



WIN Semiconductors

*Compound Semiconductor Solutions
From RF to Light-Wave*

Company Presentation



October 2017

- *This presentation contains certain forward-looking statements that are based on current expectations and are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements.*
- *Except as required by law, we undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.*

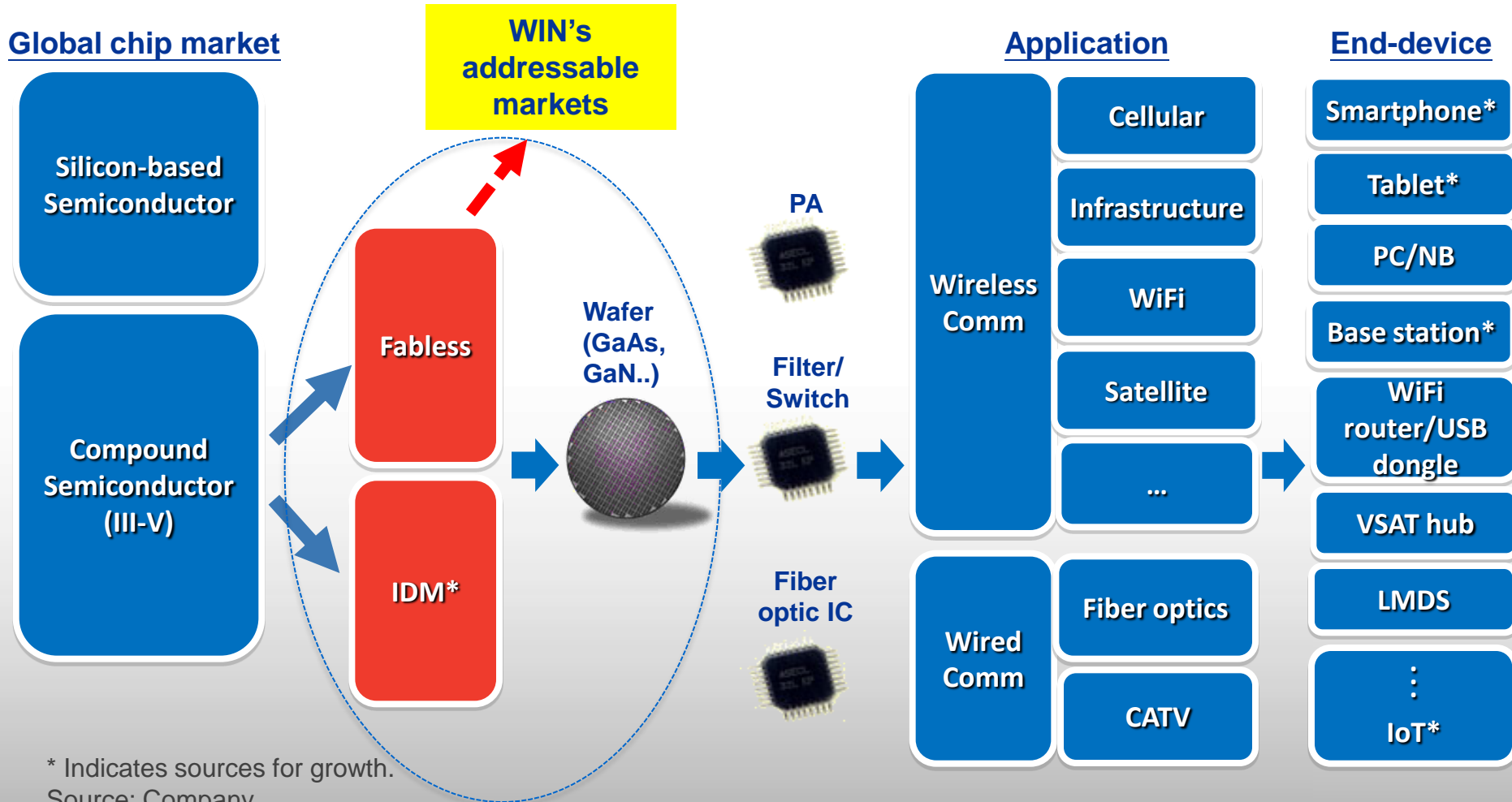
Outline

- ✓ **Market Outlook**
- ✓ **Technology**
- ✓ **The WIN Strategy**
- ✓ **Financial Review & Guidance**
- ✓ **Q&A**

