

# Financial Information

HORIBA, Ltd.

September, 2019

# Contents

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- 2019 First Half Results
- 2019 Forecast
- Outlines by Business Segments
- Shareholder Return
- Other Topics
- Financial Data
- Corporate Profile

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# Review of 2019 First Half

<b>External Events</b>	<ul style="list-style-type: none"><li>◆ The accelerating US-China trade conflict and the deteriorating Japan-South Korea relationship</li><li>◆ Intensified Brexit uncertainties</li><li>◆ Slowdown in capital spending for semiconductors</li><li>◆ Automotive electrification trend and tighter emission regulations</li></ul>
<b>Internal Events</b>	<ul style="list-style-type: none"><li>◆ Continually-enhanced R&amp;D bases on a global level</li><li>◆ Aggressive launch of new products</li><li>◆ Selected as a “Nadeshiko Brand” and for the “Health &amp; Productivity Stock Selection Program” by METI and the Tokyo Stock Exchange</li></ul>

# Summary of 2019 First-Half Results

Significant year-on-year decrease in sales and profit due to a slowdown of the Semiconductor segment

## P&L

- ◆ Year-on-year decrease in sales and profit of the Semiconductor segment
- ◆ Decline in profitability of the Automotive segment due to a change in geographical sales mix and other factors

## B/S

- ◆ Total assets were ¥273.6bn, down ¥3.6bn, mainly due to collection of accounts receivable
- ◆ Total liabilities were ¥111.6bn, down ¥3.6bn, mainly due to decrease in accounts payable and loan repayment
- ◆ Equity ratio: 58.9% (Compared to the end of Dec. 2018)

## CF

- |   |   |                            |
|---|---|----------------------------|
| <ul style="list-style-type: none"> <li>◆ Operating CF: Cash in ¥13.8bn due to operating profit and collection of accounts receivable</li> <li>◆ Investing CF: Cash out ¥4.2bn due to acquisition of tangible fixed assets</li> <li>◆ Financial CF: Cash out ¥7.2bn due to dividend payment</li> </ul> | } | <p>Free CF<br/>+¥9.5bn</p> |
|---|---|----------------------------|

# 2019 First Half Results

(Billions of Yen)

	2018 1st Half	2019 1st Half			
	Results	Forecast (as of Feb.12)	Results	vs 2018	vs Forecast
Sales	99.9	96.0	91.6	- 8.3	- 4.3
Operating Profit	14.0	10.5	8.2	- 5.7	- 2.2
OP %	14.1%	10.9%	9.0%	-5.1p	-1.9p
Ordinary Profit	13.7	10.3	8.0	- 5.6	- 2.2
Net Profit attributable to Owners of Parent	10.5	7.0	5.7	- 4.7	- 1.2
USD / JPY	108.67	110.00	110.06	+1.39	+0.06
EUR / JPY	131.55	125.00	124.32	-7.23	-0.68

# 2019 First Half Results by Segment

(Billions of Yen)

	Sales					Operating Profit				
	2018 1st Half	2019 1st Half				2018 1st Half	2019 1st Half			
	Results	Forecast (as of Feb. 12)	Results	vs 2018	vs Forecast	Results	Forecast (as of Feb. 12)	Results	vs 2018	vs Forecast
★ : Record-high										
Auto	32.7	36.0	★ 34.3	+1.6	-1.6	2.4	3.0	1.5	-0.8	-1.4
P&E	9.2	10.0	9.1	-0.0	-0.8	0.8	1.0	0.6	-0.2	-0.3
Medical	13.1	14.0	12.6	-0.4	-1.3	1.0	1.0	0.7	-0.2	-0.2
Semi	32.3	23.0	22.7	-9.6	-0.2	10.2	5.5	5.3	-4.8	-0.1
Scientific	12.5	13.0	★ 12.6	+0.1	-0.3	-0.5	-	-0.0	+0.4	-0.0
Total	99.9	96.0	91.6	-8.3	-4.3	14.0	10.5	8.2	-5.7	-2.2


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# Market Assumptions for 2019

Auto		Strong appetite for investment in the global automotive sector due to tighter emission regulations mainly in Asia and innovation for electrification & autonomous driving
P&E		Increase in demand due to tighter environmental regulations in emerging countries Recovery in investment in the oil industry
Medical		Japan: Favorable sales to doctors in private practice Overseas: Increase in demand for blood testing equipment in emerging countries
Semi		Subdued capital spending by semiconductor manufacturers Anticipate a pick-up in investment, on the background of robust demand for semiconductor devices from a mid- to long-term perspective
Scientific		Robust corporate R&D spending Accelerating research on new materials for secondary batteries

# Exchange rate

(Yen)

	2018 Results		2019					
	1sf Half	Full year	Previous Forecast (as of Feb. 12)	Results			Forecast 2nd Half	Current Forecast (as of Aug. 6)
				1Q	2Q	1st Half		
USD	108.67	110.44	110	110.22	109.90	110.06	109.94	110
EUR	131.55	130.35	125	125.16	123.48	124.32	125.68	125

1 yen O.P. sensitivity for 2019 Forecast (Yen appreciation/Full year)

USD -230 million yen

EUR -20 million yen

# 2019 Forecast

(Billions of yen)

	2018	2019			
	Results	Previous Forecast (as of Feb. 12)	Forecast (as of Aug. 6)	vs 2018	vs Previous Forecast
★ : Record-high					
Sales	210.5	218.0	★ 213.0	+2.4	-5.0
Operating Profit	28.8	29.0	25.0	-3.8	-4.0
OP %	13.7%	13.3%	11.7%	-2.0p	-1.6p
Ordinary Profit	28.3	28.5	24.5	-3.8	-4.0
Net Profit attribute to Owners of Parent	22.3	20.0	17.5	-4.8	-2.5
Net profit per share (Yen)	529	474	414	-115	-60
ROE	14.3%	11.9%	10.5%	-3.8p	-1.4p

# 2019 Forecast by Segment

(Billions of yen)

	Sales					Operating Profit				
	2018	2019				2018	2019			
	Results	Previous Forecast (as of Feb. 12)	Forecast (as of Aug. 6)	vs 2018	vs Previous Forecast	Results	Previous Forecast (as of Feb. 12)	Forecast (as of Aug. 6)	vs 2018	vs Previous Forecast
★ : Record-high										
Auto	79.6	85.0	★ 85.0	+5.3	-	7.7	9.0	★ 8.0	+0.2	-1.0
P&E	19.3	20.0	★ 20.0	+0.6	-	2.0	2.0	2.0	-0.0	-
Medical	26.0	28.0	★ 28.0	+1.9	-	1.8	2.0	2.0	+0.1	-
Semi	57.7	55.0	50.0	-7.7	-5.0	17.0	15.0	12.0	-5.0	-3.0
Scientific	27.7	30.0	★ 30.0	+2.2	-	0.2	1.0	1.0	+0.7	-
Total	210.5	218.0	★ 213.0	+2.4	-5.0	28.8	29.0	25.0	-3.8	-4.0

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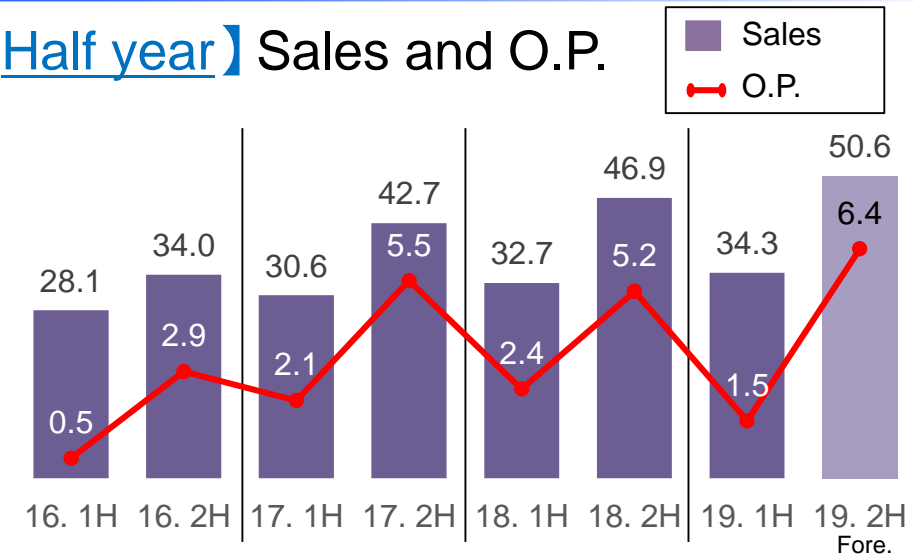
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# First Half Results and 2019 Forecast

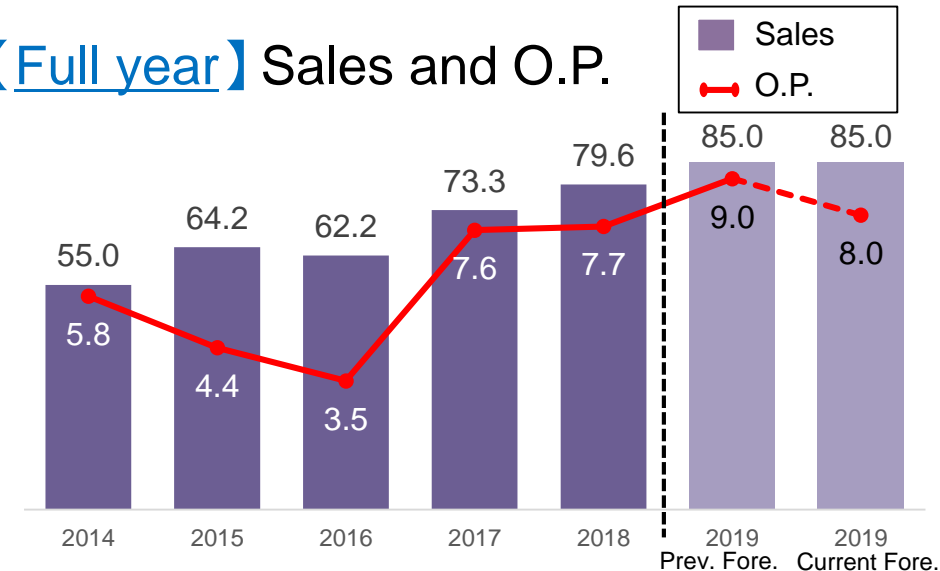
(Billions of yen)

## 2019 First Half Results

【Half year】 Sales and O.P.



【Full year】 Sales and O.P.



- + EMS** Higher demand in China and India, driven by adoption of new regulations  
Robust demand in Europe continued even after the introduction of new regulations
- + MCT<sup>1</sup>** Increase in projects in Japan and Europe
- + ECT<sup>2</sup>** Business expansion in the next-gen automotive technology development field

1: Mechatronics    2: Engineering Consultancy & Testing

## 2019 Full Year Forecast

- + EMS** Demand growth in China and India to continue
- + MCT** Increase in demand for fuel cell test systems
- + ECT** Aggressive investment to accelerate growth  
Operating expense on an increasing trend

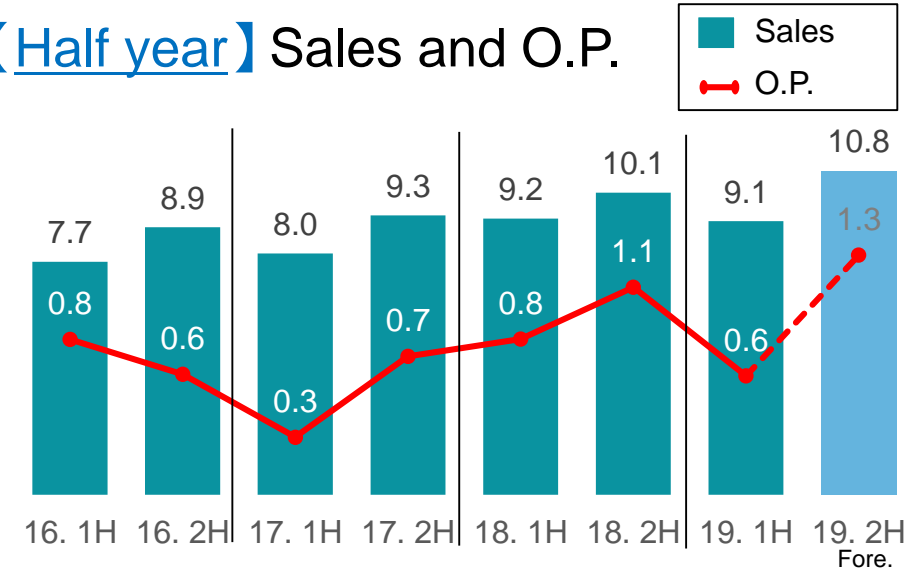
# First Half Results and 2019 Forecast

(Billions of yen)

## 2019 First Half Results

- + **【Stack gas analyzers】**  
Strong sales in Japan
- + - **【Air quality monitoring】**  
Decline from last year when a large project was recorded in Asia  
Increase in demand in Europe
- + **【Water quality monitoring】**  
Sales increase due to business growth in emerging countries

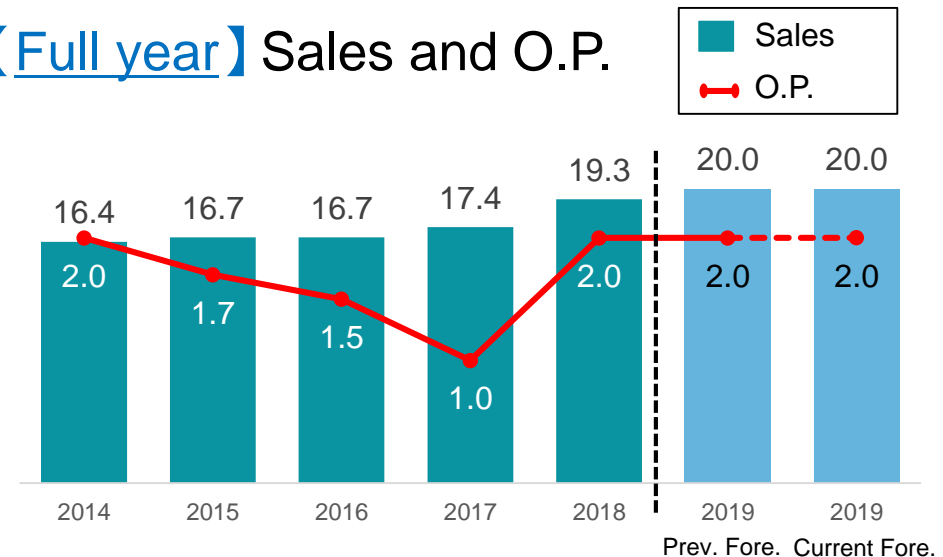
【Half year】 Sales and O.P.



## 2019 Full Year Forecast

- + **【Stack gas analyzers】**  
Anticipate business expansion in emerging countries, including China and India
- + **【Process measurement equipment】**  
Robust demand due to rising crude oil prices
- + **【Water quality monitoring】**  
Robust sales of a new product, the water quality monitoring system for ships

【Full year】 Sales and O.P.



# First Half Results and 2019 Forecast

(Billions of yen)

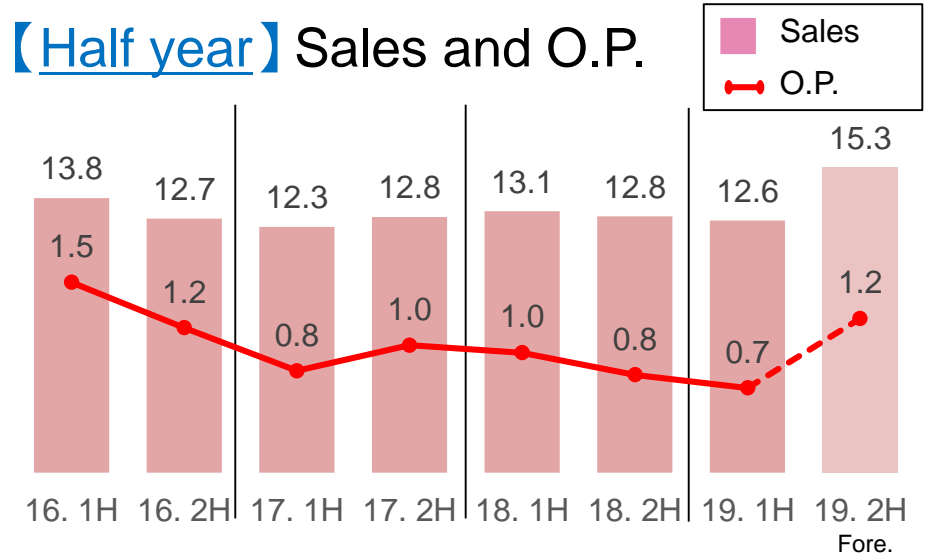
## 2019 First Half Results

- Decrease in sales from Europe in yen terms due to the euro's depreciation against the yen
- + Business expansion in emerging countries, including China and India
- +/- Enhanced sales of the new product but new entrants in the market in Japan

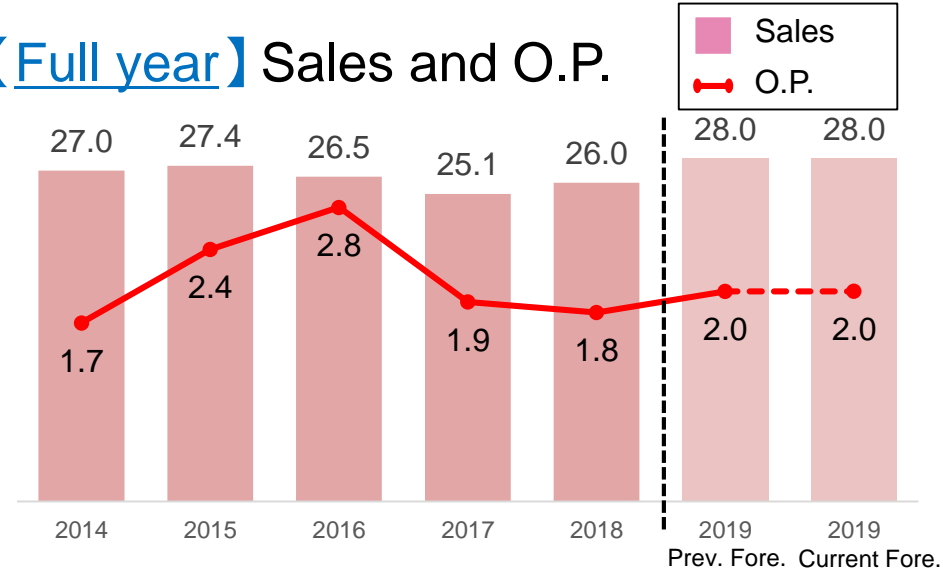
## 2019 Full Year Forecast

- + Anticipate growth in micro-blood analysis system business, driven by a new product launch
- +/- Further business expansion in emerging countries due to an increase in demand
- +/- Operating expense on an increasing trend

【Half year】 Sales and O.P.



