

IR Presentation

Q2 2019

Q2 2019 Results & Q3 2019 Guidance



August 2019
OE Solutions IR

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Q2 2019 Result Review



Financial results

Q2 19 Revenue **56.0B KRW, 200.4% (YoY), 29.1%(QoQ)**

Operating income **15.6B KRW (29.5%)**

Increase in revenue and profitability due to increased sales of 5G(NR) products in Korea

(Unit : million KRW)

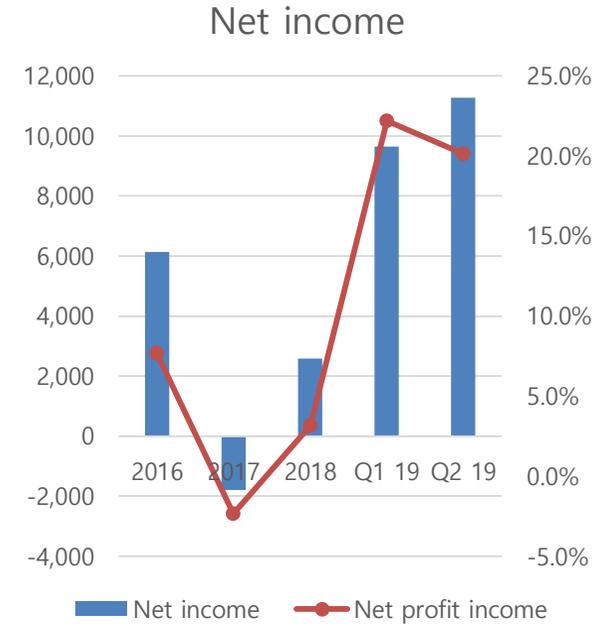
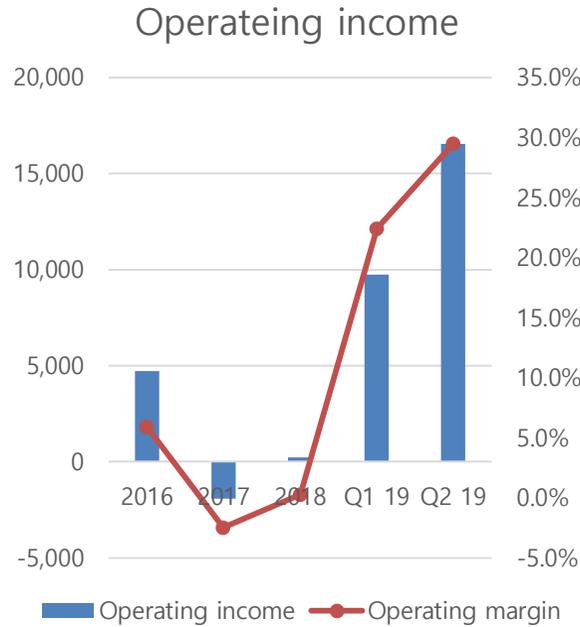
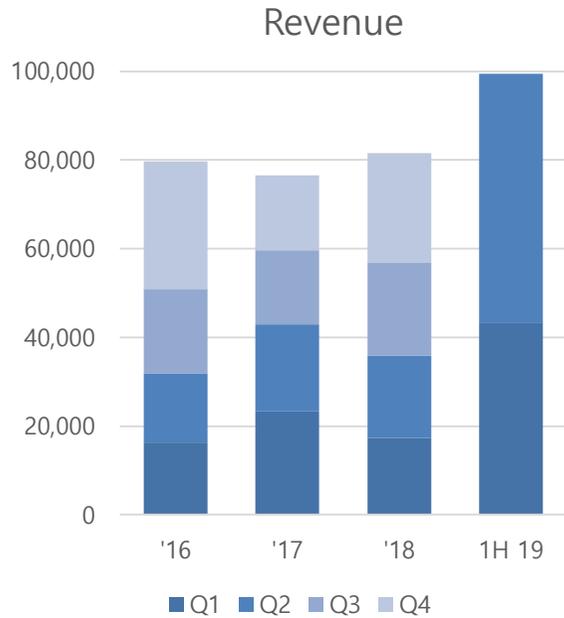
	Q2 18	Q2 19	%	YoY	Q1 19	QoQ
Revenue (Sales)	18,653	56,036		200.4%	43,409	29.1%
Gross profit	5,657	23,666	40.6%	318.3%	16,725	41.5%
Selling general administrative expenses	5,848	7,137	12.7%	22.0%	6,989	2.1%
Operating income(loss)	(191)	16,530	29.5%	8,756.3%	9,735	69.8%
Profit (loss) before tax	856	16,598	29.6%	1,838.9%	9,641	72.2%
Net income	1,641	11,273	20.1%	587.0%	9,641	16.9%

