

環宇
芯系天下

**Q3 2016
Quarterly
Online Investor
Conference
(線上法說會)**

Nov 11, 2016



環宇通訊半導體
Global Communication Semiconductors, LLC



“Enabling Today’s Global
Communications
and Beyond”

Disclaimer Statement



This presentation includes forward-looking statements. All statements, other than statements of historical facts, that address activities, events or developments that GCS Holdings, Inc. expects or anticipates will or may occur in the future (including but not limited to projections, targets, estimates and business plans) are forward-looking statements.

GCS's actual results or developments may differ materially from those indicated by these forward-looking statements as a result of various factors and uncertainties, including but not limited to price fluctuations, actual demand, exchange rate fluctuations, market share, competition, environmental risks, change in legal, financial and regulatory frameworks, government policies, international economic and financial market conditions, political risks, cost estimates and other risks and factors beyond our control.

GCS does not undertake any obligation to publicly update any forward-looking statement to reflect events or circumstances after the date on which any such statement is made or to reflect the occurrence of unanticipated events.

Agenda



Opening:

Brian Ann, CEO & President

Financial Section:

Grace Li, Director & Special Assistant to CEO

Market Overview:

Simon Yu, Senior VP and General Manager,
Worldwide Sales & Marketing and Component
Business

Q&A: All

FINANCIAL SECTION

Statements of Comprehensive Income - QoQ



(in NT\$ thousands except EPS)

| | 3Q16 | 2Q16 | 3Q15 | 3Q16 Over 2Q16 | 3Q16 Over 3Q15 |
|---------------------------------|-----------|-----------|----------|----------------------|----------------------|
| Net Operating Revenue | 455,727 | 481,273 | 424,594 | -5.3% | 7.3% |
| Gross Profit | 238,896 | 194,426 | 180,754 | 22.9% | 32.2% |
| Gross Margin | 52.4% | 40.4% | 42.6% | | |
| Operating Expenses | (128,961) | (120,896) | (98,139) | 6.7% | 31.4% |
| Operating Income | 109,935 | 73,530 | 82,615 | 49.5% | 33.1% |
| Operating Margin | 24.1% | 15.3% | 19.5% | | |
| Non-operating Items | 25,695 | 20,457 | 34,389 | 25.6% | -25.3% |
| Net Income | 118,699 | 82,563 | 109,412 | 43.8% | 8.5% |
| Net Profit Margin | 26.0% | 17.2% | 25.8% | | |
| Basic EPS (NTD) | 1.67 | 1.39 | 1.61 | | |
| Diluted EPS (NTD) | 1.21 | 1.12 | 0.91 | | |
| R&D Expense % to Revenue | 9.4% | 7.3% | 8.6% | | |
| Legal expense related to merger | 7,945 | 16,734 | | | |

Note: 71,088,959 shares and 79,001,367 shares were used in basic EPS and diluted EPS calculation for 3Q16, respectively.

Non-operating Income and Expenses- QoQ



(in NT\$ thousands)

| | 3Q16 | 2Q16 | 3Q15 | 3Q16 Over 2Q16 | 3Q16 Over 3Q15 |
|---|---------------|---------------|---------------|----------------------|----------------------|
| Other Income | 689 | 1,064 | 642 | -35.2% | 7.3% |
| Other Gains and Losses | | | | | |
| Net Gain or (losses) on financial liabilities at fair value through profit or loss | 21,933 | 10,202 | 20,129 | 115.0% | 9.0% |
| Net currency exchange gain or (loss) | (11,930) | 2,081 | 22,751 | -673.3% | -152.4% |
| Gain on disposal of investment | 21,400 | 14,983 | - | - | - |
| Dividend income | 917 | - | - | - | - |
| Finance Cost | | | | | |
| Interest expense for convertible bonds (Note) | (5,649) | (6,116) | (7,959) | -7.6% | -29.0% |
| Other interest expense | (1,665) | (1,757) | (1,174) | -5.2% | 41.8% |
| Total Non-operating Income and Expenses | 25,695 | 20,457 | 34,389 | 25.6% | -25.3% |

