



WIN Semiconductors

*Compound Semiconductor Solutions
From RF to Light-Wave*

Company Presentation



November 2017

Safe Harbor Notice



- *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

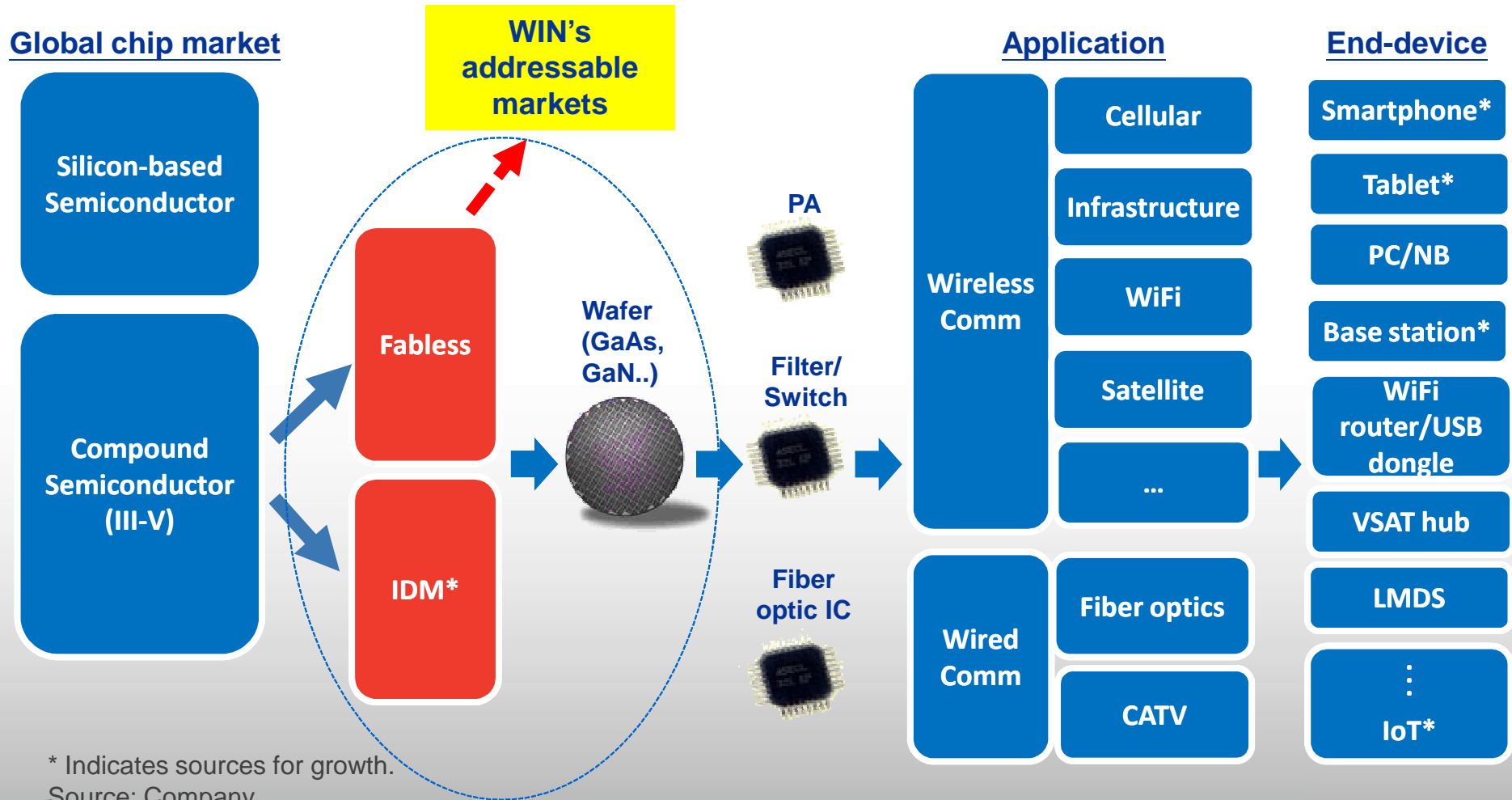
- ✓ **Market Outlook**
- ✓ **Technology**
- ✓ **The WIN Strategy**
- ✓ **Financial Review & Guidance**
- ✓ **Q&A**

