

**DX Strategy Briefing**

# **Digital Personnel Reinforcement and Business Transformation**

**Asahi Kasei Corp.**  
**December 7, 2023**

## Contents

- 1) DX Strategy**
- 2) Enhancing Management and Business Transformation**
- 3) Reinforcing Digital Foundations**
- 4) Toward Digital Normal Period**

## Contents

### **1) DX Strategy**

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**2) Enhancing Management and Business Transformation**

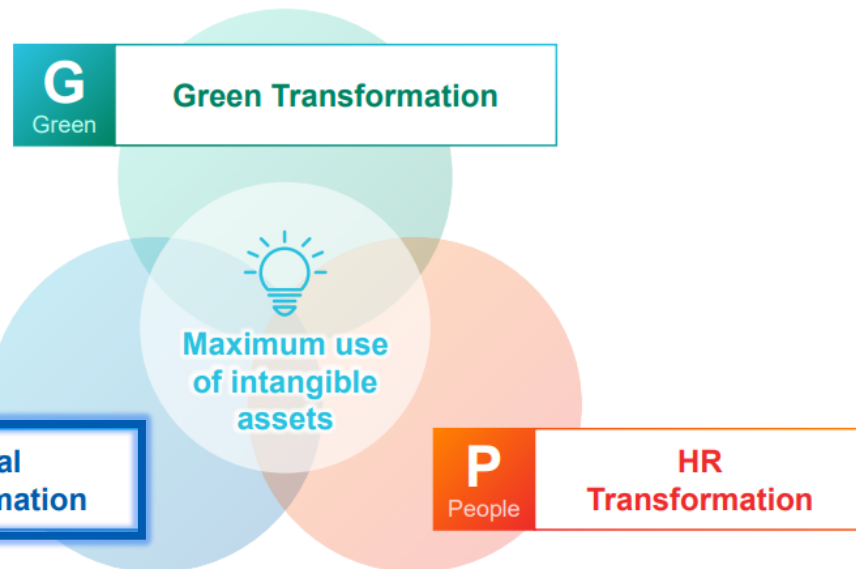
**3) Reinforcing Digital Foundations**

**4) Toward Digital Normal Period**

# Promotion of DX in Asahi Kasei

Digital transformation (DX) is vital for structural transformation and accelerating growth

DX is a key area for strengthening the business platform



What we accelerate with DX

- Business structure transformation and acceleration of GG10 (10 Growth Gears) businesses to drive future growth

Speed

Business strategy development promptly responding to customer needs and environmental changes

Asset light

Transformation to solution-oriented businesses; new business creations

High value-added

Strengthening competitiveness through continuous innovation

- Maximum use of diverse intangible assets (human resources, intellectual property, know-how, etc.) to connect technologies and ideas with businesses

- Asahi Kasei Spirit

Ambitious motivation

Healthy sense of urgency

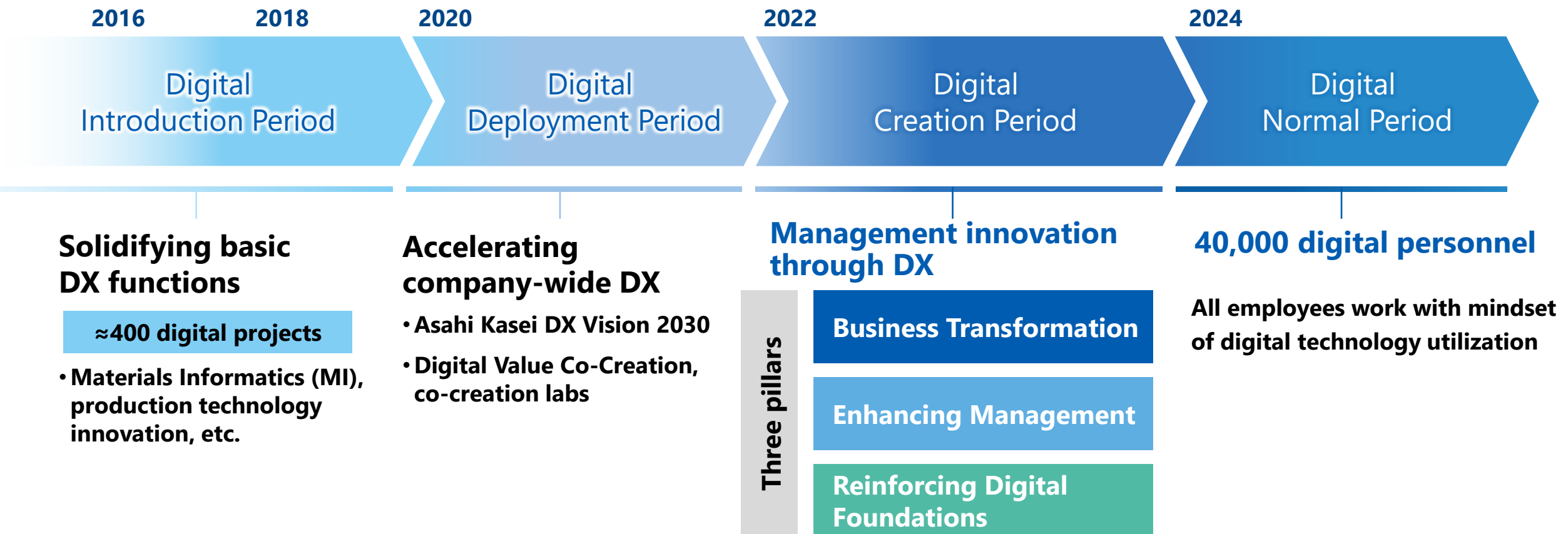
Quick decisions

Spirit of advancement

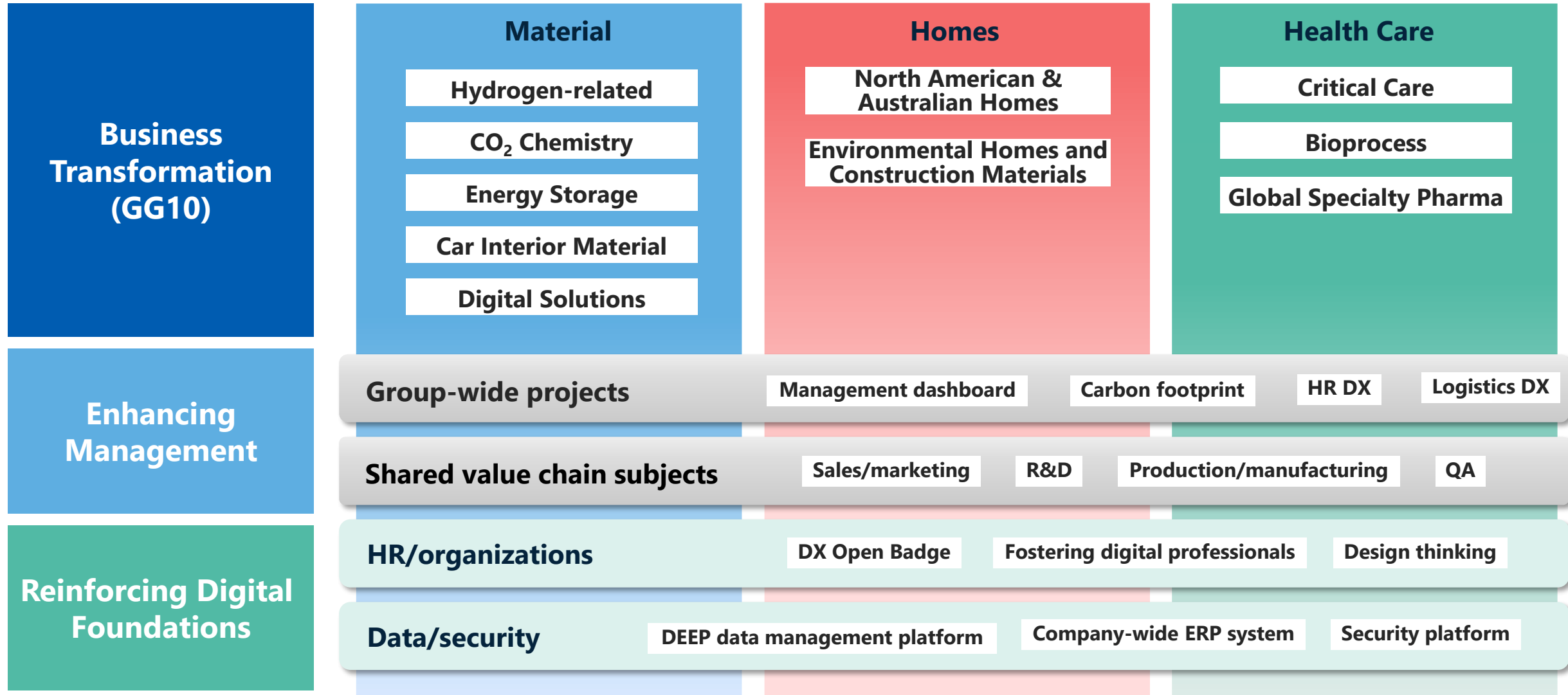
Contributing to sustainable society and sustainable growth of corporate value

