

Daiwa Investment Conference Tokyo 2018

**Atsushi Horiba
Chairman & Group CEO
HORIBA, Ltd.**

March 6–7, 2018

Since Jan. 1st, 2018

New Management of HORIBA Group started

Change in Representative Directors

Name	New title from Jan.1, 2018	Previous title
Atsushi Horiba	Chairman & Group CEO	Chairman, President & CEO
Juichi Saito	Executive Vice Chairman & Group COO	Executive Vice President
Dr. Masayuki Adachi	President & COO	Senior Managing Director
Takashi Nagano	Director & Global ATS Board Leader	Director & General Manager

Purpose behind the change in roles of new organization

Strengthening group management and clarifying the group management system, to further enhance HORIBA’s technology and development capabilities

Future roles

- Horiba** Strengthen governance, promote the corporate culture, and supervise the entire group
- Saito** Manage the group and lead specific strategies
- Adachi** Focus on managing HORIBA, Ltd. and strengthen its function as the global headquarters of HORIBA Group
- Nagano** Focus on the ATS segment, accelerate its global business expansion

At the press conference, Kyoto, Oct. 24, 2017



Contents

- **2017 Results**
- **2018 Forecast**
- **Business Segments Outline**
- **Shareholder Return**
- **Other Topics**
 - **Financial Data**
 - **Corporate profile**

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Review of 2017

External Events

- ◆ Start of the Trump administration in US
- ◆ UK's announcement to leave EU ⇒ General election in UK
- ◆ Presidential election in France, general election in Germany
- ◆ Booming semiconductor market
 - ⇒ Innovation such as IoT, AI, and autonomous vehicle operation
- ◆ Automotive electrification, emission regulations

Internal Events

- ◆ New/expanded facilities (US, UK, South Korea, etc.)
- ◆ Completion of the Aso factory expansion
- ◆ Partnership in the Medical segment
- ◆ Announcement of a transition to a new management regime
- ◆ Renewed a record-high share price; market cap exceeds 330bn yen

Summary of 2017 Results

Renewed record—highs in sales, profit and dividend; 11.5% ROE

P&L

- ◆ Increase in sales and profit in the Automotive Test Systems and Semiconductor segments

B/S

- ◆ Total assets were 265.9bn yen, up 26.2bn yen from the end of 2016, due to capital spending
- ◆ Interest-bearing debt was 42.0bn yen, down 4.6bn yen from the end of 2016, due to using the capability of financial subsidiaries in US and UK
- ◆ Equity ratio 56.5%

CF

- | | | |
|--|---|------------------------|
| ◆ Operating CF : Cash in 28.2bn yen due to growth in profit | } | Free CF
+15.1bn yen |
| ◆ Investing CF : Cash out 13.1bn yen due to capital spending | | |
| ◆ Financial CF : Cash out 9.0bn yen due to short-term debt repayment | | |

2017 Results

(Billions of Yen)

	2016	2017			
	Results	Forecast (as of Dec. 19)	Results	Vs. 2016	Vs. Forecast
★: Record-high					
Sales	170.0	192.0	★ 195.3	+25.3	+3.3
Operating Profit	18.4	24.5	★ 26.8	+8.3	+2.3
O. P. %	10.9%	12.8%	13.7%	+2.8p	+1.0p
Ordinary Profit	18.2	23.5	★ 26.6	+8.3	+3.1
Net Income attributable to Owners of Parent	12.9	15.0	★ 16.2	+3.3	+1.2
USD / JPY	108.78	111.00	112.16	+3.38	+1.16
EUR / JPY	120.26	127.00	126.70	+6.44	-0.30

2017 Results by Segment

(Billions of Yen)

	Sales					Operating profit				
	2016	2017				2016	2017			
★ : Record-high	Results	Forecast (as of Dec. 19)	Results	vs. 2016	vs. Forecast	Results	Forecast (as of Dec. 19)	Results	vs. 2016	vs. Forecast
Auto	62.2	72.0	★ 73.3	+11.1	+1.3	3.5	6.7	★ 7.6	+4.1	+0.9
P&E	16.7	17.0	★ 17.4	+0.6	+0.4	1.5	0.6	1.0	-0.4	+0.4
Medical	26.5	25.0	25.1	-1.3	+0.1	2.8	1.7	1.9	-0.8	+0.2
Semi	38.8	52.0	★ 53.3	+14.4	+1.3	9.6	15.0	★ 15.6	+5.9	+0.6
Scientific	25.7	26.0	26.1	+0.3	+0.1	0.9	0.5	0.4	-0.4	-0.0
Total	170.0	192.0	★ 195.3	+25.3	+3.3	18.4	24.5	★ 26.8	+8.3	+2.3

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Market Assumptions for 2018

Auto



Strong willingness to invest by the global automotive sector due to tighter emission regulations in Japan & Asia and innovation for electrification & autonomous driving

P&E



**Recovery in investment by the oil industry due to higher oil prices
Tighter environmental regulations in developing countries**

Medical



**Japan: Favorable sales to doctors in private practice
Overseas: Increase in demand for blood testing equipment in developing countries**

Semi



**Continuous strong investment by semiconductor manufacturers
Expect growth in demand for power semiconductors, due to vehicle electrification**

Scientific



**Stable demand for optical components from the semiconductor market
Accelerating research on new materials due to the booming secondary battery and semiconductor markets**

Exchange rate

(Yen)

	2016	2017	2018	
	Results	Results	Forecast	vs 2017
USD	108.78	112.16	110	-2.16
EUR	120.26	126.70	130	+3.30

1 yen O.P. sensitivity for 2018 Forecast (Yen appreciation)

USD 0.21 billion yen

EUR 0.02 billion yen

2018 Forecast

(Billions of Yen)

	2016	2017	2018	
	Results	Results	Forecast	vs. 2017
★ : Record-high				
Sales	170.0	195.3	★ 210.0	+14.6
Operating profit	18.4	26.8	★ 29.0	+2.1
O.P. %	10.9%	13.7%	13.8%	+0.1p
Ordinary profit	18.2	26.6	★ 28.4	+1.7
Net Income attribute to Owners of Parent	12.9	16.2	★ 19.0	+2.7
Net profit per share (Yen)	307	386	450	+64
ROE	10.0%	11.5%	12.1%	+0.6%

2018 Forecast by Segment

(Billions of Yen)

★ : Record-high

	Sales			O.P.		
	2017 Results	2018 Forecast	vs. 2017	2017 Results	2018 Forecast	vs. 2017
Auto	73.3	★ 79.0	+5.6	7.6	★ 8.0	+0.3
P&E	17.4	★ 19.0	+1.5	1.0	1.4	+0.3
Medical	25.1	26.0	+0.8	1.9	2.0	+0.0
Semi	53.3	★ 58.0	+4.6	15.6	★ 17.0	+1.3
Scientific	26.1	★ 28.0	+1.8	0.4	0.6	+0.1
Total	195.3	★ 210.0	+14.6	26.8	★ 29.0	+2.1

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2017 Results and 2018 Forecast

(Billions of yen)