Market Outlook

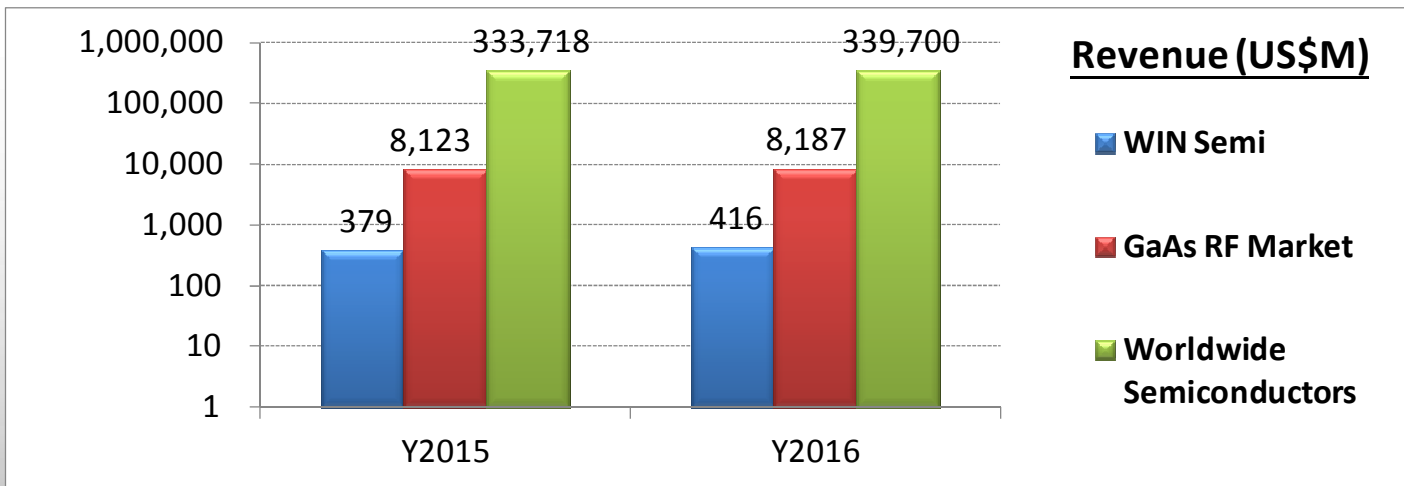
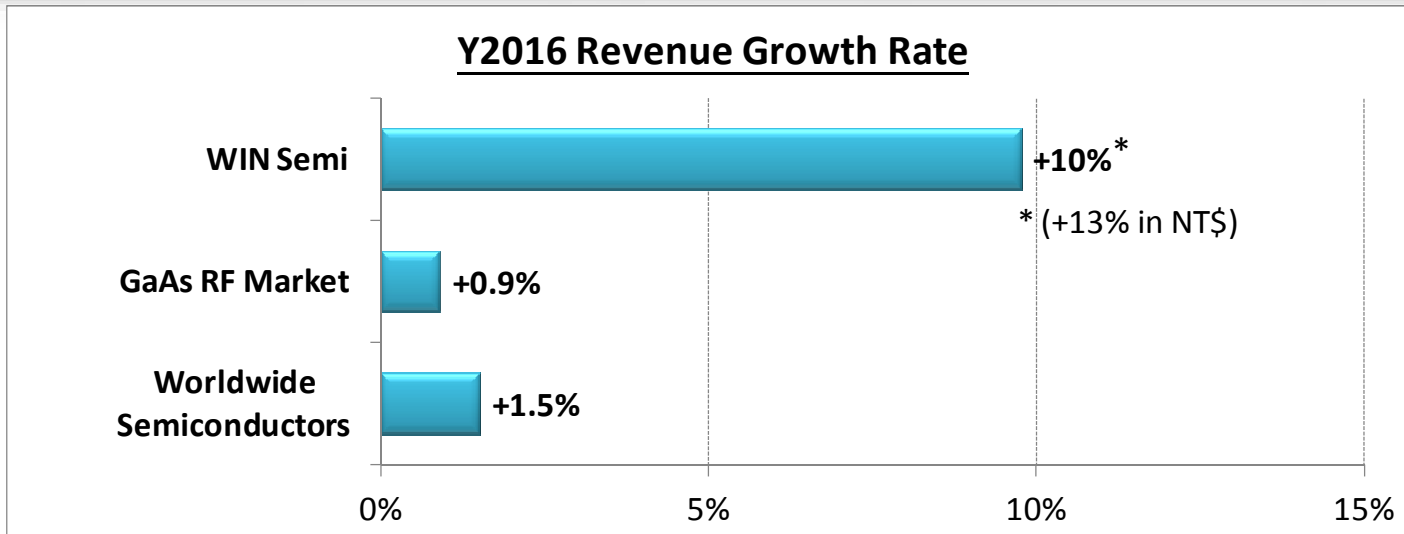
WIN's Market Positioning



- 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

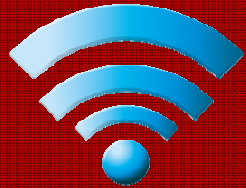
Near Term Opportunities

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

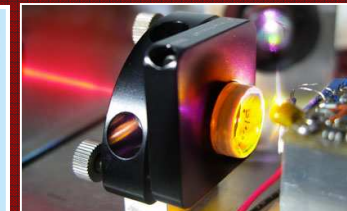


- Flagship phones adopt dual band (2G/5G) MIMO
- Mid/low-end phones start to adopt 5G band and MIMO
 - trend to include 5GHz 11ac Wi-Fi in China made smartphones
- Router and IoT gateway (e.g. 8x MIMO) markets are rapidly increasing