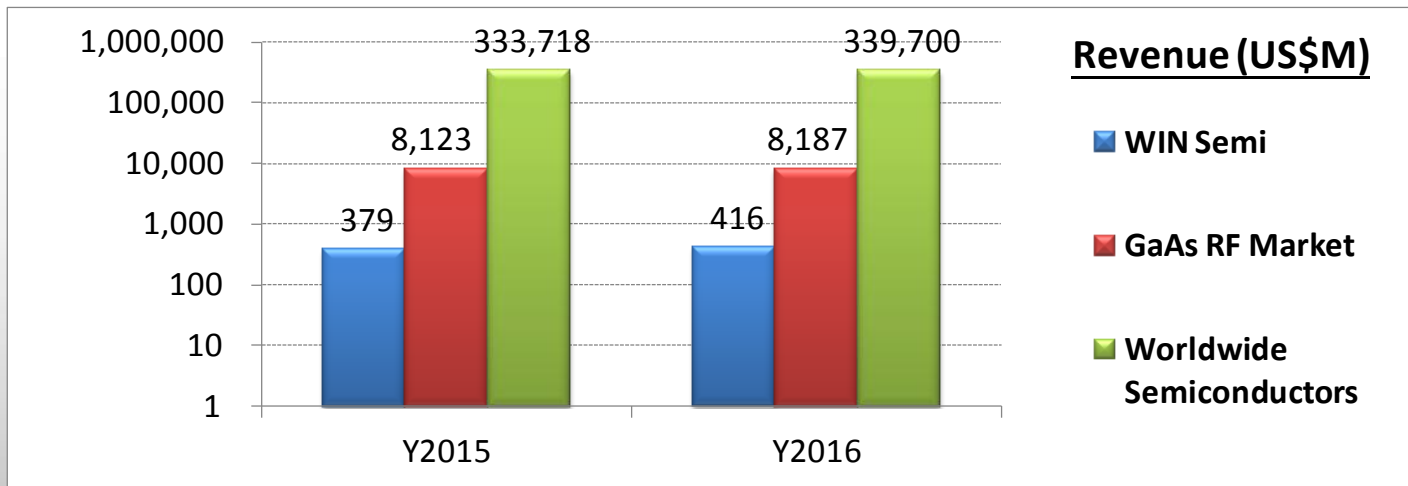
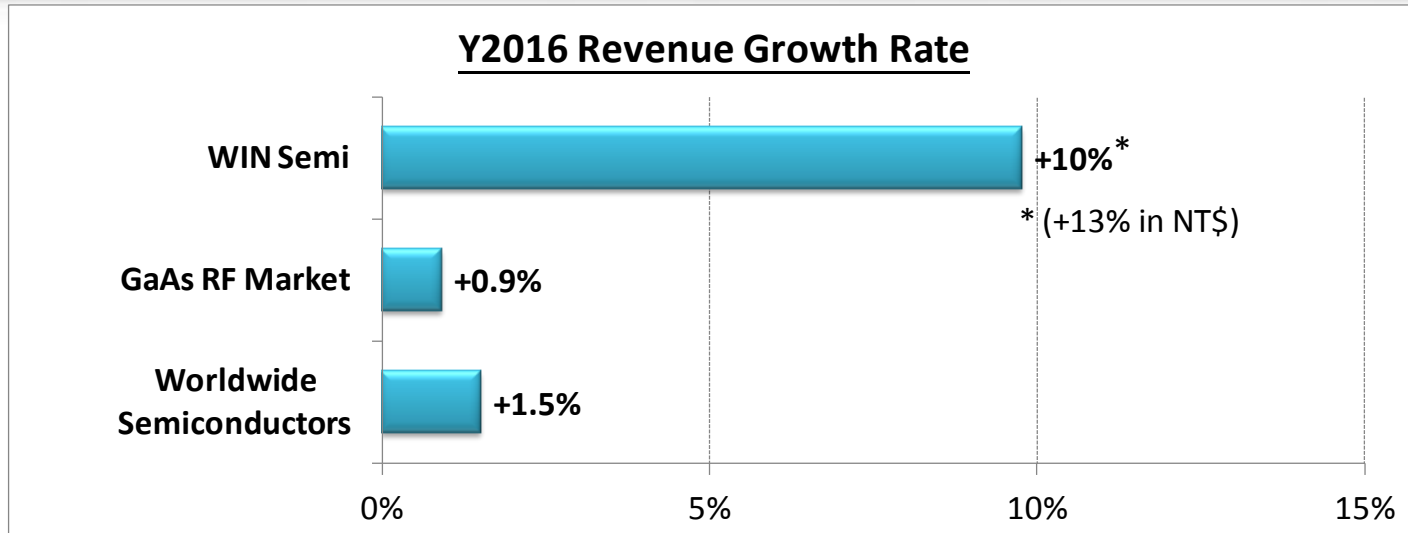
Market Outlook

WIN's Market Positioning

- WIN positions itself as a dedicated compound semiconductor wafer foundry offering foundry works to fabless and IDM customers who target in communication applications.



Semiconductor Revenue Growth



Source : (1) Worldwide Semiconductors Revenue_Gartner_2017 Jan.

(2) RF GaAs Device Revenue Hits Record Level in 2016_Strategy Analytics_2017 Mar.

Summary of Growth Momentum



**Smartphone
MIMO**



**Wireless
Infrastructure**



**Optical
Devices**



Vehicle to Vehicle

V2V, V2X



**Pre-5G Network
5G Network**

Near Term

1. Rapid increase of 5/6-mode smartphones
2. Strong WiFi adoption in smartphones, routers, and IoT devices
3. Strong infrastructure growth

Mid Term

1. Pre-5G launch (sub 6GHz)
2. Cellular MIMO CA
3. Automobile connectivity
4. Optical Devices

Long Term

1. 5G launch for broadband satellite, dense cells, ...
2. 5G launch along with massive IoT deployment

Cellular PA



- Global total frequency band count continues to increase (2016-2019 CAGR=17%)
- Rapid adoption of 5/6-mode smartphone (45% of total smartphone)
- Performance requirement continues to increase
 - CA, ET, PAE, higher frequency, higher output power

WiFi

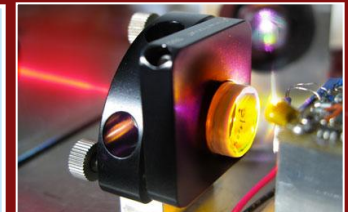


- Flagship phones adopt dual band (2G/5G) MIMO
- Mid/low-end phones start to adopt 5G band and MIMO
 - trend to include 5GHz 11ac Wi-Fi in China made smartphones
- Router and IoT gateway (e.g. 8x MIMO) markets are rapidly increasing

