

# IR Presentation

## Q1 2022

Q1 2022 Results & Q2 2022 Guidance

May 2022  
OE Solutions IR

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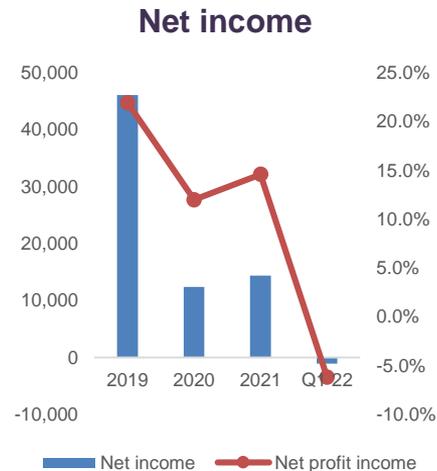
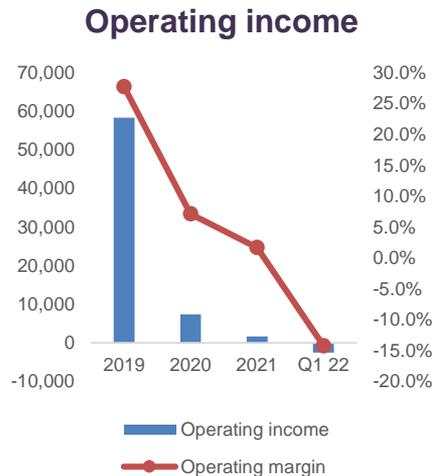
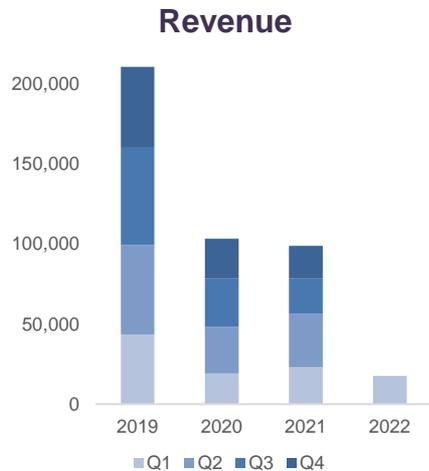
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# Q1 2022 Result Review



2022년 1Q Revenue **17.6 KRW** , Operating income **-2.5B KRW(-14.2%)**, Net income **-1.1B KRW(-6.2%)**



※ Based on consolidated

(Unit : million KRW)

	2019	2020	2021	Q1 22
• Revenue	210,283	103,178	98,681	17,626
• Operating income	58,262	7,333	1,655	-2,510
• Operating margin	27.7%	7.1%	1.7%	-14.2%
• Net income	46,065	12,352	14,372	-1,091
• Net profit margin	21.9%	12.0%	14.6%	-6.2%

## Q1 2022 Revenue **17.6B KRW** / YoY -13.6%, QoQ -12%

(Unit : million KRW)

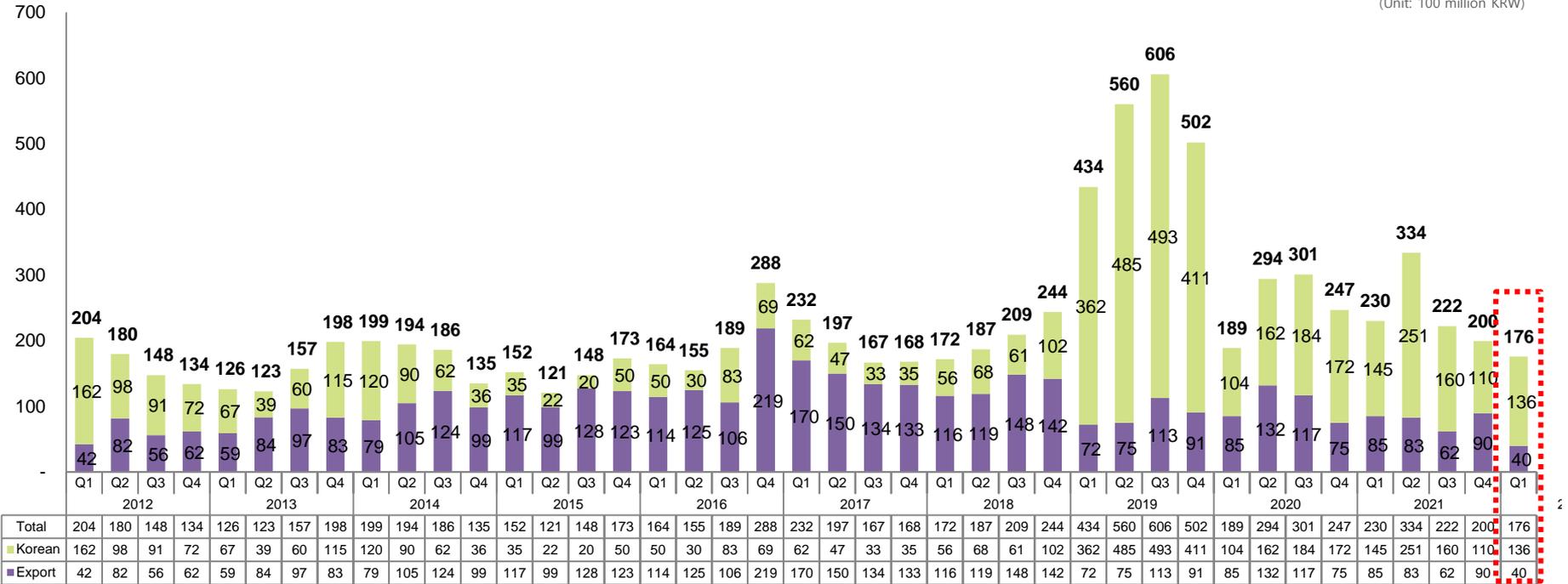
구분	1Q 21	1Q 22	%	YoY	Q4 21	QoQ
Revenue (Sales)	23,068	<b>17,626</b>		-13.6%	<b>20,023</b>	-12.0%
Gross profit	8,345	5,812	33.0%	-30.4%	5,052	15.0%
Selling general Administrative expenses	9,548	8,322	47.2%	-12.8%	8,083	3.0%
Operating Income(loss)	-1,203	-2,510	<b>-14.2%</b>	<b>-108.7%</b>	<b>-3,030</b>	17.2%
Profit (loss) Before tax	-443	<b>-1,729</b>	<b>-9.8%</b>	-289.9	<b>3,705</b>	-146.7%
Net income	2,573	<b>-1,091</b>	<b>-6.2%</b>	-142.4	<b>3,233</b>	-133.8%

