Keidanren
Policy & Action

AI Utilization Strategy

For an AI-Ready Society

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- **Keidanren**

Contents

I Background
- Technology
- How Japan Can Win

II Principles for Utilization of AI

III Guidelines for AI-Ready Society
- Companies
- Individuals
- Social Systems & Industrial Platforms

IV Strategic Frameworks for Utilization of AI

Introduction

Hopes are pinned on Japan as a pioneer in solving humanity-wide challenges and aiding the drive to achieve the SDGs.

In response, Japan has unveiled its "Society 5.0" vision. Artificial Intelligence (AI) will be the core technology behind the creation of Society 5.0.

The AI revolution has entered its industrial phase and will lead the evolutionary advancement of industry and society to a new level.

Our strategy was put together with attention to the strategies and principles established by other nations and the question of how industry can best pursue the utilization of AI and harness its power.

Technology

Backed by recent advances in technology, deep learning and other AI methodologies have made huge strides.
Going forward, major benefits are anticipated with the industrial and social integration of AI systems.

Basic features of AI technology now

- ○ **Large volumes of data required**
- ○ **Have surpassed humans in certain areas of identification and measurement**
- ○ **Learning-based systems capable of defining conditions through analysis of data**
- ○ **Results achieved with AI difficult to explain**
- ○ **Limited in handling of unknown events**

- ○ **Future prospects**
  - ⇒ **Use of simulations for utilization of AI with small datasets**
  - ⇒ **Scientific knowledge discovery**

Figure 1: Learning-based systems

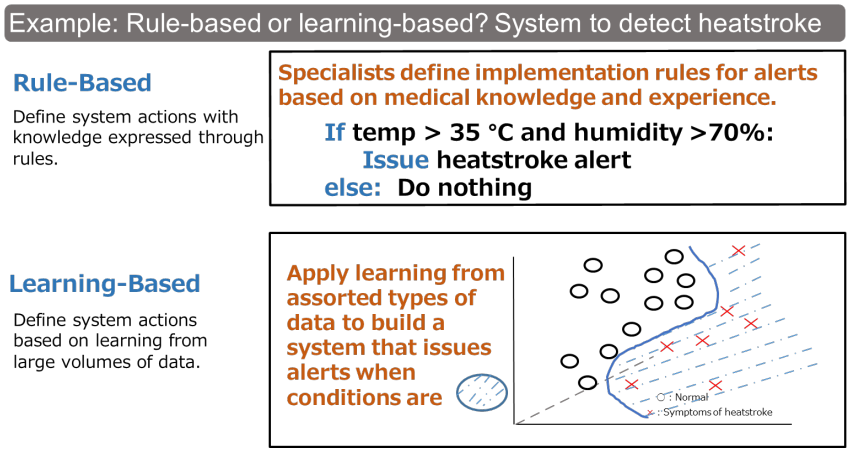
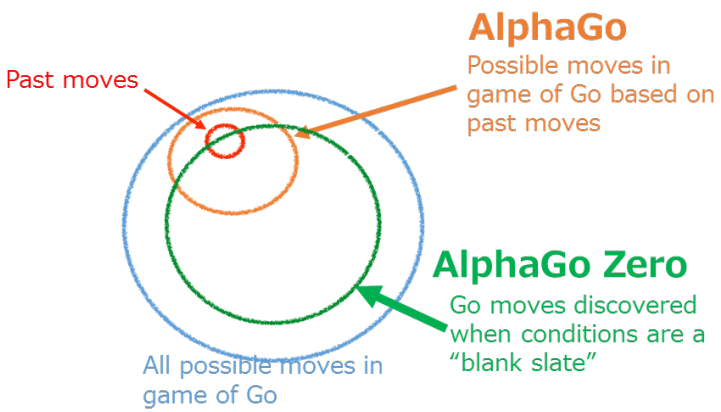


Figure 2: Mechanism of AlphaGo Zero



How Japan Can Win

AI as a social good Society 5.0 for SDGs powered by AI	Fully utilize AI as a social good in the interest of society and humankind. Contribute to development of Society 5.0 for SDGs. This is an obligation of nations and companies equipped with the AI technology.
Business applications with real-world AI	The main battleground for digital companies and other industries is shifting to the real world. Leverage real-world strengths in technology and expertise and transform existing businesses to be AI-and-service oriented
AI integration, On-site capabilities, and comprehensive strengths	Seamless integration of cyber space into the workplace On-site capabilities in data quality management/maintenance and processing Comprehensive strengths in integrated systems operation