【Full year】 Sales and O.P.





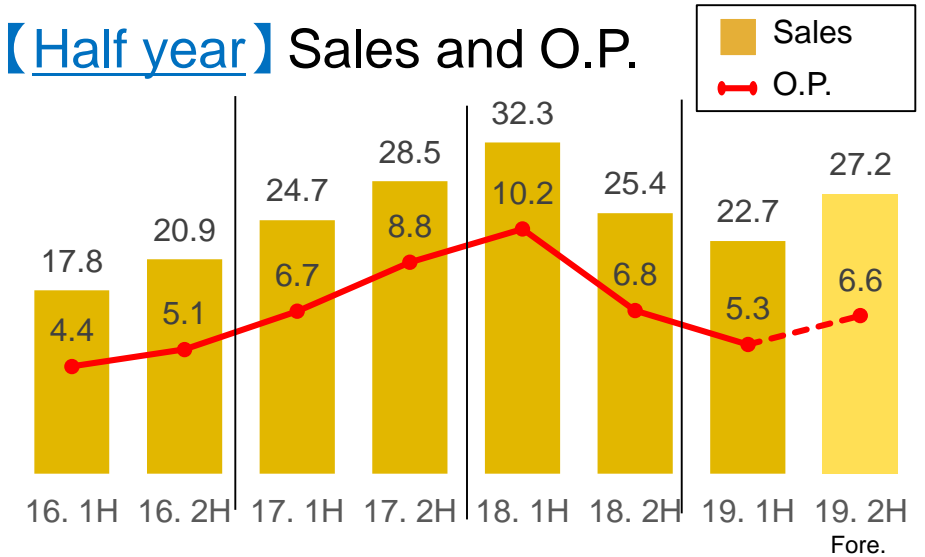
# First Half Results and 2019 Forecast

(Billions of yen)

## 2019 First Half Results

- Decline in both sales and operating profit comparing with the previous year
- Semiconductor manufacturers' capital expenditure adjustment continued.

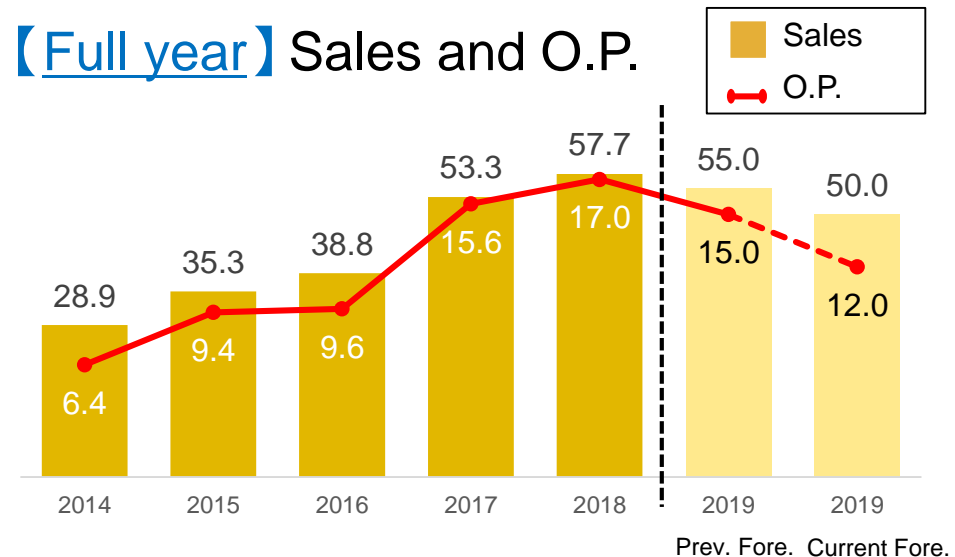
【Half year】 Sales and O.P.



## 2019 Full Year Forecast

- + - Anticipate the current condition to continue despite some signs of investment recovery by semiconductor manufacturers
- + Expect an increase in demand in the medium- to long-term

【Full year】 Sales and O.P.



Prev. Fore. Current Fore.

# First Half Results and 2019 Forecast

(Billions of yen)

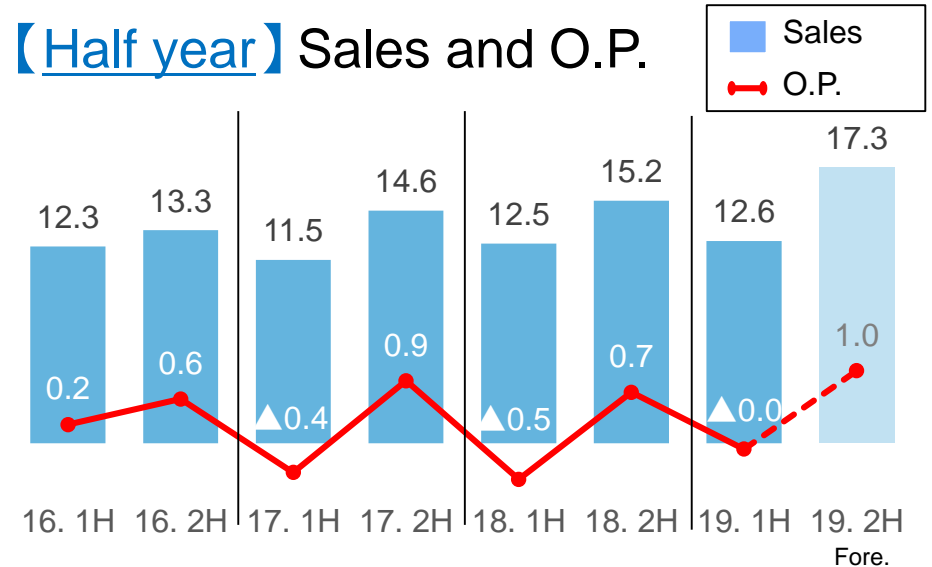
## 2019 First Half Results

- + Sales increase in Asia and Americas on the background of robust corporate R&D spending
- + Improvement in profitability compared to last year when one-off expenses were recorded in Americas

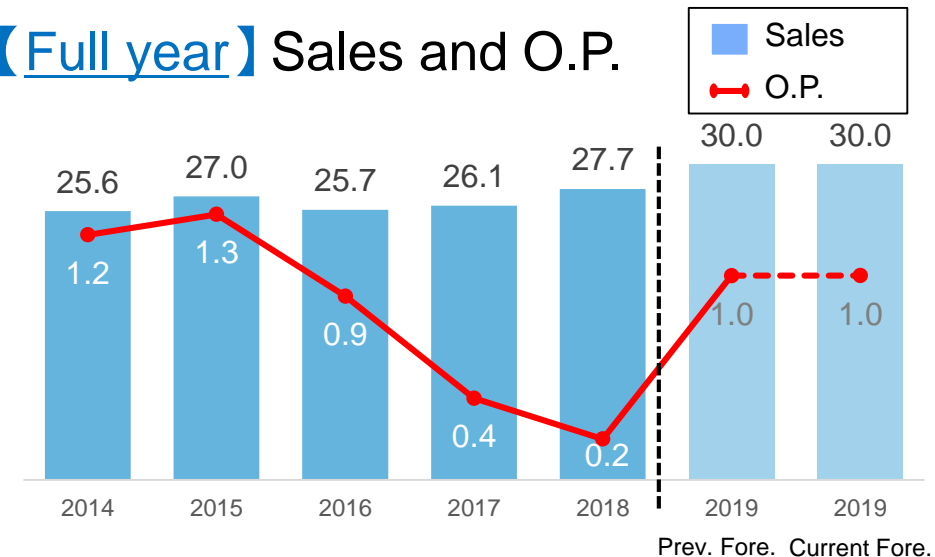
## 2019 Full Year Forecast

- + Anticipate profitability improvement and market development through product customization
- + Enhance initiatives aimed for business expansion in the materials analysis of secondary battery

【Half year】 Sales and O.P.



【Full year】 Sales and O.P.



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# Shareholder Return

## Basic policy

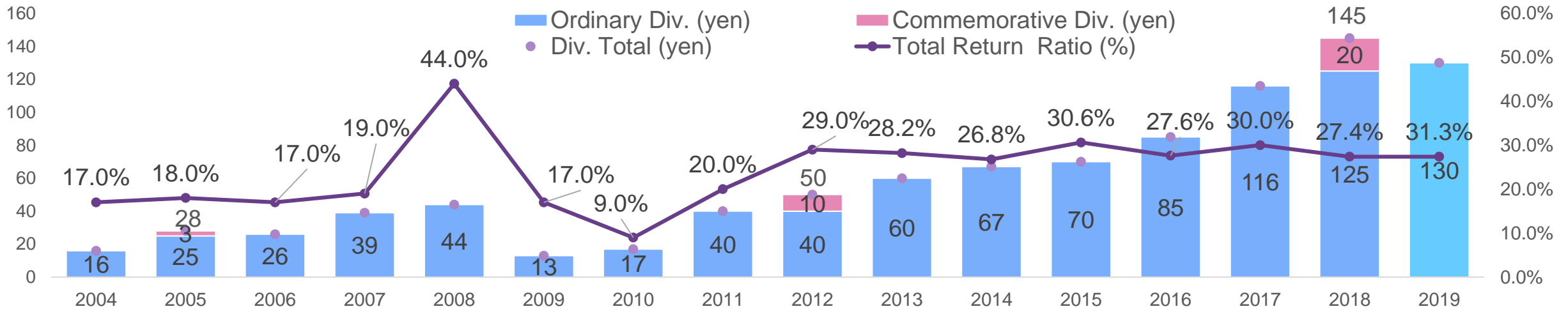
- Dividend payment + Share buyback = 30% of Consolidated net profit to be targeted
- Remaining earnings are retained internally for strategic investment (i.e. facilities, M&A)

## Dividends per share and Share buybacks

- 2017 Results 116yen [Interim 40yen/Year-end 76yen]
- 2018 Results 145yen [Interim 50yen/Year-end 95yen]
- 2019 Forecast 130yen [Interim 50yen/Year-end 80yen]

Ordinary dividend: 125yen  
 Commemorative dividend for the 65th anniversary of the company foundation: 20yen

Per-share dividend (from 2004 to 2019 Forecast)



Renewed record-highs in dividend in 9 years

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# Withdrawal from the ITS\* business

\*ITS: Intelligent Transport Systems

- Developed and provided total management systems that enabled monitoring of commercial vehicle driving information
- Commoditization of onboard devices made it hard to differentiate the products
- Will end to sell products and offer services by 2024
- Recorded non-operating income and expense in the second quarter of 2019 but the impact was immaterial.

Make use of knowledge of R&D/operation of cloud system services, obtained in the ITS business, to develop new businesses.

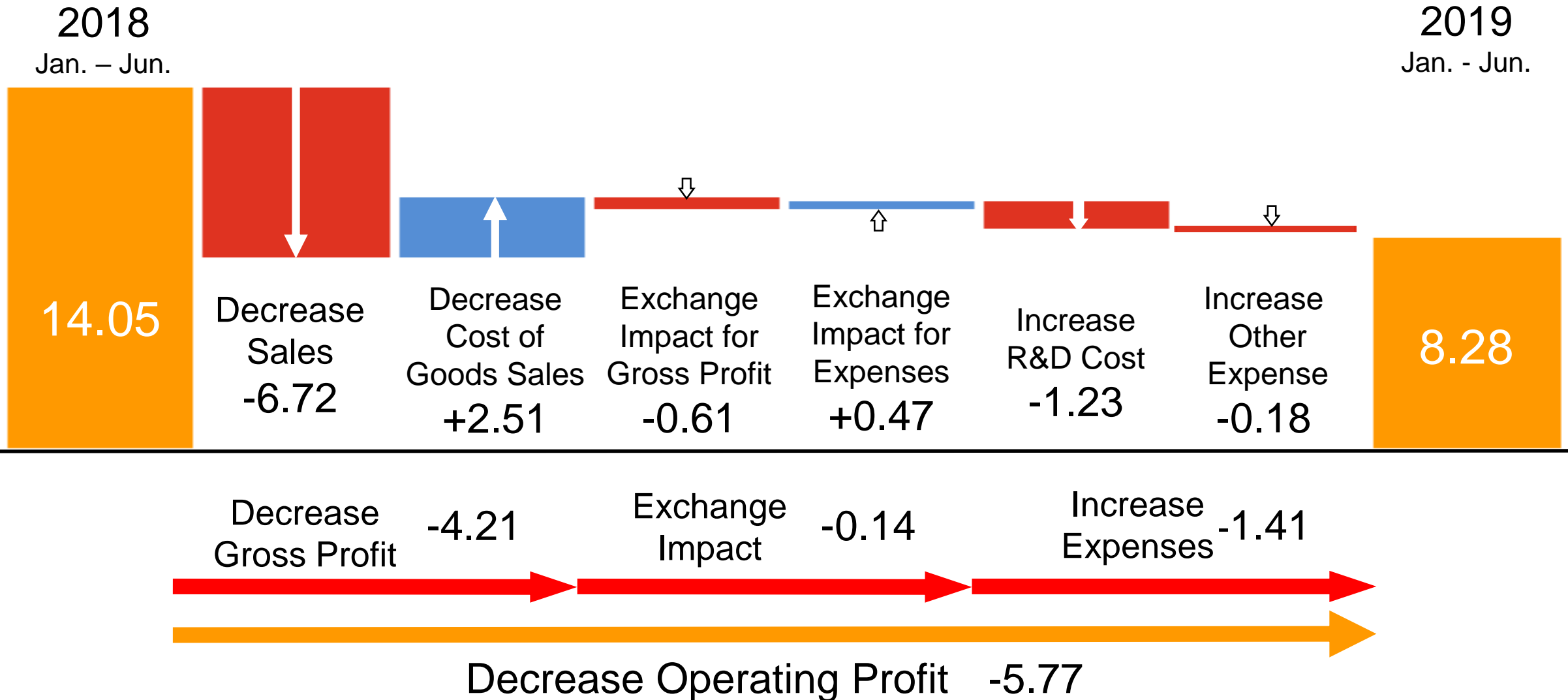
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# Operating Profit Analysis (vs 2018)

(Billions of yen)





# Impact of Fluctuation in Foreign exchange

(Billions of yen)

## Exchange rate impact (2019 First Half results)

Sales -¥1.63bn O.P. -¥0.14bn

2019 First Half results	vs 2018
Decrease Sales	- 1.63
Decrease Cost of Goods Sales	+ 1.01
Decrease Expenses	+ 0.47
Impact to Operating Profit	- 0.14

(Yen)	2018 1st Half	2019 1st Half	Diff.
USD	108.67	110.06	+ 1.39
EUR	131.55	124.32	-7.23

## Exchange rate impact

### for 2019 Forecast

1 yen impact of Sales and O.P.  
(Yen appreciation)

#### Sales

USD -¥0.44bn  
EUR -¥0.37bn

#### Operating Profit

USD -¥0.23bn  
EUR -¥0.02bn

(JPY)	2019 Forecast
USD	110.00
EUR	125.00

# Capital Investment, Depreciation, R&D

(Billions of yen)

