

Business Briefing

Communications Solutions Business

June 7, 2024

Furukawa Electric Co., Ltd

Communications Solutions Division

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FURUKAWA ELECTRIC CO., LTD.

1 . FY24 forecast

- **Net sales and operating income (FY23 Result, FY24 Forecast, FY25 Target)**
- **Optical fiber and cable**
- **Optical devices, industrial fiber lasers, broadband systems**

2 . Progress of the 2025 Mid-term Plan

- **Communications Solutions segment target – Realize a B5G society directed at 2030**
- **Overview – Market environment, initiatives directed at achieving the 2025 Mid-term Plan**
- **Status of the initiatives in each business**
(Optical fiber & cable, optical devices, industrial fiber lasers, broadband solutions, directed at realization of the IOWN concept)
- **APPENDIX: Business overview, Product overview**

- **FY23 was an extremely challenging year**
- **In FY24, the business environment will gradually recover from H2**
- **From FY25, work to definitely capture the full-scale demand recovery, and continue to achieve sustainable growth**

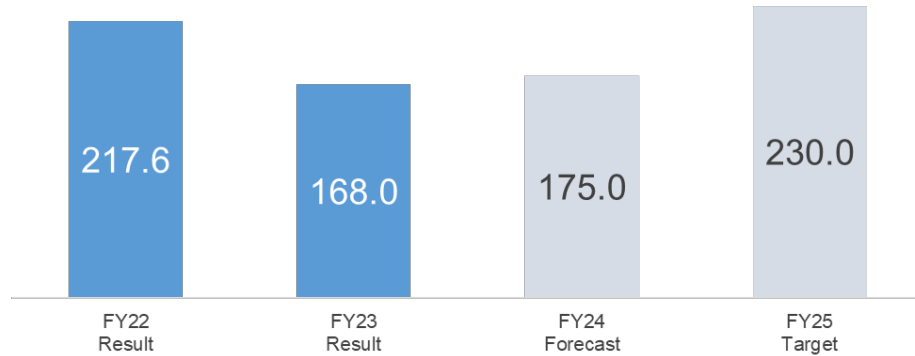
1 . FY24 forecast

1. FY24 forecast – Net sales and operating income

(FY22 result – 2025 Mid-term Plan)

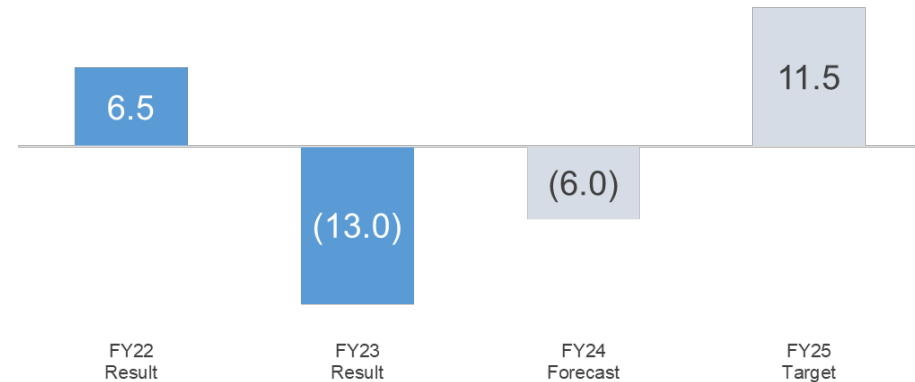
Net sales

(JPY billion)

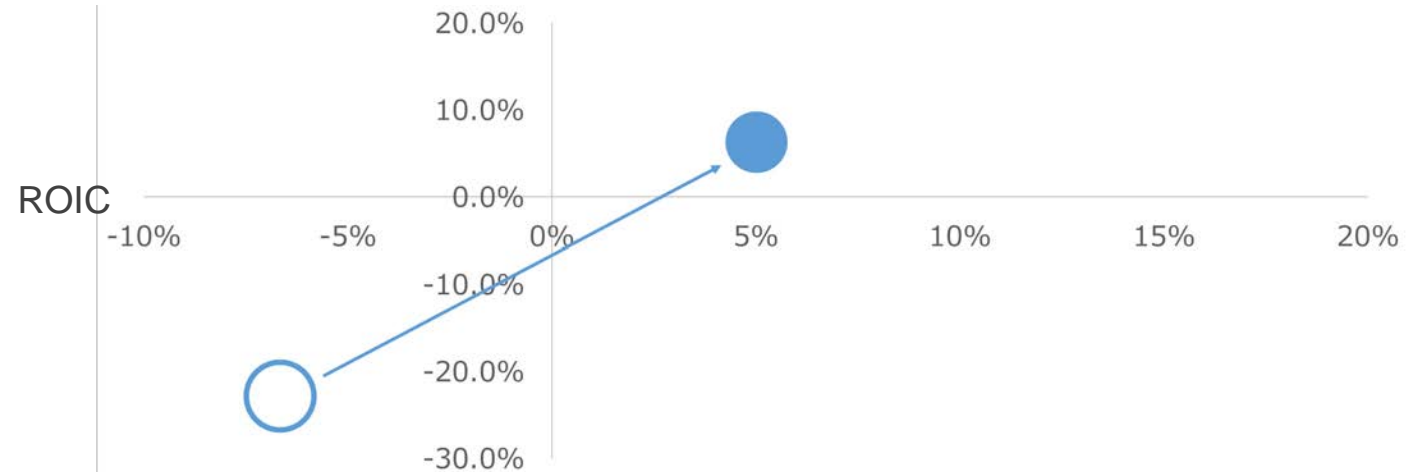


Operating income

(JPY billion)



