

Fiscal Year ending September 30, 2024 Second Quarter Report



Hamamatsu Photonics K.K.

Tokyo Stock Exchange : 6965

May 2024

1H FY2024 Results and FY2024 Full Year Forecast

1H FY2024 Results

- **Sales 103.9 billion yen (YoY : -7.6 billion yen, vs. plan : -7.5 billion yen)**

Decrease in special demand related to corona, and decrease in orders due to backlash from customer's order that exceeded actual demand against backdrop of materials shortages over past two years become apparent in various applications.

- **Operating profit : 20.0 billion yen (YoY : -11.4 billion yen, vs. plan : -3.6 billion yen)**

Operating margin: 19.3%

YoY : Main reason of decrease in profit is lower sales (5.8 billion yen), change in product mix etc (3.0 billion yen), increase in personnel expenses(2.1 billion yen),and increase in depreciation (1.1 billion yen)

FY2024 Full Year Forecast

- **Sales: 211.1 billion yen (YoY : -10.3 billion yen, vs. plan : -13.2 billion yen)**

Impact of order decline due to backlash from customer's advance order has been more prolonged and spread across wide applications than initially expected, and customers' excess inventories situation will not be resolved in this fiscal year. Recovery is expected to be delayed until FY2025 or later.

- **Operating profit 37.5 billion yen (YoY : -19.1 billion yen, vs. plan-10.9 billion yen)**

Operating margin 17.8%

Review of capital investment and expenses is underway, while investment for future growth will continue.

- 1. Summary of results**
 - 2. Earning forecast**
 - 3. TOPICS**
-

- 1. Summary of results**
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-

Summary of 1H FY2024 Financial results

Decrease in sales and profit both YoY and vs.plan Decline in profit margin due to lower sale

(Unit : billion yen)

	1H FY2023	1H FY2024	1H FY2024	YoY		vs. plan	
	(Actual)	(Plan)	(Actual)	Change	%	Change	%
Sales	111.6	111.5	103.9	-7.6	-6.8	-7.5	-6.7
Gross profit (%)	62.1 (55.7%)	57.9 (51.9%)	53.4 (51.4%)	-8.7	-14.0	-4.4	-7.6
Operating profit (%)	31.5 (28.2%)	23.7 (21.3%)	20.0 (19.3%)	-11.4	-36.2	-3.6	-15.2
Net profit	23.7	18.3	16.7	-6.9	-29.1	-1.5	-8.2

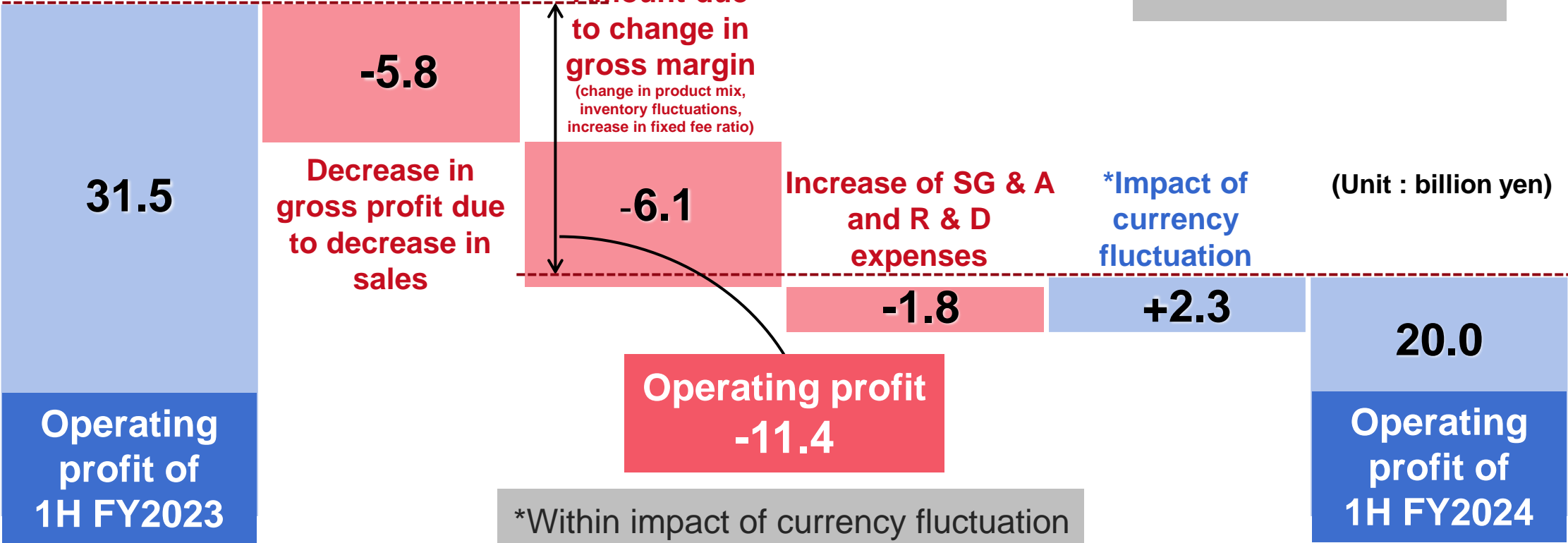
Exchange rate (Yen)	\$1	136.97	135.00	148.23
	€1	143.23	145.00	160.16
	RMB1	20.02	19.50	20.19

FX sensitivity/Year (1-yen fluctuation)		Impact by currency fluctuation to operating profit
\$1	0.3	
€1	0.1	
RMB1	0.8	
		2.3

Operating profit variation Analysis 1H FY2023-2024

\$:136.97→148.23
 € :143.23→160.16
 RMB:20.02→20.19

Without impact of currency fluctuations



*Within impact of currency fluctuation to Gross profit	3.2
to SG & A expenses	-0.9
Impact to Operating profit	2.3

Sales by application

(Unit : billion yen)

	1H FY2023 (Actual)	1H FY2024 (Plan)	1H FY2024 (Actual)	YoY		vs. plan	
				Change	%	Change	%
Medical-bio instrument	40.9	38.6	33.7	-7.2	-17.6	-4.9	-12.7
Industrial instrument	38.5	37.8	34.9	-3.6	-9.4	-2.9	-7.7
Analytical instrument	11.3	11.4	10.0	-1.3	-11.5	-1.4	-12.3
Academic research	6.1	8.5	9.0	2.9	47.5	0.5	5.9
Measuring instrument	4.8	5.1	5.6	0.8	16.7	0.5	9.8
Transport instrument	3.4	2.9	2.8	-0.6	-17.6	-0.1	-3.4

Sales by application (Medical-bio instrument)

(Unit : billion yen)

	1H FY2023 (Actual)	1H FY2024 (Plan)	1H FY2024 (Actual)	YoY vs. plan			
				Change	%	Change	%
Radiographic testing	27.1	24.0	21.0	-6.1	-22.5	-3.0	-12.5
Laboratory testing	12.2	12.2	10.5	-1.7	-13.9	-1.7	-13.9
Medical-bio instrument	40.9	38.6	33.7	-7.2	-17.6	-4.9	-12.7

Radiographic testing

- **For X-ray CT (YoY: -3.4)**

Rise of Chinese CT makers in China and preferential policies for Chinese products make European and U.S. customers struggle.

Demand decrease due to restrained capital investment by high interest rates in Europe and U.S.

- **For Dental (YoY : -2.1)**

Demand decrease due to intensified price competition mainly in Chinese market, as well as curbs on capital investment by small and medium-sized clinics due to high interest rates in Europe and U.S. (excess inventories continue).

Laboratory testing

- **For PCR (YoY : -0.8), DNA testing (YoY : -0.6)**

Special demand related to corona declined

- **For pathological diagnosis (YoY : +0.2)**

Demand increase from Japanese medical institutions due to sales expansion as medical equipment.