Note: Amortization of discount on convertible bonds

Statements of Comprehensive Income – YoY



(in NT\$ thousands except EPS)

| | 2016 Jan to Sep | % | 2015 Jan to Sep | % | Change (%) |
|---------------------------------|--------------------|--------|--------------------|--------|------------|
| Net Operating Revenue | 1,400,785 | 100.0% | 1,187,925 | 100.0% | 17.9% |
| Operating Cost | (733,610) | -52.4% | (714,528) | -60.1% | 2.7% |
| Gross Profit | 667,175 | 47.6% | 473,397 | 39.9% | 40.9% |
| Operating Expenses | (392,314) | -28.0% | (283,917) | -23.9% | 38.2% |
| Operating Income | 274,861 | 19.6% | 189,480 | 16.0% | 45.1% |
| Non-operating items | (25,994) | -1.9% | 17,751 | 1.5% | -246.4% |
| Income before Income Tax | 248,867 | 17.8% | 207,231 | 17.4% | 20.1% |
| Income Tax | (30,708) | -2.2% | (10,964) | -0.9% | 180.1% |
| Net Income | 218,159 | 15.6% | 196,267 | 16.5% | 11.2% |
| Basic EPS (NTD) | 3.04 | | 2.93 | | |
| Diluted EPS (NTD) | 3.00 | | 2.34 | | |
| Average Exchange Rate-USD/NTD | 32.43 | | 31.44 | | |
| R&D expense % to Revenue | 9.1% | | 9.0% | | |
| ROA (%) | 11.7% | | 14.1% | | |
| ROE (%) | 16.1% | | 19.1% | | |
| Legal expense related to merger | 42,840 | | | | |

Non-operating Income and Expenses- YTD



(in NT\$ thousands)

| | Jan to Sep 2016 | 3Q16 | 2Q16 | 1Q16 |
|---|--------------------|----------|---------|----------|
| Other Income | 2,276 | 689 | 1,064 | 523 |
| Other Gains and Losses | | | | |
| Net Gain or (losses) on financial liabilities at fair value through profit or loss | (23,935) | 21,933 | 10,202 | (56,070) |
| Net currency exchange gain or (loss) | (17,072) | (11,930) | 2,081 | (7,223) |
| Gain on disposal of investment | 36,383 | 21,400 | 14,983 | - |
| Dividend income | 917 | 917 | - | - |
| Finance Cost | | | | |
| Interest expense for convertible bonds (Note) | (19,255) | (5,649) | (6,116) | (7,490) |
| Other interest expense | (5,308) | (1,665) | (1,757) | (1,886) |
| Total Non-operating Income and Expenses | (25,994) | 25,695 | 20,457 | (72,146) |

Note: Amortization of discount on convertible bonds

Balance Sheet Highlight & Key Indices



Selected Items from Balance Sheet

(in NT\$ thousands)

| | 3Q16 | | 2Q16 | | 3Q15 | |
|---|------------------|-------------|------------------|-------------|------------------|-------------|
| | Amount | % | Amount | % | Amount | % |
| Cash and Cash Equivalent | 1,355,827 | 46% | 1,290,712 | 46% | 1,263,579 | 55% |
| Available-for-Sale Financial Assets-Current | - | 2% | 41,668 | - | - | - |
| Accounts Receivable | 266,988 | 9% | 267,013 | 9% | 185,564 | 9% |
| Inventory | 359,952 | 13% | 358,027 | 13% | 309,961 | 14% |
| Available-for-Sale Financial Assets-Non current | 22,370 | 1% | 22,539 | 3% | 23,283 | 1% |
| Net Property, Plant and Equipment | 475,107 | 18% | 499,573 | 18% | 427,812 | 8% |
| Deferred Tax Assets | 194,849 | 7% | 200,534 | 7% | 204,231 | 9% |
| Total Assets | 2,829,255 | 100% | 2,822,885 | 100% | 2,531,095 | 100% |
| Financial Liabilities at Fair Value through Profit and Loss | 104,318 | 4% | 129,012 | 4% | 95,196 | 4% |
| Accounts Payable and Other Payables | 172,665 | 6% | 193,393 | 7% | 145,207 | 6% |
| Long Term Borrowings - Current Portion | 358,169 | 13% | 19,697 | 1% | 19,443 | 1% |
| Bonds Payable | - | 12% | 345,332 | 14% | 497,716 | 22% |
| Long Term Bank Loans | 106,897 | 4% | 115,057 | 4% | 132,341 | - |
| Total Liabilities | 860,435 | 33% | 929,767 | 36% | 1,010,425 | 39% |
| Total Stockholders' Equity | 1,968,820 | 67% | 1,893,118 | 64% | 1,520,670 | 61% |

