VISUALIZE THE FUTURE

DMP
DIGITAL MEDIA PROFESSIONALS

Fiscal Year Ended March 31, 2017

Results Briefing

Digital Media Professionals Inc.

May 25, 2017

1 **Explanation of Results, Fiscal Year Ended March 31, 2017**

2 **Fiscal Year Ending March 2018, Business Forecast**

3 **Proposition for Future Growth**

1 **Explanation of Results,
Fiscal Year Ended March 31, 2017**

2 Fiscal Year Ending March 2018,
Business Forecast

3 Proposition for Future Growth

Operating Environment of the Company

Semiconductor Industry

- Rising demand for infrastructure-oriented chips such as chips for servers and data centers, etc., driven by IoT and AI market growth

- Favorable demand for memory and on-board automotive equipment applications

- Demise of Moore's law and rapid advance of AI technology

- Continued large-scale M&A centered on automobiles and AI/IoT fields (Intel/MobileEye, Softbank/ARM, Qualcomm/NXP, and more)

AI / Visual Computing Field

- Rapid growth in GPU applications for cloud-based artificial intelligence processing

- Self-driving cars and AI related devices (e.g., Amazon Echo) moving into focus

- Rapid growth in demand for large-volume data processing power for edge computing driven by advances in IoT/AI

- Development competition unfolding in low-power consumption, low-cost AI processors

Results Highlights

Sales

- Revenue recognition of licensing income from existing customers and licensing income from Deep Learning-type video/image recognition engine "ZIA" Classifier (*)

- Sales of image processing semiconductor "VF2" miss expectations

Earnings

(*) Details are available on page 23

- Research and development costs continuing from the previous fiscal year for the development of next-generation image processor "RS1" (*)

- Recognition of a ¥13 million special gain from final liquidation proceeds in connection with the divestiture of CogniVue Corporation after the sale of shares in the previous fiscal year

- Recognition of a ¥106 million special loss from impairment loss recognition on non-current assets related to image processing semiconductor "VF2"

(*) Details are available on page 16

Results Summary (P/L)

(Unit: million yen)

	FY ended March 31, 2016	FY ended March 31, 2017	YoY change (Amount)
Net sales	733	694	-39
Operating loss	-176	-263	-87
Ordinary loss	-193	-262	-69
Current net loss	-64	-365	-301

Results Summary (B/S)

(Unit: million yen)

	End of March 2016	End of March 2017	Increase-decrease amount
Current assets	1,984	1,668	-316
Non-current assets	260	112	-148
Total assets	**2,244**	**1,780**	**-464**
Current liabilities	226	91	-135
Non-current liabilities	18	18	0
Total liabilities	245	110	-135
Total net assets	**1,999**	**1,670**	**-329**
Total liabilities and net assets	**2,244**	**1,780**	**-464**

✓ Equity ratio of 93.6% remains at a high level

IP Core License Field

Initiation of sales and marketing efforts for the new 3D graphics IP core "M3000" series

▶ Realized small size combined with high performance

Revenue recognition from sales of middleware library "IPSL" co-developed with Toyota Tsusho Electronics Corporation (now NEXTY Electronics Corporation)

▶ High-speed processing enabled by general-purpose microcomputer GPU

▶ Contributing to cost reductions and ease of customization

SoC / Module Business Field

Roll-out of sales and marketing activities for amusement-application graphics semiconductor "VF2"

▶ Performance missed plan due to effects from decreased demand amid changing regulatory trends in the amusement industry and due to customers' delay in choosing new models

Operating tie-up with BANDAI NAMCO Entertainment Inc.
(announced on January 31, 2017)

▶ Co-development of next-generation LSI "RS1" as "VF2" successor model for next-generation platform "HAYABUSA" for game machine applications

Professional Services Field

Received commission for "Crosscutting Technology Development Project to Promote IoT" of NEDO (*)

▶ Promoted development of "AI platform based on a power saving AI engine and a cloud integrating dissimilar engines"

(*) Details are available on page 20

Received first commission for "ZIA" Classifier after announcement as an R&D result

▶ Efficient assessment of image data and image content

▶ Improvement in the accuracy of image discrimination using Deep Learning technology

1 Explanation of Results,
Fiscal Year Ended March 31, 2017

**2** **Fiscal Year Ending March 2018,
Business Forecast**

3 Proposition for Future Growth

✓ Expectations for **58.4%** year-on-year growth in sales revenue due to initiation of volume production and shipments of next-generation image processing semiconductor "RS1" and expansion of professional services