# Digital transformation roadmap

Implemented aggressive roadmap moving to new phases in two-year intervals

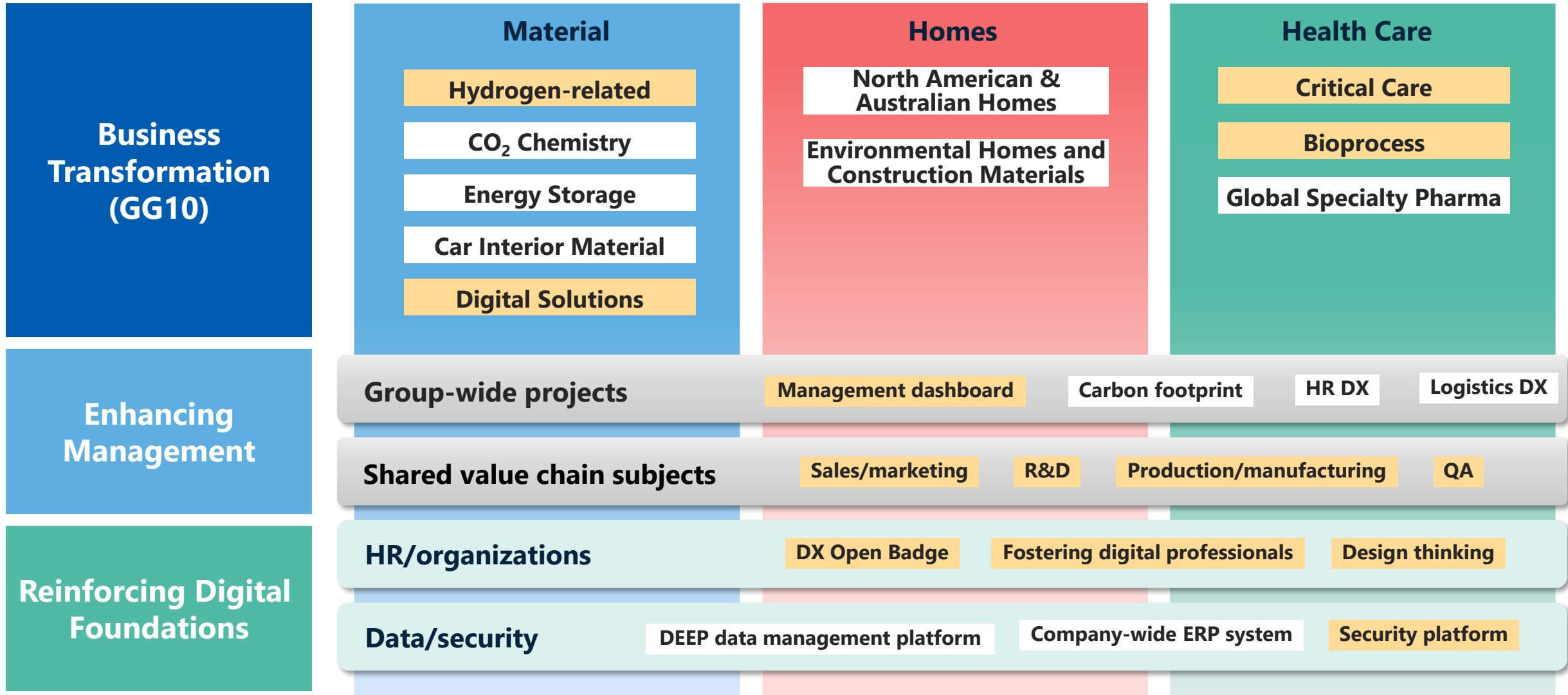


# Digital transformation framework



# Digital transformation framework

Highlighted items are described later



# Approach to realization of Digital Normal Period: Participation by all members × on-site initiative × co-creation

Advancing DX not only by specialist organizations but also through participation by all members, on-site initiative, and co-creation; counterintuitively, this approach is actually faster and optimizes costs

# DX

Target: Continuous transformation of products, services, business models, procedures, organizations, processes, and organizational culture

Means: Fully utilizing data and digital technologies



Digital Co-Creation  
Approx. 200 personnel

Scaling mechanism

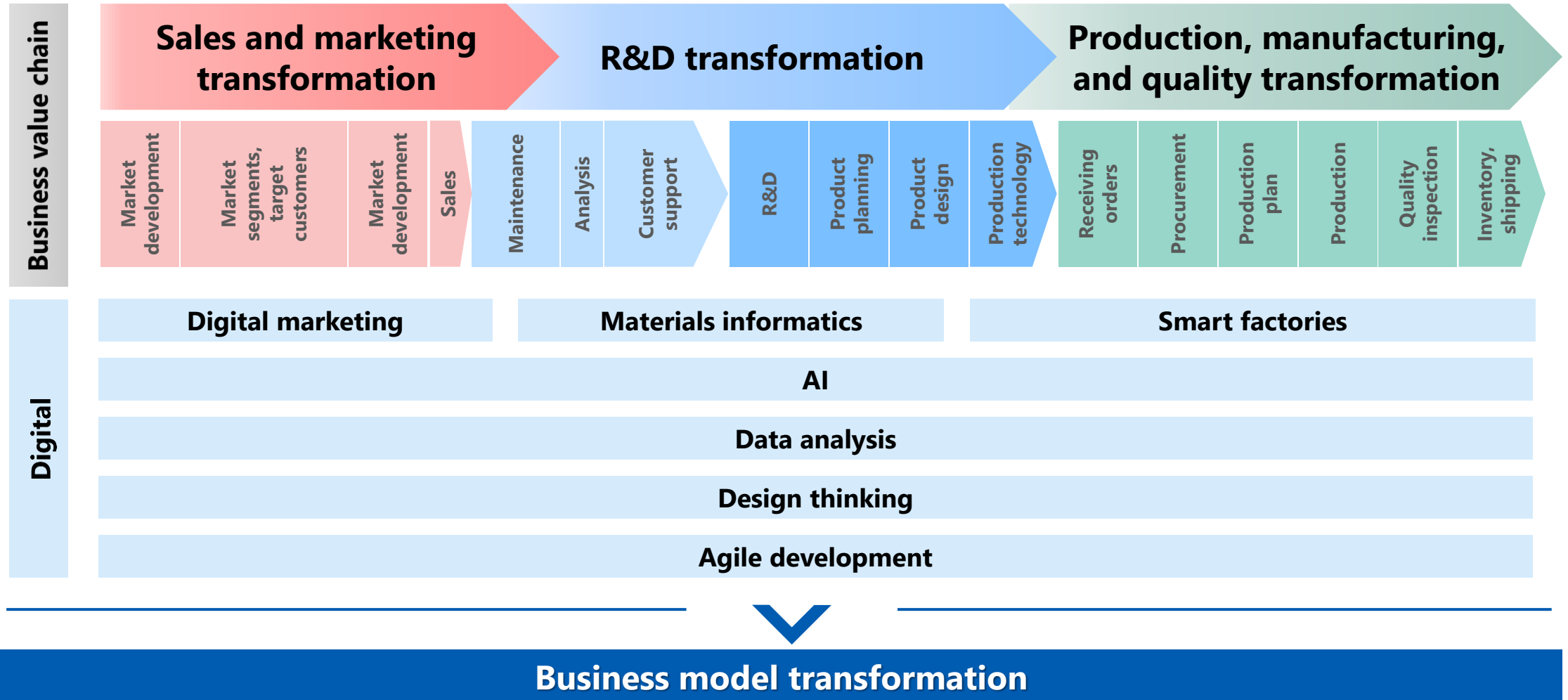


Asahi Kasei Group  
2,500 digital professionals



# Business transformation along value chains

Digital transformation in each value chain is combined by business unit, resulting in highly competitive business transformation



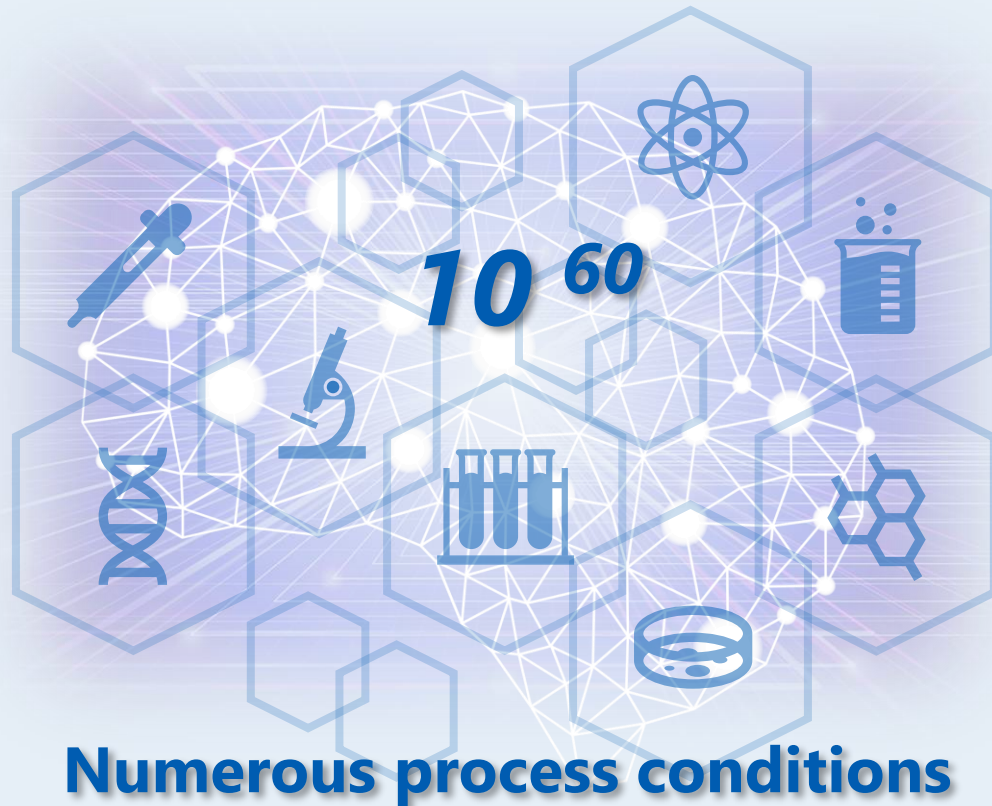
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- R&D
- **Production/manufacturing/quality**
- Sales/marketing
- Corporate
- Business model

# Materials Informatics (MI)

- In the short term, increasing competitiveness by accelerating development speed is crucial
- In the medium to long term, developing sustainable and innovative products is also vital



By utilizing **information technology** in **materials** development, MI enables **dramatic reduction** in development time and development of **innovative products**

# Heightening performance of Planova virus removal filter

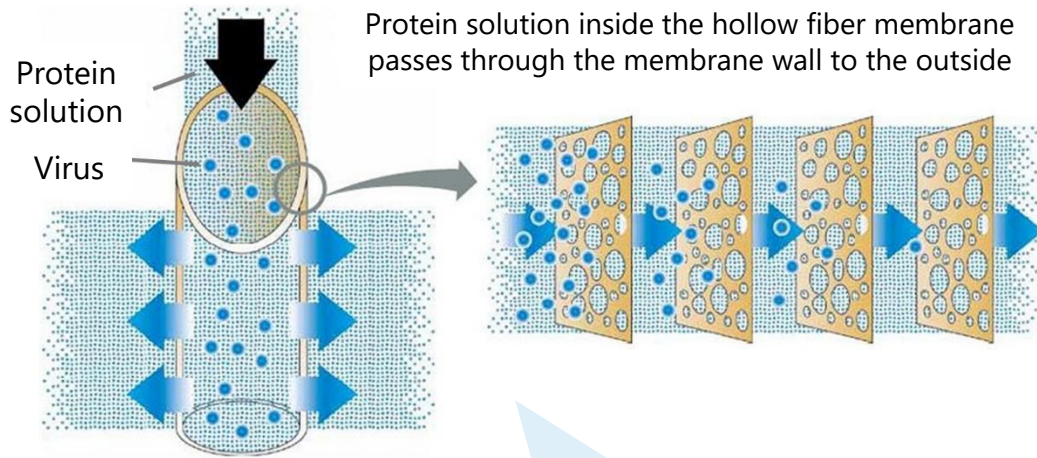
GG10

R&D

- Utilizing experimental data accumulated based on experience in the development lab
- MI enabled discovery of combinations of manufacturing process conditions that could not be discovered by experiments alone; highly competitive new product with excellent flux was achieved



## Flux and virus removal performance



### Issue 1: Trade-off

Larger membrane pore size will increase the flux but decrease the virus removal performance