ROIC (FY23 Result → FY25 Target)



Net sales CAGR

Vertical axis: Net sales CAGR (FY22-23→FY22-25)
Horizontal axis: ROIC (FY23→FY25)
Bubble: NOPAT (FY23→FY25)

- * Net sales in FY25 used to calculate net sales CAGR have been adjusted based on the **average** exchange rate in the FY24 forecast
- * CAGR: Compound annual growth rate, ROIC: Return on invested capital (after taxes)
NOPAT: Calculated as net income + interest expenses after tax in accordance with IFRS

1. FY24 forecast – Optical fiber and cable

Recognition of the business environment and envisioned risks

- ✓ **North America telecom market**
 - ◆ **Gradual recovery from FY24 H2**
 - Increased carrier demand as customer inventory is depleted
 - Start of BEAD demand with full-scale demand to be realized from FY25

Risk: Late to establish a manufacturing system for when demand recovers

- ✓ **Central and South America telecom market**
 - ◆ **Expected to shift from the temporarily weak demand to a gradual recovery**
- ✓ **AI, data center and enterprise markets**
 - ◆ **From firm demand to further growth**

Priority initiatives

- ✓ **Definitely capture the data center and carrier demand**
 - ◆ **Strengthen the relationships with major customers, and acquire new orders from large customers**
 - ◆ **Work with partners directed at BEAD*1 projects**
- ✓ **Strengthen the North America optical cable manufacturing system**
 - ◆ **Implement personnel measures (enhance hiring, training and management)**
 - ◆ **Improve productivity (strengthen cooperation within the group)**
- ✓ **Strengthen the manufacturing system for the key products, and expand the portfolio**
 - ◆ **Ultra-high count multi-core cable and FTTx*2 solutions**
- ✓ **Expand solution sales**
 - ◆ **Strengthen the sales channels and sales technology function**

* 1 Broadband Equity Access and Deployment Program

* 2 Fiber To The x (General name for communications services using optical fiber)

Recognition of the business environment and envisioned risks

- ✓ **Strong data center demand and recovering telecom demand**
 - Optical components (DFB, Nano ITLA, etc.)
- ✓ **Expand applications to the xEV market**
 - Industrial fiber lasers
- ✓ **Firm FTTH demand to CATV providers in Japan**
 - Network products in Japan
- ✓ **Raw material, component and energy costs continue to soar**

Priority initiatives

- ✓ **Increase sales for the strong demand in the data center market**
- ✓ **Definitely capture the recovering telecom demand**
- ✓ **Increase manufacturing capacity directed at capturing demand (DFB ^{*1}, Nano ITLA ^{*2}, etc.)**
- ✓ **Continue the activities to reduce costs, such as by increasing productivity**
- ✓ **Expand the products for the 800G market and xEV market**
- ✓ **Optimize sales prices, reduce procurement costs and promote the stable procurement of raw materials**
 - Secure multiple suppliers • Identify and adopt alternative materials
 - Design modification

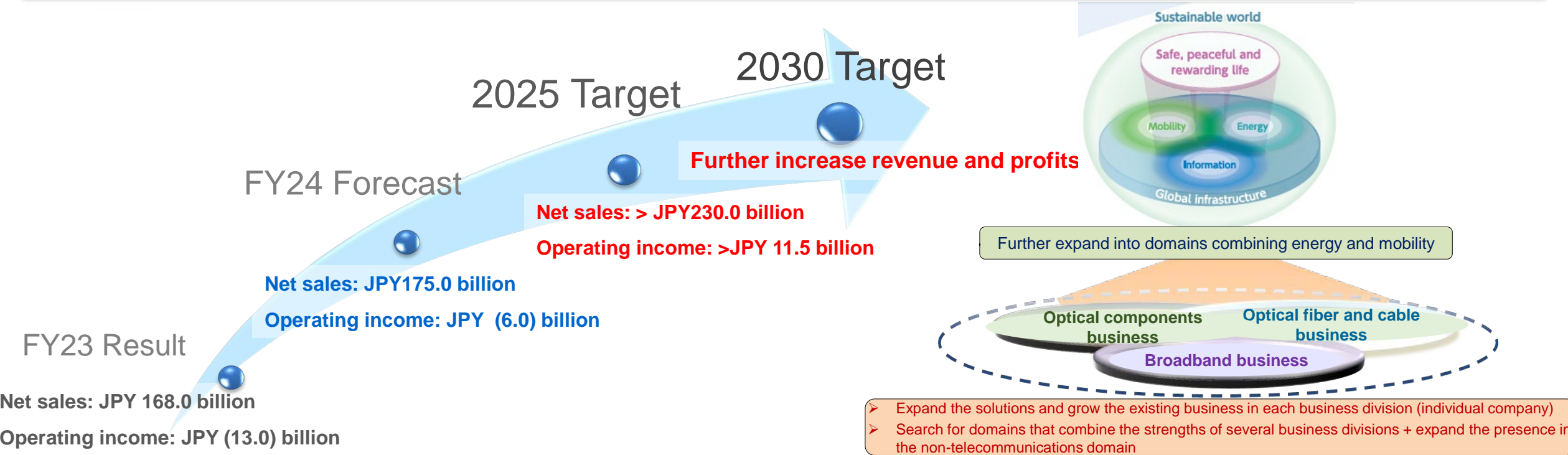
* 1 DFB: Distributed Feedback Laser
* 2 ITLA: Integrated Tunable Laser Assemble