Net sales (Unit: million yen)

1,100
(Estimate)

1,000

750

733

694

500

464

355

250

0
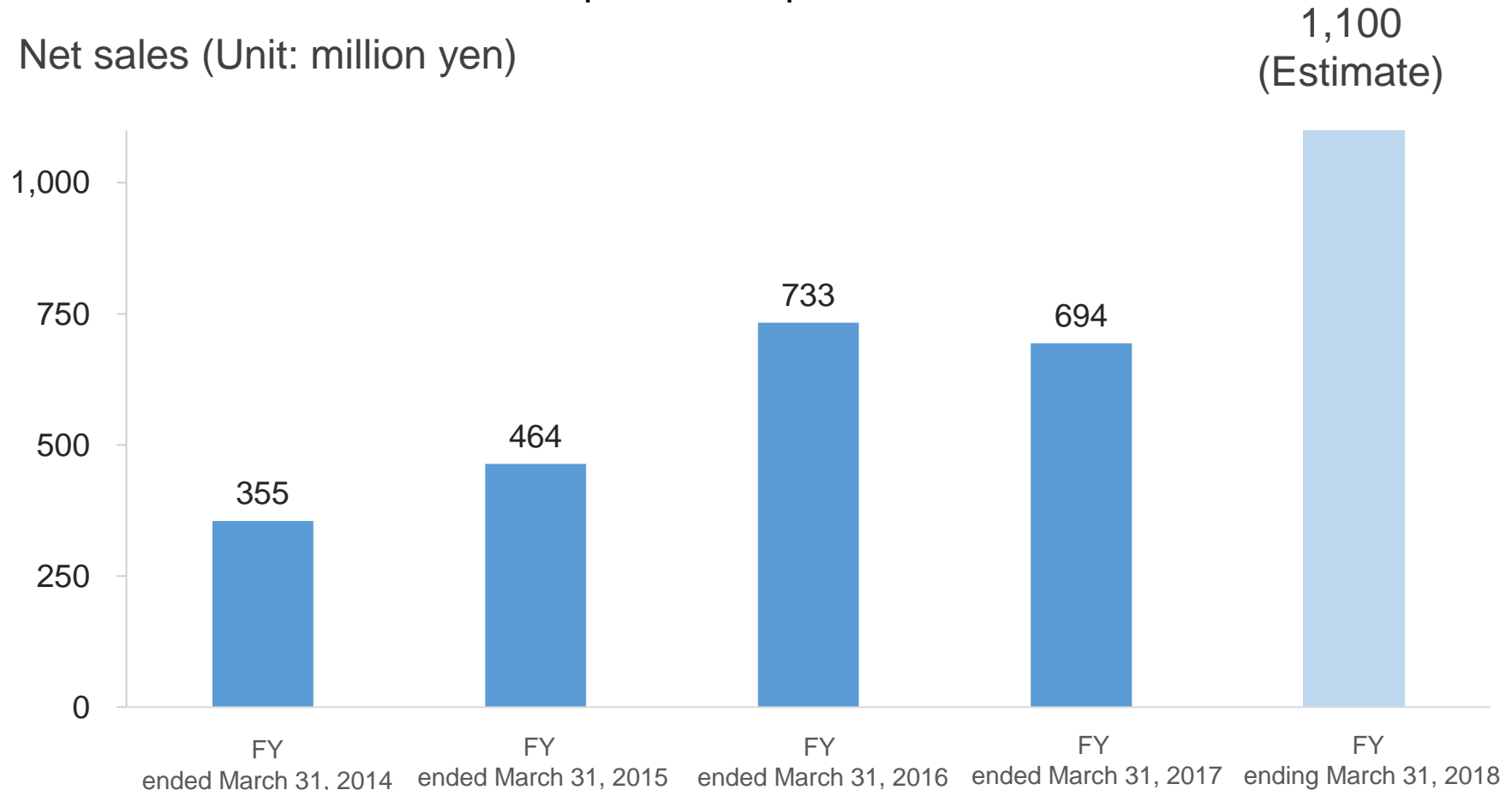
| FY ended March 31, 2014 | FY ended March 31, 2015 | FY ended March 31, 2016 | FY ended March 31, 2017 | FY ending March 31, 2018 |

Business Forecast

(Unit: million yen)