### Issue 2: Enormous combination of parameters

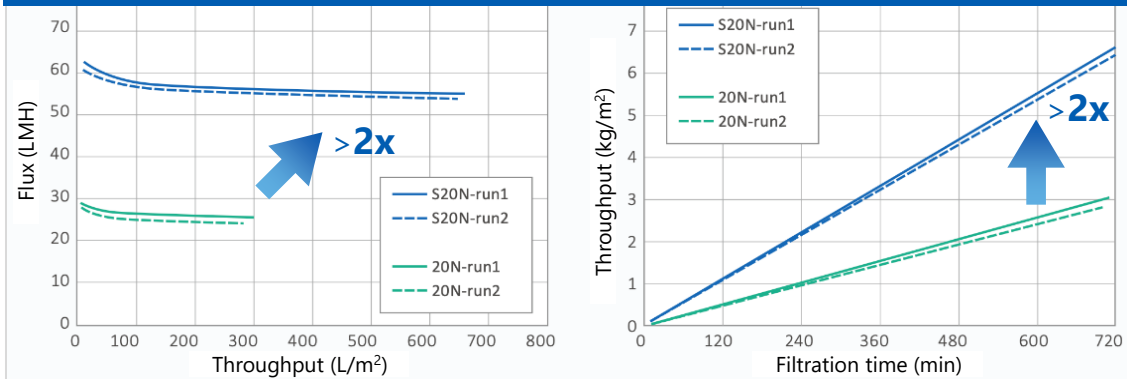
There are more than 20 manufacturing process conditions; assuming 3 choices are made for each condition, the number of combinations becomes  $>3^{20}$ , more than practical for experimental testing

## Co-creation by experts and informatics

**Experiments based on knowledge and experience**  
 Experiments with over 500 patterns among over 20 process conditions were repeated and data accumulated (targeted performance unobtainable without MI)

**MI**  
 Optimized using MI  
**Experiment design**

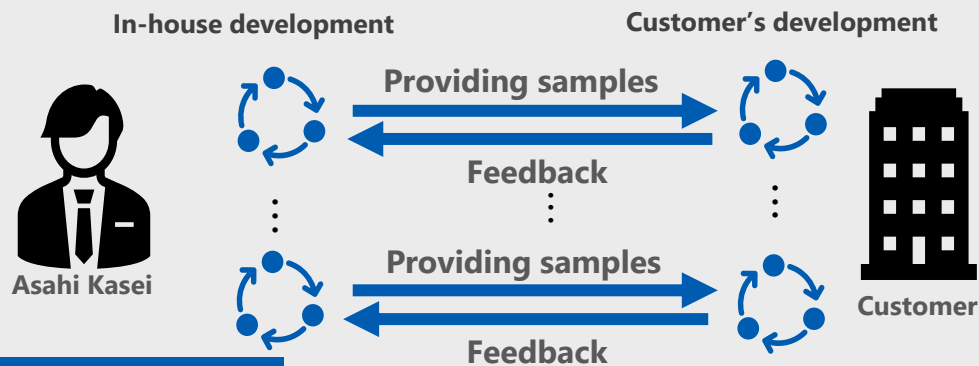
## New product Planova S20N was created with more than double the flux of conventional products



## Co-creative MI for development including supply chain

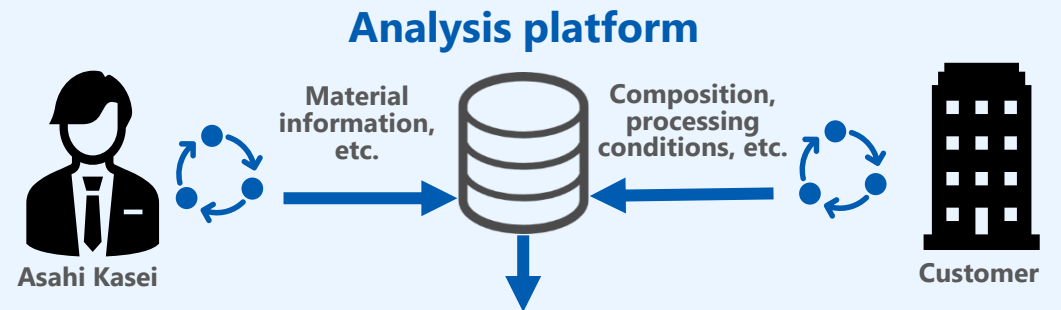
- Secure computation technology shortens time to adoption by allowing data analysis keeping each party's data confidential
- Utilization begun in R&D for energy storage business to promote collaboration with a customer

### Former approach



Although MI accelerates in-house development, time required to attain optimal raw material properties and compositions means longer period may be needed for market launch

### New approach



Faster development by linking data of different companies; enabling development of innovative products that could not be achieved by a single company

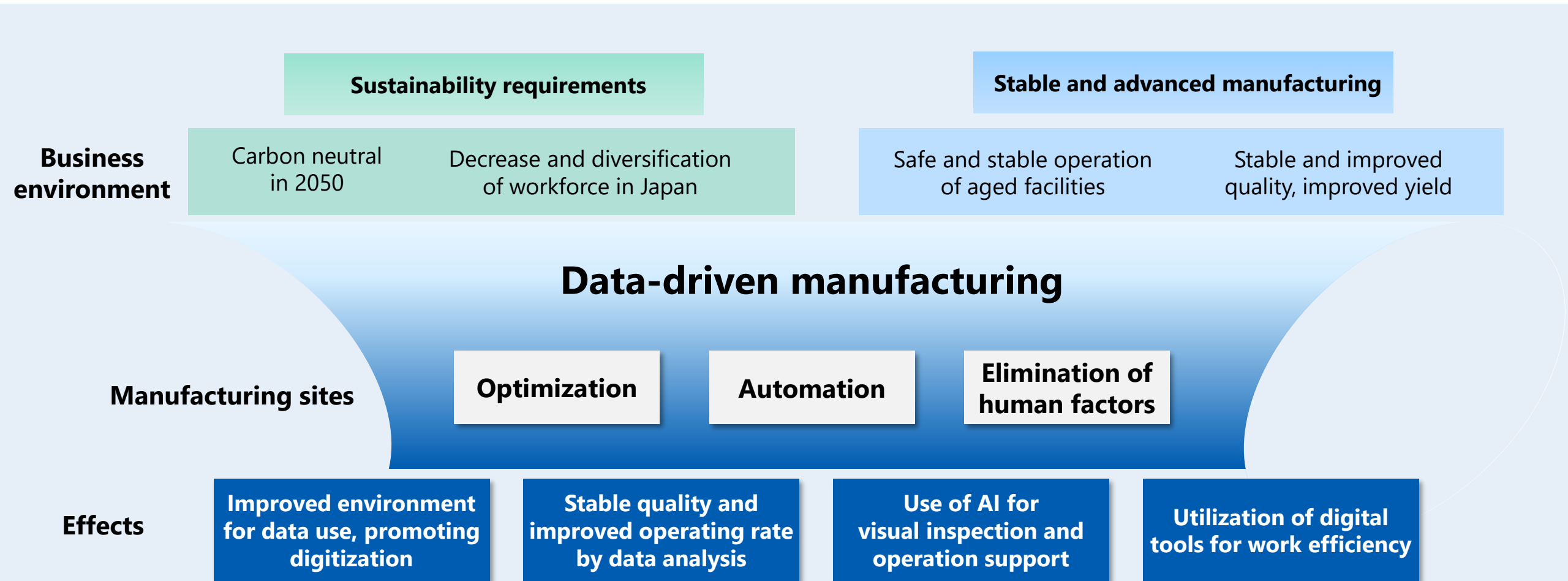
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# Smart factories

Aiming to achieve manufacturing sites having stable operation, consideration for the environment, and easy-to-work environment while advancing QCD\* through digitization, systemization, and utilization of digital tools



\* Quality, cost, delivery





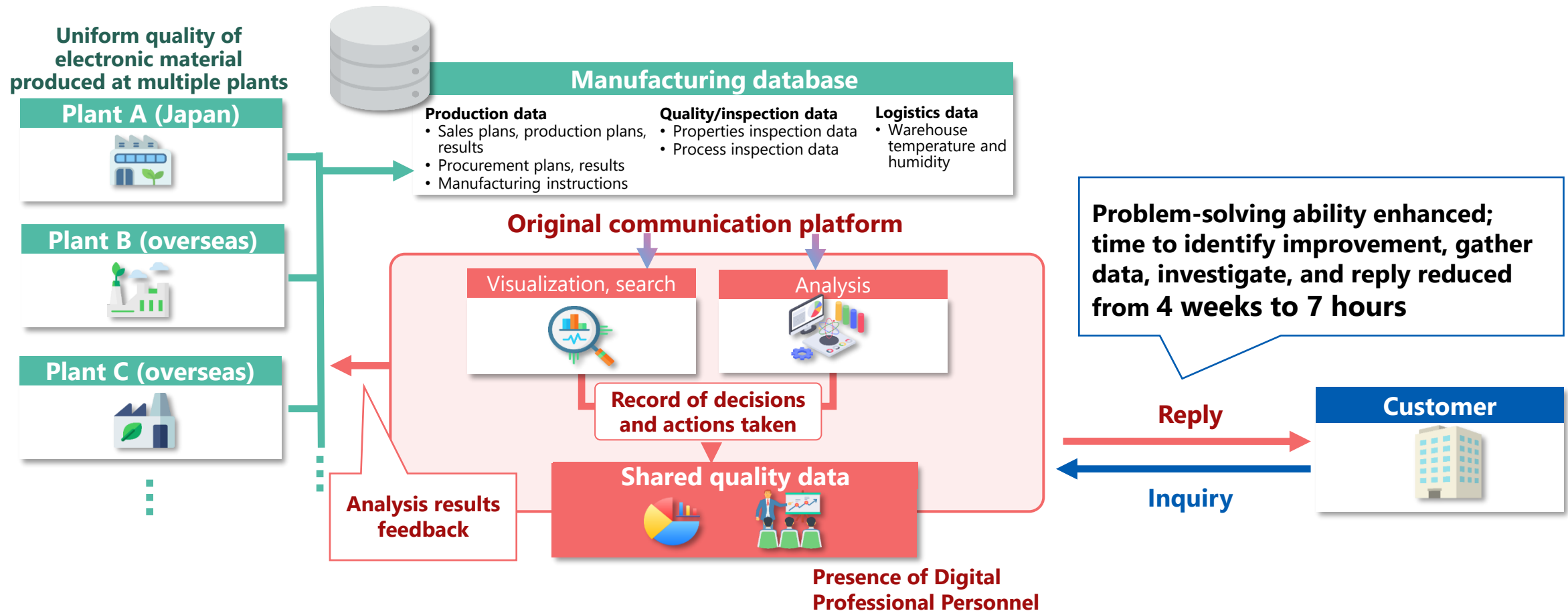


## Enhancing quality competitiveness of electronic materials business

GG10

Production/manufacturing/quality

- Conversion to “smart factories” with unified management of manufacturing information, quality control information, and customer inquiries at each site around the world enabling prompt response to slight variations in quality that affect customers’ manufacturing even when within the range of product specifications
- Preventing problems in advance with process control using analysis of data on each production process step and quality variations