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



Mid Term Opportunities

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

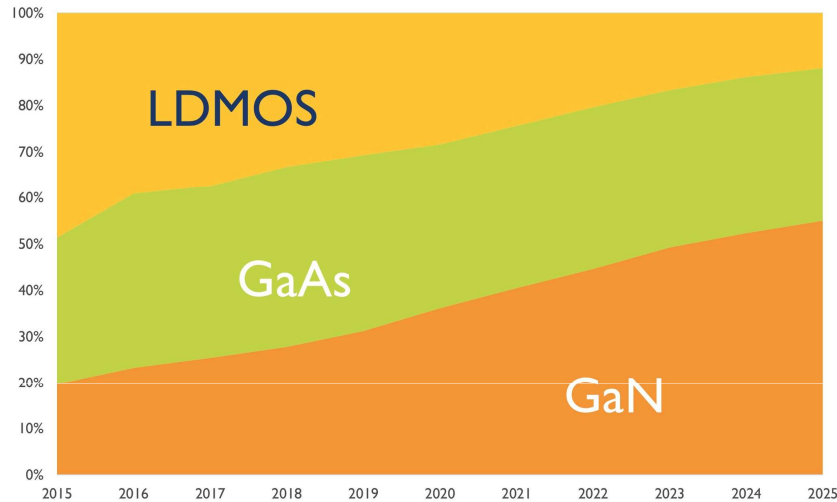
	Mobile Device	Infrastructure/CPE
Sub-6GHz	<ul style="list-style-type: none">• GaAs HBT• GaAs pHEMT	<ul style="list-style-type: none">• GaN HEMT
mmWave	<ul style="list-style-type: none">• Integrated GaAs technologies	<ul style="list-style-type: none">• GaN HEMT• GaAs pHEMT

GaN's Opportunities in 5G



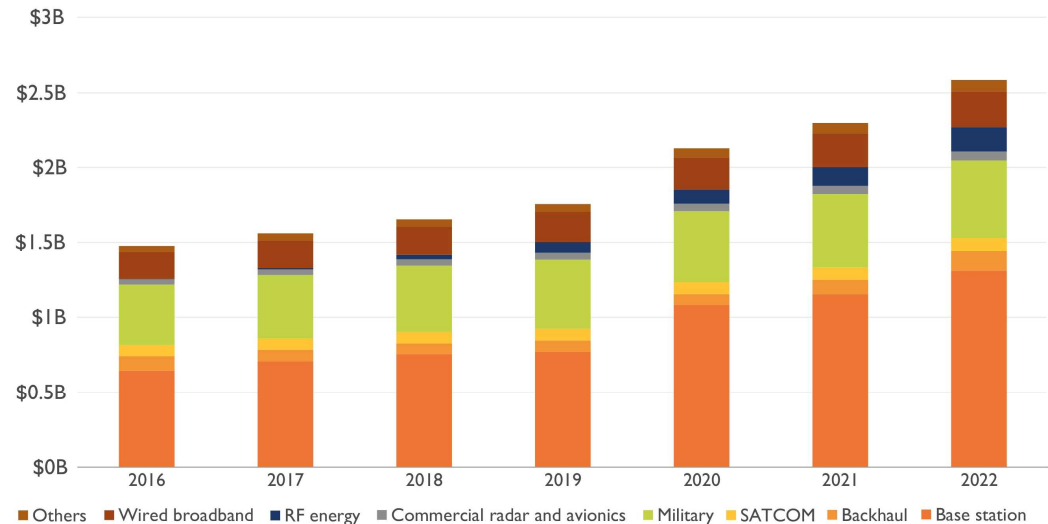
RF power device market, in value – Breakdown by technology

