

## Notice

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**HEROZ**  
JAPAN

Presentation Material for FY04/2021  
Full Year Financial Results

June 11, 2021

HEROZ, Inc. (4382)



- 1. Executive Summary**
2. Business Overview
3. FY04/2021 Full Year Performance
4. FY04/2022 Forecast
5. Growth Strategy

# Executive Summary of FY04/2021

- Net sales were ¥1,556 million (+0.8% year-on-year), consisting of
  - AI (B-to-B) services: net sales of ¥683 million ( $\Delta$ 16.3% year-on-year)
  - AI (B-to-C) services: net sales of ¥872 million yen (+20.0% year-on-year)
- In AI (B-to-B) services, revenues declined due to reduced opportunities for business meetings by COVID-19. In AI (B-to-C) services, revenues increased on a year-on-year basis because of staying home by COVID-19 and shogi events held on our app
- EBITDA of 366 million yen ( $\Delta$ 30.0% YoY), operating profit of 294 million yen ( $\Delta$ 35.9% YoY), and ordinary profit of 285 million yen ( $\Delta$ 29.4% YoY) were lower than the previous year. This was due to an increase in labor costs, recruiting and training costs and depreciation as a result of increased hiring and the purchase of in-house compute server, etc. This will contribute to our medium-to-long term growth and is in line with our strategy. Net income was 207 million yen ( $\Delta$ 18.9% YoY) due to an increase in the amount of income tax deductions associated with these increased investments/expenses
- The actual spread of the new coronavirus infection was greater than our assumptions at the beginning of the fiscal year for the forecast, which was the main reason for the deviation from the forecast

- Actual situation was different from our assumptions regarding the new coronavirus infection to estimate earnings forecast for FY04/2021, which was the main reason for the deviation from the forecast

FY04/2021	Our assumptions to estimate earnings forecast
External environment	<ul style="list-style-type: none"> <li>The increase in COVID-19 patients will settle down in the first half</li> </ul>
Internal environment	<ul style="list-style-type: none"> <li>Growth will slow down in the first half by slowdowns in progress of projects and reduced opportunities for sales discussions due to emergency declared by the government, but is expected to normalize in the second half</li> </ul>



Actual situation
<ul style="list-style-type: none"> <li>The increase in COVID-19 patients will <b>continue</b> in the <b>second</b> half <b>as well</b></li> </ul>
<ul style="list-style-type: none"> <li>Growth will slow down in the <b>entire fiscal year</b> by slowdowns in progress of projects and reduced opportunities for sales discussions due to emergency declared by the government</li> </ul>

# FY04/2021

## Risk Factors related to COVID-19

- The following table analyzes the impact related to COVID19 on the financial results for FY04/2021

Risks for FY04/2021	AI (B-to-B) Services	AI (B-to-C) Services
Materialized Impact	<ul style="list-style-type: none"> <li>• Delays in documentation (contracts, receipts, etc.) and decreased opportunities for sales discussions due to work from home</li> <li>• Some clients have suspended new projects until the situation settles down</li> </ul> <p>↓ <b>The impact continued during the entire fiscal year</b></p>	<ul style="list-style-type: none"> <li>• Increased revenues from mobile apps such as Shogi Wars</li> </ul> <p>↑ <b>The impact continued during the entire fiscal year</b></p>
Potential Upside	<ul style="list-style-type: none"> <li>• Increase in the use of AI through promotion of DX (digital transformation) , etc.</li> </ul> <p>→ <b>It has been partial and non-material</b></p>	<ul style="list-style-type: none"> <li>• Further revenue increase in our mobile apps due to increased use of our online contents</li> </ul> <p>→ <b>Limited impact other than Shogi Wars</b></p>
Potential Downside	<ul style="list-style-type: none"> <li>• Reduction in client budgets for IT investments, etc.</li> </ul> <p>↓ <b>The impact has become materialized for some clients</b></p>	<ul style="list-style-type: none"> <li>• Troubles due to increased traffic</li> </ul> <p>→ <b>No material troubles occurred</b></p>

↑ : Positive Impact      ↓ : Negative Impact      → : Non-material Impact

The logo for HEROZ JAPAN is displayed in white text on an orange background. The word "HEROZ" is in a large, bold, serif font, and "JAPAN" is in a smaller, sans-serif font directly below it.

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# Company Overview

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<b>Name</b>	HEROZ, Inc.
<b>Location</b>	PMO Tamachi 2F, 5-31-17 Shiba, Minato-ku, Tokyo
<b>Established</b>	April 2009
<b>Representatives</b>	Takahiro Hayashi/Tomohiro Takahashi
<b>Business Description</b>	AI (B-to-B) services: HEROZ Kishin AI (B-to-C) services: "Shogi Wars", etc.
<b>Membership</b>	Japan Deep Learning Association, The Japanese Society for Artificial Intelligence

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## 2019

Listed on the First Section of Tokyo Stock Exchange (TSE)

## 2018

Listed on Tokyo Stock Exchange (TSE) Mothers  
Capital and business alliance with Netmarble Games Corporation

## 2017

Capital and business alliances with Takenaka Corporation and Koei Tecmo Games

## 2016

Capital and business alliance with Bandai Namco Entertainment

## 2013

Shogi AI, developed by HEROZ engineers, defeated a shogi professional

## 2012

Launched mobile app, "Shogi Wars"



Representative Director and CEO  
**Takahiro Hayashi**

Graduated from Waseda University  
Joined NEC as a technology engineer  
Experience at IT strategy division, business planning division  
Founded HEROZ



Representative Director and COO  
**Tomohiro Takahashi**

Graduated from Waseda University  
Joined NEC as a technology engineer  
Experience at Business Planning Division, BIGLOBE  
Founded HEROZ

## Shogi Track Record

Amateur 6<sup>th</sup> dan (highest rank after becoming national amateur champion)  
7<sup>th</sup> dan, Shogi Wars  
Amateur Kisen Champion (7-time title defender as national champion)  
Played against Yoshiharu Habu (permanent 7 title holder)



Director and CFO

## Daisuke Asahara

Graduated from Kyoto University  
MBA from Wharton School  
ex-Goldman Sachs

Director and CTO, Head of Development Div.