Key Indices

| | | | |
|-------------------------|------|------|------|
| Current Ratio | 299% | 529% | 634% |
| Debt Ratio | 30% | 33% | 40% |
| AR Turnover Days | 47 | 46 | 44 |
| Inventory Turnover Days | 158 | 147 | 131 |

Cash Flows

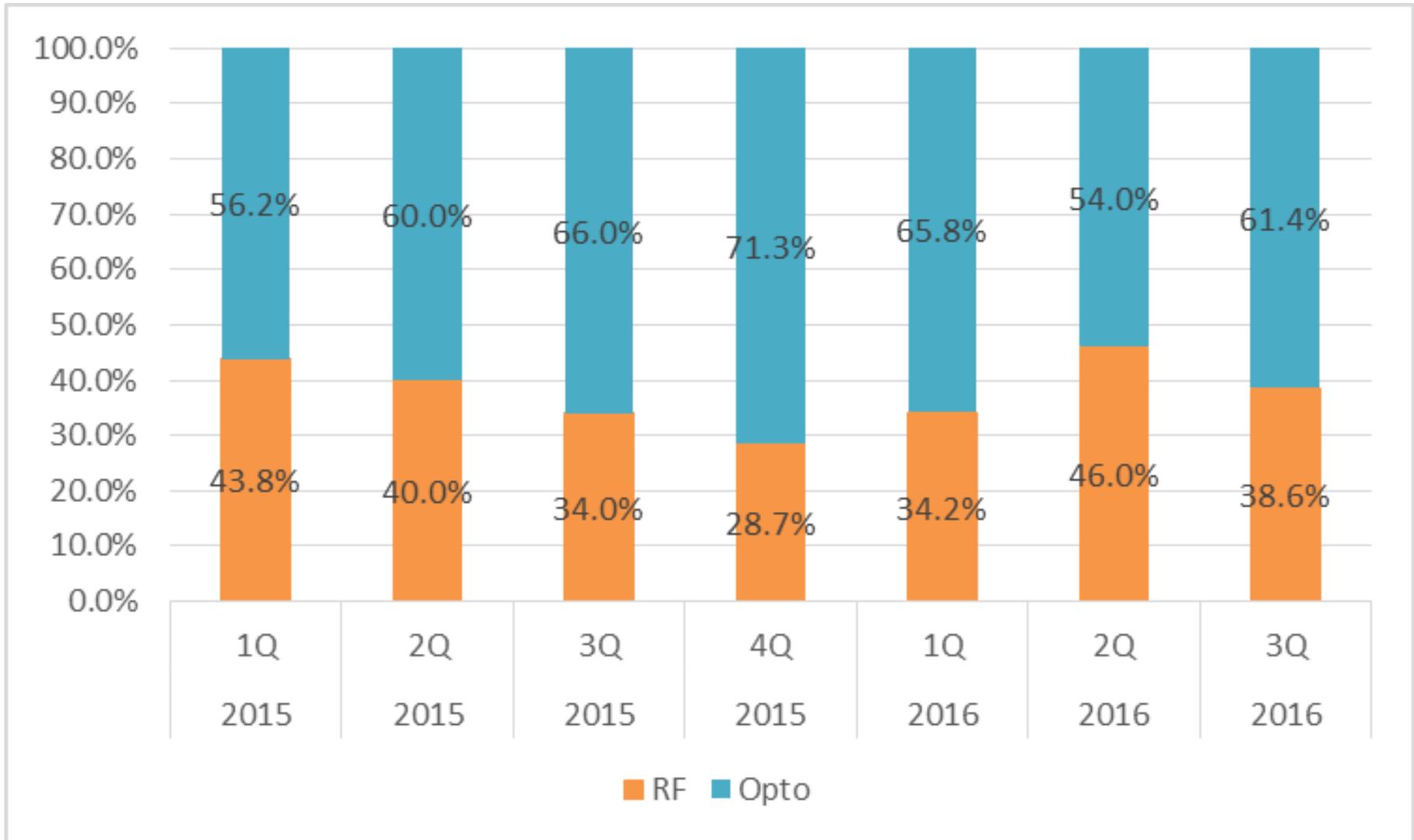


(in NT\$ thousands)

