

# Financial results for Q1 of FY 12/2023

Core Concept Technologies Inc.
Securities Code: 4371
May 12, 2023

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# 1 Executive Summary



# Results for Q1 of FY 12/2023

# Sales grew but profit declined year on year.

Q1 of FY 12/2022 Q1 of FY 12/2023

Net sales  $2,754 \Rightarrow 3,592$  million yen +30.4 % year on year

Operating profit 406 ⇒ **341** million yen -**16.1** % year on year

Operating profit margin 14.8  $\Rightarrow$  **9.5** % **-5.3** points year on year

# **Topics**

◆Injection of capital into REVA investment limited partnership No. 1 Business alliance with REVA Corporation

\*Disclosed on March 15, 2023

**◆** Acquisition of shares of P. G. System Co., Ltd. (made it a wholly-owned subsidiary)

\*Disclosed on May 12, 2023 (Date of share transfer: May 19,2023)

\*To be included in the consolidated financial settlement from Q2

# 2 Earnings Report



- **♦** While net sales increased year-on-year, operating profit decreased.
- Net sales and operating profit both progressed steadily at a pace exceeding the forecast.
  Unit: million yen

	2022 Q1	2023 Q1
Net sales	2,754	3,592
Outsourcing expenses	1,579	2,241
Personnel expenses	349	426
Other costs*	56	85
Gross profit*	768	840
Selling, general and administrative expenses*	362	499
Operating profit	406	341
Ordinary profit	430	346
Profit	314	251
Gross profit margin	27.9%	23.4%
Operating profit margin	14.8%	9.5%
Outsourcing expense rate	57.3%	62.4%

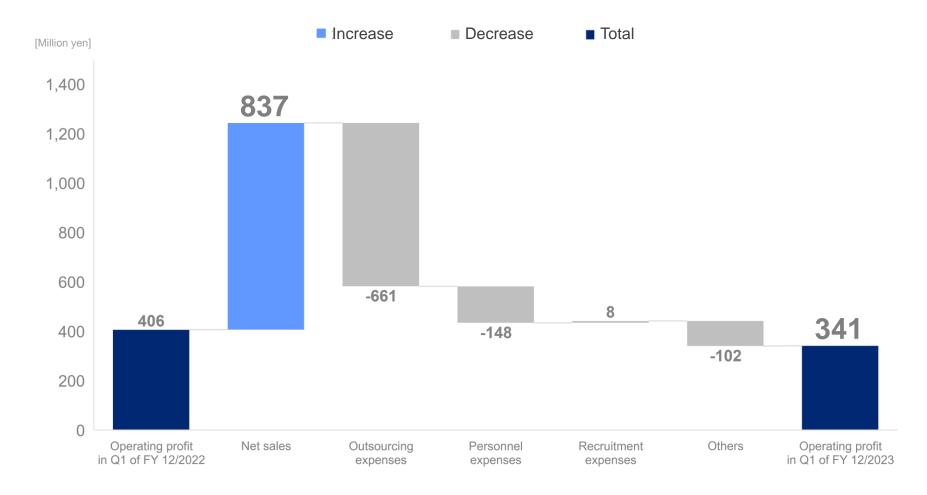
Change	% Change	Earnings forecast	Progress rate
+837	+30.4%	15,761	22.8%
+661	+41.9%	-	-
+76	+21.8%	-	-
+28	+50.5%	-	-
+71	+9.3%	-	-
+136	+37.8%	-	-
-65	-16.1%	1,586	21.5%
-84	-19.5%	1,579	21.9%
-63	-20.1%	1,095	22.9%
-4.5P	_	-	-
-5.3p	_	10.1%	_
+5.0 <sub>P</sub>	-	-	-

Q1 of FY 12/2022: Recalculated while including an allocated cost of 51 million yen, which was included in other costs, in selling, general and administrative expenses (included in selling, general and administrative expenses from FY 12/2023).



Operating profit dropped mainly due to a decline in gross profit margin for support for DX and the augmentation of personnel expenses due to an increase in the number of employees.

(-65 million yen, or down 16.1 %, year on year)





- Both support for DX and support for staffing of IT personnel saw growth of sales and profit.
- **Backlog of orders is healthy.**

Unit: million yen

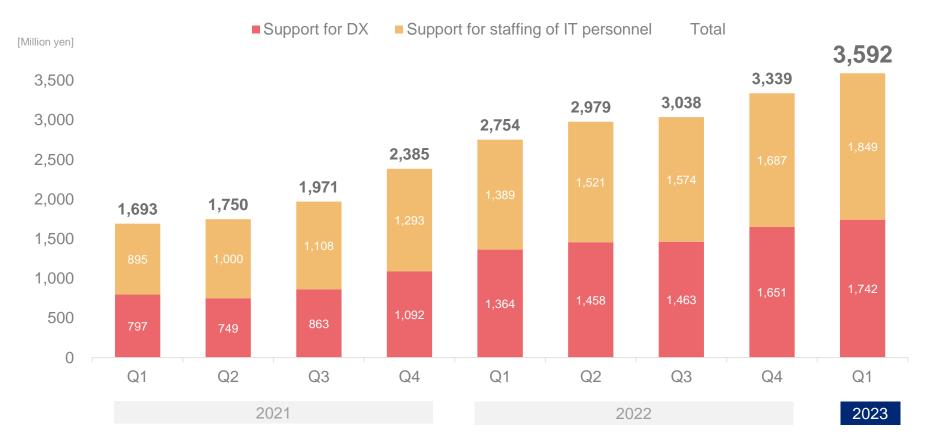
	2022 Q1	2023 Q1
Net sales	2,754	3,592
Support for DX	1,364	1,742
Support for staffing of IT personnel	1,389	1,849
Gross profit*	768	840
Support for DX*	553	549
Support for staffing of IT personnel*	215	291
Gross profit margin*	27.9%	23.4%
Support for DX*	40.5%	31.5%
Support for staffing of IT personnel*	15.5%	15.7%
Backlog of orders (as of the end of term)	2,226	2,644
Support for DX	1,296	1,443
Support for staffing of IT personnel	929	1,201

Change	% Change
+837	+30.4%
+378	+27.7%
+459	+33.1%
+71	+9.3%
-4	-0.8%
+75	+35.1%
-4.5P	-
-9.0P	-
+0.2P	-
+418	+18.8%
+147	+11.3%
+271	+29.2%

<sup>\*</sup>Q1 of FY 12/2022: Recalculated while including an allocated cost (support for DX: 47 million yen; support for staffing of IT personnel: 4 million yen), which was included in other costs, in selling, general and administrative expenses (posted in selling, general and administrative expenses from FY 12/2023).



- ◆ An upward trend continues in terms of net sales for both support for DX and support for staffing of IT personnel.
- Since many client companies settle accounts in March, net sales tend to increase from April (the second quarter of our fiscal year) to March of the following year (the first quarter of our fiscal year).