## Keiichi Iguchi

Graduated from  
Tokyo Institute of Technology  
Joined NEC Central Research Labs

# Creating the future through artificial intelligence (AI) revolutions

# Global Leader in Mind Game AI

## Chess AI



Deep Blue ('97)  
defeated a  
professional Chess  
player

**IBM**

## Shogi AI



AI developed by our  
engineers defeated a  
professional Shogi  
(Japanese Chess)  
player ('13)

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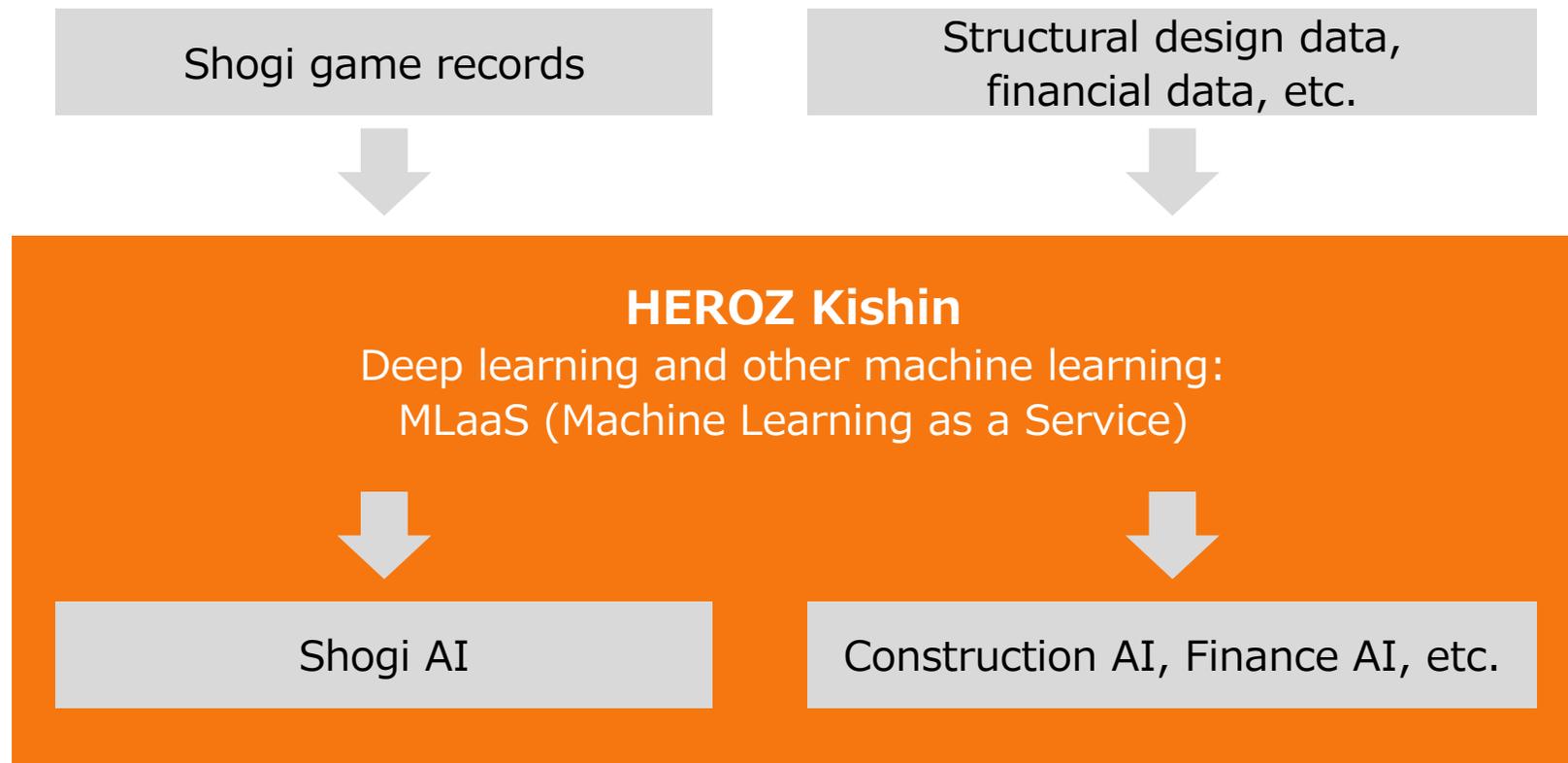
## Go AI



Google acquired Deep Mind ('14)  
AlphaGo, developed by  
Deep Mind, defeated a  
professional Go player ('16)