	2018	2019				2018	2019
	Result	Previous Forecast (as of May 14)	Forecast (as of Aug 6)	vs 2018	vs Previous Forecast	1st Half Results	1st Half Results
Capital Investment	10.2	16.0	16.0	+5.7	-	5.7	5.1
Depreciation	7.2	8.0	8.0	+0.7	-	3.5	4.2
R&D	15.1	16.0	16.0	+0.8	-	7.2	8.2
(To Net Sales)	7.2%	7.3%	7.5%			7.2%	9.1%

<b>2019 Topics</b>	<ul style="list-style-type: none"> <li>-PP&amp;E Enhancement of Asia bases, Investment to HORIBA MIRA, Battery evaluation testing facility (HORIBA BIWAKO E-HARBOR)</li> <li>-R&amp;D Increase in Automotive and Semiconductor segments</li> </ul>
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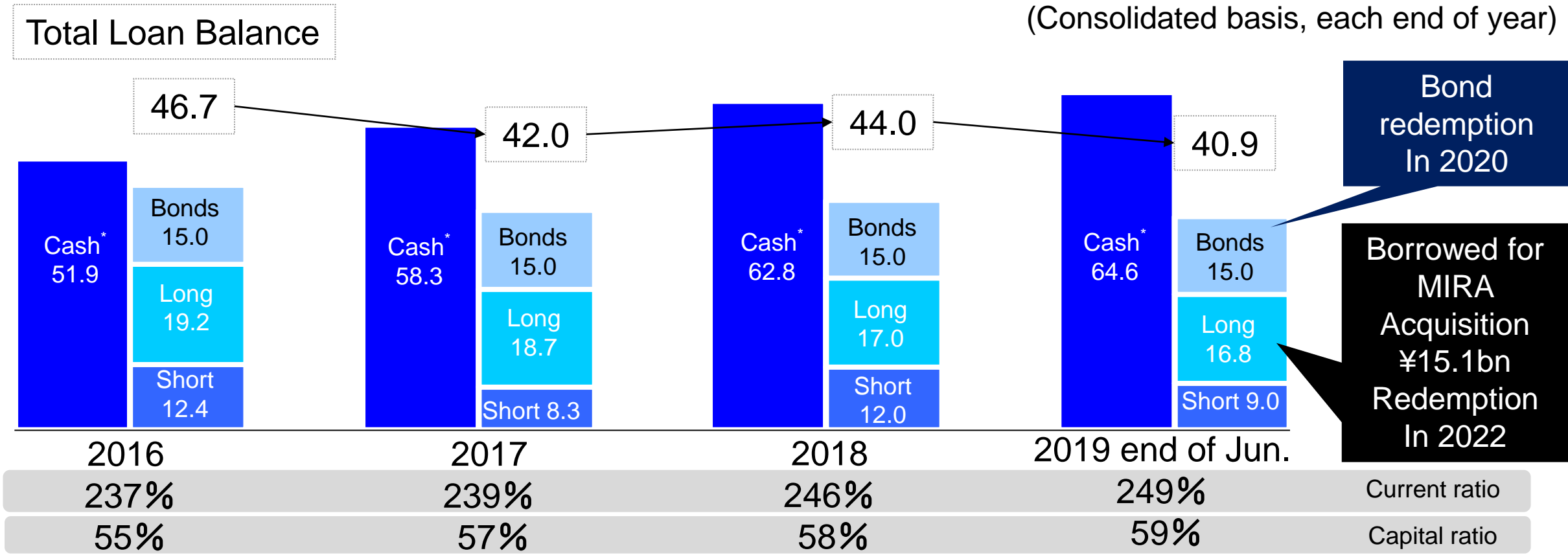
# Consolidated Cash Flows

(Billions of yen)

	2019 1st Half	2018 1st Half	Variation
Cash flows from operating activities	+13.84	+12.40	+1.44
Cash flows from investing activities	-4.26	-4.43	+0.16
Cash flows from financing activities	-7.26	-4.31	-2.94
Cash and cash equivalents at end of year	64.64	61.47	+3.17
Free cash flows	+9.58	+7.97	+1.60

# Cash Balance

(Billions of yen)



- Recent issuer rating : R&I “A” (Jul. 2019), JCR “A”(Aug. 2018)

Cash\*...Cash and Cash Equivalents at End of Period.

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# Business Segments

Automotive Test Systems



Process & Environmental



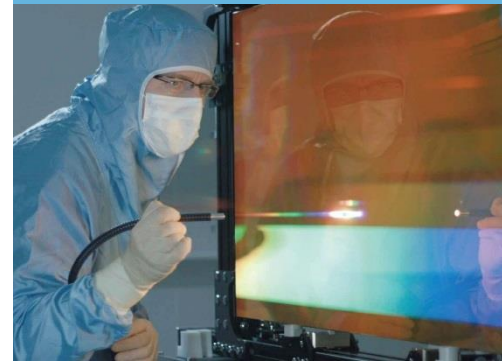
Medical



Semiconductor

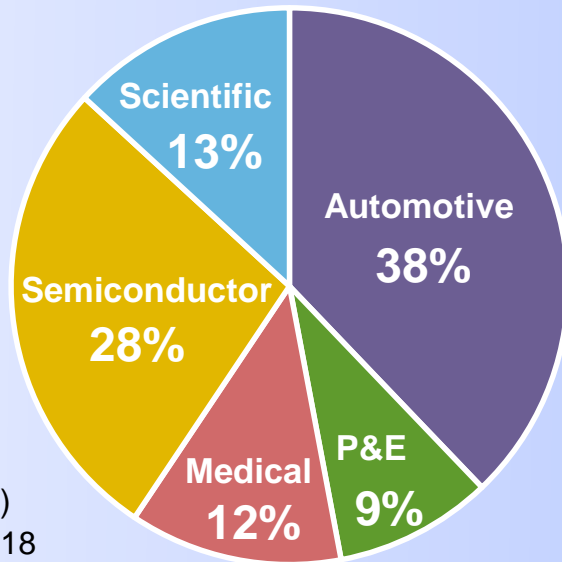


Scientific



**Net Sales**  
210.5 billion yen

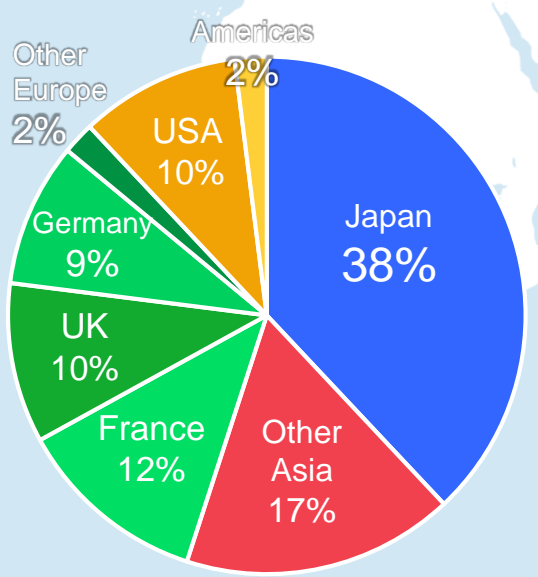
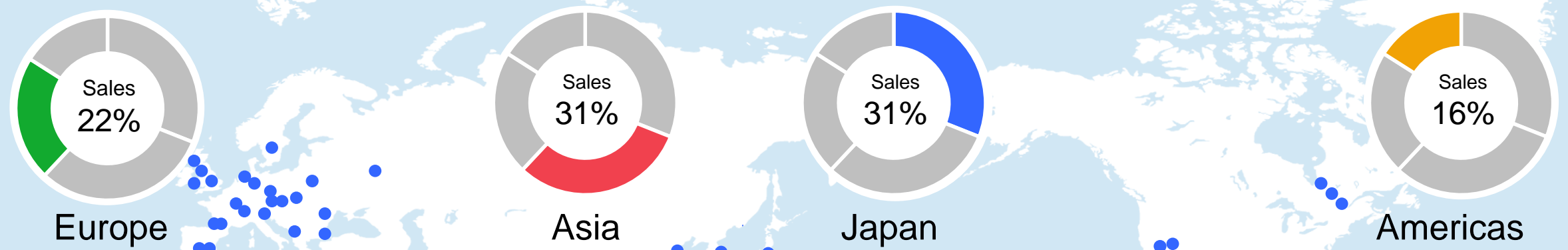
Sales by business segment (%)  
Fiscal 2018



**Expanding in New Domains and Moving onto a New Stage**

# Global Network

(As of December 31, 2018)

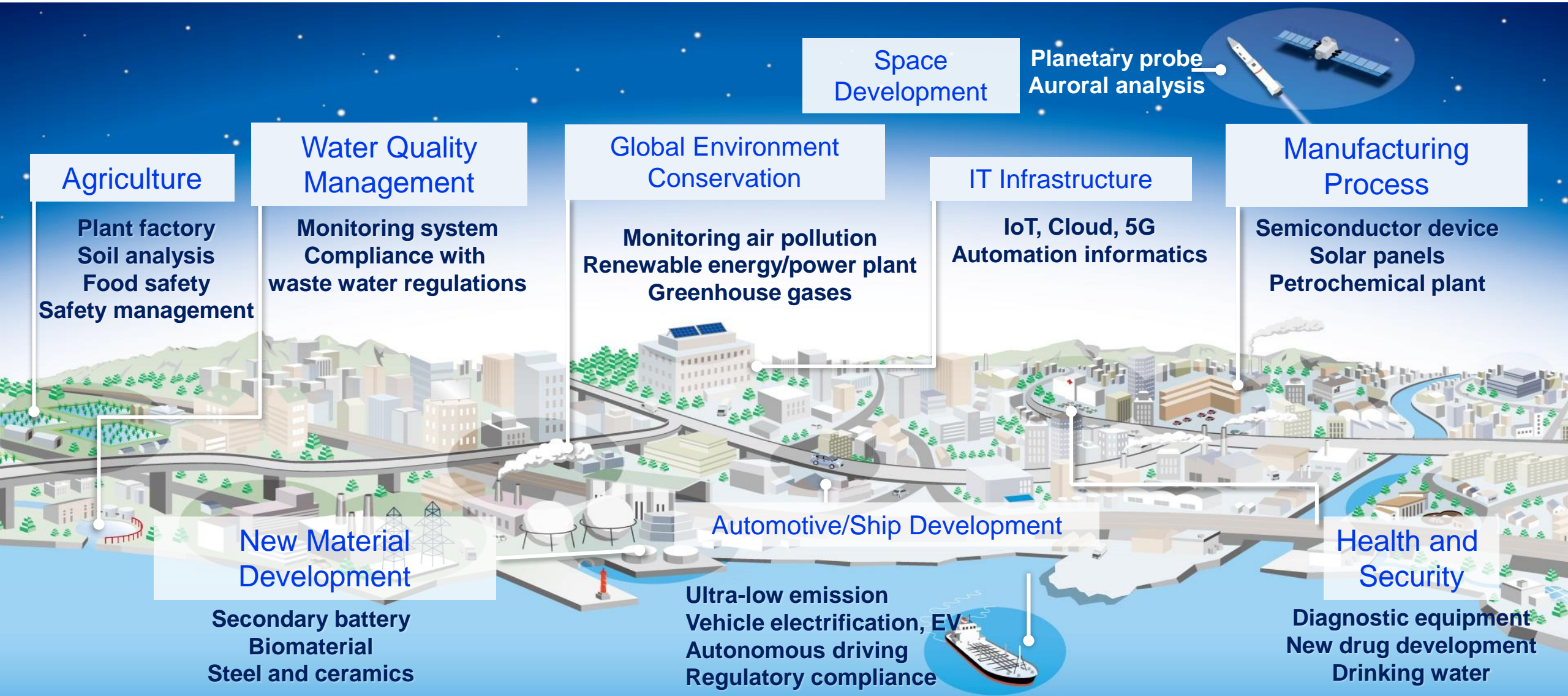


	Employees by Region	The number of companies
Americas	991 (12%)	9
Europe	2,637 (33%)	22
Asia	4,315 (55%)	18 (4 in Japan, Including HORIBA, Ltd.)
<b>Total</b>	<b>7,943</b>	<b>49</b>



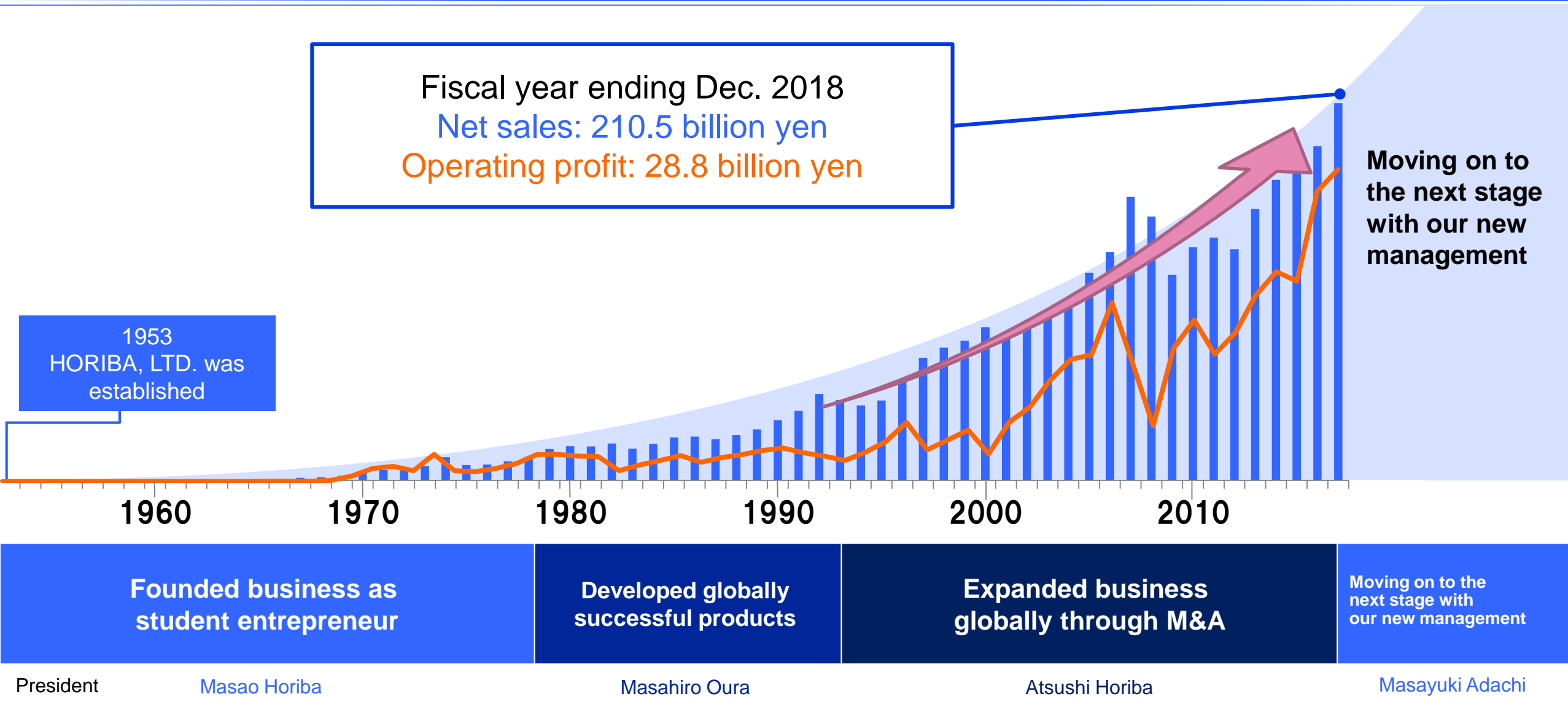
# HORIBA's Business Domain

from Nano- to Cosmic-Level Analysis





# HORIBA's Steady Growth: x10 Net Sales and x18 Op. Profit in 30 years



# HORIBA BIWAKO E-HARBOR

# HORIBA BIWAKO E-HARBOR

- Consolidating development, design, and production operations of gas measurement equipment at a single location
- Doubling of production capability and shortening delivery time to one-third by using a new production methodology
- Comprehensive engineering services from sales to development, production, and maintenance in the Automotive testing laboratory

- 
- Profitability improvement of exhaust gas analyzers
  - Presenting cutting edge automotive development technology



Total investment: 10.0 billion yen, Location: Otsu City, Shiga Prefecture, Full operation : May 2016

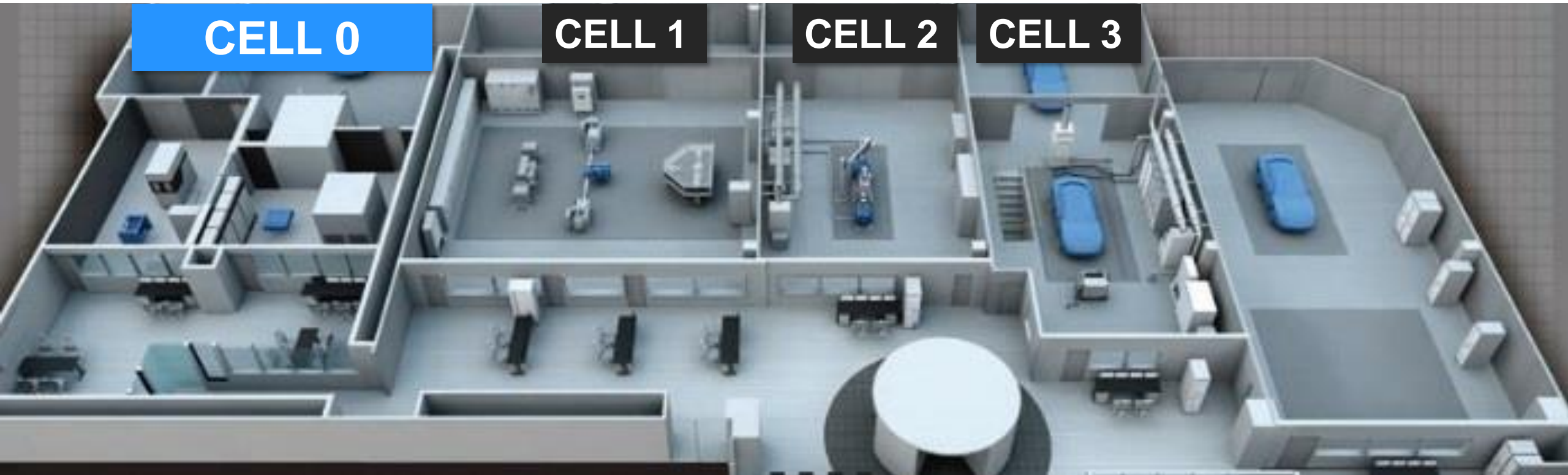


# HORIBA BIWAKO E-HARBOR



# Expansion of E-LAB for xEV Technology

Expanding E-LAB to add test facility for secondary batteries and fuel cells  
(Operation is planned to start in 2019)



Additional facility

Cell and module testing, pack and fuel cell experiments



# HORIBA MIRA

Information on page 40 to 41 are as of acquired the company.