Principles for Utilization of AI

Principle Ⅰ	Implement Society 5.0 for SDGs with AI.
Principle Ⅱ	AI for diversity and inclusion
Principle Ⅲ	Build AI-ready social systems, industries, and companies
Principle Ⅳ	Develop trusted quality AI
Principle Ⅴ	Promote appropriate understanding of AI

Guidelines for an AI-Ready Society

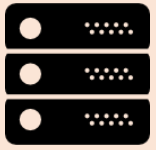
Cultivating AI-ready companies, individuals, and systems at all layers of society will be essential to the utilization and expansion of AI.

AI-Ready Companies

First, cultivate AI-ready companies with the ability to effectively utilize AI and data.
Then, foster corporate and industrial innovation with AI applications in all operations.

AI-Ready Individuals

Cultivate AI-ready executives, core human resources, and users.
Reform education, upgrade environments for R&D, and improve the understanding of users.



AI-Ready Social Systems & Industrial Platforms

Ensuring AI quality and reliability will be vital to the social and industrial penetration of AI.
Pursue the development of trusted quality AI ecosystems.

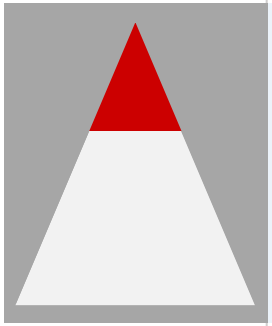
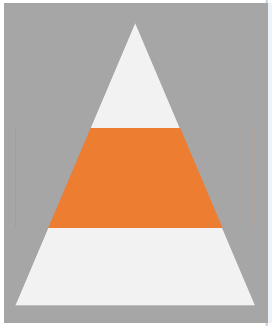
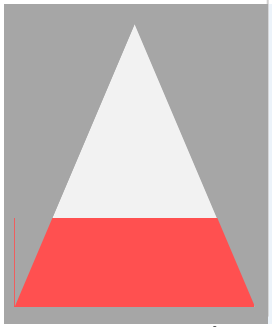
AI-Ready Companies

Five developmental levels in the formation of an AI-ready company, involving the management layers, specialists, employees, and systems and data

	Management layers	Specialists	Employees	System level/data
Level 5	**Status & clout as AI-powered company** ■ CxOs who understand the synergy of AI and data lead company- and industry-wide reforms ■ Pursuing cooperative ties industry-wide and with other firms.	**Run all business and corporate operations utilizing the synergy of AI and data, and pursue fundamental industry-wide reforms** ■ All engineers possess field-specific AI knowledge ■ Have advanced personnel and experience in AI and data application technology and research	■ All have grounding in math, science, and AI and data ■ Collaborating with specialists inside and outside the company ■ Mid-manager support with funding and personal networking	■ All elements including real space digitized and utilized in real time ■ Field-specific AI functions, APIs, and shared PFs used in collaborative domains ■ Development and service commercialization of proprietary AI functions in competitive domains
Level 4	**Shift from AI-ready to AI-powered status** ■ Have personnel in management positions, who are able to understand and utilize the synergy of AI and data in operations ■ Sustained investments aimed at achieving AI-ready status	**Boost corporate value with the synergy of AI and data. Leverage AI as a driver of core business value** ■ Have launched leading-edge projects in both technology development and research to harness the synergy of AI and data	■ Majority possess strong AI literacy ■ Organized and compliant with data ethics considerations ■ Pursuing business reforms with the synergy of AI and data	■ Seamless coordination of operational systems and analytical systems ■ Ability to analyze most business data at almost real-time speeds
Level 3	**Pursuit of AI-ready status** ■ AI applications integrated into management strategy. ■ Commitment to investments in AI ■ Executive AI training implemented	**Have a prospect for automation of existing operational flows utilizing the synergy of AI and data. Also launch strategic AI applications** ■ Equipped with sizable number of specialists in AI analysis and implementation ■ Able to develop and implement own AI operations	■ AI extensively used in business operations ■ Tools and procedures developed for that purpose ■ Employee AI training launched	■ Digitalize operation flow and business models ■ Database development initiated for operational systems and analytical systems ■ Selective use of AI and RPAs, etc. depending on field characteristics
Level 2	**Initial stage** ■ Recognize potential of AI and communicate directions ■ No detailed strategizing yet ■ Data and ethics issues not clearly defined	**Amass early experience with AI utilization on a small scale. Transition a selection of simple operations to AI with assistance from specialists.** ■ AI and data themes understood by a minority ■ Existing tech applied in collaboration with outside partners	■ Some employees understand AI basics ■ Some employees have grounding in AI and data ■ Hiring of AI human resources initiated	■ Some operations fully utilizing AI functions ■ Some data available in formats enabling analysis and utilization ■ Digitalization of customer behavior, environments, and real spaces not yet started
Level 1	**Preliminary stage** ■ Zero understanding of AI ■ Poor awareness of the business impact AI can have on own company or industry	**Only discuss AI methodologies without the start of efforts in business administration, innovation, or creation utilizing the synergy of AI and data** ■ Systems mainly outsourced ■ IT division functions as link to IT company	■ Rely mainly on experience, intuition, and personal skills ■ Issues handled with a lot of manpower and man-hours ■ Dual-track hiring for engineer and office positions	■ Overgrown legacy systems ■ Time needed for data collection, retrieval, and integration measured in years ■ Poor grasp of data content and implications