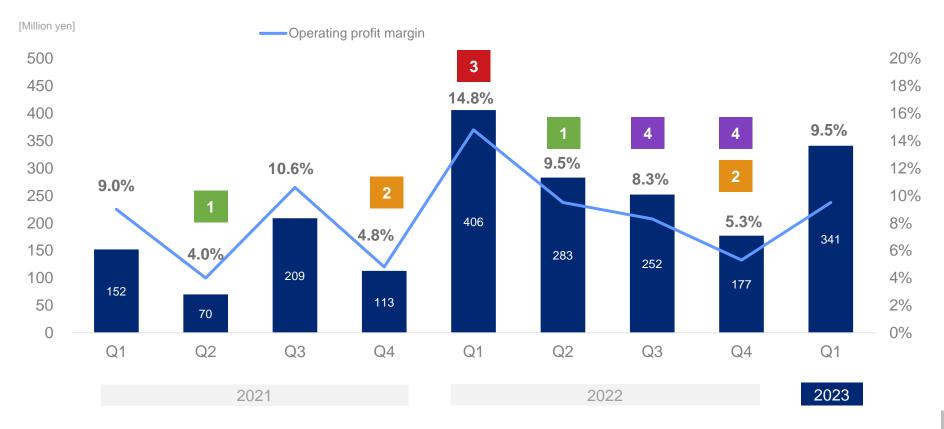




# ◆ Operating profit decreased year-on-year in Q1 of FY 12/2023. However, it is expected to increase from Q2 onward.

- Usually, operating profit margin is high in Q1 and Q3, while that in Q2 and Q4 is low due to the effects of personnel expenses, recruitment expenses and a provision for year-end bonus.
- Operating profit margin dropped due to recruitment of new graduates & experienced personnel.

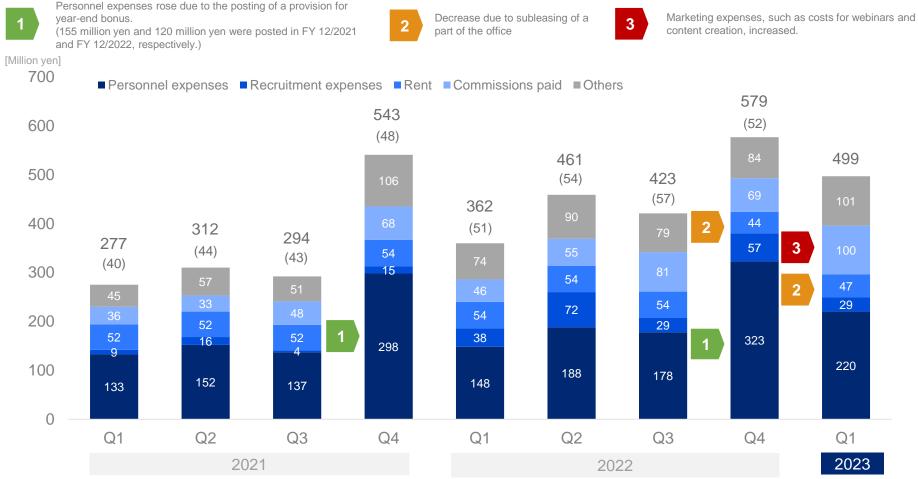
- Operating profit margin dropped due to a provision for year-end bonus. (155 million yen and 120 million yen were posted in selling, general and administrative expenses in FY 12/2021 and FY 12/2022, respectively.)
- Operating profit margin increased mainly due to the recording of sales from highly profitable large projects.
- Operating profit margin dropped due to an increase in outsourcing expenses to deal with strong demand.





# Personnel expenses increased as we enhanced recruitment activities.

• In Q4 of FY 12/2021 and Q4 of FY 12/2022, personnel expenses rose due to the posting of a provision for year-end bonus.



<sup>\*</sup>A portion of personnel expenses (remuneration for executives) was posted as cost of sales in FY 12/2021.

<sup>\*</sup>Recalculated while including the allocated amount that was included in the cost until FY 12/2022 in selling, general and administrative expenses. (Others)

The impact is shown in parentheses (recorded in selling, general and administrative expenses from FY 12/2023).

<sup>\*</sup>Personnel expenses include remuneration for executives.

# **Profit and loss statement (quarterly basis)**



Net sales have been increasing steadily.

◆ The profit margin in the previous Q1 was irregularly high, mainly due to the recording of sales from highly profitable large projects in support for DX. In Q1 of FY 12/2023, the outsourcing expense rate has remained high since the previous fiscal year, pushing down the profit margin.
Unit: million yen

	2022 Q1	2022 Q2	2022 Q3	2022 Q4
Net sales	2,754	2,979	3,038	3,339
Outsourcing expenses	1,579	1,805	1,990	2,105
Personnel expenses	349	343	375	392
Other costs*	56	86	-2	84
Gross profit*	768	745	676	756
Selling, general and administrative expenses*	362	461	423	579
Operating profit	406	283	252	177
Ordinary profit	430	284	250	174
Profit	314	209	184	127
Gross profit margin	27.9%	25.0%	22.2%	22.7%
Operating profit margin	14.8%	9.5%	8.3%	5.3%
Outsourcing expense rate	57.3%	60.6%	65.5%	63.0%

2023 Q1	
3,592	)
2,241	
426	;
85	,
840	)
499	)
341	
346	;
251	
23.4%	5
9.5%	5
62.4%	5

<sup>\*</sup>Recalculated while including an allocated cost, which was included in other costs, in selling, general and administrative expenses in FY 12/2022 (included in selling, general and administrative expenses from FY 12/2023).

Impact: Q1: 51 million yen; Q2: 54 million yen; Q3: 57 million yen; Q4: 52 million yen

# Results by segment (quarterly basis)



Unit: million yen

	2022 Q1	2022 Q2	2022 Q3	2022 Q4
Net sales	2,754	2,979	3,038	3,339
Support for DX	1,364	1,458	1,463	1,651
Support for staffing of IT personnel	1,389	1,521	1,574	1,687
Gross profit*	768	745	676	756
Support for DX*	553	504	429	476
Support for staffing of IT personnel*	215	240	246	279
Gross profit margin*	27.9%	25.0%	22.2%	22.7%
Support for DX*	40.5%	34.6%	29.3%	28.9%
Support for staffing of IT personnel*	15.5%	15.8%	15.7%	16.6%
Backlog of order (as of the account closing date)	2,226	1,960	2,405	2,824
Support for DX	1,296	1,027	1,273	1,593
Support for staffing of IT personnel	929	933	1,131	1,230

2023 Q1
3,592
1,742
1,849
840
549
291
23.4%
31.5%
15.7%
2,644
1,443
1,201

<sup>\*</sup>Recalculated while including an allocated cost, which was included in other costs, in selling, general and administrative expenses in FY 12/2022 (included in selling, general and administrative expenses from FY 12/2023).

