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HEROZ
JAPAN

Presentation Material for FY04/2020 Q3 Financial Results

March 6, 2020

HEROZ, Inc. (4382)

HEROZ
JAPAN

1. Business Overview
2. FY04/2020 Q3 Performance
3. Growth Strategy
4. Reference Materials

Company Overview

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

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

Shogi Track Record

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





Representative Director and COO

Tomohiro Takahashi

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

Director and CFO, Business Planning Manager

Daisuke Asahara

Graduated from Kyoto University Graduate School
MBA from Wharton School, University of Pennsylvania (delivered graduation speech as student body representative)
Investment Banking Division, Goldman Sachs

Our Vision

HEROZ JAPAN

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)

HEROZ JAPAN

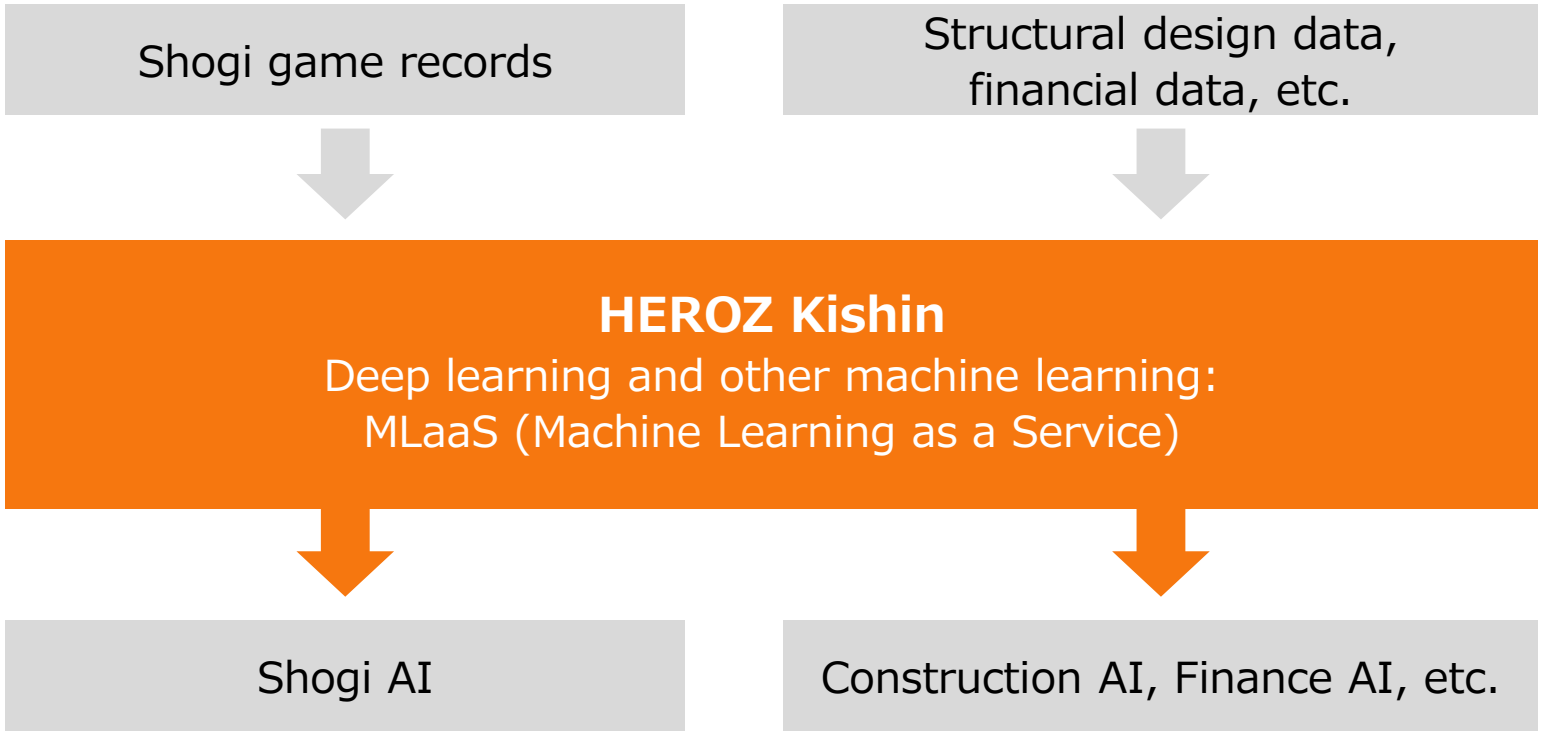
Go AI



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

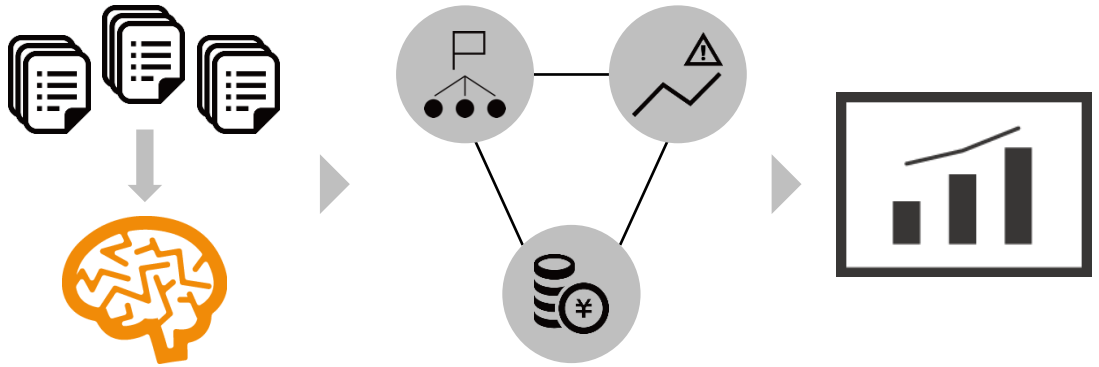
Google

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



MLaaS : What is Machine Learning as a Service?
Business model which provides machine learning/deep learning as service, similar to SaaS (Software as a Service) and IaaS (Infrastructure as a Service)

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



Client's data sent to HEROZ Kishin

Output after machine learning through deep learning, etc.

Output applied in business settings

Results measured and used for further machine learning

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

HEROZ JAPAN

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

AI-related technology and R&D capabilities
(deep learning, etc.)

Mind game engine | Game processing engine | Route optimization engine | Placement optimization engine | Prediction engine

HEROZ Kishin