Sales by application (Industrial instrument)

	1H FY2023 (Actual)	1H FY2024 (Plan)	1H FY2024 (Actual)	(Unit : billion yen)			
				YoY		vs. plan	
				Change	%	Change	%
Semiconductor instrument	22.6	20.1	21.3	-1.3	-5.8	1.2	6.0
Non destructive testing	10.4	12.3	9.3	-1.1	-10.6	-3.0	-24.4
Factory automation	4.0	4.0	3.1	-0.9	-22.5	-0.9	-22.5
Industrial instrument	38.5	37.8	34.9	-3.6	-9.4	-2.9	-7.7

Semiconductor instrument

- **For Wafer inspection (YoY : -0.3)**

Market environment is recovering, but demand is declining due to inventory adjustments by customers, which is expected to gradually dissipate from FY2025 onward.

- **Stealth Dicing (YoY : +0.2)**

Demand increase for HBM (High Bandwidth Memory) due to booming AI market

Non destructive testing

- **For Battery inspection equipment (YoY : -0.5), Electronic component inspection equipment (YoY : -0.1)**

Demand decrease due to EV market slowdown, including termination of EV subsidies in China and other countries, and elimination of LiB makers and curbs on capital investment. However, original main market for electronic board inspection is solid.

Factory automation

- **For Encoder (YoY : -0.4)**

Recovery is expected to be delayed due to unresolved excess inventories at Japanese customers (2-3 times normal inventories) as a result of lower demand for machine tools and other products due to slowdown in Chinese economy and a shift to low-priced products made in China.

Sales by application (Analytical instrument and Academic research)

(Unit : billion yen)

	1H FY2023 (Actual)	1H FY2024 (Plan)	1H FY2024 (Actual)	YoY		vs. plan	
				Change	%	Change	%
Analytical instrument	11.3	11.4	10.0	-1.3	-11.5	-1.4	-12.3

Analytical instrument

- **For Liquid chromatography systems (YoY : -0.8)**
Demand decrease due to restrained capital investment caused by stagnation in drug discovery market

	1H FY2023 (Actual)	1H FY2024 (Plan)	1H FY2024 (Actual)	YoY		vs. plan	
				Change	%	Change	%
Academic research	6.1	8.5	9.0	2.9	47.5	0.5	5.9

Academic research

- **For High energy physics experiments (YoY : +1.7)**
Shipments for Hyper-Kamiokande and CERN

Demand increase for scientific measurement cameras

Sales by application (Measuring instrument and Transport instrument)

(Unit : billion yen)

	1H FY2023 (Actual)	1H FY2024 (Plan)	1H FY2024 (Actual)	YoY		vs. plan	
				Change	%	Change	%
Measuring instrument	4.8	5.1	5.6	0.8	16.7	0.5	9.8

Measuring instrument

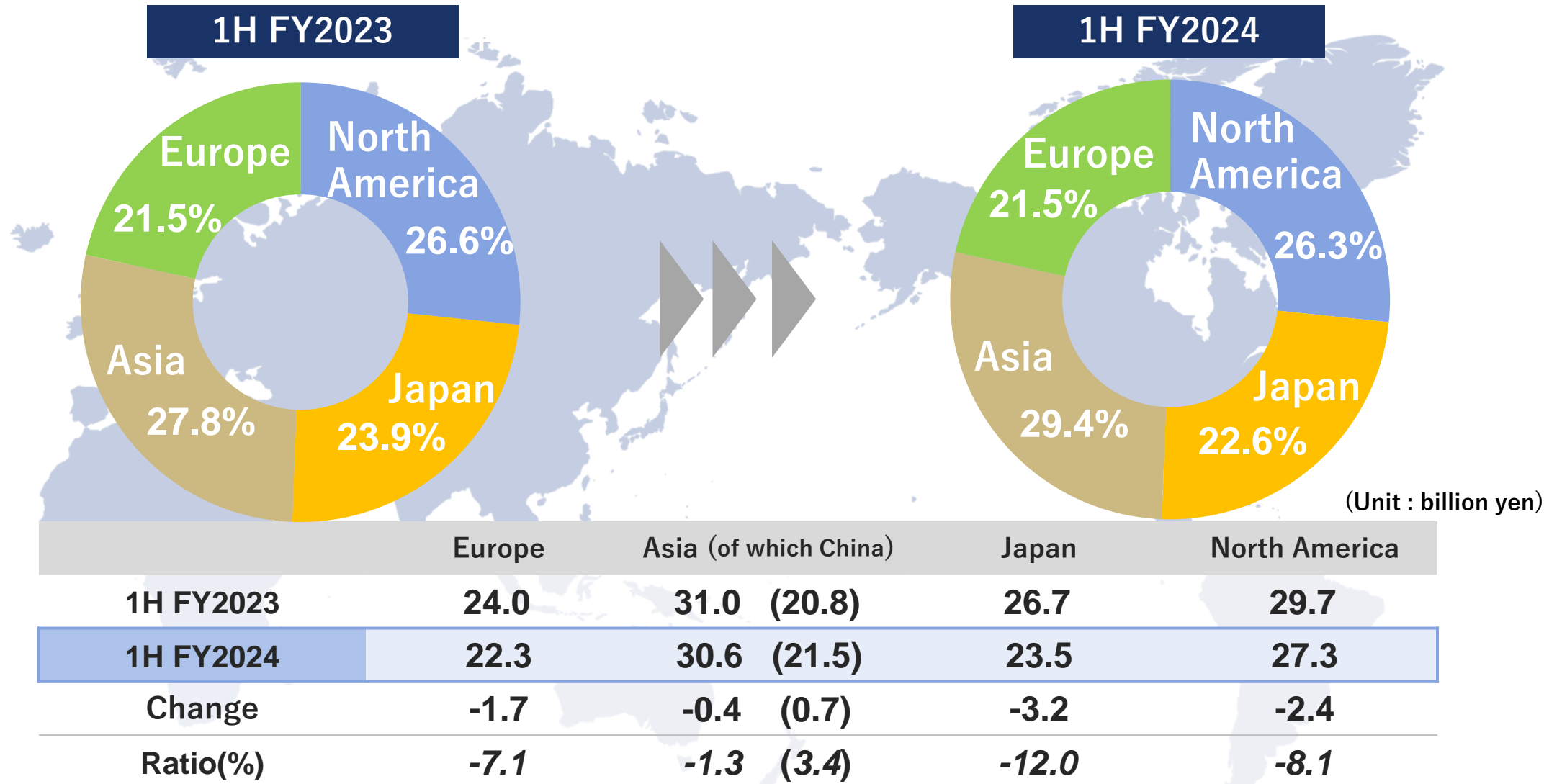
- **For Geological exploration(YoY : +0.8)**
Despite geopolitical risks, oil exploration demand is strong, driven by high oil prices

	1H FY2023 (Actual)	1H FY2024 (Plan)	1H FY2024 (Actual)	YoY		vs. plan	
				Change	%	Change	%
Transport instrument	3.4	2.9	2.8	-0.6	-17.6	-0.1	-3.4

Transport instrument

- **For LiDAR(YoY : -0.6)**
Demand decrease due to economic slowdown in China and delay in launch of automated driving market