# HORIBA MIRA Ltd.

Providing Engineering Service with World Leading Mobility Development Capability and R&D Location with Dedicated Facilities and Proving Ground

## Business Offering

1. Vehicle development engineering
2. Test engineering
3. MIRA Technology Park  
(Providing Unique R&D Location)

Established

1946

Head office

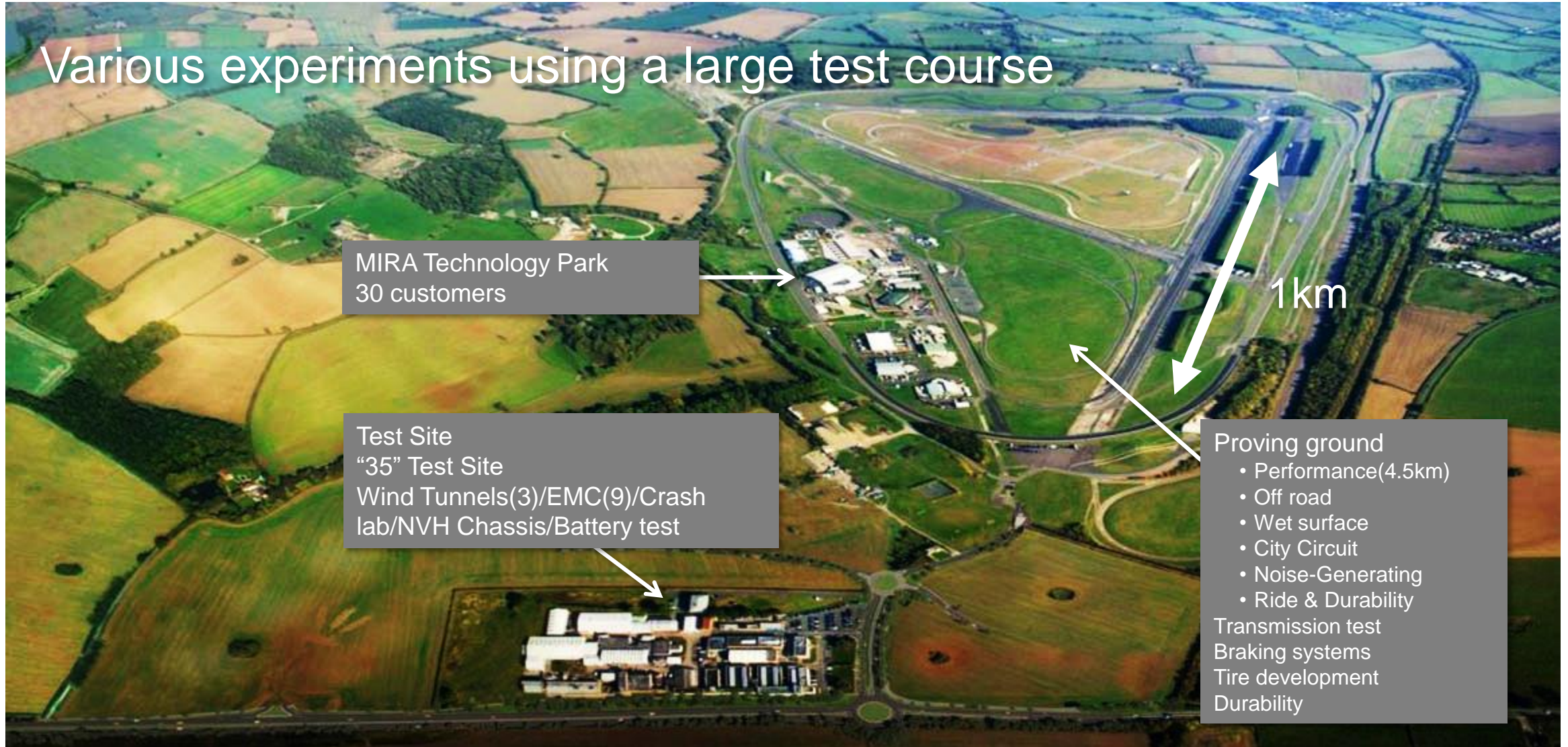
Nuneaton, Warwickshire, UK

Major locations

U.K., China, and India



# MIRA Technology Park





# Mid-Long Term Management Plan “MLMAP2023”

HORIBA, Ltd.

September, 2019

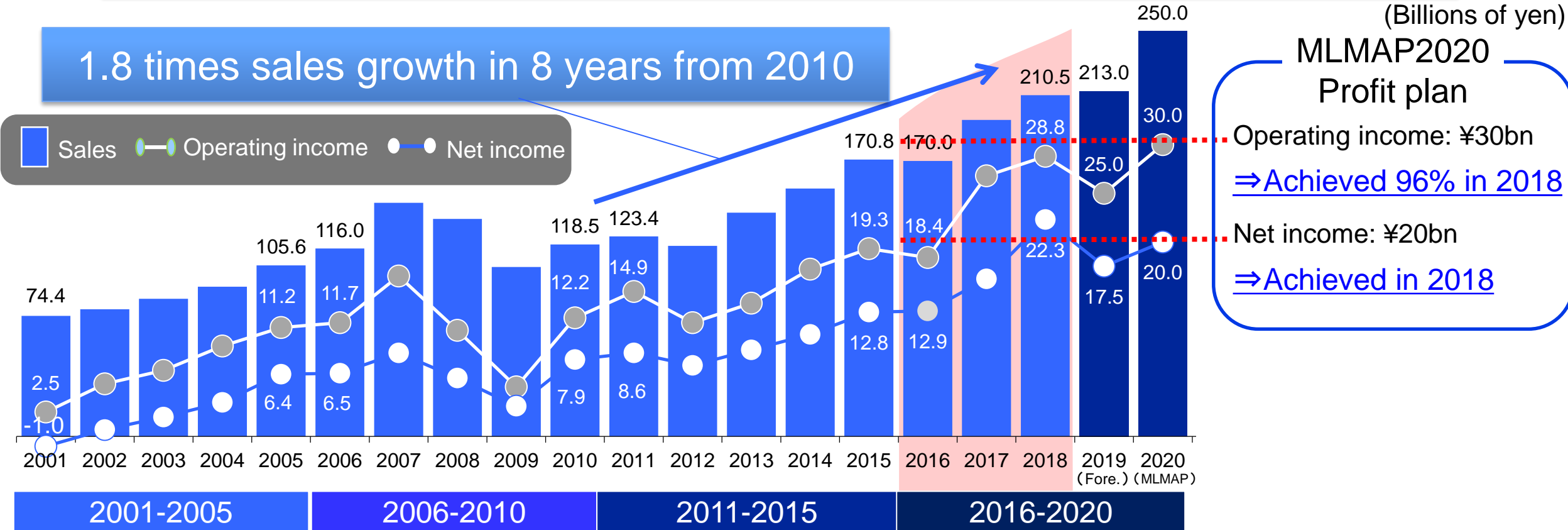
1. Looking back on the current plan (MLMAP2020)
2. Numerical Targets
3. Priority Measures
4. Segment Strategy
5. Regional Strategy
6. Capital Strategy

1. Looking back on the current plan (MLMAP2020)
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# 20-Year Operating Results and Progress of MLMAP2020

Achieved continuous sales growth and high profitability through proactive investments with a long-term perspective

1.8 times sales growth in 8 years from 2010



**MLMAP2020 Profit plan**  
 Operating income: ¥30bn  
 ⇒ Achieved 96% in 2018  
 Net income: ¥20bn  
 ⇒ Achieved in 2018

[Change of Fiscal Year-end] For the year ended December 31, 2006, the accounting term for HORIBA, Ltd. and its domestic consolidated subsidiaries in Japan was only 9 months and 11 days or only 9 months as a result of a change in the fiscal year-end to December 31. The fiscal year ended March 2006 is stated as 2005, the fiscal year ended March 2005, as 2004, and the fiscal year ended March 2004, as 2003.

HORIBA, Ltd. and its domestic consolidated subsidiaries had formerly recognized revenue mainly on a shipping basis. However, starting from fiscal 2016, HORIBA, Ltd. and its domestic consolidated subsidiaries changed their revenue recognition method to a completion-date-of-installation or delivery-date basis under the terms and conditions of the relevant contracts. The amounts in or before fiscal 2015 are not retrospectively revised.

# Main Topics, 2016-2019 [M&A/Capital Investment]

Investing to expand business scale and areas at a time of drastic change in industrial structure

## New businesses acquired through M&As

[UK]MIRA Ltd.  
 Strengthening  
 the engineering capability



[DE]FuelCon AG  
 Strengthening  
 the battery measurement  
 business



[US]MANTA Instruments, Inc.  
 Strengthening particle  
 measurement business



Micro-blood analysis  
 system business acquired  
 from ROHM Co., Ltd





# Main Topics, 2016-2019 [M&A/Capital Investment]

Investing to expand business scale and areas at a time of drastic change in industrial structure

Strengthening development/production capabilities: ¥40bn invested in 3 years

[US] Optical measurement technology  
 Strengthened the production/R&D base



[US] Semiconductor business  
 Strengthened the R&D base



[US] Process measurement  
 A new base for facility business



[US] Support to a new institute of the University of California



[IN] Test center for automotive



[KR] Consolidation of production/sales/service base



[JP] Aso plant  
 The 5th expansion



[JP] Battery evaluation test facility



[JP] HORIBA BIWAKO E-HARBOR



# Background in Launching MLMAP2023

Urgent need to respond to the accelerated changes in business environment

Significant changes in the trend of automotive industry



Electrification/  
Autonomous driving

New entrants

Accelerated advanced in technology development



AI/IoT

Bio/ healthcare

Advanced materials

Increasing interest in solving social issues



Environmental protection

SDGs/  
ESG investments

Workstyle reform  
Diversity

Open up a new era toward 2023, the 70<sup>th</sup>-anniversary year of HORIBA's founding, by utilizing all HORIBA resources under its new management team from 2018

MLMAP2023 Slogan **ONE STAGE AHEAD**

1. Looking back on the current plan (MLMAP2020)
- 2. Numerical Targets**
3. Priority Measures
4. Segment Strategy
5. Regional Strategy
6. Capital Strategy



# Numerical Targets of MLMAP2023

Net sales ¥300.0bn

Operating income ¥40.0bn

Net income ¥30.0bn

EPS  
 (Earnings Per Share) ¥711

ROE 10% or more

Total return ratio Target around 30%

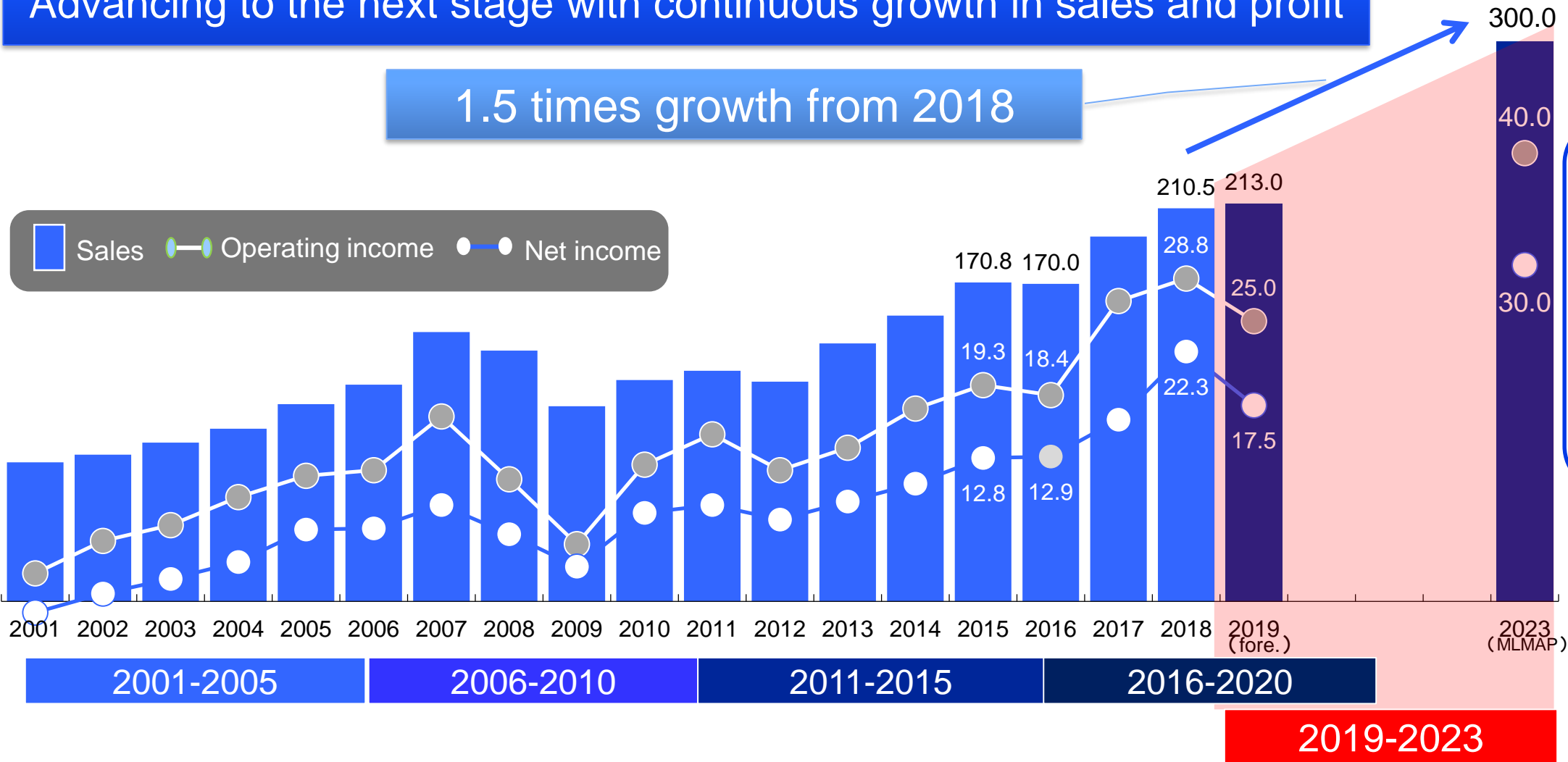
Foreign exchange rate assumptions: ¥110/US\$, ¥125/Euro

# Numerical Targets of MLMAP2023

Advancing to the next stage with continuous growth in sales and profit

1.5 times growth from 2018

(Billions of yen)



**CAGR**

- Sales
  - 2015→2018:7.2%
  - 2018→2023:7.3%
- Operating income
  - 2015→2018:14.2%
  - 2018→2023:6.8%
- Net income
  - 2015→2018:20.1%
  - 2018→2023:6.1%

1. Looking back on the current plan (MLMAP2020)
2. Numerical Targets
- 3. Priority Measures**
4. Segment Strategy
5. Regional Strategy
6. Capital Strategy

# Priority Measures of MLMAP2023

## MLMAP2023 Slogan “ONE STAGE AHEAD”

### 1. Market Oriented Business

To develop analysis and measurement solutions, utilizing HORIBA’s core technologies, in the leading three business fields of the mega trend

### 2. Solution Provider Beyond Life Cycle Management



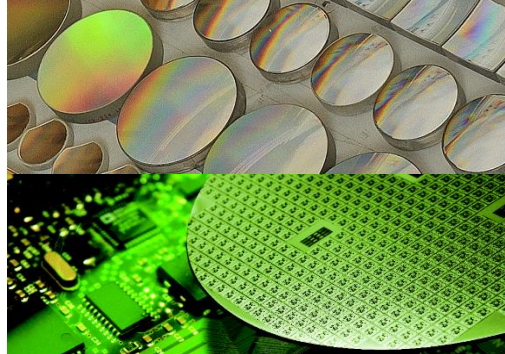


To support customers’ core businesses from all aspects – from product introduction to replacement

### 3. HORIBA Core Values “The Next Stage of Super Dream Team”

To enhance the organizational structure that fosters resilient human resources, which are the driving force of all businesses

BlackJack Project/Stained Grass Project/HORIBA Premium Value

# HORIBA's Core Technologies

Gas flow control	Infrared measurement	Spectroscopic analysis	Particle analysis	Liquid analysis (Electrochemical analysis)
				
Semiconductors	Automotive Test Systems	Scientific	Automotive Test Systems	Process & Environmental
Automotive Test Systems	Process & Environmental	Semiconductor	Process & Environmental	Semiconductors
Process & Environmental			Medical-Diagnostic	Medical-Diagnostic
			Semiconductors Scientific	Scientific

Concentrate R&D resources into specific analysis/measurement technologies.  
 By applying the core technologies, develop products efficiently in our five business segments, which target different markets, and launch them.