2. Progress of the 2025 Mid-term Plan

2. Progress of the 2025 Mid-term Plan – Communications Solutions segment targets

Become a business that “supports and leads” the evolution of data transmission and realization of a sustainable society

- Contribute to “creating global infrastructure combining information, energy and mobility” set forth in Vision 2030
- In the telecommunications domain, secure a key position in the supply chain directed at the era of IOWN and B5G, and provide around the world high value-added products and solutions based on the keyword of “energy saving”
 - In the non-telecommunications domain, provide high value-added product lineups and services that contribute to the generation, transmission and detection of information and energy and will lead to “increased safety and quality of life”

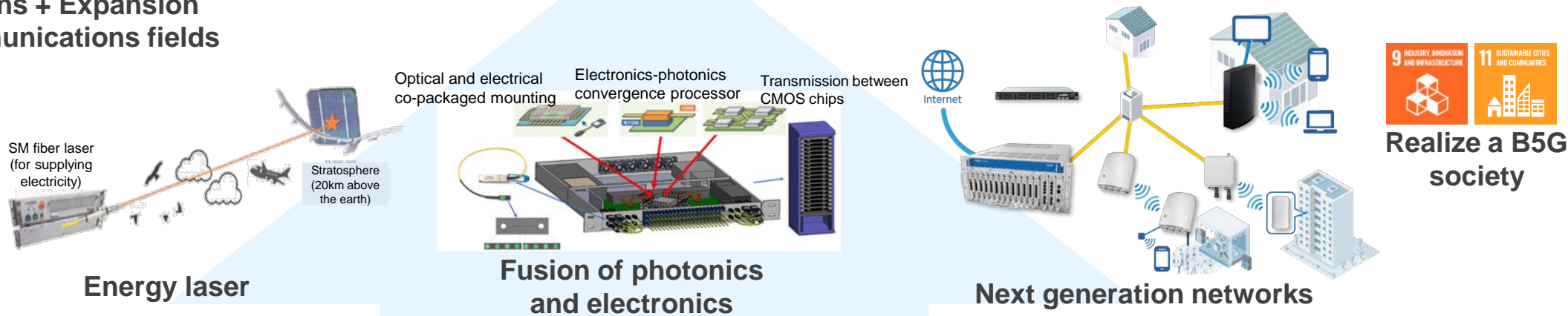


Vision
2030

Increased data traffic following realization of a B5G society
⇒ Support through photonics technology and build social infrastructure

Leap forward through the creation of businesses designed to solve social issues

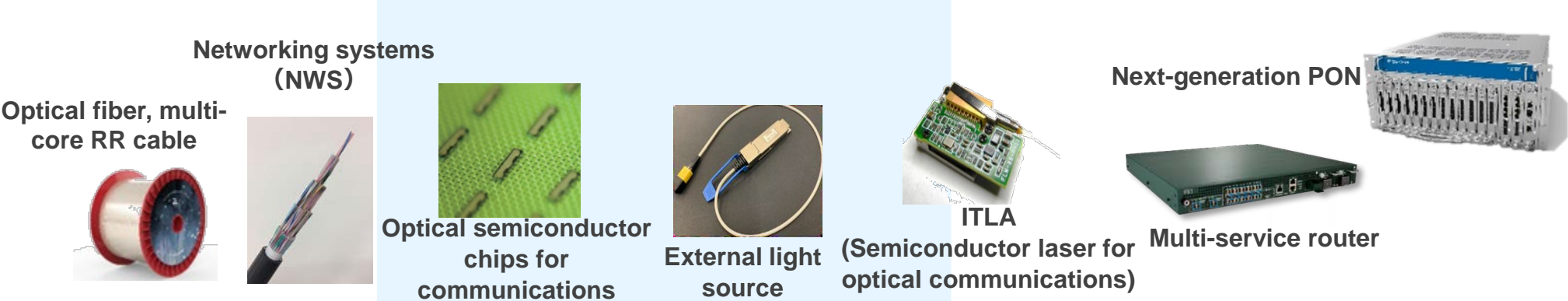
Telecommunications + Expansion
into non-telecommunications fields



2025
Goal

Realize growth by strengthening the businesses designed to solve social issues

Today



Business developments leveraging photonics and high frequency (wireless) technology

2. Progress of the 2025 Mid-term Plan – Overview

Optical fiber & cable (P13-P15)

Market environment

- ✓ Underlying growth trend remains intact despite the temporary demand correction
- ✓ Diversification of customer needs
(Low cost, energy saving, high fiber count/ high density, increased workability, etc.)

Initiatives for achieving the 2025 targets

- ✓ Expand the lineup of high value-added products
- ✓ Continue the global expansion of NWS*1
(Full-scale rollout to the Americas, Europe and Asia centered on Central and South America)
- ✓ Continue to increase productivity (DX activities, etc.)