Sales by Region



*Excluding other regions

Growth in China, which drove growth in recent years, become slow

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Earning forecast

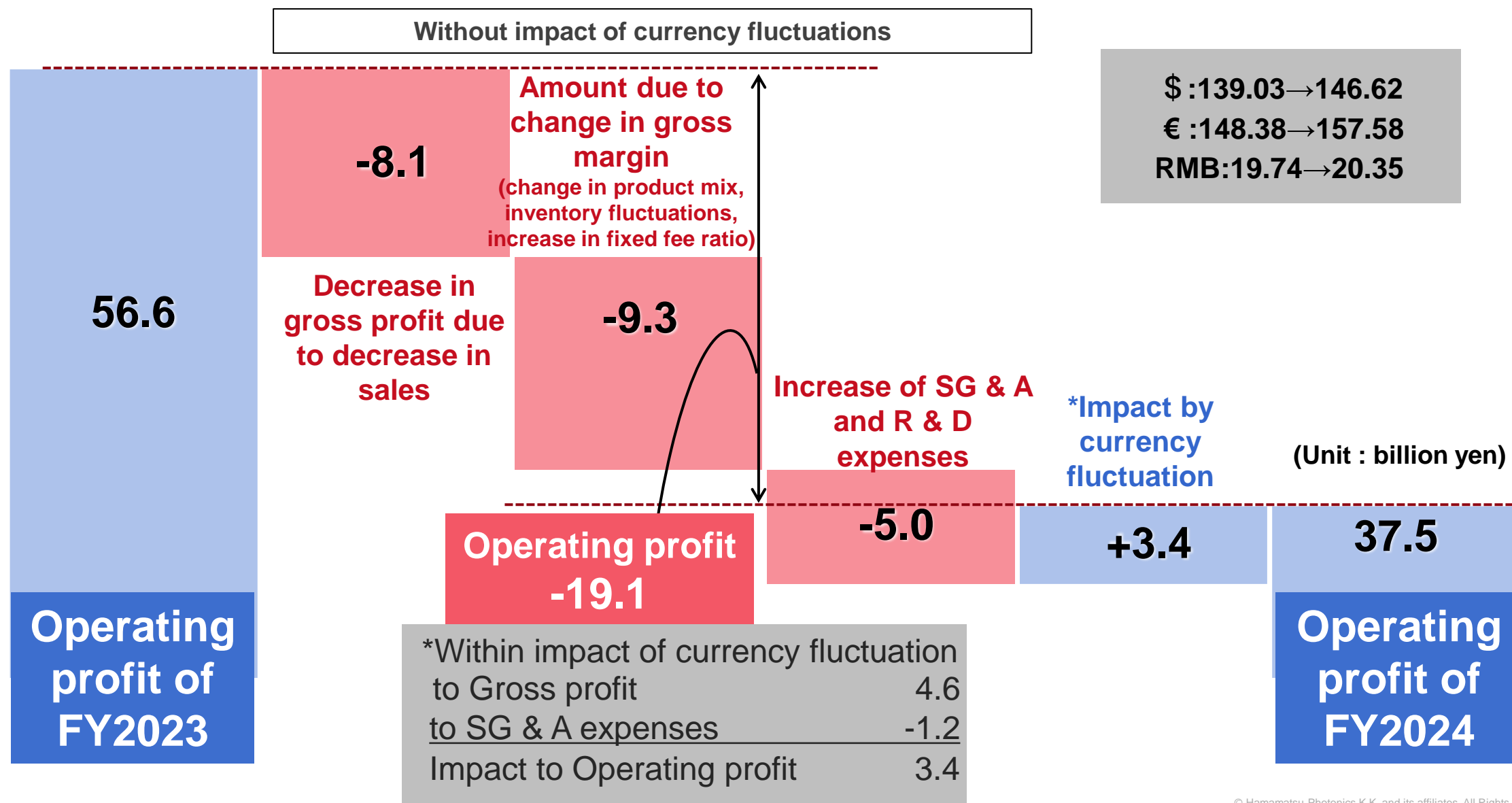
Full-year forecast is revised downward due to prolonged and diverse effects of decline in orders received as a backlash from customer's advance order.
Recovery is expected to be delayed until FY2025 or later.

(Unit : billion yen)

	FY2023 (Actual)	FY2024 (Plan)	FY2024 (Forecast)	YoY		vs. plan	
				Change	%	Change	%
Sales	221.4	224.3	211.1	-10.3	-4.7	-13.2	-5.9
Gross profit (%)	120.0 (54.2%)	116.9 (52.1%)	107.1 (50.7%)	-12.9	-10.8	-9.8	-8.4
Operating profit (%)	56.6 (25.6%)	48.4 (21.6%)	37.5 (17.8%)	-19.1	-33.7	-10.9	-22.5
Net profit	42.8	36.7	29.4	-13.4	-31.3	-7.3	-19.9

Exchange rate (Yen)		FY2023	FY2024	FY2024	FX sensitivity/Year (1-yen fluctuation)		Impact by currency fluctuation to operating profit
	\$1	139.03	135.00	146.62	\$1	0.3	3.4
	€1	148.38	145.00	157.58	€1	0.1	
	RMB1	19.74	19.50	20.35	RMB1	0.8	

Operating profit variation Analysis FY2023-FY2024



Sales by application

Orders continue to decline in many industries due to backlash from customer's advance orders
There has been no significant change of our position in key industries, and we expect to return to growth path in FY2025 as inventory excesses are resolved and market recovers.

(Unit : billion yen)

	FY2023 (Actual)	FY2024 (Plan)	FY2024 (Forecast)	YoY		vs. plan	
				Change	%	Change	%
Medical-bio instrument	78.1	77.3	67.5	-10.6	-13.6	-9.8	-12.7
Industrial instrument	74.4	77.9	67.5	-6.9	-9.3	-10.4	-13.4
Analytical instrument	22.5	23.5	21.3	-1.2	-5.3	-2.2	-9.4
Academic research	14.5	16.2	16.8	2.3	15.9	0.6	3.7
Measuring instrument	10.7	10.0	10.5	-0.2	-1.9	0.5	5.0
Transport instrument	6.0	5.9	5.7	-0.3	-5.0	-0.2	-3.4

For X-ray CT (Typical trend of major customer)

For X-ray CT

From 2021

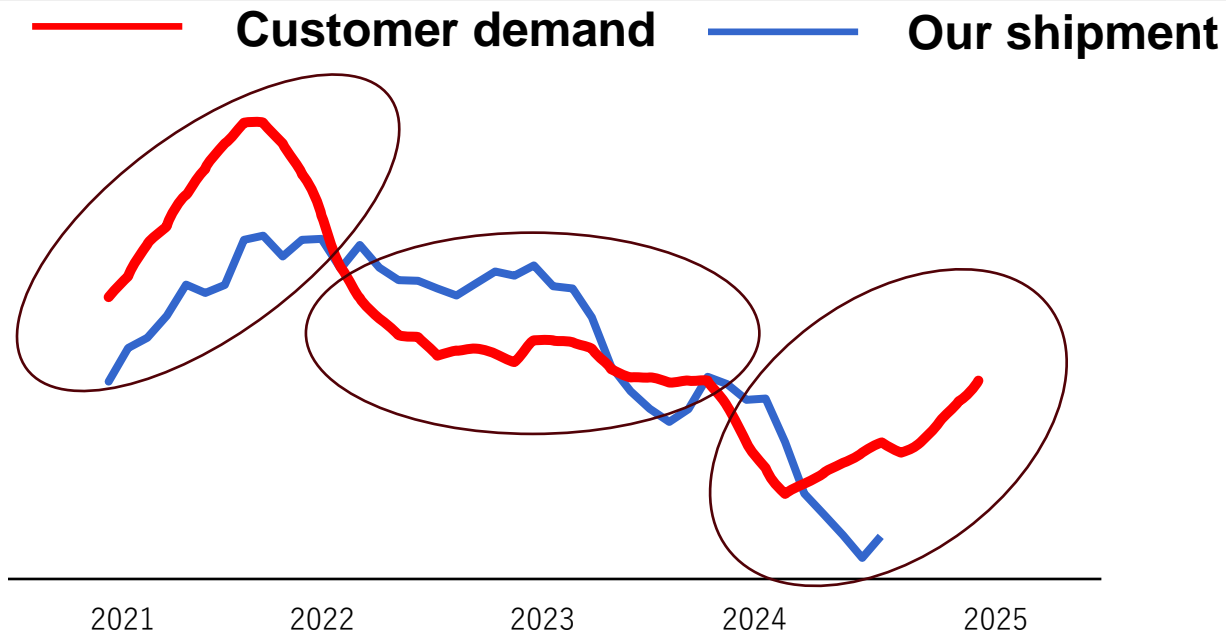
Shipment could not keep up with rapid increase in demand for X-ray CT at Corona pandemic and continued to increase production.