Impact: (Support for DX) Q1: 47 million yen; Q2: 49 million yen; Q3: 52 million yen; Q4: 47 million yen

(Support for staffing of IT personnel) Q1: 4 million yen; Q2: 5 million yen; Q3: 5 million yen; Q4: 4 million yen



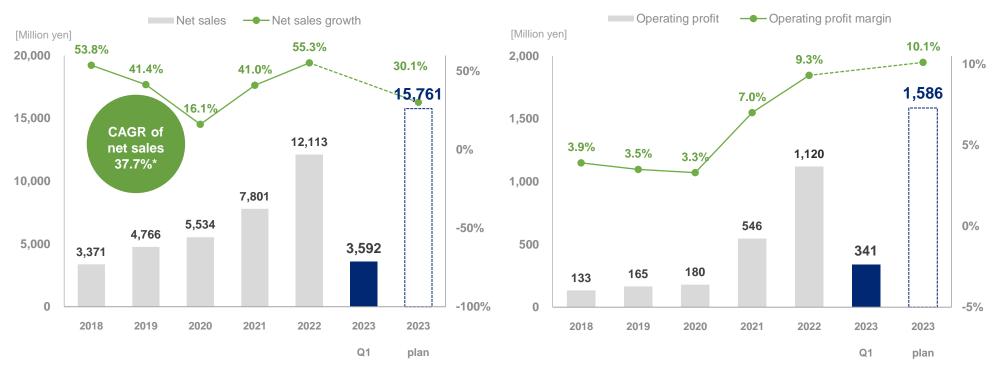
Top line continued to grow at a high rate and operating profit margin also increased.

## Variations in net sales and sales growth

 In FY 12/2020, growth rate declined, due to the delay in order receipt and the postponement of project delivery due to the novel coronavirus pandemic.

## Variations in operating profit and its margin

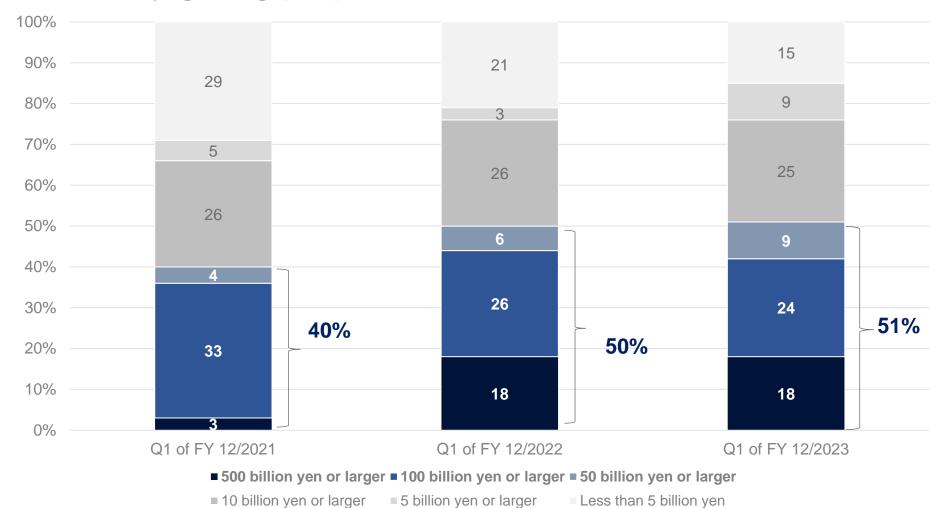
We invested for growth from FY 12/2018 to FY 12/2020.
 We prioritized active recruitment and office relocation.



<sup>\*</sup>From FY 12/2018 to FY 12/2022



# We increased transactions with large companies by actively giving proposals.

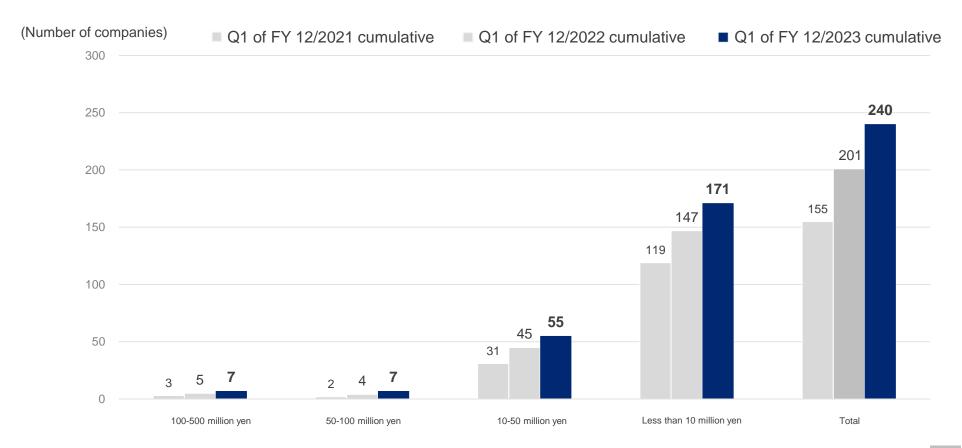




◆ As we increased continuous transactions with existing clients, the number of clients with high spend on our services is increasing.

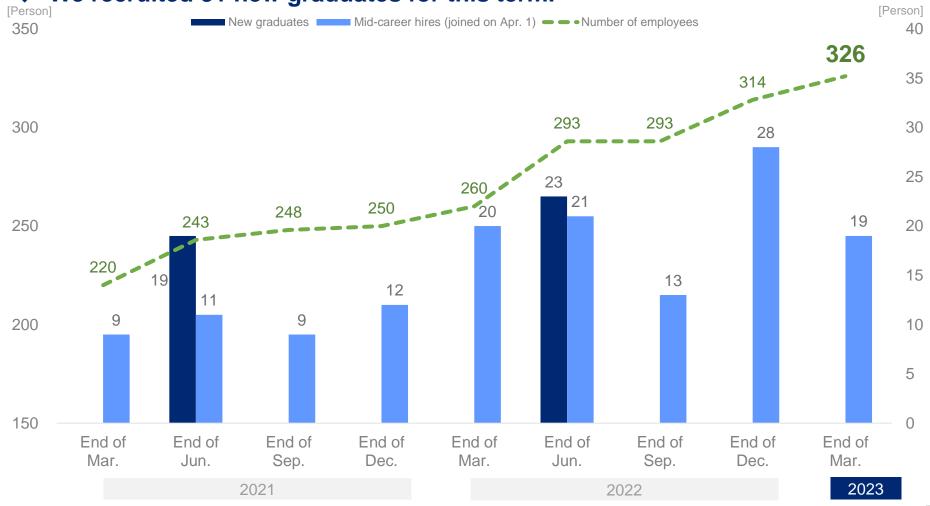
# Number of clients in each sales range

\*Total quarterly net sales are aggregated and categorized for each business partner (the overall number drops from Q4 to Q1).





- ♦ We concentrate on recruitment activities, and the number of employees is steadily increasing.
- **♦** We recruited 31 new graduates for this term.





# **♦** Retained earnings increased thanks to strong performance, resulting in improved financial soundness.

Unit: million yen

	End of FY 12/2022	Q1 of FY 12/2023
Current assets	4,351	4,316
Cash and deposits	2,199	1,699
Non-current assets	762	784
Total assets	5,114	5,100
Current liabilities	2,133	1,840
Non-current liabilities	134	121
Net assets	2,846	3,138
Total liabilities and net assets	5,114	5,100
Equity capital ratio	55.6%	61.5%

Change	Major factors in increase/decrease
-35	Decrease in cash and deposits: -499 Increase in accounts receivable - trade due to sales growth: +469
-499	Decrease due mainly to bonus provided in March and tax- payment
+22	
-13	
-292	Increase in accounts payable - trade due to increased outsourcing expenses: +60 Decrease in income taxes and consumption taxes due to tax-payment: -320
-13	
+292	Retained earnings: +251 Increases in capital and capital reserve used for exercising stock option: +40
-13	
+5.9 <sub>P</sub>	

# 3 Business Model

Support for staffing of IT

Strengths include knowledge and technology in manufacturing and the capability of staffing IT personnel.