Optical devices (P16)

- ✓ Strong data center market and recovering telecom market
- ✓ Ongoing requirements for ultra-small, high performance and low power consumption

- ✓ Mass produce and increase sales of DFB and Nano-ITLA
- ✓ Develop next-generation Raman units and pump lasers

Industrial fiber lasers (P17)

- ✓ Active development projects for xEV

- ✓ Enhance the sales and marketing function (in the field of vehicle electrification)
- ✓ Expand the laboratories and strengthen the activities aimed at increasing adoption on the mass production lines of key customers

Broadband solutions (P18)

- ✓ Solid FTTH demand for CATV business in Japan
- ✓ Solid IP router demand (for telecommunications carriers and businesses in Japan)
- ✓ Despite improvement in procuring some semiconductors, component prices remain high

- ✓ Enhance the solutions (FTTH, wireless, local 5G)
- ✓ Increase sales of high performance edge routers and virtual routers
- ✓ Promote the development of next-generation network technology

*Detailed explanation given on the page indicated in ()

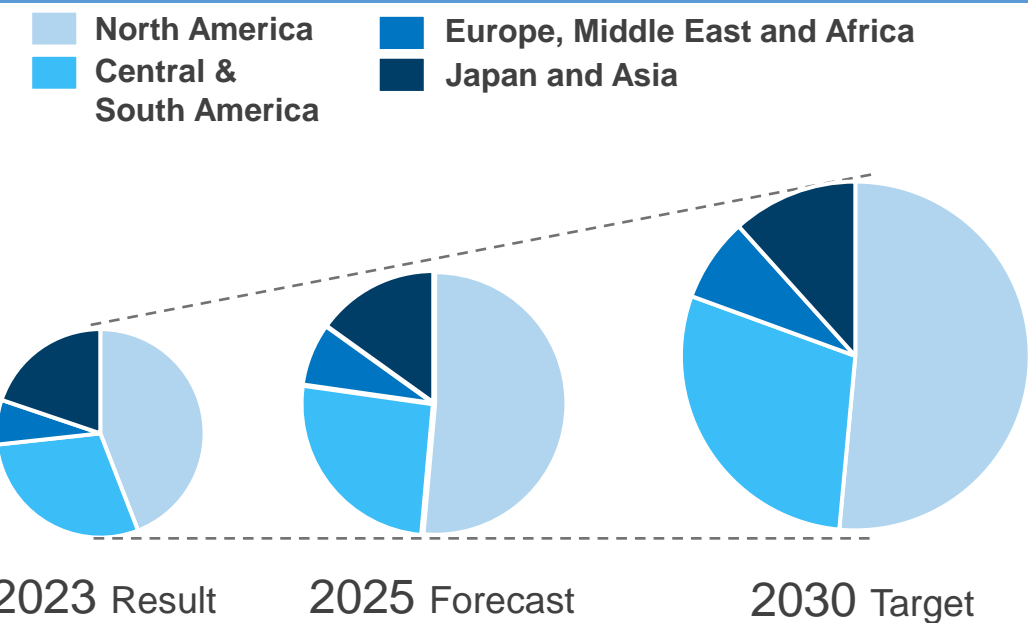
*1 NWS :Networking System

2. Progress of the 2025 Mid-term Plan – Optical fiber and cable

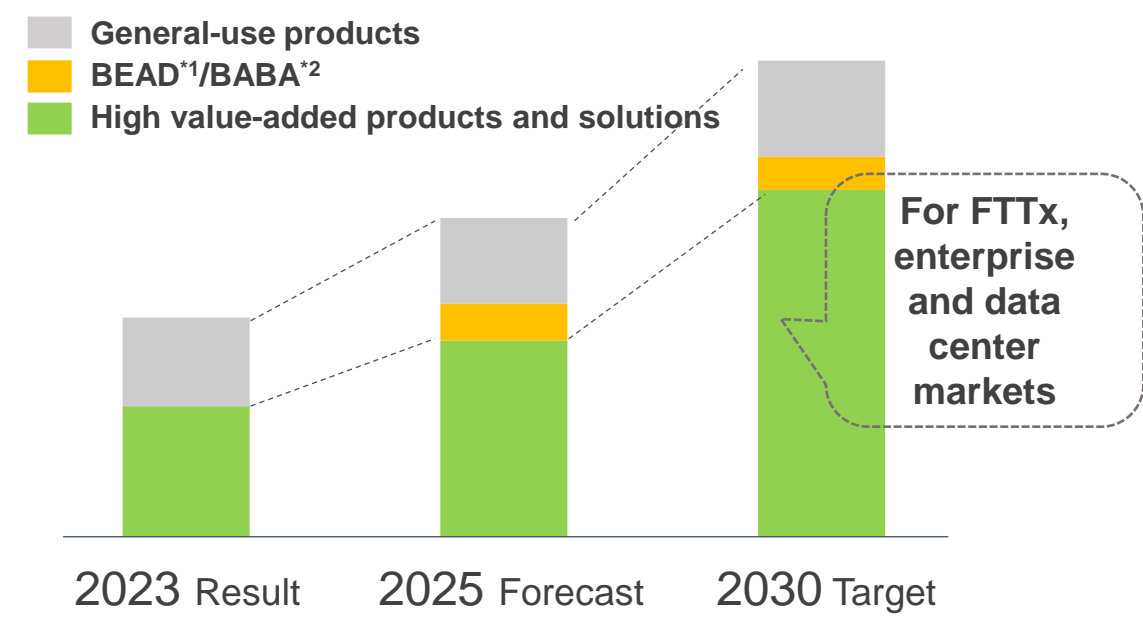
Directed at 2030, accelerate the improvements to the product portfolio and increase sales