	FY ended March 31, 2017 (Actual)	FY ending March 31, 2018 (Forecast)	YoY change	
			(Amount)	(Increase-decrease rate)
Net sales	694	1.100	406	58.4%
Operating loss	-263	-90	173	-
Ordinary loss	-262	-90	172	-
Current net loss	-365	-90	275	-

Sales

- Expectation for sales of next-generation LSI "RS1"
- Increase in IP licensing including "ZIA" platforms

Earnings

- "RS1" development cost reduced compared with the previous fiscal year
- Expectations for costs associated with the volume production of "RS1"

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Measures in the time ahead

Strengthening of existing businesses

+

Promotion of business in the AI field

- ✓ Next-generation image processing LSI "RS1" to be readied for manufacture and volume production

- ✓ Enhancement of the "ZIA" platform product line-up

- ✓ Promotion of development commissions from NEDO for power-saving AI engines

- ✓ Promotion of AI related professional services

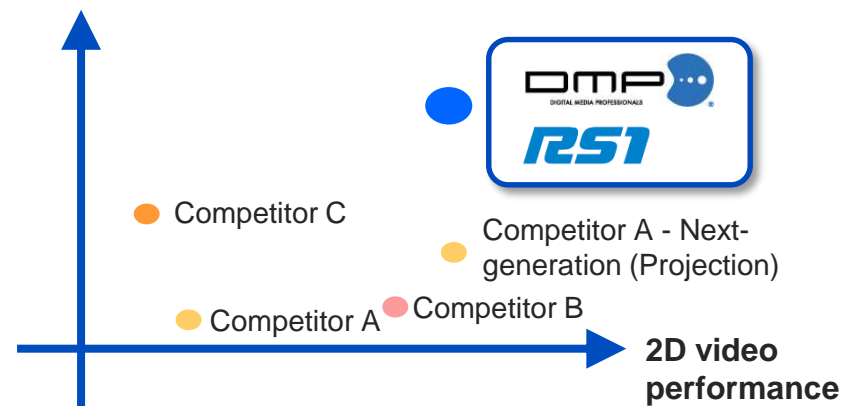# Diversification of earnings sources

About "RS1"

Next-generation image processor LSI for next-generation entertainment platforms

RS1   DMP DIGITAL MEDIA PROFESSIONALS × BANDAI NAMCO Entertainment

- Successor to game machine application graphics LSI "VF2"

- Co-development with BANDAI NAMCO

- Ongoing shipments of sample products (since May 2017)

- Under assessment by key customers

- Volume production scheduled to start this fiscal year

Real time 3D performance (vertical axis)

Hugely superior video/3D performance compared with competitor products

- (blue dot) DMP RS1
- Competitor C
- Competitor A - Next-generation (Projection)
- Competitor A
- Competitor B

2D video performance (horizontal axis)

Characteristics of the "RS1"

Specifications optimized for amusement applications

- Delivers high performance and low power consumption for both 3D and 2D graphics Application viable for all pachinko parlor slot machines and commercial game machines, etc.

**Gained significant performance**

- Delivers 3D graphics processing performance operating at up to six times the speed of the "VF2" at the same low power consumption as the "VF2"
- 2D graphics powered by 16 high-performance video machine units operating at up to three times the speed of the "VF2" Delivers high resolution and smooth image representation.