Optimal solution search engine | Classification engine | Anomaly detection engine | Text processing engine | Image recognition engine

×

Know-how on development and service operations
(massive servers, etc.)

- Con-struction → Structural design support
- Finance → Investment support / market forecast
- Enter-tainment → Mind game AI, etc.
- Media → Optimization, etc
- HR → Matching jobseekers with corporations
- Others → Route search, etc

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

想いをかたちに 未来へつなぐ
TAKENAKA

Structural design support, etc.

Fi-nance

SMBC日興証券
MONEX

Investment support, market forecasts, etc.

Enter-tainment

BANDAI NAMCO Entertainment
BANDAI
ICT
netmarble

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)

Depending on the types of projects,
ongoing fees in the form of revenue sharing is also introduced

B-to-C Services: Fees from Application Users

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 compared with FY04/2019 Q3



Shogi Wars



Animal
Shogi Wars



Igo Wars



CHESS HEROZ
(English)



BackgammonAce
(English)

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

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Our Key Performance Indicator

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

EBITDA = Operating Profit + Depreciation/Amortization Expenses

- In AI-related businesses, server investments, 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

Performance Overview (May 2019-January 2020)

- Although new and ongoing AI (B-to-B) projects increased, some of the projects are delayed compared with the original plan in Q3
- EBITDA, our key indicator, progressed almost as planned although it is negative on a year-on-year basis due to increased labor cost. In addition, other profits/income below are affected by incurred expenses associated with the listing market change and capital increase in December 2019, etc. represented in page 15