- Main target continues to be markets in the Americas
- Strengthen the products and solutions for FTTx, enterprise and data centers

Optical fiber and cable sales target
(by region)



Optical fiber and cable sales target
(product composition)



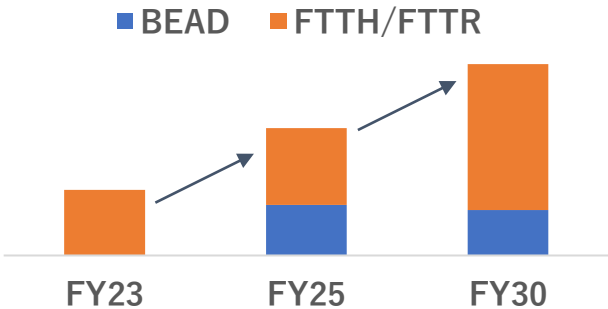
^{*1}BEAD: Broadband Equity Access and Deployment Program
^{*2}BABA: Build America Buy America Act

2. Progress of the 2025 Mid-term Plan – Optical fiber and cable

Solutions for carriers

- Transform the portfolio by increasing sales of well-differentiated FTTH/FTTR solutions
- Definitely capture BEAD demand in North America as a BABA certified supplier
- Based on cooperation with existing customers, develop and increase sales of high performance products

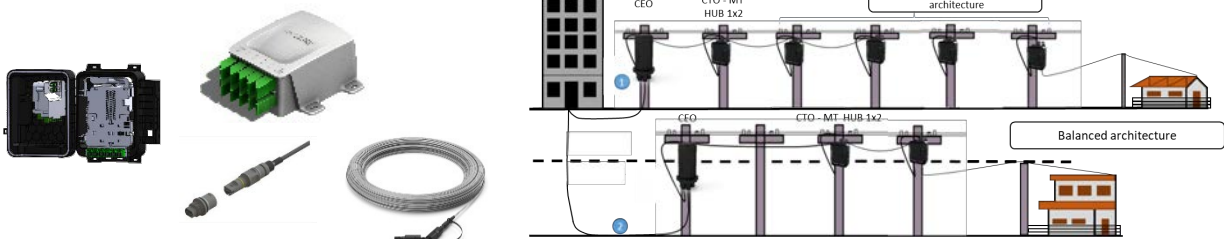
Net sales for BEAD and FTTx



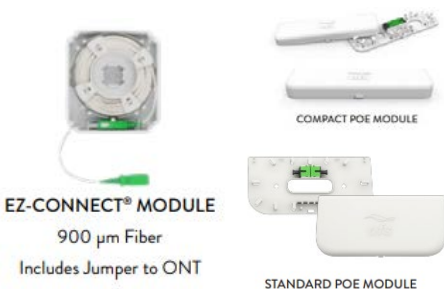
Target	Strategy
FTTx	<ul style="list-style-type: none">• Expand the Central and South America solutions globally• Expand EZ-Bend® high performance fiber and INVISILIGHT® solutions globally
BEAD	<ul style="list-style-type: none">• Leverage the superiority of BABA certification, and increase sales of optical cable and FTTx solutions
Long Haul / Metro	<ul style="list-style-type: none">• Increase sales of high performance and well-differentiated products by deepening cooperation with customers (RR cable, submarine fiber, specialty fiber for amplifiers and optical devices)

Main products and solutions

FTTH solutions



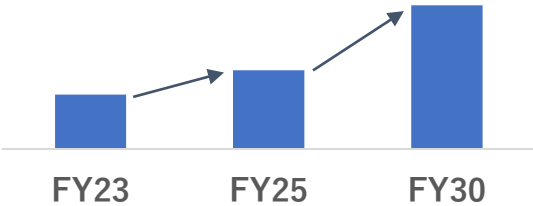
FTTR solutions



Solutions for data centers

- Establish a superior position in the HSDC market through high density and low latency technology
- Establish a framework for increasing sales for MTDC and enterprise solutions globally

Net sales for DC



Target

Strategy

HSDC

Hyper Scale Data Center

- Establish a portfolio of high density solutions
- Enhance services such as installation training
- Prepare a supply network
- Develop next-generation fiber solutions