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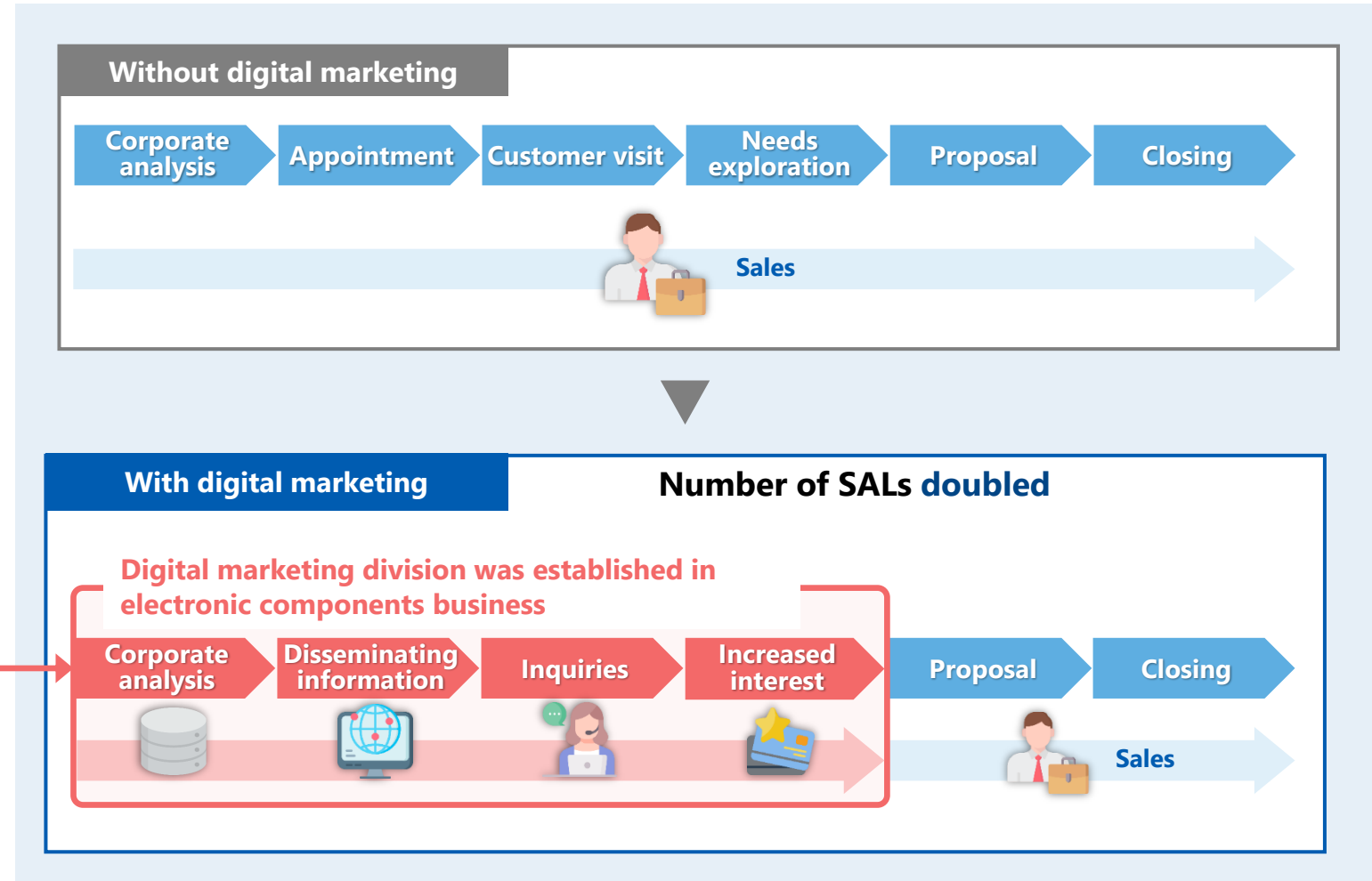
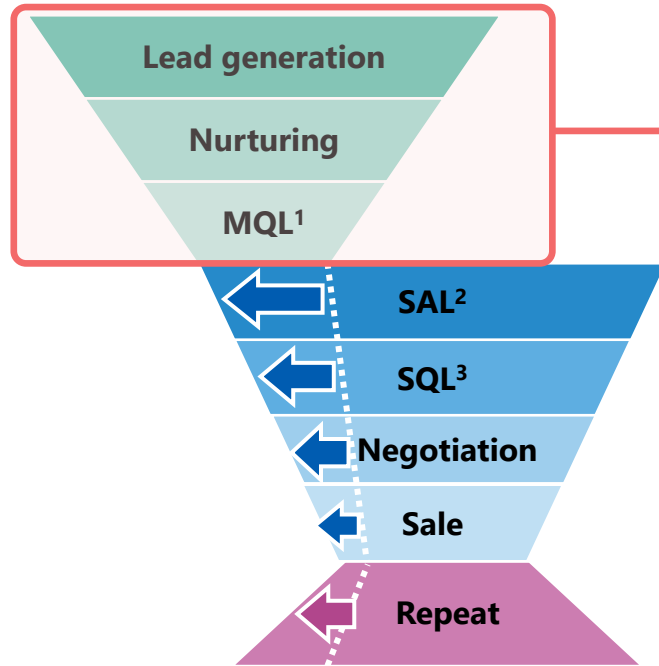
# Expanding digital marketing from Pharmaceuticals business to Material sector

GG10

Sales/marketing

- Asahi Kasei Pharma's successful examples\* and expertise of digital marketing including medical representatives' sales method reform expanded into other business sectors
- Number of SALs in electronic components business doubled

B2B marketing demand generation process in Material sector



<sup>1</sup> **Marketing Qualified Lead**  
Prospective customer gained by marketing activity

<sup>2</sup> **Sales Accepted Lead**  
Prospective customer that the sales team accepts from the marketing team and agrees to nurture

<sup>3</sup> **Sales Qualified Lead**  
Prospective customer that the sales team deems likely to become a paying customer

GG10

Sales, marketing

Training personnel to lead transformation of sales and marketing

✓ Providing venue for actual practice in addition to learning theory; constantly bringing in the latest information

### Deepening knowledge (input)

#### Open Badge

- Level 5**
  - Able to propose strategies and tactics autonomously
  - Able to guide marketing methods
  - Responsible for marketing of a business
- Level 4**
  - Able to propose strategies and tactics under direction of supervisor
  - Assistant for marketing of a business
- Level 3**
  - Able to understand marketing
  - Field sales representative or support staff

### Simulated experience (output)

#### Lead Business Seminar

- 1) Systematic learning**

Systematically learning basic knowledge of B2B marketing through seminars
- 2) Knowing through experience measures that are useful in practice**

Knowing effective combinations of digital marketing measures and points to avoid through role-playing
- 3) Making discoveries from feedback**

Receiving feedback on results; discovering effective measures and improvements

### Enhancing practices

#### Internal Seminars

Monthly seminars by specialists/academia

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# Productivity improvement project (BT Project)

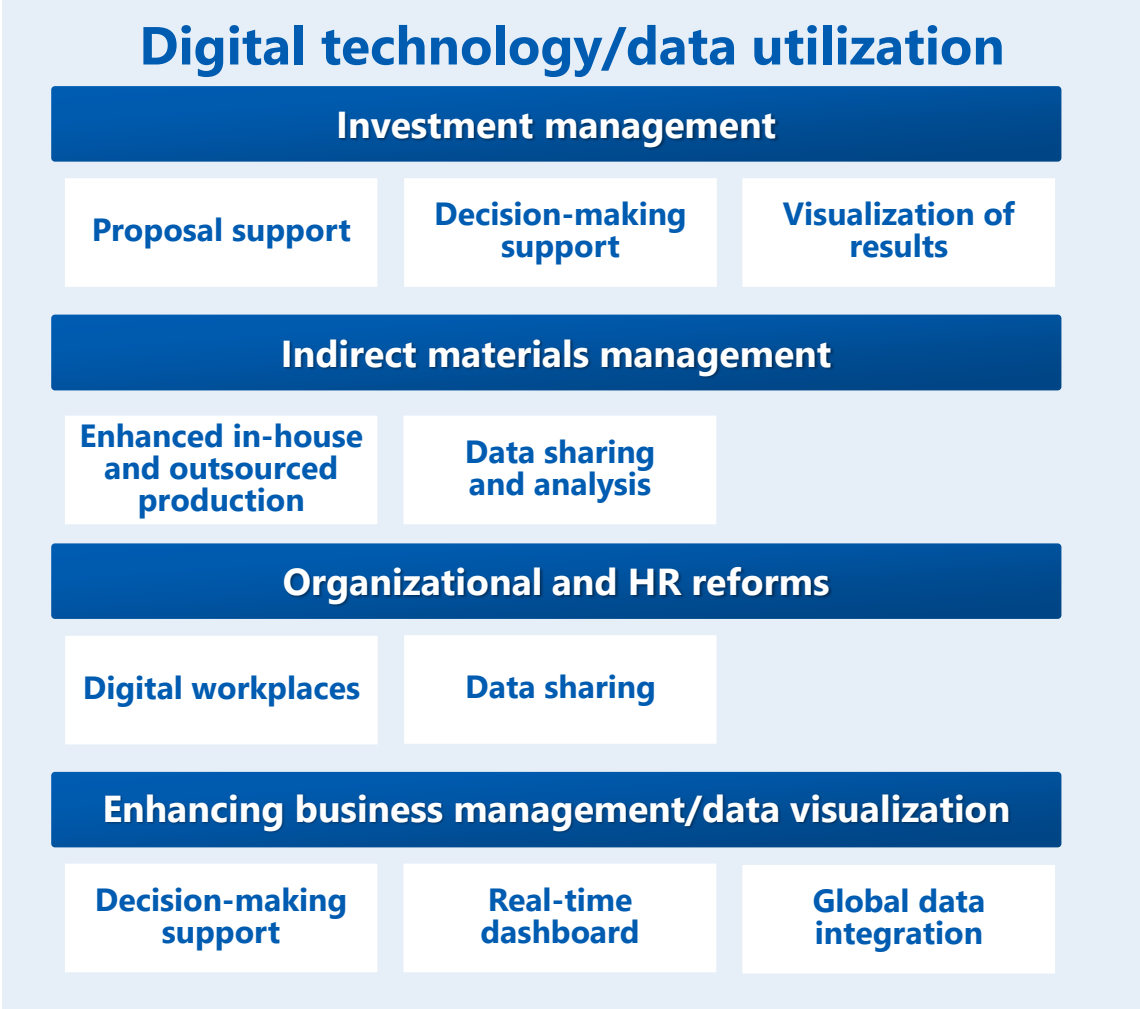
- Facilitating continuous enhancement of earnings structure by using digital tools to accelerate project activities and visualize progresses
- Management dashboard to enhanced business management and data visualization

