

www.txccorp.com

*Think of Frequency
Think of*



法人說明會
106/3/16

1991



• kHz/MHz Crystal

• TSX

• XO

• TCXO

• VCXO

• OCXO

• RTC

• Sensors

1999



• kHz/MHz Crystal

• TSX

• XO

2013



• MHz Crystal

- **3** manufacturing facilities
- **200+** automated production lines
- **310M+** monthly capacity
- **2** R&D centers (PCF, NGB)
- **400+** engineers

Crystals

✓ Metal Can



✓ Glass Seal



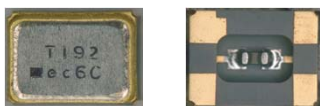
✓ Seam Seal



✓ Tuning Fork



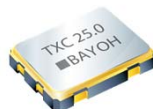
✓ Temperature Sensor Crystal (TSX)



✓ Automotive Applications

Oscillators & Modules

✓ Crystal Oscillators (XO)



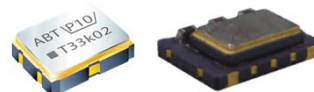
SAW Oscillators (SO)



Voltage Controlled Oscillators (VCXO)



✓ Temperature Compensated Oscillators (TCXO/S3TCXO)



Oven Controlled Oscillators (OCXO)

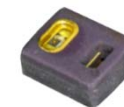


Real Time Clock (RTC)

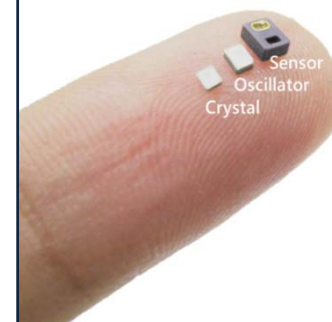


Sensors

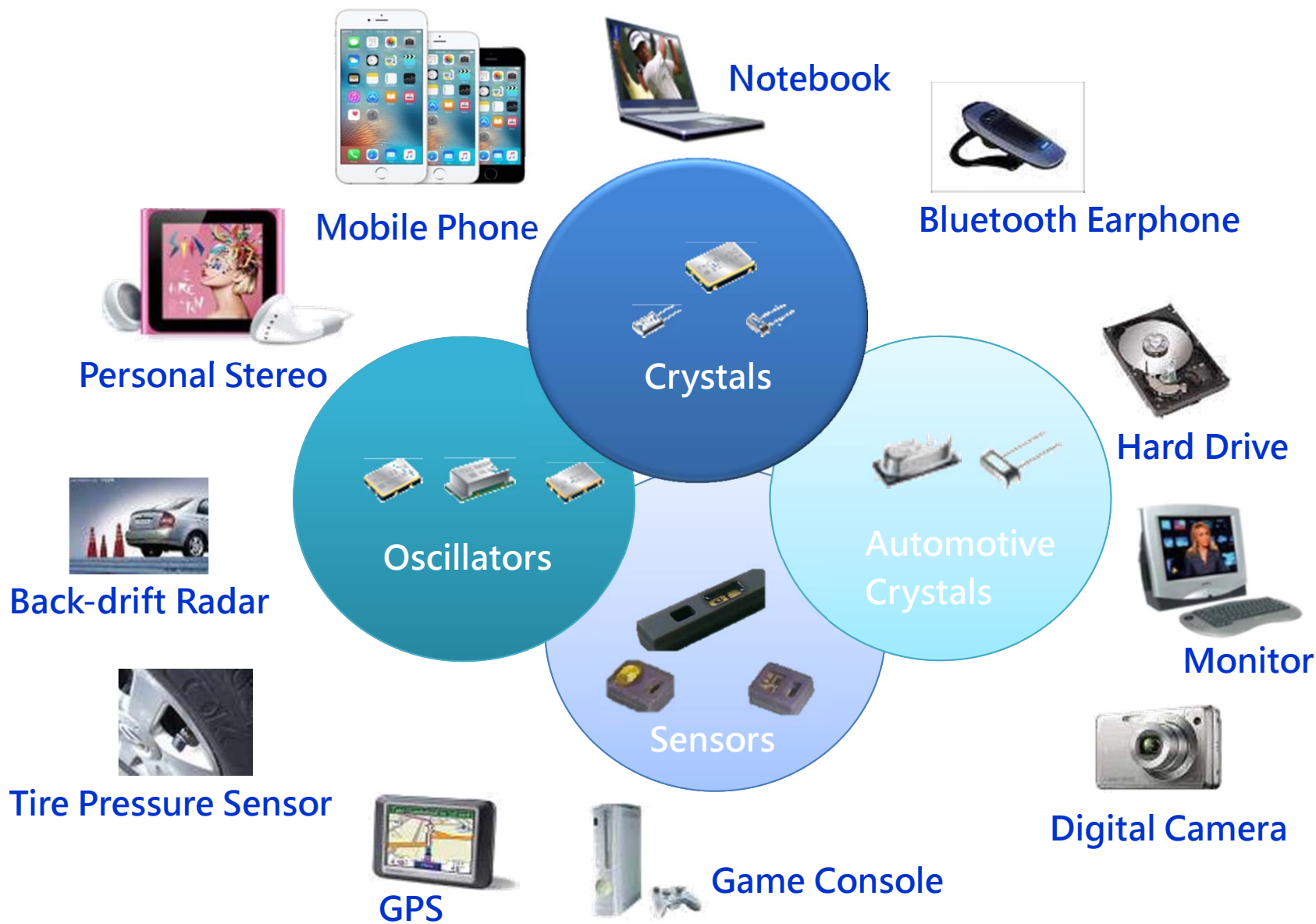
Optical Sensors (Ambient Light+Proximity)