※ Based on consolidated

# Quarterly Revenue trends

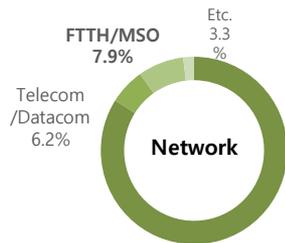
## Global 5G investment Expected in 2H 2022

(Unit: 100 million KRW)

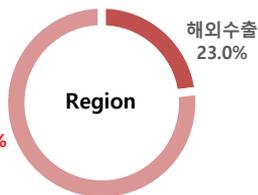


※ Based on separate standard

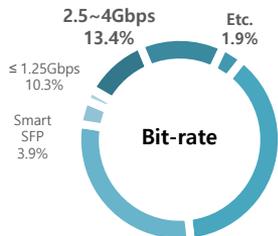
# Sales details



Wireless  
83.9%



국내 77.0%



≥ 25Gbps  
29.3%

10Gbps  
37.5%

(Unit: 100 million KRW)

	4Q 2021	1Q 2022	QoQ (%)
<b>Network</b>			
• Wireless	144.4	148.0	2.5%
• Telecom/Datacom	16.3	11.0	-32.5%
• FTTH/MSO	35.6	14.0	-60.7%
• etc.	4	3.3	-17.5%
<b>Region</b>			
• Korean	110.7	135.7	22.6%
• Overseas	89.3	40.6	-54.7%
<b>Overseas ratio</b>	44.7%	23.0%	
<b>Bit-rate</b>			
• ≤1.25Gbps	11.6	18.2	56.9%
• 2.5~4Gbps	37.6	23.6	-37.2%
• 5~6Gbps	20.5	6.4	-68.8%
• 10Gbps	53.9	66.2	22.8%
• ≥25Gbps	39.7	51.6	30.0%
• Smart SFP	33	6.8	-79.4%
• Component / Chip	4.0	3.3	-17.5%
• etc.	0.0	0.2	
<b>Total</b>	<b>200.3</b>	<b>176.3</b>	<b>-12.0%</b>

※ Based on separate standard

# 5G(NR) Mobile Network Business



# 5G(NR) Mobile Network Business

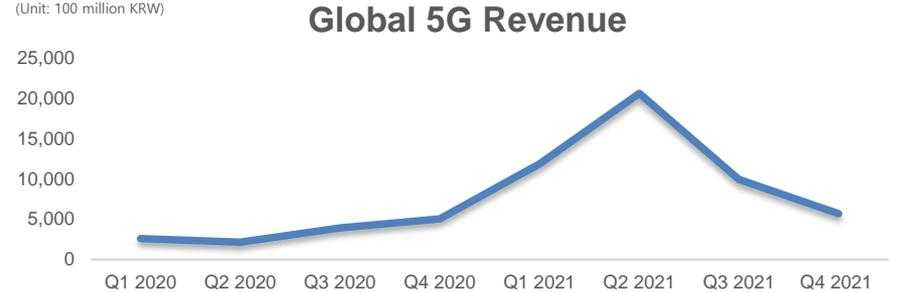
## 5G Network Supply chain



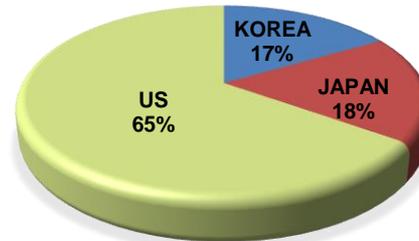
## Global 5G Revenue Forecast

Global(US, Japan, etc.) 5G sales growth is expected to increase in the 2H 2022

(Unit: 100 million KRW)