## BT (Build up to Trailblaze) Project

- Targeting ¥20 billion reduction in SG&A expenses in fiscal 2024 as a key initiative with the President as the project owner
- Aiming for continuous earnings structure reform with productivity improvement measures, including review of work styles and organizational structures, in addition to immediately effective streamlining measures



Example of real-time management dashboard



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## Utilizing design thinking and agile development for business transformation

Business model

Aiming for solutions businesses that create new value by utilizing digital technology to capture potential needs that customers are unaware of in all business sectors, in addition to selling products

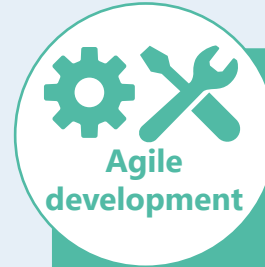
### Approach to creating innovation



Not what to make,  
but what happiness  
to give the user



Finding potential  
needs of customers



Repeat development  
process in small cycles

Give it a try in  
an "agile" way



Reducing time  
to launch service

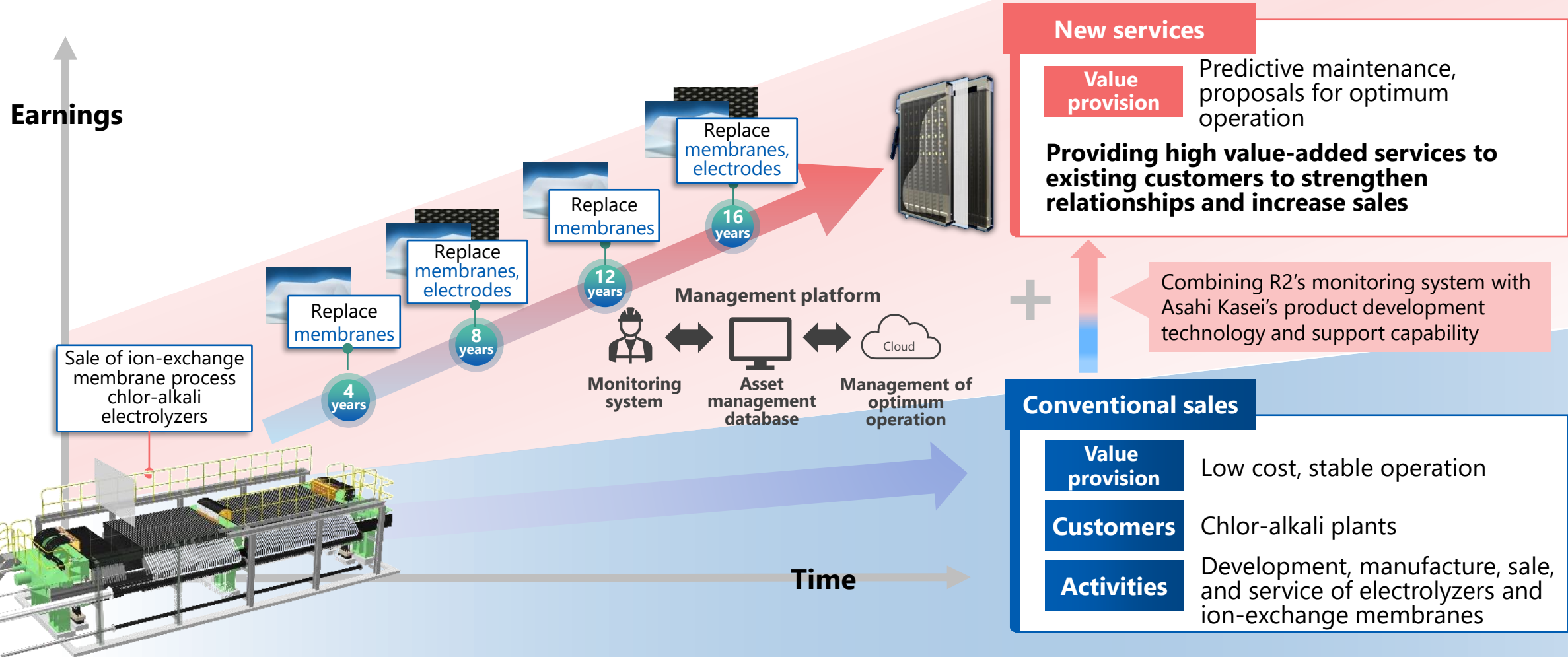


# Enhancement of recurring revenue model in ion-exchange membrane business

GG10

Business model

Development of new data-driven services such as predictive maintenance and proposals for optimum operation together with Recherche 2000 Inc. (R2), industry leader in chlor-alkali electrolysis monitoring acquired in 2020



GG10

Business model

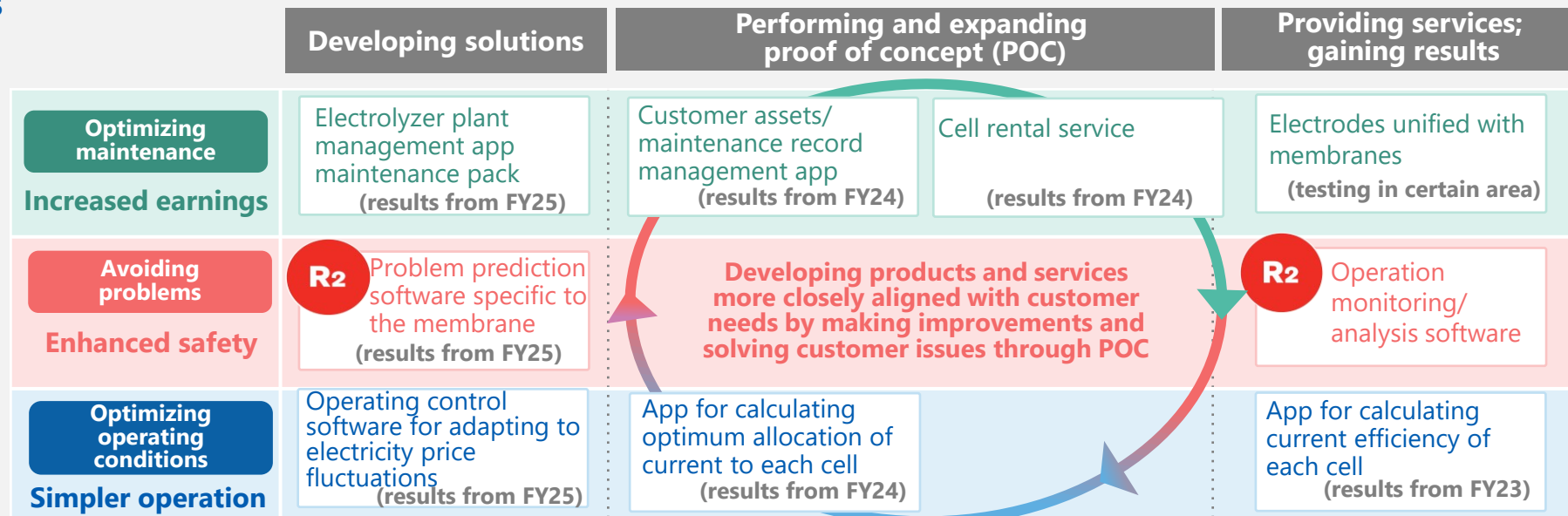
Permeation of design thinking and agile development

Fostering corporate culture

- 2021: Establishment of Customer Success Dept. in Ion Exchange Membrane BU
- 2022: Design Thinking Retreat
- 2023: Agile CX Workshop (scheduled)



Plan for creating new services for recurring revenue model in ion-exchange membrane business



▶ Considering future extension of service platform to hydrogen business

# Enhancing competitiveness of electronic components business

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Business model

- Reinforcement of Digital Professional Personnel for marketing strategy focused on value provided to end users
- Changing customer contact points and relationships with reinforced digital technology in addition to competitive technologies and products

## Vision

Accelerating the co-creation cycle through digital technology

## Example: Providing sound experience value with Garage Labs

- In-vehicle demonstration and joint development to **enhance actual sensation and experience with customers**
- **Driving demonstration and joint development** outside the garage using demonstration vehicles with customers

### Asahi Kasei Microdevices

### Customers

Providing information on latest technology

Stimulating concepts through technology experience

### Co-creation

Developing technology anticipating long-term needs

Providing information on future ideas

Heightening position in established markets and capturing new markets



### Evolution of digital technology

- ✓ Combination of high-quality audio IC technology, software algorithms, and tuning technology
- ✓ Developing products that appeal to users' senses by providing experience value; accelerating co-creation

Significant increase in prototyping speed, strengthened relationships with customers

## Enhanced platform for customer data in Homes business

GG10

Business model

- Enhancing digital platform and utilization for stronger and deeper customer relationships in long-life homes with continuing customer satisfaction
- Even with domestic housing market forecasted to shrink, Asahi Kasei Homes and its affiliates create added value and strengthen competitiveness

### New form of contact with customers

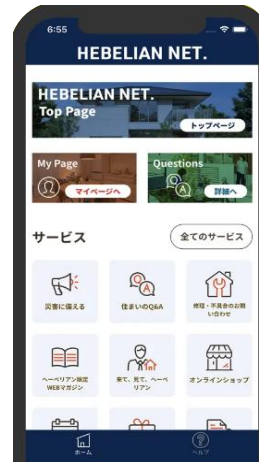
#### Hebelian Net

##### Content

Members-only site for Hebel Haus and Hebel Maison owners

##### Expectation

- Supporting customers with information on periodic inspections, notice of issues, online shop, consultation, etc.
- Providing peace of mind in emergencies by confirming safety after natural disasters and providing information on restoration of basic utilities



(membership increased by 40% in 2 years)

### Coordinating customer information among Asahi Kasei Homes and its affiliates

#### Long Life Navi

##### Content

Asahi Kasei Homes, Asahi Kasei Reform, Asahi Kasei Realty & Residence, etc., coordinating customer information such as periodic inspection history and contact history

##### Expectation

Providing optimum proposals to customers at optimum timing, building basis for long-term peace of mind and satisfaction; maximizing value provision to customers

**Increased number of referrals**  
(new home construction, moving to new home, etc.)

**Expanding business for existing homes**  
(remodeling, rental management, solar power, etc.)

# Maximizing value of ZOLL LifeVest through data utilization

GG10

Business model

- Providing further added value with LifeVest by expanding functions through continuous data collection
- Maintaining firm position as the pioneer in the market with an estimated potential of \$3 billion in the United States alone

## LifeVest wearable defibrillator



- Subject:** Patients at elevated risk of sudden cardiac arrest
- Method:** Continuously monitors and analyzes electrocardiogram; if life-threatening arrhythmia is detected, defibrillating shock is administered within about a minute
- Record:** Worn by more than 1 million patients around the world, saved thousands of lives since launch over 20 years ago

## Providing patient data of value to physicians

### ZOLL Patient Management Network



- Patient data automatically transferred from LifeVest to the server once each day
- Medical professionals able to remotely monitor patients