From 2022 to 2023

In complete turnaround, excess inventory due to declining customer demand after Corona pandemic became apparent. Production adjustment continued.

From 2024

Bottoming out in 1H FY2024 and customer demand is forecasted to rise. Recovery in normal trend is expected from 2H FY2024



For Dental (Typical trend of major customer)

For Dental

From 2021

Production falls below demand due to shortages of electronic components and other materials.

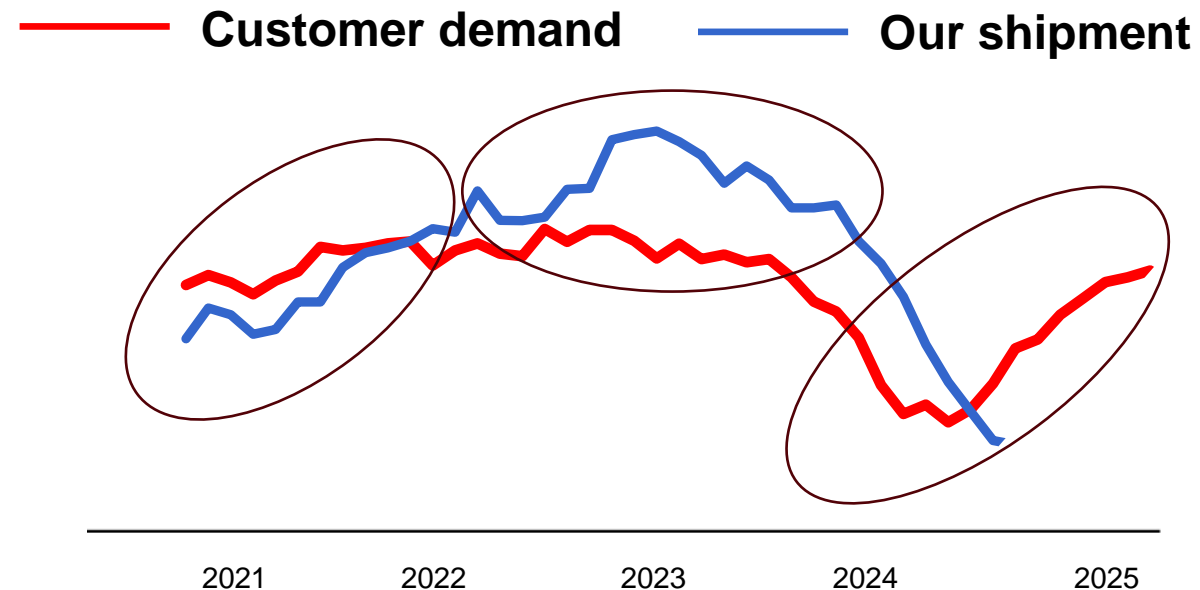
From 2022 to 2023

We continued to increase production by responding to past customer requests for shipments, but excess inventory at customers became apparent due to sharp drop in demand caused by high interest rates in Europe and U.S. and intensified competition in China domestically.

From 2024

Demand appears to have bottomed out, but it is expected to take time to eliminate excess inventory.

Recovery is expected in future, but there are concerns due to intensifying price competition on manufacturer side.



For Semiconductor instrument (Typical trend of major customer)

For Semiconductor instrument

From 2021 to 2023

Production could not keep up with demand and we continued to increase it.

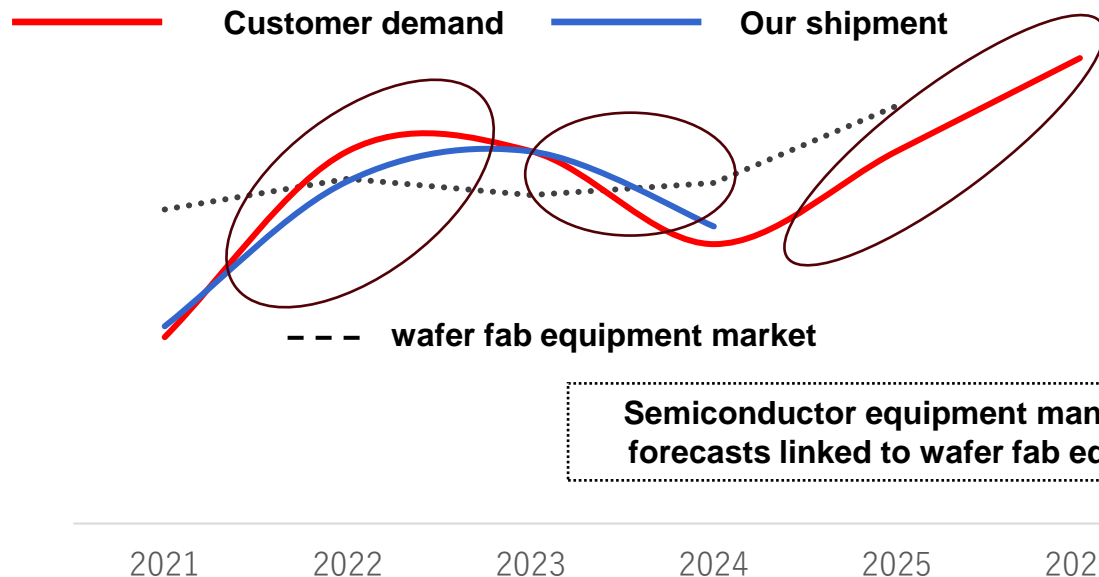
From 2023

We continued to increase production by responding to past customer requests for shipments.

Peaked in 2022, demand declined sharply due to memory recession.

From 2024

Demand clearly bottomed out. Demand is expected to recover from 2H FY2024 and exceed record highs in FY2025. Production to increase with delay of 6 months to 1 year from market.



*Source : SEMI Wafer Fab Equipment Market Information

Provides high market share products for major semiconductor manufacturing and inspection equipments

Mask blanks/Mask Inspection

EUV light source for inspection



Optical Critical Dimension measurement

Laser-Driven Light Sources (LDLS)