# Priority Measure 1: “Market-Oriented Business”

To develop analysis and measurement solutions, utilizing HORIBA’s core technologies, in the leading three business fields of the mega trend

Market	Energy & Environment	Materials & Semiconductor	Bio & Healthcare
Main Targets	Mobility, Power generation, Environmental preservation, Water	Advanced materials, Materials for semiconductor	Clinical diagnostic, Pharmaceutical, Drug discovery, Cells, DNA
Corresponding business segments	Automotive Test Systems	Semiconductor	Medical-Diagnostic
	Process & Environmental		
	Scientific		

Aims to transform itself into an entity that accelerates innovation by "measurement" technologies

# Priority Measure 2: Becoming a “Solution Provider Beyond Life Cycle Management”

To support customers’ businesses from all aspects,  
 from installation to replacement

## Products/Solution Packages

Support the efficient operation of  
 customers’ facilities

Accurate facility management utilizing data from operations

Consulting with analysis technologies

Offer new value via analysis of measured data

Data from  
 operations

Measured data

Integrate equipment sales with  
 high-value-added support



STARS  
 Enterprise

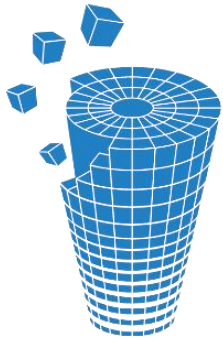
これからの時代に合わせた水質管理ソリューション  
 はかるEXpress

Always with you: HORIBA is always on the customer’s side



# Priority Measure 3: “HORIBA Core Values” The next stage of the Super Dream Team

## BlackJack Project



BLACKJACK

To bring about changes in our awareness and activities, the project has yielded a system for sharing front-line operating information with the management

- The cumulative number of project themes exceeds 9,000; collectively they are an integral part of HORIBA's corporate culture.
- Leads the activities to turn in profits from investments

### Policy for 2023

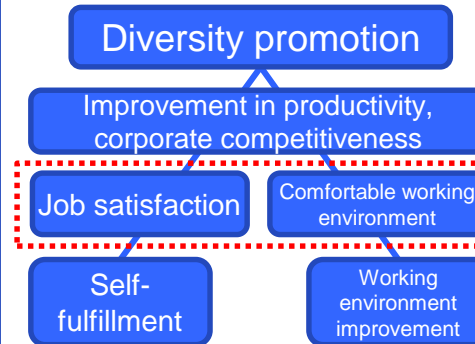
- Expand the BlackJack Project overseas (Asia)  
→ Make it a group-wide project

Bring the management closer to the front-line globally



HORIBA's World Cup goes to the best proposal from reps from several nations. In 2018, India won first prize.

## Stained Glass Project



HORIBA's diversity promotion project

[Themes]

2014: Women's empowerment  
2017: Connect the Management/HR/Front-line



Certified for the first time in 2019



### Policy for 2023

- Promote personnel exchanges among group companies  
→ Promote activities globally
- Pursue both job satisfaction and comfortable working environment  
→ Lead the personnel system reform

Adopted a remote-work system in Jan. 2019



The Nadeshiko Brand award ceremony



# Priority Measure 3: “HORIBA Core Values”

## Improve asset efficiency with HORIBA Premium Value

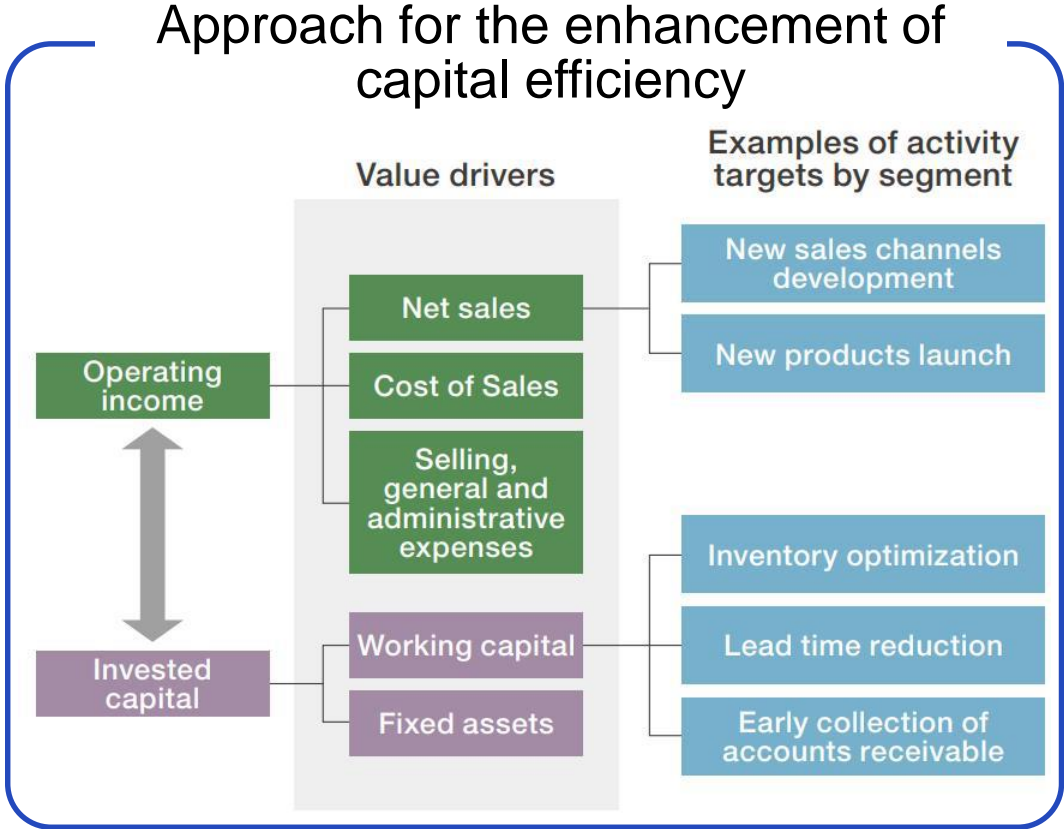
Budgeting by using HORIBA’s unique KPI (subtracting “Cost of Capital” from “Operating Income”) that measures capital efficiency

### HORIBA Premium Value

$$\text{Operating income} - \text{Cost of Capital} = \text{HORIBA Premium Value}$$

[Invested Capital X Internal WACC]

- A simple calculation method, easily adopted by group companies
- Use of “Operating Profit,” monitored by business divisions every day
- Evaluate in absolute monetary terms, easily capturing effects and targets achievement



**Flexible Procurement**  
Just in Time!

Well recognized globally

**Ultimate Supply Chain**  
Stream Production!

Reform of entire production processes with partner companies

**Proper Working Capital**  
CCC\* Improvement!

Adequate global control of Accounts Receivable and Inventory

1. Looking back on the current plan (MLMAP2020)
2. Numerical Targets
3. Priority Measures
4. **Segment Strategy**
5. Regional Strategy
6. Capital Strategy



# Vision of MLMAP2023



## Application-driven business

Provide the best applications in four business areas.  
Establish a position as an indispensable partner in the automotive development field.



Emissions: Engine/exhaust gas

Energy efficiency: Electrification

CAV: Connected/autonomous driving system

Enterprise Data Management for Development: Overall vehicle-related R&D

Target for 2023

Sales of ¥120bn; Operating Income of ¥12bn



# Emissions: Strengthening the existing areas and challenging growth areas

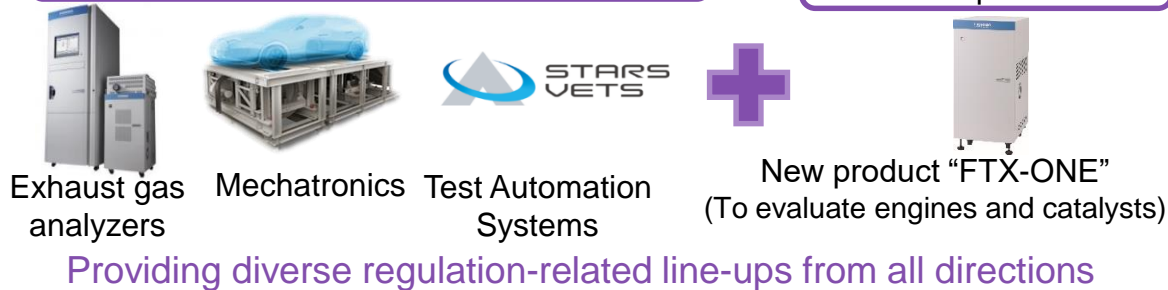


## Solutions for fuel efficiency and exhaust gas regulations (Strengthening the existing areas)

### Globally, continuing tighter regulations

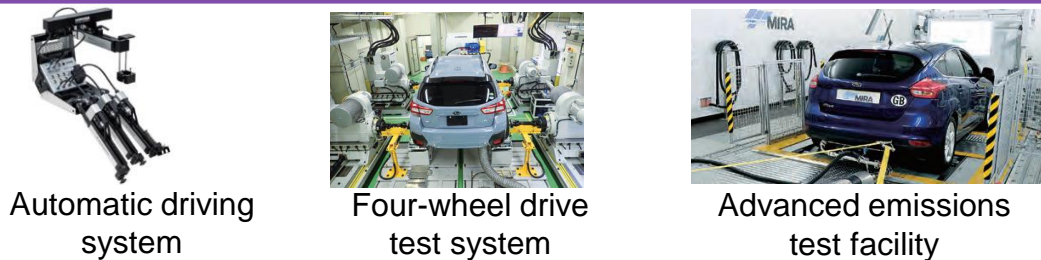
Flexible applications for emission measurement

Proactive launch of new products



### Efficient application for RDE\* is imperative

Create a lab environment for accurate Real Driving Emissions simulations



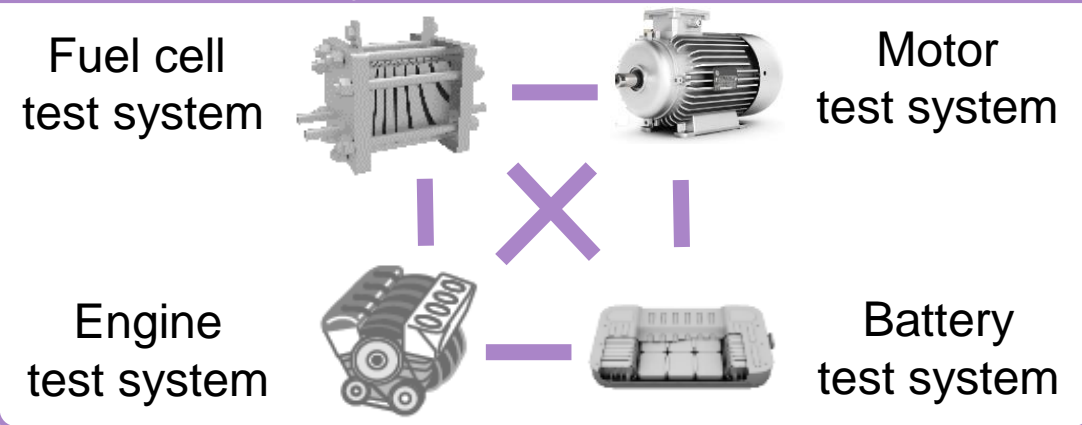
Provide systems that help shorten the development process

\*Real Driving Emissions Regulations

## Optimal powertrains (Challenging growth areas)

Electrification leads to an increase in system development, shifting away from single-unit (i.e., engine, battery, or motor) development

Propose a "package" to solve issues related to analysis and measurement



Maximize the Group synergy and provide total solutions



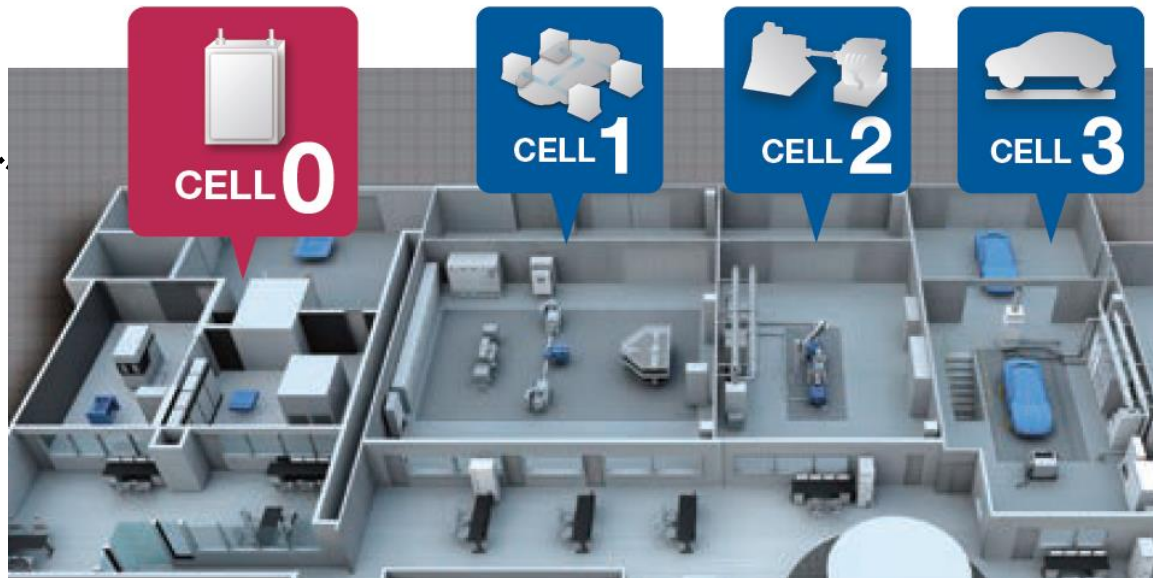


# Energy Efficiency: Maximize the electrification business

Contribute to optimizing the development process of electric vehicles

Establishment of the “CELL Zero” test facility for evaluation of batteries for electric vehicles  
(Scheduled to open in HORIBA BIWAKO E-HARBOR in 2019)

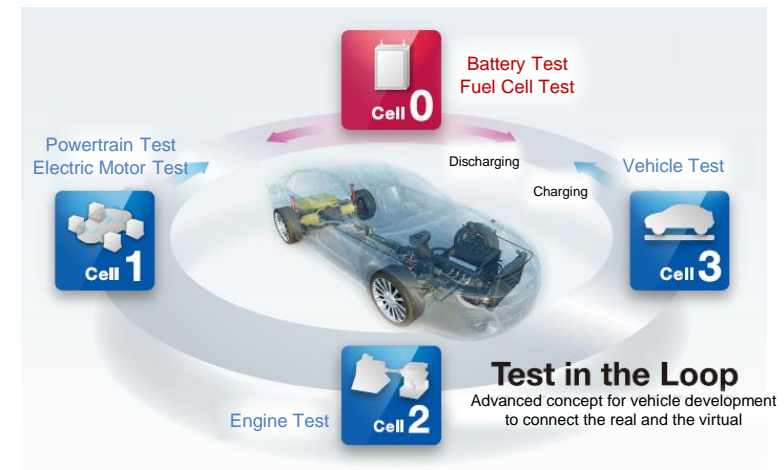
CELL Zero to be connected with CELL 1, 2 and 3



Provide measurement solutions with new values with the “Test in the Loop” total evaluation system

Objective of “Test in the Loop”  
Proposal of a highly-efficient R&D environment for electric vehicles

- Data measurement in virtual environment of a real vehicle
- Performance verification, using a real vehicle with the embedded simulation model