**Google**

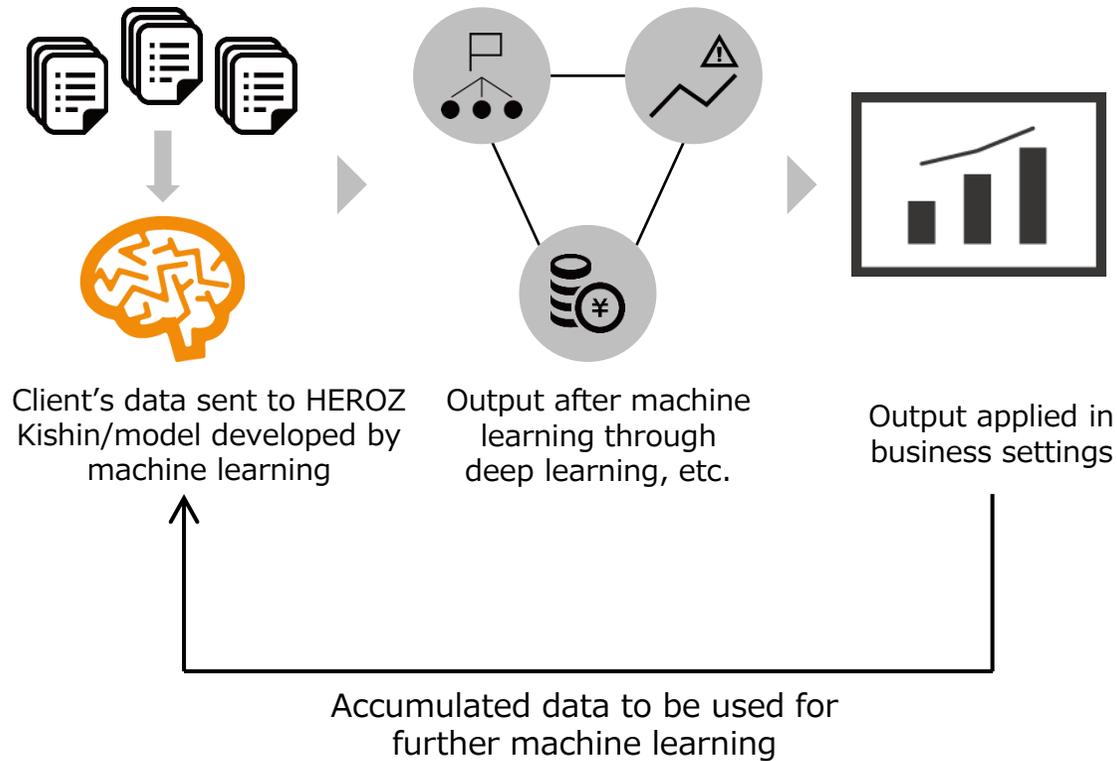
# B-to-B Services: Machine Learning by Replacing Shogi Game Records with Other Data



MLaaS : What is Machine Learning as a Service?

Provides models, developed by machine/deep learning, as a service

# B-to-B Services: Profit Model and High Switching Costs



**Output precision increases through repeated machine learning**

Research/develop Shogi AI

Standardize AI technology accumulated through shogi AI

Establish "HEROZ Kishin" = MLaaS (Machine Learning as a Service)

Establish an infrastructure which allows HEROZ to provide AI services efficiently to solve various challenges in various industries just by changing input data

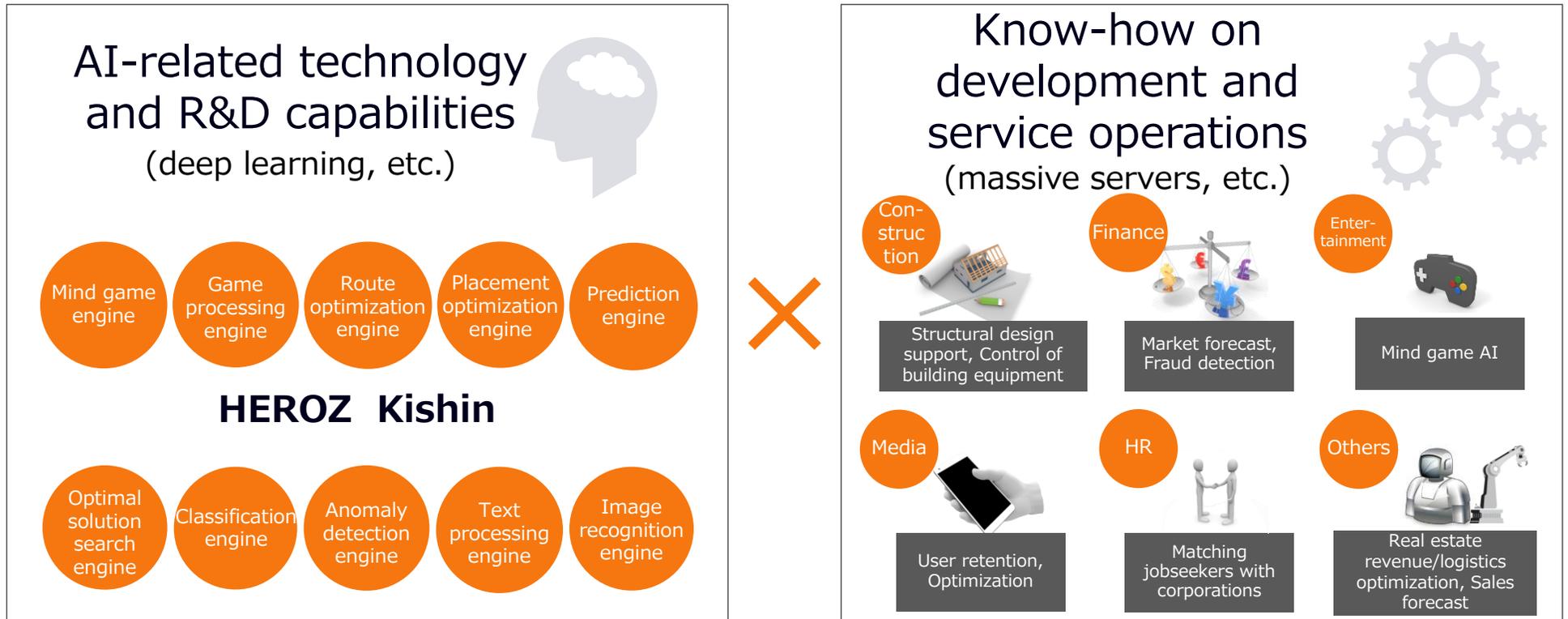
Provide comprehensive AI services with massive servers

Achieve stable, sustained earnings and high switching costs

**Earning structure: initial setup fee and ongoing fees**

# B-to-B Services: Engines included in HEROZ Kishin and Examples of Applications

- Create AI products by combining engines and achieve an efficient operating structure



We aim to create the industry standard for AI in each sector through collaboration with companies which own high-quality private data

# B-to-B Services: Areas of Focus and Examples of Services Provided

- Focusing on construction, finance, and entertainment for the foreseeable future
- Earning structure is initial setup fee and ongoing fees