Non-handset



- Satellite communication Ku/Ka bands
- Fiberoptics is moving toward 25Gbps, 40Gbps, and even >50Gbps per channel
- Point-to-point radio
- Optical devices:
 - 3D sensing, depth camera



Cellular / Wi-Fi



- Continue to move toward higher frequency (sub 6GHz) as the pre-5G
- Cellular MIMO CA
- MU-MIMO enabled Wi-Fi chipset shipments (2017-2019 CAGR >60%)

Non-handset



- V2X; V2V (e.g. 5.9GHz) :
 - V2V DSRC will rapid ramp-up from 2018 to 2021 (CAGR 115%)
- Broadband satellite communication using Ku/Ka bands

Optical Device



- LD and PIN diodes for 2.5/10/25Gbps
- VCSEL for LiDAR (anti-collision and self-driving cars)

Long Term 5G Opportunities

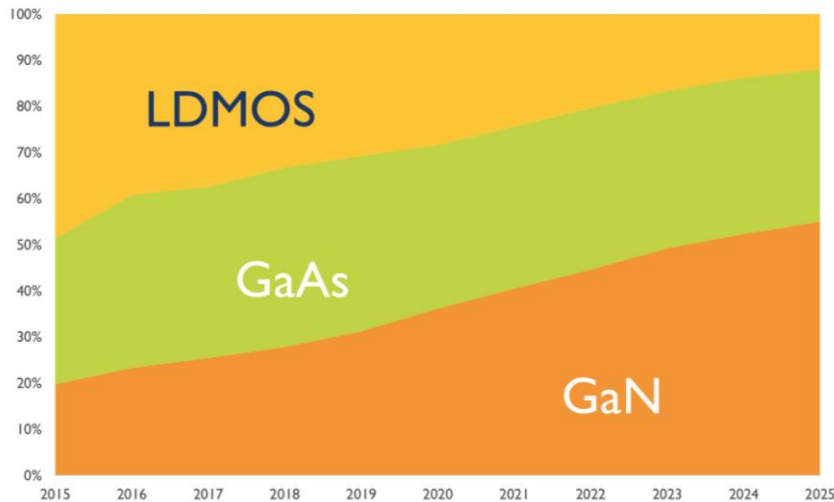
- 5G sub-6GHz (<6GHz) spectrum bands for ubiquitous network coverage
- 5G mmWave (~30GHz) likely for fixed wireless access as a start followed by extreme mobile broadband in the longer term

	Mobile Device	Infrastructure/CPE
Sub-6GHz	<ul style="list-style-type: none">• GaAs HBT• GaAs pHEMT	<ul style="list-style-type: none">• GaN HEMT
mmWave	<ul style="list-style-type: none">• Integrated GaAs technologies	<ul style="list-style-type: none">• GaN HEMT• GaAs pHEMT

GaN's Opportunities in 5G

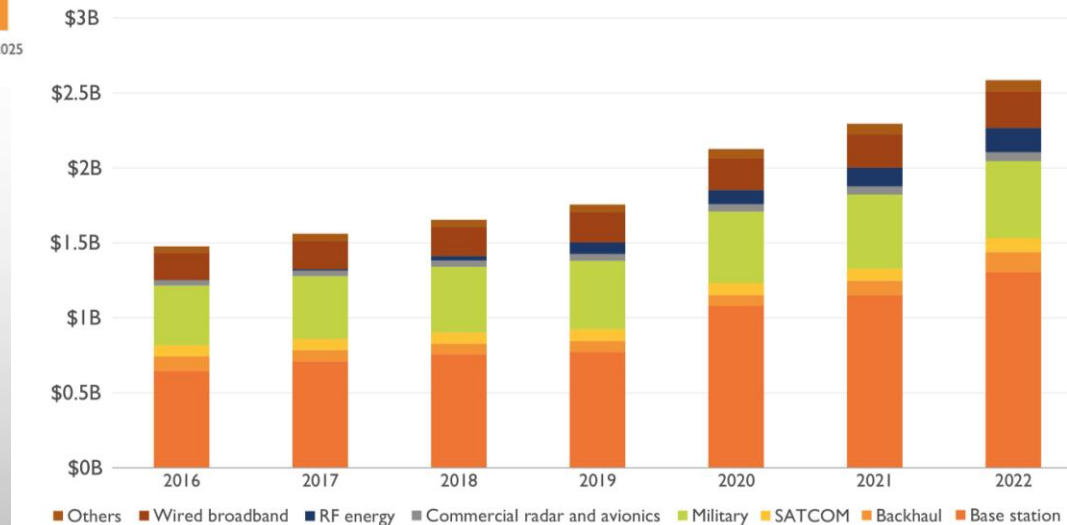
RF power device market, in value – Breakdown by technology

(Only considering RF power semiconductors above 3W, excluding such applications as mobile PAs)



“Growth is being driven by increasing demand for telecom base-station upgrades and small-cell implementations.”

