

Business Briefing Communications Solutions Business

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Furukawa Electric Co., Ltd.

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FURUKAWA ELECTRIC CO., LTD.

- 1. Review of FY2021**
- 2. Forecast for FY2022**
- 3. Overview of the 2025 Mid-term Plan
(as related to Communications Solutions)**

Appendix

1. Review of FY2021

2. Forecast for FY2022

3. Overview of the 2025 Mid-term Plan (as related to Communications Solutions)

Appendix

Main achievements

Current issues

Optical fiber & cable/ Networking systems

(P6, P7)

- ✓ Sales grew 25% mainly in North America and Central/South America (compared to FY2020)
- ✓ Increased optical cable productivity and improved the product mix in North America
- ✓ Revised the framework for strengthening the networking systems business

- ✓ Response to the difficulty procuring raw materials, higher costs and increased logistics expenses
- ✓ Securing, maintaining and training personnel (particularly in the US)
- ✓ Response to the issues related to Russia – Ukraine

Optical devices/ Fiber lasers

(P8)

- ✓ Increased sales of laser excitation modules
- ✓ Launched new products (nano-ITLA)
- ✓ Increased production of laser chips for silicon photonics
- ✓ Released the industrial hybrid laser “BRACE®X”

- ✓ Reduce costs and overcome the difficulty procuring raw materials
- ✓ Mass produce and increase sales of nano-ITLA
- ✓ Increase sales of industrial laser systems

Broadband solutions

(P9)

- ✓ Increased net sales and profits in FTTH systems for CATV in Japan and high performance multi-service routers etc.
- ✓ Launched new products that support advances in telecommunications infrastructure

- ✓ Response to the extended delivery times for raw materials (including semiconductor components) and soaring costs

☐ ※Indicates the page(s) containing a detailed explanation

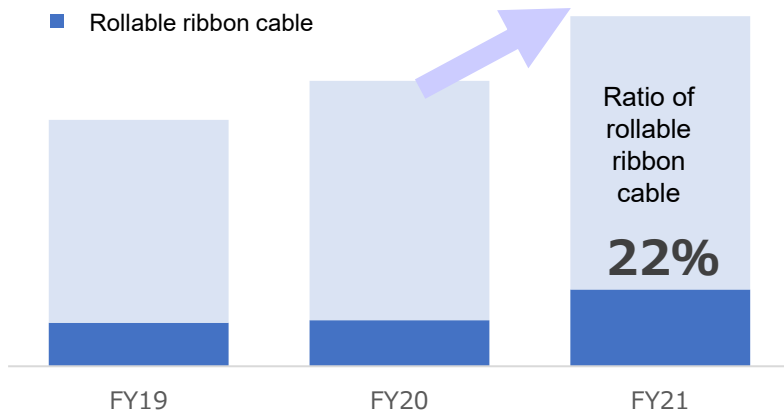
Increased optical cable productivity and improved the product mix in North America

- **Sales volume:** Increased by more than 20% compared to last year
Sales of rollable ribbon cable increased 60% compared to last year and drove overall growth
- **Secure personnel:** Converted workers from temporary to full-time status, switched temporary staffing agencies, enhanced training and hired more managers
Although the turnover rate has gradually declined compared to last year, the low unemployment rate and rising wage environment in the US continues to be a risk factor

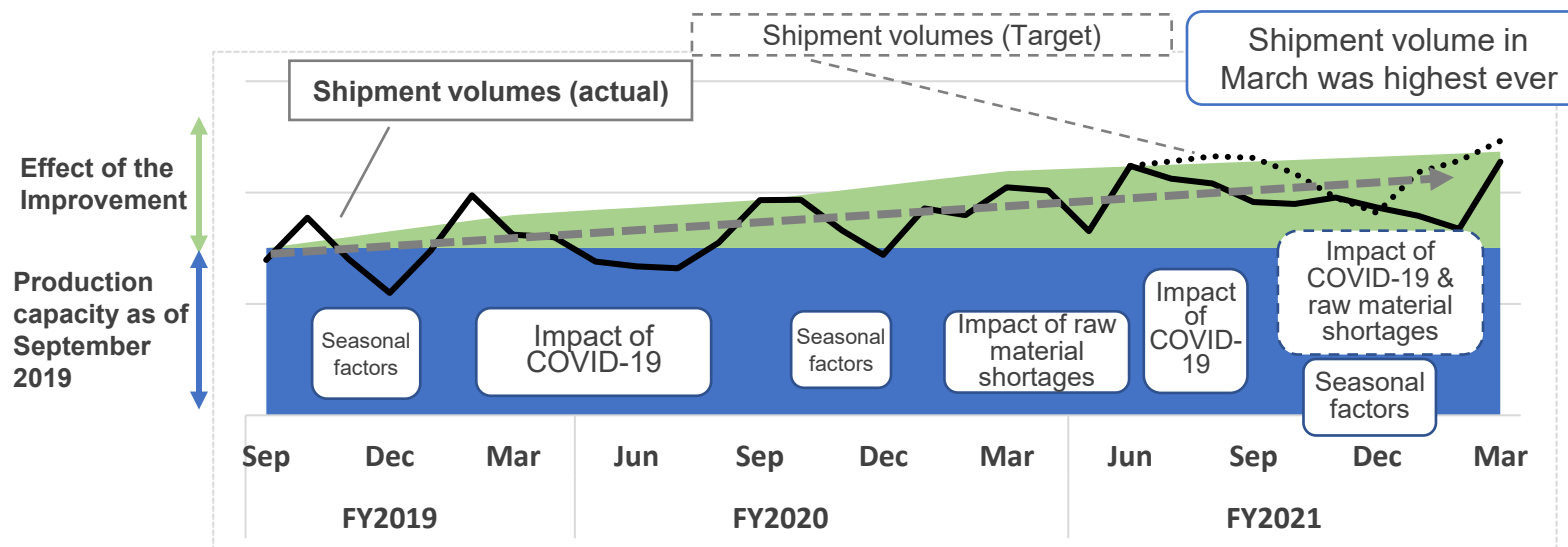
North America optical cable sales volumes*