Optical Endpoint detection
Plasma emission spectroscopy

CCD for spectral measurement



Defect Inspection/Metrology

Xenon lamps



TDI-CCD

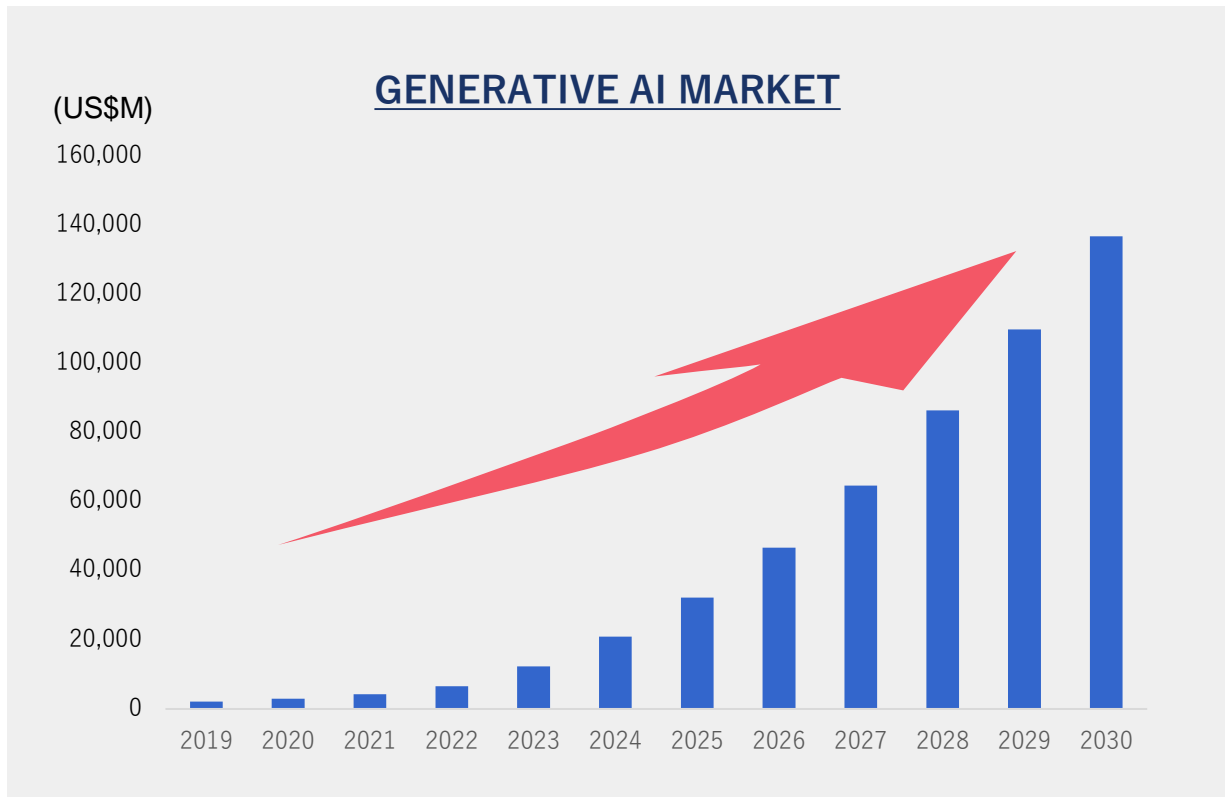


Photomultiplier tubes



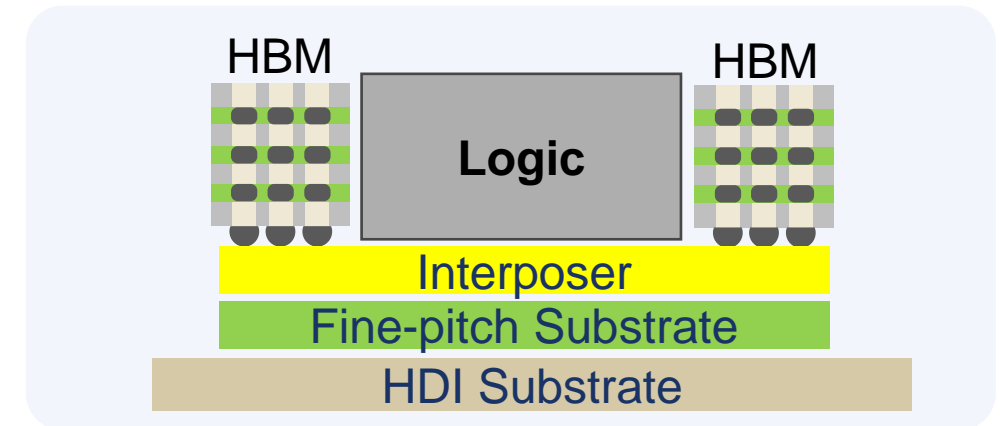
Semiconductor Market Driven by AI

Generative AI market will expand at a rate of CAGR about 50% over the 10 years.



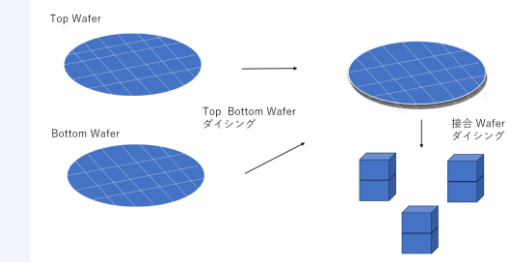
Source : GENERATIVE AI MARKET, Forecast to 2030, MarketsandMarkets

Generative AI chips includes GPU and HBM (high-bandwidth, high-capacity, high-speed special memory)

