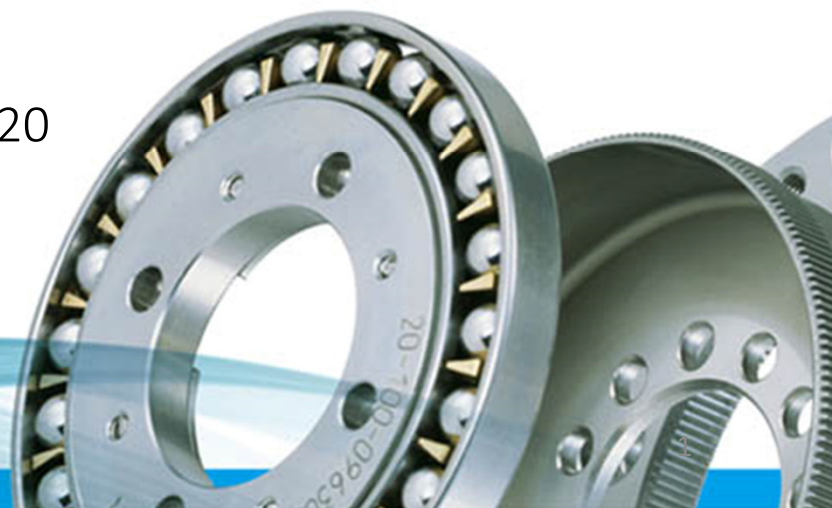


# **Harmonic Drive Systems Inc.**

## Financial Results for the 1st-Half of the Fiscal Year Ending March 31, 2021

November 18, 2020

This presentation contains forward-looking statements relating to expected future performance as of November 18, 2020. Such statements are based on the views and assumptions of company management and involve risks and uncertainties such as changes in the business environment that may cause the actual results to differ materially from expectations.



# Performance Summary for 1H FY03/21



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# Consolidated results for 1H FY03/21 (versus original forecasts)

(millions of yen)

	Forecasts (announced Aug 7, 2020)		1H FY03/21 (actual)		Vs. original forecasts	
	Amount	Percent (%)	Amount	Percent (%)	Change	Rate (%)
Net sales	17,300	100.0	17,702	100.0	402	2.3
Operating income	(600)	—	(81)	—	518	—
Ordinary income	(650)	—	216	1.2	866	—
Net income	(550)	—	115	0.7	665	—
EPS (yen)	(5.71)	—	1.20	—	6.91	—

Net income (loss) refers to net income (loss) attributable to owners of parent.



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# Consolidated results for 1H FY03/21 (year-on-year change)

(millions of yen)

	1H FY03/20		1H FY03/21		Year-on-year change	
	Amount	Percent (%)	Amount	Percent (%)	Change	Rate (%)
Net sales	21,577	100.0	17,702	100.0	(3,874)	(18.0)
Operating income	1,383	6.4	(81)	—	(1,464)	—
Ordinary income	1,613	7.5	216	1.2	(1,396)	(86.6)
Net income	280	1.3	115	0.7	(164)	(58.8)
EPS (yen)	2.91	—	1.20	—	(1.71)	(58.8)
Capital investment	5,779	—	835	—	(4,943)	(85.5)
Depreciation	3,635	—	3,490	—	(145)	(4.0)
R&D expenses	1,166	—	1,174	—	8	0.7

Net income (loss) refers to net income (loss) attributable to owners of parent.

Depreciation includes depreciation of tangible assets and amortization of intangible assets and goodwill.



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# Performance of main group companies in 1H FY03/21

(millions of yen)

	Equity stake	Net sales		Net income	
		Amount	Year-on-year change (%)	Amount	Year-on-year change (%)
Harmonic Drive Systems Inc.	—	10,041	(4.6)	388	53.2
*2 *5 HD Systems, Inc. (Harmonic Drive L.L.C.) (U.S.A)	100% (51%)	2,681	(25.7)	105	(67.2)
Harmonic AD, Inc.	100%	776	(19.7)	(5)	—
*3 Harmonic Drive Systems (Shanghai) Co., Ltd.	100%	1,358	(42.6)	118	(40.4)
*4 *6 Harmonic Drive SE (Germany)	74.7%	5,439	(26.6)	279	(51.5)

\*1 For overseas subsidiaries, the fiscal year ends December 31.

\*2 Exchange rates: Jan–Jun 2019 1USD = ¥110.05, Jan–Jun 2020 1USD = ¥108.27

\*3 Exchange rates: Jan–Jun 2019 1CNY = ¥16.20, Jan–Jun 2020 1CNY = ¥15.39

\*4 Exchange rates: Jan–Jun 2019 1EUR = ¥124.32, Jan–Jun 2020 1EUR = ¥119.30

\*5 Net income (loss) of US subsidiaries (consolidated) is after excluding non-controlling interests.

\*6 The figures for Harmonic Drive SE are on a consolidated basis, including results of its subsidiaries; net income is before excluding non-controlling interests



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# Non-consolidated results for 1H FY03/21 (year-on-year change)

(millions of yen)

	1H FY03/20		1H FY03/21		Year-on-year change	
	Amount	Percent (%)	Amount	Percent (%)	Change	Rate (%)
Net sales	10,527	100.0	10,041	100.0	(485)	(4.6)
Operating income	354	3.4	416	4.1	62	17.5
Ordinary income	679	6.5	537	5.4	(141)	(20.9)
Net income	253	2.4	388	3.9	135	53.2
EPS (yen)	2.64	—	4.04	—	1.40	53.2
Capital investment	3,651	—	257	—	(3,393)	(92.9)
Depreciation	1,551	—	1,404	—	(147)	(9.5)
R&D expenses	841	—	844	—	3	0.4



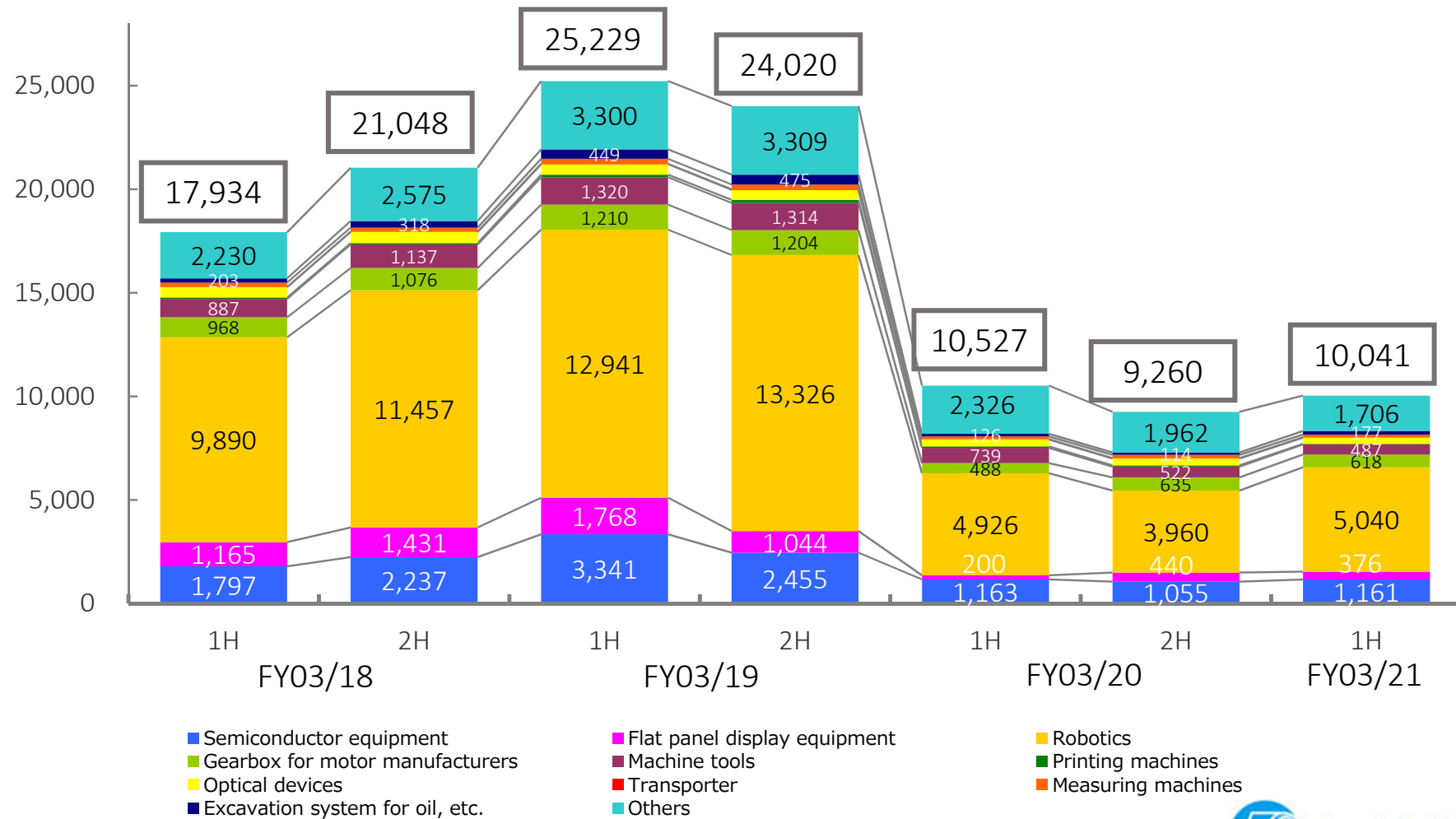
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# Non-consolidated net sales by application (half-yearly)