(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



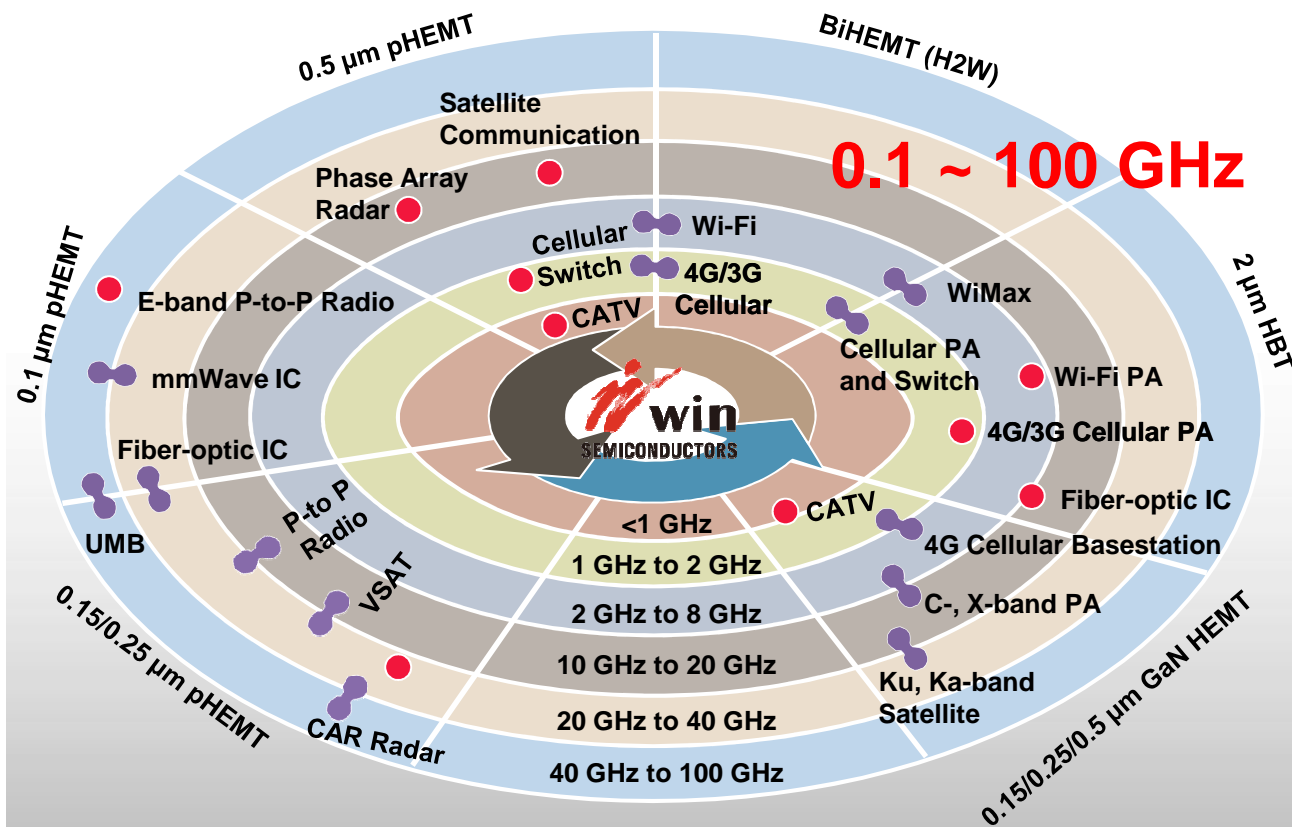
Source: Yole Développement’s “RF Power Market and Technologies 2017: GaN, GaAs and LDMOS Report”

Technology

Broad Portfolio of Advanced Technologies

SEMICONDUCTORS

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



0.1 ~ 100 GHz

- ✓ 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 0.1μm pHEMT on 6" GaAs wafer
- ✓ Industry leading 0.15–0.25μm 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

- ✓ Higher power efficiency → Longer battery power
- ✓ Better linearity → Faster speed
- ✓ Lower noise → Better quality of signal

GaAs vs CMOS



- Higher Functionality Integration

WIN provides all of the GaAs solution for the above!

WiFi FEM : PA + LNA + Switch + Logic

BiHEMT = HBT + E/D pHEMT

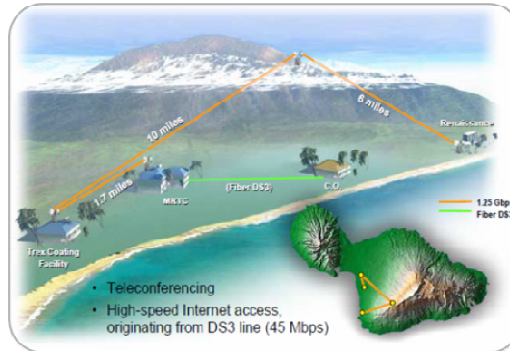
PA + LNA/Switch/Logic

PA/LNA/Switch/Logic

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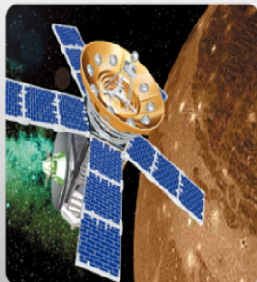
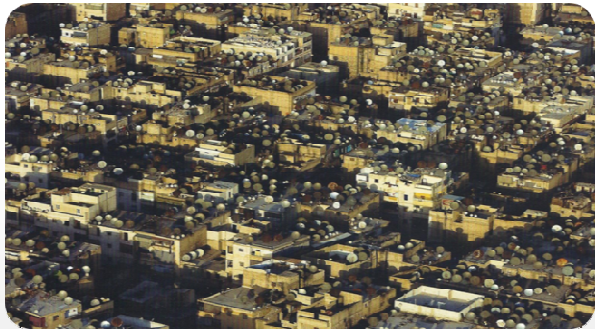
Cu Pillar Bump Flip Chip