※ Based on consolidated

Financial results_Graph

1H19 Revenue **99.4B KRW**

Operating income **26.3B KRW(26.4%)**, Net income **20.9B KRW(21.0%)**



※ Based on consolidated

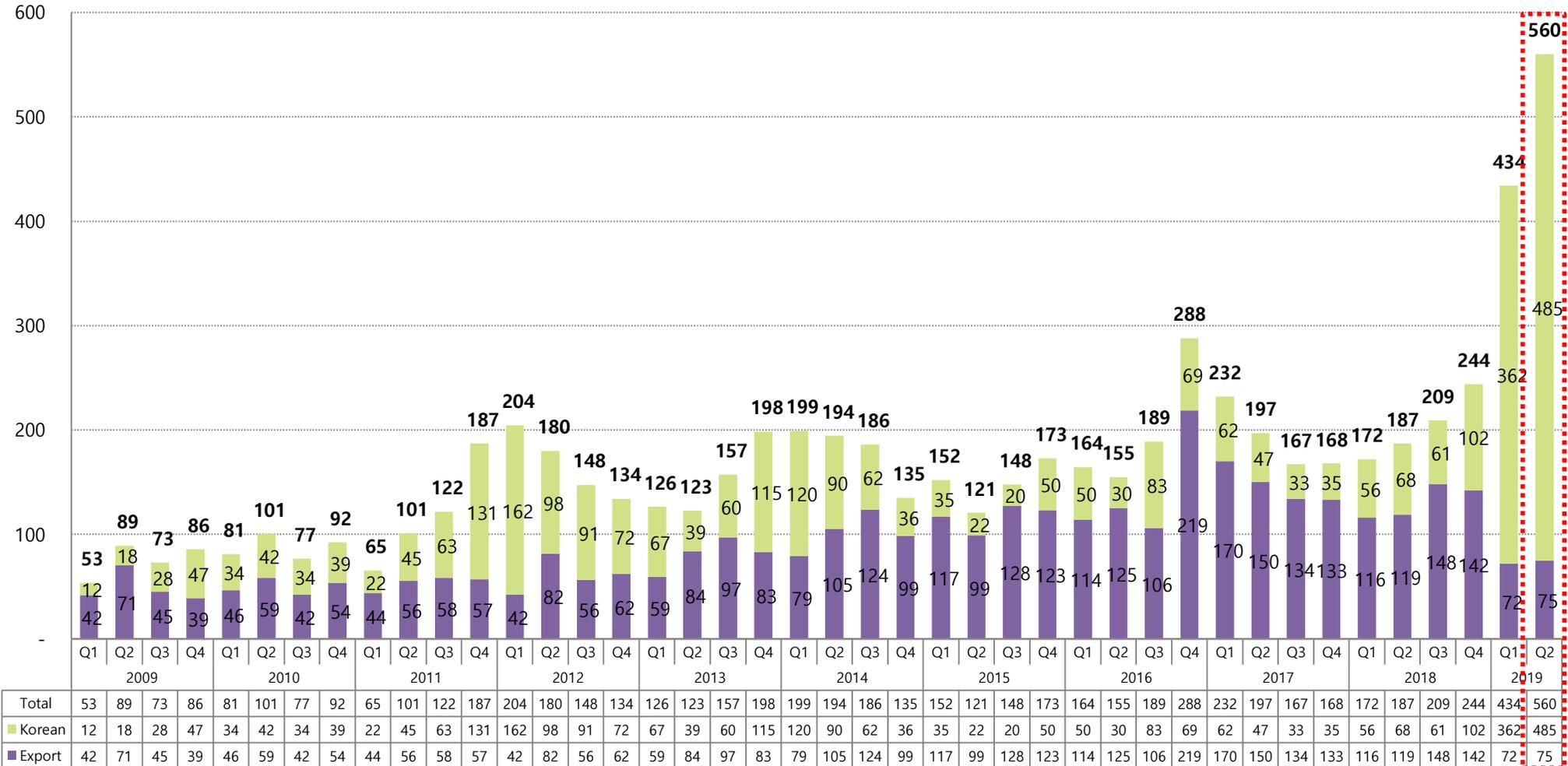
(Unit : million KRW)

구분	2016	2017	2018	Q1 2019	Q2 2019	1H 2019
• Revenue	79,720	76,594	81,504	43,409	56,036	99,445
• Operating income	4,721	(1,917)	234	9,735	16,530	26,265
• Operating margin	5.9%	-2.5%	0.3%	22.4%	29.5%	26.4%
• Net income	6,127	(1,786)	2,590	9,641	11,273	20,915
• Net profit margin	7.7%	-2.3%	3.2%	22.2%	20.1%	21.0%

Quarterly Revenue trends

Korean sales expected to drive revenue growth in 2019.

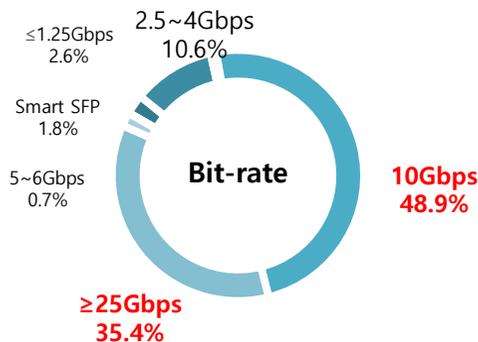
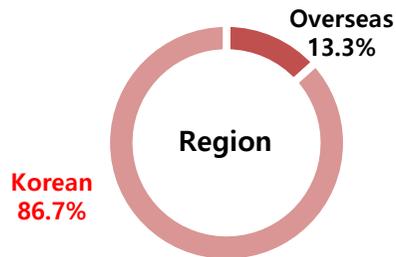
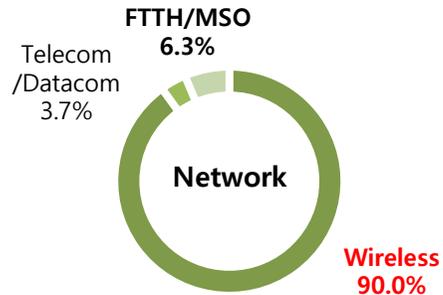
(Unit: 100 million KRW)