(millions of yen)

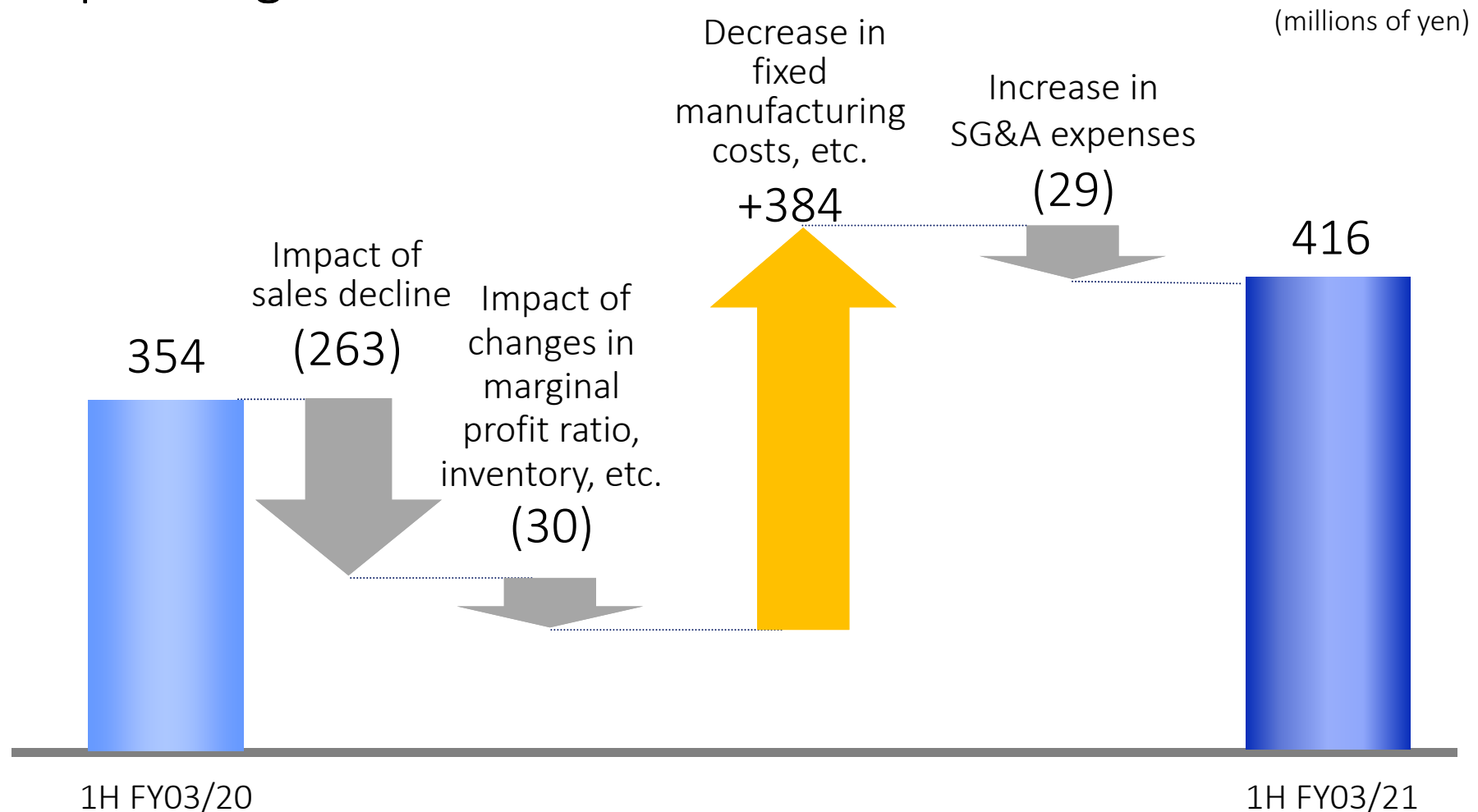


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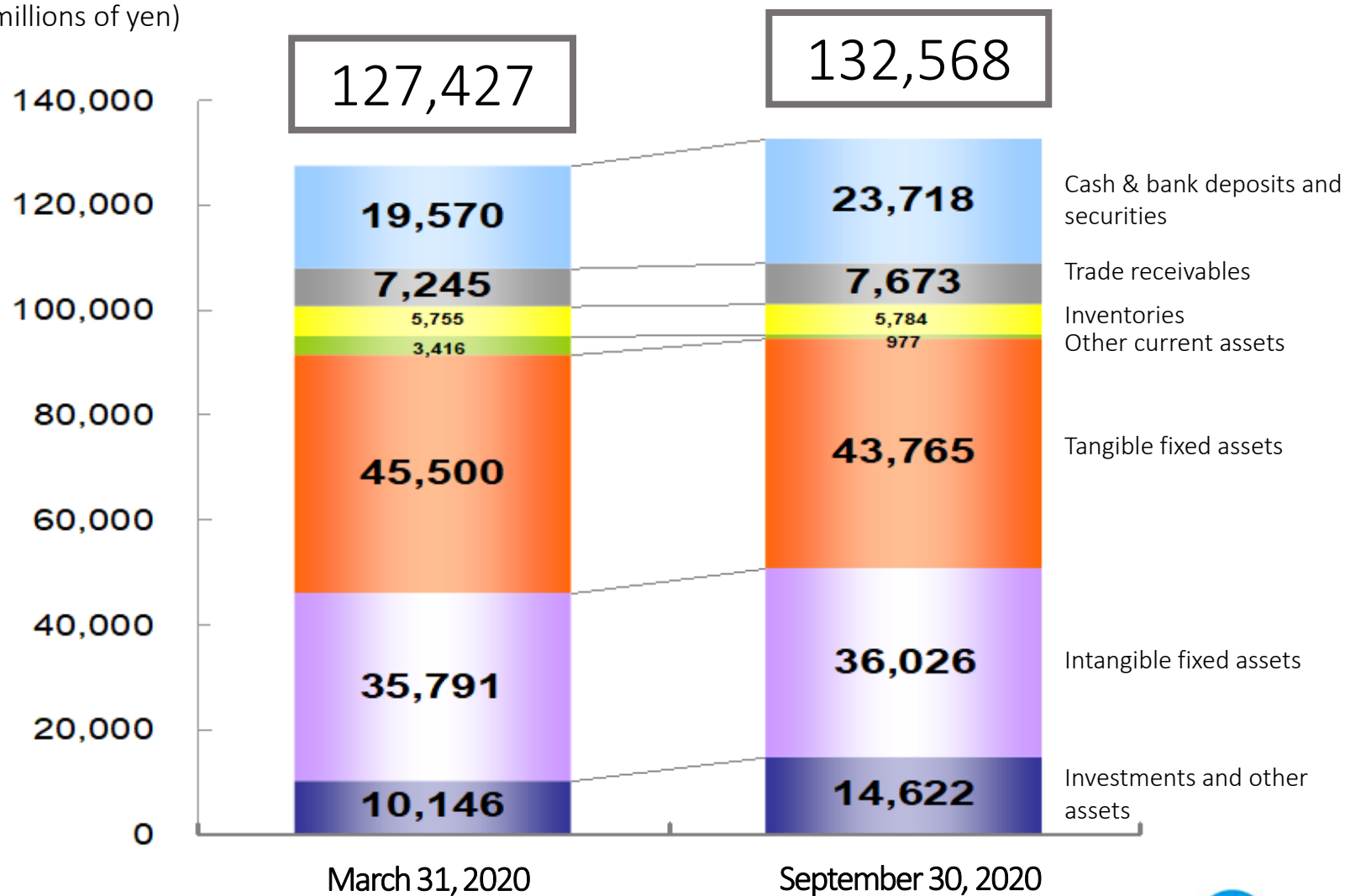
# Breakdown of year-on-year change in non-consolidated operating income