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

Technology Leadership

Invest in technologies to maintain competitive edge and sustain leadership

Cost & Efficiency

Customer Diversification

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

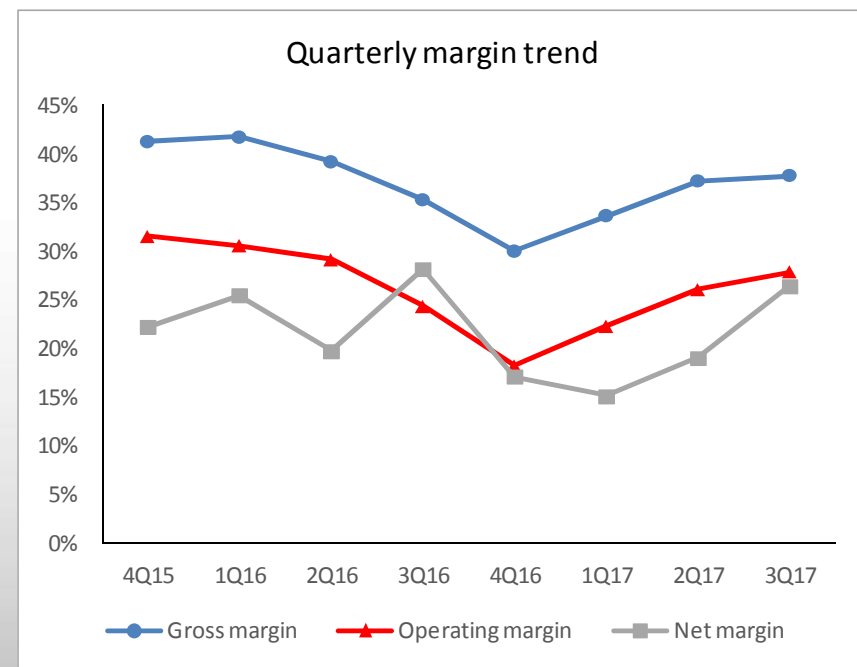
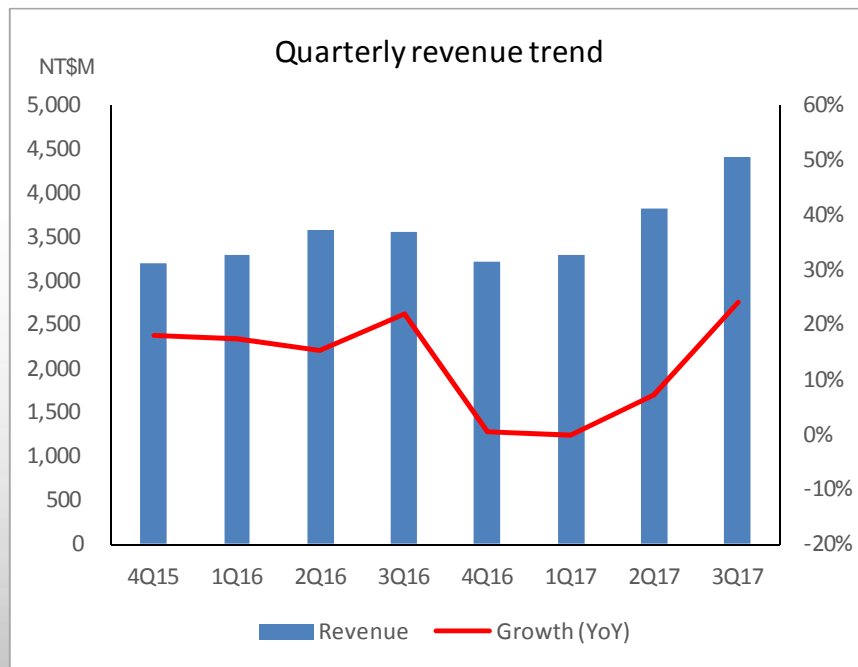
Grow and acquire new customers in existing and new markets to diversify customer base

Quarterly Results & Guidance

Revenue & Margin Trend



- As the stronger season in 2Q17 continued into 3Q17, revenue reached NT\$4.4bn in 3Q17, up 15% QoQ and 24% YoY.
- Given the growth in revenue and the increase in utilization in 3Q17, GM and OPM were 37.8% and 27.9%, respectively, improving by 0.6 and 1.8pp sequentially.