AI-Ready Individuals

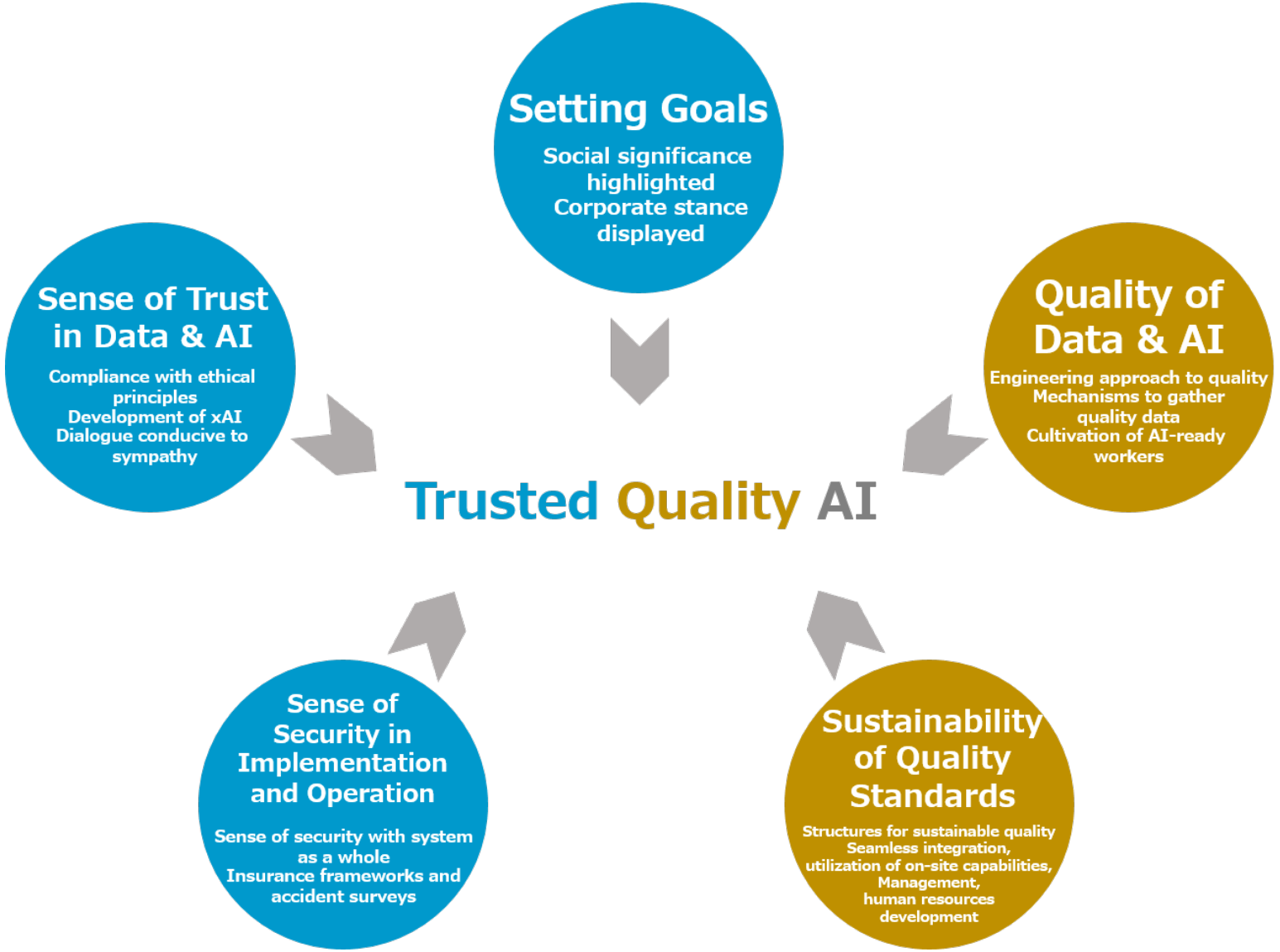
To ensure that all individuals can utilize and benefit from AI, it will be necessary to train top-level and core human resources and provide users with literacy education.