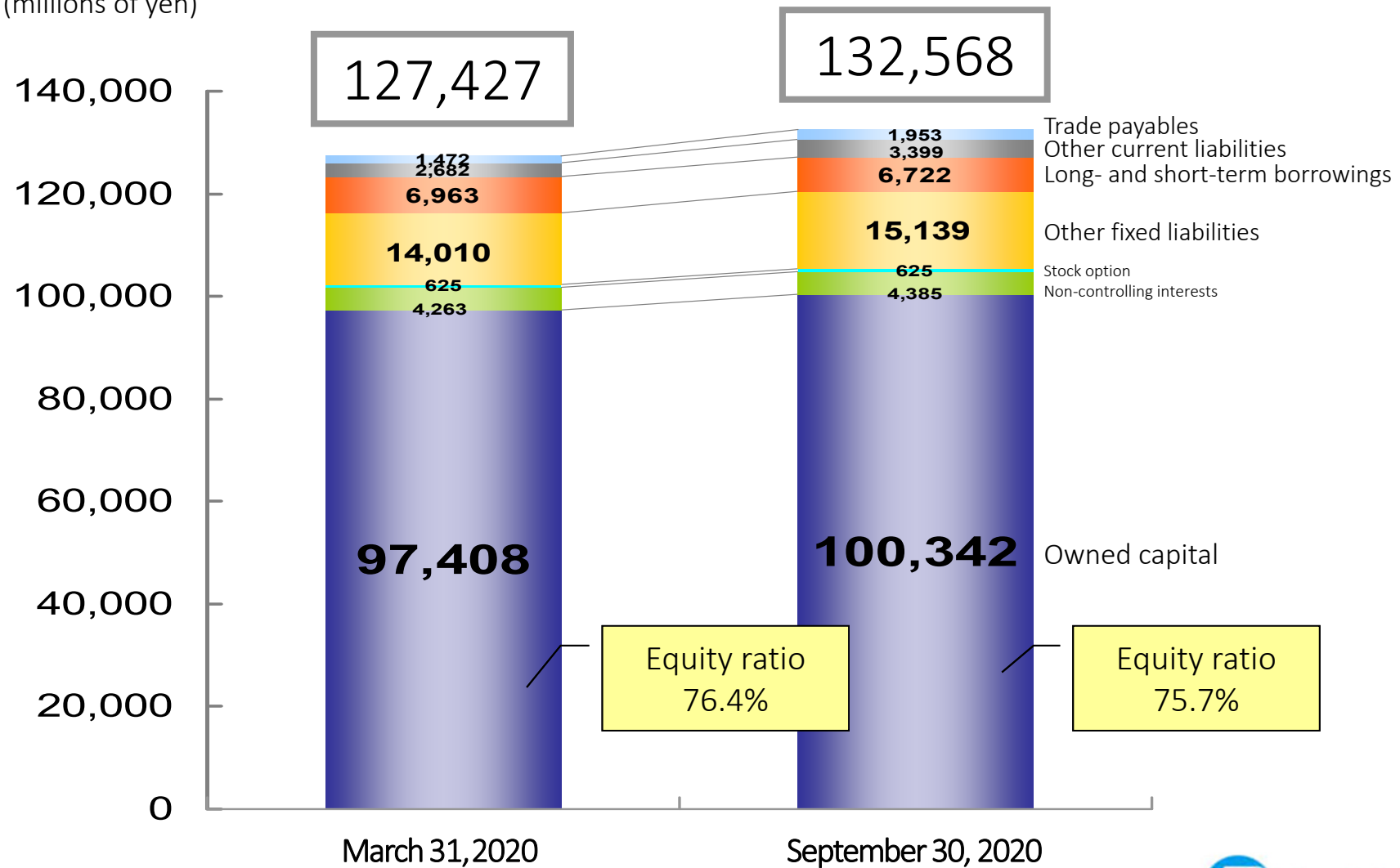
# Status of consolidated assets

(millions of yen)



# Status of consolidated liabilities and net assets

(millions of yen)



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# Status of consolidated cash flows

(millions of yen)	1H FY03/20	1H FY03/21
Cash flow from operating activities	8,756	6,132
Cash flow from investing activities	(9,638)	(735)
Cash flow from financing activities	3,522	(1,385)
Effect of exchange rate changes on cash and cash equivalents	(50)	(22)
Net increase (decrease) in cash and cash equivalents	2,590	3,987
Cash and cash equivalents at end of period	20,190	22,330



# Performance Forecasts for Full-year FY03/21



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# Consolidated performance forecasts for full-year FY03/21

(millions of yen)

	FY03/20		FY03/21 (forecasts)		Year-on-year change	
	Amount	Percent (%)	Amount	Percent (%)	Change	Rate (%)
Net sales	37,487	100.0	35,000	100.0	(2,487)	(6.6)
Operating income	67	0.2	(800)	—	(867)	—
Ordinary income	499	1.3	(450)	—	(949)	—
Net income	(832)	—	(450)	—	382	—
EPS (yen)	(8.65)	—	(4.67)	—	3.97	—
Capital investment	7,892	—	2,800	—	(5,092)	(64.5)
Depreciation	7,467	—	6,800	—	(667)	(8.9)
R&D expenses	2,195	—	2,700	—	504	23.0

Assumed exchange rate for FY03/21 forecasts: 1USD = ¥105.00 1EUR = ¥120.00 1CNY = ¥15.00

Net income (loss) refers to net income (loss) attributable to owners of parent.



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# Performance forecasts on main group companies for full-year FY03/21

(millions of yen)

	Equity stake	Net sales		Net income	
		Amount	Year-on-year change (%)	Amount	Year-on-year change (%)
Harmonic Drive Systems Inc.	—	22,000	11.2	1,000	—
*2 *5 HD Systems, Inc. (Harmonic Drive L.L.C.) (U.S.A)	100% (51%)	5,300	(15.3)	90	(75.3)
Harmonic AD, Inc.	100%	1,600	(10.1)	0	—
*3 Harmonic Drive Systems (Shanghai) Co., Ltd.	100%	2,000	(40.0)	100	(50.0)
*4 *6 Harmonic Drive SE (Germany)	74.7%	9,400	(26.2)	0	—

\*1 For overseas subsidiaries, the fiscal year ends December 31.

\*2 Exchange rates: Jan–Dec 2019 1USD = ¥109.05, Jan–Dec 2020 1USD = ¥105.00

\*3 Exchange rates: Jan–Dec 2019 1CNY = ¥15.78, Jan–Dec 2020 1CNY = ¥15.00

\*4 Exchange rates: Jan–Dec 2019 1EUR = ¥122.07, Jan–Dec 2020 1EUR = ¥120.00

\*5 Net income of US subsidiaries (consolidated) is after excluding non-controlling interests.