\*Examples of clients served

## Construc- -tion



Structural design support,  
Control of building equipment,  
etc

## Fi- -nance



Market forecast, Fraud  
detection, etc

## Enter- -tainment

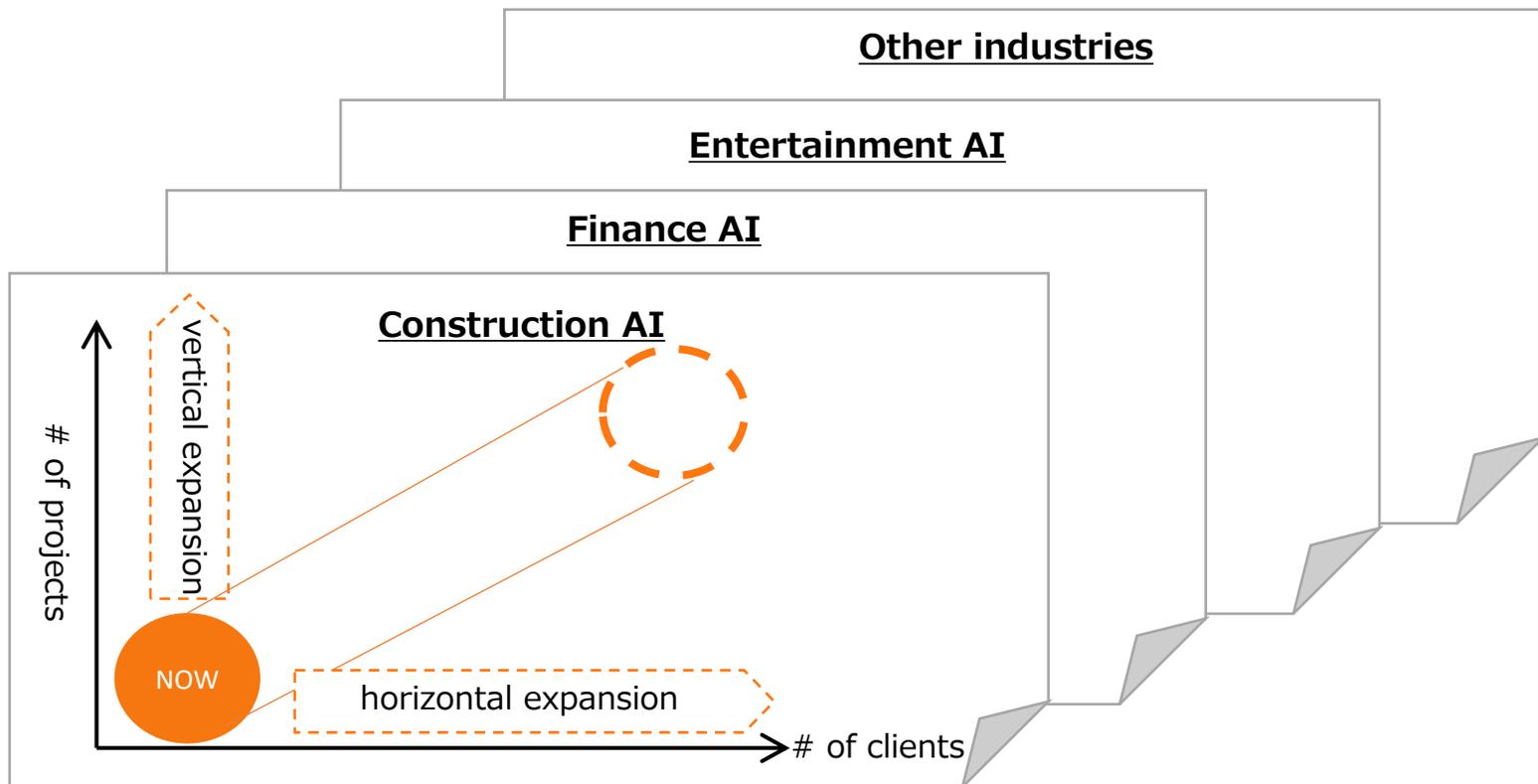


Creation of high-quality NPCs,  
game balance adjustment, etc.  
(In B-to-B service, HEROZ is  
not a game  
operator/publisher but a  
background AI provider)

Initial setup fees: new revenue recognition standard are applied since May 2021  
Ongoing fees: mostly fixed fees recognized monthly

# B-to-B Services: horizontal x vertical expansion across industries

- We aim to create industry-standard AI through horizontal and vertical expansion, applying into various industries
- After creating the industry-standard AI, we plan to form an ecosystem based on it



## Charging fees for B-to-C content which user AI

- Leveraging AI-related technology to provide mind games such as shogi, chess, and backgammon worldwide
- Shogi Wars has remained cash cow backed by increase of paid users on a YoY basis
- The governmental requests to stay at home have led to increased demand for our mobile apps, with an increase in our paid active user base in the fourth quarter



Shogi Wars



Animal  
Shogi Wars



Igo Wars  
(scheduled to be  
terminated in July)



CHESS HEROZ  
(scheduled to be  
terminated in July)



BackgammonAce  
(scheduled to be  
terminated in July)

Earning structure: monthly membership fees, Kishin (AI) usage fees, etc.



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- We believe that EBITDA, as calculated below, is our key performance indicator

$$\text{EBITDA} = \text{Operating Profit} + \text{Depreciation/Amortization Expenses}$$

- In AI-related businesses, investments in compute servers, etc. are required to engage in advanced machine learning, leading to various depreciation/amortization expenses. We aim to continuously enhance enterprise value/equity value via EBITDA growth, without being concerned about fluctuations in one-time depreciation/amortization expenses.
- In-house compute servers are mainly depreciated based on the declining-balance method with a useful life of 5 years.