2023: Achieve sales of ¥10bn in the electrification business



# CAV\*: Acquisition of Initiatives in Advanced Technology



\* CAV: Connected and Autonomous Vehicle

## “Drive/Turn/Stop & Protect” - Support R&D from all directions (HORIBA MIRA’s initiatives)

### Drive/Turn/Stop

Multi-purpose tests for autonomous vehicles

- Verification of telecommunication function, vehicle safety/limit control range



In cooperation with the UK government and local universities, HORIBA aims to take initiative in the R&D domain of autonomous driving technologies

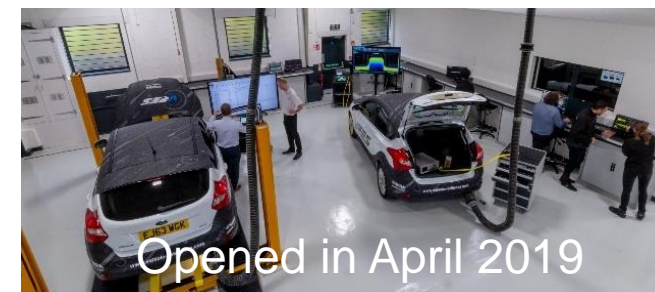
Test facilities to verify an autonomous parking function



### Protect

Opened the Vehicle Resilience\* Technology Centre

- Support of R&D of autonomous driving technologies
- Comprehensive approach that combines cyber security and EMC



- Resilience: Solutions that eliminate threats associated with advanced vehicle technologies

HORIBA MIRA’s initiatives were broadcasted in Japanese TV station KBS Kyoto’s news program “KyobizX“. (Go to HORIBA’s website to see the program in Japanese at HORIBA’s official Facebook)

[Web Link](#)





# Enterprise Data Management for Development: Contributing to optimizing overall vehicle R&D

Contributing to the front-loading of automotive development  
(reduction in man-hours from shorter development process)

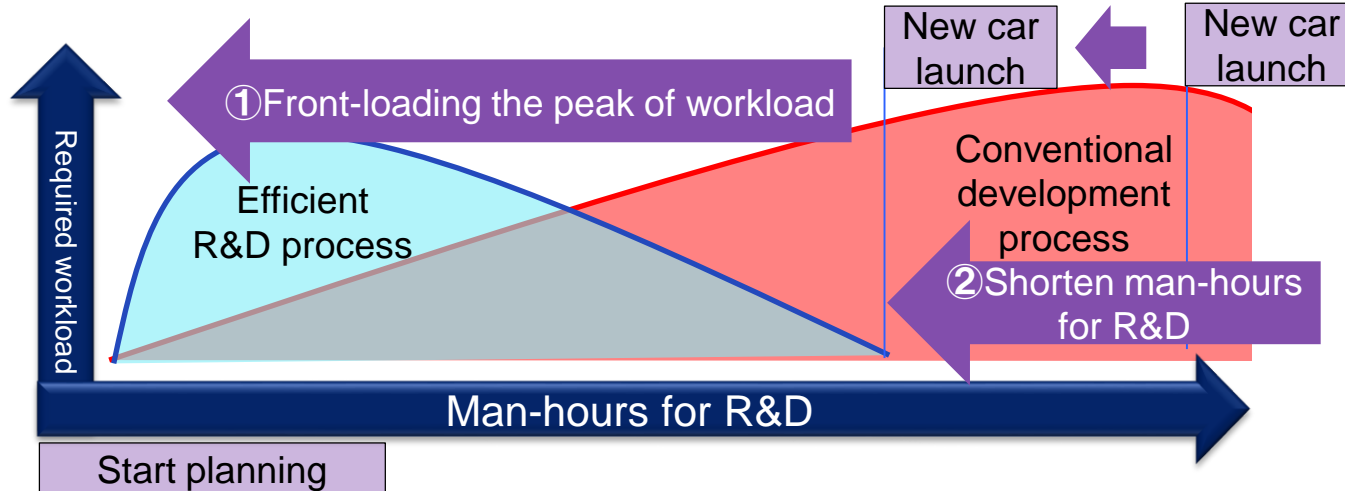
## HORIBA

Core system that integrates and manages analysis and measurement data



A HORIBA COMPANY **MIRA**

Knowledge in engineering and testing



Contributing to realizing efficient R&D processes

1. Front-load R&D processes
  - Centralize various data
  - Utilize applications with high reproducibility and simulation software
2. Improve man-hours efficiently by reducing the amount of rework





# Vision of MLMAP2023



## HORIBA as a worldwide player who analyzes the entire earth

Provide various solutions in the global market: ranging from approaches to environmental regulations, to raising production efficiency



Business growth in emerging countries  
[Approaches to environmental reg.]



Open up markets in developed countries  
[Improve industrial processes]



Grow globally in the water monitoring business

Target for 2023

Sales of ¥28bn; Operating Income of ¥2.8bn





# Global Trend and Growing Needs of Environmental Measures



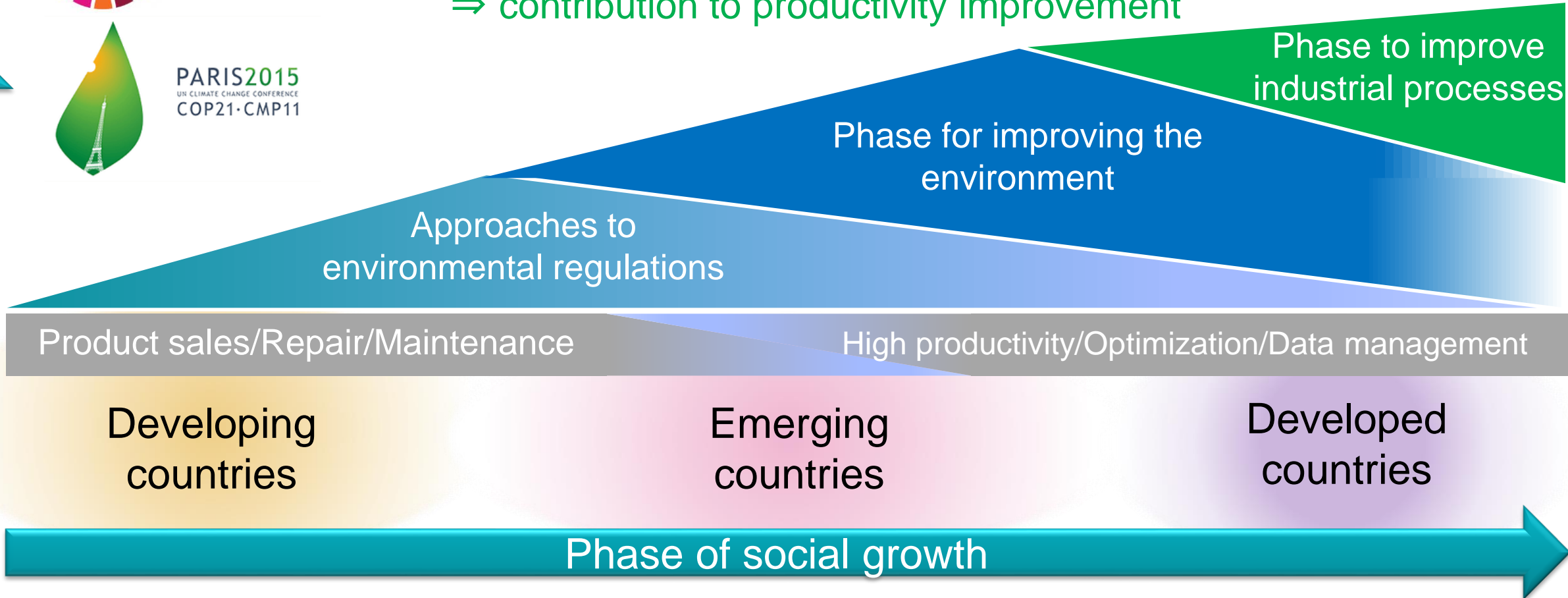
PARIS2015  
UN CLIMATE CHANGE CONFERENCE  
COP21·CMP11



Increased awareness on global environmental preservation  
⇒ contribution to productivity improvement



Demand



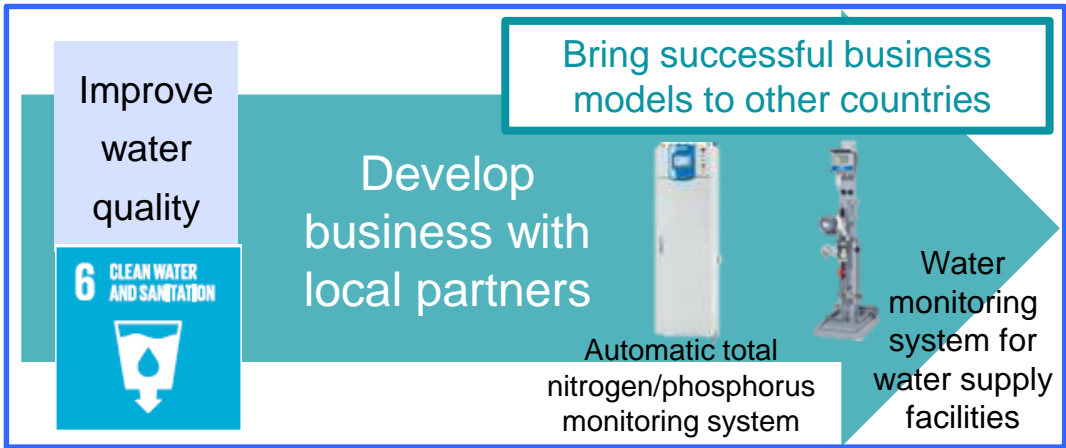
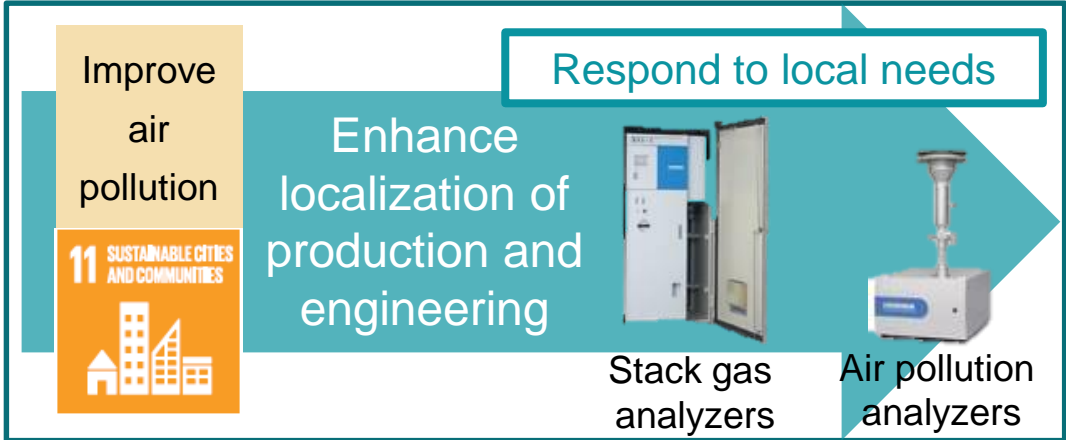
Needs

Gas

Water

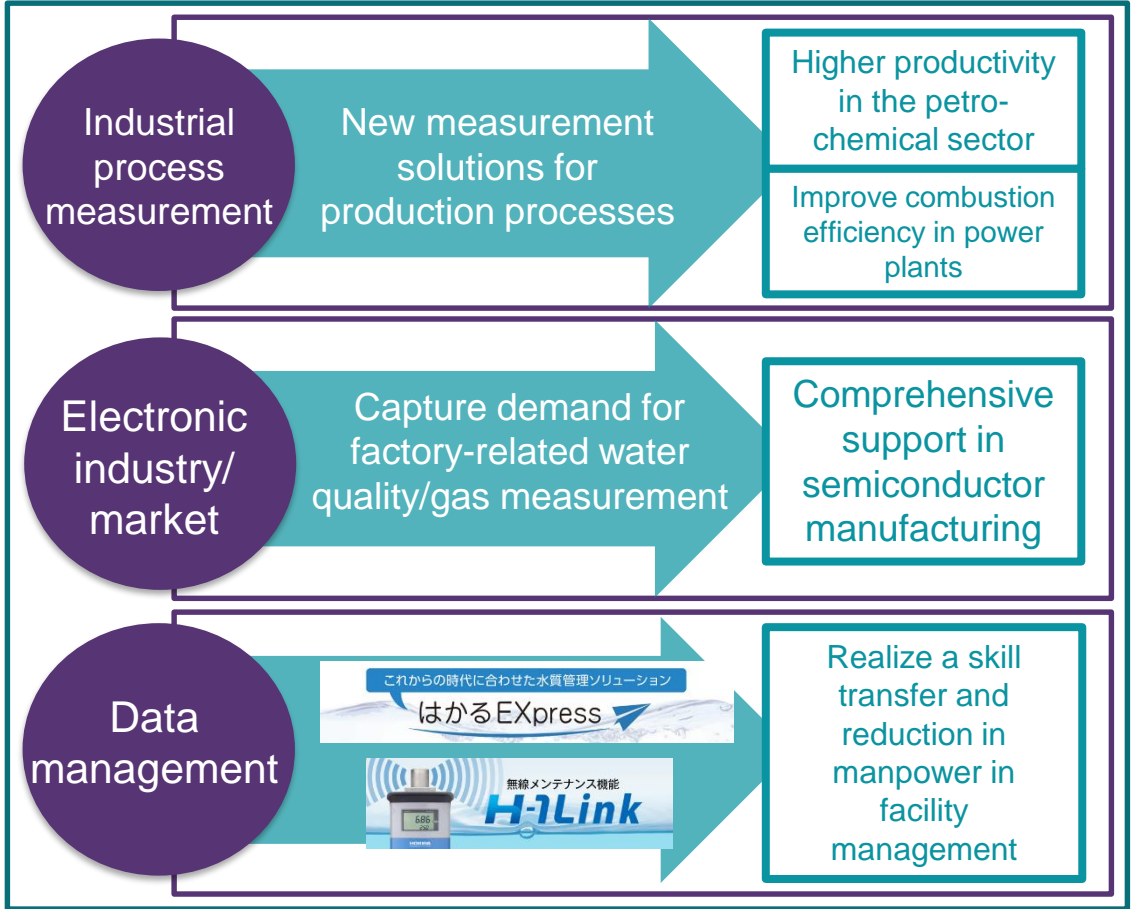
Emerging Countries (Southeast Asia, etc.)

Approaches to environmental regulations



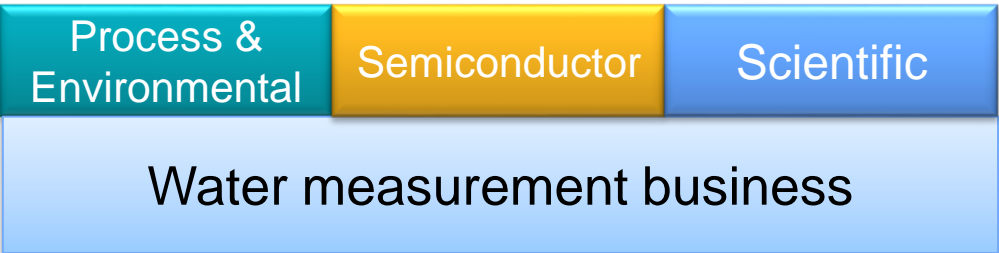
Developed Countries

Approaches to env. reg. + Industrial process improvement





# Global Growth in the Water Measurement Business




Integrated into  
**HORIBA Advanced Techno Co., Ltd.**

**Beyond Water with You**

Utilize existing technologies and sales network and aim to grow globally


## Sales expansion in the tap water monitoring market

Kuala Lumpur(Malaysia)




Tap water quality monitoring system

Sao Paulo(Brazil)



Monitoring of water discharge in the tap water infrastructure investment

## Undertake data management and realize reduction in manpower

**はかるEXpress** 

Free installment of analyzers ⇒ Charge for measured data



# Vision of MLMAP2023



## To be a Preferred Partner

Expand product portfolio from small to large scale analyzers.  
Accelerate global business expansion.



Enhancing strength  
Sales development in the small- and medium-sized market



Entering the large-scale market  
Access to the hospital market



Capturing emerging markets  
Enhance business in India/China

Target for 2023

Sales of ¥40bn; Operating Income of ¥4bn



# Expand Business Domains

## Use of proprietary technologies and alliances for further expansion

Test Category		Hematology	Clinical Chemistry	Immunology	Coagulation
Market size (HORIBA's estimates)		¥0.35tn	¥2tn	¥2tn	¥0.2tn
Hospitals	Large hospitals	Alliance	Alliance		Alliance
	Testing centers				
	Small- and medium-sized hospitals				
Private practitioners					Alliance
Hospital units and surgery rooms (POCT)					

Small- and medium-sized market: Expand application to clinical chemistry and Immunology.

Hematology: Enter the large-scale market.

## Enhance strength in the small- to medium-sized market

### Business environment

- Increase in testing in the background of the aging society
- Increase in importance of clinical diagnosis by primal care doctors

### HORIBA's strategy

- Use μTAS\* technologies, acquired from ROHM, to develop products with hematology plus extra functions
- Support process optimization at the customer site by introducing the data management system.
- Expand product line-ups in the clinical chemistry category through business alliance.