\*6 The figures for Harmonic Drive SE are on a consolidated basis, including results of its subsidiaries; net income is before excluding non-controlling interests



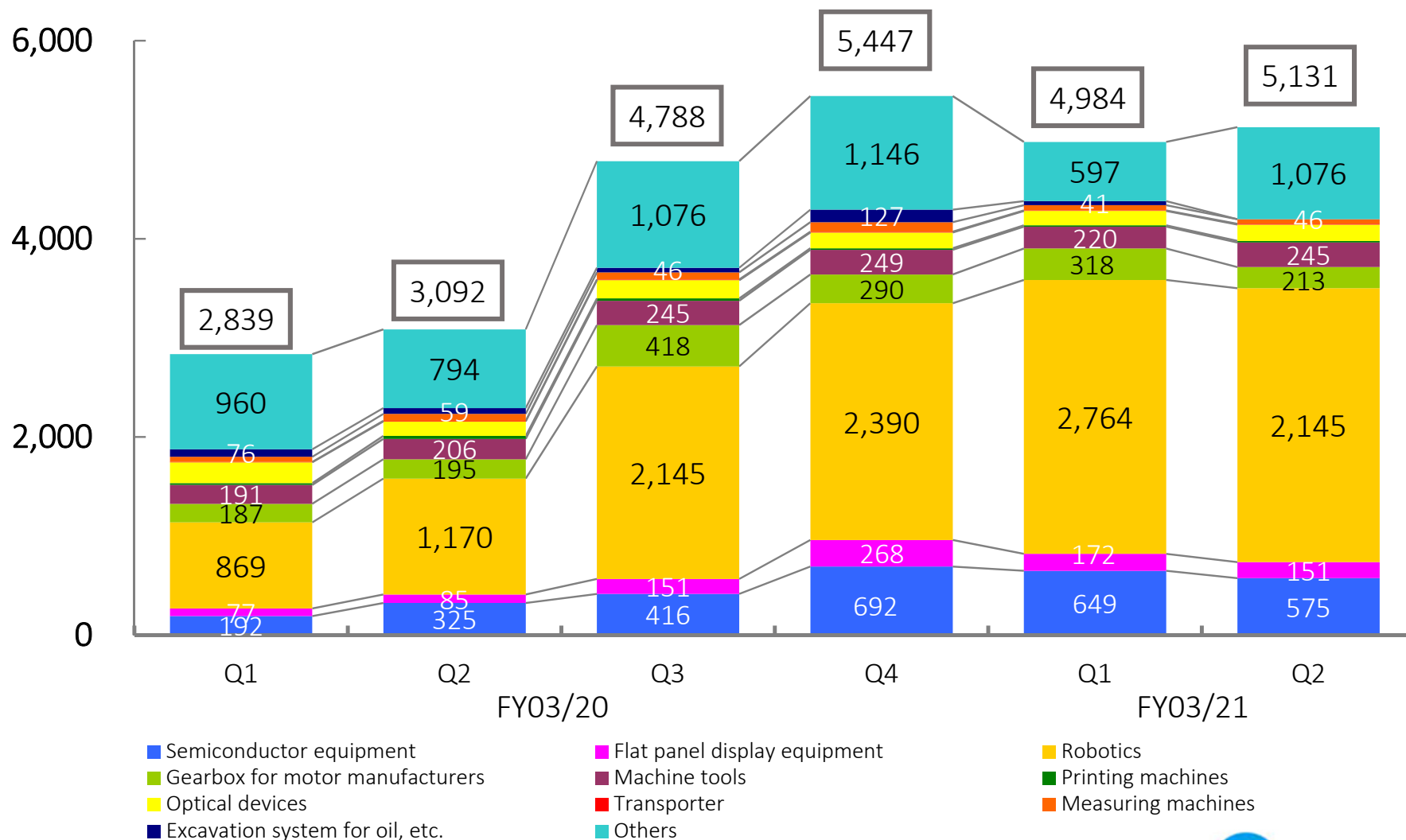
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# Non-consolidated orders by application (quarterly)

(millions of yen)



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# Non-consolidated performance forecasts for full-year FY03/21

(millions of yen)

	FY03/20		FY03/21 (forecasts)		Year-on-year change	
	Amount	Percent (%)	Amount	Percent (%)	Change	Rate (%)
Net sales	19,788	100.0	22,000	100.0	2,211	11.2
Operating income	380	1.9	1,200	5.5	819	215.5
Ordinary income	848	4.3	1,450	6.6	601	70.1
Net income	(173)	—	1,000	4.5	1,173	—
EPS (yen)	(1.80)	—	10.39	—	12.19	—
Capital investment	5,022	—	2,100	—	(2,922)	(58.2)
Depreciation	3,289	—	3,000	—	(289)	(8.8)
R&D expenses	1,572	—	2,100	—	527	33.5

Assumed exchange rate for FY03/21 forecasts: 1USD = ¥105.00    1EUR = ¥120.00    1CNY = ¥15.00



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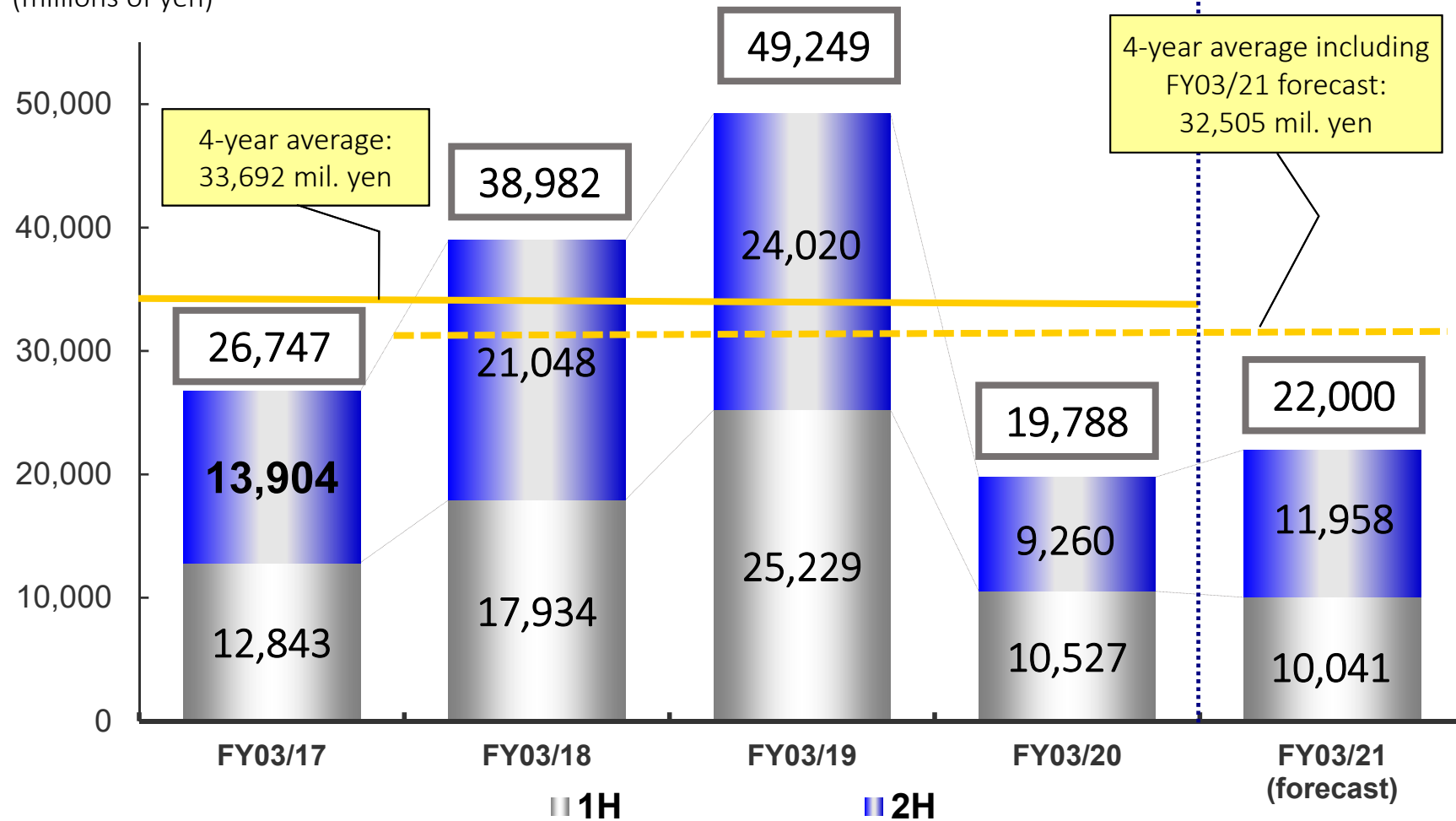
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# Sales trends (non-consolidated)