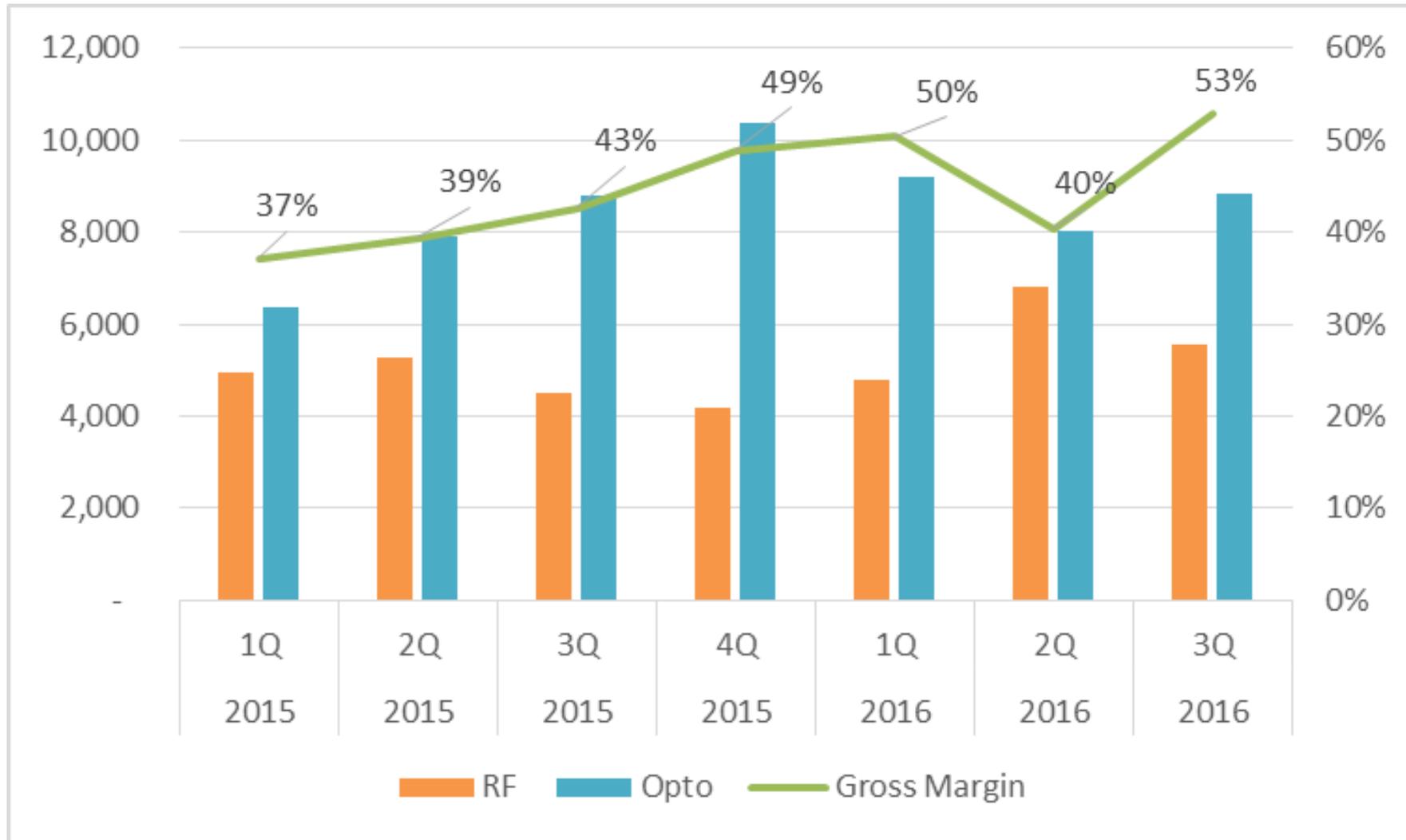
| | <u>3Q16</u> | <u>2Q16</u> | <u>3Q15</u> |
|--|-------------|-------------|-------------|
| Beginning Balance | 1,290,712 | 1,258,482 | 1,190,862 |
| Cash from Operating Activities | 72,797 | 43,166 | 136,518 |
| Acquisition of property, plant and equipment | (21,164) | (45,266) | (268,050) |
| Acquisition of available-for-sale financial assets | - | - | (66) |
| Proceeds from the sale of of available-for-sale financial assets | 44,642 | 34,362 | - |
| Proceeds from Long-term Loan | 0 | 0 | 153,667 |
| Repayments of long-term loans | (6,400) | (4,811) | (1,883) |
| Proceeds from issuance of convertible bonds | - | - | - |
| Treasury stock buyback | (9,908) | - | - |
| Employee option Exercise | 10,825 | 88 | 19,178 |
| The effect of exchange rate changes | (25,586) | 1,225 | 34,630 |
| Others | (91) | 3,466 | (1,277) |
| Ending Balance | 1,355,827 | 1,290,712 | 1,263,579 |
| Free Cash Flow (Note) | 51,633 | (2,100) | (131,532) |