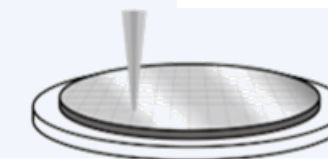


Use of wafer bonding technology to improve device performance

Individuating HBM · DRAM chips

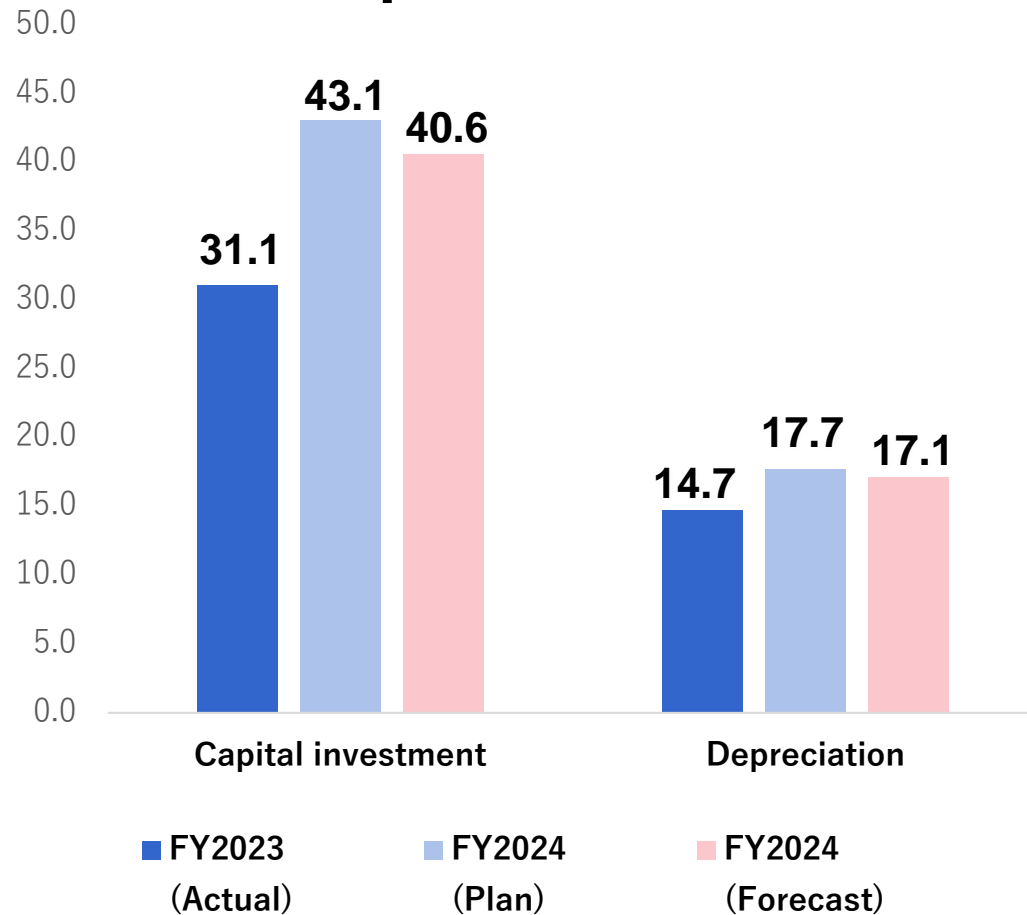


Stealth Dicing



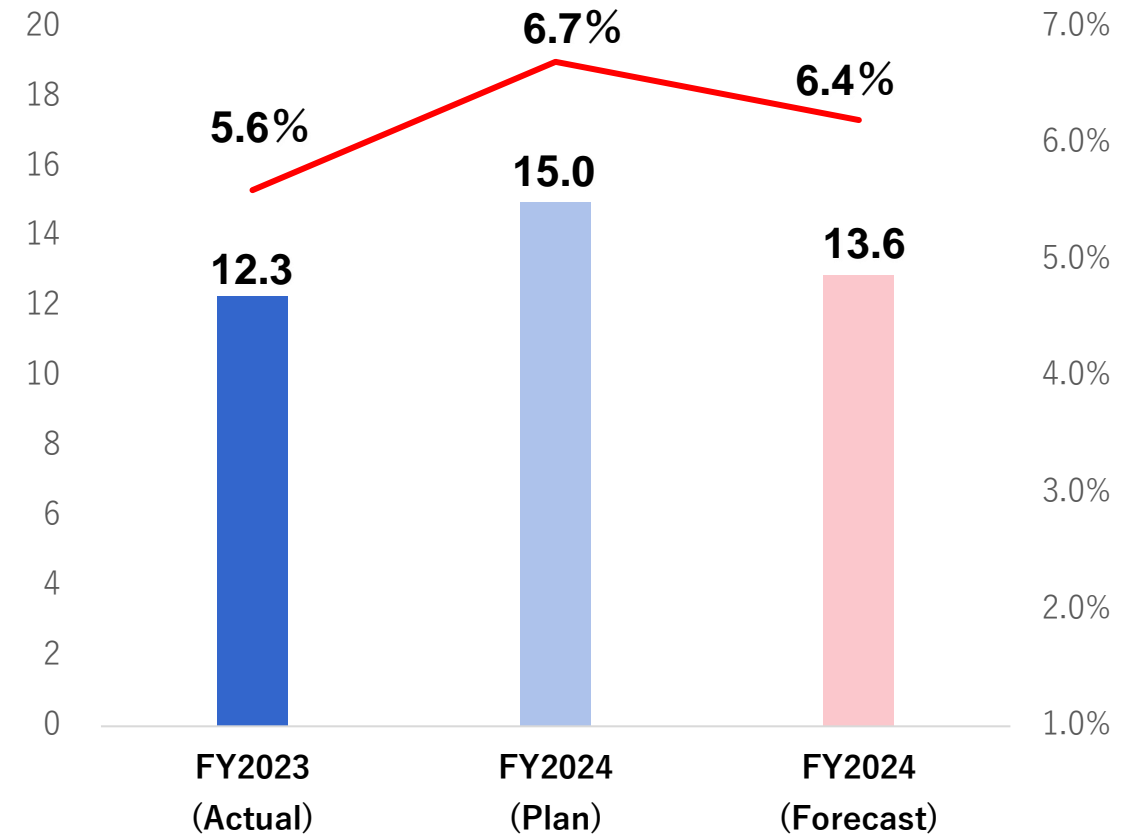
Capital investment/Depreciation/R&D expenses

Capital investment and Depreciation



R&D expenses and ratio of R&D expense to sales

(Unit : billion yen)



Action to Implement Management that is Conscious of Cost of Capital and Stock Price

Stock split

■ Purpose of Stock split

To improve liquidity and expand investor base by reducing amount per investment unit through stock split and creating friendly environment to investment

■ Details of Stock split

Two-for-one stock split of Company's common stock (Record date : September 30, 2024, Effective date : October 1, 2024).

Dividends for FY2024

■ Maintain dividends for current fiscal year

Annual dividend will be maintained at 76 yen per share as planned

Stock buy-back

■ Under consideration

Considering implementation at appropriate time after completion of NKT Photonics acquisition, based on overall funding situation, debt financing, etc.

Action to Implement Management that is Conscious of Cost of Capital and Stock Price

Response to request from Tokyo Stock Exchange

- March 28 Disclosure of responses to achieve cost of capital and stock price conscious management

Considerations for next Mid-term plan (November, 2024)

- Growth strategy story to enhance corporate value over mid-term

Consideration of financial strategy in conjunction with mid-term plan

■ Awareness of appropriate allocation of management resources

- ✓ Determination of target management indicators, analysis including elemental decomposition, and consideration of countermeasures
- ✓ Upgrade Mid-term Capital Allocation Policy
- ✓ Investment in growth (M&A, capital investment, R&D, etc.) and consider shareholder return initiatives
- ✓ Consideration of leverage effects through use of financing (e.g., increased debt)

■ Balance sheet inspection

- ✓ Analysis and evaluation of current situation, and consideration of future goals

■ Management conscious of cost of capital

- ✓ Sustained profitability in excess of cost of capital and widening of gap between cost of capital and profit、 Consideration of measures to reduce capital costs

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Creating synergies through collaboration

Value-added
Initiatives

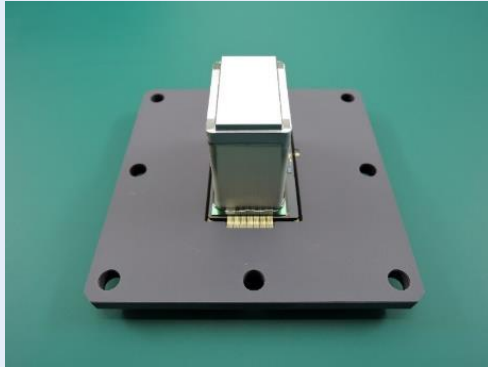
Creation of new
technologies and
growth businesses

Value-added Initiatives



~Establishment of new business~

Promotion of high value-added custom module business



- ✓ Collaboration of in-house **elemental technologies**
- ✓ **High value-added custom products** in line with customer requirements
- ✓ Building **new businesses** across **segment**
- ✓ Can be implemented **directly into customer end products**



Electron Tube segment

- ✓ FOP Fiber Plates
- ✓ Scintillator
- ✓ Light sources & Detectors



Imaging and Measurement Instruments segment

- ✓ Image processing technology
- ✓ Optical design technology
- ✓ Circuit and software design technology
- ✓ Product realization technology



Opto-semiconductor segment

- ✓ Image sensors
- ✓ Light sources & Detectors



~Strengthening Core Competence~

Newly established X-ray business strategy office (May 1)

- ✓ Launched as new cross-divisional organization (personnel selected from each segment)
- ✓ Proposal for development of **new high value-added products** by coordinating **in-house X-ray elemental technologies**
- ✓ Marketing, sales strategy, new product proposals, and technology verification **across segments**