## 2021 5G Revenue



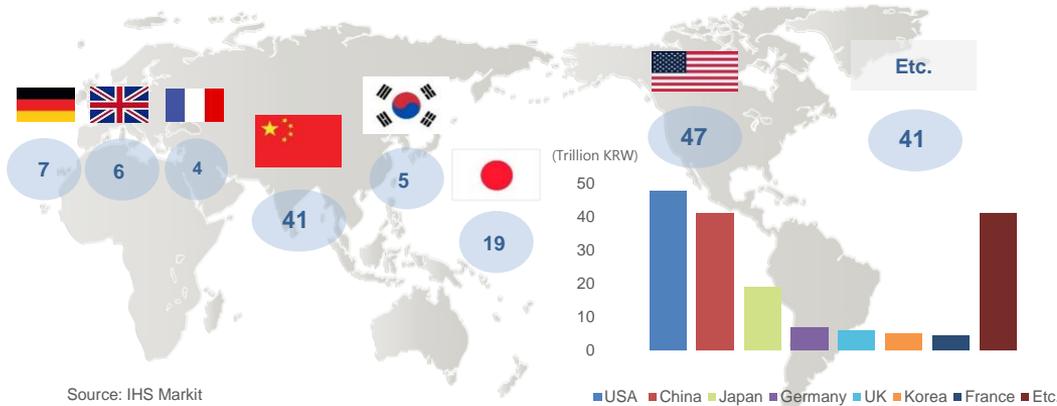
(Unit: 100 million KRW)

Region	Operator	Revenue	%
US	Verizon	37,522	65%
	KDDI	10,461	14%
JAPAN	NTT docomo		
KOREA	KT	9,563	28%
	LG U+		
	SKT		
<b>Total</b>		<b>57,546</b>	

## 5G Market Forecast

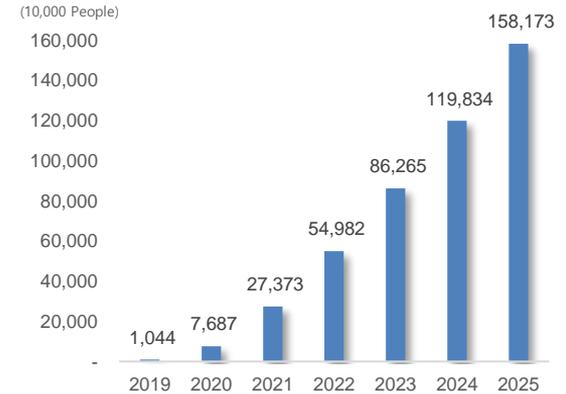


### 5G Infra equipment investment outlook - 5-year average



Source: IHS Markit

### Global 5G subscribers outlook



Source: IHS Markit

## Data traffic

### Global Mobile data traffic outlook

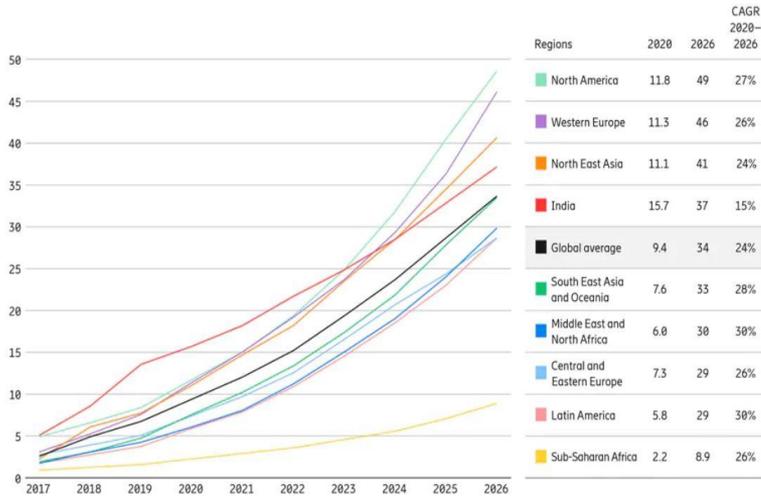
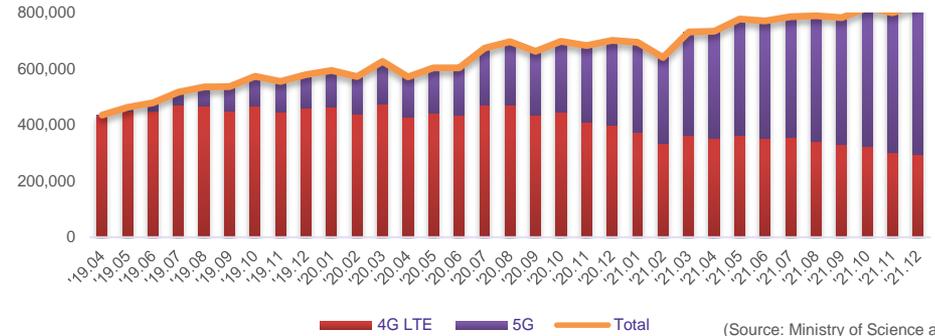


Figure 13: Mobile data traffic per smartphone (GB per month)

(Source: Ericsson)

(Unit: TB)

### Korea Mobile Data traffic



(Source: Ministry of Science and ICT)