(millions of yen)



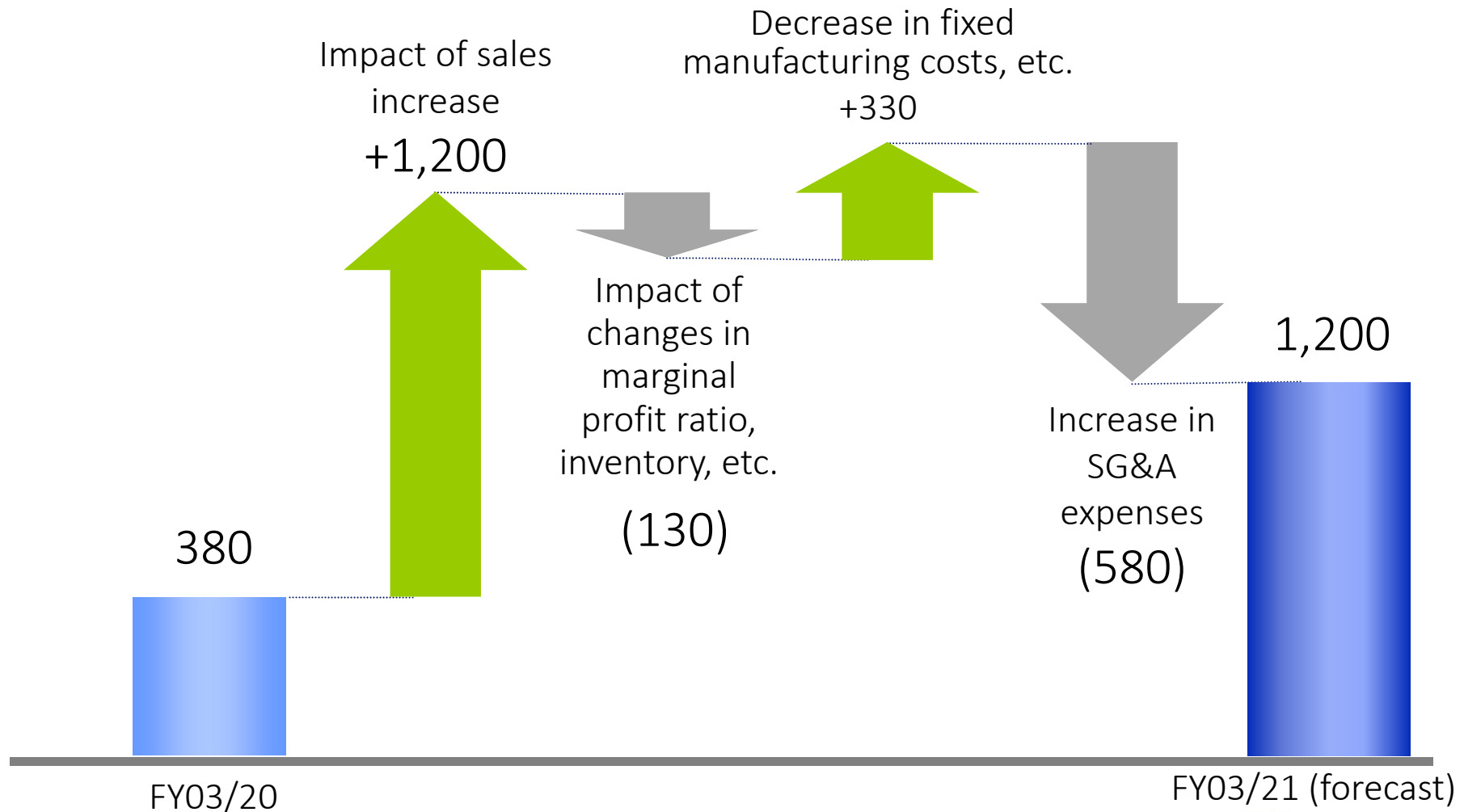
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# Breakdown of projected year-on-year change in non-consolidated operating income

(millions of yen)



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# Future Outlook



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# 1. Order trends and outlook



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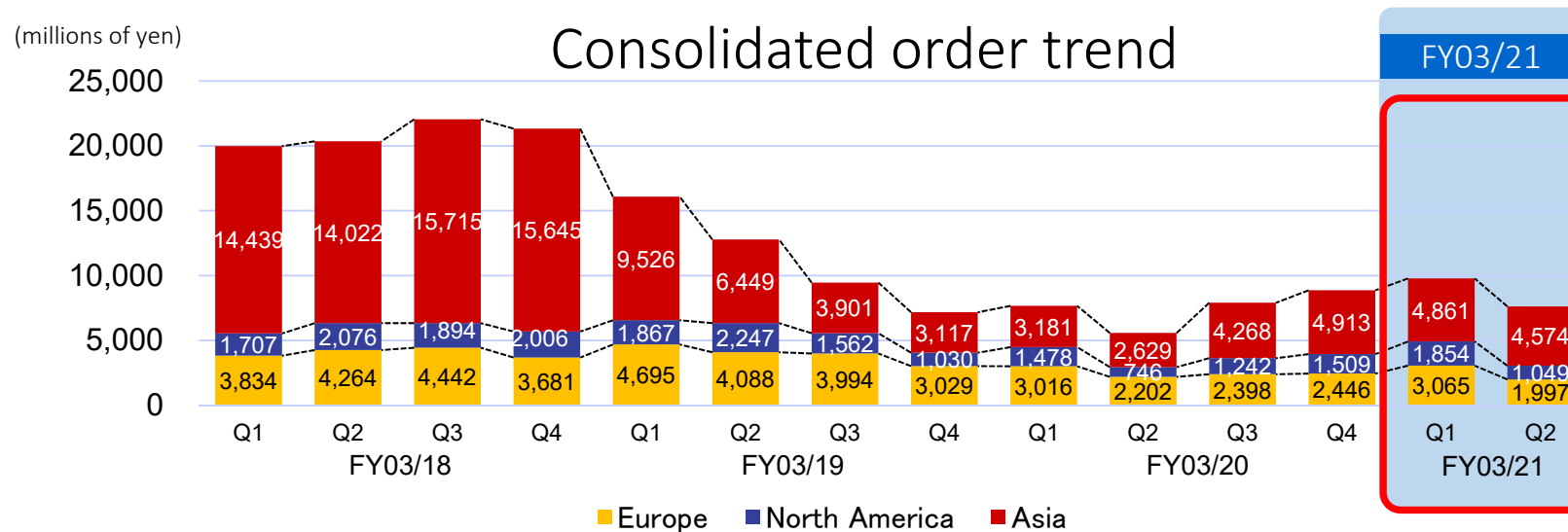


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## 1-1. Our operating environment

COVID-19 outbreak caused recovery to stall



### Asia

Steady demand from Chinese market for domestic robot manufacturers

### North America

Orders for service robots were down, but orders for semiconductor and medical applications were steady

### Europe

Manufacturers with a strong presence in the Chinese market showed signs of recovery, but overall market remained sluggish