Both scalability in good times and financial resilience in bad times are achieved

through active use of outsourcing (Ohgi).

# **Support for DX**

✓Expanding the target area from manufacturing, which has been a strength since our founding, to construction and logistics industries.

✓Utilizing the standard function module + customizable "Orizuru" and the DX support methodology "CCT DX-Method."

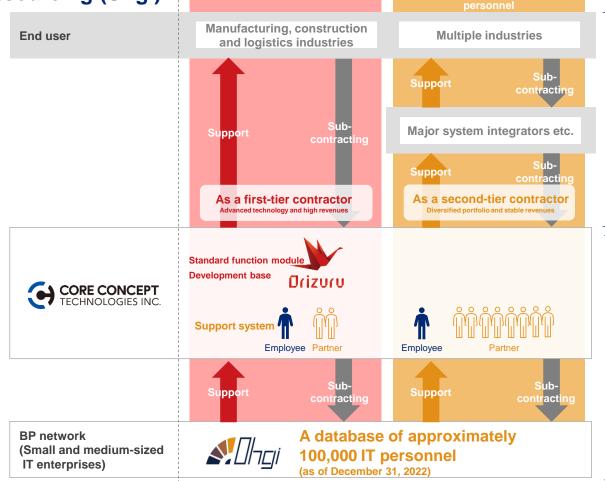
√We provide hands-on support for clients in all processes, including the envisioning of an ideal state after DX, the verification of technologies, the development, operation, and maintenance of systems, and in-house DX.

# Support for staffing of IT personnel

✓Undertaking part of projects as a subcontractor to meet temporary needs for IT personnel from major system integrators, etc.

✓Support with a team structure utilizing the IT personnel staffing capabilities based on "Ohgi," an extensive business partner (BP) network centered on small and medium-sized IT enterprises.

\*We utilize the "Ohgi" network in projects we received in support for DX, and work on projects in collaboration with them.





# A structure that increases competitive advantage and sustains business growth as the business progresses

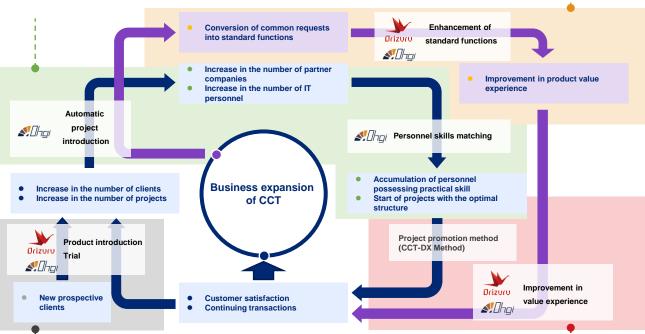
Increase of partner companies (IT personnel from small and medium-sized companies nationwide) by introducing profitable cutting-edge DX projects

- Convert ability to receive orders into ability to acquire personnel
- The ability to acquire personnel is directly related to the ability to execute
   3 and 4.

4

To promote reliable and continuous product enhancement through development linked to projects

- · In principle, no R&D investment is required.
- Operations in 1, 2 and 3 are standardized and productivity improvement continues.



- Orizuru visually shows "the post-DX vision" and demonstrates its value through "case studies, methods, and actual data."
  - · Product functions continue to evolve in 4.
  - Accumulation of case studies and messages of customer satisfaction provide a boost.

3

# Systematic promotion of projects by utilizing Orizuru and the CCT-DX Method

- · Continue to stick to our origins of customer satisfaction by creating results.
- New personnel in 2 become ready to play a role early in line with the model when participating.



Building a unique business model that ensures profitability even after "inhouse DX" by supporting both DX and IT personnel staffing.

Process of support for DX (targeted at business companies)

Ideal post-DX envisioning

Technical verification

System development

Maintenance/inhouse DX support

After in-house DX

After in-house DX, sales will shift from those from support

for DX to those from support for staffing of IT personnel.

**Support for DX** 





BP procurement by **our company** (Outsourcing expenses)

Support for staffing of IT personnel

BP procurement by business companies (Commission sales)

[Case study] Development of "meviy" for MISUMI Corporation

Support for DX: CCT was commissioned by MISUMI to develop meviy.

Support for staffing of IT personnel: As a result of in-house DX by DTD (a joint venture between MISUMI and CCT), DTD procured BPs from Ohgi.

Mainly for major system integrators

As a second-tier contractor

Client

companies

As a first-tier contractor

Planning

Technical verification

System development

Operation and maintenance

Support for staffing of IT personnel





- Focus on the manufacturing, construction, and logistics industries where we can leverage our strengths.
- **♦** The use of Orizuru enables speedy realization of DX for customers.

See slide 36 for the description of Orizuru.

### Manufacturing

(since the establishment of our company)

### Construction

(since 2015)

## Logistics

(since 2023)

### Main areas of support



# Design, procurement and manufacturing

- Order receipt and procurement (Orizuru)
- Smart factory (Orizuru)
- PLM (ArasInnovataor)
- ERP (mcFrame/infor)

# Design and construction

- BIM linkage system/common data infrastructure
- Design efficiency (Al utilization)
- PLM (ArasInnovataor)



# Warehousing and transportation

- WMS (Warehouse Management System)
- TMS (Transport Management System)

### Strengths

- 3D shape data processing technology (CAD, numerical algorithms of geometry and image processing by AI)
- Manufacturing expertise in the manufacturing industry

- Achievements in the manufacturing industry by support for DX
- Experience in the development of BIM common data infrastructure and BIM data (IFC) handling technology
- Extensive business knowledge in the construction industry

 Achievements in the manufacturing industry by support for DX



# ◆ Ability to give proposals (speed × quality × quantity) utilizing Ohgi, an extensive BP network

\*See slide 38 for the description of Ohgi

### Sales

- Responding to the needs from business companies, mainly major system integrators
- Strong relationships with both clients and BPs, more reliable than competitors (mostly small and medium-sized companies)

### Support system



- Responding to all needs from upstream to downstream
- Capable of forming teams ranging from one person to dozens of people