MTDC

Multi Tenant Data Center

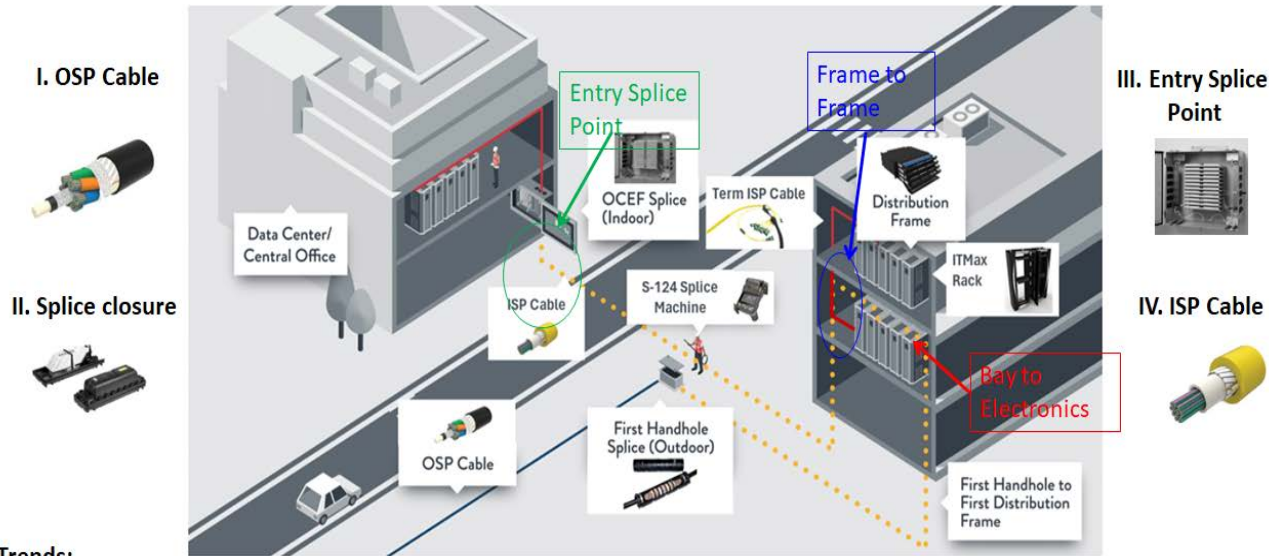
- Support worldwide the global expansion of major MTDC operators
- Acquire new customers by enhancing new product development

Enterprise Network

- Expand the PON-LAN solutions globally by strengthening the partnerships with other companies

Main products and solutions

- DCI (Data Center Interconnect) / OSP (Outside Plant) / ISP (Inside Plant)



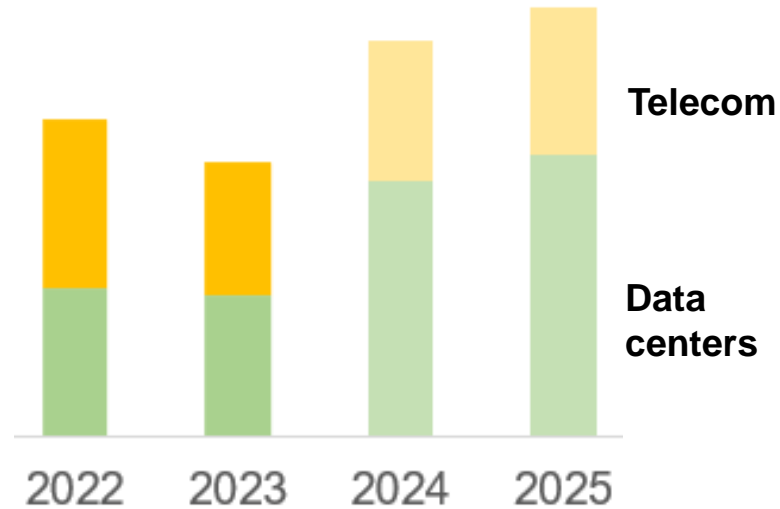
Trends:

- Preterminated assemblies (Indoor and outdoor versions) using VSFF connectors;
- Self-cleaning / Expanded beam / Dust tolerancy Technologies.

2. Progress of the 2025 Mid-term Plan – Optical devices

- Definitely capture the demand in the strong data center and recovering telecom markets
- Increase sales of DFB to data centers, and develop technology, expand manufacturing capacity and increase sales of Nano-ITLA

- Telecom demand will gradually recover from FY24 H2
- AI and data center demand will continue to be strong
- Expand the Nano-ITLA applications for data centers



Optical component market forecast

Source: SignalAI

DFB

- Expand manufacturing capacity to respond to increased demand for 400G
- Strengthen product development and increase sales for 800G/1.6T
- Continue the activities to reduce costs, including by improving productivity

NANO-ITLA

- Expand manufacturing capacity to respond to the recovering telecom demand
- Strengthen product development and increase sales for 800G
- Continue the activities to reduce costs, including by improving productivity

Expand the products

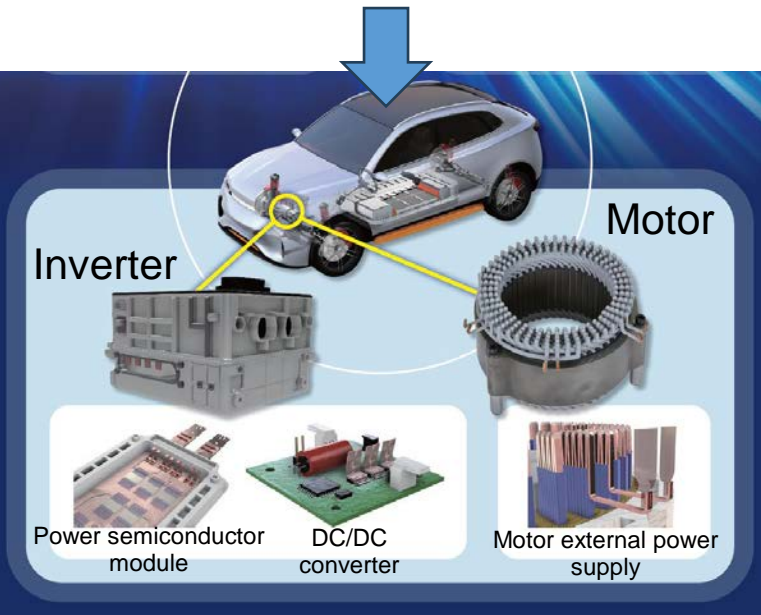
- Lead the electronics-photonics convergence market through high output, high efficiency, integrated light sources
- Expand the Raman units that contribute to longer distance and increased quality