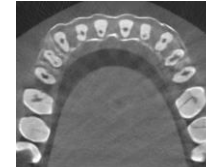
Electron Tube segment

- ✓ Microfocus X-ray Sources
- ✓ FOP (Fiber Optic Plate)
- ✓ Scintillator



Imaging and Measurement Instruments segment

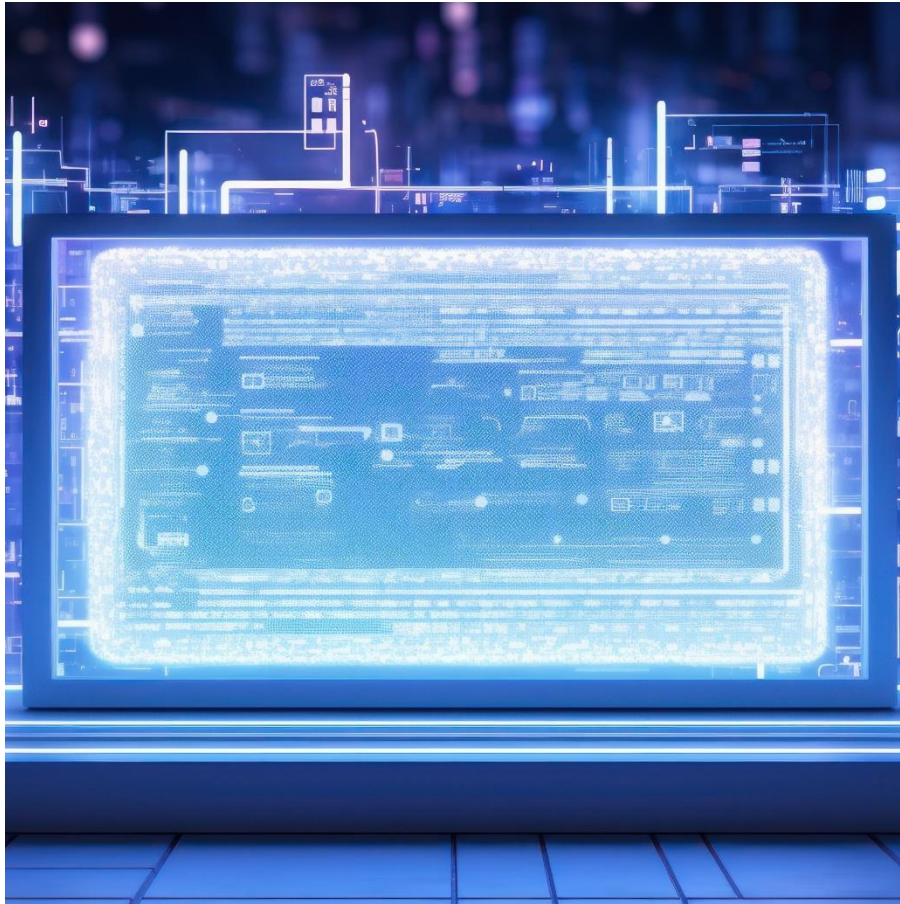
- ✓ X-ray line sensor camera
- ✓ 2D X-ray camera
- ✓ AI de-noising algorithm



Opto-semiconductor segment

- ✓ X-ray Flat Panel
- ✓ TDI-CCD CMOS
- ✓ Photodiode for X-ray CT





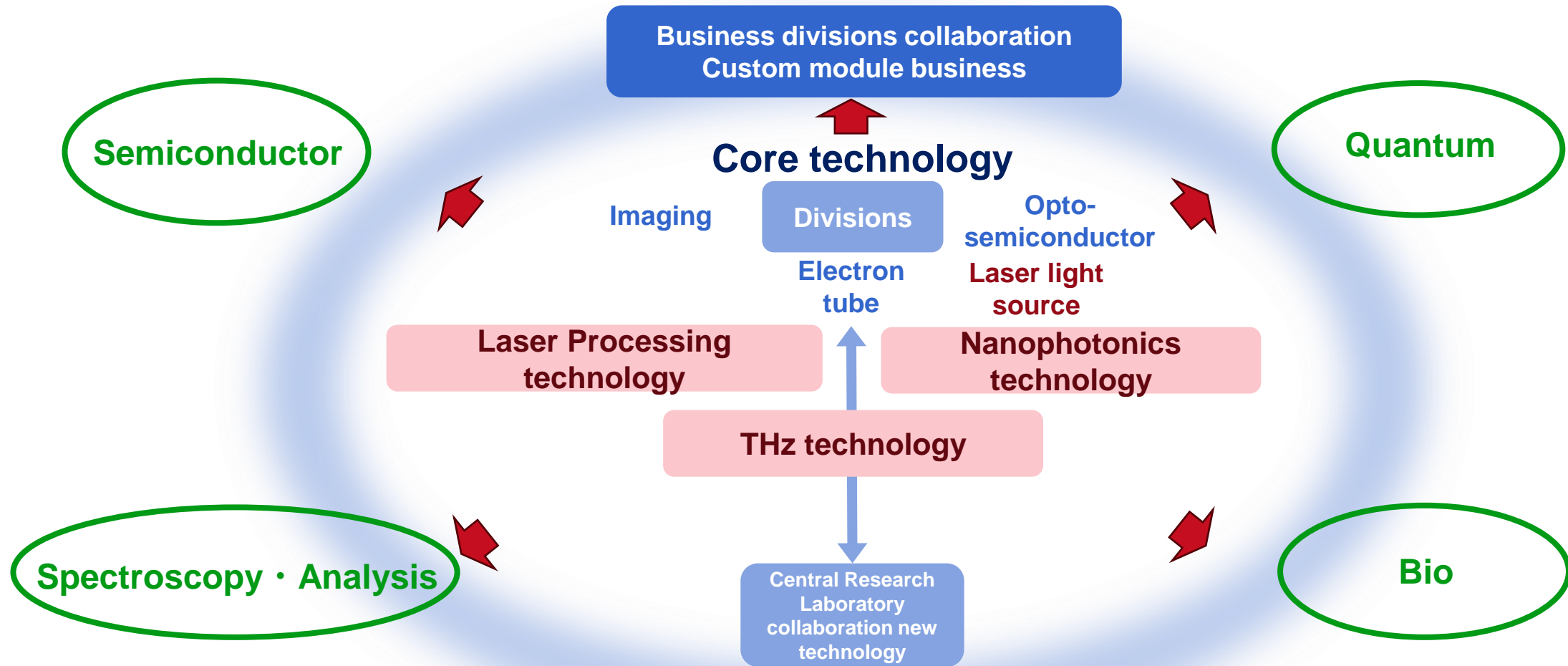
**Creation of new
technologies and
growth businesses**

Business Composition (Components)



Creation of new technologies and growth businesses

~Collaboration with the Central Research Laboratory~



Creation of growth businesses

- ✓ Contribution to production of 3D advanced semiconductor chips for generative AI
- ✓ Providing new measurement and failure analysis methods



Semiconductor

Source : Semiconductor Manufacturing Equipment Market – Forecast to 2028,MarketsandMarkets

- ✓ Supplying key components
- ✓ Accelerating practical application

Quantum



Source : Quantum Photonics Market - Forecast to 2030,MarketsandMarkets



Spectroscopy · Analysis

- ✓ Providing innovative new devices
- ✓ Providing new measurement methods

Source : Life Science Instrumentation Market - Forecast to 2028,MarketsandMarkets

Bio



- ✓ From selling products to selling services in drug discovery field
- ✓ Providing cloud-based analysis technology

Source : Cell Based Assays Market - Forecast to 2028,MarketsandMarkets

Creation growth businesses < Quantum >

Quantum computer

< Neutral atom main technologies >

Optical phase modulator LCOS-SLM
Qubit detection camera ORCA-Quest



- ✓ Supplying key components
- ✓ Accelerating practical application



Source : Quantum Photonics Market - Forecast to 2030,MarketsandMarkets

Quantum sensing

< Ultra-sensitive magnetic measurement technology >

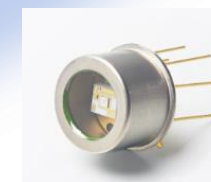
Optical pumping magnetic sensor OPM
Magneto brain measurement MEG



Quantum network

< Single photon detection technology >

Superconducting nanostrip single photon detector SSPD
Single photon detection avalanche diodes SPAD



Creation of growth businesses < Semiconductor >

- ✓ Contribution to Production of 3D advanced semiconductor chips for generative AI
- ✓ Providing new measurement and failure analysis methods

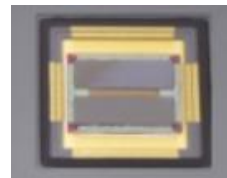


Semiconductor

Source : Semiconductor Manufacturing Equipment Market – Forecast to 2028, MarketsandMarkets

Semiconductor Production · Inspection

High speed and high sensitivity
TDI-CCDCMOS technology



Enegetiq
EUV light source
Laser-Driven Light Sources
(LDLS)