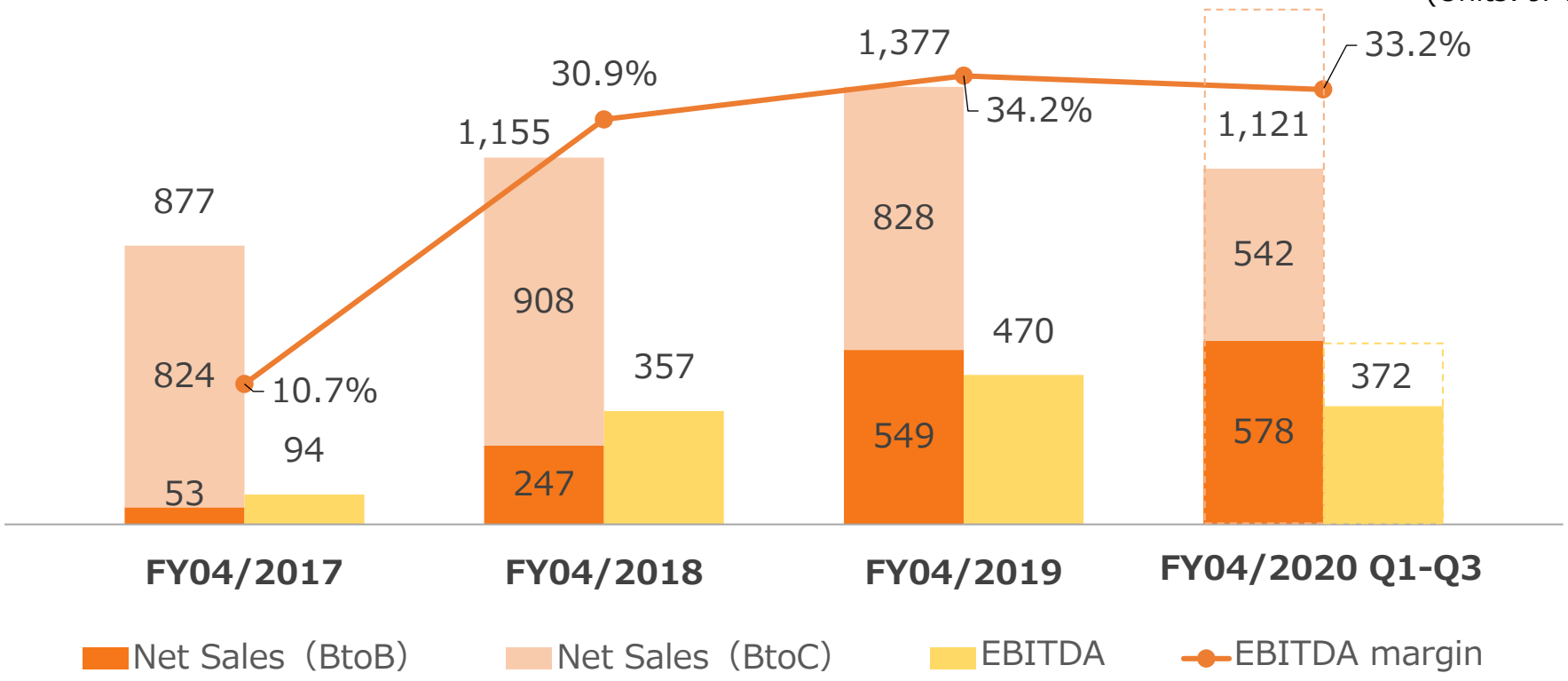
(Units: JPY millions)	FY04/2020 Q1-Q3 Actual	(Reference) FY04/2019 Q1-Q3 Actual	YoY	FY04/2020 Forecast	Progress
Net Sales	1,121	1,041	+7.8%	1,630	68.8%
EBITDA*	372	404	△ 8.1%	570	65.3%
EBITDA Margin	*33.2%*	*38.9%*	–	*35.0%*	–
Operating Profit	324	375	△13.5%	520	62.4%
Operating Margin	*28.9%*	*36.0%*	–	*31.9%*	–
Ordinary Profit	270	369	△ 27.0%	510	53.0%
Net Income	184	255	△ 27.9%	350	52.7%

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

Net sales and EBITDA Trends

- We forecast that revenues from AI (B-to-B) services, which is the core pillar of our growth strategy, will grow faster than the industrial average, CAGR 43% calculated in Reference Materials, and exceed revenues of AI (B-to-C) services in FY04/2020
- We expect revenues from AI (B-to-C) services to decrease on a year-on-year basis by the termination of "Pokémon Duel" in October, 2019. However, we expect a steady performance of Shogi Wars, etc