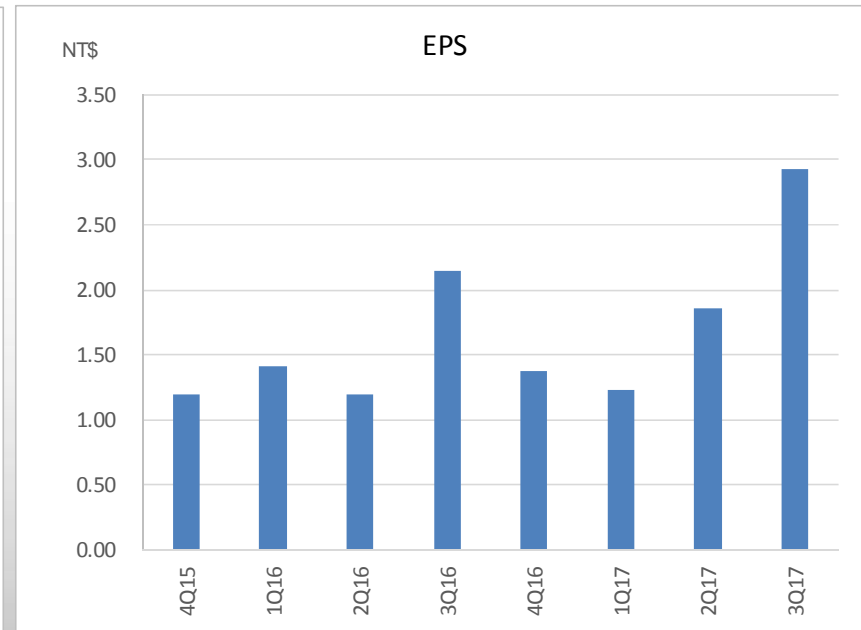
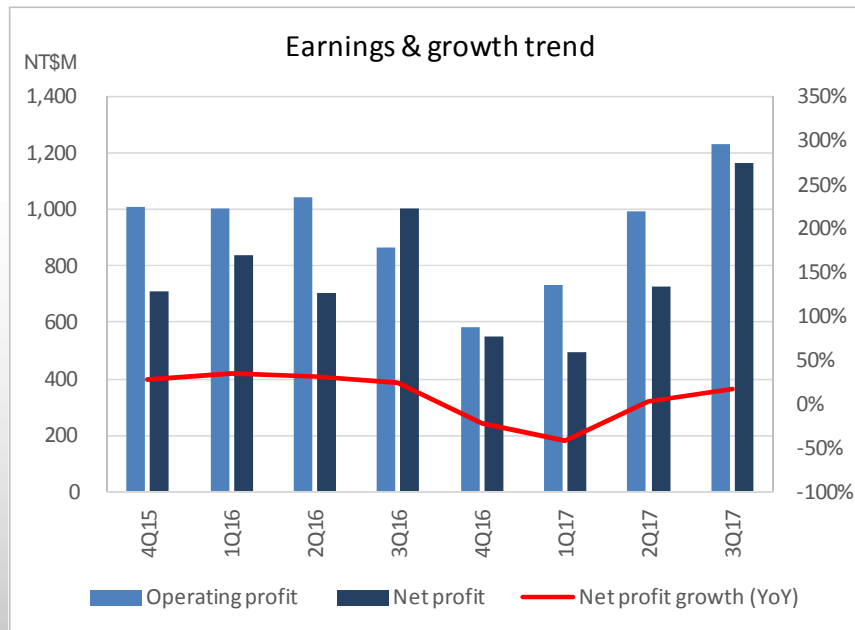


Source: company.

Earnings Trend



- 3Q17 net income was NT\$1.16bn, up 60% QoQ. The growth was mainly driven by 23% QoQ increase in operation income and NT\$137mn for non-op income. Net income increased by 16% YoY. 3Q17 EPS came in at NT\$2.93, compared to NT\$1.85 in 2Q17.

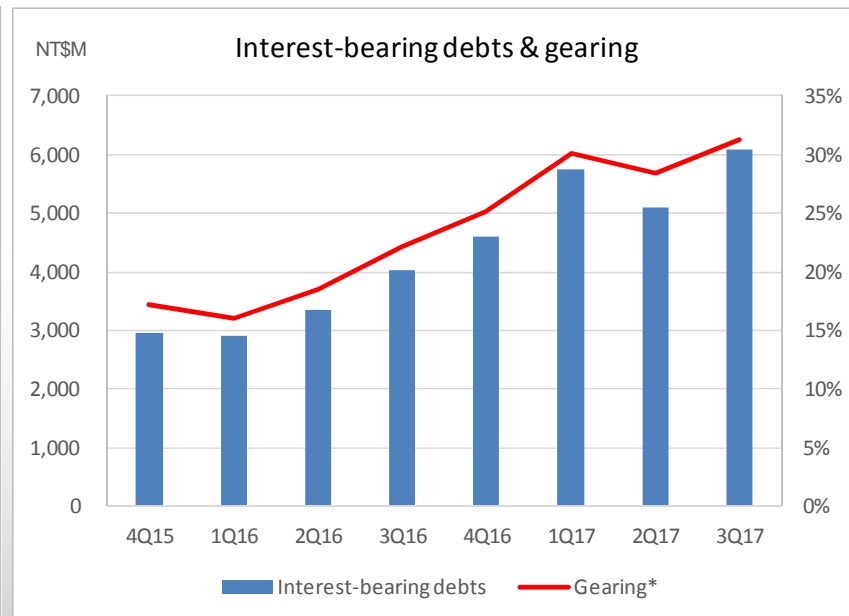
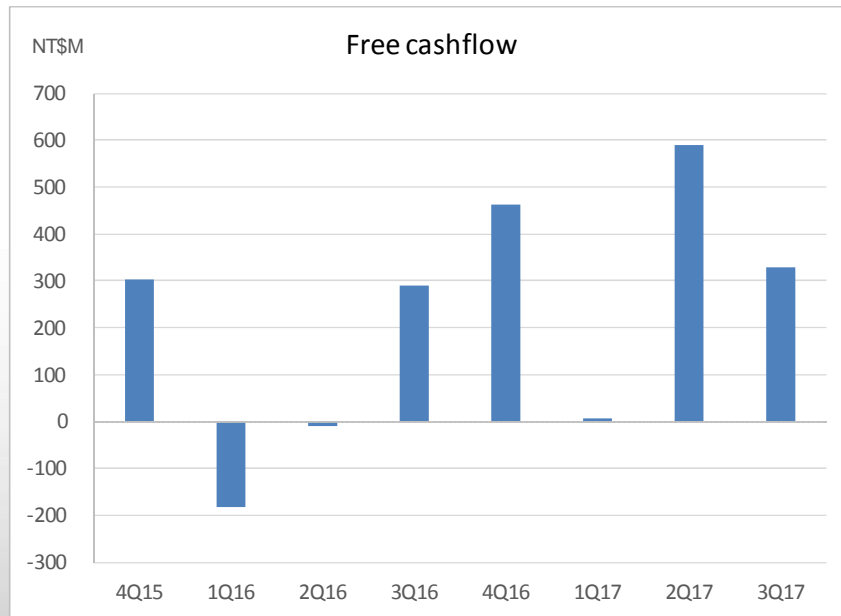