2017 Results

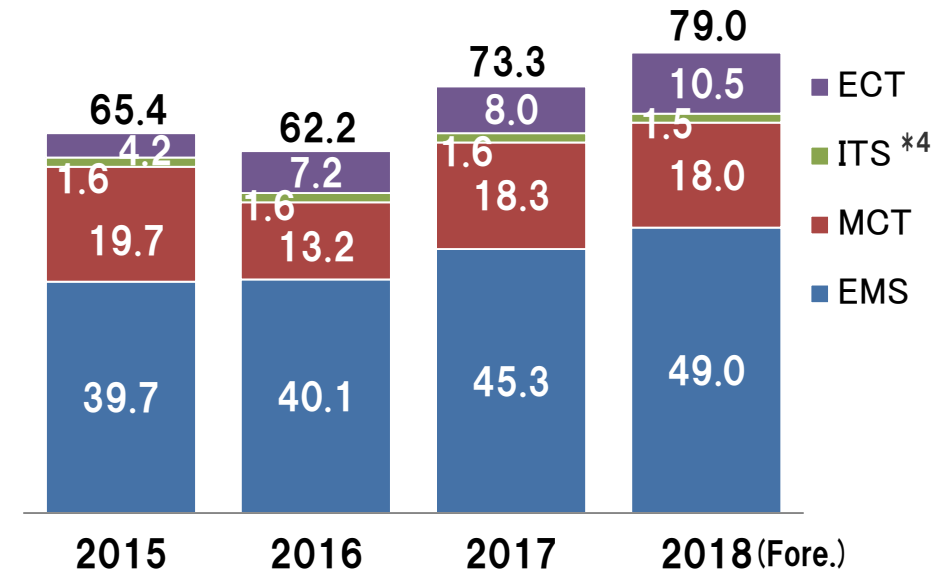
- + EMS^{*1}** Sales increase due to tighter emission regulations
- + MCT^{*2}** Recovery in capital spending by automakers
- + ECT^{*3}** Increase in expenses to form a MIRA Japan team
Aggressive investment for next-generation regulations and technologies

*1 Emission Measurement Systems; *2 Mechatronics; *3 Engineering Consultancy & Testing

2018 Forecast

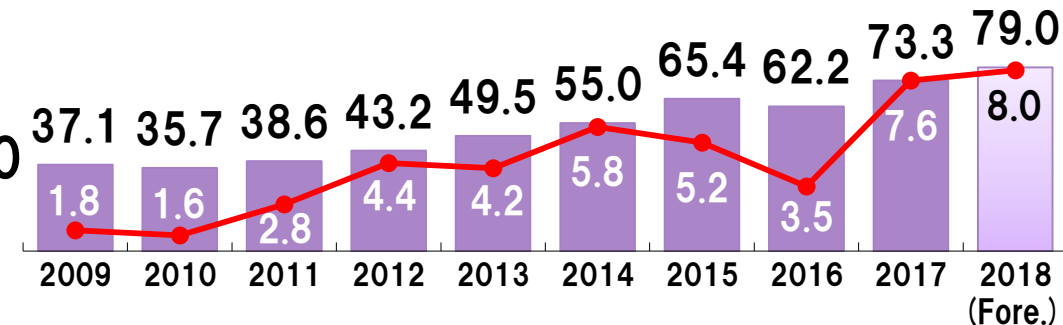
- + EMS** Solid demand in Europe under new regulations
Increase in demand in China and India ahead of new regulations
- + MCT** Similar trend as in 2017. Automakers: likely to increase new R&D facility construction in 2019–2020
- + ECT** Increase in orders based on next-gen technologies

<Auto Sales Breakdown>



*4 Intelligent Transport Systems

Sales and O.P. (Full-year) Sales O.P.



The next-generation emission regulations EVs generating activity

(Billions of yen)

Status of next-gen emission regulations

Regulation	EU	Japan
WLTP ¹	Sep. 2017	Oct. 2018 (Plan)
RDE ²		2022 (Plan)

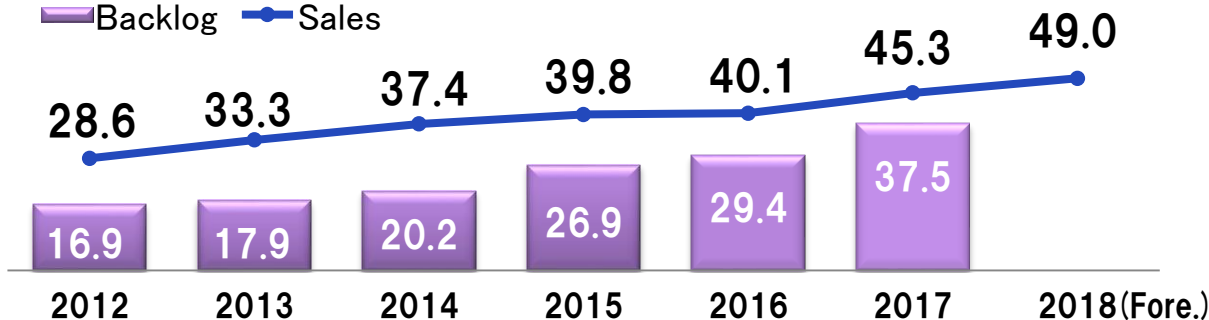
China, India: New regulation from 2020 (Plan)
(Same level as Euro6)

1 Worldwide harmonized Light vehicles Test Procedure
(Unified emission regulations by the UN)

2 Real Driving Emission (On-board emission regulation)

<EMS Sales/ Backlog>

■ Backlog ● Sales



Activity derived from EVs

Test systems

Provide solutions from single systems (powertrain, motor) to comprehensive systems, incl. vehicle evaluation

E-Motor testing equipment



Electric vehicle testing



Battery development and analysis

- Development and testing of battery packs and battery management systems (HORIBA MIRA)
- Analysis and evaluation of li-ion and all-solid-state batteries (use of scientific technology)

Battery development



Analysis by scientific products



Business expansion by mutual utilization of resources

Contributing to R&D for autonomous driving vehicles



Business in UK

Participate in the UK government project

- Autonomous driving “UK Autodrive”
- Host demonstration experiment

Main members of “UK Autodrive”



※UK Autodrive Consortium members

<http://www.ukautodrive.com/consortium-members/>

New order booked from the UK government

Establish a facility for multi-purpose tests such as communication, crash, and vehicle turning.

Rendering of the test facility



Action for business globalization



Event at the British Embassy Tokyo

- Automakers and UK government VIPs attended
- HORIBA presented potential for EV & autonomous vehicle business.



Accompanied UK Prime Minister May's visit to China

- Dr. George Gillespie, CEO of HORIBA MIRA accompanied the prime minister, as a representative of the UK automotive industry.

Accelerate business globalization

Event at the British Embassy Tokyo
(2nd from right: UK Ambassador to Japan, Paul Madden)



Prime Minister May's visit to China



2017 Results and 2018 Forecast

(Billions of yen)

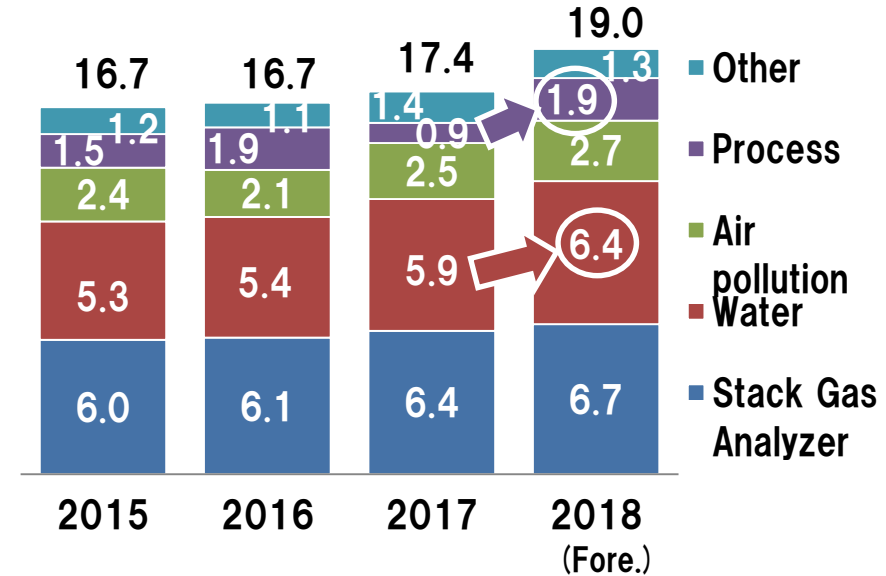
2017 Results

- + Stack gas analyzers
 - Japan: Replacement demand
 - China: Demand increase, driven by VOC regulation
- Slow sales in the process measurement equipment business in US due to less investment by the oil industry