※ Based on separate standard

Sales details

Wireless accounts for 90% of sales and Korean sales for 86.7% of total sales
 Revenue from new 25Gbps products targeted at 5G applications is 35.4% of total sales



(Unit: 100 million KRW)

	Q1 2019	Q2 2019	QoQ (%)
Network			
• Wireless	377.1	504.1	33.7%
• Telecom/Datacom	14.0	20.5	46.4%
• FTTH/MSO	43.0	35.4	-17.7%
Region			
• Korean	362.0	485.5	34.1%
• Overseas	72.1	74.5	3.3%
Overseas sales ratio	16.6%	13.3%	
Bit-rate			
• ≤ 1.25Gbps	13.3	14.3	7.5%
• 2.5~4Gbps	45.8	59.4	29.7%
• 5~6Gbps	2.5	4.1	64.0%
• 10Gbps	122.5	273.6	123.3%
• ≥25Gbps	247.1	198.5	-19.7%
• Smart SFP	2.9	9.9	241.4%
• Others	-	0.2	
Total	434.1	560.0	29.0%

※ Based on separate standard

5G(NR) Mobile Network Business



5G(NR) Mobile Network Business

Revenue Growth due to Korean buildout of 5G infrastructure in 2019

Expected to be followed by growth in overseas market (North America, Japan)

5G(NR) Mobile Network



Market Environment and Business Outlook

• Korean

- 5G products Q2 2019 sales of 43.5B KRW(78%), 1H 2019 sales of 75.2B KRW(76%)
- Investment in Nationwide Network will be made between 4Q 2018 and 2022 for 3.5GHz/28GHz frequency bands
- Publically announced sales contract (Unit : million KRW)

Date	Contract	Amount	Customer	Etc
Dec.20, 2018	5G(NR) Target product	27,376	Samsung Electronics	Invest in Korea
Feb.22, 2019		10,336		
Apr.18, 2019		13,135		
Jul.25, 2019		12,751		
Total		63,598		

→ OES 10G/25G optical transceiver demand is expected to increase

• Overseas

- North American operators such as Verizon, AT&T and Japanese operators such as NTT Docomo and KDDI are also competing in the 5G market.
- We expect 5G Infra construction to ramp in North America in H2 2019 and in Japan in early of 2020.

→ OES is in the process of qualifying 10G/25G optical transceivers for 5G with major customers, such as NOKIA, Samsung, Fujitsu and NEC, to serve overseas markets.

5G(NR) Coverage map in Korea

(Source: KT, SKT, LG U+ Website)


 ✓ LTE
 ✓ LTE-A
 ✓ 3Band LTE-A



As of May 10, 2019

As of Aug.8, 2019

KT



SKT



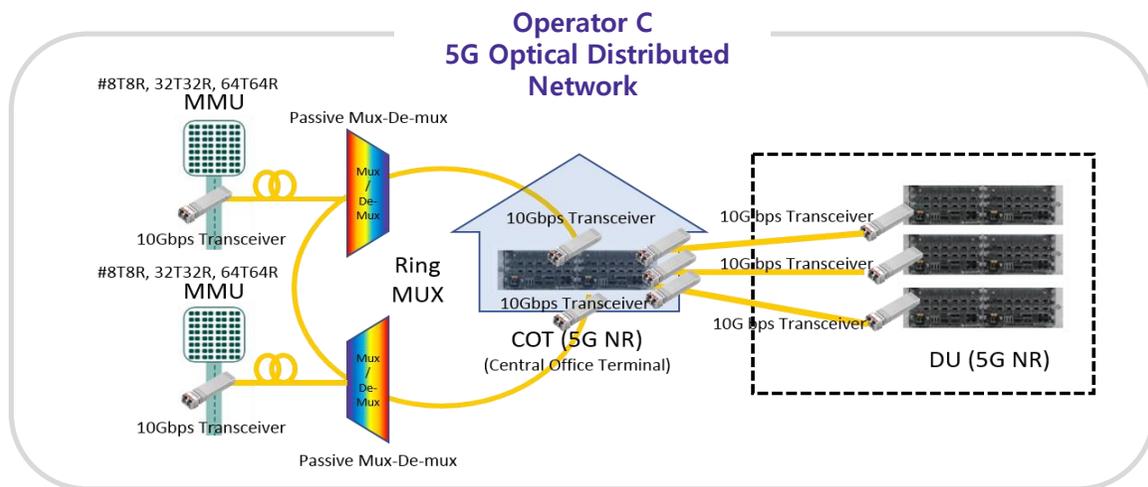
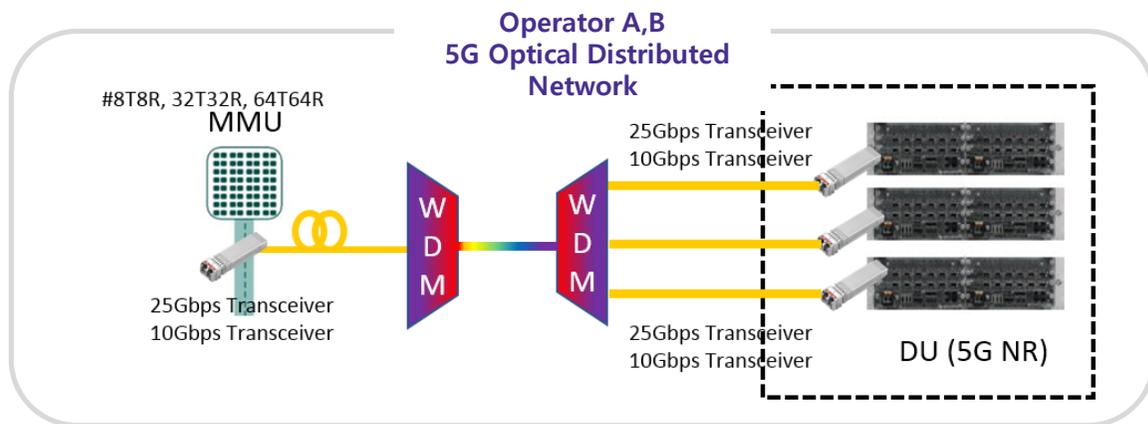
LGU+