2. Progress of the 2025 Mid-term Plan – Industrial fiber lasers

- The laser application laboratory CALL* located in the Chubu region has been well received
Open a new larger laboratory in the Chubu region in the second half of 2024 in order to strengthen co-creation with customers
- Through laser solutions developed utilizing BRACE® X and CALL, strengthen the activities aimed at increasing adoption on customers' mass production lines
- Enhance the BRACE® series lineup through co-creation with Nichia Corporation

Laser welding solutions provided by Furukawa Electric

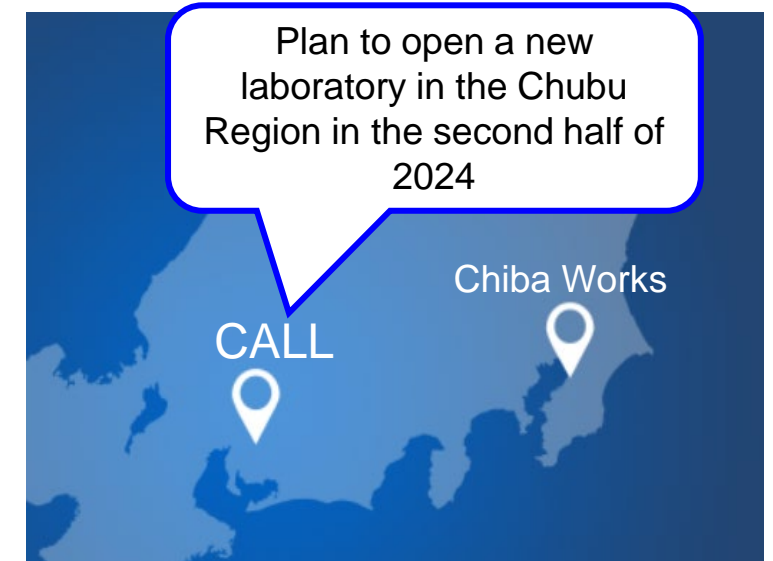
Fiber laser technology
+ Copper processing technology



Laser application laboratory CALL located in the Chubu region



Interior view of CALL

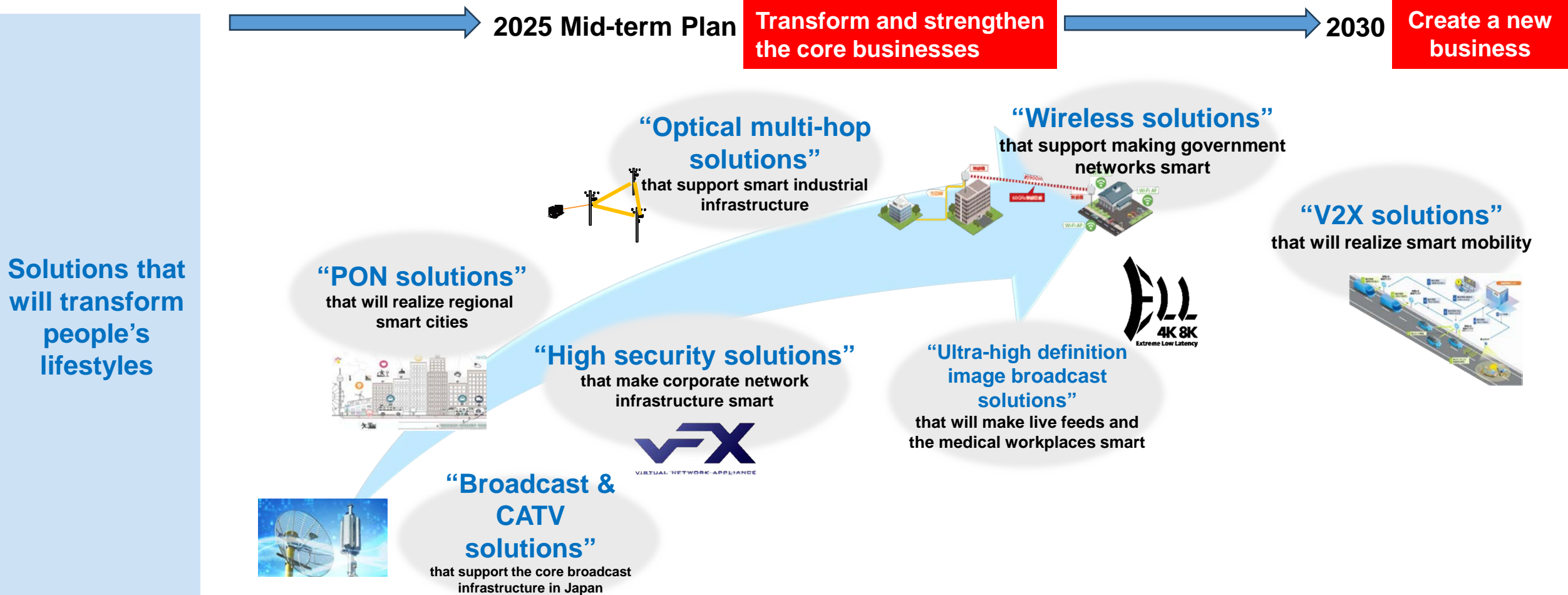


Location of CALL

* CALL : Chubu Advanced Laser processing Laboratory – Opened in November 2022

2. Progress of the 2025 Mid-term Plan – Broadband solutions

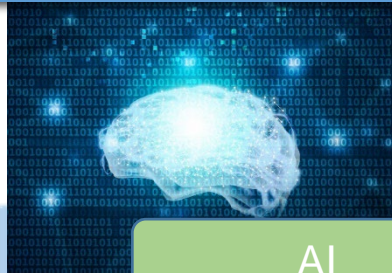
Within IOWN, expand the solutions that will transform people’s lifestyles.
Strengthen the solutions business that will expand the limitless potential of optical and wireless systems.