Enhanced added value through modulization

Regarding AI Markets

AI markets to grow to **¥86 trillion** in market size by 2030
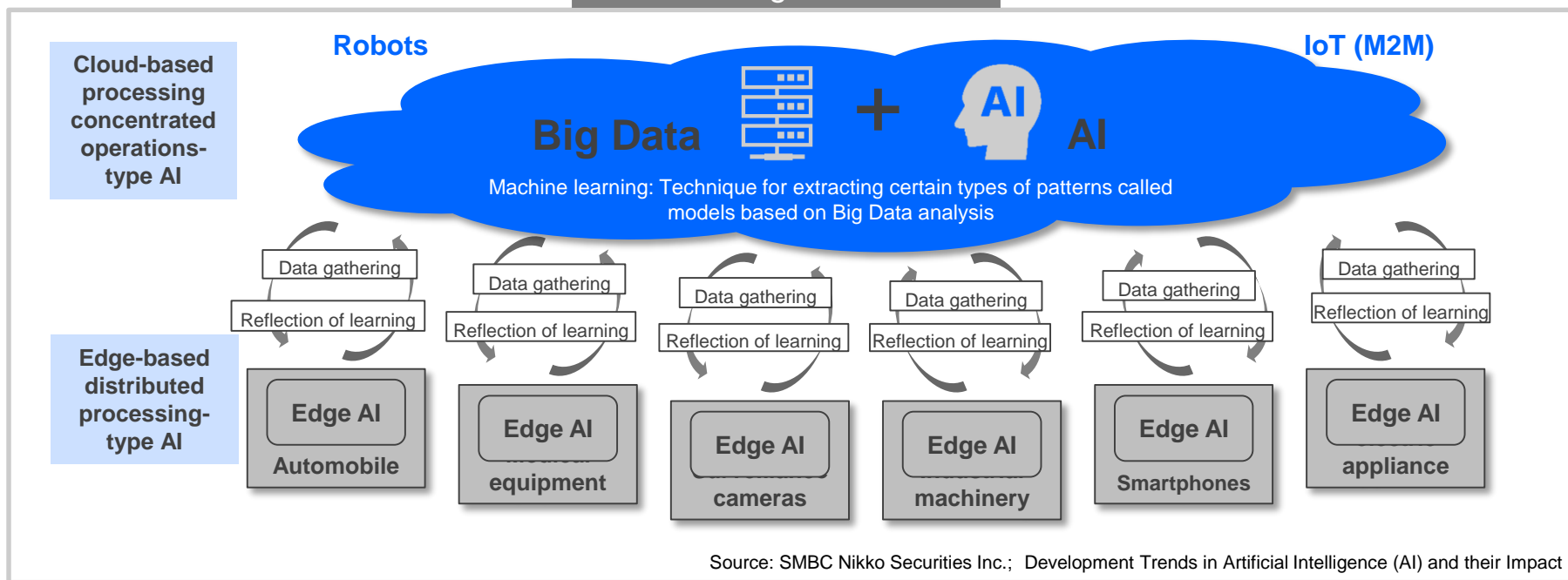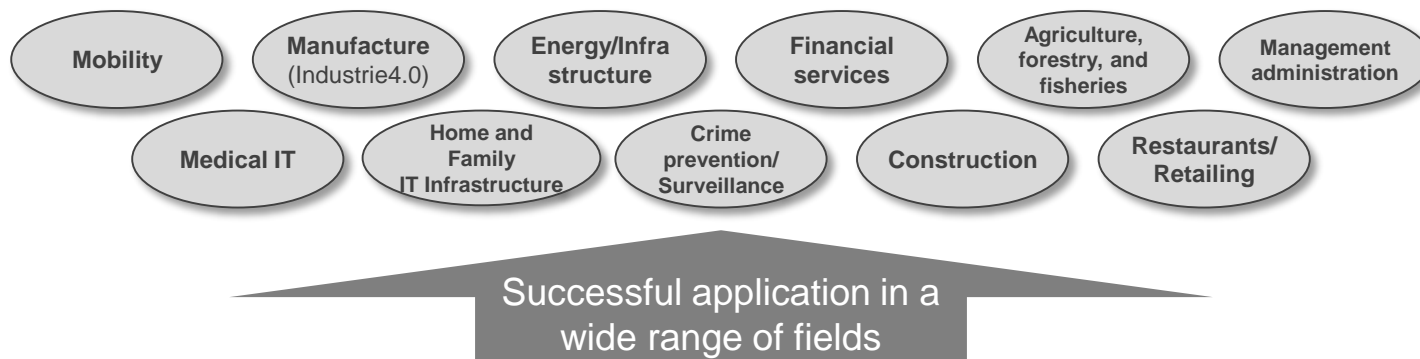
Diffusing from IT application fields such as e-commerce, AI passed into everyday environments through the interconnection with IoT and is destined to see outsized market growth and development

