underway
Experience and background-based talent management
Lack of AI implementation, insufficient/undeveloped data
Digital Engineering, Cloud/Edge/IoT not yet started
Emphasis on security and high reliability
Insufficient visualization

Aim not only to catch up but also to run side by side (solve global problems/participate/contribute to technological development).

Key Themes (Draft)

Mindset

- Raise awareness of the importance of software.
- Consideration of global competitive strategy (path to parallel competition).

Organization

- Consideration and promotion of Building Block Software(OSS, API, etc.) .
- Promotion of standardization of processes other than system development, such as contracts.

Technology

- Consideration and promotion of visualization (modeling, SBOM, etc.).
- Consideration and promotion of EdgeCloud.

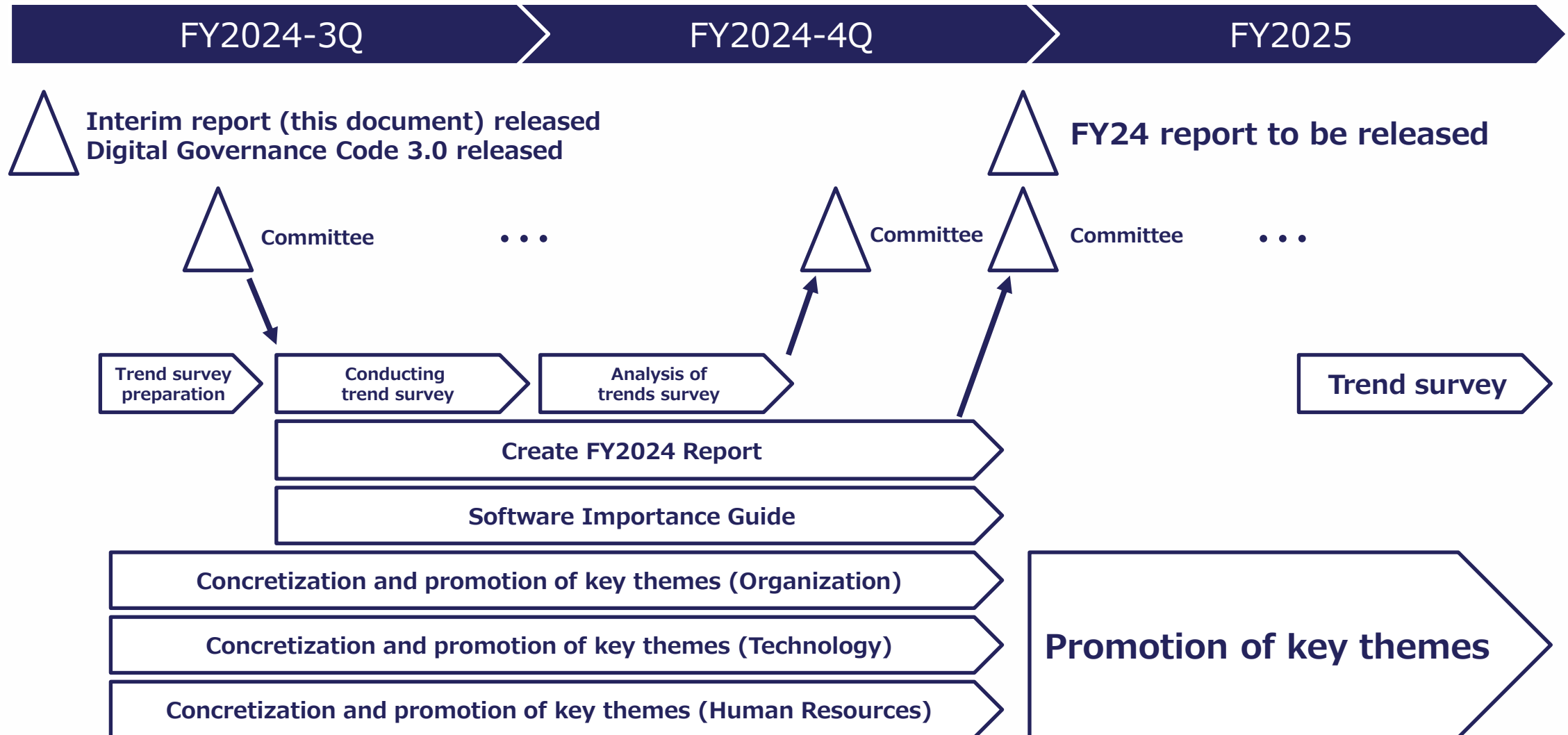
Human Resources

- Promotion of Digital Skills Standards (DSS) .
- Promotion of the use of overseas educational materials.
- Promotion of global human resource exchange and information gathering.

Other

- Trend survey to grasp the actual situation (organization, technology, personnel).
- Consideration of LegalTech.
- Consideration of initiatives in the public sector.

Schedule (Draft)



Reference:

Overview of the Software Modernization Committee

Event Overview



- ♦ Considering the dramatic changes occurring in the software environment, IPA has established a committee to review its quantitative surveys and, in cooperation with industry associations, to consider modernizing software development and operations.

| Event | Date | Main themes |
|---|--------------------|--|
| 1st Committee Meeting | June 11, 2024 | <ul style="list-style-type: none">• Discussion of the direction to take. |
| 2nd Committee Meeting | July 18, 2024 | <ul style="list-style-type: none">• Discussion of how to proceed with the future of this committee. |
| 1st Workshop (held by volunteer members) | August 1, 2024 | <ul style="list-style-type: none">• Discussion of the future of Japan considering social trends.• Discussion of the future direction that Japanese society will take. |
| 3rd Committee Meeting | August 22, 2024 | <ul style="list-style-type: none">• Discussion of the direction to take. |
| 2nd Workshop (held by volunteer members) | September 5, 2024 | <ul style="list-style-type: none">• Discussion of the committee's future roadmap. |
| 4th Committee Meeting | September 25, 2024 | <ul style="list-style-type: none">• Discussion of the interim report outlining the direction we are aiming for and the roadmap for the future. |

Committee Members



| Type | Name | Affiliation | Remarks |
|------------------|-------------------|--|-----------|
| Chairperson | Takeshi Hayama | NTT DATA GROUP CORPORATION | |
| Committee Member | Hiroshi Kaneko | TOSHIBA CORPORATION | JEITA REC |
| Committee Member | Hajime Kurosaka | SIOS Technology, Inc. | JOPF REC |
| Committee Member | Takuya Saito | NEC Corporation | |
| Committee Member | Akihiro Saimi | Hitachi Solutions, Ltd. | |
| Committee Member | Akihiko Nagasaka | Future Architect, Inc. | MCIS REC |
| Committee Member | Kazumaro Hino | Obic Business Consultants Co.,Ltd. | SAJ REC |
| Committee Member | Norihisa Fujimoto | Japan Users Association of Information Systems | JUAS REC |
| Committee Member | Osa Hori | SCSK Corporation | JISA REC |
| Committee Member | Minoru Yasunaga | TIS Inc. | |
| Committee Member | Hiroyuki Watanabe | eXmotion Co., Ltd. | JASA REC |



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