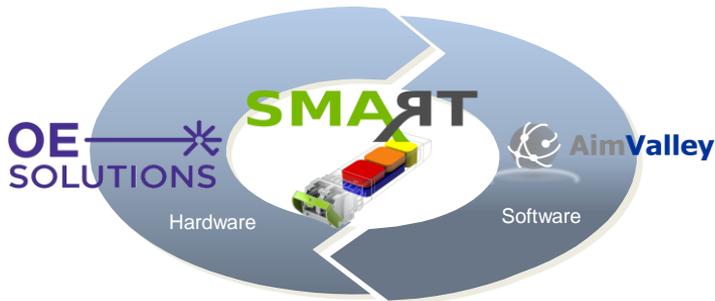


# OE Solutions Vision & Strategy



## World's First Leading Technology Smart Transceiver

### Smart Transceiver



### Product Features



### Smart Transceiver

The Network system features in the transceiver enable network migration at low cost and high efficiency. OE Solutions/AimValley

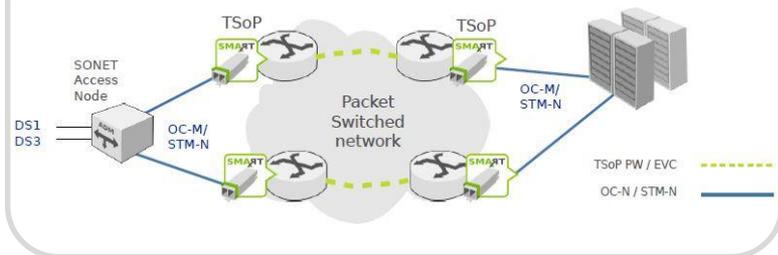
### World's First Leading Technology

**Global Tier 1 customer design in good progress**

→Ciena, CISCO, Nokia, Juniper, ADVA etc.

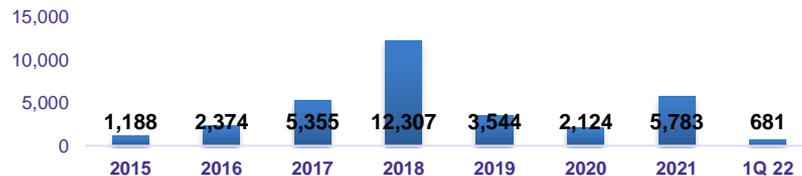
### Simplify Network Migration

#### Example of using Smart SFP



### Smart Transceiver Revenue

(Unit: million KRX)



Business expand



## Optical Component



- Mass production scheduled for the 2020
- 10G/25G/100G will start using in-house laser chip
- Component sales for China 5G and data center applications
- Component business expect high margin
- Through in-house capability, 1)Cost competitive 2) Supply and demand stabilization 3) Custom development will be possible
- Road map : 10G DML, 25G DFB, 25G EML, Tunable Chip
- 25G EML : Joint with ETRI



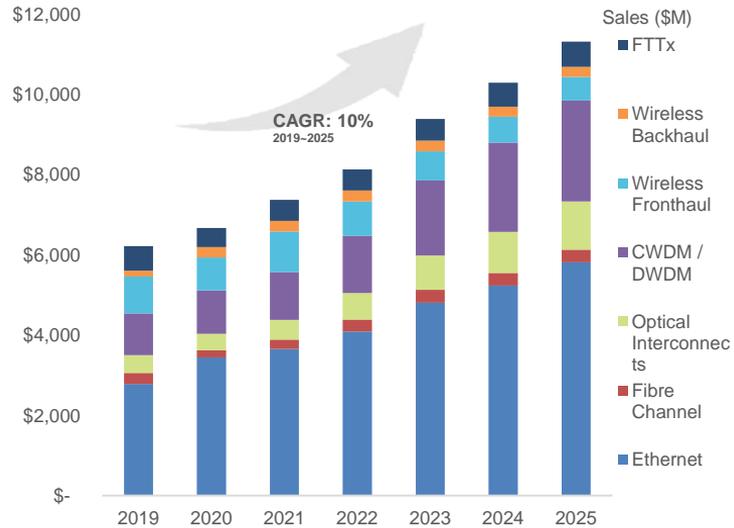
## Transceiver



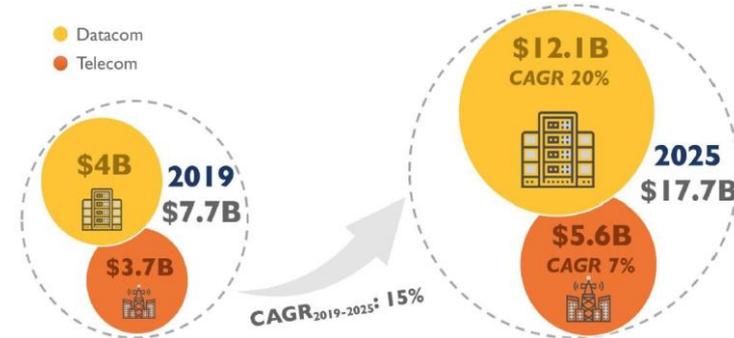
- Global 5G Transceiver All line-up
- Transceiver profitability and competitive advantage through in-house technology
- High bit-rate Transceiver development to launch a variety of Network Target products
- New Product in the second half
  - 50Gbps, 100Gbps, 400Gbps PAM4 for wireless and Data Center interconnector
  - 10Gbps Tunable Transceiver for WDM
  - Digital Coherent TRx for 100Gbps >100km