## Personnel staffing

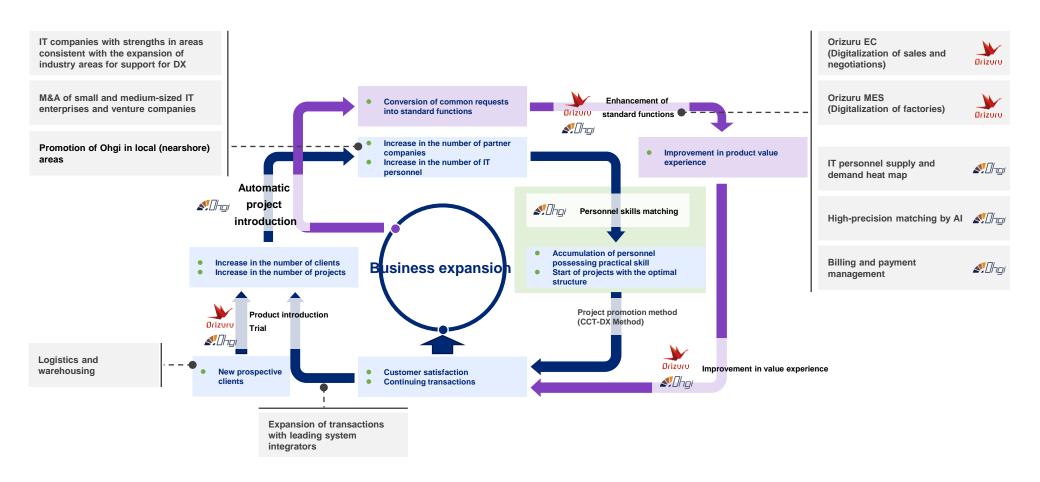


- Quickly procure the right personnel
- Ohgi mainly consists of employees belonging to small and medium-sized IT enterprises, rather than freelancers, so we have won the significant trust of end-users.

# 4 Growth Strategy



Three axes – (1) increase the number of clients/projects, (2) increase the number of IT personnel and (3) strengthen products – are key measures for growth. (Continue improvements in practice for the promotion of projects after receiving orders.)





# ◆Injection of capital into REVA investment limited partnership No. 1 and business alliance with REVA Corporation

### Reasons for investment and business alliance

- √ The goals of REVA Corporation and CCT are in line with each other.
- √ The investment and business alliance will lead to mid-to-long term business growth of CCT.
- √ We can expect a satisfactory return on investment.

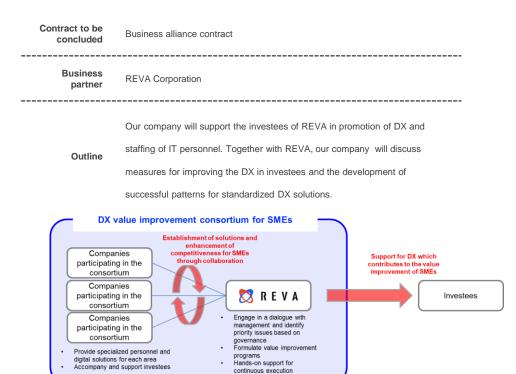
# Injection of capital into REVA investment limited partnership No. 1

Contract to be concluded	Investment limited partnership contract
Purpose of investment	To secure excellent return by investing in companies headquartered in Japan or in companies with major domestic business foundations
Investment targets	Business succession of SMEs and large companies' projects for carving out their non-core businesses
Total investment amount (goal)	30 billion yen
Our company's promised investment amount (at the lowest)	500 million yen *Every time the fund makes an investment, we will bear the pro rata share.

### **REVA Corporation**

The company aims to realize an affluent future by strengthening the industrial competitiveness of Japan and solving social issues, including ESG issues, and invests mainly in the manufacturing industry.

### **Business alliance with REVA Corporation**





# **♦** We acquired shares of P. G. System Co., Ltd. and made it a whollyowned subsidiary on May 19.



✓By making P. G. System Co., Ltd. a whollyowned subsidiary, we aim to expand our business while increasing the number of branches and securing resources.

✓We promise to achieve the development of both companies by contributing to the growth of P. G. System Co., Ltd. through measures such as having P. G. System Co., Ltd. participate in the projects we received, improving the ability to receive orders and providing know-how on recruitment and training.

Name	P. G. System Co., Ltd.
Address	2 <sup>nd</sup> Floor of Taiyoseimei Bldg., 18-10 Matsushima Town, Ube City, Yamaguchi Prefecture
Outline of business	Entrusted development of software, operation and management of systems, dispatch of engineers to system development companies, etc.
Date of establishment	January 21, 1998
Date of conclusion	May 12, 2023
Date of share transfer	May 19, 2023 (To be included in the consolidated financial settlement from Q2 of FY 12/2023)
Transfer amount	About 310 million yen *Shares amounting to 280 million yen + brokerage fees, etc. amounting to about 30 million yen
Net assets	64 million yen (FY 3/2022)
Net sales	543 million yen (FY 3/2022)
Operating profit	22 million yen (FY 3/2022)
No. of employees	63 (as of the end of April 2023)

# Market scale: Scale of the DX market and the business domain of our company

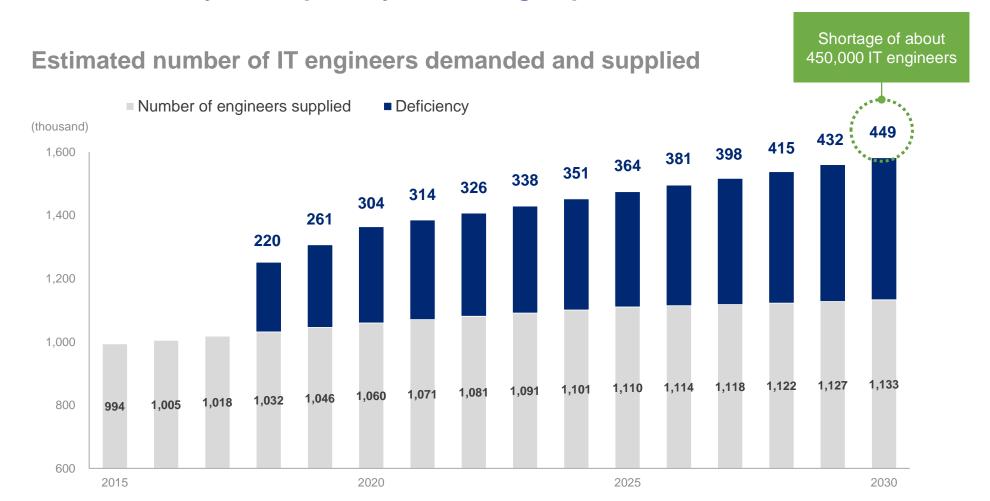


The investment in DX is expected to grow considerably. We will expand our DX support business domain in the fields of traffic/transportation, distribution, and medical care, which have a high affinity for the manufacturing and construction fields.