Market size of AI related industries

¥86 trillion

¥3 trillion

¥23 trillion

2015

2020

2030
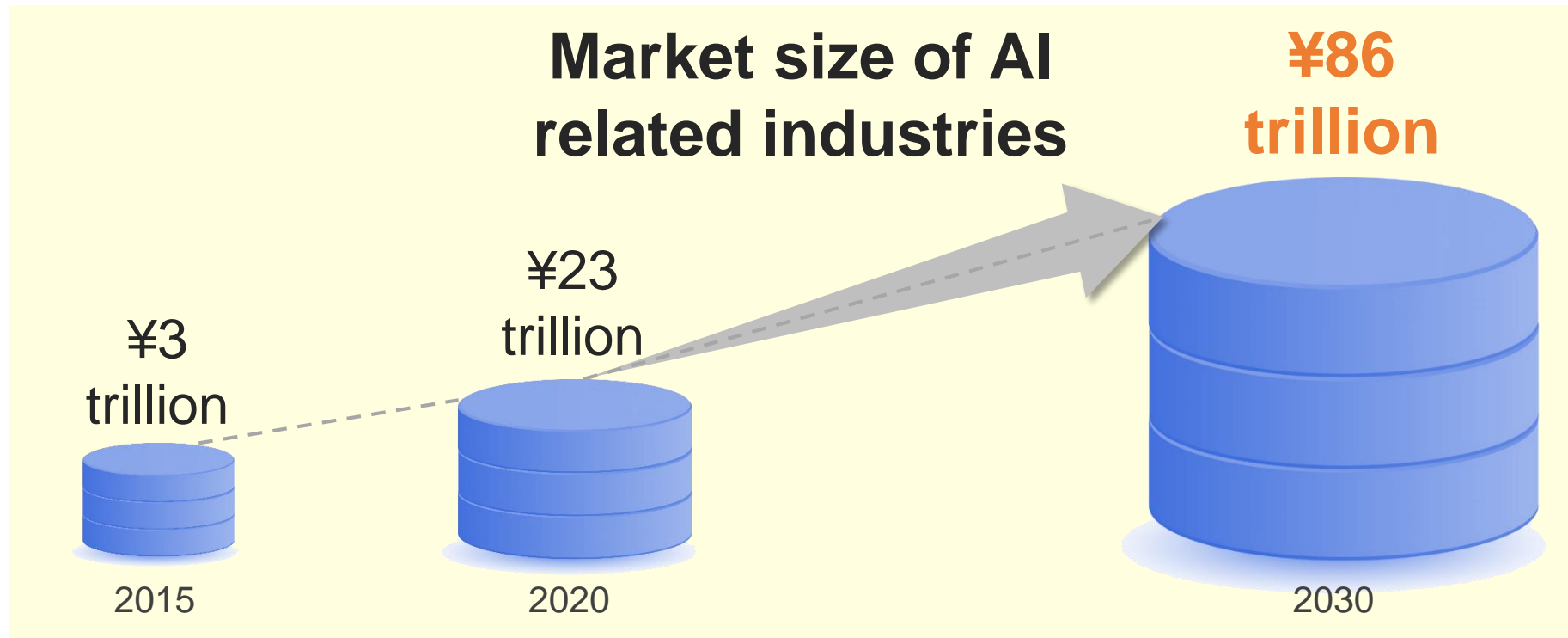
Source: Ernst & Young Institute Co., Ltd., "Creation and Destruction Brought On By AI" (2015)

The environment surrounding artificial intelligence (AI)

Mobility

Manufacture (Industrie4.0)

Energy/Infra structure

Financial services

Agriculture, forestry, and fisheries

Management administration

Medical IT

Home and Family IT Infrastructure

Crime prevention/ Surveillance

Construction

Restaurants/ Retailing

Successful application in a wide range of fields

Robots

IoT (M2M)

Cloud-based processing concentrated operations-type AI

Big Data **+** **AI**

Machine learning: Technique for extracting certain types of patterns called models based on Big Data analysis

Edge-based distributed processing-type AI

Data gathering / Reflection of learning — **Edge AI** **Automobile**

Data gathering / Reflection of learning — **Edge AI** **equipment**

Data gathering / Reflection of learning — **Edge AI** **cameras**

Data gathering / Reflection of learning — **Edge AI** **machinery**

Data gathering / Reflection of learning — **Edge AI** **Smartphones**

Data gathering / Reflection of learning — **Edge AI** **appliance**

Source: SMBC Nikko Securities Inc.; Development Trends in Artificial Intelligence (AI) and their Impact

About Edge AI

- Many sensors are to be transposed to cameras

    - Number of network cameras to be shipped in 2020: up to 350 million units (*)

- Explosive growth in data volumes (700PB/day)

- Applications posing real-time requirements (e.g., car driving, AR/VR)

- Privacy concerns

(*) Source: Intel Corporation

Edge processing + Real time processing + Security = Business chances (existing and new markets)