## Demand for Transceivers continues to increase due to infrastructure investments that require data connectivity

Transceiver Market Forecast



Source : LightCounting, 2020 October Report



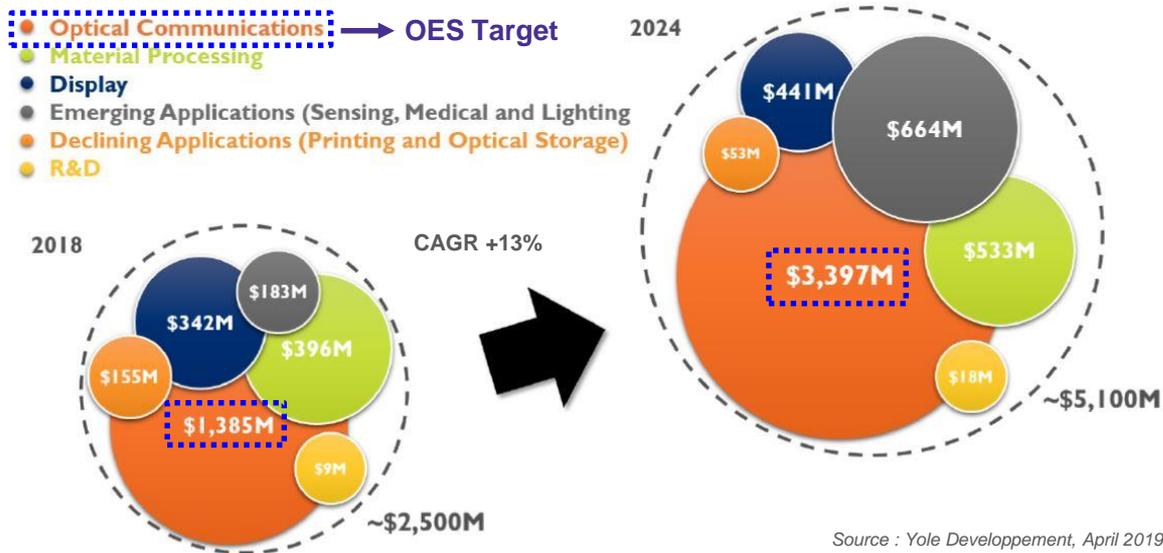
Source : Yole Developpement, 2020

# Vision & Strategy for OES's Semiconductor Laser Diode Chip

Target the Optical Communication market through Edge Emitting Lasers technology  
EEL technology has potential to expand into many businesses

\*EEL Market

\*EEL : Edge Emitting Lasers



Q2 of 22 Guidance



**Q2 Revenue is expected to 21.0B KRW**

YoY -9%, QoQ +19%

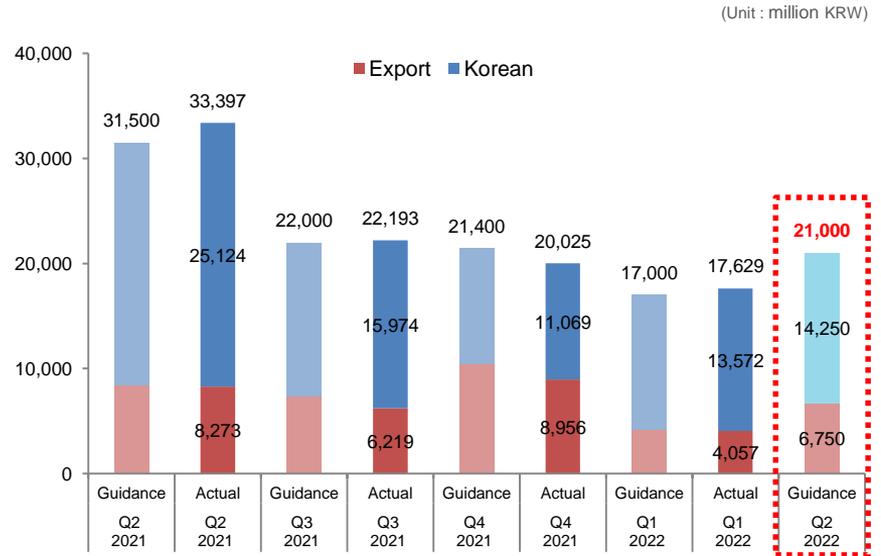
## Quarterly Guidance

(Unit : million KRW)

	Q2 2020 Actual	Q3 2021 Actual	Q4 2021 Actual	Q1 2022 Actual	Q2 2022 Guidance
Revenue (Sales)	33,397	22,193	20,025	17,629	<b>21,000</b>
Domestic	25,124	15,974	11,069	13,572	<b>14,250</b>
Export	8,473	6,219	8,956	4,057	<b>6,750</b>

※ Consolidated and forecast as of March 2022

## Quarterly Trends



# Appendix

- Company Introduction
- Financials



# About OE Solutions

## Overview

<b>Name</b>	OE Solutions, Co., Ltd	<b>Date of Established</b>	Aug.7, 2003
<b>Number of Employees</b>	411 (Korea: 390 / USA: 17 / Japan: 4)	<b>Date of Listing</b>	Feb.27, 2014(KOSDAQ code : 138080)
<b>Product</b>	Optical Transceiver	<b>Homepage</b>	www.oesolutions.com
<b>Locations</b>	Head Quarter : Gwangju, South Korea / US : Ridgefield Park, NJ, USA / JAPAN : Tokyo Japan		