RF power market from 2016 to 2022

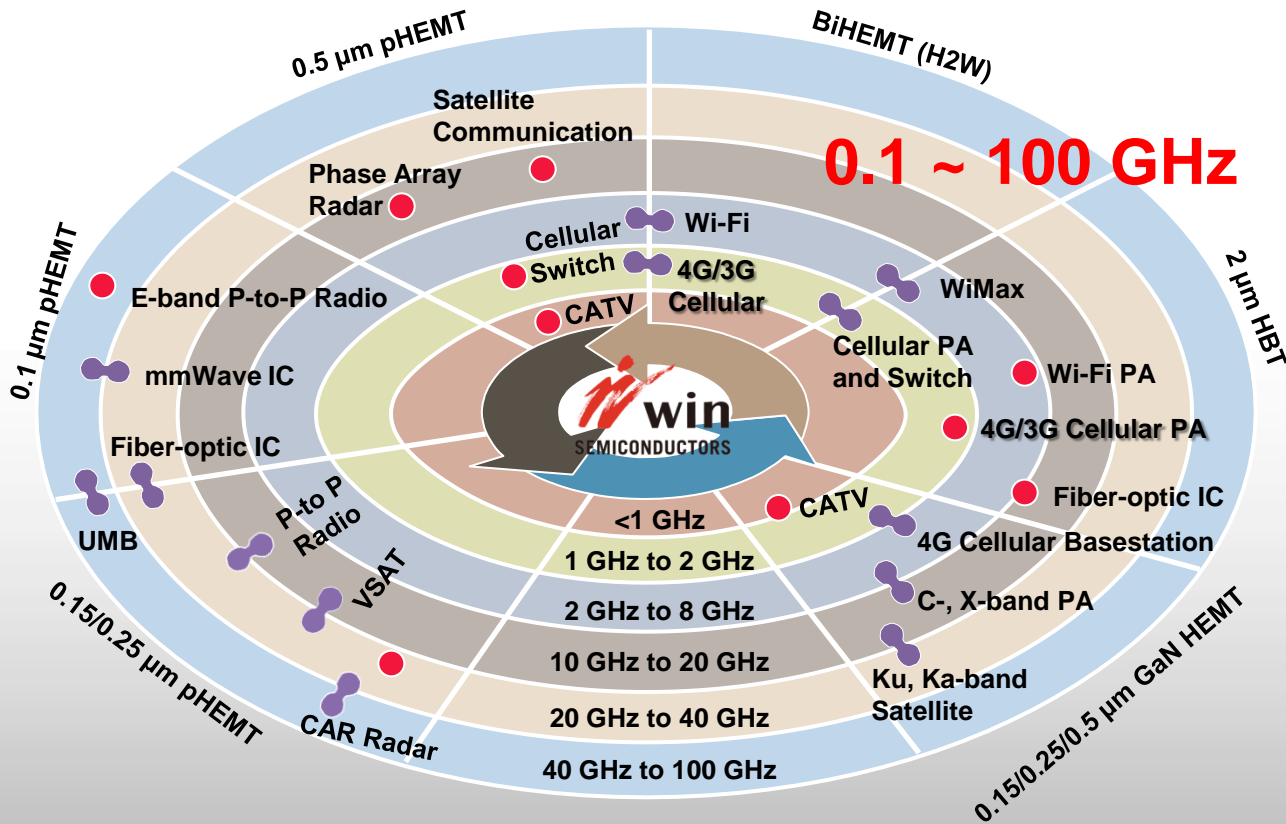


Source: Yole Développement’s “RF Power Market and Technologies 2017: GaN, GaAs and LDMOS Report”

Technology

Broad Portfolio of Advanced Technologies

The most comprehensive technology portfolio in industry enables customers to develop optimized products for a wide range of applications



- ✓ **Dominant market share for high-performance HBT used in LTE PAs**
- ✓ **Leading BiHEMT technology for advanced integrated FEM**
- ✓ First and only foundry worldwide to commercially develop 0.1 μm pHEMT on 6" GaAs wafer
- ✓ Industry leading 0.15–0.25 μm pHEMT technology
- ✓ Supports broad range of products such as PAs (from 50MHz–100GHz), switches, and fiber optic IC
- ✓ Developing GaN for high power devices (4G base station)

Unlike Si semiconductor technology in the digital world focuses on gate/line dimension shrinkage, the RF technology roadmap focuses on the following perspectives:

- Better Performance

GaAs vs CMOS

- ✓ Higher power efficiency → Longer battery power



- ✓ Better linearity → Faster speed



- ✓ Lower noise → Better quality of signal



- Higher Functionality Integration

WIN provides all of the GaAs solution for the above!

WiFi FEM : PA + LNA + Switch + Logic

BiHEMT = HBT + E/D pHEMT

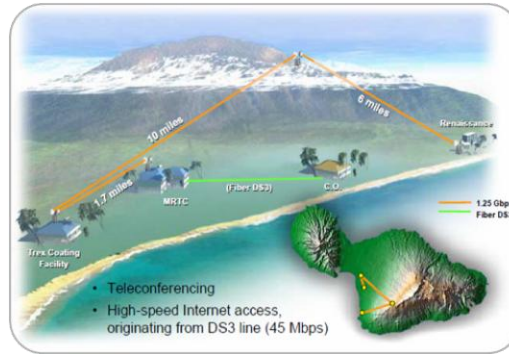
PA + LNA/Switch/Logic

PA/LNA/Switch/Logic

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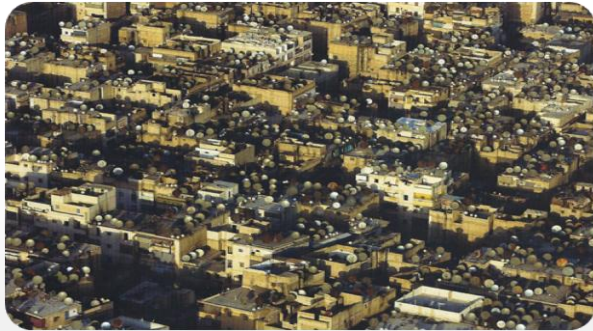
Cu Pillar Bump Flip Chip

WIN 0.25/0.15/0.10 μ m pHEMT Inside!