Note: Free Cash Flow = Cash from Operating Activities - Capital Expenditures

Revenue Product Mix % - QoQ

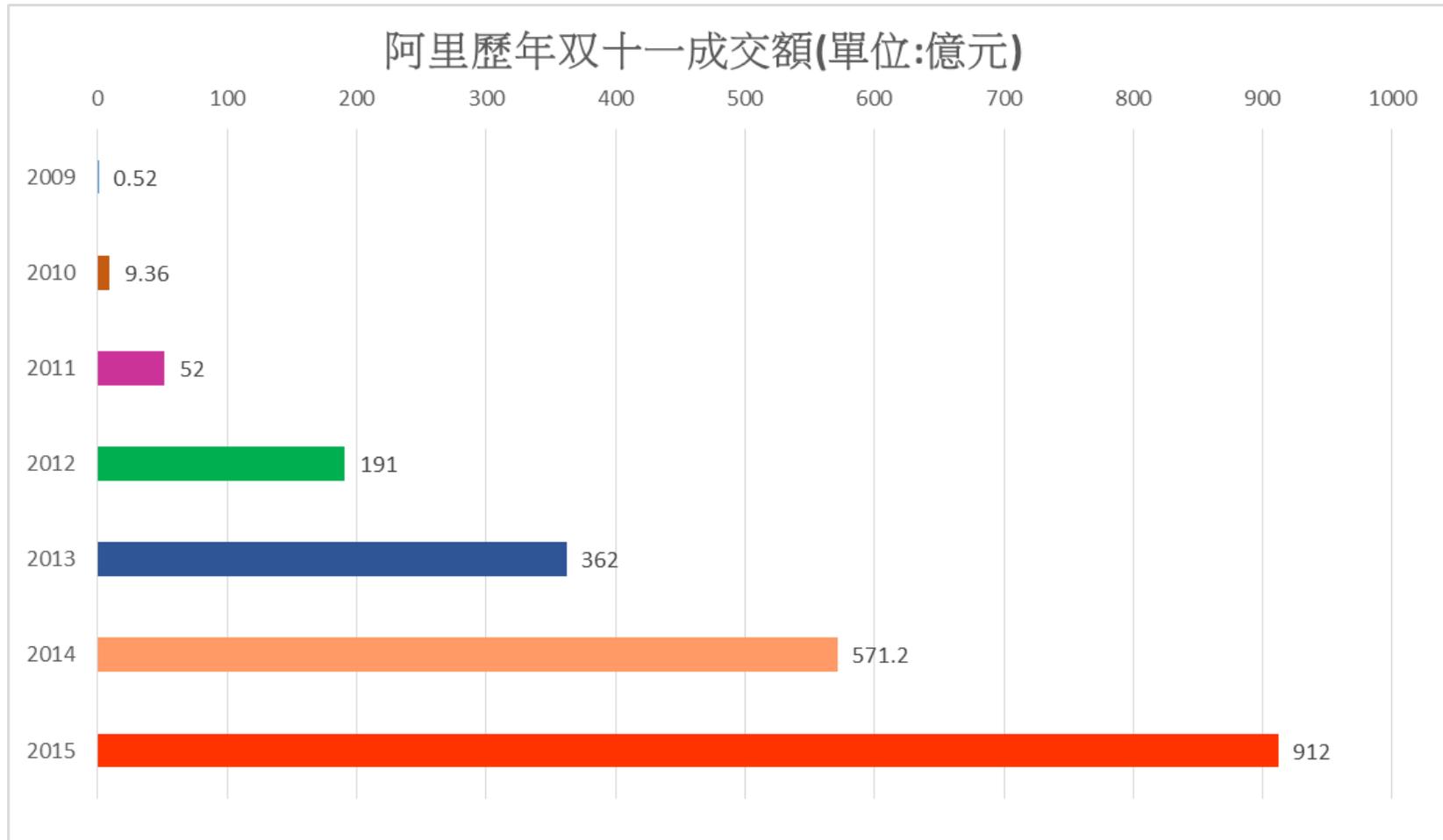


Revenue Mix (K USD) vs Gross Margin



MARKET OVERVIEW

阿里歷年雙十一成交額



2016 天貓雙11總交易額



🕒 02:30:20

2016天貓雙11總交易額

500 亿

电商在线

全球买卖

直播2016双11

CEEC
中国电商企业家俱乐部
CHINA E-COMMERCE ENTREPRENEUR CLUB

shopeX商派
让互联网商业无处不在

云起ERP

OPTICAL COMMUNICATION MARKET

So far 2016 Market (Lightcounting):

- Total market for optical components and modules is expected to grow by **17%** in 2016
- Main Drivers:
 - 100G DWDM Networks in China
 - 40GbE/100G GbE in mega-DC from cloud-based companies
- Strong growth in sales of 100G DWDM and 100GbE products (**30+%**) and expectations for 2017 are high
- SONET/SDH, Fibre Channel, FTTx, wireless fronthaul and optical interconnects are likely to remain flat or decline in 2016

OPTICAL COMMUNICATION MARKET