5G(NR) Mobile Network Business

Optical Transceivers for 5G(NR) Network deployment

5G(NR) Network architecture in Korea



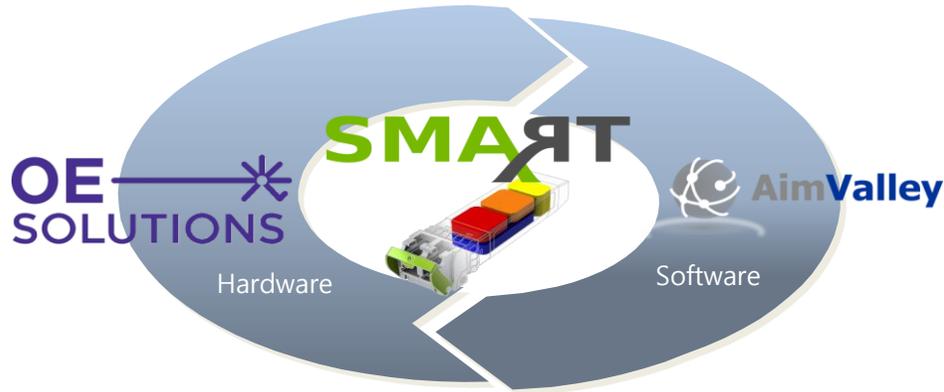
OE Solutions Strategic Product



Unique Products-Smart Transceivers

World's First Leading Technology Smart Transceiver

Smart Transceiver



Product Features



Smart Transceivers

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

OE Solutions/AimValley

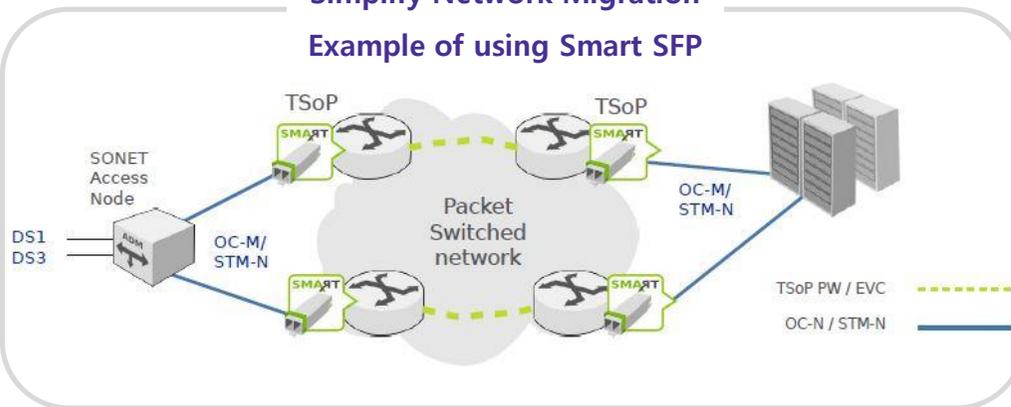
World's First Leading Technology

Major Customers

→ Ciena, CISCO, Nokia, Juniper, etc.

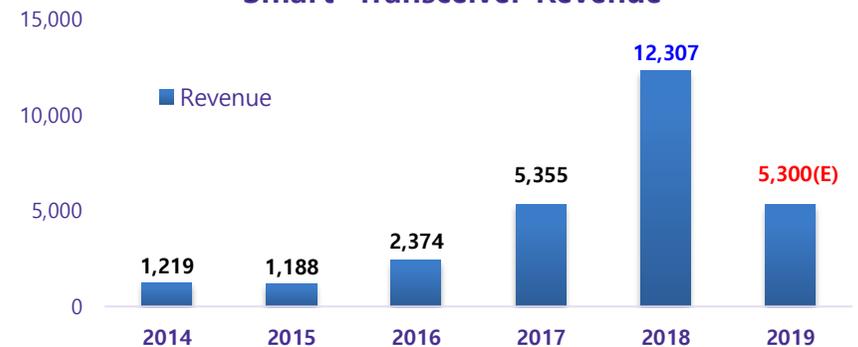
Simplify Network Migration

Example of using Smart SFP



Smart Transceiver Revenue

(Unit: million KRX)