Ultra high frequency semiconductor technology provider!

Satellite Communications, Fiber optic Communication, Wireless infrastructure ...



The WIN Strategy

Invest in capacity to capture demand growth and improve margins through product remix

Scale & Remix

Invest in technologies to maintain competitive edge and sustain leadership

Technology Leadership

Cost & Efficiency

Customer Diversification

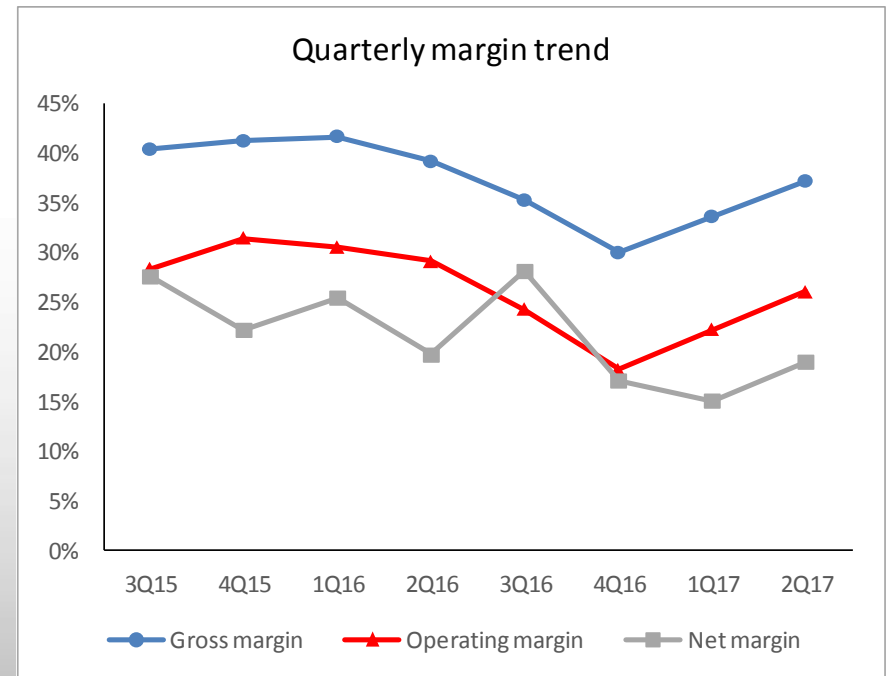
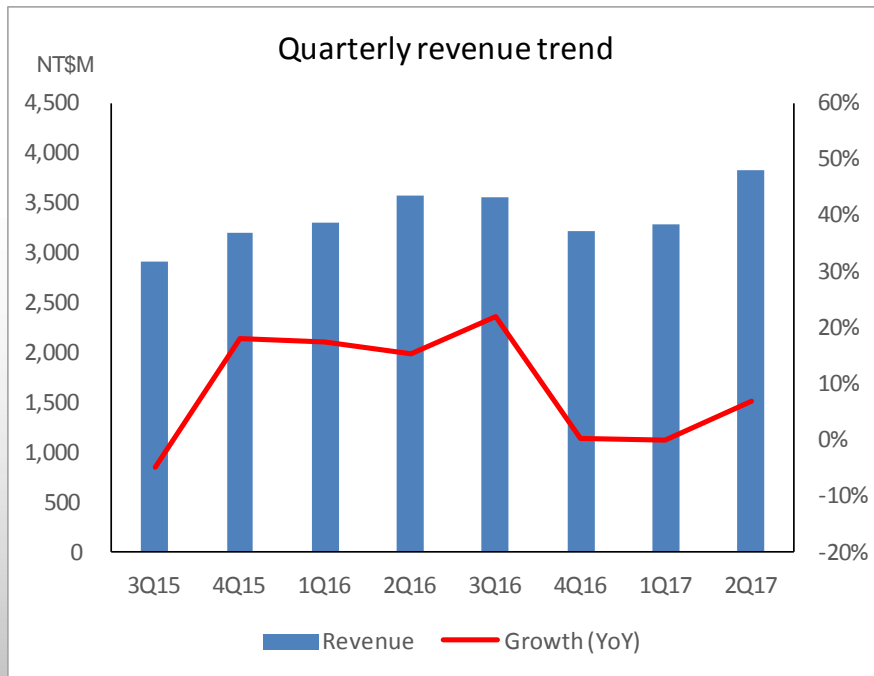
Leverage on technology and manufacture expertise to lift efficiency and drive cost down

Grow and acquire new customers in existing and new markets to diversify customer base