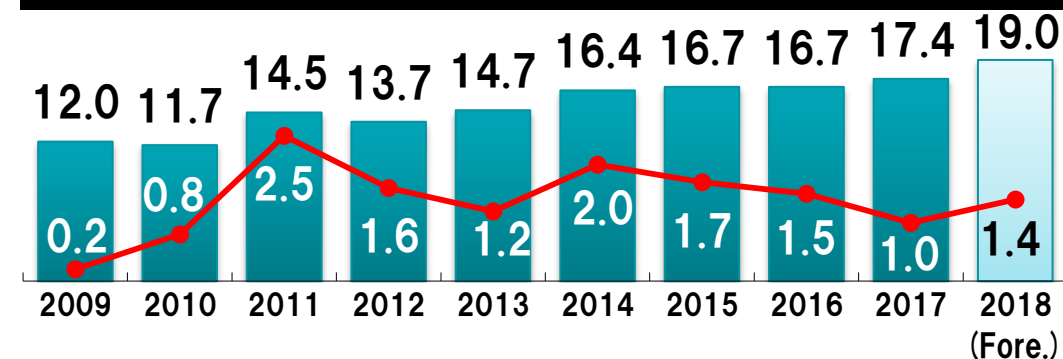
2018 Forecast

- + Capture domestic replacement demand and anticipate further demand for stack gas analyzers related to VOC regulation in China
- + Sales increase for process measurement equipment business due to recovery in investment by the oil industry
- + Capture domestic replacement demand for water measurement systems
- + Sales increase in developing countries

<Sales by Business>



Sales and O.P. (Full-year) Sales O.P.



Business expansion in emerging markets

Gas

Launch new products in developing countries

(Tunable Laser Hydrogen Chloride Analyzer “TX-100”)

Feature: No need of periodic replacement of parts;
Easy calibration → Reduce running and maintenance cost

Plan: Sale to incineration plants

Enhancement of local engineering (India, China)

Customize stack gas analyzer to local specification

TX-100 (adopted at an incineration plant in China)

Local customization in India



Water

Sales increase by coping with local regulations

S. Korea



Wastewater regulation change
→ Quickly modified and authorized

India



- Authorized under local industrial standard
- Increase in the number of distributors for expanding sales channels

Water quality analyzers applied in the sewerage process of plants



【Sewerage plants】



2017 Results and 2018 Forecast

(Billions of yen)

2017 Results

- + - Increase in expense in promoting hematology and CRP analyzers in Japan
- Sales drop in South America
- + - Increase in expense for US FDA approval and sales promotion of new products

2018 Forecast

- Intensified competition in hematology and CRP analyzers in Japan
- + - Sales increase by new products launch and increase in expense for US FDA approval and sales promotion of new products

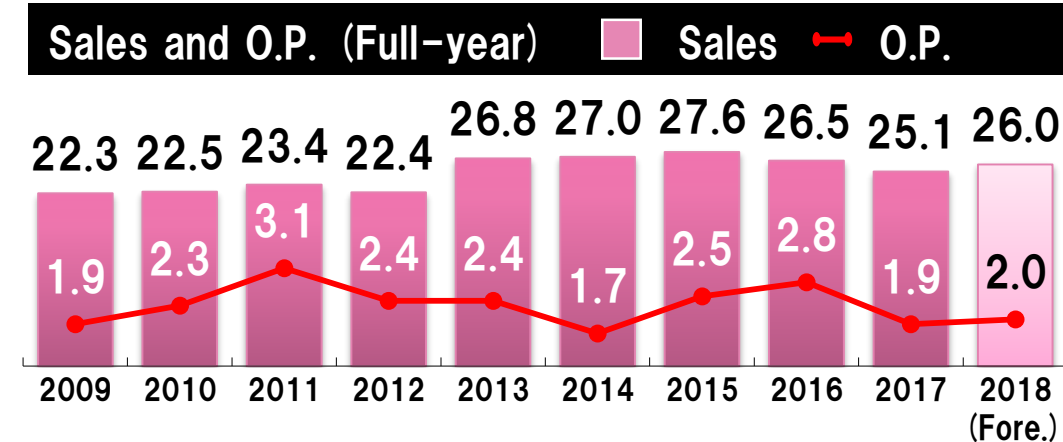
New testing systems



Solution
(Launch in 2017)



Rendering of installed products in a customer's lab. in Brazil



Medical Initiatives for business expansion

Long-term agreement with Siemens Healthineers

Contract signed: Oct. 2017

Contents: Supply middle-large hematology analyzer to Siemens, which provides total healthcare solutions including inspection equipment, diagnostic imaging unit, and care system

Aiming at sales growth, together with HORIBA Yumizen brand

<Business development by test category>

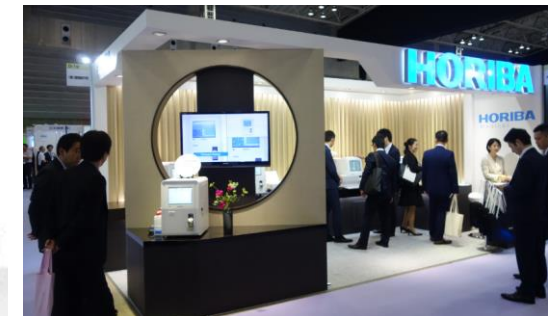
Test Category		Clinical Chemistry	Hematology	Immunology	Coagulation
Market size		2tn yen	350bn yen	2tn yen	200bn yen
Hospitals	Large hospitals Testing centers	C.C.	Mid./Small Hematology	CRP	Mid./Small Coag.
	Small and medium-sized hospitals				
Private practitioners					
Hospital units and surgery rooms (POCT)					

New product "Yumizen H630CRP" with combined technology of Japan and France

- 5 Diff. white cell diagnosis (France) +CRP (Japan)
- For private practice and Small- to mid-sized hospitals
- Coordinate with software "GATE LINK" compliant with electric medical charts



New product Yumizen H630CRP



Exhibition (Launch in Nov. 2017)

2017 Results and 2018 Forecast

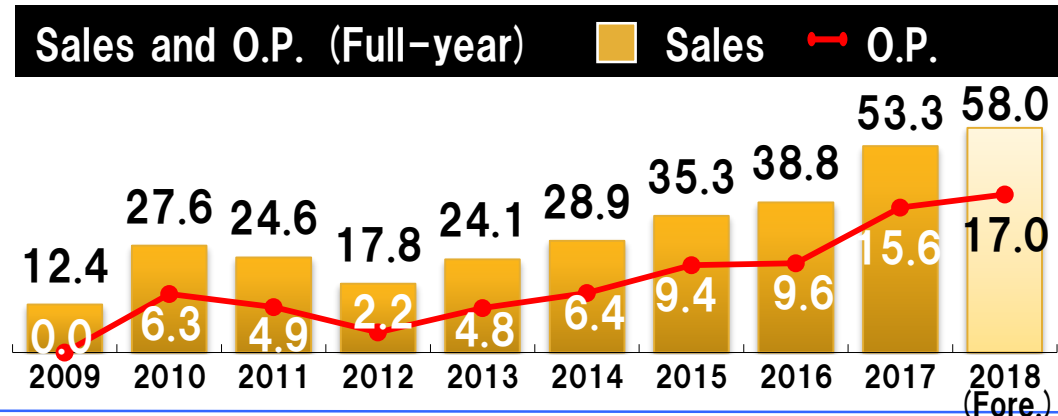
(Billions of yen)

2017 Results

- + Record-high sales and O.P.
- + Record-high production volume in Mass Flow Controllers (MFC)

2018 Forecast

- + Robust capital spending by semiconductor makers in 1st half of year
- + Increased production capacity of the expanded Aso factory



MFC-related topics in Semi. market

Increase in storage for data centers
 Increase throughput of Big Data related to AI and IoT
 Increased use of semicons in automobiles

High demand for semi.