# FY04/2021 Full Year Financial Performance

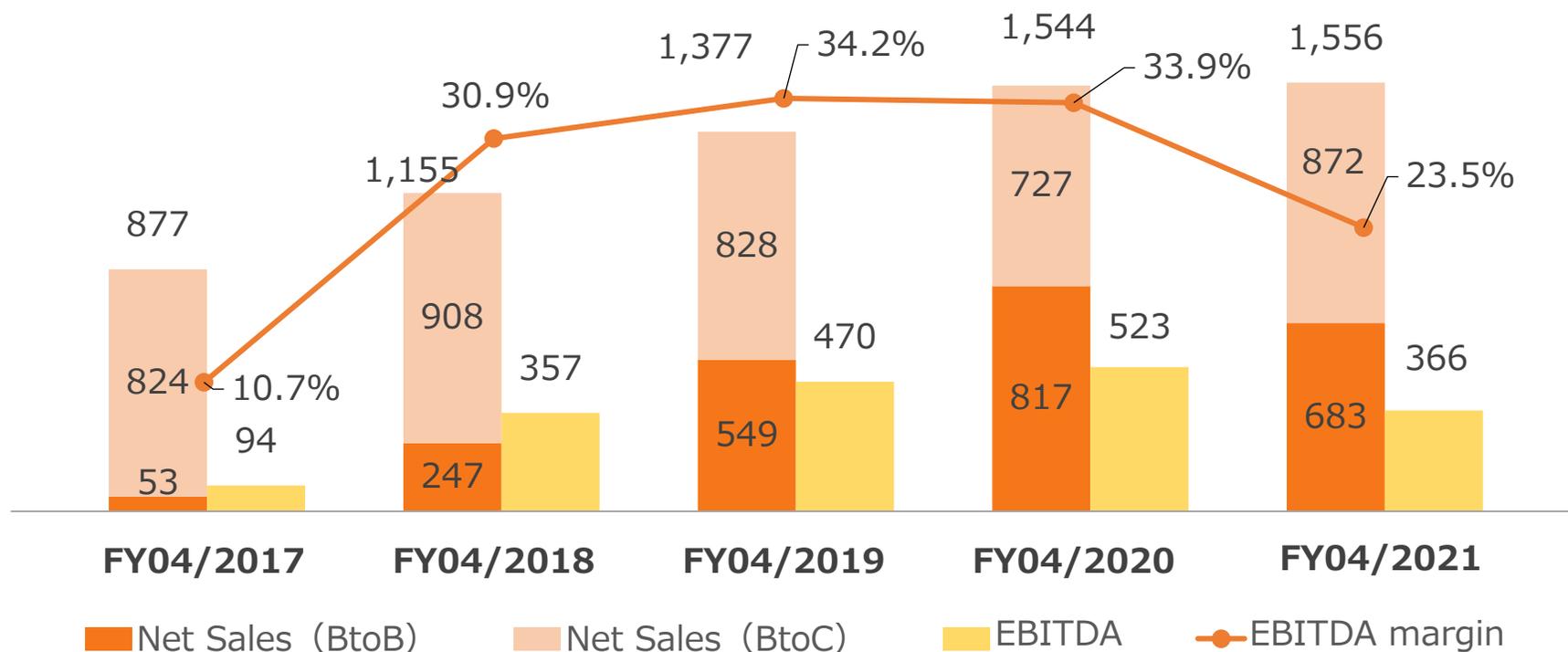
- While revenues from AI (B-to-B) services were negatively impacted by decreased opportunities for sales talks and the termination of gaming services in our entertainment AI, revenues from AI (B-to-C) services increased by stay-at-home demand. As a result, overall revenues fell short of our forecast at the beginning of the fiscal year
- We made growth investments using capital raised in December 2019. However, profits exceeded forecasts as investments were suppressed as revenues grew

(Units: JPY millions)	FY04/2021 Actual	(Reference) FY04/2020 Results	YoY	FY04/2021 Forecast	Actual to Forecast (%)
Net Sales	1,556	1,544	+0.8%	1,700	91.6%
EBITDA*	366	523	△30.0%	290	126.3%
<i>EBITDA Margin</i>	<i>23.5%</i>	<i>33.9%</i>	–	<i>17.1%</i>	–
Operating Profit	294	459	△35.9%	230	127.9%
<i>Operating Margin</i>	<i>18.9%</i>	<i>29.7%</i>	–	<i>13.5%</i>	–
Ordinary Profit	285	404	△29.4%	220	129.9%
Net Income	207	255	△18.9%	150	138.1%

\* EBITDA = Operating Profit + Depreciation Expenses + Amortization of Lease Deposits