*Including exports from bases in Europe and Japan

+23%

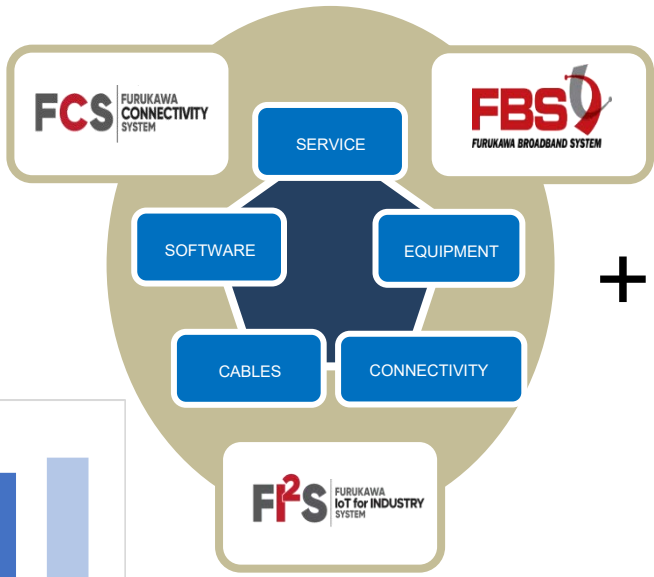
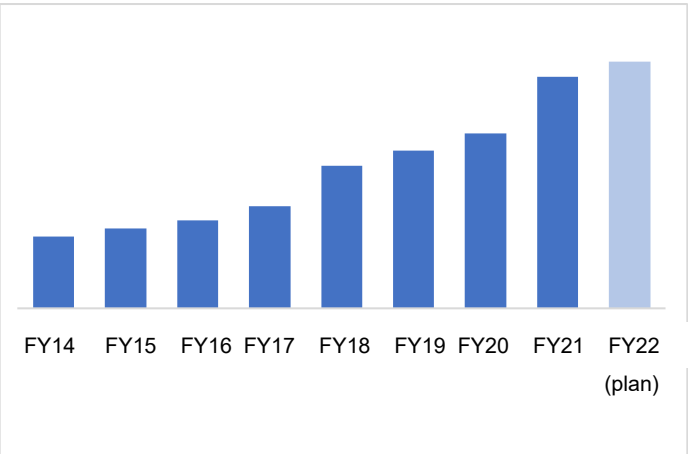


North America optical cable production capacity and shipment volumes

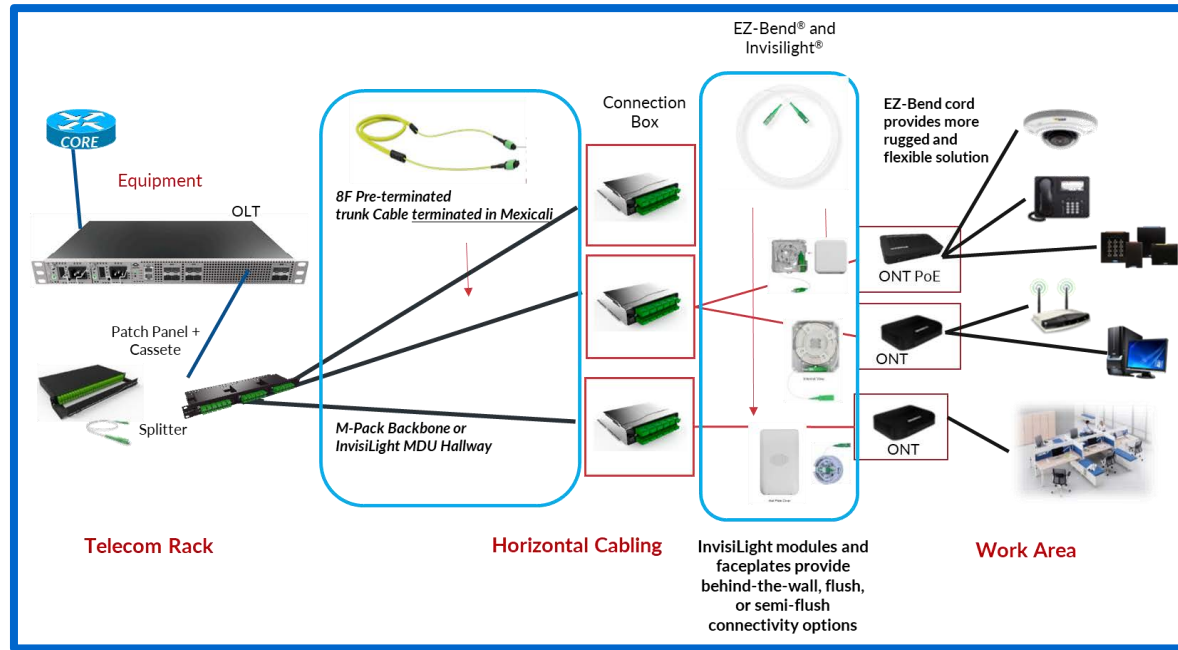


■ Expand the area:
 Accelerate cooperation within the group (personnel exchanges, organizational restructuring) to expand the networking systems (solutions) business developed by FEL to Southeast Asia, EMEA and North America, and expand the product mix / services and grow the customer base