# Entering Large-scale Markets and Focusing on Particular Markets

## Expand business in large-scale markets

### Business environment

- European market: centralization of testing at large-scale laboratories and productivity improvement
- Emerging markets: increase in testing

### HORIBA's strategy

- Expand sales of HELO Solution, the first product for a new large-scale market
- Alliance with Siemens Healthcare Diagnostics Inc. to enter the large-scale market

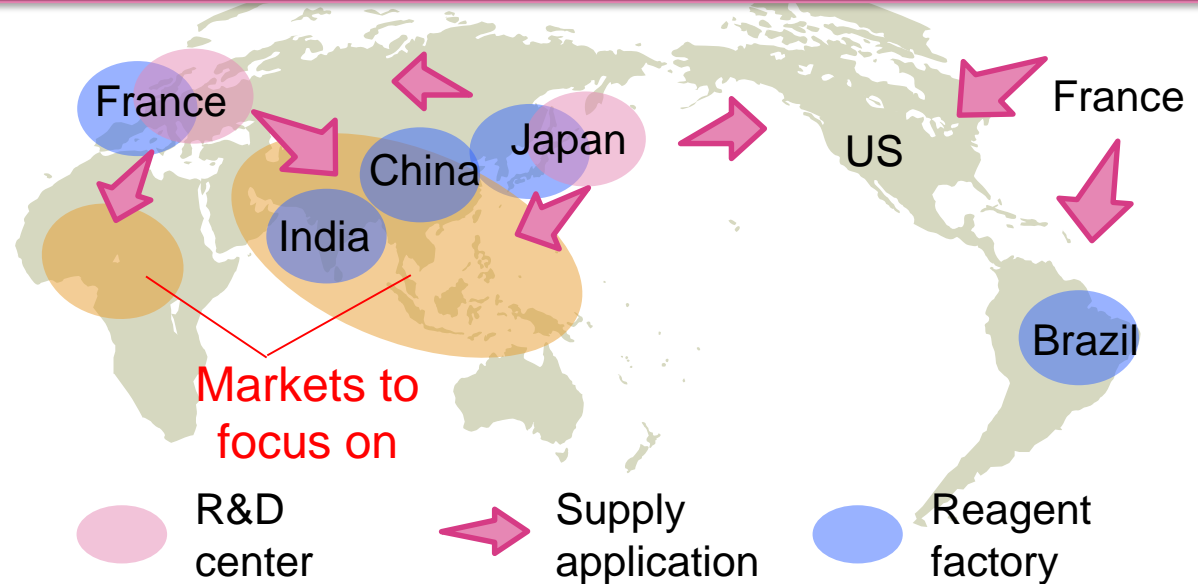
**HORIBA**  
Medical



**SIEMENS**  
Healthineers



## Strengthen global network/supply chain



R&D: product development in Japan and France  
 Production/sales: enhance local capabilities in the markets to focus

# Enhance HORIBA's strength and expand into a new stage.

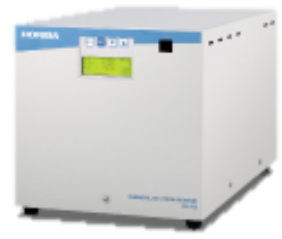


# Vision of MLMAP2023

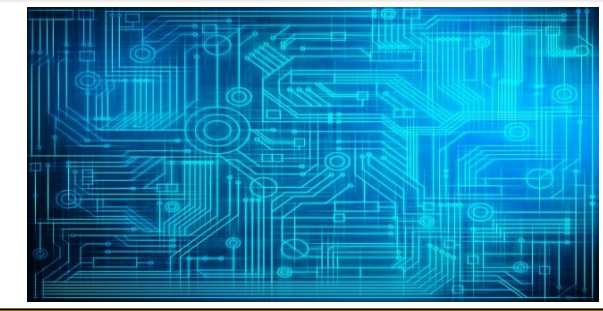


## Shape the market, sell the solution

Evolve the company into a comprehensive supplier that provides high-value-added solutions in all semiconductor manufacturing processes, from R&D to aftermarket services



- Device Analysis
- Materials Analysis
- Dry Process
- Wet Process
- IoT
- Lithography
- Utility/Wastewater



Enhance the existing fields

Extend coverage

Taking up challenges in new fields

Establish a robust R&D network and supply chain

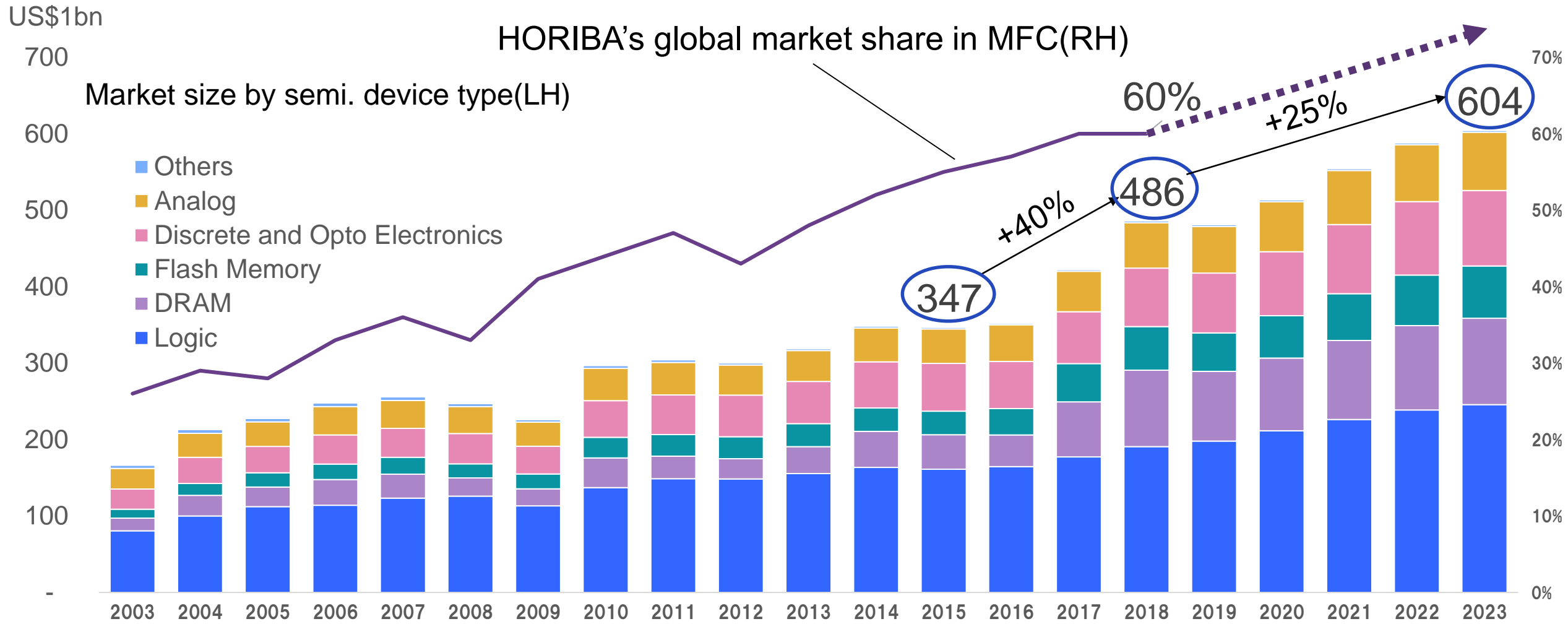
Target for 2023

Sales of ¥77bn and Operating Income of ¥17.7bn





# Semiconductor Market Projection and HORIBA's Market Share in Mass Flow Controllers (MFC)



Semiconductor market projection: Data from VLSI Research, modified by HORIBA  
 Market share of MFC: HORIBA's estimates (as of August 2019)

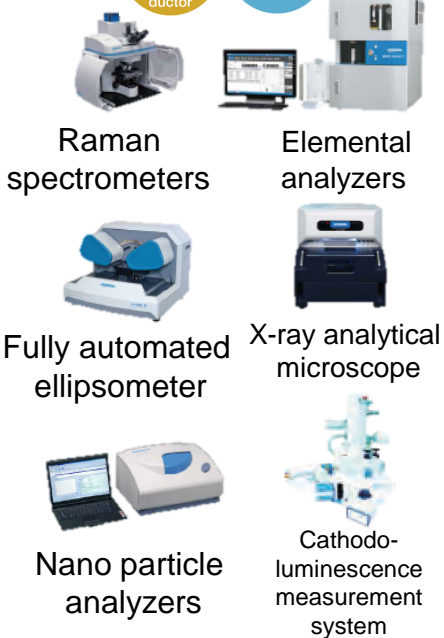


# Extend Coverage and Take up the Challenges of New Fields

## Provide high-value-added solutions in semiconductor manufacturing processes

### R&D

Contribute to evaluation/analysis of next-gen materials

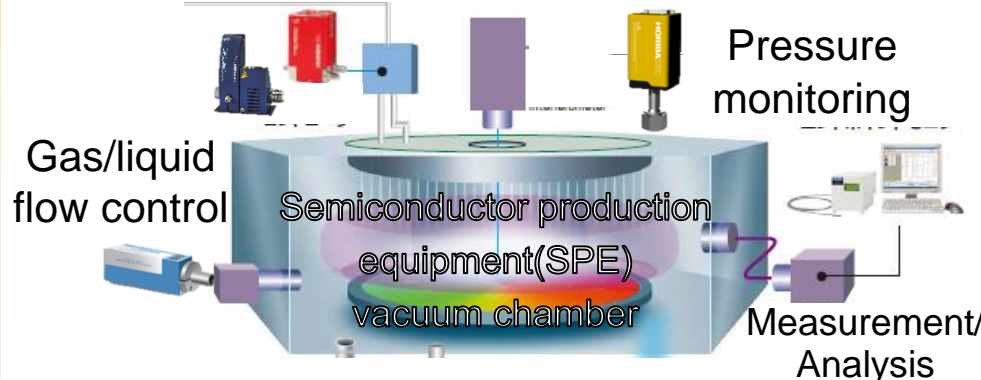


### CVD/Etching process

- Increase in processes due to miniaturization and multi-layering
- Cope with a wide variety of materials

### SPE's controlling process

Expand flow control applications as new solutions related to a vacuum chamber

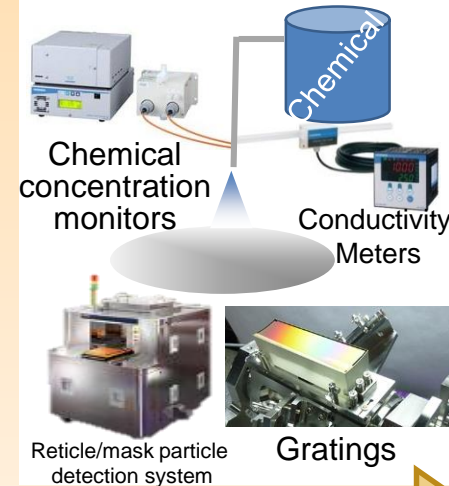


Accumulate analysis and measurement data

### Wet/Lithograph process

- Deal with micro particles, pay attention to safety
- Extreme rays applied for EUV, etc.

### High-precision wet/lithograph processes



### Challenge to add new value

- Various analysis and measurement technologies and experiences
- Use of big data for the process control of SPE to optimize manufacturing

Contribute to improving productivity in semi. manufacturing processes



# Establish a Solid R&D Network and Supply Chain

## Global R&D system

Enhance R&D operations in Kyoto and Fukuchiyama (Japan), and Reno(US)

Reflect customers' needs in R&D  
Aim to gain higher market share

Advanced Technology Center

- 1. Research next-gen semiconductor manufacturing process
- 2. Standardize flow control



Kyoto

Develop key components

Capture local needs  
→ cooperate with a Japanese team

Fukuchiyama Technology Center



Fukuchiyama, Kyoto

Reno Technology Center



Nevada, US

## Enhance supply capacity

Production system in Japan



Accelerate local engineering in China



Increase production capacity and supply timely

Facility expansion to boost production volume



Aso, Kumamoto, Japan

Kyoto: production of high-end models



Kyoto

China: supply mass flow controllers tailored for local needs

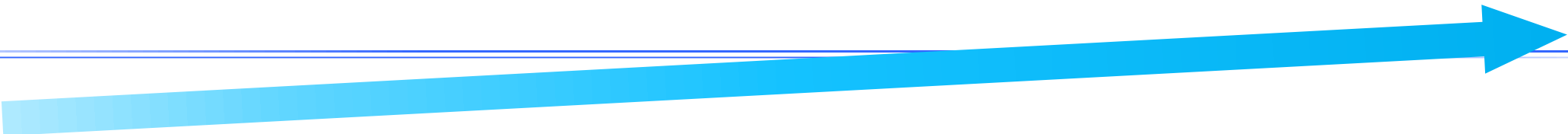


Beijing, China



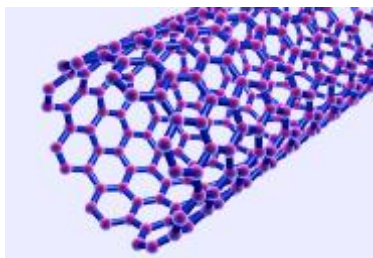


# Vision of MLMAP2023



## Core Technology Provider

Apply the technology cultivated as a founding business in the megatrend market.  
Leading “HORIBA in Technology” in cooperation with each segment



Advanced materials

Bio

Energy, Semiconductor, Water

Customized technology to meet all customer needs; Local engineering for local needs

Target for 2023

Sales of ¥35bn and Operating Income of ¥3.5bn



## Maximize synergies by effectively using resources from three global bases

### HORIBA FRANCE(France)

- A leading company in spectroscopic analysis
- Increase market shares by more applications in various fields



Boasting a 30% global share\*  
Raman spectrometer

\*In-house survey as of August 2019



Sharing light and passion  
200 years of optical innovation

Jobin Yvon  
(Horiba France at present)  
200<sup>th</sup> anniversary in 2019

### HORIBA(Japan)

- Utilizing various technologies as a “headquarter of core technology”
- Flexible product customization  
→Leading in industrial processes



Founding technology  
[pH meter]



A wide range of technologies  
[Water monitoring/Particle-size distribution analysis/  
Elemental analysis]

### HORIBA INSTRUMENTS (US)

- Deploy applications that satisfy customer needs
- Strengths in bio, healthcare, and nano technology areas

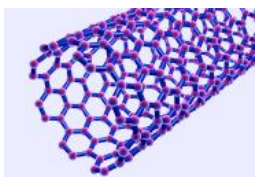


Opened a new base on the East Coast (2018) to strengthen R&D and production capacity



Targeting the bio market  
[Fluorescence and absorbance spectrometer/  
Nanoparticle tracking analysis system]

## Provide innovative solutions that support the technological progress in the world



### 【Advanced materials】

- Advanced nano-level spectroscopic analysis technology
- Approach to 2D materials and micro plastics

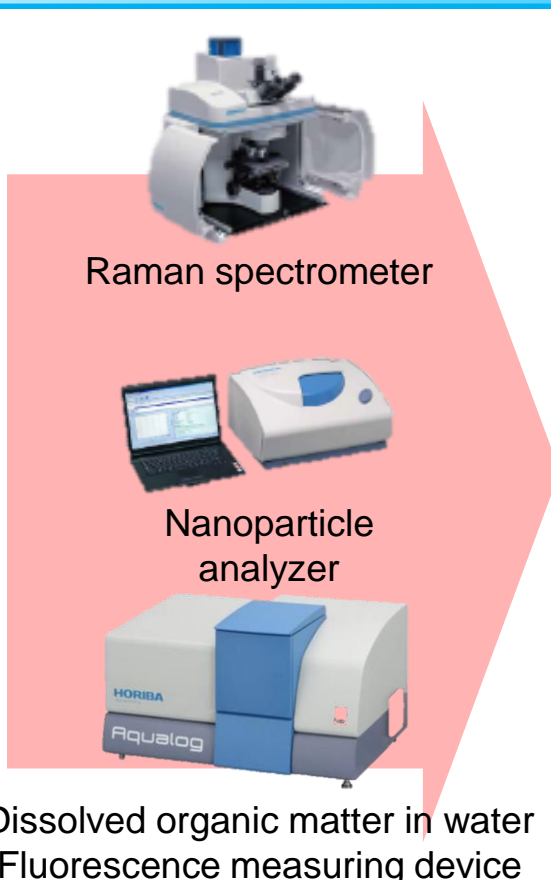
### 【Bio】

- Develop applications for analysis of cosmetics, pharmaceuticals, viruses, and vaccines



# Energy, Semiconductor, and Water

Collaborate with other segments to realize business expansion by using their sales channels



- Energy and automotive industry**
  - Increase in demand for secondary battery material analysis
- Semiconductor**
  - Growth of Chinese semiconductor manufacturers
    - Increase in demand for analysis and evaluation of semiconductor materials
- Water quality measurement**
  - Efficient water management at water treatment plants
  - Seek to contribute to solving environmental issues centered on water