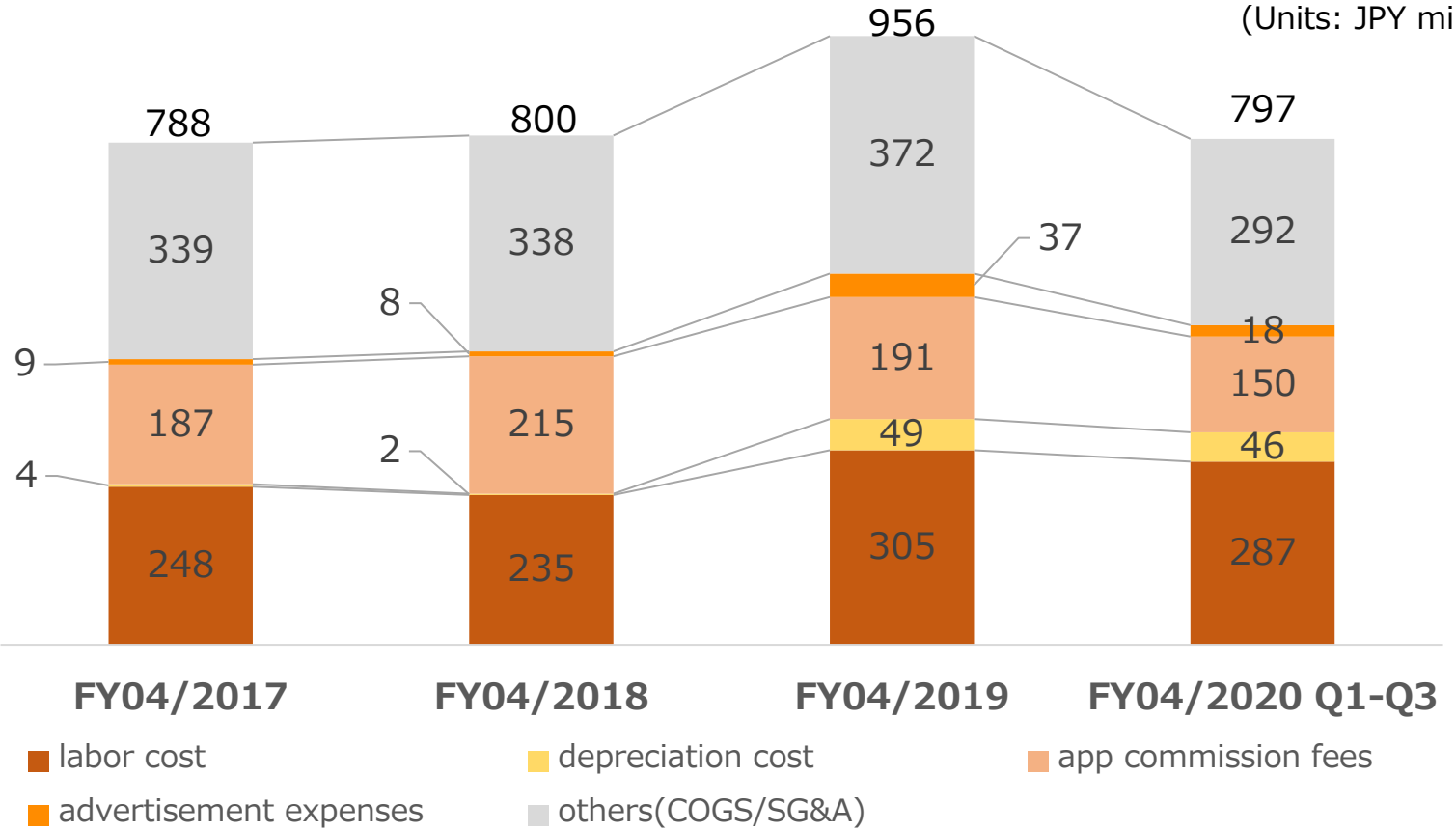
(Units: JPY millions)



COGS and SG&A Trends

- Labor cost has increased on a year-on-year basis and is expected to keep growing to increase our engineering capacity, which will lead to our medium-to-long term growth
- Size-based business tax and one-time incurred expenses associated with the listing market change and capital increase in December 2019 as well as depreciation cost negatively affected operating/ordinary profit and net income on a year-on-year basis

(Units: JPY millions)



Balance Sheet (as of January 31, 2020)

- Cash and deposits increases via public offering in December 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 computing servers and external cloud computing services, expansion of office space, investments to companies with peripheral technologies which can be applied to our operations, working capital)