Change in semiconductor technology (Miniaturization, 3D-NAND, Multi-layered)

High demand for etching

High demand for mass flow controllers

HORIBA's strength in high-end etching

Installed PI (Pressure Insensitive) function that enables highly accurate fuel control against pressure fluctuation

Pressure Insensitive MFC
CRITERION D500



Establish a stable delivery system Enhance sales and service capabilities

Completed expansion of Aso factory

Expansion to satisfy further increase in demand

Timely delivery of high-quality products

Investment: About 2.7bn yen

Completed: Dec. 2017

Objective: Increase production capacity of MFCs
(50% increase in floor space)



Expansion in Aso factory

Enhance global sales and service bases

Korea: new head office of HORIBA STEC KOREA, Ltd.

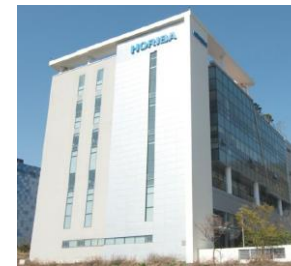
- Started in Apr. 2017
- Increased production capacity and number of engineers

Taiwan: new head office of HORIBA Taiwan, Inc.

- Started in Sep. 2017
- Added one clean room, the second

China: new service offices in Wuhan and Nanjing

Provide technical service to nearby customers



HORIBA STEC KOREA's new office



Opening ceremony of HORIBA Taiwan

HORIBA's global MFC market share: About 60% (as of Dec. 2017; estimate: HORIBA)

2017 Results and 2018 Forecast

(Billions of yen)

2017 Results

- Sluggish sales to universities in Japan, US and EU
↔ + Strong sales in China
- + - Increase in R&D expenses for new products
- + US sales up of spectrometers for semicon makers

2018 Forecast

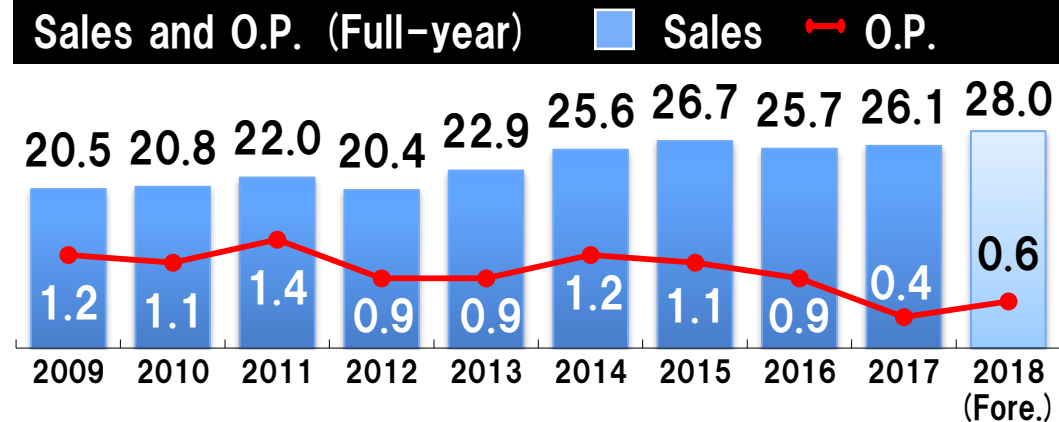
- + Firm sales of core components for optical products
- + Recovery in demand from universities in Japan, US and EU
- + New market development with products customized to needs of each customer

Diffraction gratings

- Core component of optical products
- Global state of the art technology
- Developed and produced by HORIBA France S.A.S. (former HORIBA Jobin Yvon S.A.S.) entered into HORIBA Gr. in 1997



HORIBA France S.A.S.
Europe Research Center (France)



New product launch in new markets

Initiatives taken in growth markets

New product “DUETTA” for the Bio-Life science market

- Fluorescence and absorbance spectrometer
- For R&D of antibody treatment drugs
- Combined the technology of former Photon Technology International (US) acquired in 2014 and former HORIBA Jobin Yvon US



Use of a speed detector to enable quick measurement



New software with improved user interface

Raman spectrometer: Expand business in China and apply new technology

Raman/Fluorescence Technology Symposium

Participated by 80 scientists in materials, energy, chemical, other fields



(Held in Dun Huang, China, in Aug. 2017)

Toray Research Center developed a new analysis method by using HORIBA’s technology

- Integrated current Raman microscope with AFM (Atomic Force Microscope)
- Enabled a nano-level analysis
 - ➔ Valid for structural analysis of power semiconductors



AFM (Atomic Force Microscope) Raman

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Shareholder Return

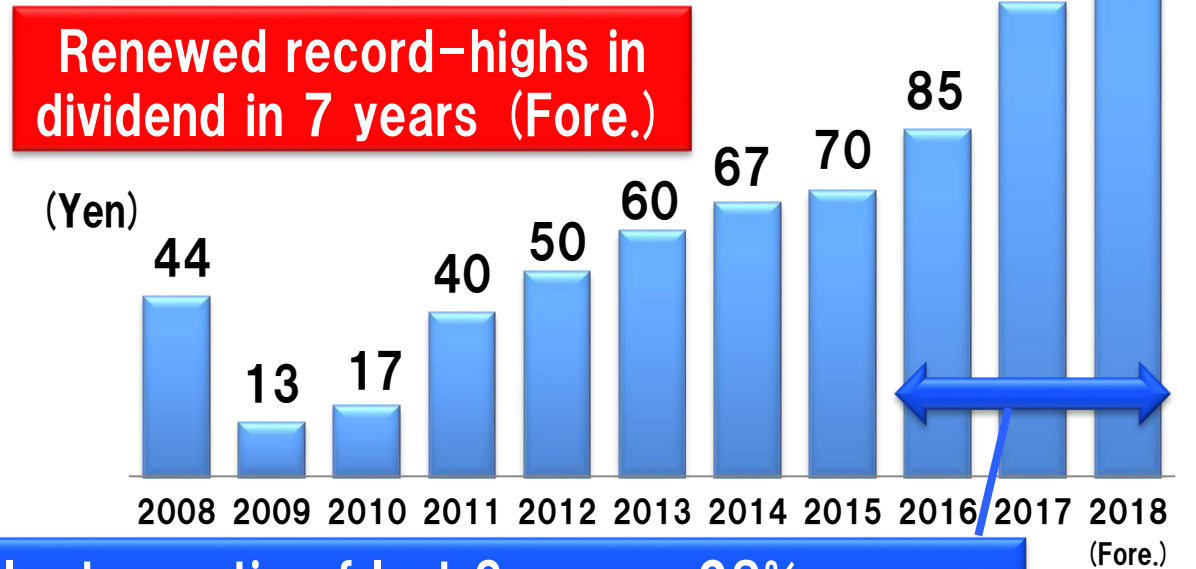
Basic policy

- 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

	Interim	Year-end
2016 Results	85 yen [30 yen, 55 yen]	
2017 Results	116 yen [40 yen, 76 yen]	
	(Upward revision by +21 yen from previous forecast)	
2018 Forecast	120 yen [50 yen, 70 yen]	

Per-share dividend (from 2008 to 2018 Forecast)



An average total return ratio of last 3 years : 28%

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Initiatives for workstyle innovation matching the workforce

“Stained Glass Project” initiatives

STEP 1
2014
Start from promoting women's empowerment

STEP 2
from 2015
Start Workstyle Innovation workshop
Theme: "Individuals are changemakers"

STEP 3
from 2017
Connect management, HR Department, and workforce
Make best of characteristics of each worksite and organization

Key actions in 2018

- Raise efficiency of meetings: Create optimal operating methods for corporate-wide use
- Study introduction of rules to achieve flexible workstyles considering the workforce

Reviews of activities in 2017

“KAERU” Meeting 34 meetings
(340 participants)

Get off early.
Change work practices.
Change myself.