Source: company.

FCF & Gearing Trend

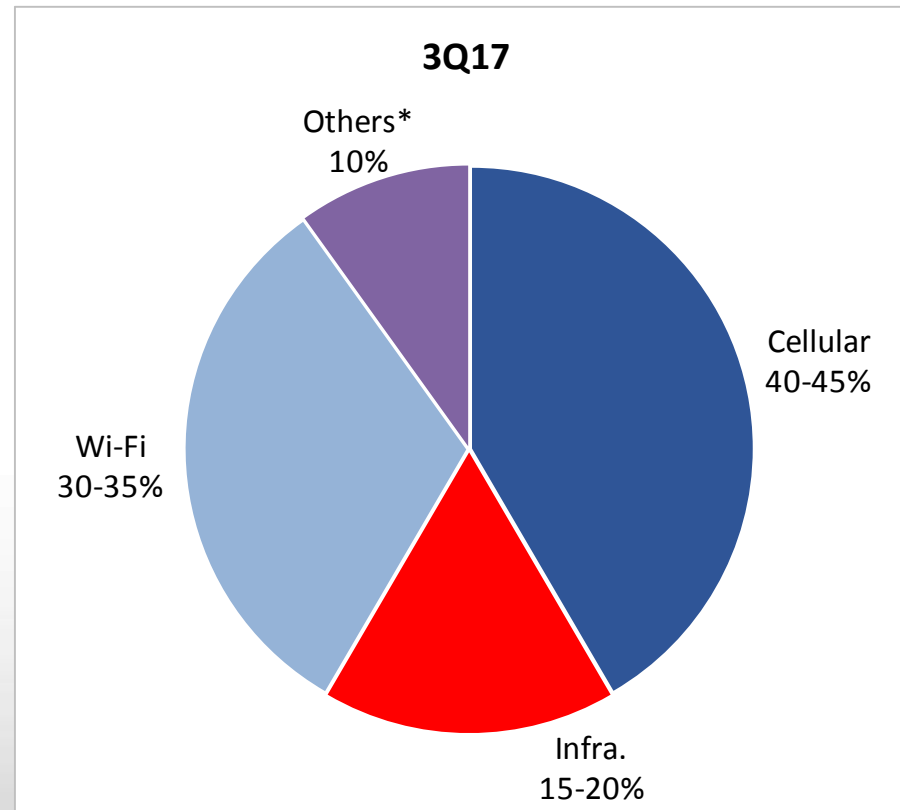
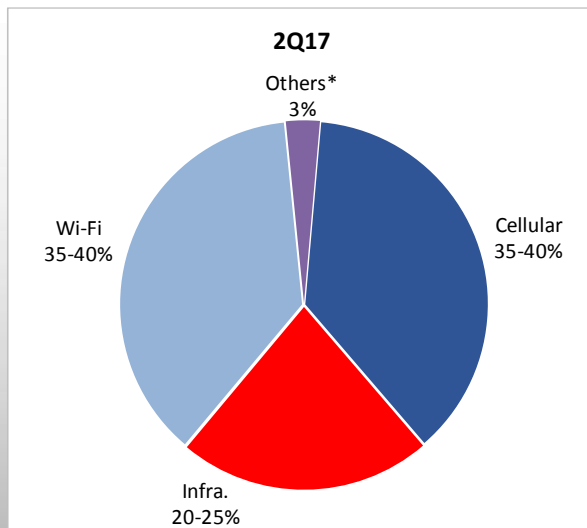
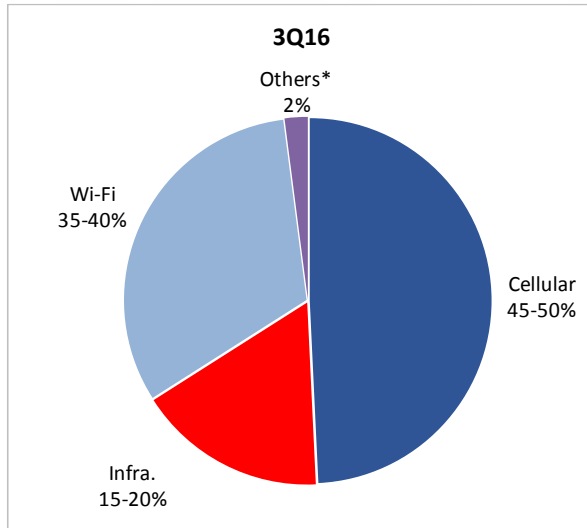


- Despite continued significant capex investments, we were able to maintain positive free cash flow.
- Interest-bearing debts and gearing ratio both increased sequentially. We prudently manage our leverage while maintaining a healthy financial structure.