Industries/business fields	FY 2021 [100 million yen]	Forecast for FY 2030 [100 million yen]	CAGR 30/21 (%)	
Traffic/ transportation	3,215	11,795	15.5	← Future priority field
Finance	2,465	8,880	15.3	
Manufacturing	2,590	8,130	13.6	← Current priority field
Distribution/retail	516	1,852	15.2	Future priority field
Medical care/nursing care	896	2,052	9.6	← Future priority field
Real estate	435	1,514	14.9	
Municipalities	520	1,760	14.5	
Sales and marketing	1,630	3,240	7.9	
Customer services	231	462	8.0	
Others	10,675	25,509	-	
Total	23,173	65,194	12.2	



# We are entering the age in which business competitiveness is determined by the capability of staffing IT personnel.



# 5 Appendix

# **Corporate profile**



Corporate name **Core Concept Technologies Inc. (CCT)** Business To support client companies in DX and staffing of IT personnel description Location 11th floor of DaiyaGate Ikebukuro, 1-16-15 Minami-ikebukuro, Toshima-ku, Tokyo Representative Takeshi Kaneko, Representative Director, President, CEO **September 17, 2009** Date of establishment **Tokyo Headquarters** 11th floor of DaiyaGate Ikebukuro, 1-16-15 Minami-ikebukuro, Toshima-ku, Tokyo 554,013 thousand yen (as of March 31, 2023) Capital stock CORE CONCEPT Account closing December month **Osaka Office** 3rd floor of Dai-san Nakajima Bldg., 5-11-10 Nishi-Nakajima, Yodogawa-ku, Osaka-shi, Osaka Number of **326** (as of March 31, 2023) employees **Fukuoka Office** 11th floor of Hakataeki-mae City Bldg., 1-9-3 Hakataeki-mae, Hakata-ku, Fukuoka-shi, Fukuoka Office locations Tokyo (headquarters), Osaka, and Fukuoka



# Mission

# **Create the Next-generation IT Industry**

## Vision

# Right AI, Right DX.

In order to support and promote true digital transformation (DX) among clients and secure business competitiveness in the AI era to come, we will fulfill our valuable roles. (Right AI, Right DX.) Under this management vision, we are operating business with the aim of becoming an IT vendor for offering new values.

# Action Guideline

# Think Big, Act Together.

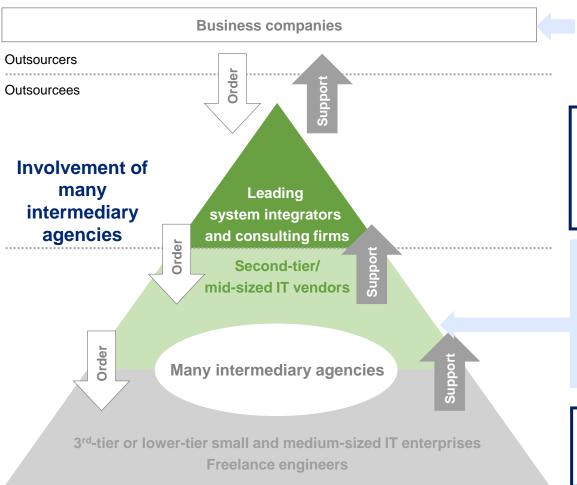
Our action guideline is composed of the following:

- (1) Out-of-the-box, freewheeling thinking (Think Big), and
- (2) Cooperatively taking action while envisioning ideal business activities from the standpoint of customers (Act Together).



It is difficult for business companies to conduct DX by themselves.

The involvement of many intermediary agencies makes each project uneconomical.



### Problems business companies are facing

- Shortage of personnel who can proceed with DX
- They rely on leading system integrators and consulting firms for IT strategies and development.

### Problem-solving by our company

 To provide "reproducible DX methods and a DX development base," so that clients can conduct DX by themselves



To procure temporary IT personnel by using "Ohgi"



# Problems small and medium-sized IT enterprises are facing

- The system is uneconomical, due to the involvement of intermediary agencies.
- Inefficiency of staffing of IT personnel (spending labor and time)
- Income inequality between engineers of leading system integrators and of small and medium-sized IT enterprises

### **Problem-solving by our company**

 To eliminate the problem of involvement of many intermediary agencies by expanding "Ohgi"





Support for DX has supported clients mainly in the manufacturing and construction fields.

Support for staffing of IT personnel has assisted a wide range of industries through leading system integrators.













**OBAYASHI** 

























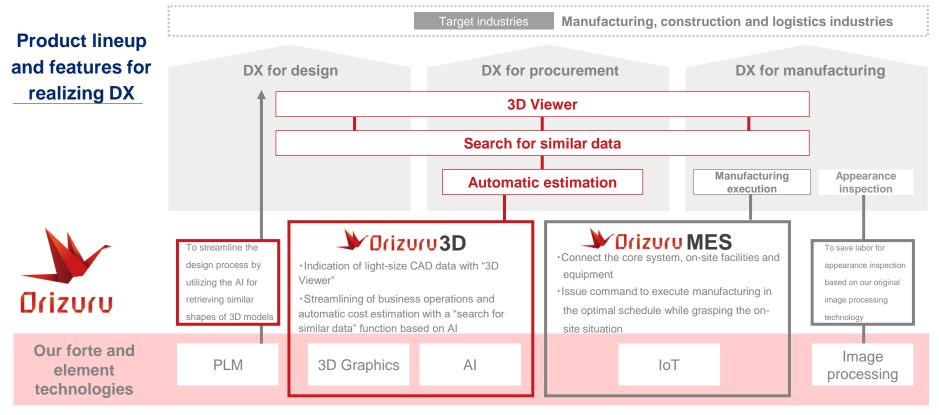


<sup>\*</sup>Existing clients account for about 90% of sales. Repeat orders from existing clients shore up steady growth.

# Support for DX product "Orizuru"



- ◆ To actualize the functions demanded by customers swiftly at low cost by utilizing a DX development base "Orizuru"
- Working on various development projects evolves the standard functions of Orizuru (basically, no need for investment in development)



\*PLM: Abbreviation of "Product Lifecycle Management." It means summarizing a variety of technological information on the entire product lifecycle, and using it for improving the capability of developing products and corporate competitiveness.

3D Graphics: A method of producing a 3D image on a plane by using 3D data with height, width, and depth.

Al: Abbreviation of "Artificial Intelligence." Technology for conducting intellectual activities, such as identification, inference, and problem solving, on behalf of human beings. **IoT:** Abbreviation of "Internet of Thing." It means linking the Internet with things that have been offline so far.

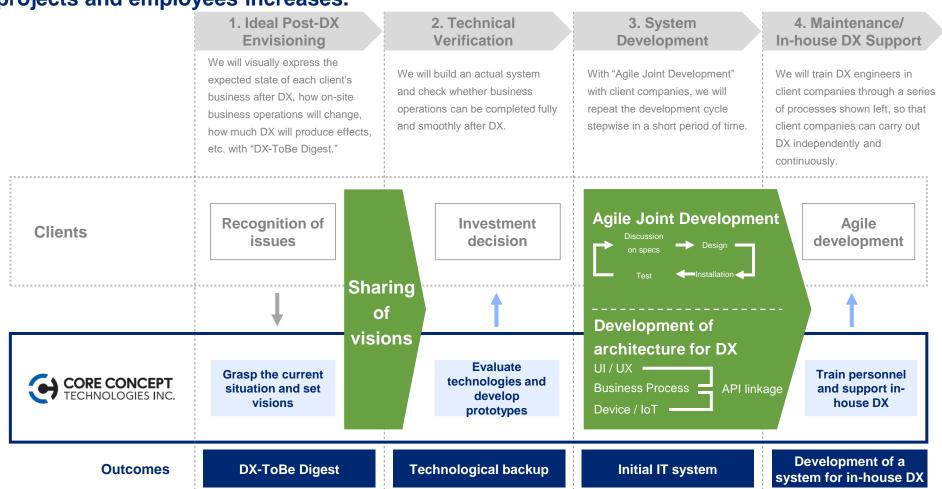
CAD: Abbreviation of "Computer Aided Design." It is a tool for supporting design and drawing with a computer.