(As of March.31,2022 )

## Locations



- Hilversum, Netherlands**
- Europe Headquarter
  - Europe Sales
  - Smart and system R&D

- Gwangju, Korea**
- Global Headquarter
  - Manufacturing
  - R&D

- Seoul (Anyang), Korea**
- Korea Sales
  - R&D

- Seoul (Suwon), Korea**
- Korea Sales
  - Engineering Support

- Taipei, Taiwan**
- China Sales
  - Engineering Support

- Tokyo, Japan**
- Japan Sales
  - Engineering Support

- Ridgefield Park, NJ, USA**
- US Headquarter
  - US (East Coast) Sales
  - Engineering Support

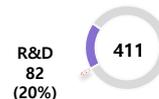
- Irvine, CA, USA**
- R&D

- Santa Babara, CA, USA**
- R&D

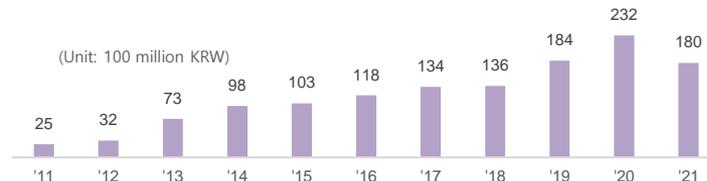
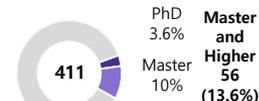


## R&D Engineer & Cost

< By sector >



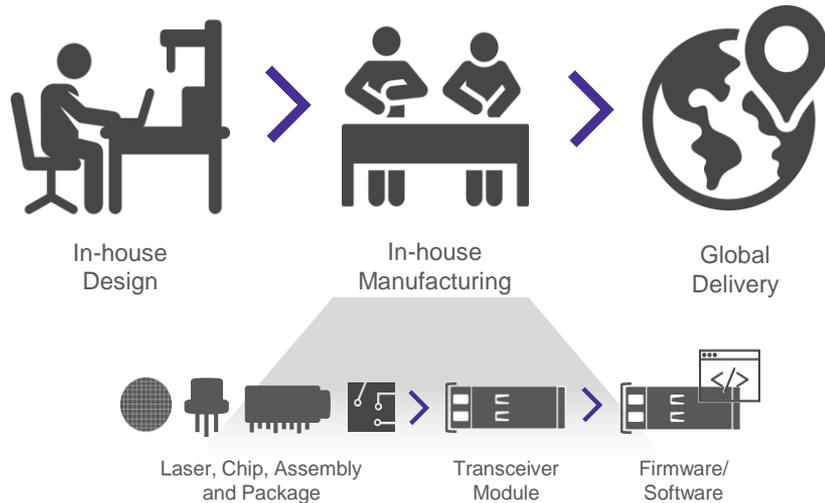
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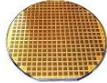


## Leading Supplier of High-Reliability Optical Components for Challenging Deployment Environments



- ❑ Leading supplier of optical components since 2003
- ❑ Founded by a team of Bell Labs and Samsung veterans
- ❑ Traded on KOSDAQ since 2014
- ❑ Key supplier to tier-1 MSO and Wireless OEMs
- ❑ Serving global customer in over 50 countries
- ❑ Leading supplier of BID1 and I-Temp Optics
- ❑ Leading supplier of Smart SFPs (co-developed with AimValley)
- ❑ Vertically integrated production
- ❑ In-house production in Gwangju, S. Korea factory
- ❑ R&D sites in Korea, USA and the Netherlands