Lightcounting: 2017 and beyond

- Total market for optical components and modules used in optical communications will grow at a CAGR of **10%** in 2017-2021
- Sales of optics to the cloud datacenter market will continue to grow rapidly in 2017-2021, averaging **20%** annually
- The increasing contribution of China to the global market was related to its massive deployments of FTTx and wireless fronthaul optics in 2011-2015, but the situation has changed in 2016. This year it is demand for 100G DWDM and 100GbE optics that increased China's share of the global market, and this trend will continue in 2017-2021

But...in China

2016年1~6月全国新建光缆线路275.4万km，总长达到2762.7万km，同比增长22.9%

2020 前 -聚焦在农村及偏远地区的宽带建设 - >200亿元投资

2025 -全国90%地区提供不大于30ms的传送网时延

OPTICAL COMMUNICATION MARKET - DC

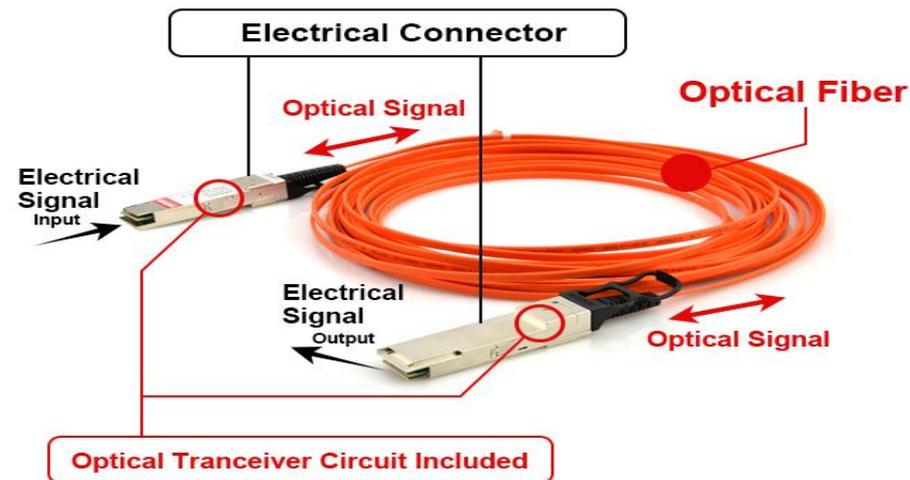
Active optical cables (AOCs) used in data centers:

2015 - \$481M

2022 - \$3.4-4.2 Billion (based on several research firms)

NA, Eorupe and Japan:

60% share of worldwide AOC revenue in 2020



Active Optical Cable Structure

Source: Fujikura

OPTICAL COMMUNICATION MARKET - DC

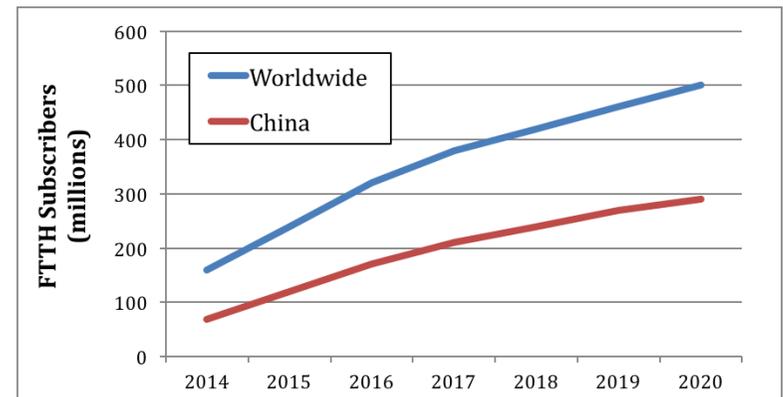
Lightcounting:

- **Google** is starting deployment of 100GbE today and considers 200GbE to be the next step
- **Facebook** and **Microsoft** confirmed their commitment to deploying 400GbE as soon as possible and skipping 200GbE. Both companies count on SiP to accelerate advances in optical component technologies
- **Intel** anticipates wide use of SiP connectivity in combination with high speed ACIS

OPTICAL COMMUNICATION MARKET - FTTH

- With 120 million households enjoying fiber broadband connections, China is home to half of the world's FTTH subscribers
- More than 50 million of these FTTH connections were added in 2015 and another 40 million customers will be connected this year
- Despite these records, China is ranked **#89** in the world by Akamai in terms of actual broadband speed
- Improving this ranking will require an acceleration of upgrades to the rest of the networking infrastructure in China

Lightcounting (7/14/2016)



4G LTE Base Stations in China

中国移动通信基站产量：

2014 -- 35,396万信道

2015 -- 30,660万信道 (YoY -13.4%)

下滑主要原因是 2014 年中国移动 4G 建设力度大、同时为储备电信、联通的 4G 项目，厂商增加基站产量过快，2015 年也在消耗存货所致。上半年信道产量同比下滑 30%， 全年下滑趋势较上半年有所缓解，主要是下半年中国移动 LTE三期建设的开始以及中国电信、中国联通对 4G 扩容。

2016 Q1 - 9665.2 万信道，同比上涨 46%，基站建设回暖明显

2017 1H - 800MHz LTE FDD (中国电信) (300K), 900MHz (联通)