Sales in the Central and South America business

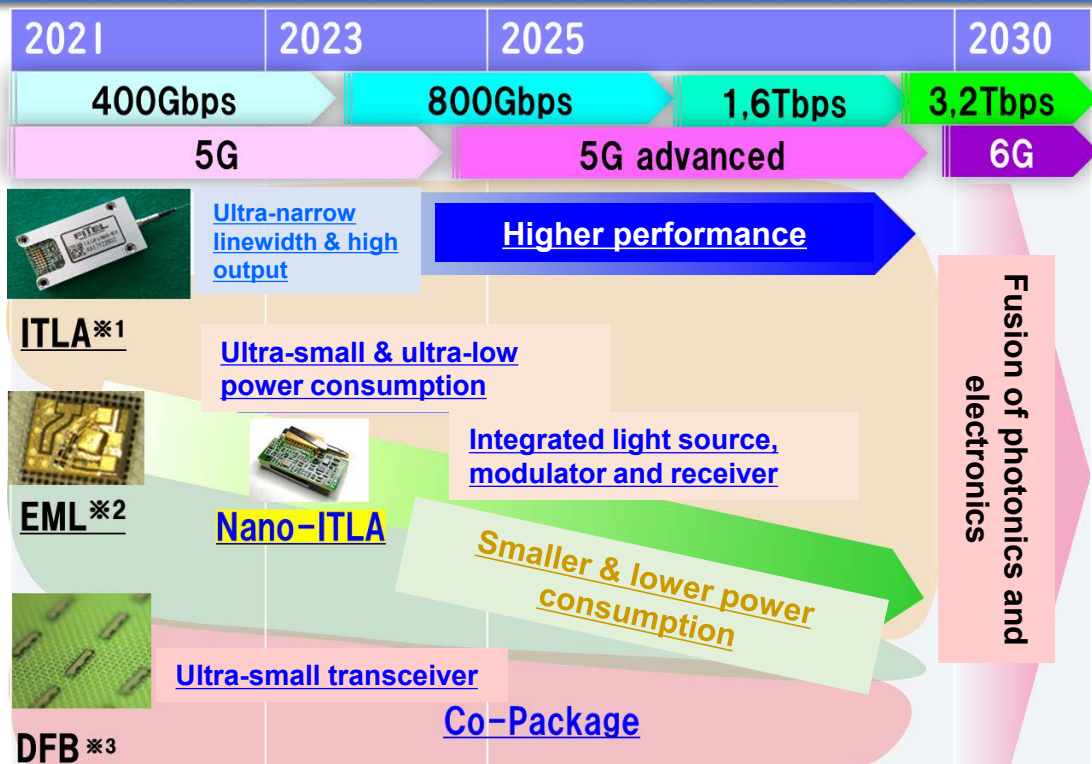


New solutions for the enterprise market
 More compact (GPON), more simple (includes connectors), wider area (all optical) and lower cost solutions

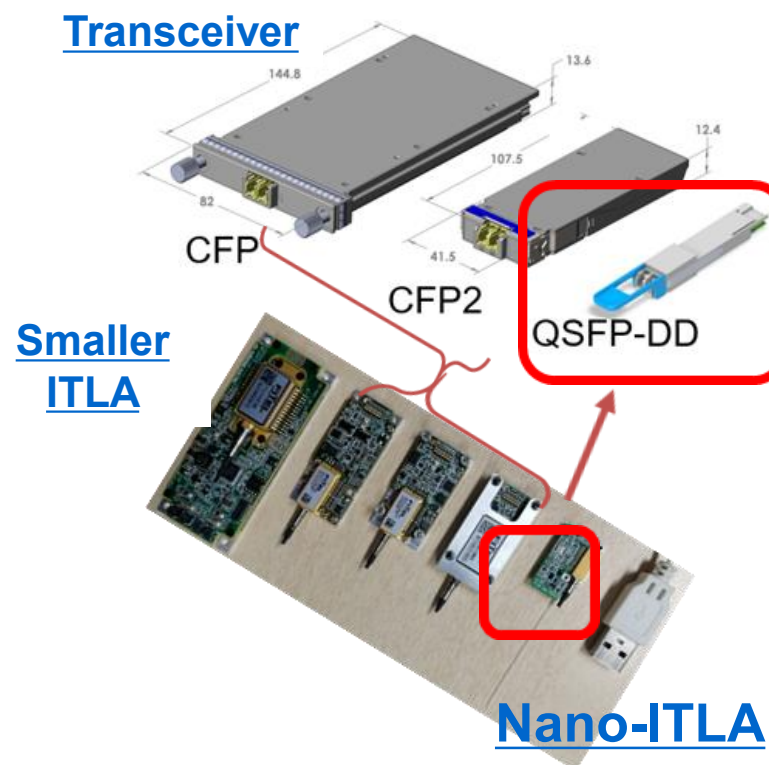


Optical device and fiber laser business

- Increased sales of laser excitation modules: Increased 20% compared to FY2020 (net sales basis)
- Launched new products (Nano-ITLA)
- Increased production of laser chips for silicon photonics (DFB): Increased 70% compared to FY2020 (shipment basis)
- Released the industrial hybrid laser BRACE[®]X



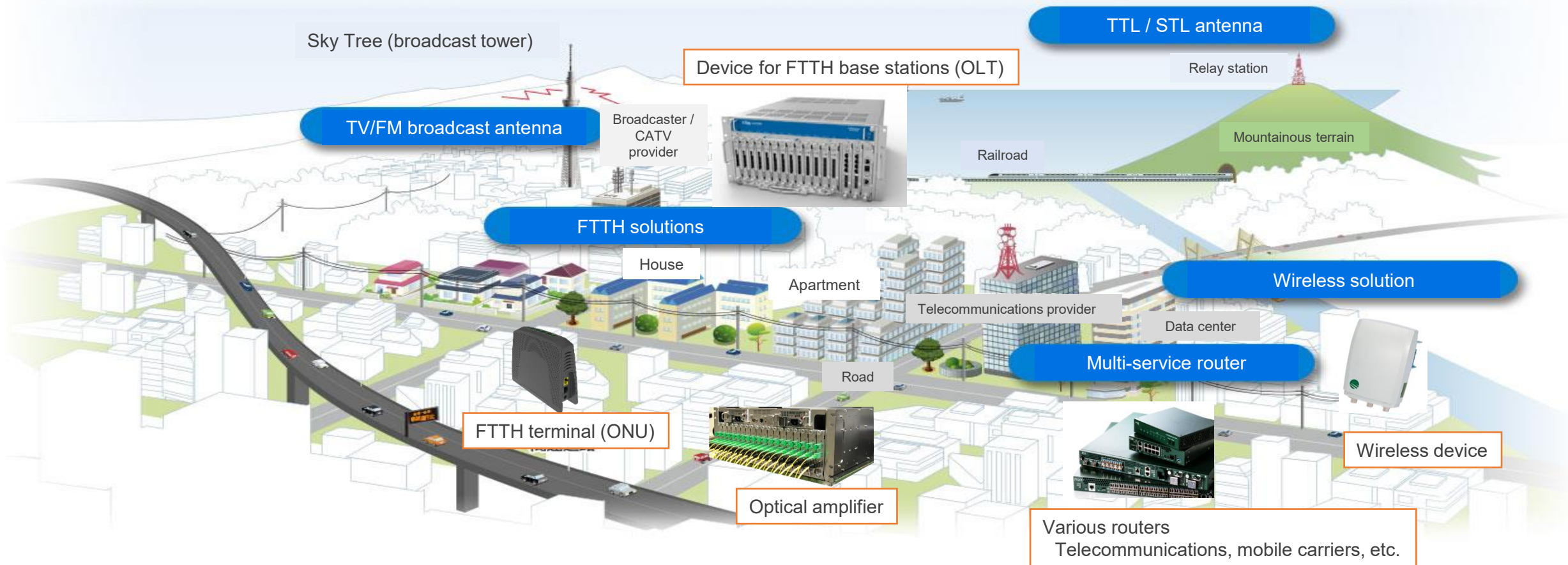
※1:ITLA(Integrated Tunable Laser Assembly: Light source for long-distance communications)
 ※2:EML(Electro-absorption Modulator Integrated with DFB Laser: Light source for medium-distance communications)
 ※3:DFB(Distributed feedback: Light source for short-distance communications)