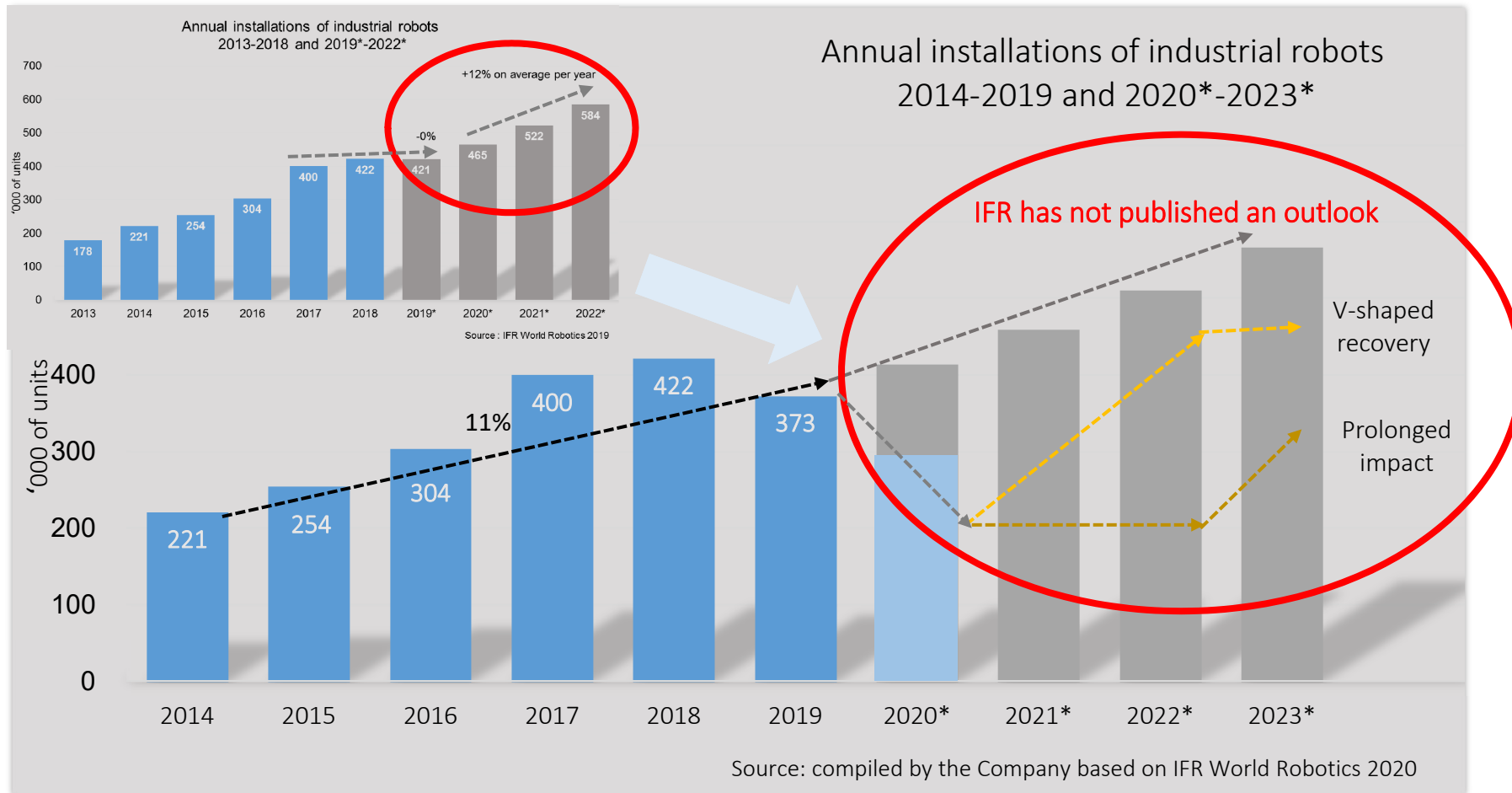
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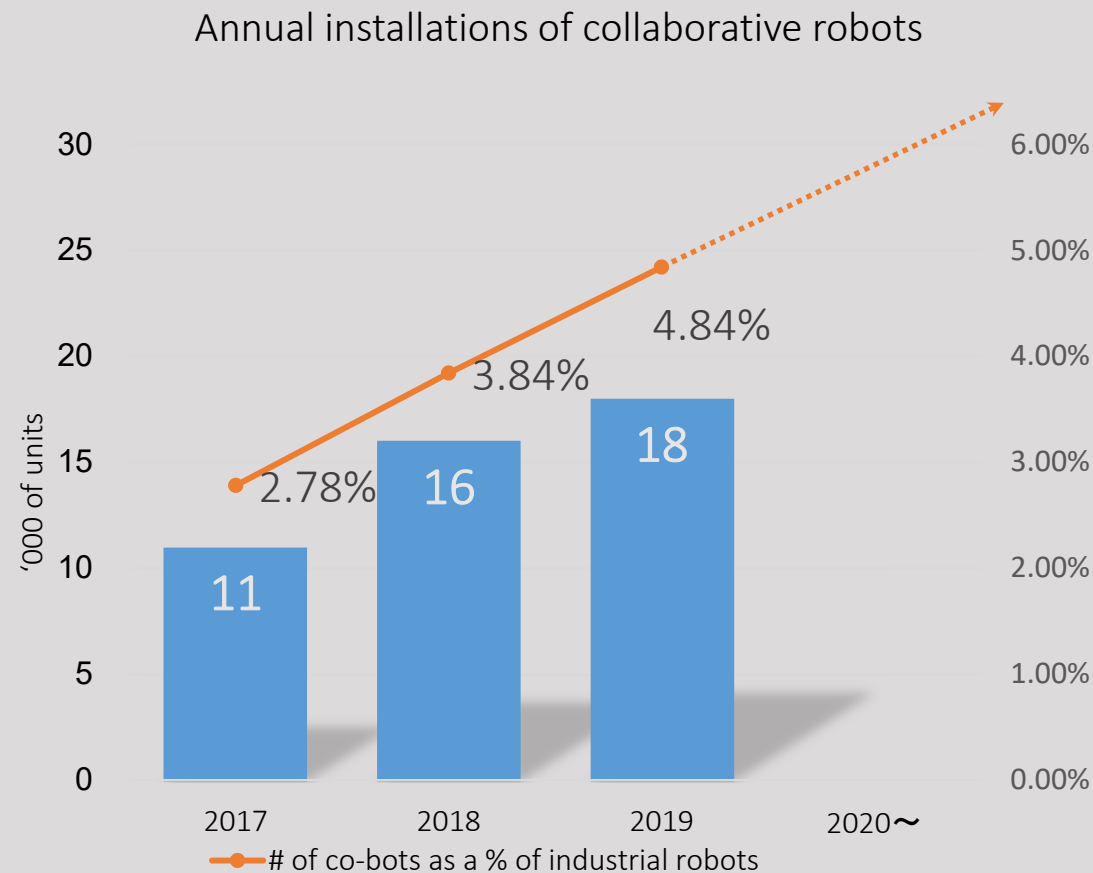
## 1-2. Worldwide outlook for number of industrial robots sold

- COVID-19 outbreak led to a slowdown in capital investment
- Meanwhile, automation and labor-saving demand accelerated amid pandemic



# 1-3. Collaborative robots (co-bots)

- COVID-19 response: Rising demand for collaborative robots for managing labor and avoiding the three Cs (Confined spaces, Crowded places, and Close contact)
- More companies newly entering the collaborative robot market, leading to market growth



Source: Compiled by the Company based on IFR World Robotics 2020



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# 1-4. Semiconductor manufacturing equipment and surgical robots

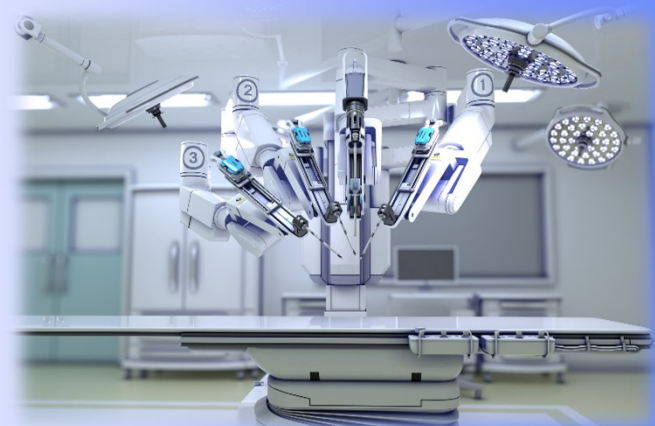
## Semiconductor manufacturing equipment

- Driven by cutting-edge technology investment by foundries; Large-scale capital investment in memory in full swing
- Domestic semiconductor production efforts accelerated in China. Production capacity expansion led to higher sales of semiconductor manufacturing equipment.