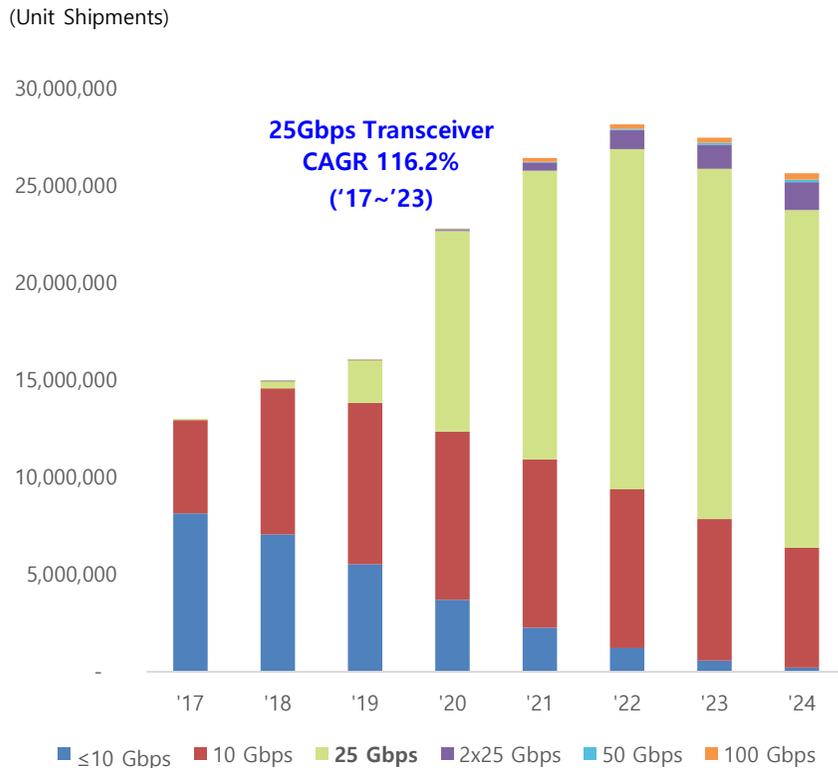


LD Chip & Strategic Transceivers

5G deployments expected to increase demand for 25G laser chips and transceivers

Chip production is mid- to long-term strategy for supplier differentiation

Wireless Fronthaul Optics Forecast



Shipments of optical transceivers used in wireless infrastructure (Historical Data and Forecast)

(Source: LightCounting 2019)

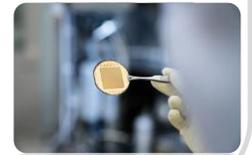
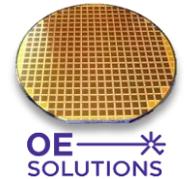
LD Chip

25G Laser Diode Chip

- Mass production scheduled for the second half of the year. Reliability Testing is in progress.
- 25G/100G will start using in-house laser chips
- LD Chip sales for China 5G and data center applications



Transceiver profitability and competitive advantage through In-house technology



Transceiver

25G/40G/100G Transceiver



Q2 of 19 Guidance



Q2 of 19 Guidance

Expected sales of **58B KRW** – Growth of **177% (YoY)**, **3.6% (QoQ)**
 Revenue Growth due to continued Korean 5G infrastructure deployments

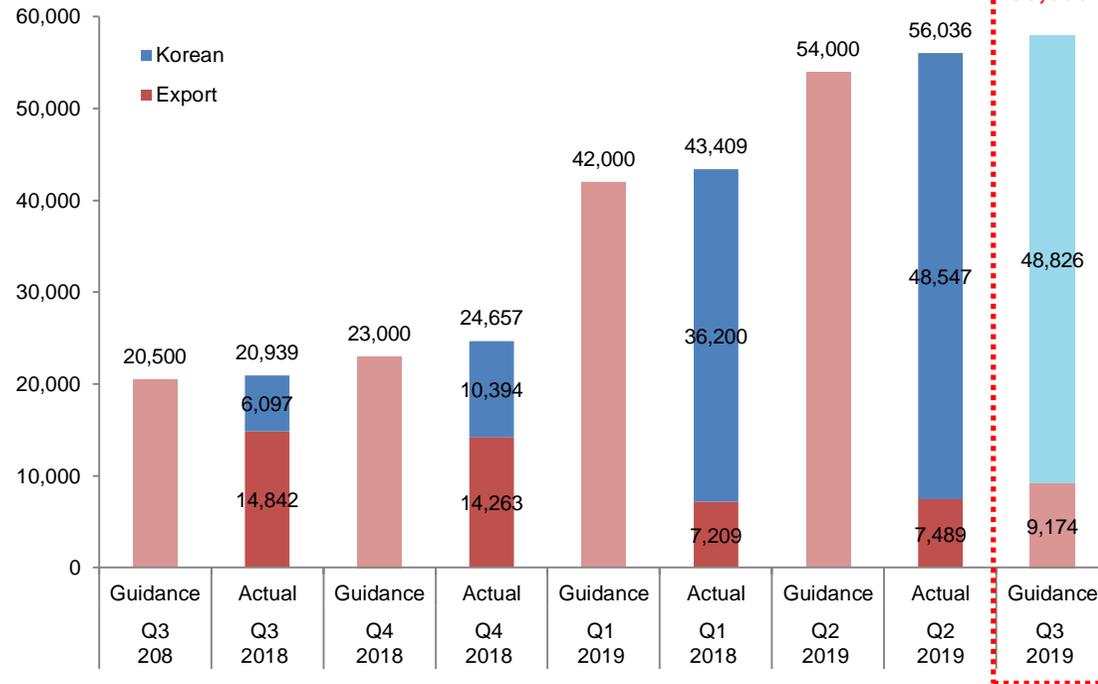
Quarterly Guidance

(Unit: million KRW)

	Q3 2018 Actual	Q4 2018 Actual	Q1 2019 Actual	Q2 2019 Actual	Q3 2019 Guidance
Revenue (Sales)	20,939	24,657	43,409	56,036	58,000
Korean	6,097	10,394	36,200	48,547	48,826
Export	14,842	14,263	7,209	7,489	9,174

Quarterly Trends

(Unit: million KRW)



※ This is a consolidated basis and is based on our forecast as of August 2019.