Strategic Innovation



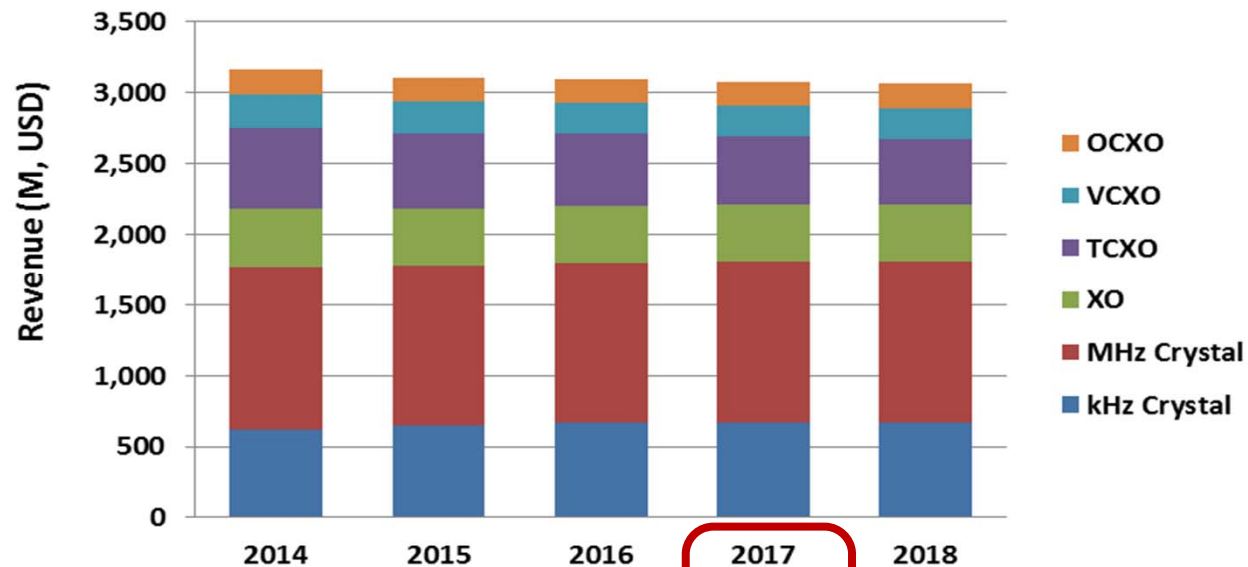
產品應用



產業概況

全球頻率元件產值維持31-33億美元 年複合成長率0.5%

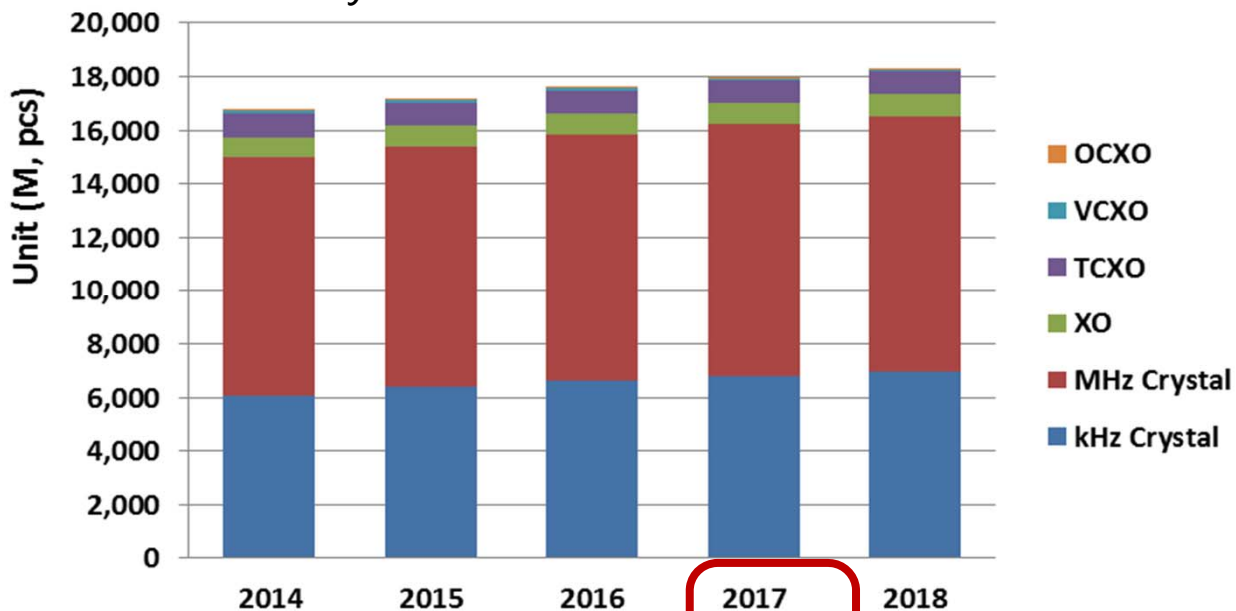
Worldwide Crystal and Oscillator Forecast (Source: CS&A)



	2014	2015	2016	2017	2018
kHz Crystal	19.6%	20.9%	21.4%	21.7%	21.8%
MHz Crystal	36.3%	36.5%	36.8%	36.9%	37.1%
XO	12.9%	13.0%	13.0%	13.1%	13.1%
TCXO	18.3%	17.2%	16.4%	15.8%	15.3%
VCXO	7.4%	7.1%	7.1%	7.1%	7.1%
OCXO	5.5%	5.4%	5.4%	5.4%	5.5%

全球頻率元件年銷量估計180-200億顆年複合成長率2.5%

Worldwide Crystal and Oscillator Forecast (Source: CS&A)



	2014	2015	2016	2017	2018
kHz Crystal	6,089	6,394	6,617	6,816	6,952
MHz Crystal	8,897	8,986	9,211	9,395	9,583
XO	765	776	792	807	824
TCXO	889	867	849	832	816
VCXO	88	87	88	90	92
OCXO	3.12	3.08	3.13	3.19	3.26