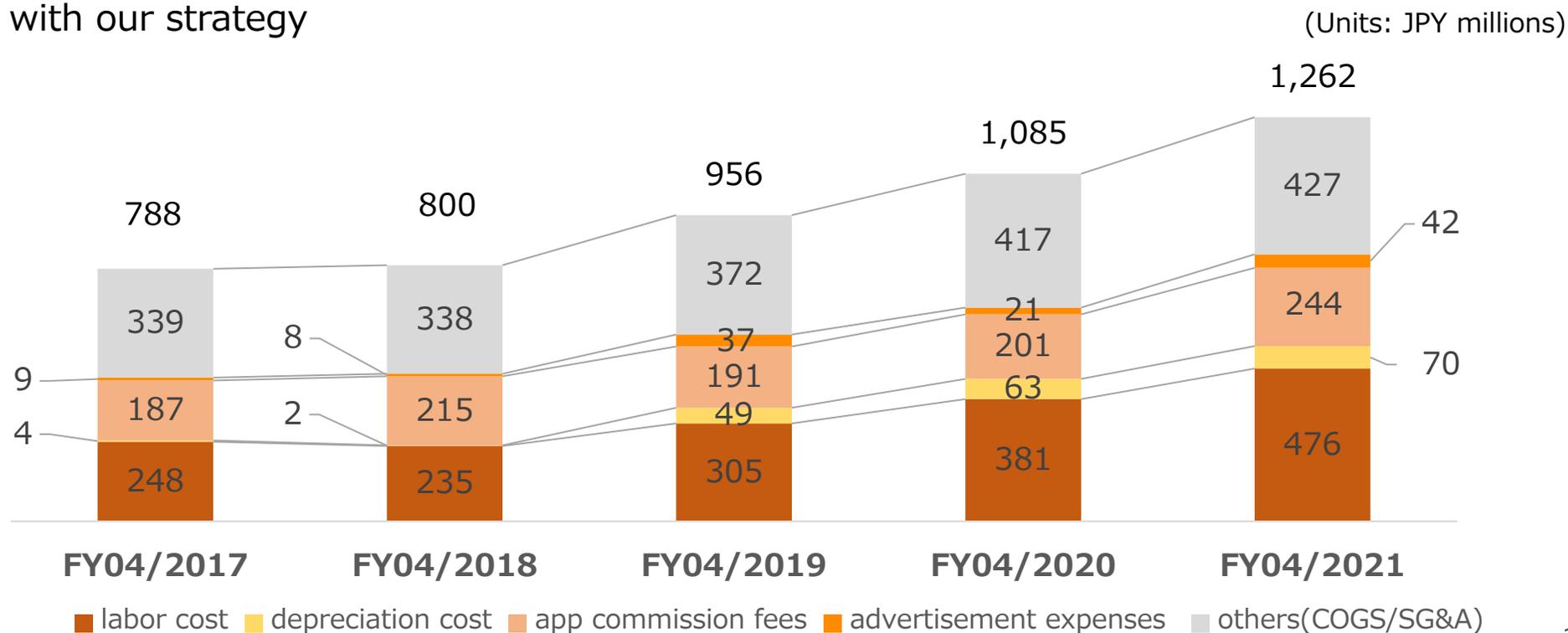
# Net sales and EBITDA Trends

- While revenues from AI (B-to-B) services were negatively impacted by decreased opportunities for sales talks, etc., revenues from AI (B-to-C) services were positively affected by increased stay-at-home demand. As a result, total revenues in FY04/2021 increased year-on-year
- While we reported a decrease in profits including EBITDA, this is in line with our plan to invest capital raised in December 2019 towards future growth (Units: JPY millions)



# COGS and SG&A Trends

- Labor cost has increased on a year-on-year basis and is expected to keep growing next fiscal year as well to increase our engineering capacity, which will lead to our medium-to-long term growth
- In addition, there were an increase in app commission fees by growth of AI (B-to-C) services, and anticipatory investments of proceeds via public offering for our growth strategy. Although profits were down compared with the previous year, they are in line with our strategy



# Balance Sheet (as of April 30, 2021)

- B/S remains strong backed by cash and deposits increased via public offering in 2019
- We plan to invest them in efforts to achieve the medium-to-long term growth strategy (e.g. hiring for AI engineers, in-house compute servers and external cloud compute services, investments to companies with peripheral technologies which can be applied to our operations, working capital)

Units: JPY millions	As of 4/30/2021	As of 4/30/2020
Current Assets	5,786	5,935
Cash and deposits	5,554	5,562
Fixed Assets	759	473
Property, plant and equipment	424	131
Intangible assets	17	6
Investments and other assets	318	334
Total Assets	6,546	6,408
Current Liabilities	143	226
Fixed Liabilities	—	—
Net Assets	6,403	6,182



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# FY04/2022 Financial Forecast

- We keep investing proceeds from public offering in 2019, in hiring for AI engineers, compute servers, etc. until 2022. While earnings will decrease for the foreseeable future as a result, we expect earnings recovery after those investments. The difference between EBITDA and operating profit is mainly due to depreciation of in-house compute servers
- As the risks with COVID-19 on page 5 have been resolved, we forecast over 20% year-on-year revenue growth for AI (B-to-B) services (Units: JPY millions)

(Units: JPY millions)	FY04/2021 Actual	FY04/2022 Forecast	YoY* (%)
Net Sales	1,556	1,700	+9.2%
EBITDA	366	280	△23.5%
<i>EBITDA Margin</i>	23.5%	16.5%	-
Operating Profit	294	100	△66.0%
<i>Operating Margin</i>	18.9%	5.9%	-
Ordinary Profit	285	90	△68.5%
Net Income	207	63	△69.6%

\*As the “new earnings recognition standard” is used from the beginning of FY04/2022, our forecasts reflect this new standard. Thus, year-on-year changes stated herein are provided only as a reference

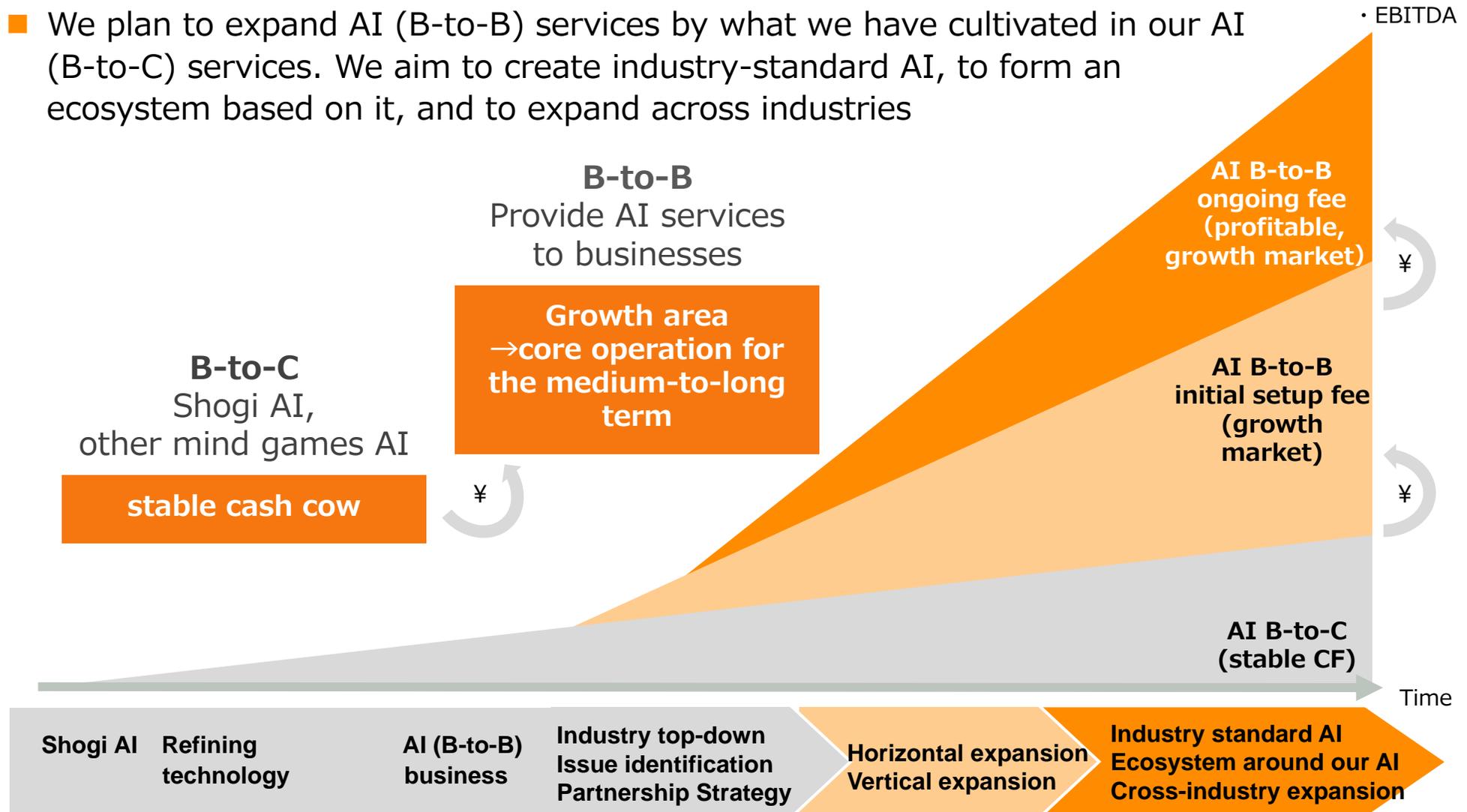
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# Medium-to-long term Growth Strategy