**Profit from electrification in China**

Increase in demand for battery material analysis

+

Accelerate industry penetration of spectral analysis technology



Held the raman/fluorescence spectroscopy symposium

Aiming to increase volume by expanding the range from R&D to production processes






# One-to-One Customization & Global Engineering



Accelerate product development for customer needs

## One to One Customization Customization & Engineering

### Inline/online measurement

Contributing to improving production processes  Thermometer for battery production line

Analysis efficiency enhancement (work efficiency)

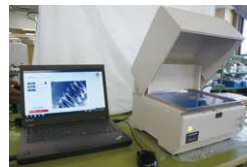
Efficiency through automation

### Imaging

Efficiency by visualization of analysis data



Particle size distribution meter with autosampler



X-ray equipment for precious metals

### Highly-difficult measurement samples

Proposal for analysis using a new method

Strengthen uniqueness in global engineering

Founding Technology



Global Engineering

- Propose products for customers based on analysis of their needs
- Secure high profitability through diversity in production selectivity



New pH meter (announced in August 2019)  
Launch of global products, made in Singapore

**HORIBA**  
Scientific

**200** YEARS  
1819-2019  
**HORIBA** JOBIN YVON

# Sharing light and passion

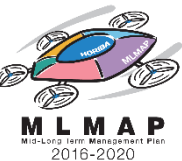
200 years of optical innovation

[www.horiba.com/en\\_en/200years](http://www.horiba.com/en_en/200years)

1819 - 2019

1. Looking back on the current plan (MLMAP2020)
2. Numerical Targets
3. Priority Measures
4. Segment Strategy
- 5. Regional Strategy**
6. Capital Strategy





## Think Big. Grow Bigger.

Strengthen sales and the service network, rooted in the local society  
Provide high-value-added analysis/measurement technologies

### Enhance engineering/facility capability



The technical laboratory at Pune, India, opened in July 2019

- Establish local bases to strengthen engineering capability
- Provide products and technologies that meet local needs



### Enhance supply network



Reagent production/logistics line at Haridwar

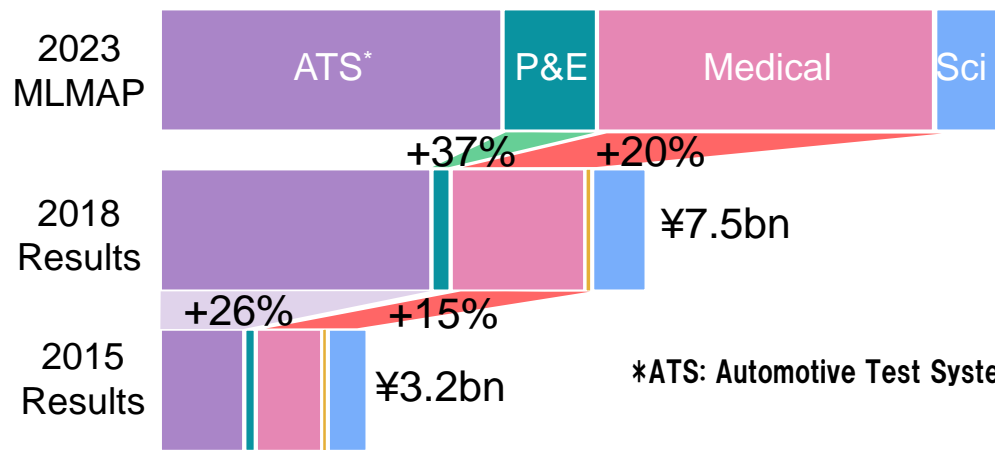


- Capture demand in clinical testing along with population growth
- Enhance a supply network to maintain stable volume and quality



2023 plan

Sales of ¥13.0bn



Capture demand in a volume zone and become a driver of future growth

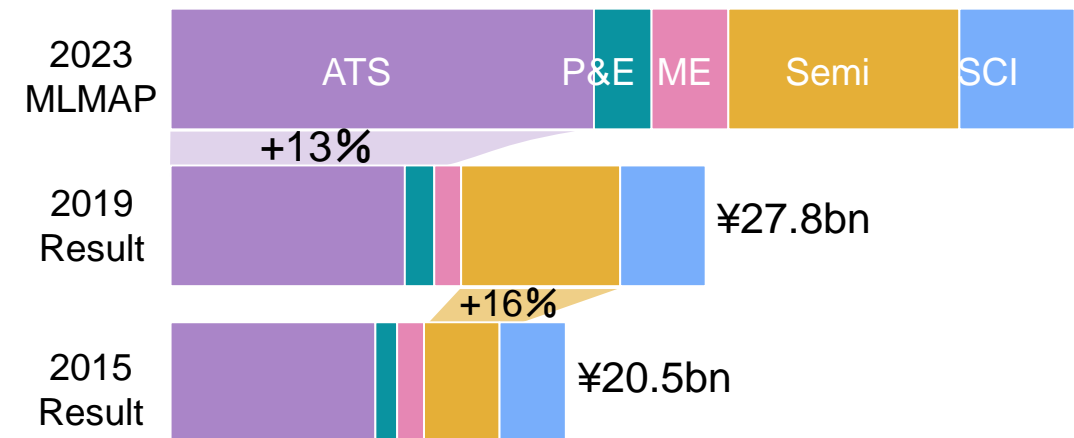
China: Rapid growth and changes in the market  
Growth and technological improvement of local companies

HORIBA: Invest aggressively and realize further growth in China at the time of changing trends in technology

1. Strengthen “production capacity” for the Chinese market
2. Strengthen “R&D capability” for the Chinese market
  - Establish an application center
  - Collect cutting-edge information

Plan for 2023

Sales of ¥47.0bn



Implement the strategy at “China speed” and drive growth

1. Looking back on the current plan (MLMAP2020)
2. Numerical Targets
3. Priority Measures
4. Segment Strategy
5. Regional Strategy
6. **Capital Strategy**



# Shareholder Return and Financial/Investment Strategy

## Shareholder return policy

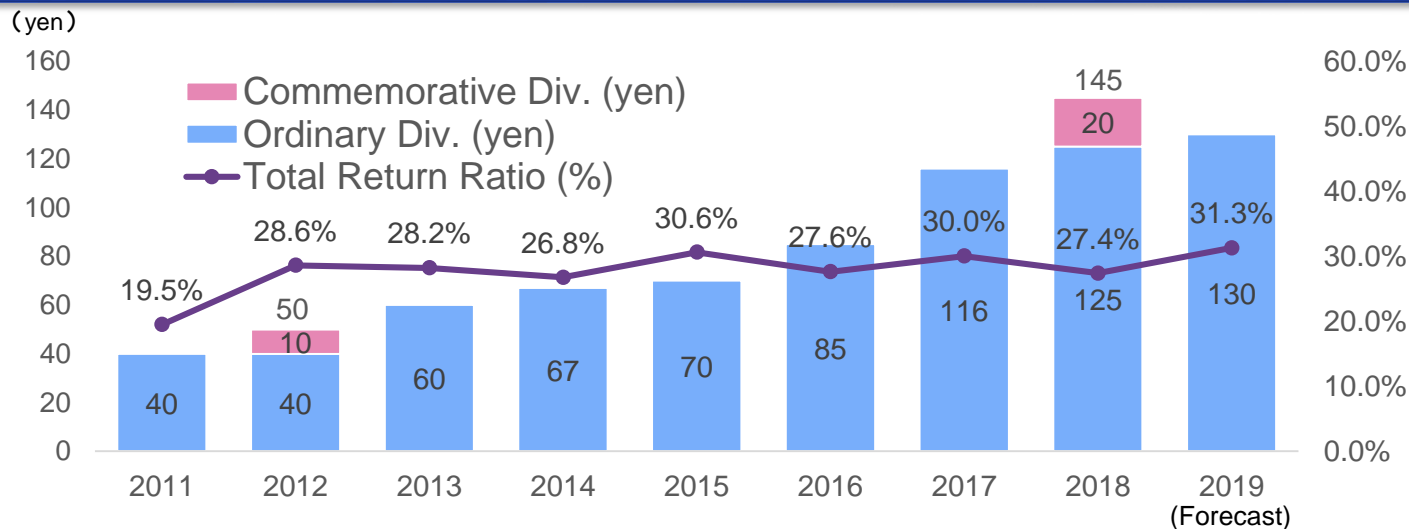
- Dividend payment + Share buyback = 30% of consolidated net profit\* to be targeted
- Retained earnings will be used for strategic investment(i.e., CAPEX, M&A)

\*In fiscal 2013, the policy was shifted from the non-consolidated dividend payout ratio, based on non-consolidated net income of HORIBA, Ltd., to the total return ratio, based on HORIBA's consolidated net income.

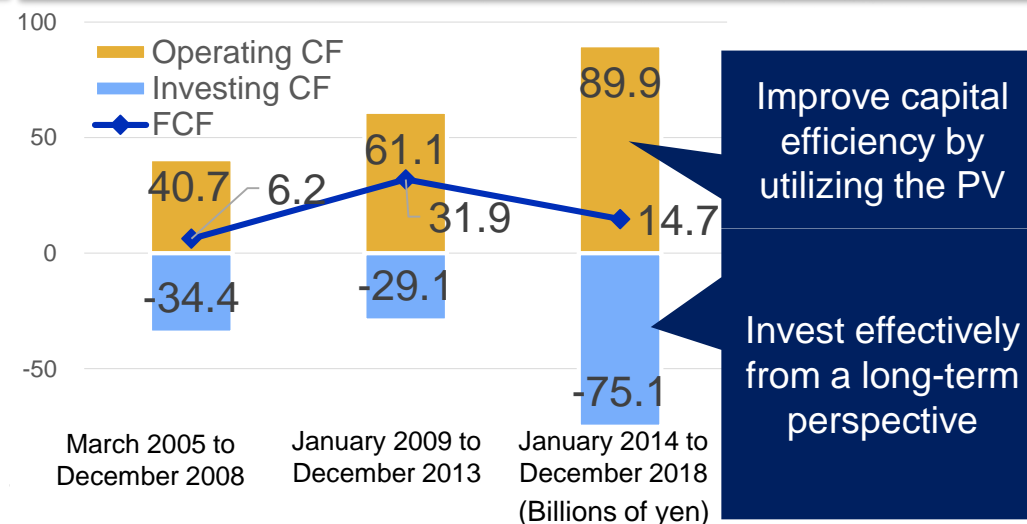
## Financial/investment strategy

1. Invest effectively from a long-term perspective
2. Utilize intra-group financing
  - Utilize financial group companies (US, Europe, UK and China)
3. Utilize HORIBA Premium Value (PV) to improve asset efficiency

## Per-share dividend and total return ratio



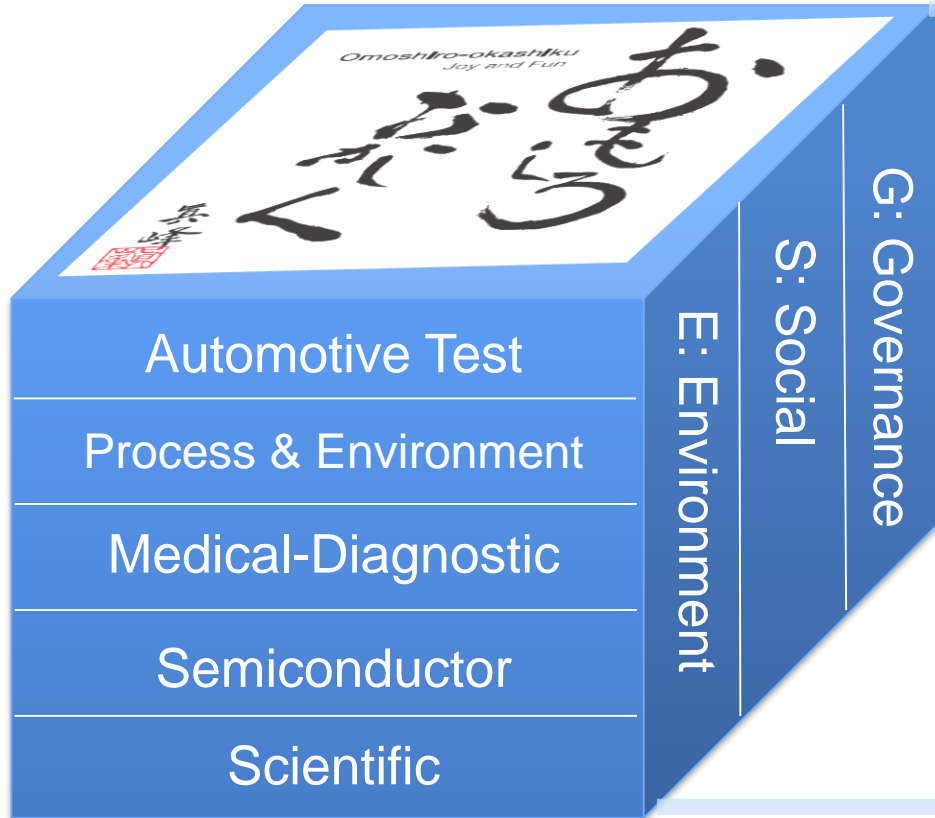
## Free cash flows for every five years



# Thoughts on ESG investment and SDGs



**HORIBA**



[Basic Policy]

We contribute to realizing the sustainable society advocated by SDGs\* by offering analyze and measurement technologies which lead technology innovation that supports security, safety, and health for people while contributing to global environmental conservation.

HORIBA supports ESG investment and SDGs to be active globally and strives to disclose clear information.

Under the corporate motto "Joy and Fun," all HORIBARIANS understand the nature of ESG/SDGs investment and realize growth of each business.

\*SDGs: "Sustainable Development Goals", unanimously adopted by the United Nations General Assembly in 2015

# Symbol for MLMAP2023: Hawk



**MLMAP**  
Mid-Long Term Management Plan  
2019-2023

Find the targets from a heightened perspective  
Accomplish the objectives at the fastest speed

Thank you

# References

# Numerical targets (vs 2018, vs 2019)

(Billions of yen)

	2018	2019	MLMAP2020	MLMAP2023		
	Results	Forecast	Plan	Plan	vs.2018	vs.2019
Sales	210.5	213.0	250.0	300.0	+42%	+41%
Operating income	28.8	25.0	30.0	40.0	+39%	+60%
Operating income%	13.7%	11.7%	12.0%	13.3%	-0.4p	+1.6p
Net income	22.3	17.5	20.0	30.0	+34%	+71%
EPS (Yen)	529	414	475	711	+33%	+70%
ROE	14.3%	10.5%	10% or more	10% or more	-	-

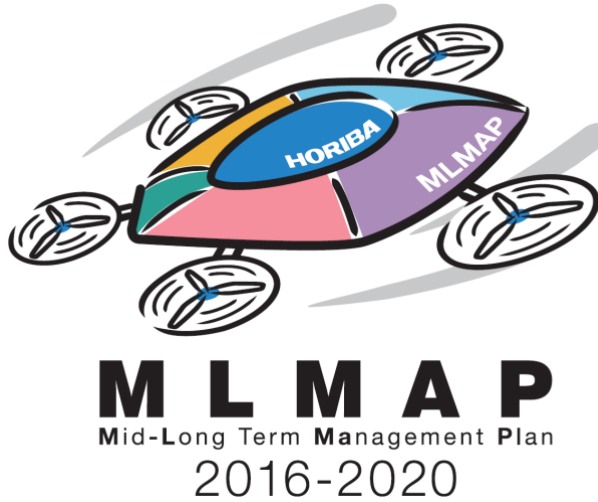


# Numerical targets (by Segment)

(Billions of yen)

	Sales						Operating income					
	2018 Results	2019 Forecast	MLMAP2020 Plan	MLMAP2023 Plan	vs. 2018	vs. 2019	2018 Results	2019 Forecast	MLMAP2020 Plan	MLMAP2023 Plan	vs. 2018	vs. 2019
Auto	79.6	85.0	100.0	120.0	+51%	+41%	7.7	8.0	10.0	12.0	+56%	+50%
P&E	19.3	20.0	25.0	28.0	+45%	+40%	2.0	2.0	2.5	2.8	+38%	+40%
Medical	26.0	28.0	40.0	40.0	+54%	+43%	1.8	2.0	4.0	4.0	+119%	+100%
Semi	57.7	50.0	50.0	77.0	+33%	+54%	17.0	12.0	10.0	17.7	+4%	+48%
Scientific	27.7	30.0	35.0	35.0	+26%	+17%	0.2	1.0	3.5	3.5	+1,483%	+250%
Total	210.5	213.0	250.0	300.0	+42%	+41%	28.8	25.0	30.0	40.0	+39%	+60%

# Transition of Symbol



# Thank you

Omoshiro-okashiku  
Joy and Fun



감사합니다      Cảm ơn

ありがとうございました

Dziękuję      धन्यवाद      Grazie

Merci      谢谢      நன்ற

ขอบคุณครับ      Obrigado

Σας ευχαριστούμε

Tack ska ni ha

شُكْرًا

Большое спасибо

Danke

**Gracias**