MES: Abbreviation of "Manufacturing Execution System." MES grasps and manages manufacturing processes, and gives instructions and support to workers.



# Original method to accompany and support our clients to realize DX in-house by utilizing Orizuru and Ohgi.

Aim to continue maintaining quality and customer satisfaction even as the number of projects and employees increases.





- Ohgi considerably reduces the time required for matching projects and personnel.
- We have formed a wide network of small and medium-sized IT enterprises.

Workflow in the conventional multi-outsourcing system (3 days to 1 week required for sending requests and proposals)



### Matching process with "Ohgi"



### **Features of Ohgi**

- ✓ A network of more than 100,000 IT personnel centered in Tokyo
- ✓ Targets mainly at small and medium-sized IT enterprises (not freelancers)
- ✓ We will expand the network to include local IT enterprises.



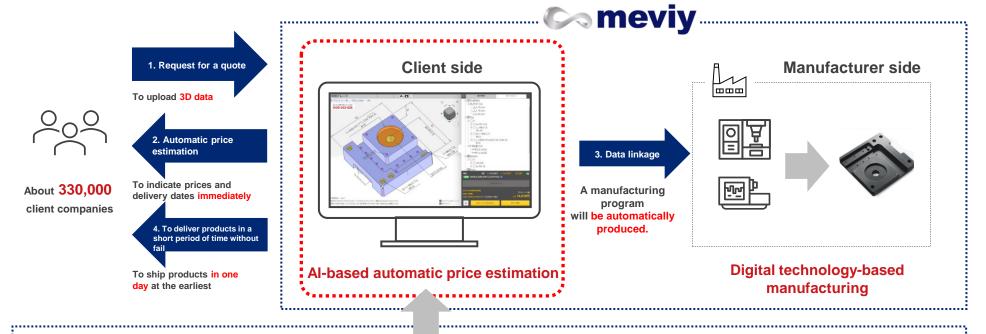
# Example of support for DX: We supported MISUMI Corporation in developing a platform for receiving and placing orders for components.



Development of a platform for receiving and placing orders for components

We supported MISUMI in developing a smooth transaction from enabling their clients to upload design data, automatic price estimation and immediate product shipment.

We will utilize the shape data processing technology nurtured through the development of "Orizuru" for Al-based automatic price estimation and digital technology-based manufacturing.





Our company's roles

- To jointly develop a 3D user interface and technologies for Al-based automatic price estimation and digital technology-based manufacturing by utilizing the shape data processing technology nurtured through the development of Orizuru.
- To organize a large-scale development team utilizing Ohgi



Development of a platform for receiving and placing orders for components

# We established a joint venture named DT dynamics corporation, for accelerating development and realizing in-house DX. We support the staffing of IT personnel by utilizing the Ohgi network.

### Establishment of a joint venture

By combining the know-how of MISUMI, which has been striving to improve the inefficiency in procurement of parts through the development, manufacturing, and sale of over 30 million machine parts, and the technology of CCT, which excels at developing systems for the manufacturing industry by utilizing the advanced 3D data processing technology, we will further accelerate the system development for meviy, with the aim of achieving further global growth.

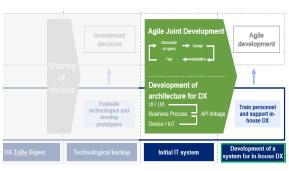
### Expected effects: Acceleration of development and provision of overseas services



### Promotion of in-house DX

In the final phase of support for DX, we will support in-house DX. We will entrust the joint venture with the development of meviy, which has been conducted in an agile manner, to realize in-house DX and transformation into a tech company.

#### Expected effect: Transformation into a tech company



### Support for staffing of IT engineers

It is difficult to form a team swiftly by recruiting IT engineers required for development. The utilization of the "Ohgi" network enables the timely procurement of IT personnel with required skills and contributes to the swift formation of a team.

#### **Expected effect: Dynamic personnel staffing capability**

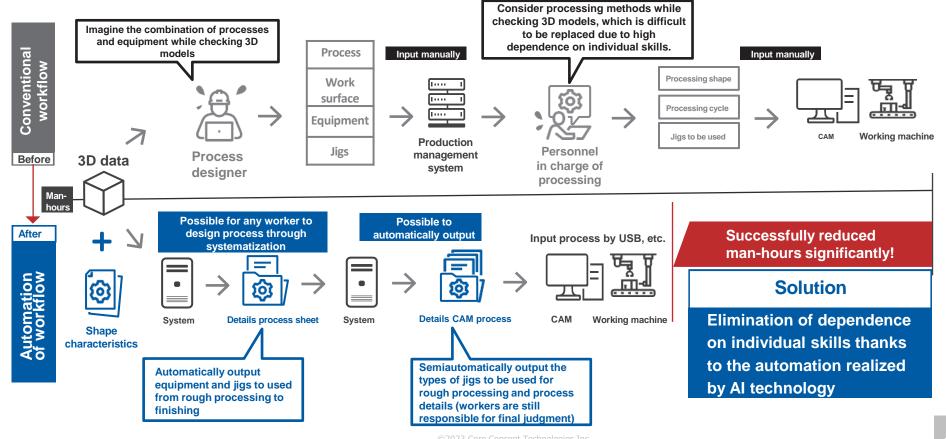


# Example of support for DX: Semi-automation of process design and CAM process for Nabeya Co., Ltd.



Automation and labor saving of high-mix low-volume parts machining process

# Quantification and standardization of process design for high-mix low-volume parts, which had been the responsibility of veteran process designers



# Example of support for DX: Semi-automation of process design and CAM process for Nabeya Co., Ltd.



Automation and labor saving of high-mix low-volume parts machining process

# The elimination of the processes that are dependent on individual skills contributed to a significant reduction in man-hours. Cost reduction by elimination of excess tools

### Semi-automation of process design

Process design, which takes up a large percentage of the total work time, was dependent on a few experienced engineers. The process, which was determined based on specific individual skills, was quantified and standardized, and then AI was introduced so that anyone can perform the process design through semi-automation.

Expected effects: Improved productivity and quality and elimination of processes that are dependent on individual skills

### Semi-automation of the CAM process

Equipment and tools were managed based on the know-how and rules of the person in charge on site, and were not centralized and standardized. The CAM process was also not standardized, so it depended on the individual skills of each person in charge. We carefully selected tools to be used, centralized management, and organized CAM tool library. CAM processes are output semiautomatically by utilizing 3D model shape data recognition technology.

Expected effects: Improved productivity and quality and elimination of processes that are dependent on individual skills

### **Cost reduction**

In the process of selecting tools carefully, we set 140 types (currently 2,300 types) of standard tools. By reducing the total number of tools in the factory, the number of surplus products decreased, and the ratio of tool costs to processing was curtailed.

Expected effect: Improved profit margin





### Example of support for DX: Support for building a Mirai-Factory for Fine Sinter Co., Ltd.



Support for construction of a smart factory

### A visualization of the overall concept of a smart factory Reforming the manufacturing line: Designed DX for production control, quality control, and production planning

Understanding the current business (As Is) and setting a reform policy (To Be)



By sharing a concrete image, the management/on-site workers can recognize the state after DX.