Target Layers	Initiatives
	**● Top-level human resources (researchers)** ☐ Develop **training mechanisms unconstrained by existing educational systems**. ☐ Build **frameworks for accurate assessments** of top-level human resources. ☐ Pursue collaboration on AI with **all academic disciplines (*)**. ☐ Starting with international symposia on AI, establish international **centers for collaboration by industry, academia, and government.**
	**● Core human resources (engineers)** ☐ **Establish "AI engineering" program** for the utilization of AI by engineers from varied backgrounds. ☐ **Promote recurrent education** approaches to the training of AI engineers. ☐ **Promote double majors in AI and specialized fields(*) and liberal arts degree programs** ☐ Promote the **accreditation of education programs** for AI personnel through collaboration by industry, academia, and government.
	**● Literacy (for users)** ☐ Pursue **reforms to the education system** aimed at ensuring that all individuals acquire AI literacy. ☐ **Expand liberal arts education** to facilitate the utilization of AI by all individuals. ☐ **Utilize personal data through individual initiative** to build a better society. ☐ Utilize AI as a **technology for inclusion** to build a more diverse society.

*Note: For example, a broad spectrum of fields including finance, medicine, economics, law, and the arts.

AI-Ready Social Systems & Industrial Platforms

It is important to develop trusted-quality AI ecosystems that will assure user reliability and the quality of data and AI as social systems and industrial platforms.



Ensuring Data and AI Quality & Achieving Sustained Quality

Steps to ensure AI quality through seamless integration, on-site capabilities, and comprehensive strengths as well as the collection of quality data and mechanisms to sustain that quality, will all be key.

Harnessing Japan's strengths

- Assure AI quality through seamless integration, on-site capabilities, and total strength.
- Approach the task as an engineering challenge and pursue its establishment as a systematic technology.

Collecting quality data & sustaining that quality

● Promote open access to, and standardization of, public data

- Promote open access to data held by national and local governments.
- Promote the development of APIs and standardize the formats that facilitate their use.

● Overcome sectoral and public-private barriers and share, coordinate, and utilize varied types of data

- It will be important to assign flexible data utilization rights through inter-business agreements.
- Open APIs should be promoted as an effective approach to the reciprocal use of data by corporate and industrial counterparts.

● Promote the distribution and re-use of trained models.

- Trained models generate value through re-use and distribution. Mechanisms and efforts in R&D aimed at facilitating their distribution and re-use should be explored.

Ensuring Trust & Sense of Security about Data and AI

Setting goals for the utilization of AI, encouraging a sense of trust in data and AI, and ensuring sense of security in the event of operational problems or accidents in implementing AI functions, will together contribute to the creation of trusted AI systems.

Setting Goals

- Clarify social significance of AI utilization.
- Clarify corporate stance on use of AI and put it into practice.