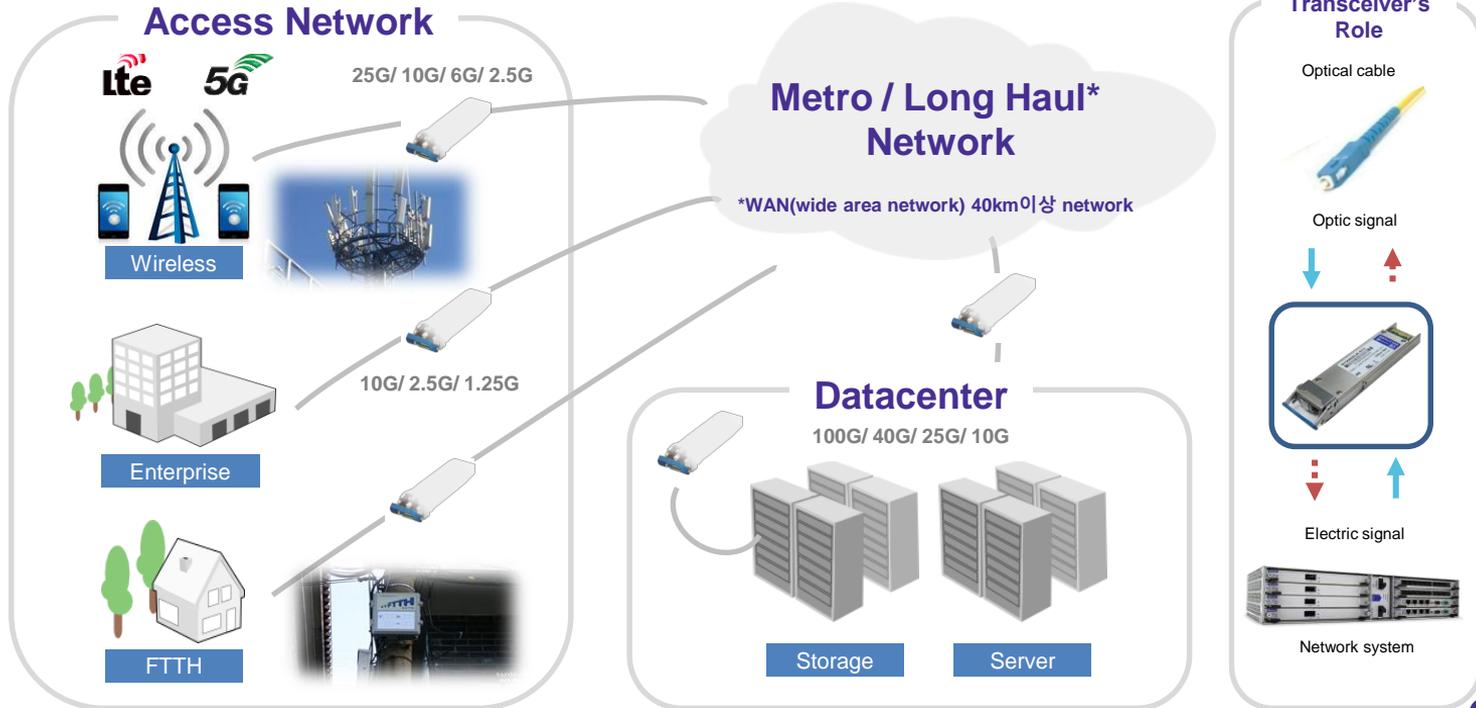


Manufacturing Process			Manufacturing Technology	
<b>Chip</b>		Laser Diode Photo Diode	Epitaxy / Fabrication / Wafer Characterization	
<b>Assembly</b>		TO/ XMD (Cooled/ Uncooled)	Die Bonding, Wire Bonding, Seam Sealing, Burn-in, DC/AC Test	
<b>Package</b>		OSA (TOSA/ ROSA/ BOSA)	Laser welding, Epoxy bonding, DC/AC Test	
<b>Circuit / Module</b>		Transceiver (Tuning & Test)	Auto Soldering / Auto Tuning / Test	
<b>Firmware / Software</b>		Sub-system (Network Migration & Self-Monitoring Technology)	Co-developed with AimValley, a networking technology expert in Netherlands	
<b>Production</b>		Own manufacturing, assembly & testing facility	Low cost, flexible production	