Appendix

- Company Introduction
- Financials



About OE Solutions

Overview

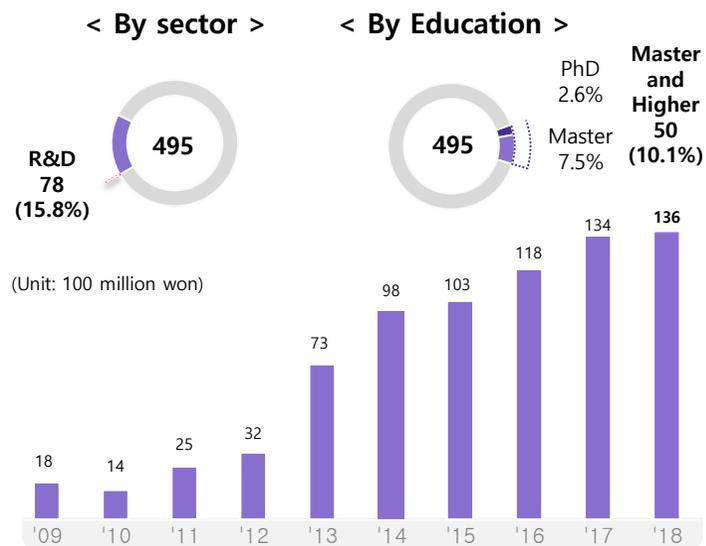
Name	OE Solutions, Co., Ltd	Date of Established	Aug.7, 2003
Number of Employees	495 (Korea: 474 / USA: 18 / Japan: 3)	Date of Listing	Feb.27, 2014(KOSDAQ code : 138080)
Product	Optical Transceiver	Homepage	www.oesolutions.com
Locations	Head Quarter : Gwangju, South Korea / US : Ridgefield Park, NJ, USA / JAPAN : Tokyo Japan		

(As of 2019.04.30)

Locations



R&D Engineer & Cost

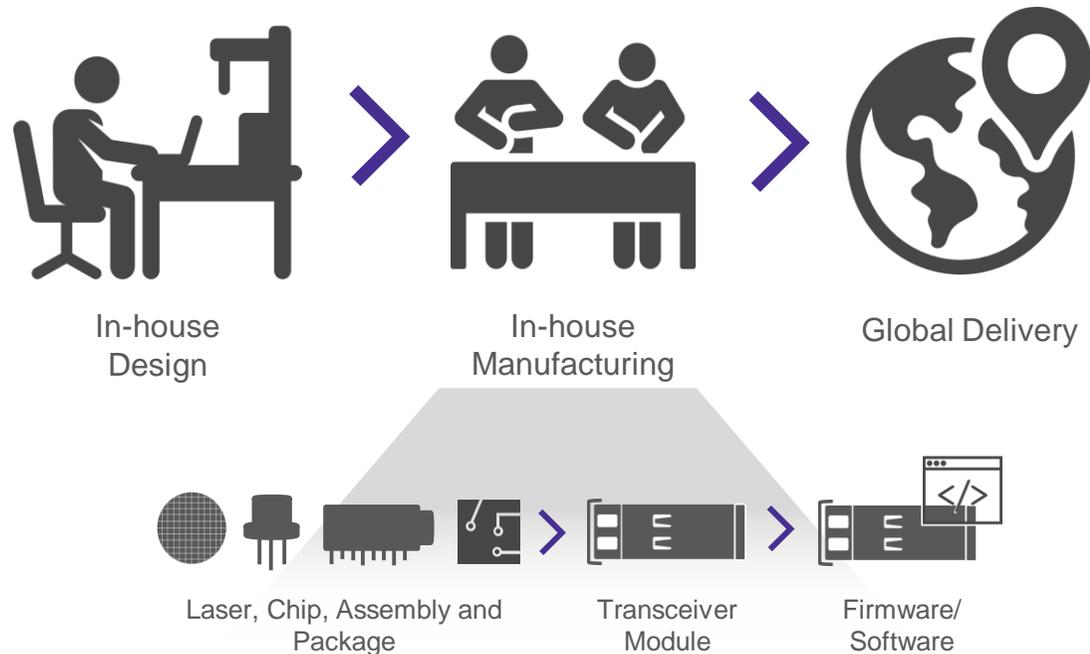


OE Solutions – A Global Supplier of Transceivers

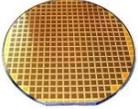
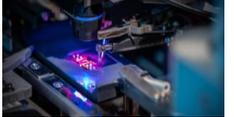
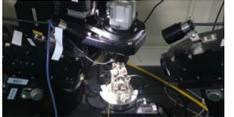
Leading Supplier of High-Reliability Optical Components for Challenging Deployment Environments



- ❑ 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 BIDI 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