Quarterly Results & Guidance

Revenue & Margin Trend

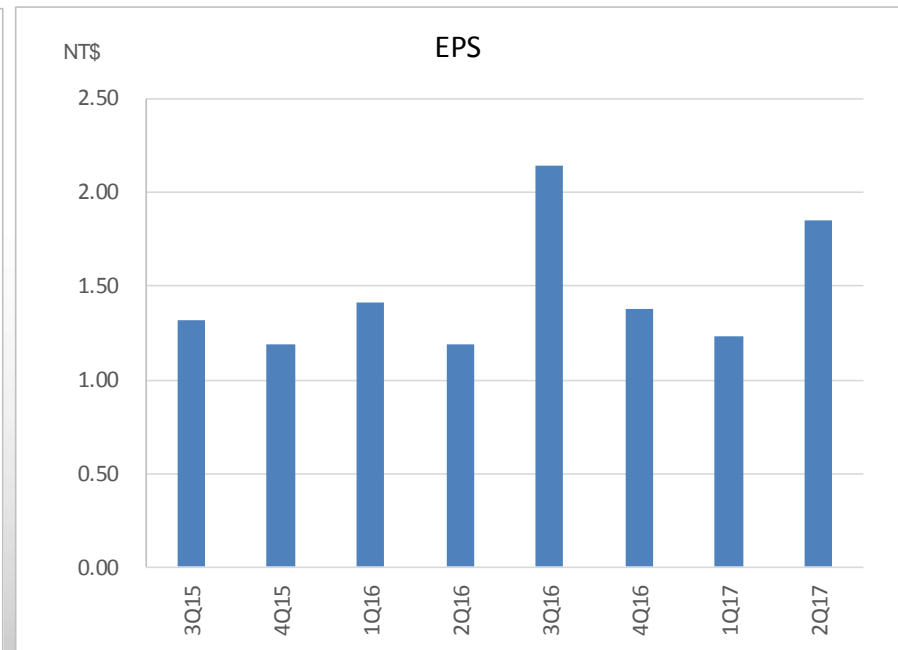
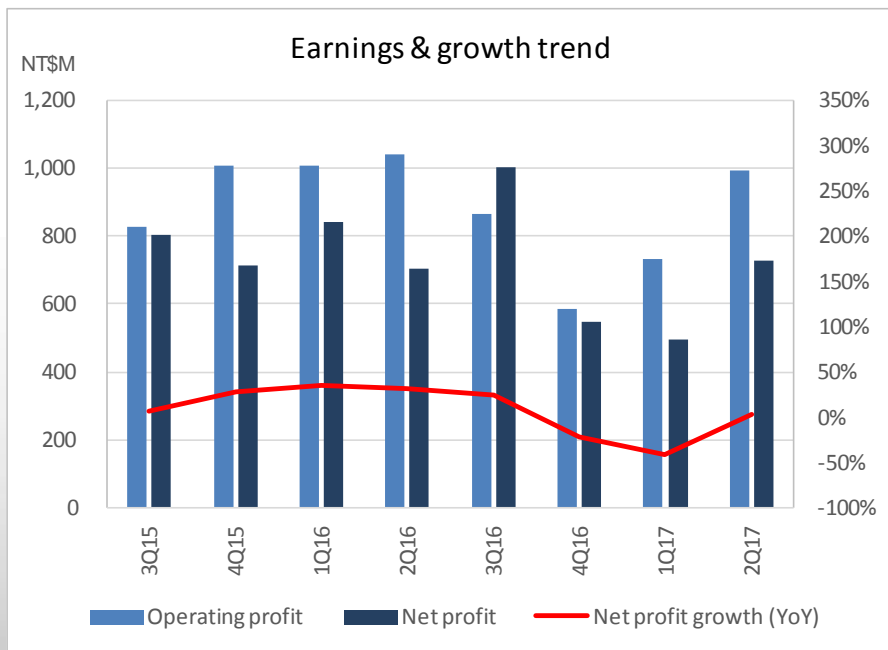
- 2Q17 revenue was NT\$3.82bn, up 16% QoQ and 7% YoY, reflecting customer demand for a traditionally stronger season.
- Given the growth in revenue and the increase in utilization in 2Q17, GM and OPM were 37.2% and 26.1%, respectively, improving by 3.5 and 3.8pp sequentially.



Source: company.