BRACE[®]X

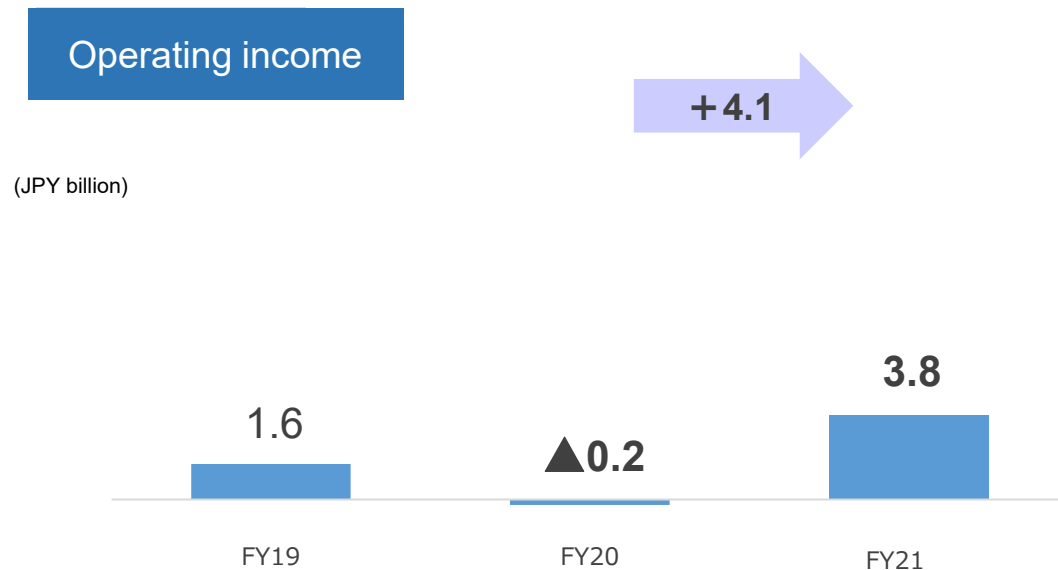
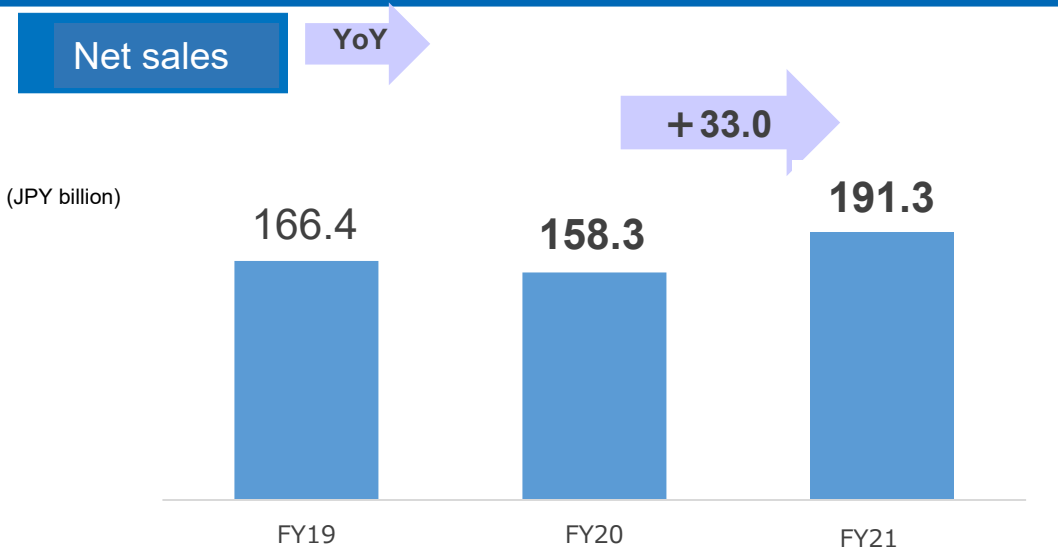
Broadband solutions business

- Strong sales of FTTH systems for CATV in Japan: Increased 20% compared to FY2020 (net sales basis)
- High performance multi-service routers were firm, and in addition to the main VPN market, made gradual inroads into the IPoE_(※) market



※ IPoE: IP over Ethernet. Method of directly connecting to the Internet using the same method as a corporate LAN

1. FY2021 financial results



■ FY21 (YoY)

Net sales

JPY +33.0 bil.

Operating income

JPY +4.1 bil.

- (+) Optical fiber and cable in North America (increased productivity) and FTTH and LAN solutions in South America
- (+) Specialty fibers
- (+) Digital coherent products
- (+) Network products in Japan
- (-) Optical fiber strands to North America customers
- (-) Shortage of raw materials, higher raw material prices and soaring transportation expenses
- (-) Increased depreciation expenses

1. Review of FY2021

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Appendix

2. Forecast for FY2022

External environment and envisioned risks

- ✓ Infrastructure investment in broadband and 5G will continue globally, and strong demand is anticipated (including FTTH systems for CATV in Japan, new and replacement demand for broadcast related applications)
- ✓ As demand recovers from COVID-19, raw material and logistics costs will remain high. The shortage, soaring price and extended delivery lead time are particularly pronounced from some materials (helium, coating resin, steel wire, steel tape, waterproof tape, semiconductor components, etc.)
- ✓ Due to the low unemployment rate and accelerating inflation in North America, the labor shortage and rising wage environment will remain ongoing
- ✓ Due to the problem between Russia and Ukraine, the group's optical cable production will decline

Key initiatives

- ✓ Maximize sales by further increasing productivity and optimizing insourcing within the group (Morocco, Brazil, Mexico, Colombia, etc.)
- ✓ Increase sales of high value added products including rollable ribbon cable, specialty fibers and high performance routers, and strengthen the networking systems business
- ✓ Uncover new and replacement demand for FTTH, and increase profits
- ✓ Increase sales of Nano-ITLA and DFB chips
- ✓ Incorporate costs in the sales price, reduce procurement and logistics costs and promote stable raw material procurement

<ul style="list-style-type: none"> • Secure multiple suppliers • Strengthen cooperation within the group 	<ul style="list-style-type: none"> • Search for and adopt alternative materials • Design modifications etc.
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- ✓ Strengthen personnel hiring (continue to implement HR initiatives such as revising the hiring conditions)