- We plan to expand AI (B-to-B) services by what we have cultivated in our AI (B-to-C) services. We aim to create industry-standard AI, to form an ecosystem based on it, and to expand across industries



- On June 11, 2021, we concluded a business alliance agreement with Toyo Engineering Corporation (TOYO)
  - HEROZ has concluded a business alliance agreement with TOYO for the utilization of AI technology and joint development of AI systems for plant design and construction
  - Through this business alliance with TOYO, HEROZ will develop a system to enhance EPC (engineering, procurement and construction) and introduce it to all TOYO projects, thereby contributing to the 6-fold increase in productivity that DXoT (Digital Transformation of TOYO) is aiming for and realizing integrated digitalization from the sales stage to the completion of projects

- In April 2021, we enhanced in-house compute servers for machine learning to operate a 61 PFLOPS computation environment for AI development
  - We have added nine new NVIDIA DGX A100, the world's first 5 PFLOPS AI system with high computational density, performance and flexibility. With existing GPUs, the theoretical peak performance is up to 61PFLOPS.
  - Our CAPEX to these machine learning servers, which are fixed assets, is mainly depreciated based on the declining-balance method with a useful life of five years

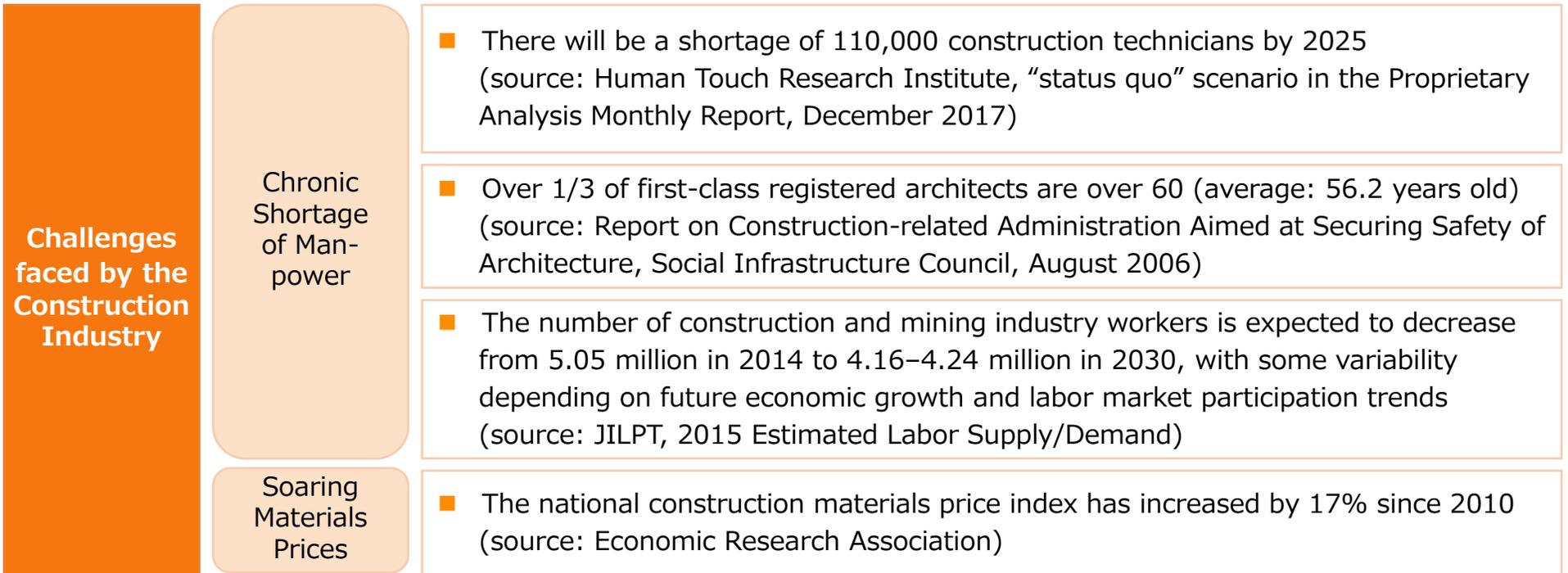
## History of major enhancements to our machine learning servers to date

- November 2018: GPU (NVIDIA V100 x 128) installed
- Feb 2020: CPU (Supermicro blade server x 20 nodes) installed
- November 2020: CPU (Supermicro blade server x 80 nodes) installed