Earnings Trend

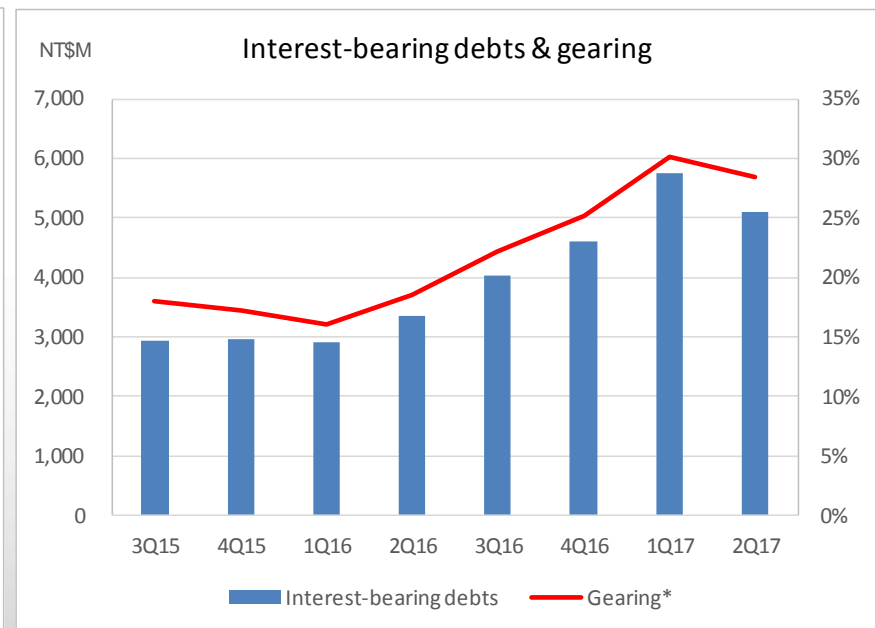
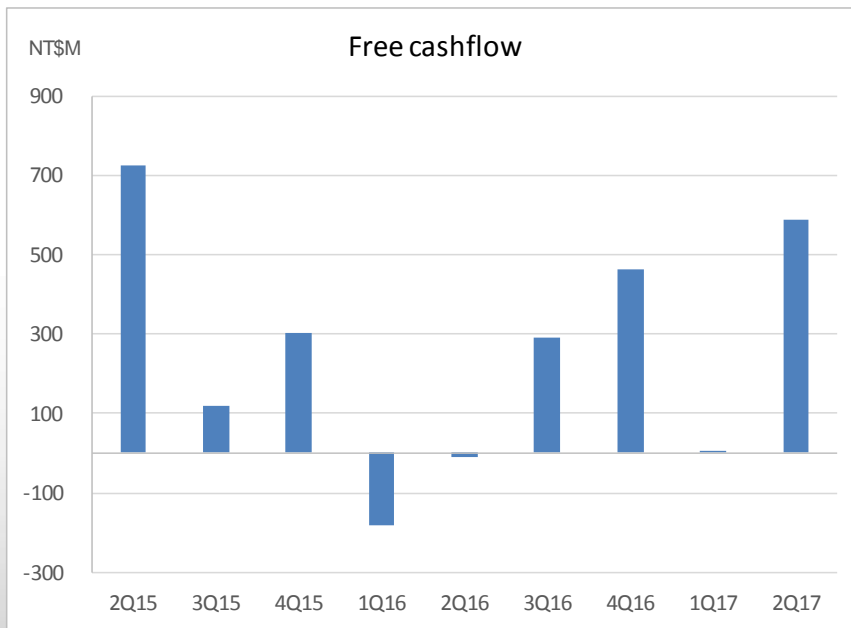
- 2Q17 net income was NT\$727mn, up 47% QoQ. The growth was mainly due to higher non-op expenses from forex loss in 1Q17, while no such impact in 2Q17. Net income increased by 3% YoY. 2Q17 EPS came in at NT\$1.85, compared to NT\$1.23 in 1Q17.



Source: company.

FCF & Gearing Trend

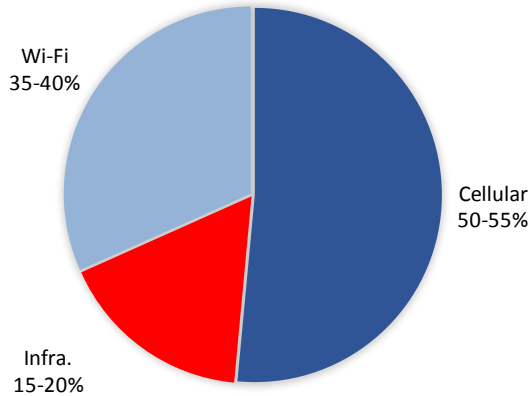
- 2Q17 capex was lower than 1Q17, leading to higher free cash flow.
- Interest-bearing debts and gearing ratio both declined sequentially. We prudently manage our leverage while maintaining a healthy financial structure.



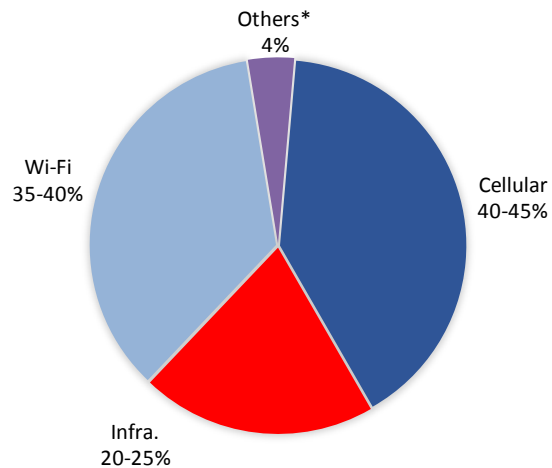
* Gearing = interest-bearing debts / equity
Source: company.