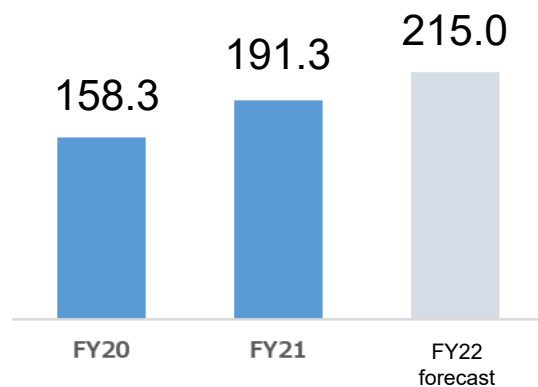
2. Forecast for FY2022

FY22_Full year forecast

YoY

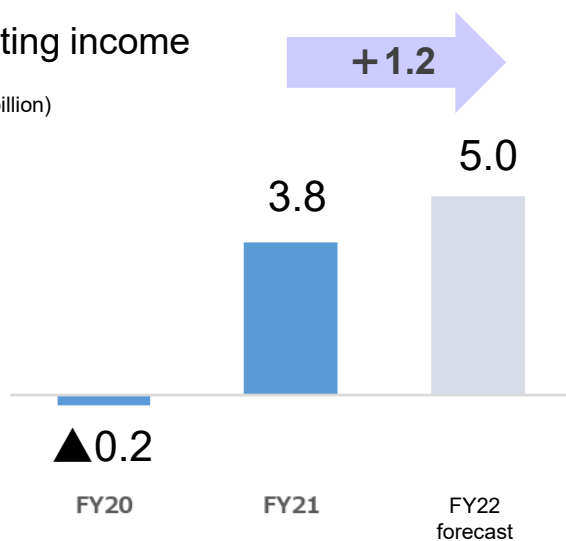
Net sales

(JPY billion)



Operating income

(JPY billion)



■ FY22 (YoY) Net sales JPY +23.7 bil.

Operating income JPY +1.2 bil.

- (+) Improve optical fiber and cable productivity in North America and realize benefits from the investments in rationalization in Japan
- (+) Increase sales of high value added products (rollable ribbon cable, specialty fibers)
- (+) Incorporate the soaring raw material prices in the sales price
- (+) Increase sales of digital coherent products and industrial lasers
- (-) Higher raw material prices, transportation expenses and energy costs
- (-) Ongoing issues in the supply chain (raw material procurement)
- (-) Lower optical cable sales to Europe due to the situation in Russia and Ukraine
- (-) Increased depreciation expenses

【Focus points】

- Stable procurement of raw materials
- Secure personnel directed at increasing production at the optical fiber and cable manufacturing site in North America
- Continue to improve productivity (Locations in Japan and North America)
- Strengthen the optical cable site in Morocco

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3. Overview of the 2025 Mid-term Plan

Communications Solutions segment goals

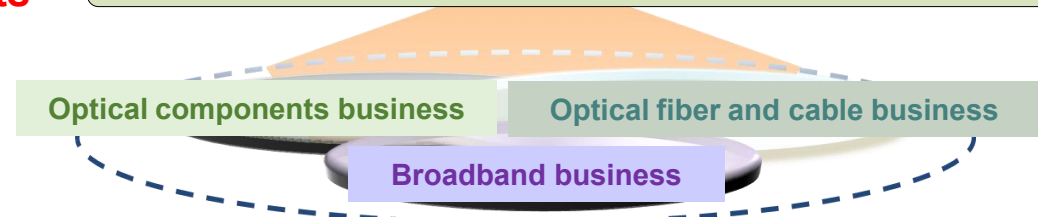
Become a business that “supports and leads” the evolution of data transmission and realization of a sustainable society

Directed at 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 and provide high value added product lineups and solutions based on the keyword “energy saving”
- In the 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”



Expand into the domains that combine energy and mobility



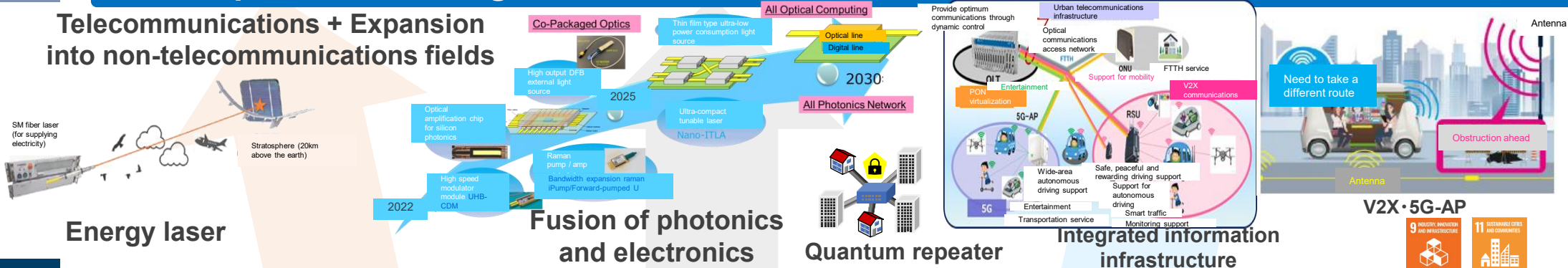
- Growth of the existing business divisions (individual companies) + Expansion of the solutions business
- Search for domains that combine the strengths of several divisions + Expansion of the non-telecommunications domain

3. Overview of the 2025 Mid-term Plan As related to Communications Solutions

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

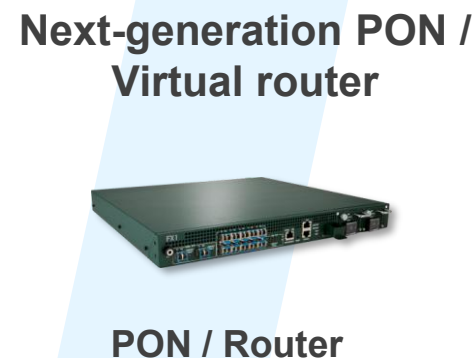
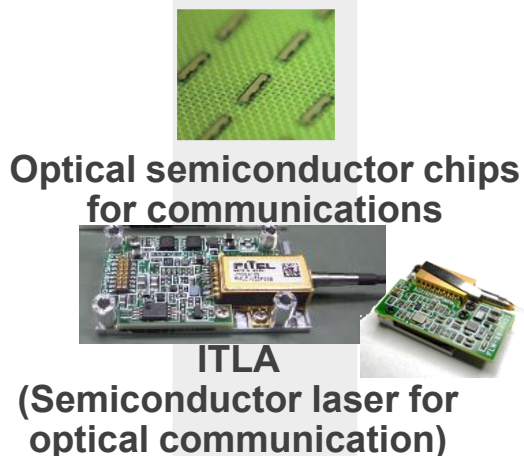
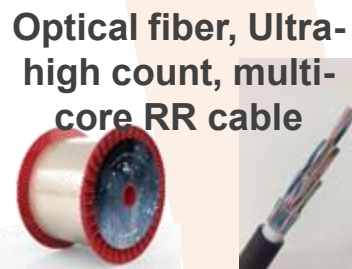