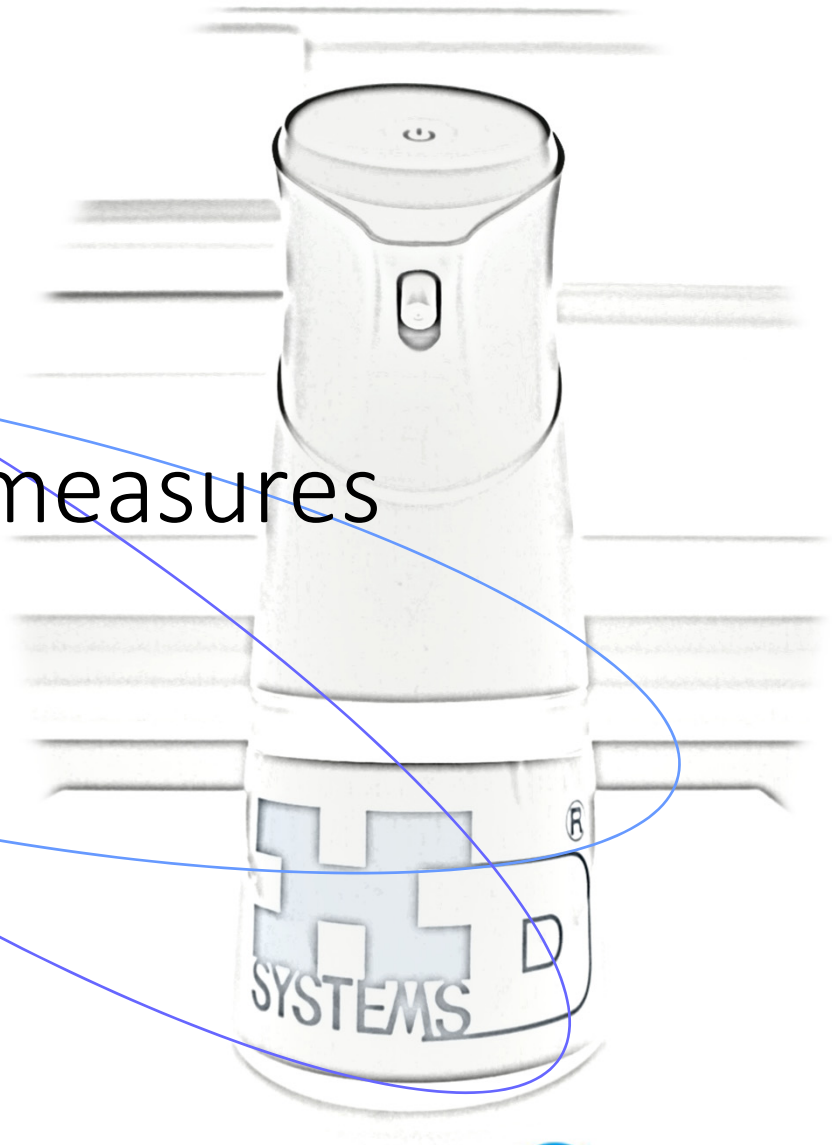
## Surgical robots

- Wide variety of robots under development globally
- Harmonic Drive Systems and group companies cooperating from the development stage
- Can showcase our product strengths (compactness & ultra-precision) in this market
- Market set to grow with widespread adoption of remote surgery in conjunction with 5G expansion; Expectations as future growth driver for the Company





## 2. COVID-19 measures



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## 2-1. Initiatives to minimize risk of infection

### Safety and security of employees and stakeholders is No. 1 priority

- Thorough disinfection and ventilation implemented; placed posters to alert safety measures
- Encouraged remote work and avoiding public transportation
- Developed remote work infrastructure
- Changed office layout to avoid three Cs
- Established a hub in Omiya to maintain Kanto area sales mobility



Omiya Hub

### COVID-ready production and sales system

- Used new factory wing office to avoid three Cs
- Production accelerated by one day assuming a one-day factory shutdown in the event of an infection
- Implemented tools and stepped-up efforts to improve remote communication skills of employees to enhance remote customer service



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## 2-2. Sales initiatives during the COVID-19 outbreak

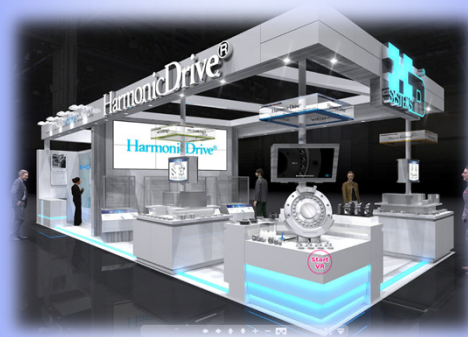
### Exhibition participation

- Proactively participating in exhibitions with thorough infection prevention measures in place
- Technical presenters provide product descriptions from our factory using a remote conferencing system



### Virtual exhibitions

- Plans in place to participate in virtual exhibitions
- Introduced own virtual exhibition on the company website



We are maximizing output by combining physical and virtual worlds.

### 3. Review of current medium-term management plan



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### 3-1. Basic policies of **medium-term management plan** spanning FY03/19 to FY03/21

#### 50th Anniversary of Founding

Seize rapidly expanding growth opportunities and advance to next stage

1

Expansion of RD, MT, and AD businesses (establishing three cores)  
Buildout global monthly HD production capacity to 280,000+ units

2

Increase customer satisfaction by raising QCDS capabilities

3

Raise capabilities of group companies to strengthen all-around abilities

4

Strengthen management foundation (especially human resources) to support future growth