Edge AI processor integrated cameras

Z!A™ DV700
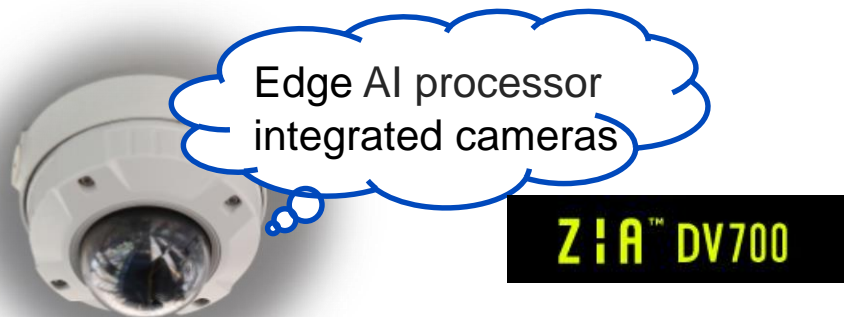
Comparison of data volumes

20 MB

Burglar intruding   10 byte

Started development of artificial intelligence platform based on power saving AI engine and cloud able to integrate dissimilar engines

Amount awarded DMP under the contract (total amount): ¥475 million
Duration of the commission: June 2016 - March 2019

Project outline

• Development of a power saving AI engine which enables AI algorithms to process 10 times more efficient than predecessors did

• Development of an AI platform for integrating dissimilar engines on the cloud side
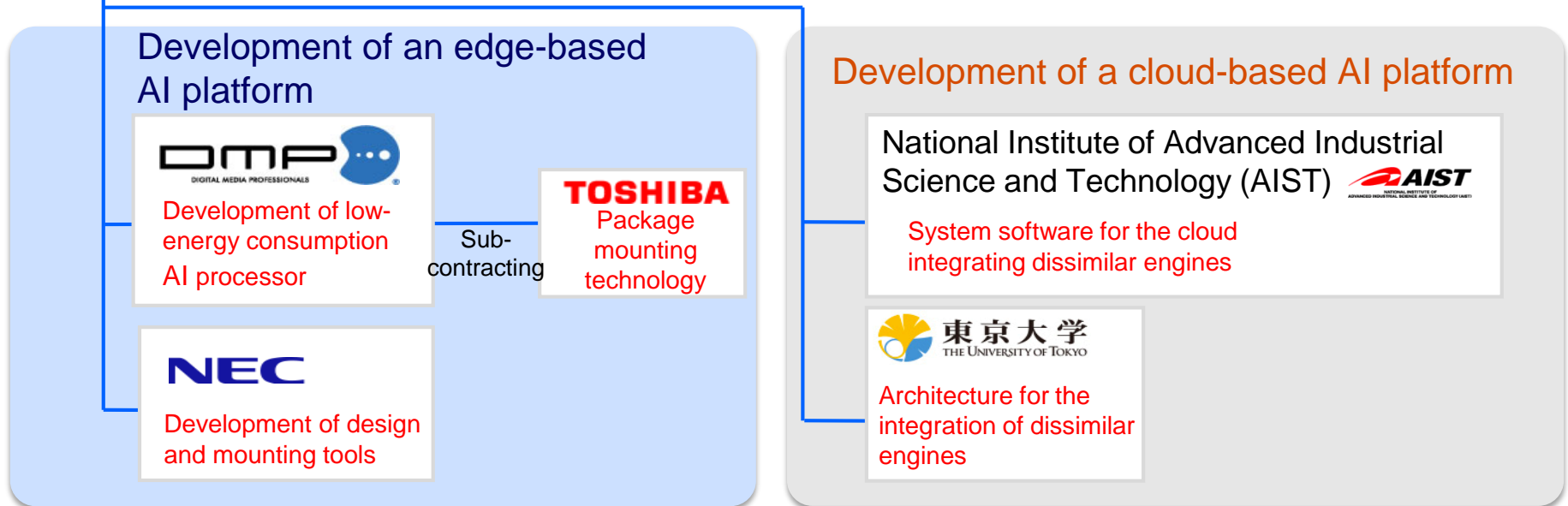
Accelerate DMP AI Business

NEDO

Crosscutting Technology Development Project to Promote IoT (Fiscal year 2016 to fiscal year 2020)

Development of AI platform based on a power saving AI engine and a cloud integrating dissimilar engines

Commission

Development of an edge-based AI platform

DMP — Development of low-energy consumption AI processor

Sub-contracting

TOSHIBA — Package mounting technology

NEC — Development of design and mounting tools

Development of a cloud-based AI platform

National Institute of Advanced Industrial Science and Technology (AIST) — System software for the cloud integrating dissimilar engines