2025
Goal

Realize growth by strengthening the businesses designed to solve social issues

Today

Expansion of networking systems (solutions)



Business developments leveraging photonics and high frequency (wireless) technology

3. Overview of the 2025 Mid-term Plan

Optical fiber & cable products



Realize a B5G society

【Optical fiber and cable】

Increase sales of high value added products, and accelerate the expansion of the networking systems business

Business environment

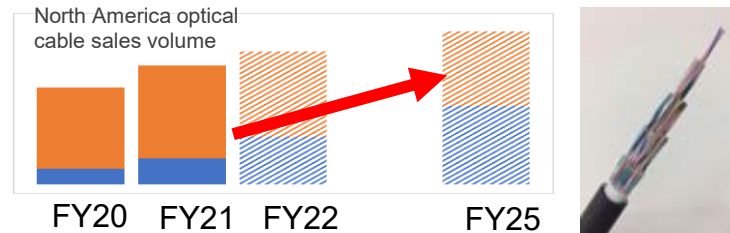
- ❑ **Medium to long-term growth of optical fiber demand**
 - CAGR + 5% (Estimate by Furukawa Electric)
 - Continued global expansion of FTTH/5G
 - Continued infrastructure investment in North America
 - Improved supply / demand balance
- ❑ **Diversifying customer requirements**
 - Low cost, energy saving
 - Multi-core, high fiber count
 - Easy installation and design flexibility
 - Shorter delivery lead times, improved customer service
- **Low unemployment rate and rising wages (in North America)**

Business strategy

Growth markets and strengths of the products / technology

⇒ Increase sales of high value added products

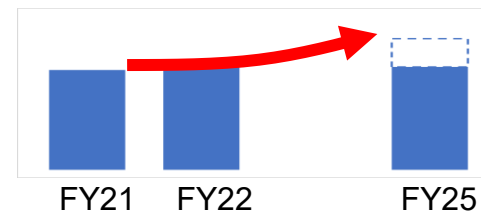
Triple sales of rollable ribbon cable



Strengths of the business model developed in Central & South America

⇒ Expand the networking systems business

Focus on America, Europe and Asia, and increase sales by 30%



Initiatives for realizing the strategy

Continue to increase productivity and reduce costs

Respond to growing demand in the North America and Europe markets

Increase sales of specialty fibers

Enhance R&D and partnerships

- For submarine cable
- Non-telecommunications fields (Energy transmission, sensing, aerospace and medical)

Strengthen cooperation within the group

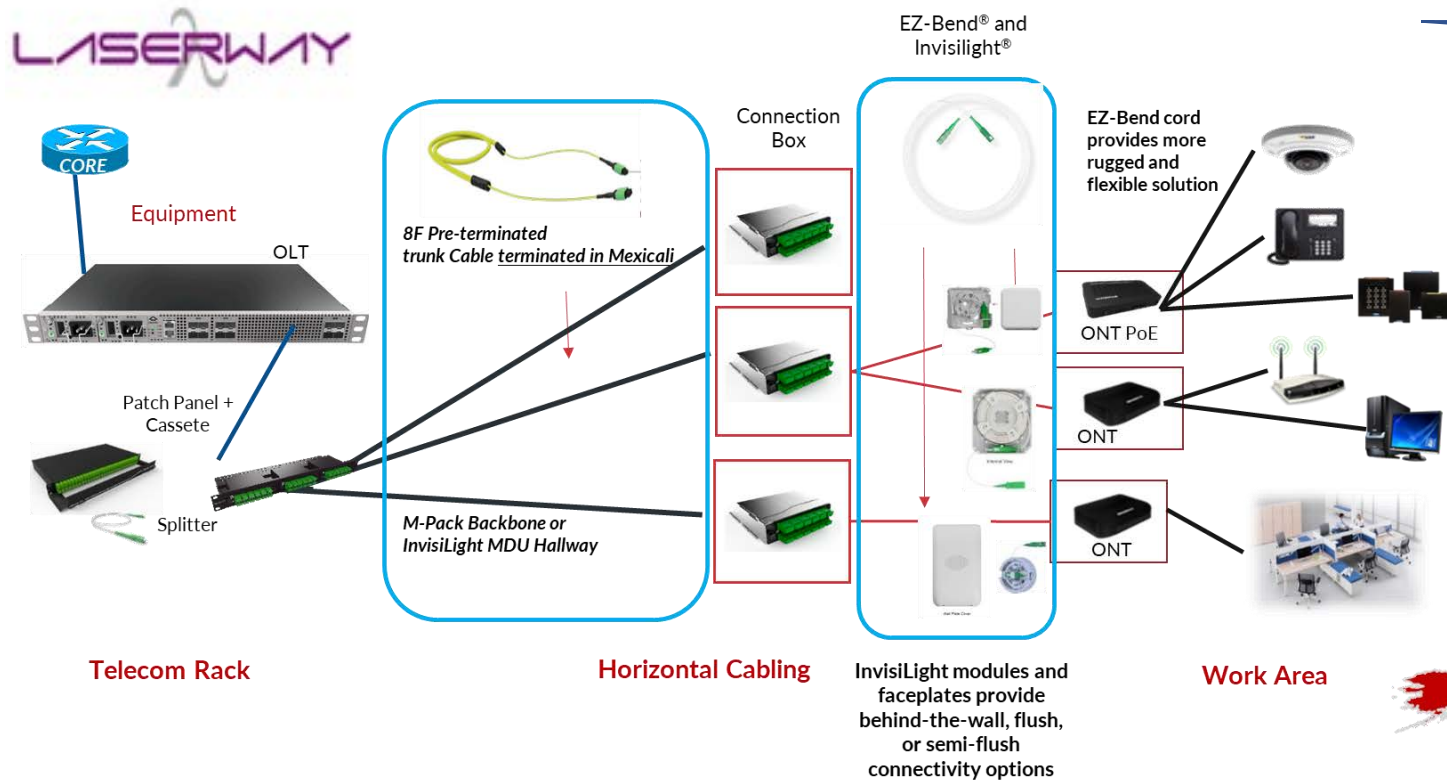
- Unify and promote the brands
- Consolidate / expand the product portfolio
- Strengthen sales and marketing