### Trends over time and health survey



- Trends over time can be viewed for heart rate, steps, body position, etc.
- Health survey function allows the patient to answer questions on the LifeVest touch screen

### Setting up alerts in accordance with needs

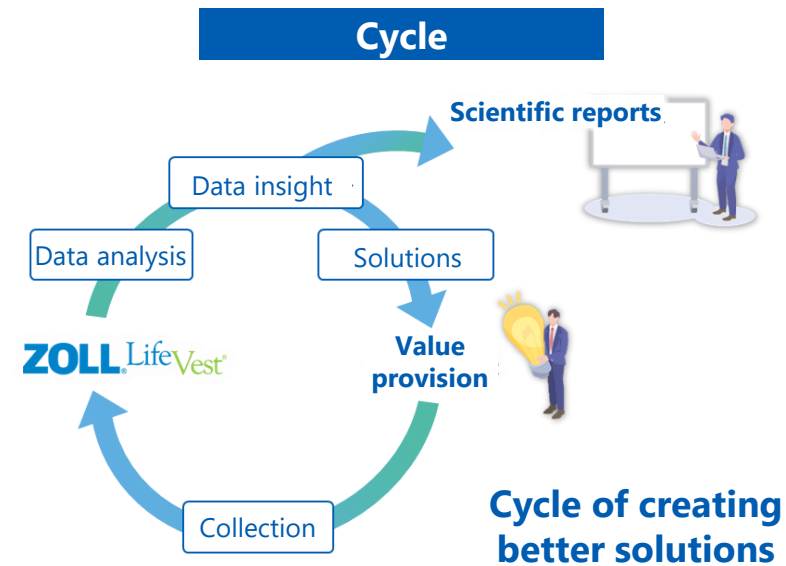
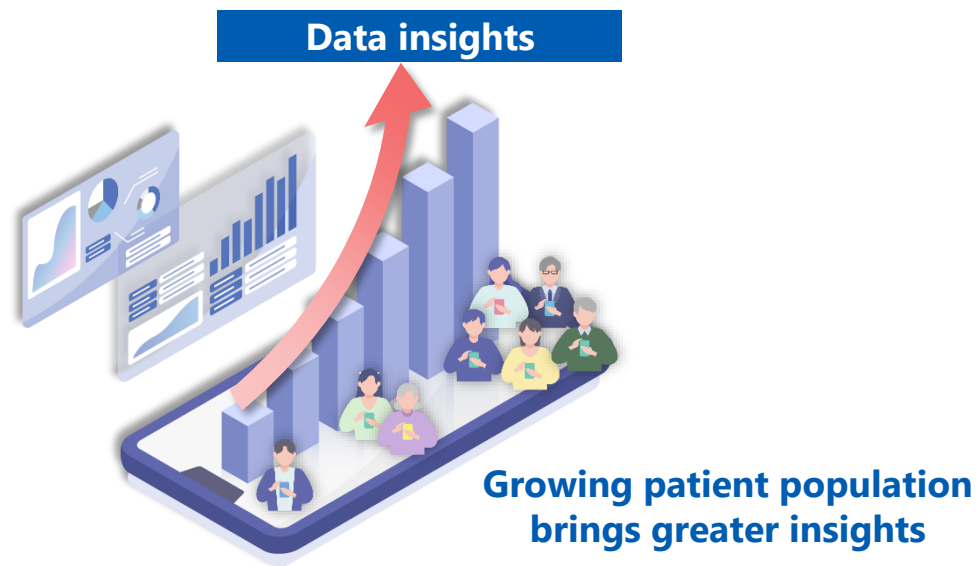


- Physicians can choose which patient data to receive alerts on
- Selectable events
  - Treatment (electric shock)
  - Automatic and patient-initiated electrocardiogram recordings
  - High trending heart rates



## LifeVest business competitive advantage from data

- ✓ Data continuously collected, utilized in data science and machine learning for LifeVest business
- ✓ New insights can be obtained as the number of patients increases, enabling continuous provision of new value



### Example

Advanced arrhythmia discrimination (AArD) enabled by machine learning, reducing the number of false alarms

#### Data

Performance confirmed with data from **96,000** patients

#### Results

Total number of alarms reduced by **56%** compared to previous product, median number of false alarms per 90 days pf wear reduced from **4 to 0**

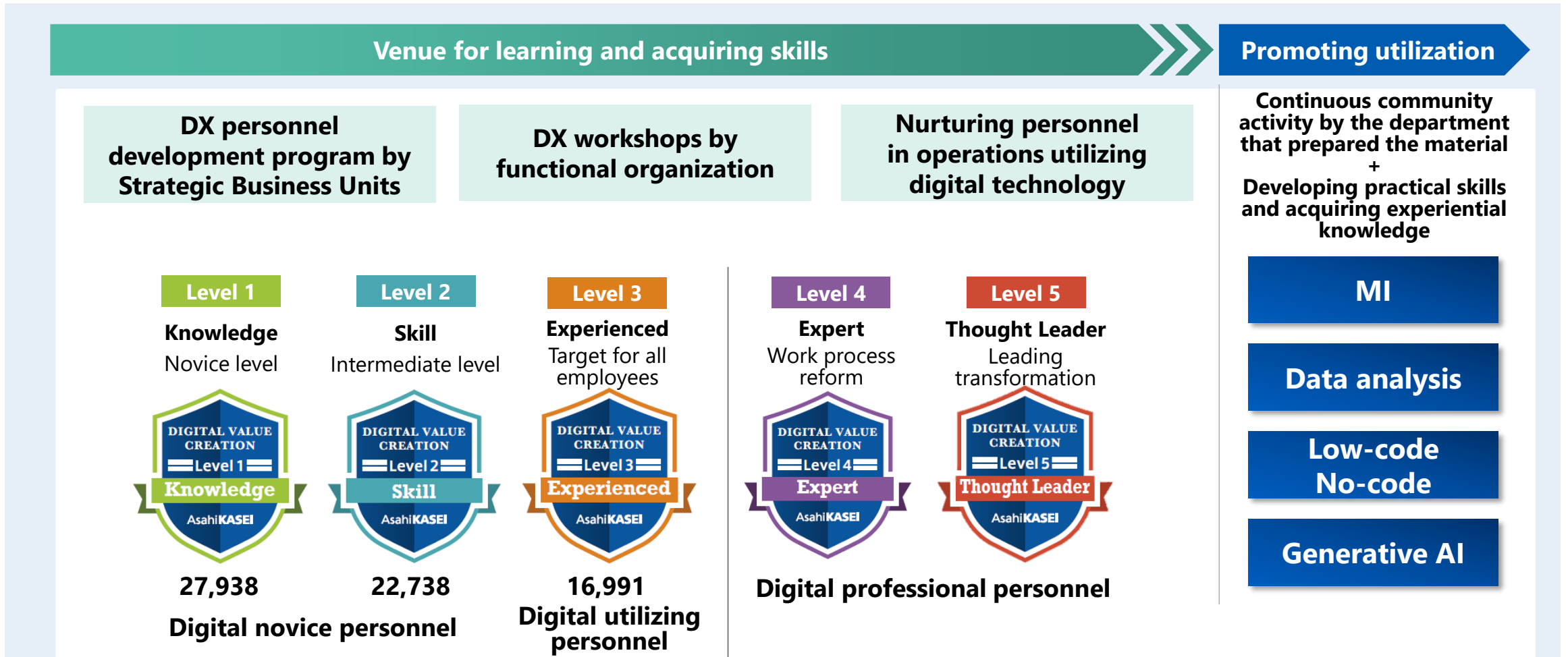
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- Fostering digital personnel
- Generative AI
- Security

# Asahi Kasei DX Open Badge Acquisition

- Community management ensures a structure where acquisition of the badge leads to utilization and implementation of digital skills in actual work
- Available in 11 languages, fostering digital personnel globally



Note: Numbers of employees completing each level current as of November 30, 2023



# Asahi Kasei DX Open Badge Courses

Updating materials in a timely manner according to technological trends

Example: Generative AI established in October 2023

Group Masters	IT Domain	Digital Innovation Domain													
		Data-driven areas					Data platform development			Business design					
Digital professional personnel	Level 5 Thought Leader	IT (lo/no code)		MI (advanced)	Data scientist (DS training)					Smart factory	Marketing & digital	Design thinking	Scrum in practice		
	Level 4 Expert	IT (business system)	IT (lo/no code)	MI (intermediate)	Data analysis (PU training)	App (API) development	Machine learning	DB	DPF	Smart factory	Marketing & digital	Design thinking	Scrum in practice	BI technical	
Digital utilizing personnel	Level 3 Experienced	IT	Digital comprehensive	Generative AI	MI hands-on	Data analysis (GU training)	Python	Machine learning	Data Utilization		Industrial IoT development	Digital marketing	Design thinking	Agile development	BI basics
Digital novice personnel	Level 2 Skill	IT		Generative AI	Introduction to MI		Data science		Introduction to data use		Factory IoT	Marketing basics		Garage	
	Level 1 Knowledge	Introduction to IT		Introduction to generative AI		Introduction to AI					Introduction to IoT			Introduction to Garage	



Note: Darker colors indicate open courses

## Fostering digital utilizing personnel and promoting activity by digital professional personnel

- Implementing various measures to further accelerate digital human resources development
- Each organization promotes DX led by digital professional personnel with all the members having a certain degree of digital knowledge and a mindset of digital utilization

Targeting 2,500 on-site personnel

Digital professional personnel

### President's message

President's video message encouraging digital professional personnel



### Visualization of digital professional personnel

Posted in the Talent Management System and disclosed company-wide

### Certification of digital professional personnel

(scheduled for March 2024)

System to identify, certify, and visualize digital professional personnel in business-specific digital domains

Targeting all employees

Digital utilizing personnel

### Promoting participation

Group training session during suspension of plant operation for maintenance



### Maintaining and retaining motivation for learning and awareness of utilization

Digital case studies (submitted case studies disclosed internally)



# Establishment of Digital Talent Strategy within Digital Value Co-Creation

Comprehensively accelerating personnel measures by systematizing education and co-creation programs obtained separately by agile development

1

## More agile

Leading measures executed with position in Digital Value Co-Creation rather than Human Resources

2

## Further acceleration of fostering, obtaining, and leveraging digital talent

Headed by a specialist in DE&I

3

## Ensuring diversity and fostering corporate culture

Achieving business reformation across boundaries



**Mitsu Akimoto**  
General Manager  
Digital Talent Strategy

After doing sales and legal duties in a business division, seconded to the Tokyo Chamber of Commerce and Industry. Transferred to Diversity Promotion Office in HR in 2018, assigned to support personnel rearing children or caring for family members and to advance DE&I across the Asahi Kasei Group. Current position since April 2023.