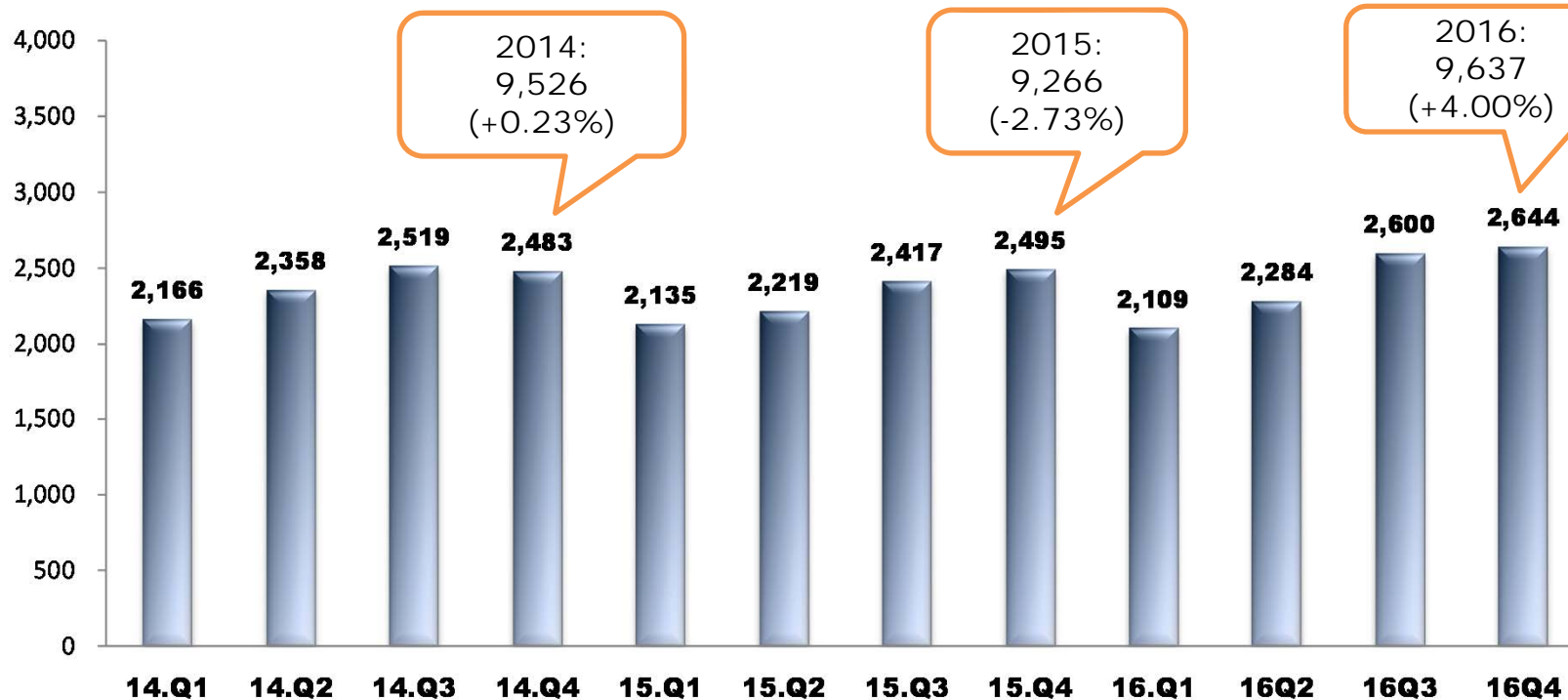
全球頻率元件主要供應商排名

Company	Rank			Revenue (M, USD)			Market Share
	2013	2014	2015	2013	2014	2015	2015
Epson	1	1	1	500.10	449.00	427.00	13.8%
NDK	2	2	2	432.52	417.86	338.36	10.9%
TXC	3	3	3	326.00	323.00	301.50	9.7%
KCD	4	4	4	297.65	295.00	300.51	9.7%
KDS	5	5	5	259.65	214.08	201.24	6.5%
Vectron	6	6	6	169.80	176.60	163.35	5.3%
SIWARD	7	7	7	95.50	99.50	94.53	3.0%
Hosonic	9	8	8	93.50	95.10	91.40	2.9%
RIVER	10	13	9	66.06	59.45	77.28	2.5%
Murata	12	11	10	59.32	60.00	69.00	2.2%
Others						1,039.2	33.5%
Total						3,101.8	100%