“ Laserway Solution”: Solution for realizing a complete transition to optical LAN networks



3. Overview of the 2025 Mid-term Plan Networking systems business

Global expansion of the networking systems business



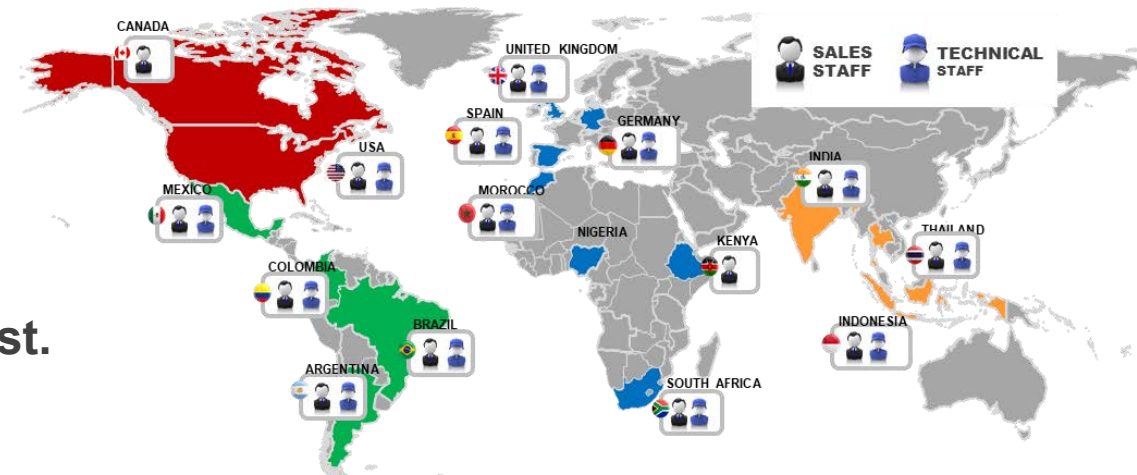
As new solutions for the enterprise market, offer solutions that are more compact (GPON), more simple (including connectors), support a wider area (all optical) and lower cost.

Strengthen cooperation within the group

- Unify and promote the brands
- Consolidate / expand the product portfolio
- Strengthen sales and marketing



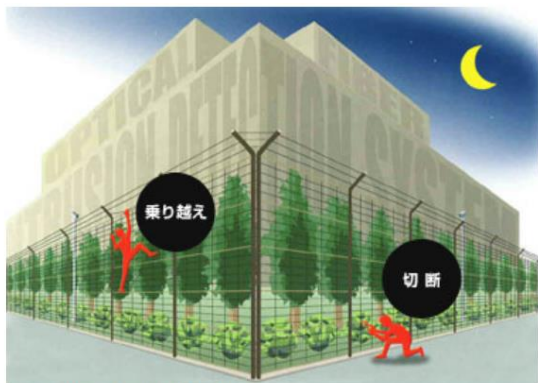
Realize a B5G society



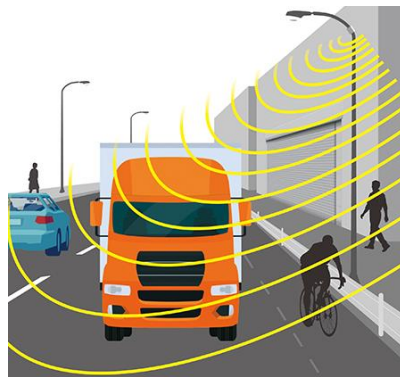
3. Overview of the 2025 Mid-term Plan Contribute to realizing the IOWN concept

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

Utilizing photonics and wireless technology, "support simultaneous realization and be a valued partner"



光ファイバによる屋外外周セキュリティ

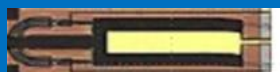


Create photonics products that will solve the social issues in 2030

2022



Excitation light source for Raman amplifiers



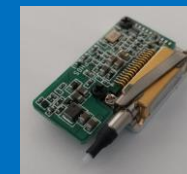
Semiconductor optical amplifier for silicon photonics



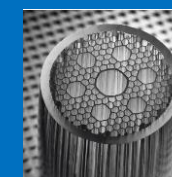
High speed modulator



High output DFB external light source



Ultra-small tunable laser



Optical fiber with new functions

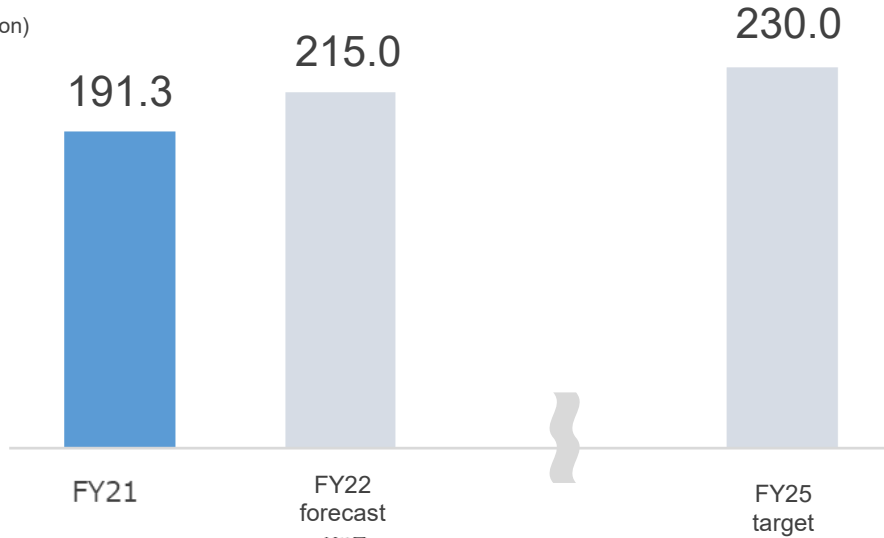
2030

In April 2022, launched the "Project for the creation of next generation photonics businesses" reporting directly to the president