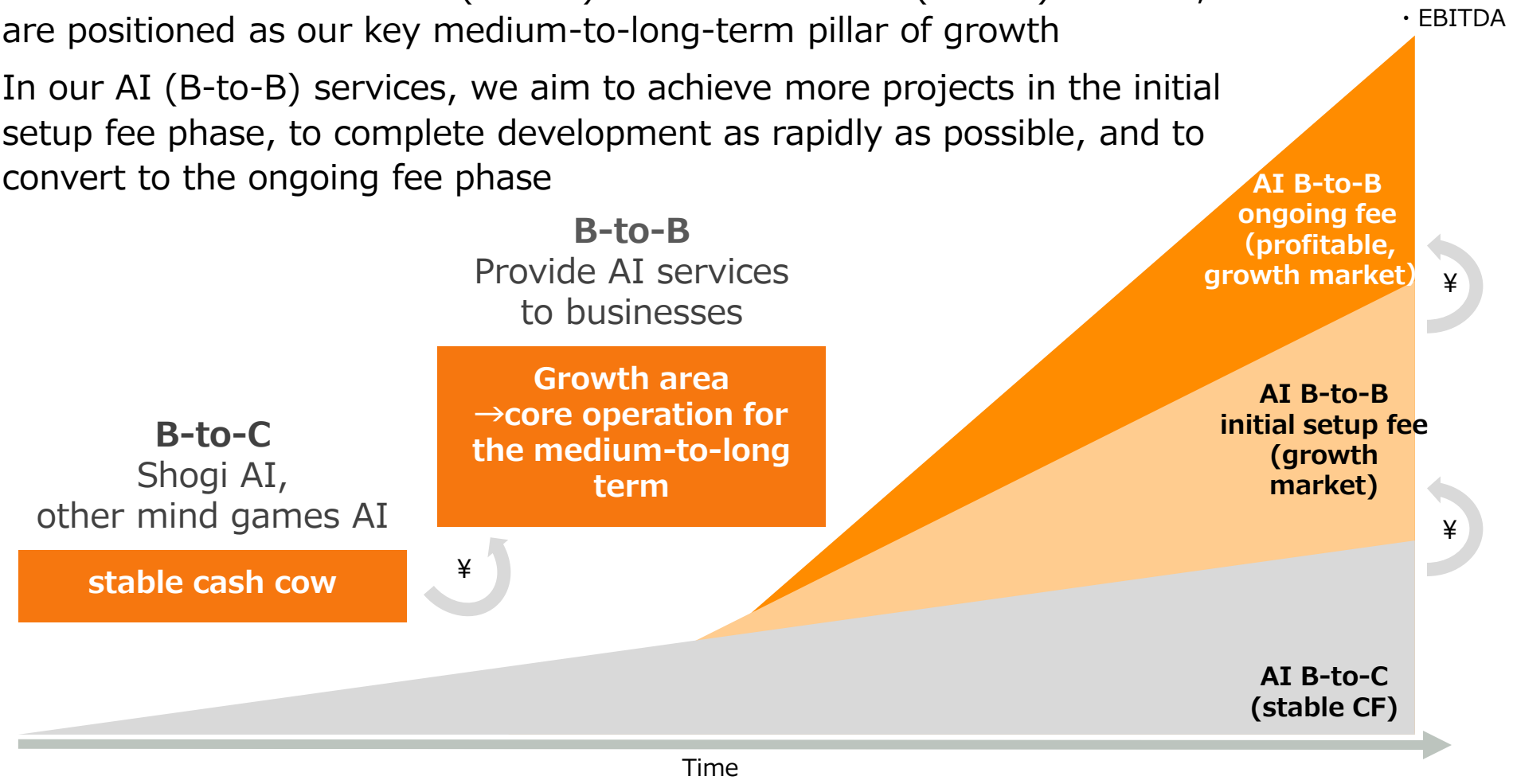
Units: JPY millions	As of 1/31/2020	(Reference) As of 4/30/2019
Current Assets	5,828	1,659
Cash and deposits	5,581	1,494
Fixed Assets	474	498
Property, plant and equipment	107	150
Intangible assets	5	5
Investments and other assets	361	342
Total Assets	6,302	2,157
Current Liabilities	190	178
Fixed Liabilities	-	-
Net Assets	6,111	1,979

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Medium-to-long term Growth Strategy

- We aim to achieve EBITDA growth by investing our cash flows and leveraging our know-how from our AI (B-to-C) services to our AI (B-to-B) services, which are positioned as our key medium-to-long-term pillar of growth
- In our AI (B-to-B) services, we aim to achieve more projects in the initial setup fee phase, to complete development as rapidly as possible, and to convert to the ongoing fee phase