- "HEROZ Kishin Eye" to start on April 1, 2021
  - HEROZ has taken over the "Ricoh Shogi AI Game Record System" developed jointly by Ricoh Company, Ltd. and the Japan Shogi Association, which automatically generates game records by using AI technology, and started its operation on April 1, 2021 under the name of "HEROZ Kishin Eye"
  - "HEROZ Kishin Eye" is a system using deep learning to analyze the images taken by a camera of the board of a game, and book the game record automatically, which has been done by a human recorder until now
  - This system will solve the problem of chronic shortage of human recorders during Shogi games, and will contribute to the preservation of the game records, an important asset of the Japan Shogi Federation

# Potential AI Demand in Our Areas of Focus

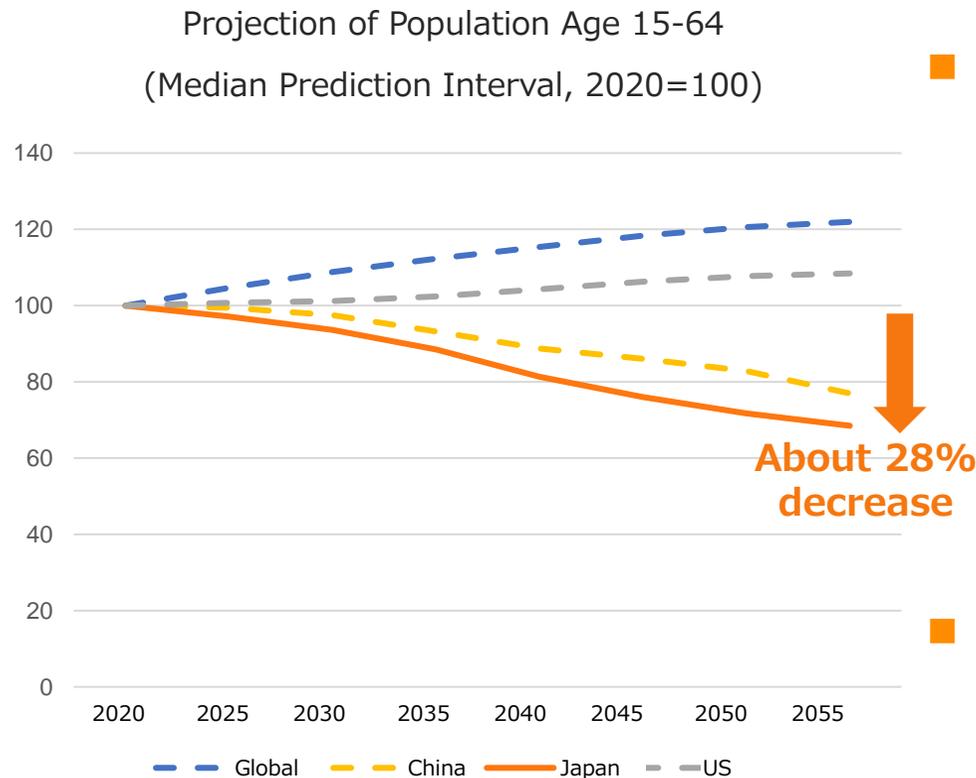
- We believe there is also significant potential demand for enhancing operational efficiency through AI in the construction industry, which is one of our areas of focus



- We entered into a capital and business alliance with Takenaka Corporation in 2017 and became a member of i-Construction. We aim to create the industry standard AI for the construction industry, enhancing productivity and creating a new, attractive construction site

# Japan: Potential AI Demand is Among the Largest Worldwide

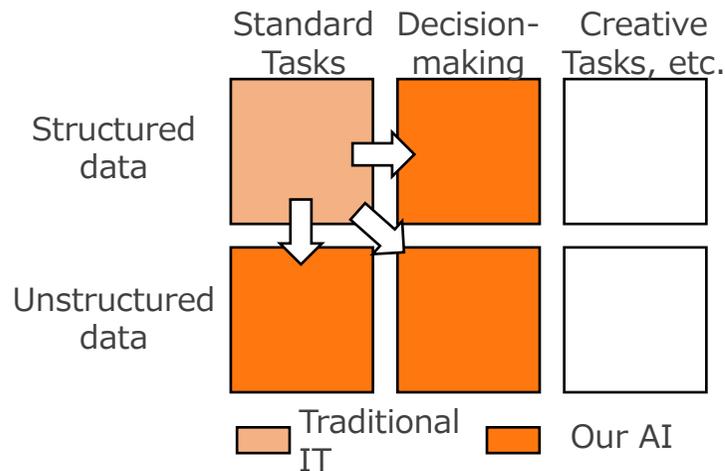
- Potential AI demand in Japan can be expected to be among the largest worldwide, as the working population is expected to decrease significantly going forward



- When defining the working population as those aged 15-64, the world average is forecasted to increase by about 12% from 2020 to 2035 and by about 21% from 2020 to 2055. On the other hand, the working population is expected to decrease by about 11% and about 28% during the same periods, respectively
- Based on such forecasts, the Japanese working population will show the largest decrease among leading GDP nations

Source: Prepared by HEROZ based on United Nations, World Population Prospects, The 2019 revision

- Domestic DX (digital transformation) is expected to accelerate due to the future decrease in the working population as well as the impact of the COVID-19 pandemic
- AI allows for DX of a wide variety of operations including those involving decision-making, which were previously considered difficult to automate



- DX will begin with standard tasks based on structured data and is expected to expand to decision-making and tasks which utilize unstructured data
- Our AI can automate a wide variety of operations including those requiring decision-making. We have also achieved DX for unstructured data, which were traditionally considered difficult for DX
- We are promoting DX and building a track record in areas including construction, finance, and entertainment

The contents set out in this material are prepared based on generally acknowledged economic, social and other conditions, and on certain assumptions deemed rational by HEROZ, Inc. and may therefore be subject to change without prior notice due to changes in the managerial environment or for other reasons.

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