Identified “efficiency of meetings” as common issue

Realizing flexible workstyles

- A company-wide survey of opinions of frontline workers
- Support for work and family care balance

“KAERU” Meeting



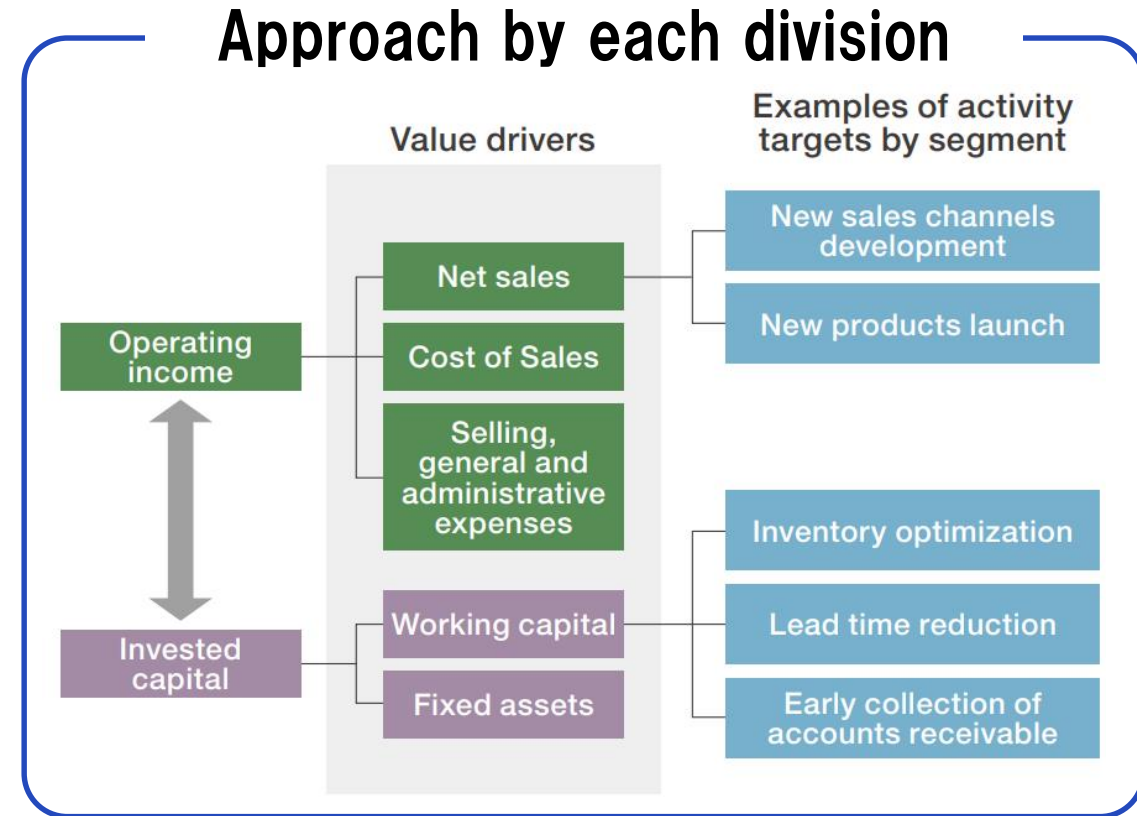
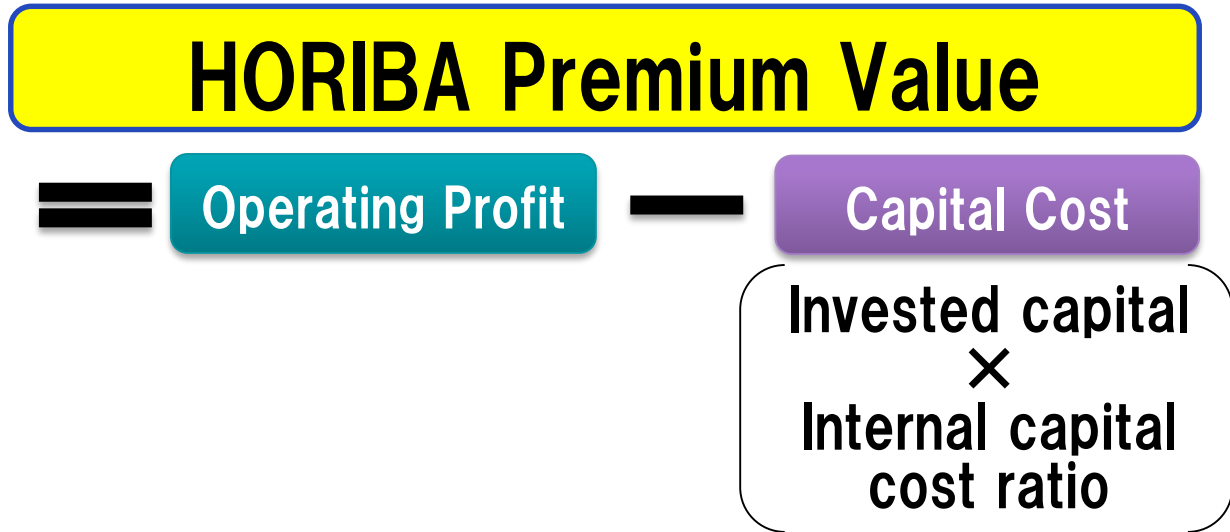
Work and family care seminar



“HORIBA Premium Value” introduction

Adopt a budget for a unique KPI to measure capital efficiency

“Capital cost” is deducted from “Operating profit”



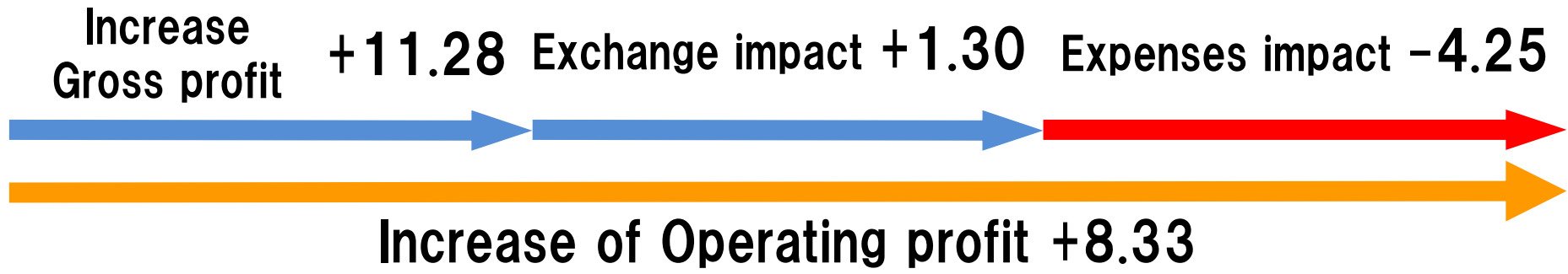
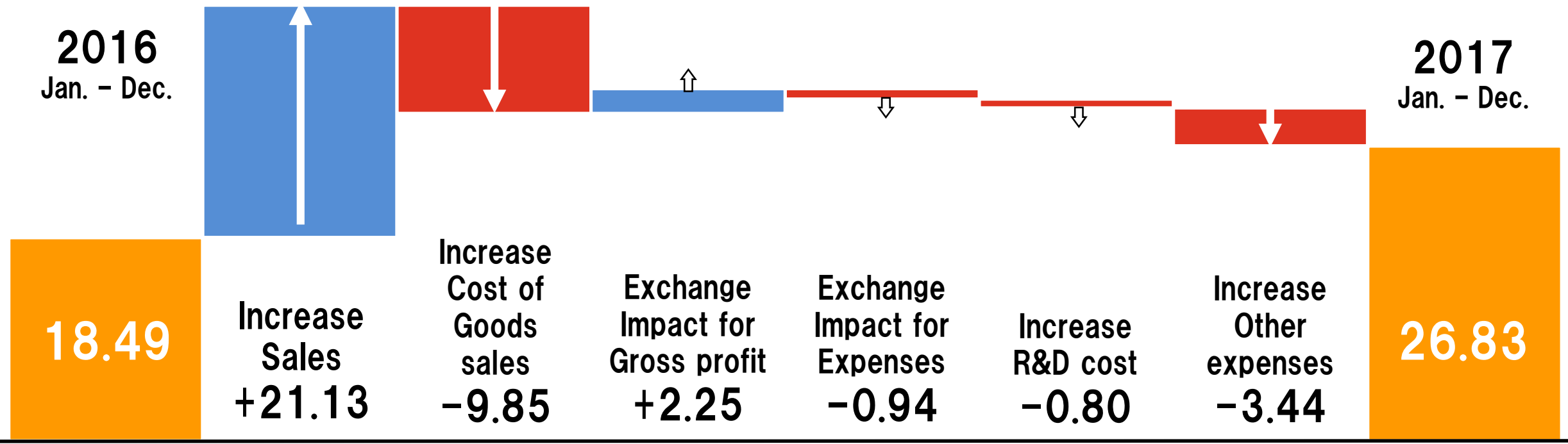
- Penetrate the concept to group companies with a simple calculation method
- Focus the operating profit which business divisions monitoring on a daily operations
- Evaluate in absolute numbers, to easily understand effects and targets in monetary terms