東京大学 THE UNIVERSITY OF TOKYO — Architecture for the integration of dissimilar engines

Advisory companies
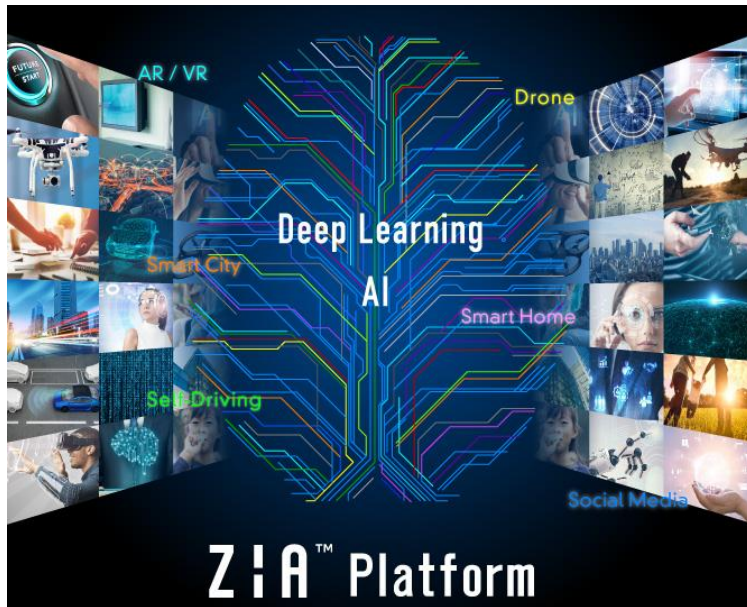
DENSO **SECOM** **Canon** **Sony Interactive Entertainment** and more

Deep Learning / AI / ZIA™

ZIA™ Z Intelligence Accelerator

■ Based on the technologies accumulated since the founding as Japan's only GPU vendor, the AI platforms of DMP form novel software/hardware products fusing AI/Deep Learning knowledge

Software Product

ZIA™ Classifier — On sale

Stage 1
Image classification engine

Hardware Product

ZIA™ DV700 — New sales launch

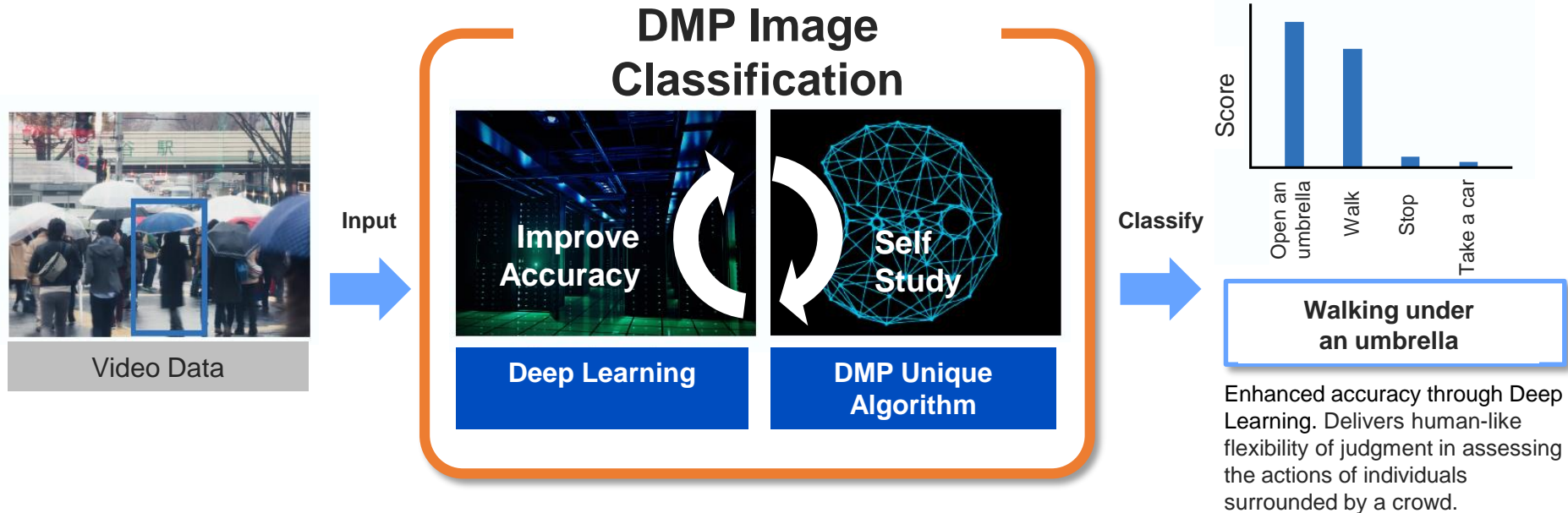**ZIA™ AI LSI** — Under development

Stage 2
AI processors for edge computing

ZIA Classifier

Stage 1 "ZIA" series image recognition and classification engines using Deep Learning