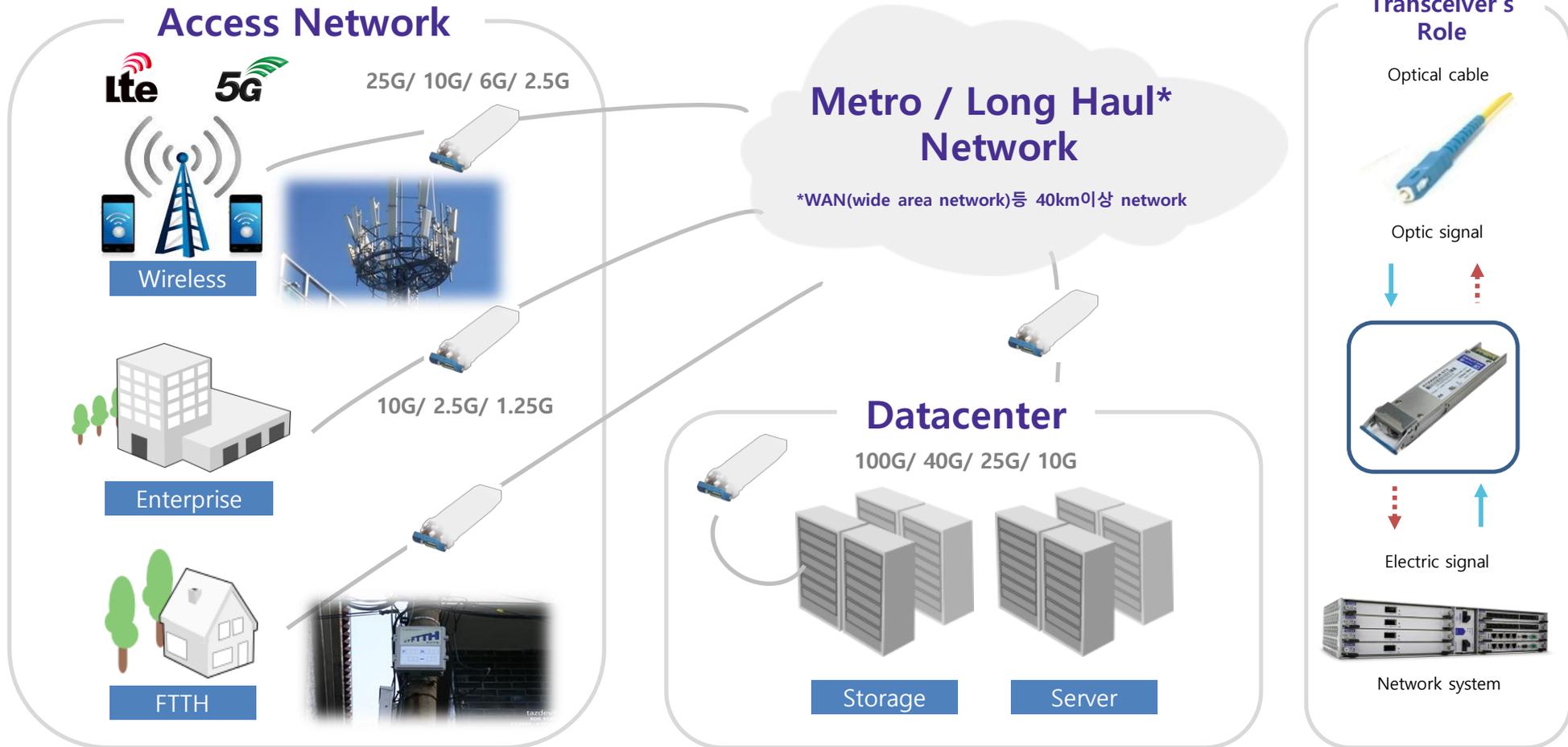
Vertical Integration

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

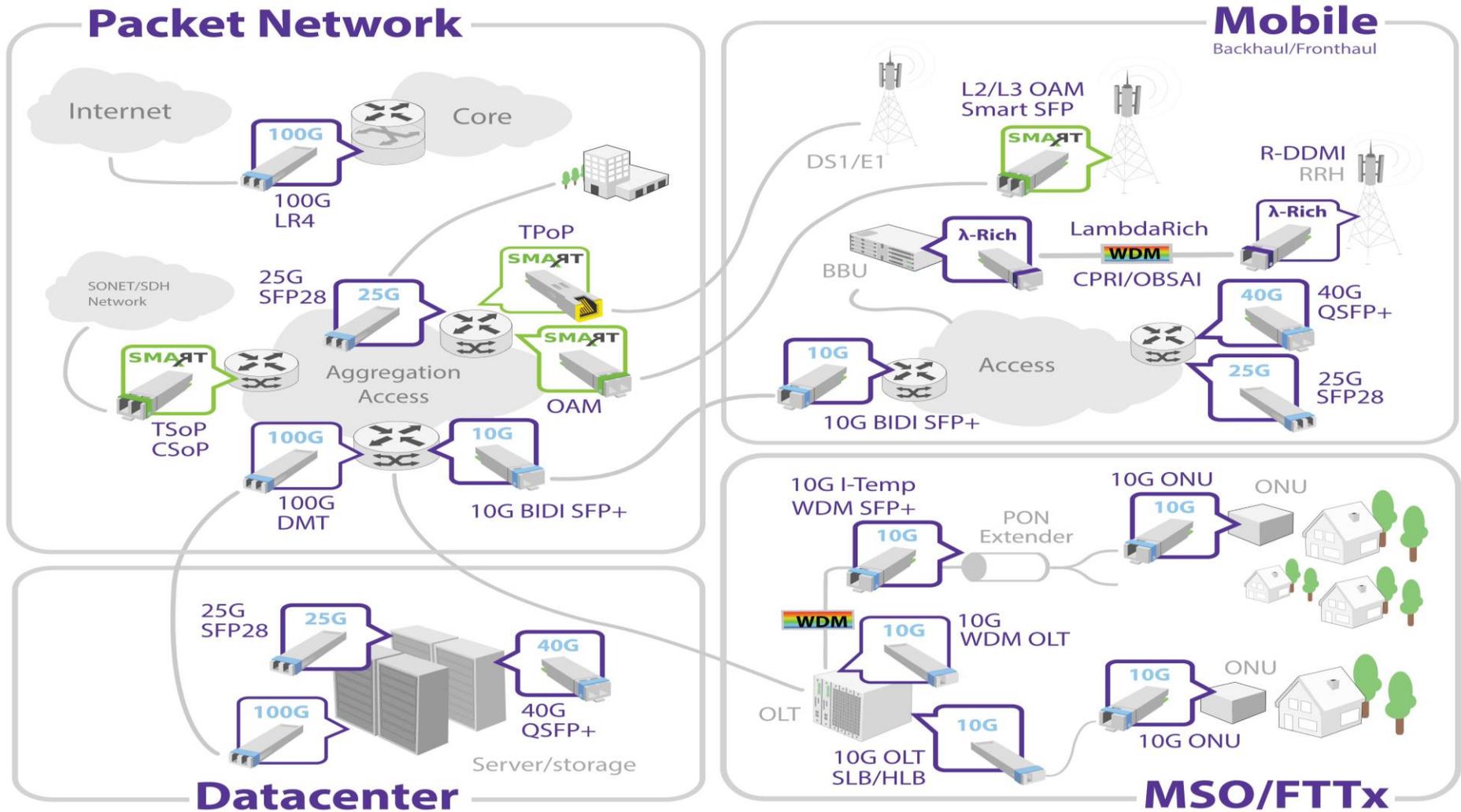
Transceiver Products Applications

The use of Transceiver in the Network

Transceiver required for network connections



Key Application Areas



Supplier to The World's Leading Network Equipment Manufacturers

Sales growth requires long-term product reliability, quality, customer response, etc.



Condensed income statement

Consolidated financial statement

(Unit : million KRW)

	2016	2017	2018	2019	
				1Q	2Q
Revenue (Sales)	79,720	76,594	81,504	43,409	56,036
Cost of sales	53,089	53,974	54,106	26,684	32,370
Gross margin	26,631	22,620	27,398	16,725	23,666
Operating expenses	21,910	24,537	27,164	6,989	7,137
Operating income(loss)	4,721	(1,917)	234	9,735	16,530
Profit (loss) before tax	6,076	(3,788)	1,951	9,641	16,598
Net income	6,127	(1,786)	2,584	9,641	11,273

Separate financial statement

(Unit : million KRW)

	2016	2017	2018	2019	
				1Q	2Q
Revenue (Sales)	79,590	76,535	81,406	43,409	56,006
Cost of sales	52,965	53,914	54,117	26,684	32,370
Gross margin	26,625	22,621	27,289	16,724	23,636
Operating expenses	22,375	25,174	26,925	6,669	6,766
Operating income(loss)	4,250	(2,553)	364	10,056	16,871
Profit (loss) before tax	5,553	(4,514)	1,945	10,219	16,973
Net income	5,929	(2,338)	2,641	10,219	11,649

* K-IFRS

Condensed statement of financial position

Consolidated financial statement

(Unit : million KRW)

	2016	2017	2018	2019	
				1Q	2Q
Current assets	52,923	57,247	57,027	68,216	84,831
Cash and cash equivalents	9,270	21,923	11,703	17,264	19,199
Accounts receivable	22,998	14,626	18,696	22,195	31,770