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Operating profit Analysis (vs 2016)

(Billions of Yen)



Impact of Fluctuation in Foreign exchange

(Billions of Yen)

Exchange rate impact (2017 Results)

Sales +4.17bn yen O.P. +1.30bn yen

	Sales			Operating profit		
	Total	USD	EUR	Total	USD	EUR
Auto	+1.26	+0.32	+0.96	+0.18	+0.05	+0.10
P&E	+0.29	+0.08	+0.10	+0.09	+0.00	+0.04
Medical	+0.79	+0.15	+0.51	+0.03	+0.19	-0.06
Semi	+1.06	+0.70	+0.02	+0.88	+0.58	+0.01
Scientific	+0.75	+0.30	+0.41	+0.10	+0.03	+0.05
Total	+4.17	+1.57	+2.01	+1.30	+0.70	+0.15

Exchange rate impact for 2018 Forecast 1 yen impact of Sales and O.P. (Yen appreciation)

Sales
USD -0.52bn yen
EUR -0.32bn yen

Operating profit
USD -0.21bn yen
EUR -0.02bn yen

2016 Jan. - Dec.	USD : 108.78 yen, EUR : 120.26 yen
2017 Jan. - Dec.	USD : 112.16 yen, EUR : 126.70 yen
2018 Jan. - Dec. (Fore.)	USD : 110.00 yen, EUR : 130.00 yen

Capital Investment, Depreciation, R&D

(Billions of Yen)

	2016	2017				2018	
	Results	Forecast @12/19	Results	vs 2016	vs Forecast	Forecast	vs 2017
Capital Investment	13.7	15.0	11.6	-2.1	-3.4	16.0	+4.4
Depreciation	6.8	7.2	7.5	+0.7	+0.3	7.5	+0.0
R&D	12.9	14.0	13.9	+1.0	-0.1	15.5	+1.6
(To net sales)	7.6%	7.4%	7.1%	-0.5%	-0.3%	7.4%	+0.3%

2017 Topics	<ul style="list-style-type: none"> -PP&E -Depreciation -R&D 	<p>Expansion of Aso factory (2.3 bn yen), Investment to MIRA (1.3 bn yen)</p> <p>Goodwill of MIRA* (0.4 bn yen)</p> <p>Increased in P&E business</p>
2018 Topics	<ul style="list-style-type: none"> -PP&E -Depreciation -R&D 	<p>Expansion of Aso factory (1.7 bn yen), Investment to global network</p> <p>Decrease Goodwill of MIRA +Increase by new investment and expansion of Aso factory (0.1 bn yen)</p> <p>Increase in Auto and Semi Business</p>

※Good will of MIRA e.g...Amortization included

Consolidated Cash Flows

(Billions of Yen)

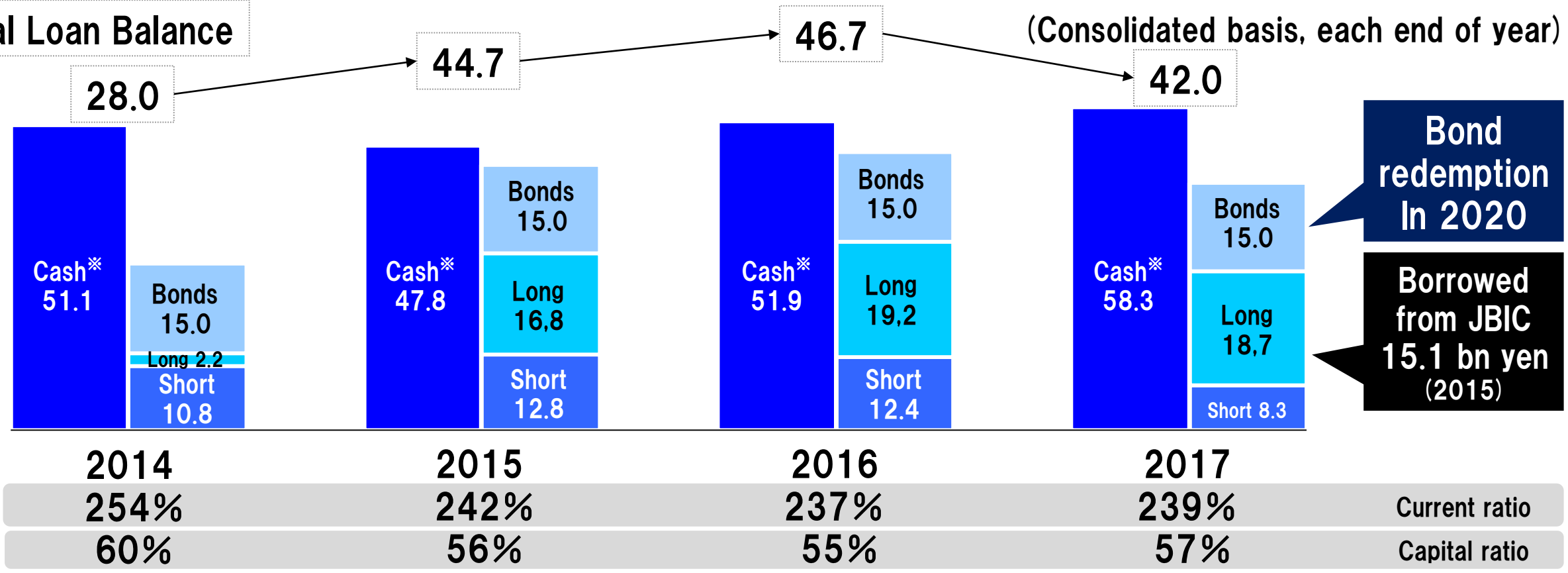
	2017	2016	Variation
Cash flows from operating activities	+28.28	+15.87	+12.41
Cash flows from investing activities	-13.16	-10.42	-2.73
Cash flows from financing activities	-9.04	-0.45	-8.59
Cash and cash equivalents at end of year	+58.33	+51.94	+6.39
Free cash flows	+15.12	+5.44	+9.67

Cash Balance

(Billions of Yen)

Total Loan Balance

(Consolidated basis, each end of year)