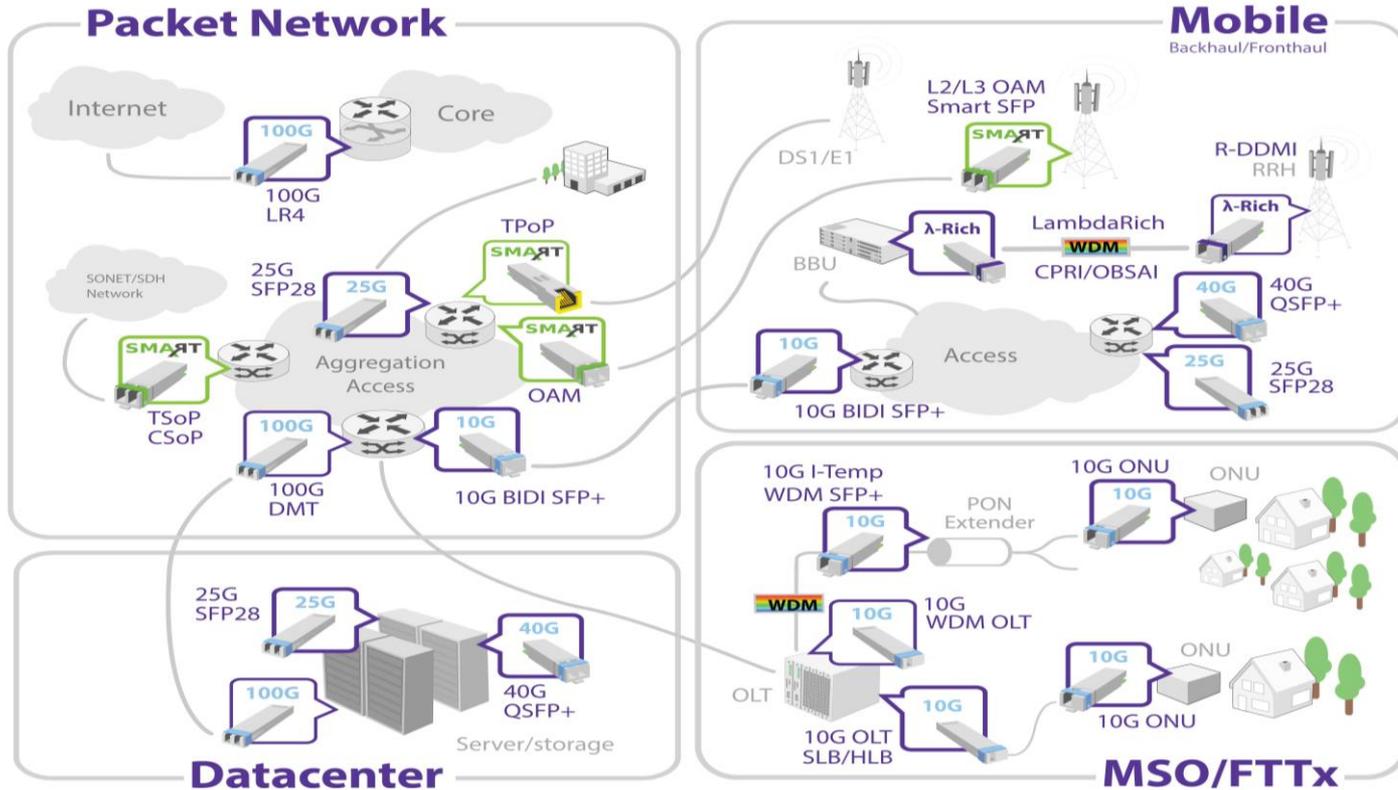
# Transceiver Products Applications

The use of Transceiver in the Network

Transceiver required for network connections



# Key Application Areas



# Condensed income statement

## Consolidated

(Unit : million KRW)

	2019	2020	2021	2022 1Q
Revenue (Sales)	210,283	103,178	98,681	17,626
Cost of sales	122,835	62,686	62,416	11,813
Gross profit	87,448	40,492	36,265	5,812
Selling general administrative expenses	29,186	33,159	34,610	8,322
<b>Operating income(loss)</b>	<b>58,262</b>	<b>7,333</b>	<b>1,655</b>	<b>-2,510</b>
Profit (loss) before tax	58,388	6,699	11,967	-1,729
Net income	46,065	12,352	14,372	-1,091

## Separate standards

(Unit : million KRW)

	2019	2020	2021	2022 1Q
Revenue (Sales)	210,242	103,172	98,681	17,629
Cost of sales	122,835	62,686	62,416	11,688
Gross profit	87,407	40,486	36,265	5,940
Selling general administrative expenses	28,533	33,180	33,912	8,110
<b>Operating income(loss)</b>	<b>58,874</b>	<b>7,305</b>	<b>2,353</b>	<b>-2,169</b>
Profit (loss) before tax	59,436	6,990	11,466	-1,588
Net income	47,026	12,227	13,920	-907

# Condensed statement of financial position

## Consolidated

(Unit : million KRW)

	2019	2020	2021	2022 1Q
Current assets	137,422	129,808	106,938	115,332
Cash and cash equivalents	44,259	40,068	31,095	27,662
Accounts receivable	33,138	14,847	10,778	7,978
Inventory asset	24,222	22,484	33,334	36,201
Non-current assets	46,945	65,377	94,901	86,815
Property, plant and equipment	30,161	39,269	39,791	40,160
Intangible assets	738	746	860	859
<b>Total assets</b>	<b>184,367</b>	<b>195,184</b>	<b>201,839</b>	<b>202,147</b>
Current liabilities	42,847	45,749	40,745	45,191
Short-term debt	27,000	36,000	34,000	34,000
Non-current liabilities	2,211	2,455	1,794	1,892
<b>Total liabilities</b>	<b>45,059</b>	<b>48,204</b>	<b>42,539</b>	<b>47,083</b>
Capital	5,312	5,312	5,312	5,312
Paid-in capital in excess of par value	52,031	52,002	52,002	52,002
Retained earnings	79,731	87,511	99,665	95,389
<b>Total equity</b>	<b>139,308</b>	<b>146,981</b>	<b>159,299</b>	<b>155,065</b>

## Separate standards

(Unit : million KRW)

	2019	2020	2021	2022 1Q
Current assets	136,299	127,504	105,532	114,299
Cash and cash equivalents	42,423	34,557	27,929	25,377
Accounts receivable	33,096	18,137	12,599	8,040
Inventory asset	24,222	22,484	33,334	36,201
Non-current assets	46,416	65,055	93,630	85,366
Property, plant and equipment	29,192	38,592	38,676	39,036
Intangible assets	36	18	52	50
<b>Total assets</b>	<b>182,715</b>	<b>192,559</b>	<b>199,162</b>	<b>199,665</b>
Current liabilities	43,065	44,794	40,811	45,363
Short-term debt	27,000	36,000	34,000	34,000
Non-current liabilities	1,676	2,164	1,047	1,090
<b>Total liabilities</b>	<b>44,740</b>	<b>46,959</b>	<b>41,858</b>	<b>46,453</b>
Capital	5,312	5,312	5,312	5,312
Paid-in capital in excess of par value	52,031	52,002	52,002	52,002
Retained earnings	78,461	86,116	97,819	93,728
<b>Total equity</b>	<b>137,975</b>	<b>145,600</b>	<b>157,303</b>	<b>153,212</b>

Thank you.

OE — \*  
SOLUTIONS

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