(Source: CS&A)

營收趨勢

Unit: NT\$ Million

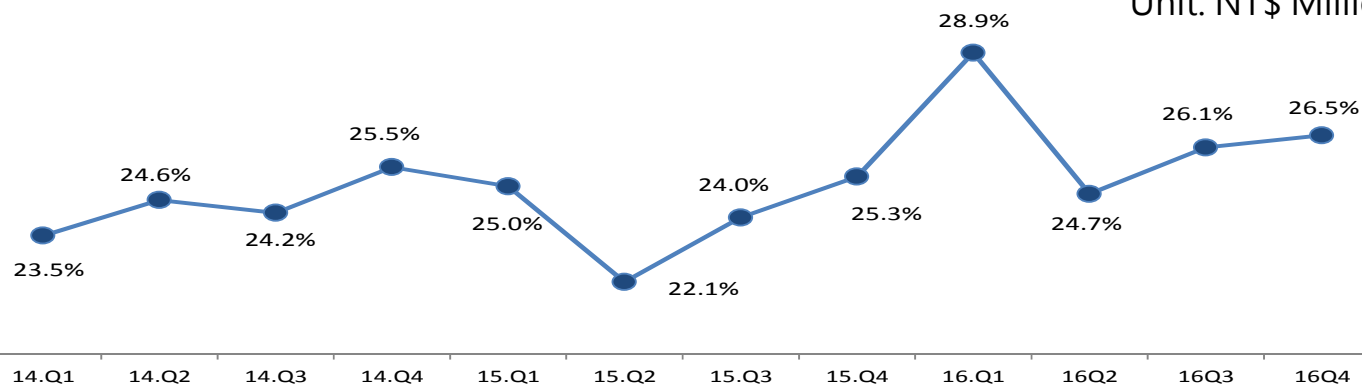


	14.Q1	14.Q2	14.Q3	14.Q4	15.Q1	15.Q2	15.Q3	15.Q4	16.Q1	16.Q2	16.Q3	16.Q4
Revenue (QoQ)	-9.8%	8.9%	6.8%	-1.4%	-14.0%	3.9%	8.9%	3.2%	-15.5%	8.3%	13.8%	1.7%
Revenue (YoY)	-6.9%	1.2%	3.0%	3.5%	-1.4%	-5.9%	-4.0%	0.5%	-1.2%	2.9%	7.6%	6.0%