Initiatives Aimed at Achieving the Growth Strategy (1)

- Listing of our shares was changed to the 1st section of the Tokyo Stock Exchange on December 25, 2019. At the same time, we completed a capital increase via public offering and secondary sale of shares aimed at achieving medium-to-long-term growth and increasing liquidity of our shares

- The uses of proceeds, equivalent to the approximately ¥4 billion, are as follows:
  - Personnel expense to increase our AI engineering capacity
  - Investment in in-house computing servers and expenses to utilize external cloud computing services
  - Security deposit and expenses relating to expansion of office space
  - Investments to companies with peripheral technologies which can be applied to our operations
  - Working capital for business operations

Initiatives Aimed at Achieving the Growth Strategy (2)

- Commenced full-scale operation of the housing loan abuse detection system “ARUHI Hawkeye”
  - We co-developed “ARUHI Hawkeye”, the housing loan abuse detection system leveraging our deep learning capabilities, with ARUHI Corporation (“ARUHI”). ARUHI launched the system in December 2019
  - ARUHI Hawkeye is an AI-based system which engages in deep learning based on screening information from past housing loans to detect applications which have the potential to be used illicitly for real estate investments

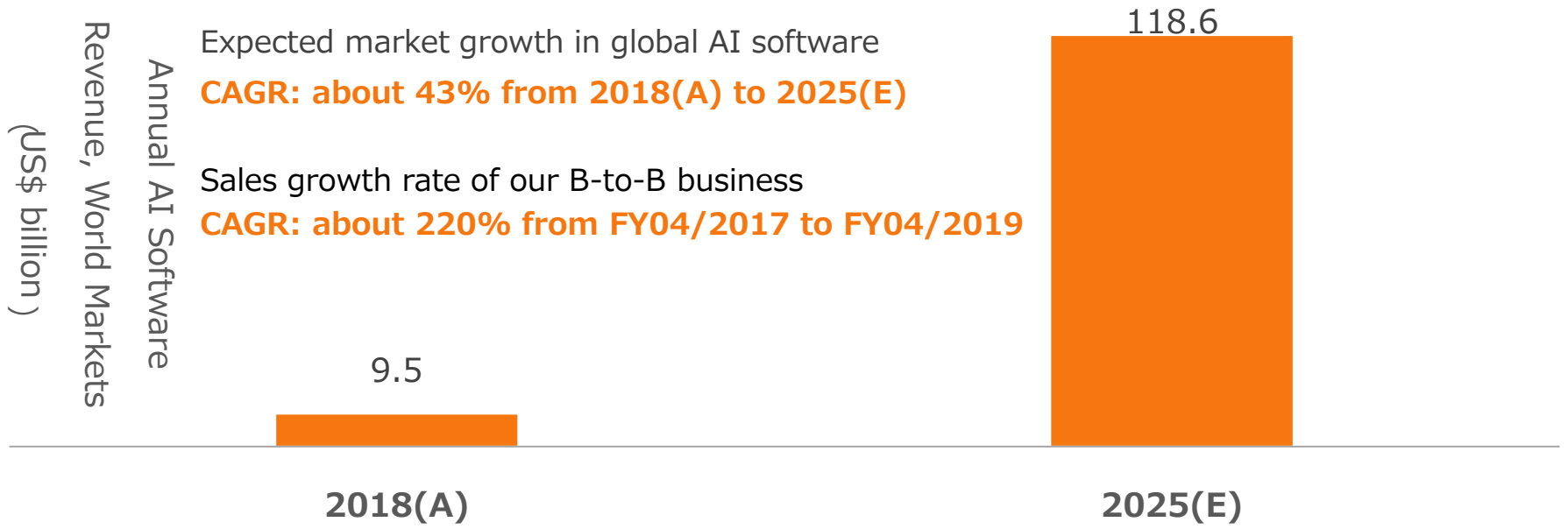
- Netmarble Monster’s Magic: ManaStrike, for which we cooperated in AI development, was officially released worldwide on January 29, 2020
  - We cooperated in some aspects of Magic: ManaStrike’s development using our state-of-the-art AI technology, including game balance adjustment
  - Magic: ManaStrike is a real-time strategic battle mobile game developed by Netmarble utilizing IP (intellectual property) rights from Magic: The Gathering, the pioneer in TCG (Trading Card Games). Magic: ManaStrike recreates the original cards and world perspective using high quality 3D graphics