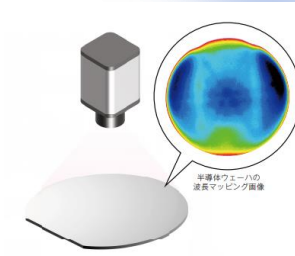


Semiconductor Production Technology

Stealth dicing SD

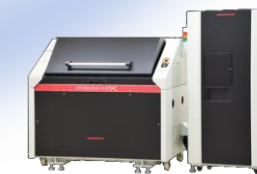
In-plane film thickness gauge

Ultra-high D-range spectrometer OPAL-Luxe

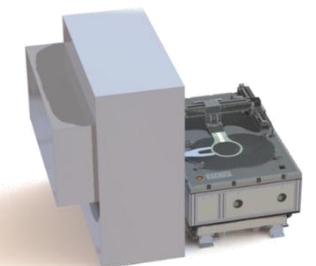


Semiconductor Failure Analysis

From extraction to automation iPHEMOS-MPX
Providing a new heat emission analysis method



iPHEMOS-MPX



Creation of growth businesses < Spectrum · Analysis >

- ✓ Providing innovative new devices
- ✓ Providing new measurement methods



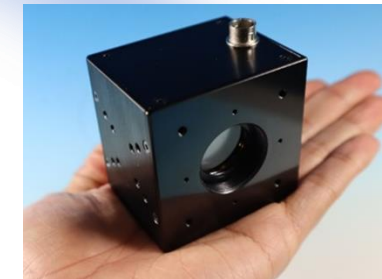
Spectroscopy · Analysis

Source : Life Science Instrumentation Market - Forecast to 2028,MarketsandMarkets

THz Spectroscopy

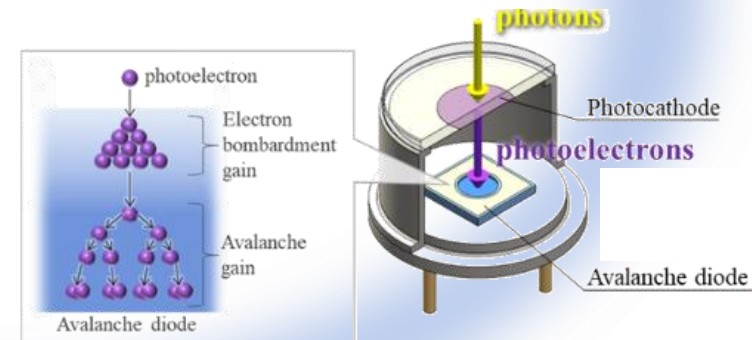
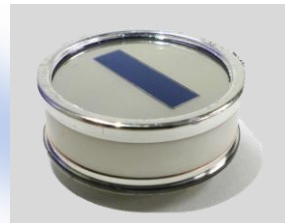
THz PMT · THz II

Normal temperature operation THz Light source



Innovative new devices

Integration of opto-semiconductor and photocathode technologies
High SN, high D-range, low dark current,
low multiplication fluctuation

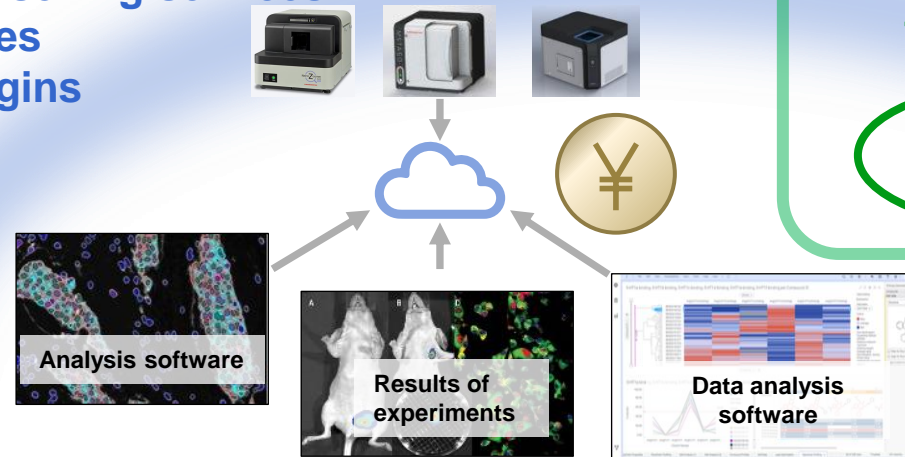


Development of new sensor

Creation of growth businesses < Bio >

Cloud-based service offerings

From selling products to selling services
Ensuring continuous sales
Ensuring high profit margins



- ✓ From selling products to selling services
- ✓ Providing cloud-based analysis technology

Bio



Source : Cell Based Assays Market - Forecast to 2028,MarketsandMarkets

From compound discovery to clinical trials

Covering all areas of the drug discovery market

Drug Discovery Research
through Screening



FDSS Series

Evaluation of drug efficacy and
toxicity



CYTOQUBE

New products under
development



Clinical trials



NanoZoomer

**(Progress of disclosure) Acquisition of shares in NKT Photonics A/S,
Denmark by a consolidated subsidiary (conversion to a subsidiary)**

Notice of Progress of Disclosure Matters

(Progress of disclosure) Acquisition of shares in NKT Photonics A/S, Denmark by a consolidated subsidiary (conversion to a subsidiary)

Based on the Board of Directors meeting held on June 9, 2022, the Company concluded a share transfer agreement on June 24, 2022, that its consolidated subsidiary Photonics Management Europe S.R.L. would acquire all the shares of NKT Photonics A/S to make it a subsidiary (a sub-subsidiary of the Company).

Subsequently, we proceeded with the legal and regulatory procedures in the relevant countries and obtained the approvals for the share acquisition from the relevant authorities in Germany, the United Kingdom, and the United States. However, in Denmark, the Minister for Industry, Business and Financial Affairs decided to reject the application for the share acquisition in accordance with the Danish Investment Screening Act after consulting with the Minister for Finance, Minister for Foreign Affairs, Minister for Justice, and Minister of Defense.

On May 2, 2023, we received a notice regarding the decision from the Danish Business Authority.

In response to the above, after the necessary internal and external consultations and on July 20, 2023, we again submitted to the Danish Business Authority an application to acquire shares in NKT Photonics A/S as a subsidiary of Photonics Management Europe S.R.L. (a sub-subsidiary of the Company).

The application was received by the Danish Business Authority on July 26, 2023, and after consulting with the Minister for Finance, Minister for Foreign Affairs, Minister for Justice, and Minister of Defense, the Minister for Industry, Business and Financial Affairs decided to approve the application.

On May 6, 2024, the Company received a notice of approval for the share acquisition from the Danish Business Authority.

(Progress of disclosure) Acquisition of shares in NKT Photonics A/S, Denmark by a consolidated subsidiary (conversion to a subsidiary)

【Date of the business combination】

During the third quarter of this fiscal year (Planned)

【Acquisition cost of the acquiree and breakdown thereof by consideration type】

Consideration for the acquisition Cash Approx. EUR 239 million (Approx. JPY 39,030 million) (Plan)

Acquisition cost Approx. EUR 239 million (Approx. JPY 39,030 million) (Plan)

The exchange rate is assumed to be EUR 1 = JPY 163.24 (closing telegraphic transfer middle rate for March 29, 2024 announced by MUFG Bank, Ltd.)

The acquisition cost includes consideration for the acquisition of the shares plus the amount of net interest-bearing debt. The amount will be adjusted for price adjustments as stipulated in the share transfer agreement.

【Details and amounts of main acquisition-related costs】

Advisory fees, etc. (approximate amount): JPY 1,000 million

【Amount of goodwill, reason for recognition, amortization method and amortization period】

Not confirmed at this stage.

【Amount and breakdown of assets to be acquired and liabilities to be assumed on the date of the business combination】

Not confirmed at this stage.

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