Based on the strengths in optical fiber & cable and optical components, expand the solutions business

Based on the group's core technologies, contribute to the realization of next-generation networks as an IOWN partner

Selected for NEDO's Post 5G Program and NICT's Beyond5G Program



AI



IOT / Remote works



Autonomous driving



Telemedicine

Fully photonic networks

Low latency

Large volume

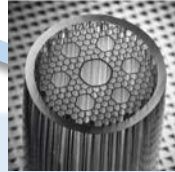
Low power consumption



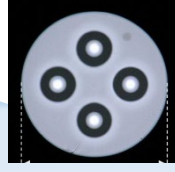
PON device



High performance fusion splicer



Optical fiber with new functions



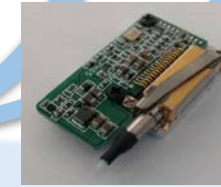
Multi-core optical fiber



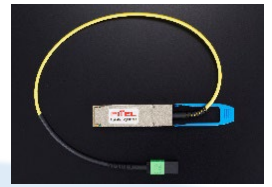
Forward Raman amplifier unit



Excitation light source for Raman amplifiers



Ultra-small tunable laser



High output DFB external light source

Leverage photonics and wireless technology to “support and utilize simultaneous realization”

Thank you very much for your attention

Appendix – Business overview



【2025 Mid-term Plan (Road To Vision2030 -Transform and Challenge-) basic policy】
Contribute to “creating global infrastructure combining information, energy and mobility” set forth in Vision 2030 by evolving the elemental telecommunications technology accumulated over the years and providing further solutions

【Business environment, strengths and issues】








Business environment – Main revenue opportunities	Strengths as a division
<ul style="list-style-type: none"> Increased data traffic worldwide (high speed, large volume, low latency, energy saving) Advances in IOT and B5G/6G Changes in workstyles and lifestyles 	<ul style="list-style-type: none"> Global production network in growing markets Differentiation through high performance products and technology (optical fiber & cable, digital coherent and IP network technology)
Business environment – Main menaces and risks	Issues as a division
<ul style="list-style-type: none"> Issues involving Russia & Ukraine, and relations between China and the US Global supply chain problems Soaring personnel expenses, energy costs and raw materials expenses due to inflation 	<ul style="list-style-type: none"> While taking into consideration the business environment indicated on the left, maximally utilize the global production network to deliver optimum solutions to the market

【Main business strategy for achieving the 2025 Mid-term Plan】

- Telecommunications domain: Secure a key position in the supply chain and provide high value-added products and solutions that contribute to “energy saving” in data transmission
- Non-telecommunications domain: Provide high value-added product lineups and services for contributing to the generation, transmission and detection of data and energy that will lead to “increased safety and quality of life”
 - ▶ Increase sales of high value-added optical fiber and cable, and accelerate the expansion of the networking systems business
 - ▶ Contribute to building integrated data infrastructure and the evolution of broadband networks through semiconductor lasers, optical fiber and IP network devices and systems



Appendix – Product overview

	Optical fiber and cable products			FITEL products			Broadband solutions		
			 						
5G/B5G	●	●	●			●	●		
Tougher infrastructure	●	●	●			●	●		
Carbon neutral	●	●	●	●					
Main products	<ul style="list-style-type: none">● Low loss fiber● Low bending loss fiber for building/residential applications● Specialty fiber	<ul style="list-style-type: none">● Optical cable (including rollable ribbon cable)● Optical connection products	<ul style="list-style-type: none">● DFB● Variable wavelength laser modules● Laser excitation modules	<ul style="list-style-type: none">● Industrial fiber lasers	<ul style="list-style-type: none">● FTTH systems● Wireless systems	<ul style="list-style-type: none">● Network router			
Main applications	<ul style="list-style-type: none">● Telecommunications● Video broadcasts● Data centers	<ul style="list-style-type: none">● Telecommunications infrastructure and networks● Video broadcasts● Data centers	<ul style="list-style-type: none">● Large capacity communications for data centers● Digital coherent signal light source● Excitation light source for optical signal amplification	<ul style="list-style-type: none">● Metal cutting and welding processes	<ul style="list-style-type: none">● Telecommunications and broadcast services● Video broadcasts● Wireless infrastructure	<ul style="list-style-type: none">● High speed, large volume telecommunications services● VPN services			
Main customers	<ul style="list-style-type: none">● Telecommunications carriers● OTT● Telecommunications construction companies			<ul style="list-style-type: none">● System vendors● Transmission device manufacturers	<ul style="list-style-type: none">● Industrial processing equipment manufacturers	<ul style="list-style-type: none">● Telecommunications providers● CATV providers● Municipalities	<ul style="list-style-type: none">● Telecommunications providers● General companies		