Inventory asset	17,662	18,840	19,740	23,996	27,754
Non-current assets	37,005	38,809	42,125	41,392	41,070
Tangible assets	30,011	29,597	30,476	29,966	30,346
Intangible assets	777	766	782	793	770
Total assets	89,928	96,056	99,152	109,608	125,902
Current liabilities	28,435	24,807	25,369	26,972	31,675
Short-term debt	20,000	20,000	19,400	19,400	19,400
Non-current liabilities	6,198	4,303	5,736	5,831	6,031
Total liabilities	34,633	29,110	31,105	32,803	37,706
Capital	2,590	3,870	3,870	3,870	3,870
Premium on capital stock	13,900	26,969	26,969	26,969	26,969
Retained earnings	36,286	33,937	34,868	43,581	54,854
Total equity	55,295	66,946	68,047	76,806	88,195

* K-IFRS

Separate financial statement

(Unit : million KRW)

	2016	2017	2018	2019	
				1Q	2Q
Current assets	52,218	55,648	55,790	67,047	83,900
Cash and cash equivalents	8,358	20,662	10,227	15,805	16,413
Accounts receivable	23,083	14,254	18,299	22,283	33,658
Inventory asset	17,662	18,840	19,740	23,996	27,754
Non-current assets	37,044	38,923	41,993	41,507	40,786
Tangible assets	29,624	29,306	30,119	29,614	29,593
Intangible assets	77	105	54	50	45
Total assets	89,262	94,572	97,783	108,554	124,685
Current liabilities	29,563	25,309	26,119	27,507	32,023
Short-term debt	20,000	20,000	19,400	19,400	19,400
Non-current liabilities	6,099	4,228	5,643	5,735	5,700
Total liabilities	35,662	29,538	31,761	33,242	37,724
Capital	2,590	3,870	3,870	3,870	3,870
Premium on capital stock	13,900	26,969	26,969	26,969	26,969
Retained earnings	34,550	31,650	32,638	41,929	53,577
Total equity	53,600	65,034	66,022	75,312	86,961

Thank you.

OE — 
SOLUTIONS

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