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Global Market Forecasts: AI Software (B-to-B)

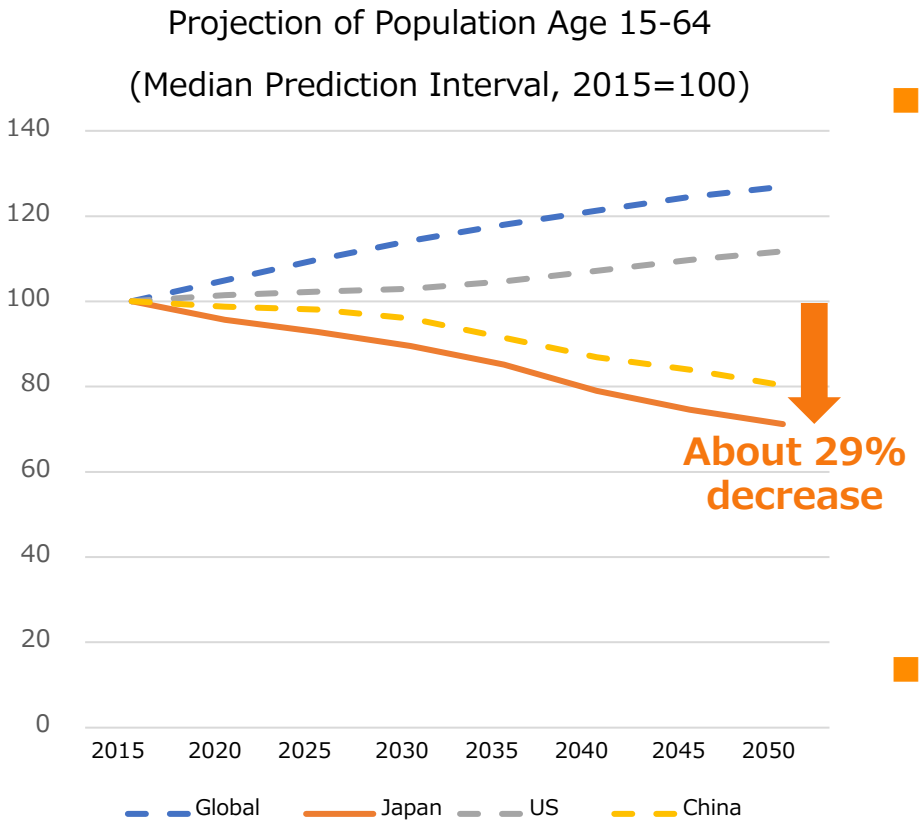
- AI demand is accelerating globally in each industry, leading us to believe that our AI (B-to-B) service carries strong growth potential
- AI software market in Japan is also required to grow so rapidly due to the decrease of the domestic working population that AI will support to increase labor productivity.
- Our AI (B-to-B) service is growing up faster than the overall market. In FY04/2020, revenues from our AI (B-to-B) service are forecasted to grow up by more than 43%, the expected market growth



Source: Tractica, Artificial Intelligence Market Forecasts (1Q 2019)

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



Source: Prepared by HEROZ based on United Nations, World Population Prospects, The 2017 revision

- When defining the working population as those aged 15-64, the world average is forecasted to increase by about 14% from 2015 to 2030 and by about 27% from 2015 to 2050. On the other hand, the working population is expected to decrease by about 10% and about 29% during the same periods, respectively

- Based on such forecasts, the Japanese working population will show the largest decrease among leading GDP nations

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

Challenges faced by the Construction Industry		
	Chronic Shortage of Man-power	■ There will be a shortage of 110,000 construction technicians by 2025 (source: Human Touch Research Institute, “status quo” scenario in the Proprietary Analysis Monthly Report, December 2017)
		■ Over 1/3 of first-class registered architects are over 60 (average: 56.2 years old) (source: Report on Construction-related Administration Aimed at Securing Safety of Architecture, Social Infrastructure Council, August 2006)
		■ The number of construction and mining industry workers is expected to decrease from 5.05 million in 2014 to 4.16–4.24 million in 2030, with some variability depending on future economic growth and labor market participation trends (source: JILPT, 2015 Estimated Labor Supply/Demand)
	Soaring Materials Prices	■ The national construction materials price index has increased by 17% since 2010 (source: Economic Research Association)

- 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

Disclaimer

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