### Example of support for DX: Support for building a Mirai-Factory for Fine Sinter Co., Ltd.



Support for construction of a smart factory

### Resolving technical issues with a demonstration line Verifying reform policies, improvement effects, and ROI in each process

# Production plan optimization for each facility

Developing an hourly production plan that is standardized and designed for each production facility

#### Expected effect: Reduction of work dependent on individual skills



## Instructions to start construction for technicians

Issuing a work instruction list that directs each technician to perform highpriority work

#### Expected effect: Increased work efficiency



## Preparatory work instructions for technicians

Instructions for preparing necessary items, such as cutting tools required for processing, and individual identification by 2D barcode

#### Expected effects: Increased work efficiency and error prevention



# Automatic processing condition adjustment

Test processing, processing condition adjustment, and manufacturing are executed based on automatic measurement results and various sensor data

#### Expected effects: Productivity improvement and quality improvement



## Understanding real-time production status

Real-time monitoring and understanding of production from anywhere, instead of traditional local monitoring and monthly tabulation

#### Expected effects: Remote work and real-time monitoring

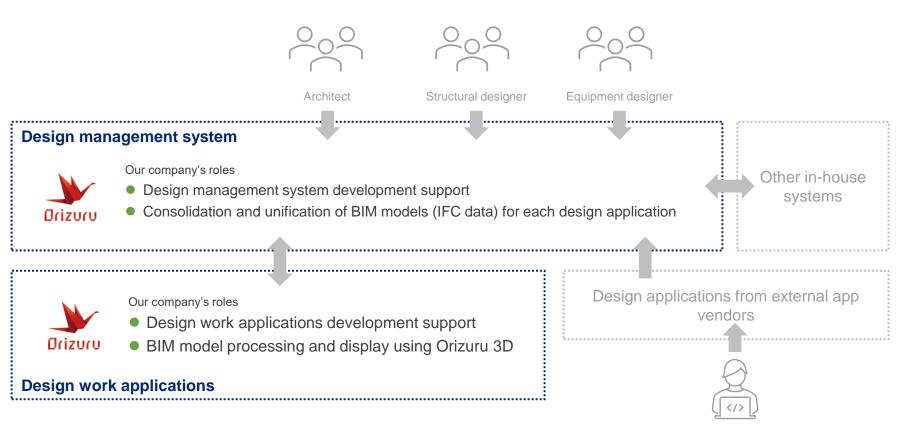


# **Example of support for DX: Support for design support system construction for Takenaka Corporation**



Design and BIM management system development

# Design management system development support for realizing open BIM Utilizing Orizuru 3D to process and display various BIM models (IFC data)



BIM/CIM: A technology that recreates the 3D model of a real building on a computer, collects various technical information generated over the entire architecture and construction life cycle, connects the engineering chain, realizes efficiency and sophistication of architectural and construction work, and strengthens corporate competitiveness. BIM targets the construction field, and CIM targets the civil engineering and construction field. The three-dimensional model management, such as buildings and topography, is collectively called "BIM/CIM."

# **Example of support for DX: Support for design support system construction for Takenaka Corporation**



Design and BIM management system development

# Supporting the improvement and stabilization of design quality Incorporating the needs and knowledge of design users into the Orizuru 3D development roadmap

### Cooperation with external systems

By expanding the scope of common data utilization by linking it with external systems, we will strengthen data linkage in general design work and improve architectural design quality by utilizing that data.

### **Expected effect: Improvement of design quality**



### Systematization of design knowhow

It improves and stabilizes design quality by promoting and executing the systematization of designers' advanced know-how. It also helps improve the productivity of design work in response to social demand such as work style reform.

### Expected effects: Improvement of design quality and productivity



### Joint development

By incorporating the needs and knowledge of design users into the Orizuru 3D development roadmap, it has grown as a DX development base optimized for the construction industry.

### Expected effect: Enhancing the value of Orizuru 3D

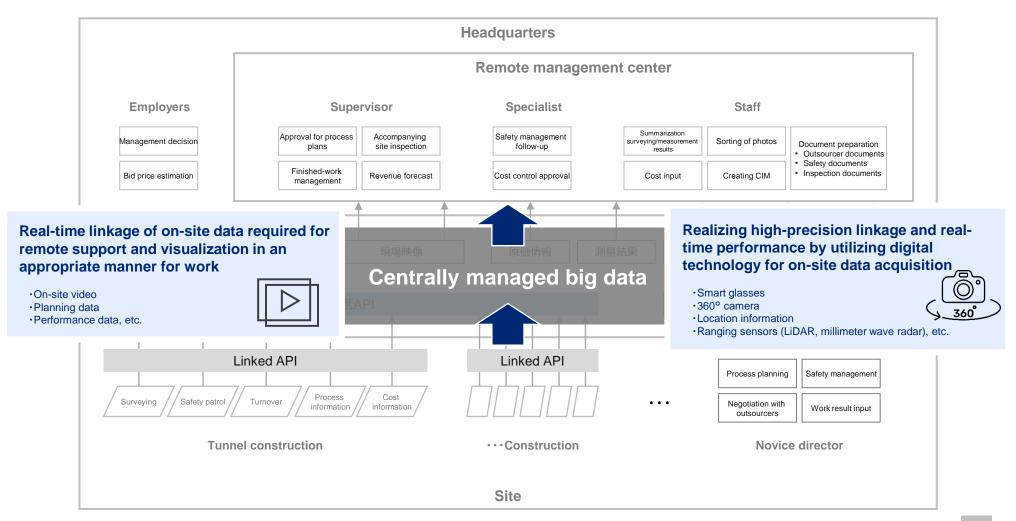


# Example of support for DX: DX of on-site work for a major construction company



Remote management center establishment support

### Centralized management of information at the remote management center = Construction of a digital twin world



# Example of support for DX: DX of on-site work for a major construction company



Remote management center establishment support

Dissemination of knowledge of veteran staff and tackling the issue of developing young human resources Improving productivity and achieving workstyle reform for on-site employees through centralized management of information

### Remote communication

In response to the problem of difficulty in maintaining on-site capabilities due to the mass retirement of veteran employees, by synchronizing on-site information such as images in real time at the remote management center, it is possible to obtain information equivalent to or better than the construction site even from remote locations, which makes it possible to provide support as if veteran employees were on the site.

### Expected effects: Improvement of productivity, knowledge transfer and remote work



### **Consolidation of on-site operations**

There was a concern that the number of mid-level workers responsible for on-site work would decrease, and the number of work sites that could be handled would decline, making it challenging to secure profits. In response to this, simple tasks common to each site, such as document preparation and photo sorting, which had been performed on-site until now, were consolidated at the remote management center to reduce the on-site workload.

#### Expected effects: Workstyle reforms and securing profits



# Next-generation human resources development

There was a chronic lack of opportunities for young people to be trained due to the small number of mid-career workers, resulting in knowledge not being passed to the next generations. In response to this, we created case method (simulation) type educational content using VR generated from the site information accumulated in the remote management center. In addition, we have established a system in which past knowledge is managed in a manner allowing it to be referred to at any time, providing opportunities for voluntary knowledge acquisition during operations.

### Expected effects: Knowledge transfer and speeding up personnel training



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