Trust in Data & AI

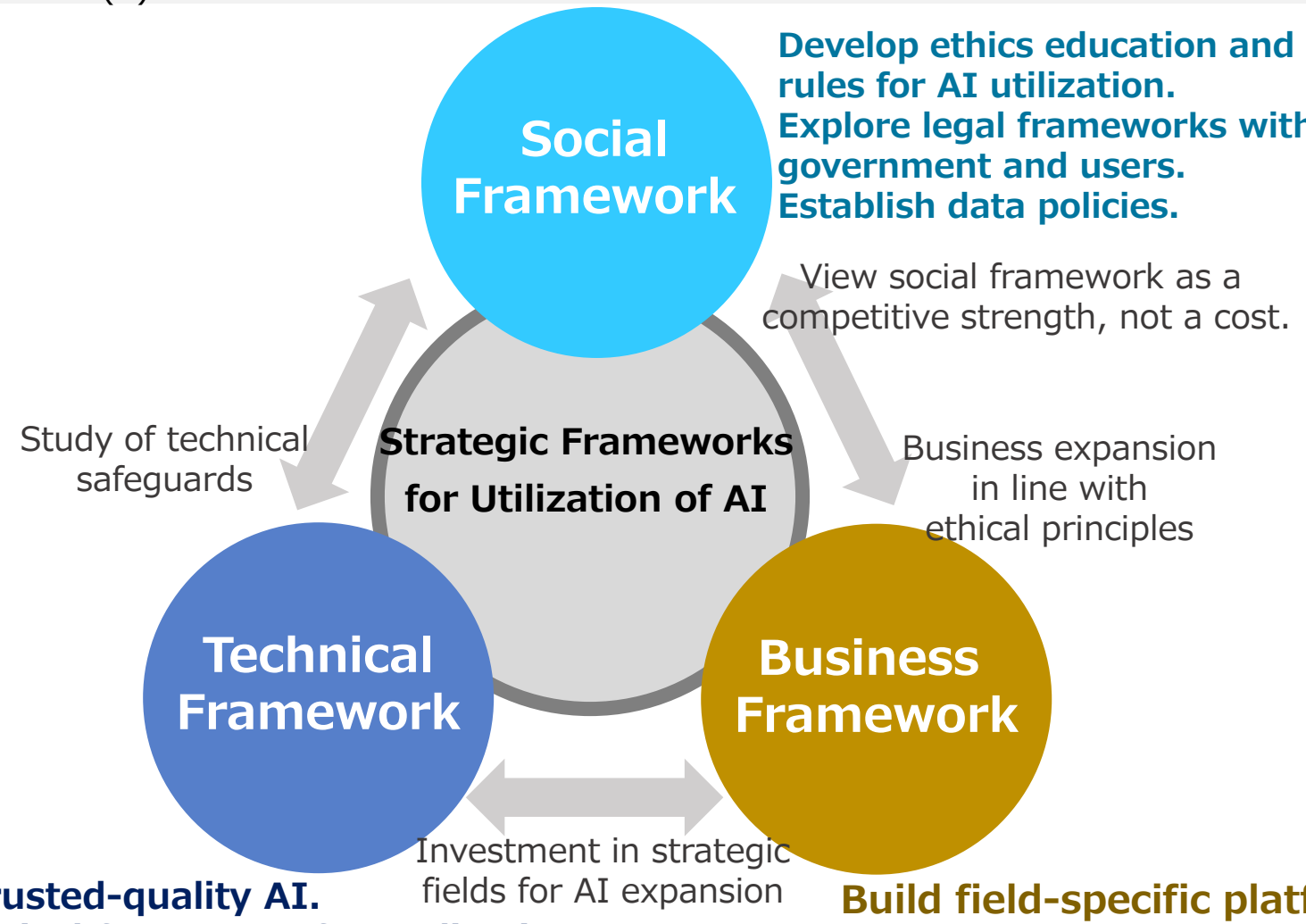
- Ensure data reliability and quality levels.
- Implement AI that ensures fairness, accountability, and transparency.
- Communicate with users about the characteristics of AI.
- Conduct R&D on explainable AI (xAI).
- Develop rules that ensure a balance between the use and protection of personal data.

Sense of Security in Implementation & Operation

- Guarantee the safety and dependability of the system as a whole.
- Take into consideration privacy, security, and human rights from the design stages for products and services.
- On matters involving rights and interests or the assignment of liability, place emphasis on agreements between the parties involved.
- Develop technologies, systems, and legal frameworks for the management of data-related rights.
- Enhance insurance frameworks for the handling of problems and accidents and investigate the causes.

Strategic Frameworks for Utilization of AI

The following three frameworks should be taken into account when pursuing the expansion of AI in individual fields where real-world field expertise and real data(*) can be made use of.



*Healthcare, energy, mobility, manufacturing/services, finance, etc.

In conclusion,

AI is a technology for the solution of humanity-wide challenges. Using it will be an obligation for companies and humankind as a whole.

Having a focus on what to use AI for is important. AI will contribute substantially to the achievement of Keidanren's visions—”Society 5.0 for SDGs” and “Japan as a successful platform for diversity and inclusion.”

It is vital to take early action in line with the technological advancement of AI and rapidly changing environment. We encourage companies to move forward with steps to transform themselves into AI-ready enterprises. Keidanren is committed to promoting the advancement of AI in specific sectors.