### Fostering digital personnel

- **Systemization of internal program content**
- **Global training and certification**
- **One IT Team**
- **External collaboration**
  - Future Digital Personnel Club
  - Miyazaki Digital Personnel Training Consortium
  - Lectures at Nobeoka Technical High School

### Ensuring diversity of personnel

- **40% of Digital Value Co-Creation employees hired mid-career**
- **Recruitment activity at overseas universities (India, Vietnam)**

### Fostering culture of diverse activity

- **Defining and visualizing employee skills and roles**
- **External co-creation**
  - 2-month program to study other companies' problem-solving processes and work procedures
- **Alumni network**
  - Scheduled to be established in Digital Value Co-Creation during fiscal 2024, creating opportunities for co-creation with retirees

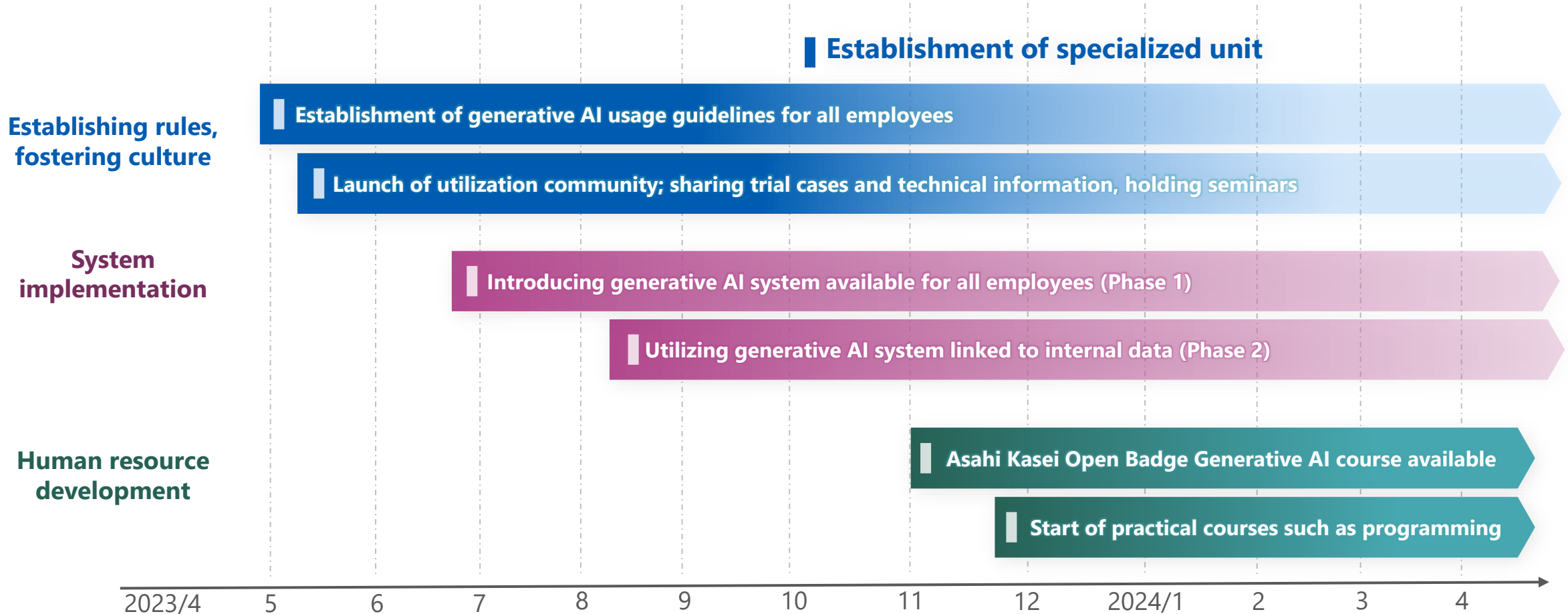
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# Generative AI utilization in Asahi Kasei

- Promoting company-wide active use by promptly establishing our own guidelines and forming communities
- Fostering a culture of AI utilization lead by specialized Generative AI/Language Analysis Unit to accelerate system implementation and human resource development



Priority given to subjects with the greatest effects and earliest results expected

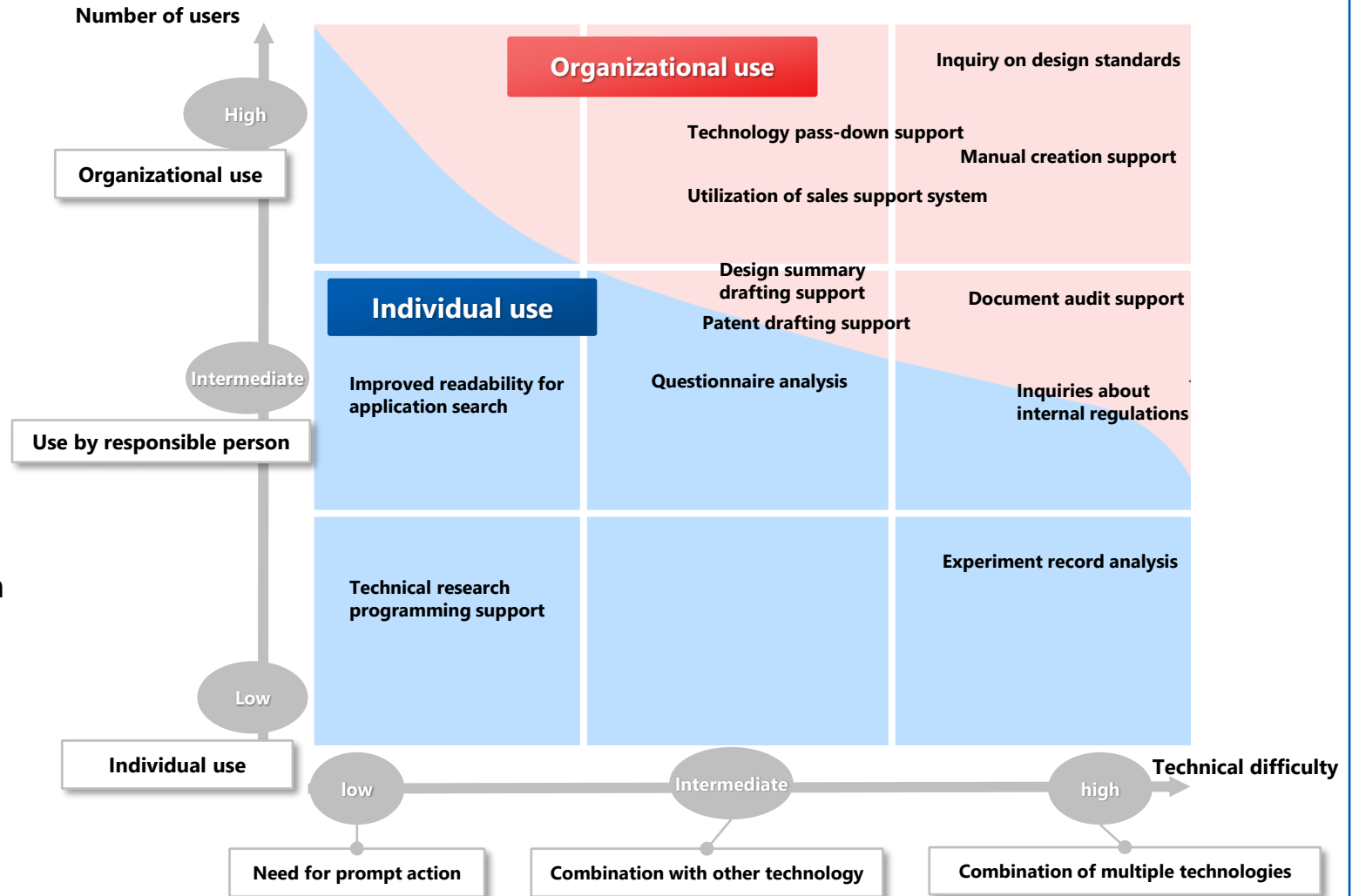
Examples of subjects utilizing generative AI

**Individual use**

Training programs such as Open Badge and practical courses to support employees improving their individual skills

**Organizational use**

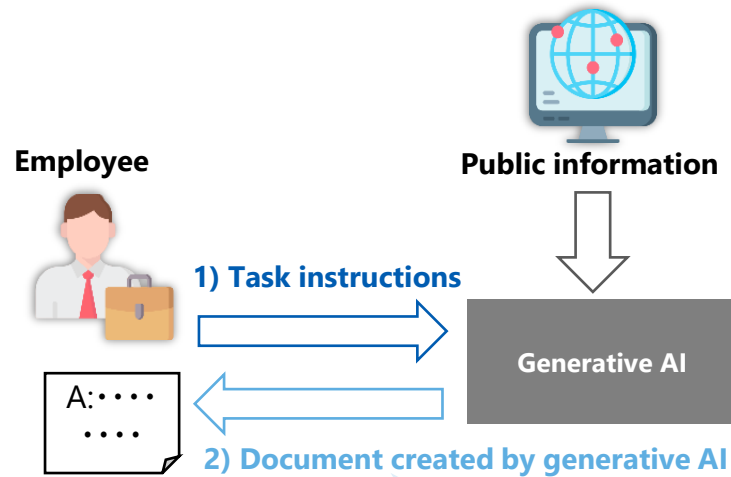
Generative AI/Language Analysis Unit performs technical support such as system development for each application



## Steps to implement generative AI

### Phase 1 (from June 2023)

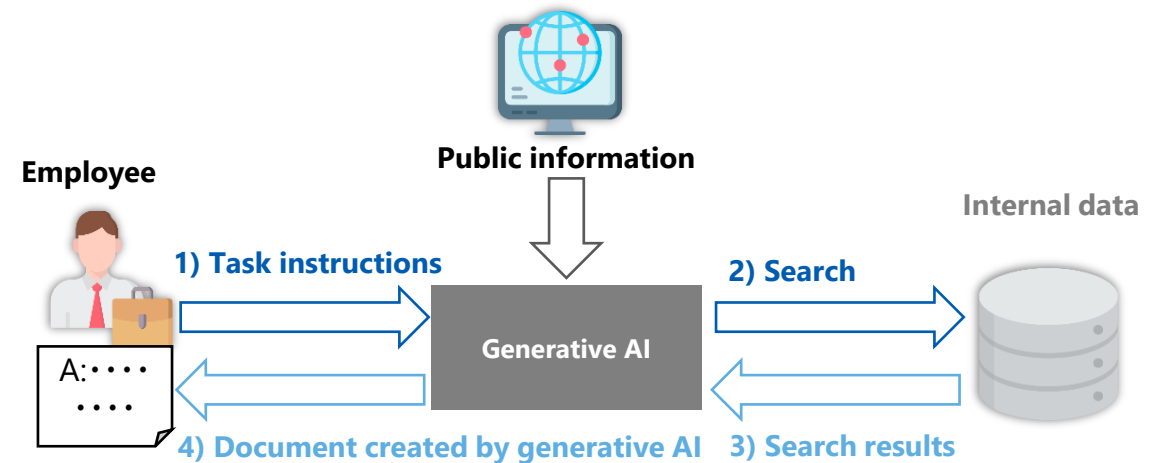
- ✓ Permitting work-related use of generative AI based on public information on the internet in a secure environment where information does not leak out