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

Product Mix



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

Source: company.

4Q17 Guidance



- We expect 4Q17 revenue to increase by low-teens QoQ.
- We expect 4Q17 gross margin to be around at 3Q17 level.

Appendix - Financial Summary

Consolidated Statements of Comprehensive Income - Quarterly



Unit: NTD Million	3Q'16	2Q'17	3Q'17 (unaudited)	QoQ	YoY
Net revenue	3,553	3,820	4,404	+15%	+24%
Gross profit	1,254	1,422	1,664	+17%	+33%
<i>Gross margin (%)</i>	35.3%	37.2%	37.8%		
Operating expenses	(390)	(427)	(436)	+2%	+12%
<i>Operating expenses rate (%)</i>	-11%	-11%	-10%		
Operating income	864	995	1,228	+23%	+42%
<i>Operating margin (%)</i>	24.3%	26.1%	27.9%		
Non-operating incomes and expenses	284	0.1	137		
Income before income tax	1,148	995	1,365	+37%	+19%
Income tax expense	(146)	(268)	(201)		
Net income	1,001	727	1,164	+60%	+16%
<i>Net margin (%)</i>	28.2%	19.0%	26.4%		
EPS (NT\$)	2.14	1.85	2.93	+58%	+37%
Other comprehensive income, net	69	90	366		
Comprehensive income	1,071	817	1,530	+87%	+43%
ROE(%)	22%	16%	25%		
Approx. Utilization (%)	90%	90%	95%		
Depreciation	637	576	650		
CAPEX	861	740	772		

Consolidated Statements of Comprehensive Income - YTD



Unit: NTD Million	2016Q1~Q3	2017Q1~Q3 (unaudited)	YoY
Net revenue	10,417	11,506	+10%
Gross profit	4,027	4,191	+4%
<i>Gross margin (%)</i>	38.7%	36.4%	
Operating expenses	(1,117)	(1,236)	+11%
<i>Operating expenses rate (%)</i>	-10%	-11%	
Operating income	2,911	2,955	+2%
<i>Operating margin (%)</i>	27.9%	25.7%	
Non-operating incomes and expenses	332	(3)	
Income before income tax	3,243	2,952	-9%
Income tax expense	(696)	(564)	
Net income	2,546	2,388	-6%
<i>Net margin (%)</i>	24.4%	20.8%	
EPS (NT\$)	4.62	6.02	+30%
Other comprehensive income, net	413	726	
Comprehensive income	2,959	3,114	+5%
ROE(%)	19%	17%	
Approx. Utilization (%)	90%	90%	
Depreciation	1,702	1,800	
CAPEX	2,535	2,525	

Non-operating Items



Unit: NTD Million	3Q'16	3Q'17 (unaudited)	2016Q1~Q3	2017Q1~Q3 (unaudited)
Foreign exchange gains (losses)	(34)	(2)	(85)	(136)
Gains (losses) on disposals of property, plant and equipment	(2)	-	(3)	(0.2)
Gains (losses) on disposals of investments	227	120	228	114
Gains on financial assets (liabilities) at fair value through profit or loss, net	(11)	(23)	18	(33)
Share of loss of associates and joint ventures accounted for using equity	(8)	(46)	(17)	(80)
Others	112	87	192	133
Total	284	137	332	(3)

Consolidated Balance Sheets



(Unit: NTD Million)	Major Item	2016/9/30		2017/6/30		2017/9/30 (unaudited)	
		\$	%	\$	%	\$	%
	Cash and cash equivalents	1,813	7%	3,189	11%	2,841	10%
	Current financial assets at fair value through profit or	193	1%	197	1%	166	1%
	Current available-for-sale financial assets	922	4%	1,290	5%	1,597	5%
	Notes and accounts receivable, net	960	4%	1,064	4%	1,444	5%
	Inventories	2,569	10%	3,009	11%	3,403	12%
	Long-term investments	2,066	8%	2,484	9%	2,364	8%
	Net property, plant and equipment	15,889	63%	16,263	57%	16,593	56%
	Total Assets	25,306	100%	28,420	100%	29,501	100%
	Current liabilities	4,048		6,295		4,362	
	Long-term borrowings	2,858		3,940		5,397	
	Total Liabilities	7,119	28%	10,460	37%	10,010	34%
	Common stock	4,077		4,027		4,027	
	Total Equity	18,188	72%	17,960	63%	19,490	66%
	Book value per share (NT\$)	44.61		44.60		48.40	
	Key Indices						
	Current ratio (<i>Current assets / Current liabilities</i>)	171%		147%		232%	
	Debt ratio (<i>Total liabilities / Total assets</i>)	28%		37%		34%	

Q & A

For more information regarding WIN
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