2002-2016Q1年中国移动通信基站设备产量



统计局

4G LTE Base Stations in China

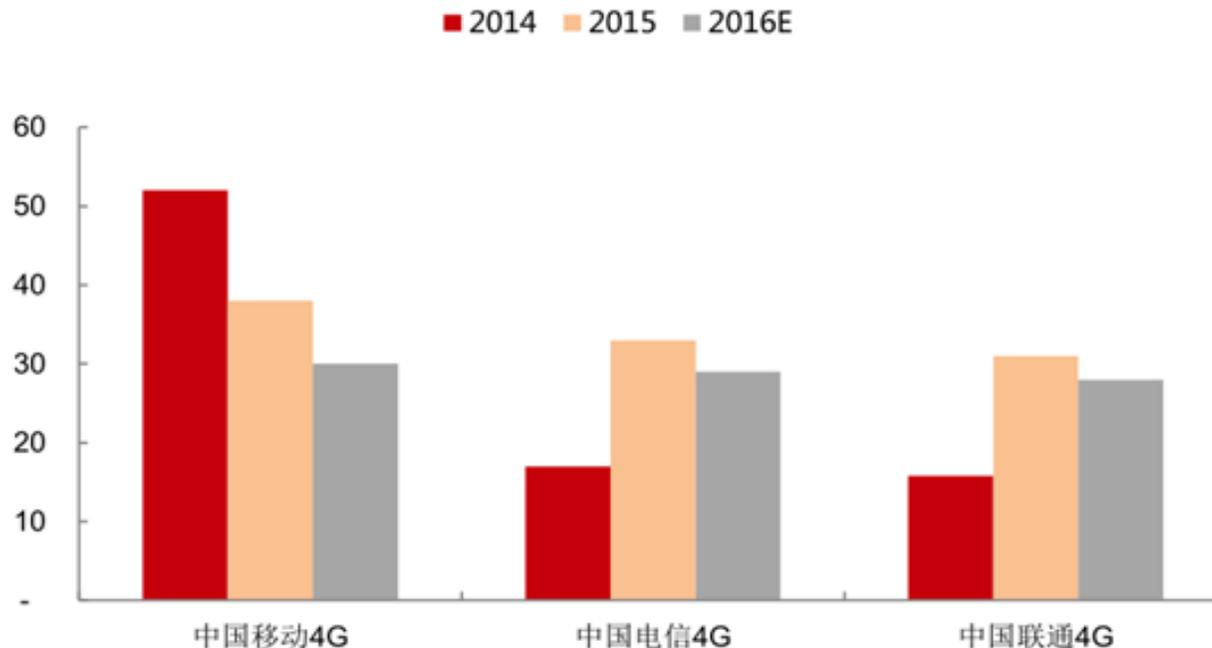
New-added 4G base stations:

2014 - 84.8万个

2015 - 102万个 (YoY 20.28%) - 中国移动: 38万, 中国电信: 33万, 中国联通: 31万

2016 - 三家将分别增加约 30 万座 4G 基站建设

2014、2015 年三大运营商新增 4G 基站数量



4.5G (LTE-A Pro)

2016 年为 4.5G 的商用元年，全球已经有 9 个运营商部署了 LTE-A pro，包括 Telstra（澳大利亚），DNA（芬兰），SK 电讯（韩国），Vodafone（西班牙），AIS（泰国），True、Turkcell、Turk Telecom、Vodafone（土耳其）。

华为预计 2016 年将有超过 60 张 4.5G 网络投入商用，4.5G 将在 2016 年迎来商用爆发。

中国联通董事长王晓初表示，4.5G 性价比较高，计划明年在重点城市部署。

预计中国三大运营商将于 2017 年开启 4.5G 规模建设。



智研咨询发布的《[2016-2022年中国通信行业市场深度调研及投资前景分析报告](#)》

5G

- 2016 – 3GPP initiated 5G standard research
- 2017 – Complete 5G research
- 2018 – develop 5G Rev. 1.0 standard (1st phase before September)
- 2019 – develop 5G Rev. 1.0 standard (2nd phase before December)
- 2020 – 5G commercial launch

5G Bands:

6GHz, 15GHz, 18GHz, 28GHz, 38GHz, 45GHz, 60GHz, 72GHz

US FCC (7/2016): >24GHz

高频段意味着覆盖半径将更小，
单基站的覆盖半径将减小到 20m-50m

4G stations – 2.5M (as of 1H2016)
5G stations - >10M (estimated)

Applications & Markets



RF & Power Electronics

RFIC, HEMT, pHEMT, HBT, InP HBT, GaN/Si, GaN/SiC, SiC...

Wireless
(mobile + Infrastructure)



Base Station/
Mobile Phones
(**4G**
4.5G
5G)



WiFi
(802.11AC)
WiMax

Power Electronics



HEV, EV,
Motor Drives,
and etc.

Optoelectronics

PD, APD, VCSEL, FP/DFB LD, Photonic Integrated Circuits, 2D Image Sensors

40G
100G
200G
400G

Data Centers



40G
100G
200G
400G

Consumer / IoT



AOC
HDMI (**4/4.5/5G**)
Mobile
Wearable

Fiber Optical Network



LTE
FTTx

Q & A



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**For further inquiry
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