Product Mix

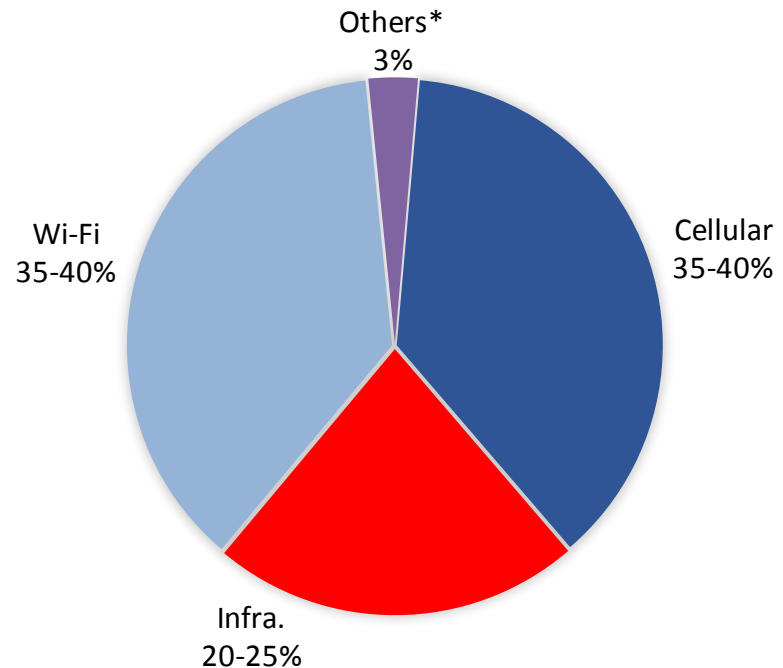
2Q16



1Q17



2Q17



* Others: Revenue not attributable to main product segments and additional revenue being consolidated in accordance with IFRS.

Source: company.

3Q17 Guidance



- We expect 3Q17 revenue to increase by low-teens QoQ.
- We expect 3Q17 gross margin to be better than 2Q17.

Appendix - Financial Summary

Consolidated Statements of Comprehensive Income - Quarterly

Unit: NTD Million	2Q'16	1Q'17	2Q'17 (unaudited)	QoQ	YoY
Net revenue	3,572	3,282	3,820	+16%	+7%
Gross profit	1,400	1,105	1,422	+29%	+2%
<i>Gross margin (%)</i>	39.2%	33.7%	37.2%		
Operating expenses	(360)	(373)	(427)	+14%	+19%
<i>Operating expenses rate (%)</i>	-10%	-11%	-11%		
Operating income	1,040	732	995	+36%	-4%
<i>Operating margin (%)</i>	29.1%	22.3%	26.1%		
Non-operating incomes and expenses	50	(140)	0.1		
Income before income tax	1,090	592	995	+68%	-9%
Income tax expense	(384)	(95)	(268)		
Net income	706	496	727	+47%	+3%
<i>Net margin (%)</i>	19.8%	15.1%	19.0%		
EPS (NT\$)	1.19	1.23	1.85	+50%	+55%
Other comprehensive income, net	171	270	90		
Comprehensive income	876	767	817	+7%	-7%
ROE(%)	16%	11%	16%		
Approx. Utilization (%)	90%	80%	90%		
Depreciation	560	574	576		
CAPEX	795	1,013	740		

Consolidated Statements of Comprehensive Income - YTD

Unit: NTD Million	2016H1	2017H1 (unaudited)	YoY
Net revenue	6,864	7,102	+3%
Gross profit	2,773	2,526	-9%
<i>Gross margin (%)</i>	40.4%	35.6%	
Operating expenses	(727)	(800)	+10%
<i>Operating expenses rate (%)</i>	-10%	-11%	
Operating income	2,046	1,727	-16%
<i>Operating margin (%)</i>	29.8%	24.3%	
Non-operating incomes and expenses	49	(140)	
Income before income tax	2,095	1,587	-24%
Income tax expense	(550)	(363)	
Net income	1,545	1,224	-21%
<i>Net margin (%)</i>	22.5%	17.2%	
EPS (NT\$)	2.60	3.08	+18%
Other comprehensive income, net	343	360	
Comprehensive income	1,888	1,584	-16%
ROE(%)	18%	13%	
Approx. Utilization (%)	90%	85%	
Depreciation	1,065	1,150	
CAPEX	1,674	1,753	

Non-operating Items

Unit: NTD Million

	2Q'16	2Q'17 (unaudited)	2016H1	2017H1 (unaudited)
Foreign exchange gains (losses)	(7)	7	(51)	(134)
Gains (losses) on disposals of property, plant and equipment	(1)	(0.2)	(1)	(0.2)
Gains (losses) on disposals of investments	0.3	(4)	1	(6)
Gains on financial assets (liabilities) at fair value through profit or loss, net	21	(20)	29	(10)
Share of loss of associates and joint ventures accounted for using equity	(5)	(18)	(10)	(34)
Others	42	35	80	46
Total	50	0.1	49	(140)

Consolidated Balance Sheets

(Unit: NTD Million)	Major Item	2016/6/30		2017/3/31		2017/6/30 (unaudited)	
		\$	%	\$	%	\$	%
	Cash and cash equivalents	1,415	6%	3,278	12%	3,189	11%
	Current financial assets at fair value through profit or	506	2%	234	1%	197	1%
	Current available-for-sale financial assets	931	4%	1,314	5%	1,290	5%
	Notes and accounts receivable, net	1,297	5%	1,002	4%	1,064	4%
	Long-term investments	2,588	10%	2,170	8%	2,484	9%
	Net property, plant and equipment	15,819	62%	16,322	58%	16,263	57%
	Total Assets	25,591	100%	28,071	100%	28,420	100%
	Current liabilities	4,983		3,973		6,295	
	Long-term borrowings	2,356		4,811		3,940	
	Total Liabilities	7,545	29%	9,010	32%	10,460	37%
	Common stock	5,867		4,027		4,027	
	Total Equity	18,046	71%	19,061	68%	17,960	63%
	Book value per share (NT\$)	30.76		47.34		44.60	
	Key Indices						
	Current ratio (<i>Current assets / Current liabilities</i>)	140%		228%		147%	
	Debt ratio (<i>Total liabilities / Total assets</i>)	29%		32%		37%	

Q & A

For more information regarding WIN
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