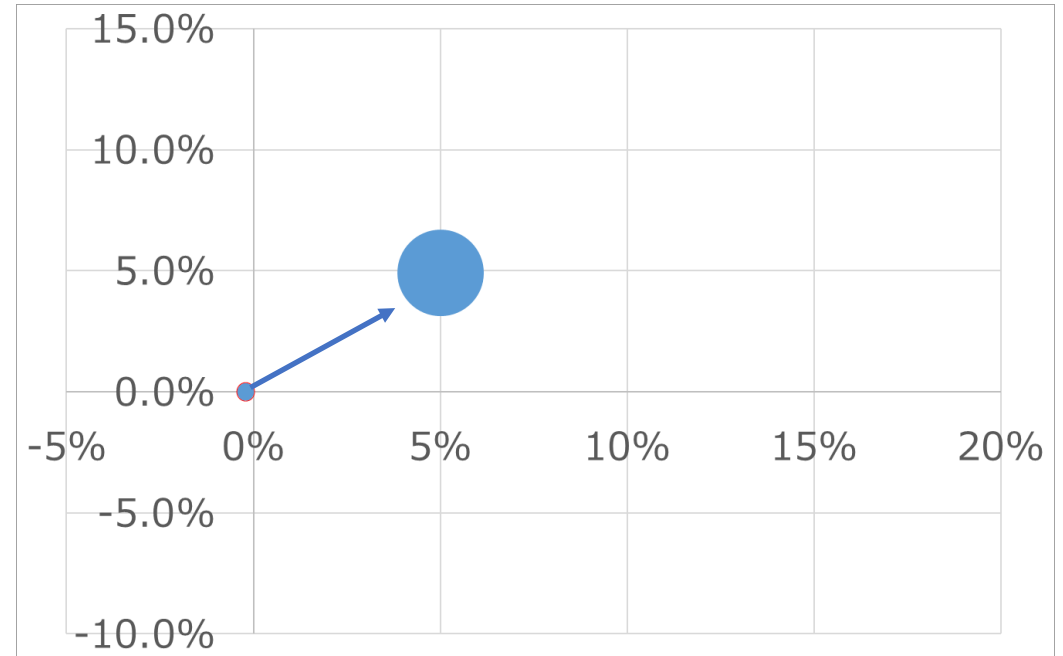
Net sales and operating income during the 2025 Mid-term Plan

Net sales

(JPY billion)

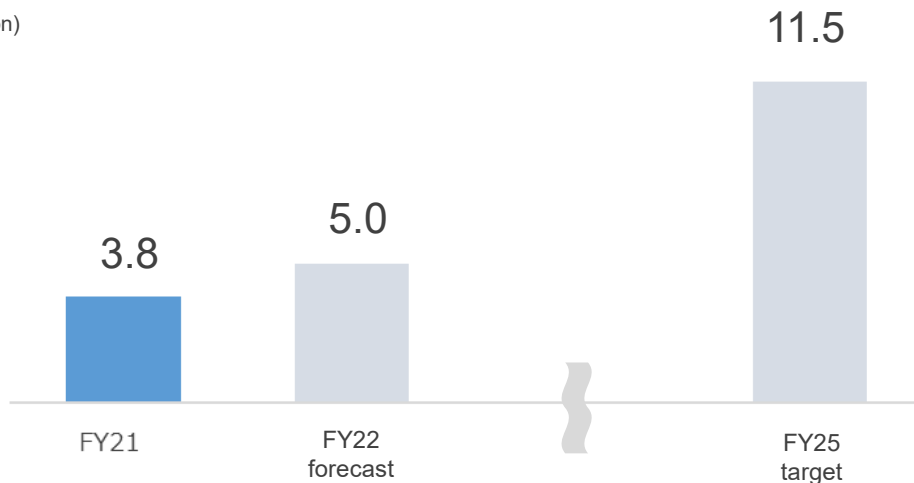


ROIC (FY21 actual → FY25 target)



Operating income

(JPY billion)



Vertical axis : Net sales CAGR (FY17-21→FY21-25)
 Horizontal axis: ROIC (FY21→25)
 Bubble : NOPAT (FY21→25) ※ Bubble outlined in red indicates a negative figure

	FY21	FY22 forecast	FY25 target
Average market price of copper (JPY/kg)	1,136	1,260	1,085
Average exchange rate (JPY/USD)	112	120	110

Thank you very much for your attention.



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Appendix



【 2025 Mid-term Plan (Road to Vision 2030 -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

【External environment, strengths and issues】

External environment – Main revenue opportunities

- Increased data traffic worldwide (high speed, large volume, low latency, energy saving)
- Advances in IOT and 5G/B5G/6G
- Changes in the social environment

Strengths as a division

- Global production network in growing markets
- Differentiation through high performance products and technology (optical fiber & cable, digital coherent and network technology)

External environment – Main menaces and risks

- Issues involving Russia & Ukraine and US & China
- Global supply chain problems
- Soaring energy costs and raw material prices
- Global semiconductor shortage

Issues as a division







- While taking into consideration the external environment indicated on the left, maximally utilize the global production network to deliver optimum solutions to the market

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

- In the “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
- In the “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”



Appendix – Product overview

	Optical fiber and cable products		FITEL products		Broadband solutions	
						
5G/B5G	●	●	●		●	●
Tougher infrastructure	●	●	●		●	●
CN*1	●	●		●		
Main products	<ul style="list-style-type: none"> ● Low loss fibers ● Low bending loss fiber for building/ residential applications ● Specialty fibers 	<ul style="list-style-type: none"> ● Optical cable (including rollable ribbon cable) ● Optical connection products 	<ul style="list-style-type: none"> ● Variable wavelength laser modules (ITLA*2) ● Laser excitation modules 	<ul style="list-style-type: none"> ● Industrial fiber lasers 	<ul style="list-style-type: none"> ● FTTH system devices (including high definition image and low latency transmission systems) 	<ul style="list-style-type: none"> ● Network routers
Main applications	<ul style="list-style-type: none"> ● Telecommunications business ● Video broadcasts ● Data centers 	<ul style="list-style-type: none"> ● Telecommunications infrastructure and networks ● Video broadcasts ● Data centers 	<ul style="list-style-type: none"> ● 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 ● Design and installation of transmission systems and networks 	<ul style="list-style-type: none"> ● High speed, large volume telecommunications services ● Establish VPN
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 manufacturers 	<ul style="list-style-type: none"> ● Telecommunications providers (CATV providers) ● Municipalities 	<ul style="list-style-type: none"> ● Telecommunications providers ● General companies

*1CN: Carbon Neutral, *2ITLA: Integrable Tunable Laser Assembly