Replies created based on public information and input information

### Phase 2 (from August 2023)

- ✓ Linking to internal data in addition to the latest information on the internet
- ✓ Highly specialized tasks such as patent drafting is possible by fine-tuning the answers to be more specific to Asahi Kasei



Advanced utilization possible by addition of internal data that is not disclosed externally, such as experimental results and technological information

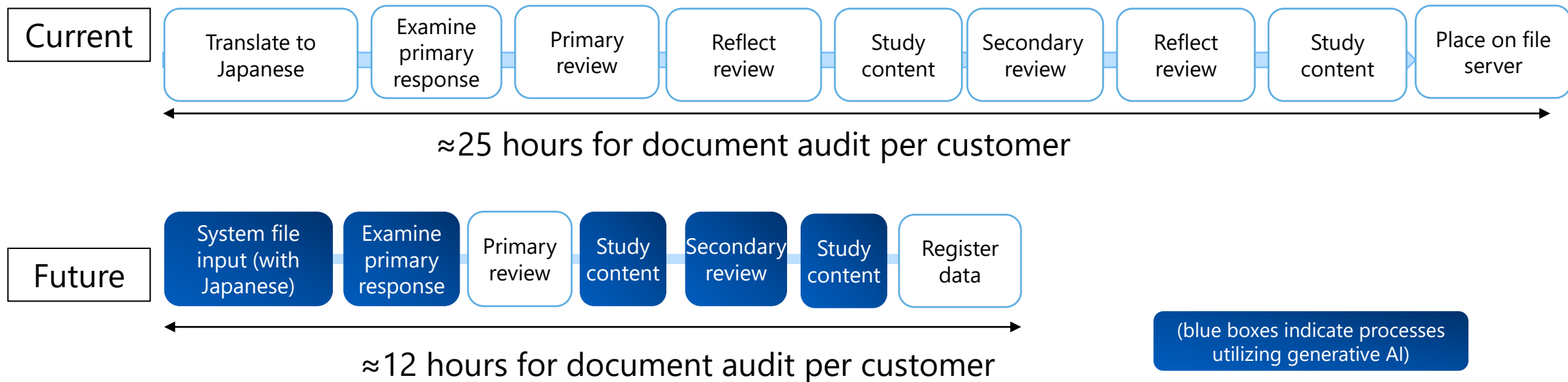
## Utilizing generative AI for document auditing

Using generative AI to raise the efficiency of the current auditing process, forecasting large decrease in time required

Trial calculation at a certain business unit:

$$13 \text{ h/case} \times 140 \text{ cases/year} = 1,820 \text{ hours saved}$$

### Quantitative effect



### Qualitative effect

Increased customer satisfaction with greater precision of responses (more detailed responses)



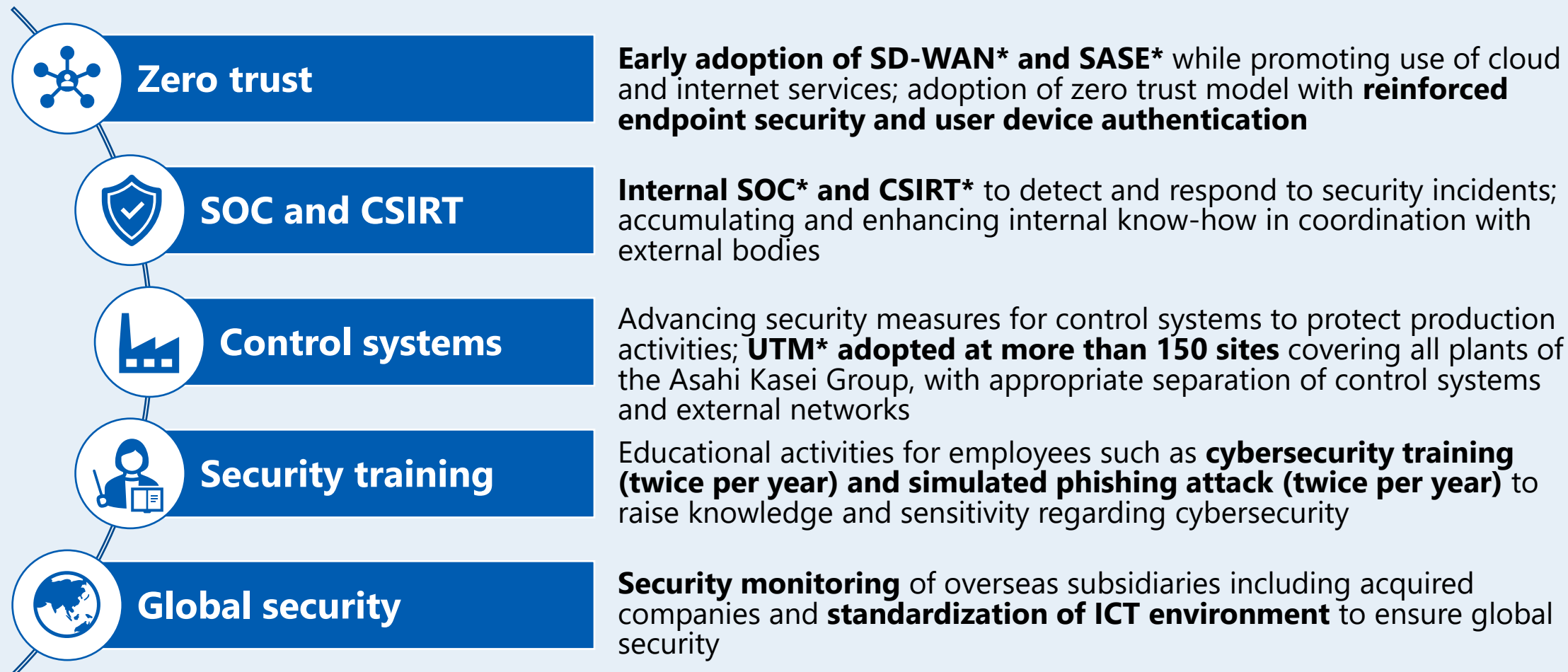
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# Cybersecurity measures

Cybersecurity risk positioned as a Material Group Risk; measures being reinforced



\* SD-WAN: Software Defined-Wide Area Network, SASE: Secure Access Service Edge, SOC: Security Operations Center, CSIRT: Computer Security Incident Response Team, UTM: Unified Threat Management

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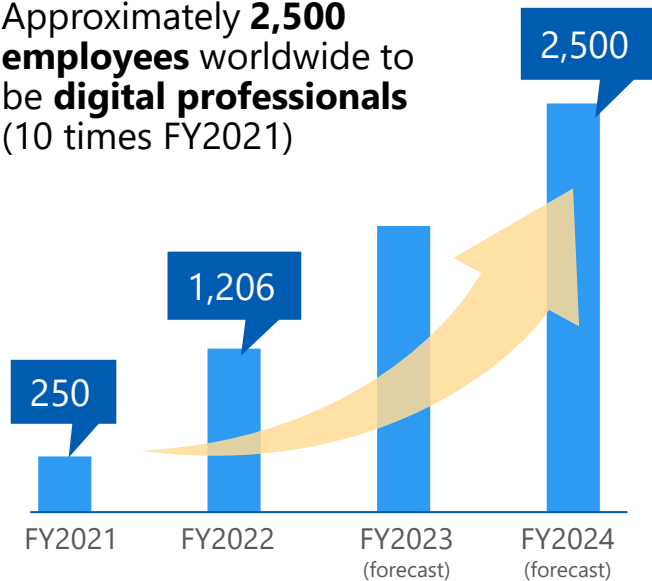
# Fiscal 2024 targets: DX-Challenge 10-10-10

Targets of 3-year medium-term management plan from fiscal 2022; all on track as of H1 fiscal 2023

## Digital professionals

**x10**

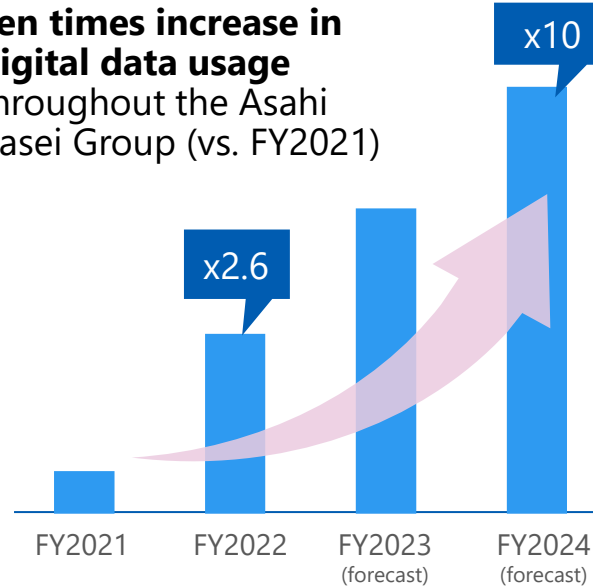
Approximately **2,500 employees** worldwide to be **digital professionals** (10 times FY2021)



## Volume of digital data usage

**x10**

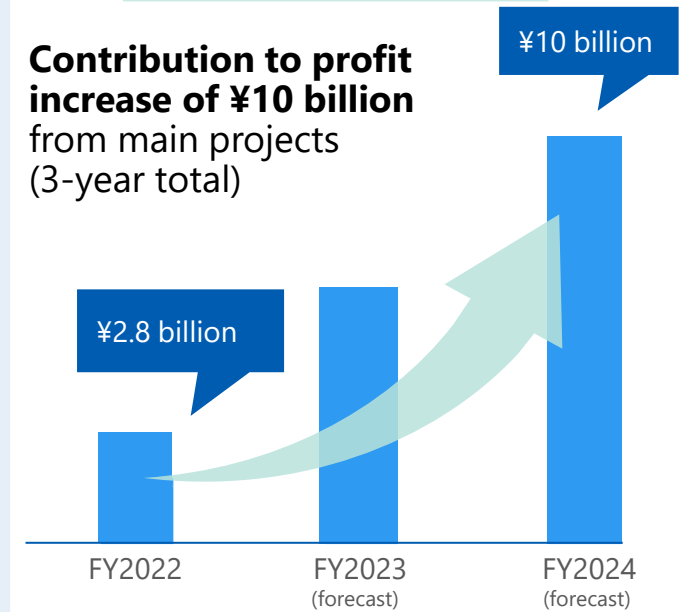
Ten times increase in digital data usage throughout the Asahi Kasei Group (vs. FY2021)



## Profit contribution from main projects

**¥10 billion**

Contribution to profit increase of **¥10 billion** from main projects (3-year total)



Note: Total DX-related investment of ≈¥30 billion planned (IT investments and cloud usage fees for digital transformation)

# Asahi Kasei DX Vision 2030

**Asahi Kasei will co-create “healthy living” and  
“a future world full of smiles” through borderless  
connections enhanced by digital innovation.**