Bond redemption In 2020

Borrowed from JBIC 15.1 bn yen (2015)

- Loan repayment due to group financing
- Recent issuer rating : R&I “A-” (July 2017), JCR “A” (August 2017)

1 Cash...Cash and Cash Equivalents at End of Period. *2 JBIC: Japan Bank for International Cooperation

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Corporate Profile

Head Office	Kyoto, Japan
Foundation	1945
Incorporation	1953
Fiscal Year End	December 31

Atsushi Horiba
Chairman & Group CEO



– Corporate motto –

Omoshiro-okashiku
Joy and Fun



To have interest and pride
in our work to enjoy our lives

Business Segments

Automotive Test Systems



- Emission Measurement Systems
- Test Automation Systems
- Intelligent Transport Systems
- Engineering Consultancy & Testing (HORIBA MIRA, Ltd)

Process & Environmental



- Environmental & Process Systems
- Environmental Radiation Monitor
- Environmental Regulation & Process Business

Medical



- In-Vitro Diagnostic (IVD) Systems
- Integration of HORIBA ABX' s
Technology & Marketing Know-how

Semiconductor



- Mass Flow Controller
- In-situ Analysis
- Synergy among HORIBA HQ, HORIBA STEC, HORIBA Advanced Techno
and HORIBA Jobin Yvon' s Technologies

Scientific



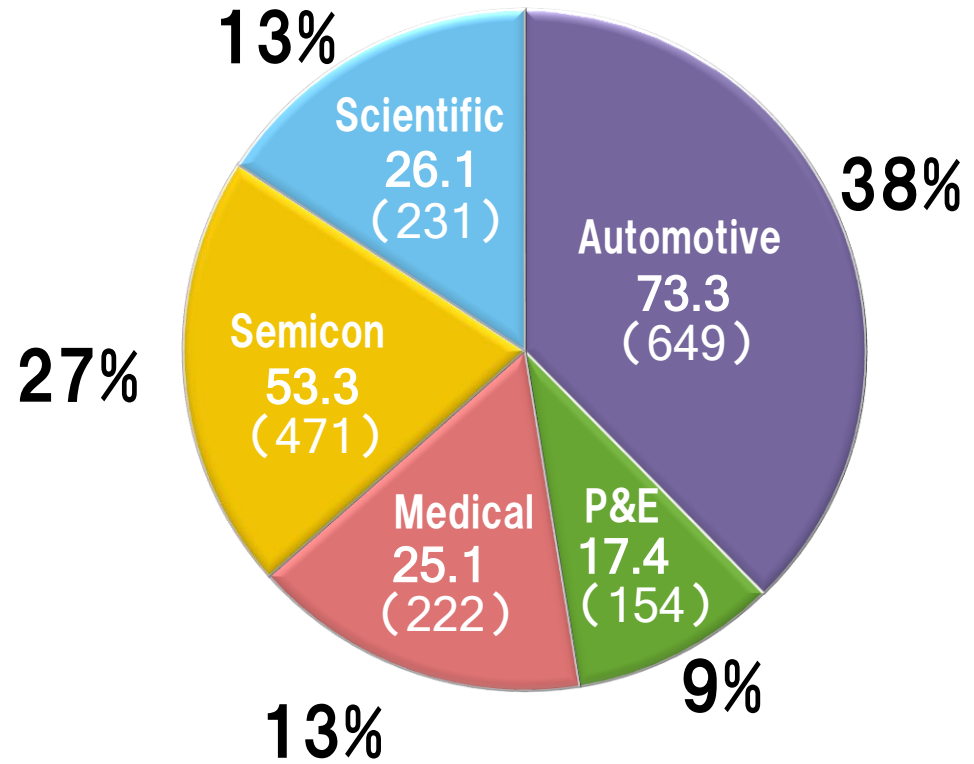
- Raman, Grating, and Fluorescence
- Synergy of HORIBA and HORIBA Jobin Yvon' s Technologies

Business Segments



Sales Breakdown by Segment

Sales: 195.3 B.JPY



() = Segment Sales in MUSD

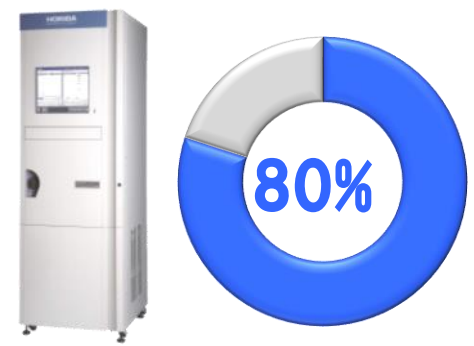
% = Segment Sales Ratio

(Sales of FY2017)

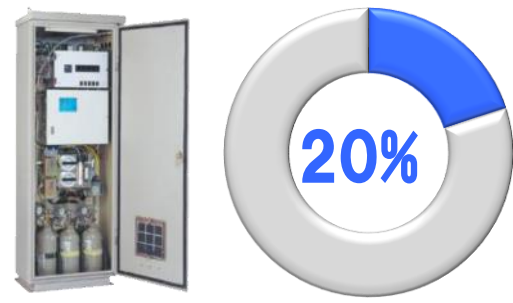
Market share

Global

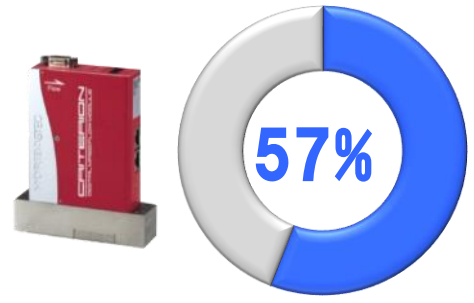
Emission Measurement Systems



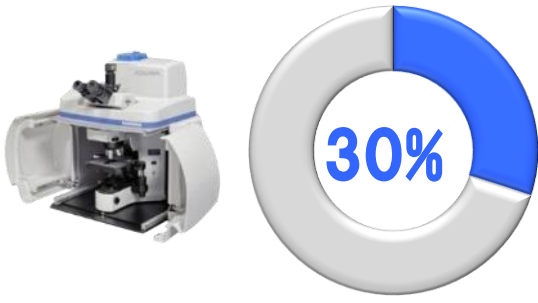
Stack Gas Analyzers



Mass Flow Controllers



Raman Spectrophotometers



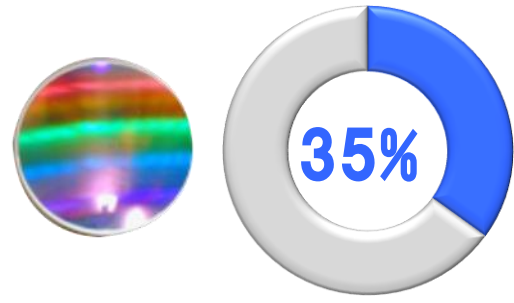
Domestic

Automatic Blood Cell Counter plus CRP



(As of December 31, 2015)