ZIA™ Classifier

- Categorization by item out of large-volume image data as required by customers, with efficiency-enhanced Deep Learning performance and with processing time shortened

- Ongoing co-development of applications for the creation of new services using "ZIA" ™ together with large service-related Japanese corporations
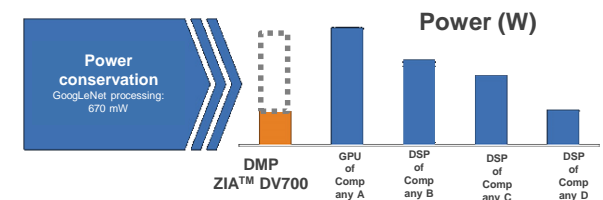
DMP Image Classification

Video Data → **Input** → Improve Accuracy / Self Study

Deep Learning | **DMP Unique Algorithm**

→ **Classify** →

Score: Open an umbrella, Walk, Stop, Take a car

Walking under an umbrella

Enhanced accuracy through Deep Learning. Delivers human-like flexibility of judgment in assessing the actions of individuals surrounded by a crowd.
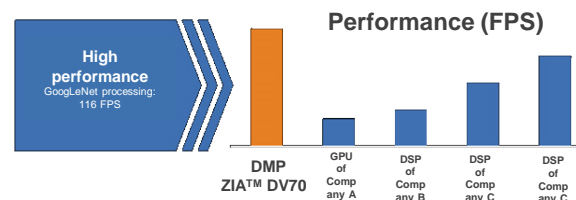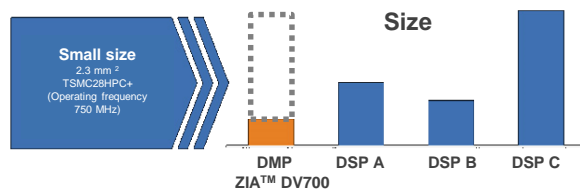
ZIA DV700

Processor with ultra-low power consumption specialized for Deep Learning inference processing applicable to all data categories

ZIA™ DV700 **NEW**

- Stage 2 product of the "ZIA" product platform using AI technology of DMP

- Processor with ultra-low power consumption suited for edge-computing AI processing, capable of inference processing applicable to all data categories including images, videos, and voice data, etc.

- Combines low power consumption and high performance with flexible response capability regarding functions and performances required for a diversity of applications including security cameras

ロボット　自動車　防犯カメラ　ドローン　家電　OA機器　医療機器　ウエアラブル
ZIA™ DV700

Size
Small size 2.3 mm² TSMC28HPC+ (Operating frequency 750 MHz)	DMP ZIA™ DV700	DSP A	DSP B	DSP C

Performance (FPS)
High performance GoogLeNet processing: 116 FPS	DMP ZIA™ DV70	GPU of Company A	DSP of Company B	DSP of Company C	DSP of Company C

Power (W)
Power conservation GoogLeNet processing: 670 mW	DMP ZIA™ DV700	GPU of Company A	DSP of Company B	DSP of Company C	DSP of Company D

Proposition for Future Growth

Added value

Entry into the next added value and growth market

Expansion into the growing IoT field

Products achieving advanced image processing such as wearables, automotive applications, residential applications, industrial application, and consumer electronics, etc.

+

Expansion into the AI / Deep Learning* fields

Active use of technologies accumulated by the Company Entry into the AI / Deep Learning markets

Development of software and hardware products for AI applications centered on the ZIA platform

Establishment of a SoC business platform in the amusement market where we can win

**Continuing from the "VF2", steady progress in new product development for the "RS1"
Impending market entry and volume production start**

Markets

Phase 1	Phase 2

※ A type of machine learning application for the recognition of diverse types of data and patterns such as image and voice recognition using multiple layers of neural networks.