5

Staging the Growth for Years 2030 and 2050



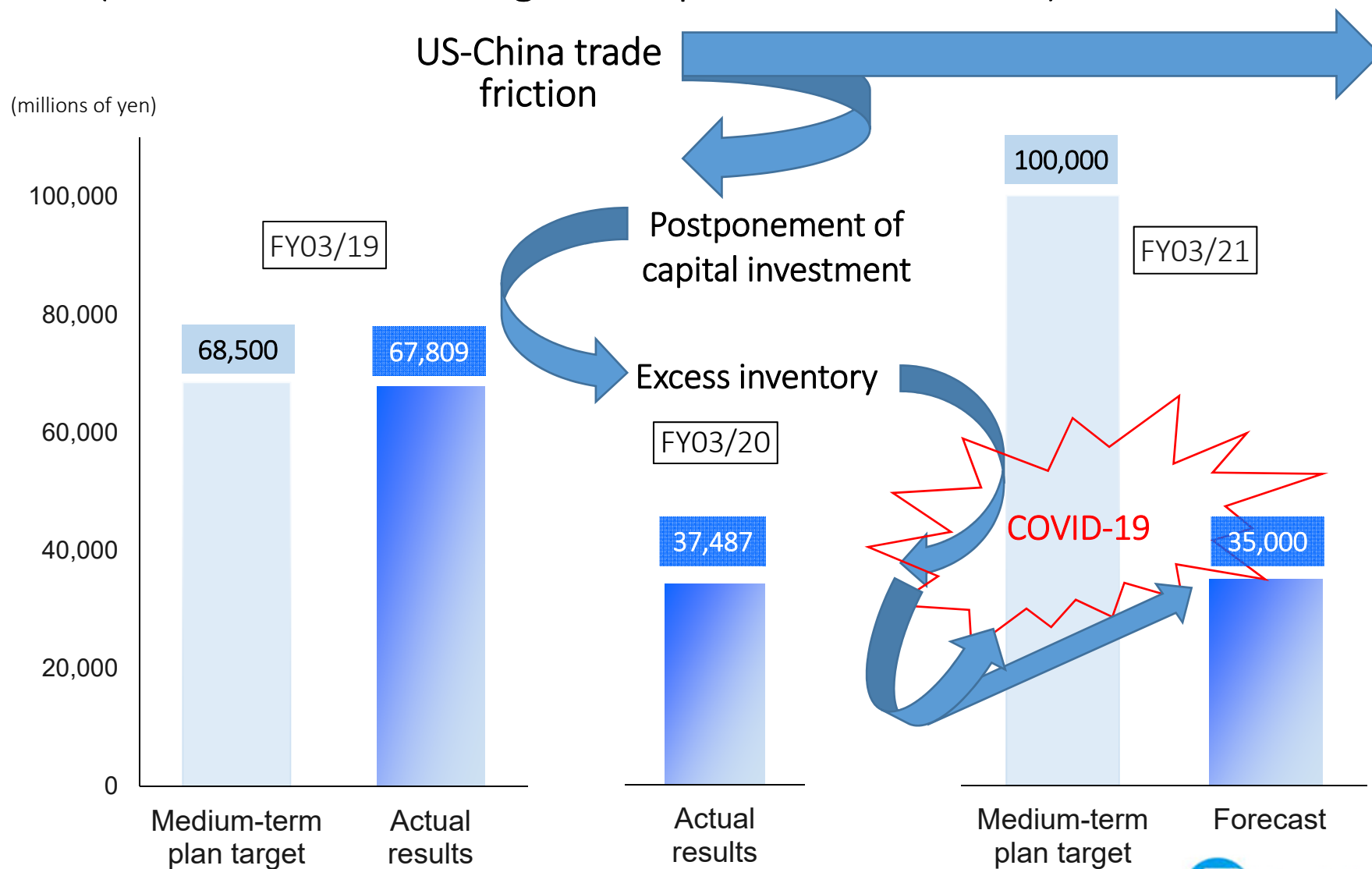
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## 3-2. Consolidated net sales (medium-term management plan versus results)



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## 4. Toward formulating the next medium-term management plan (FY03/22 to FY03/24)



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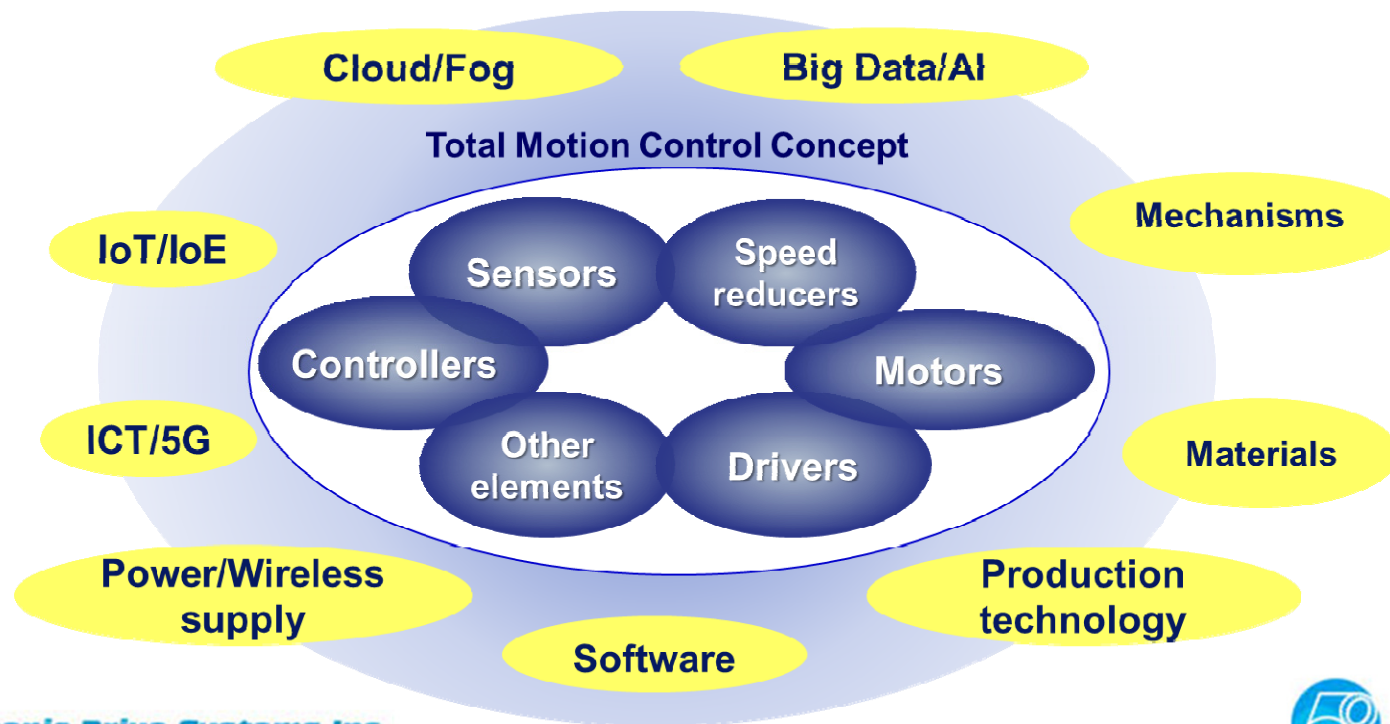
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## 4-1. Next medium-term management plan (FY03/22 to FY03/24)

- Missed current medium-term targets, but our competitiveness and management foundation remains solid
- Firming up on sectors based on economic indicators and less sensitive to capital investment trends (medical, aerospace, animatronics, etc.)

Diversifying operating environment



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## 4-2. Mechatronics focus

Develop mechatronic products that maximize  
Harmonic Drive® performance

Driver



High  
response

Actuator



Ultra-  
compact

Ultra-flat

Bringing the  
**customer's  
vision** to life  
through  
innovative  
mechatronic  
products

Medical /  
Research

Robotics / FA

Collaborative  
Robots

AGV



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## 4-3. Company-wide quality improvement

Quality



Fulfilling customer expectations

Improve product and operational quality

Example of a FY03/21 initiative:

Launched the Emergency Response (ER) Team

Swiftly responded to urgent customer requests through company-wide efforts

Quick responses and proposals led to inquiries



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## 4-4. Alliance with SRI: A stepping stone to the future

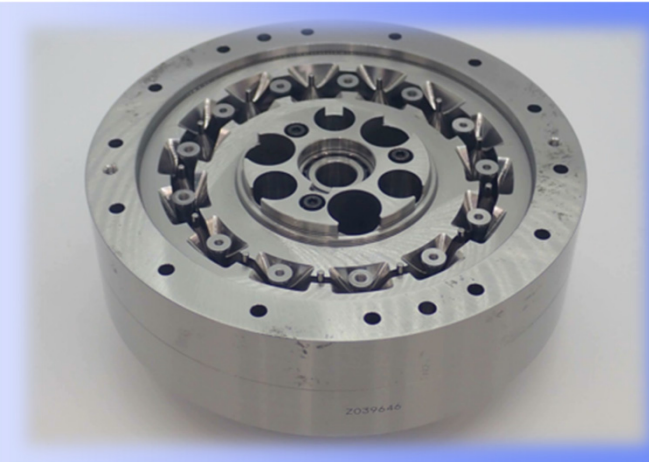
### ■ Joint research on Abacus drive with SRI

- Pure rolling cycloid drive
- Features of Abacus drive
  - High energy efficiency (low loss)
  - Low reduction ratio region  
(complementary with strain wave gearing devices)



### ■ Prototype evaluation

- Confirmed **96.6%** energy efficiency  
Continuing research as a next-generation new technology





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