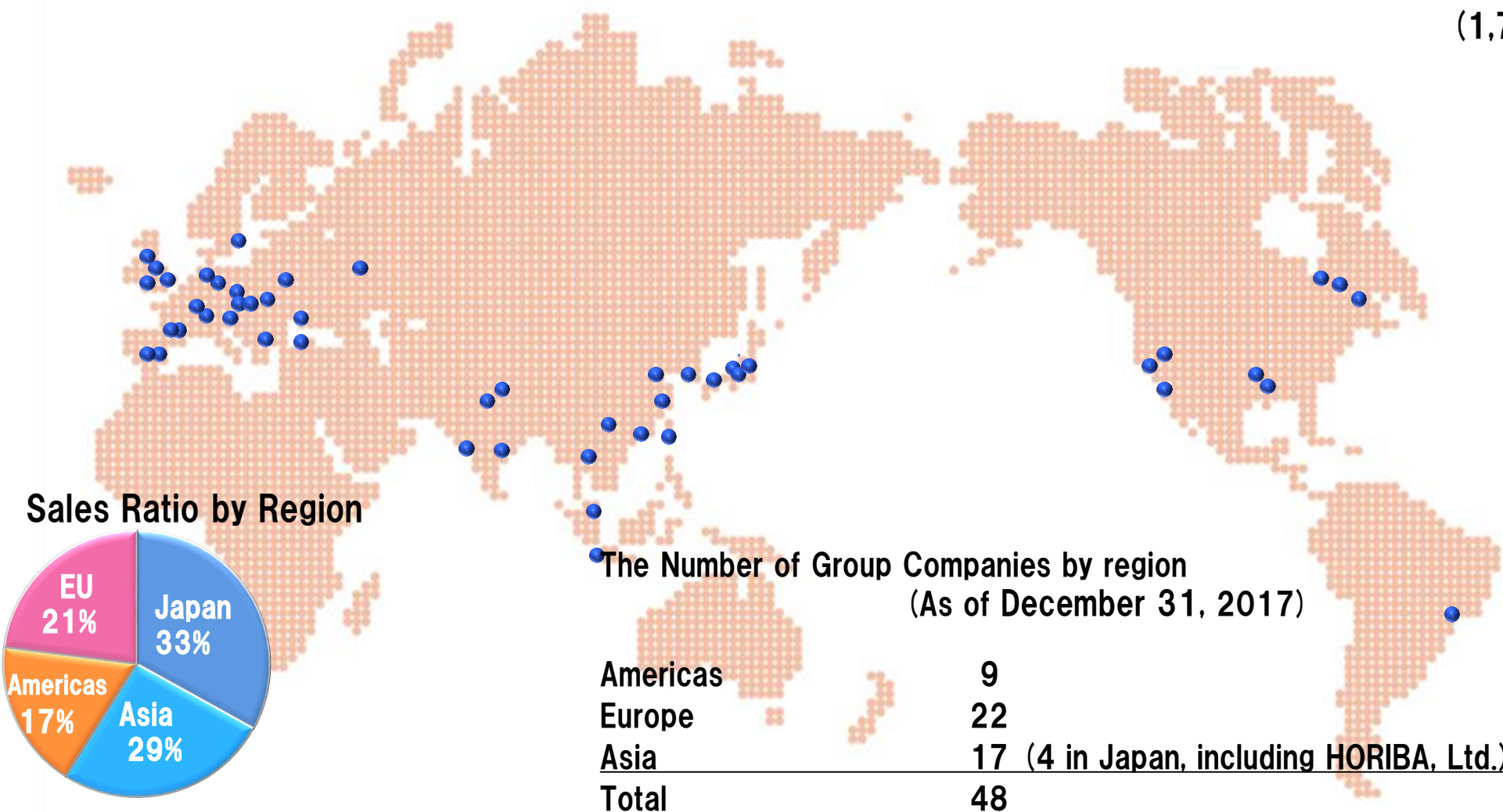
Gratings



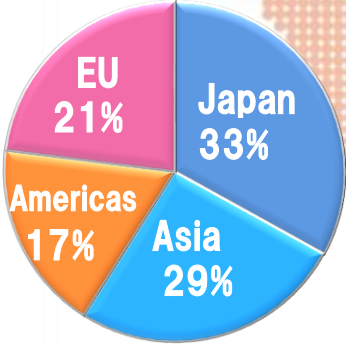
※Market shares quoted are estimates by HORIBA.

HORIBA Worldwide

Sales of FY2017 : 195.3 BJPY
(1,729 MUSD)



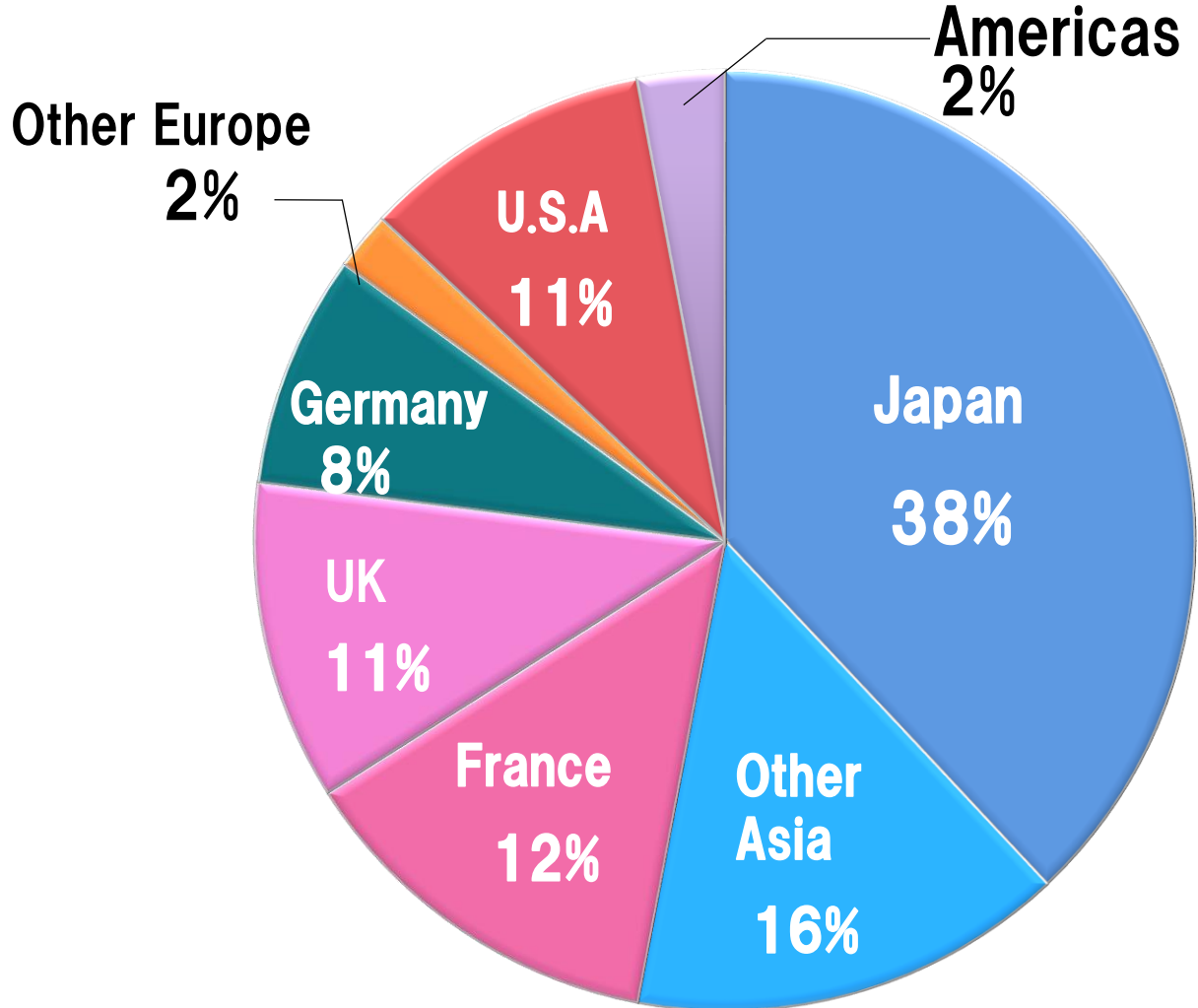
Sales Ratio by Region



The Number of Group Companies by region
(As of December 31, 2017)

Americas	9
Europe	22
Asia	17 (4 in Japan, including HORIBA, Ltd.)
Total	48

Employees by Region



Total Number of Employees

7,399

Total Asia : 4,041

54%

Total Europe : 2,414

33%

Total Americas : 944

13%

(As of December 31, 2017)

Thank you