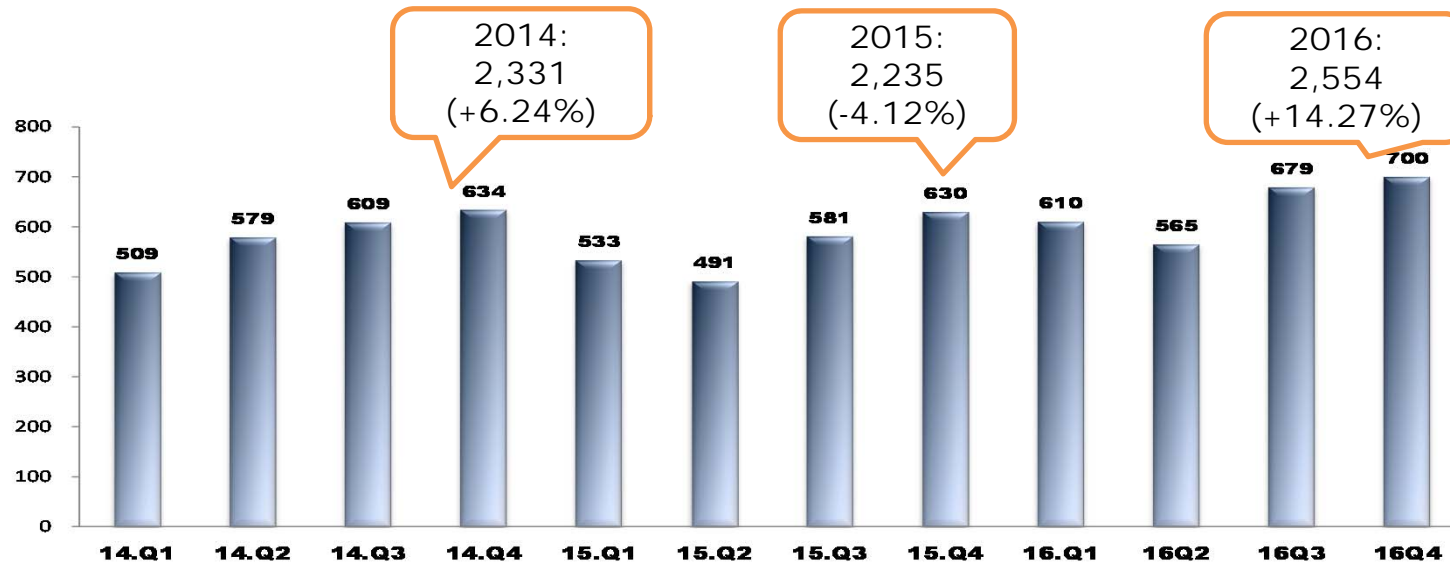
毛利率趨勢

Unit: NT\$ Million

毛利率



毛利

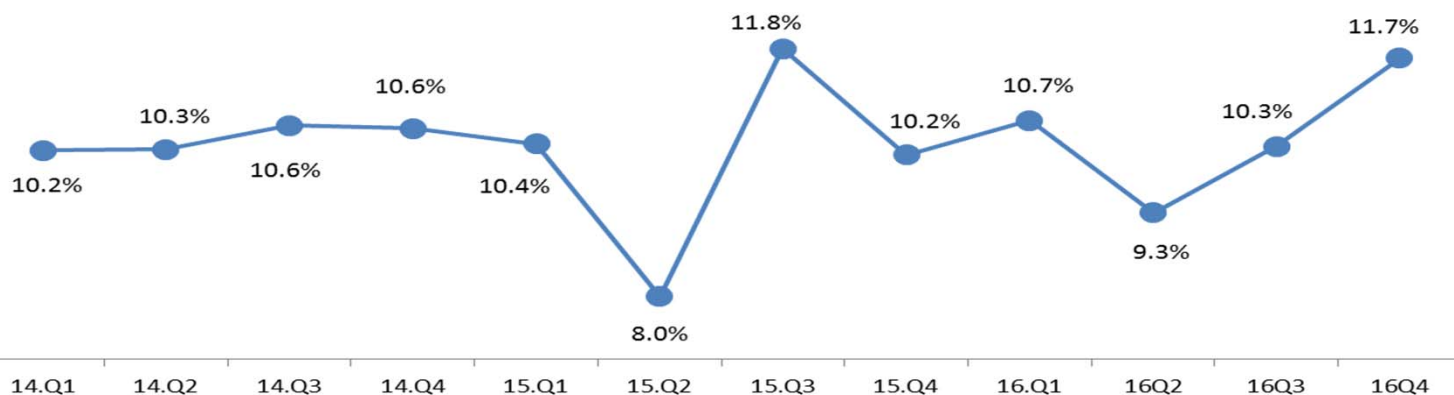


	14.Q1	14.Q2	14.Q3	14.Q4	15.Q1	15.Q2	15.Q3	15.Q4	16.Q1	16.Q2	16.Q3	16.Q4
Gross Profit (QoQ)	-7.3%	13.8%	5.2%	4.1%	-15.9%	-7.9%	18.3%	8.4%	-3.2%	-7.4%	20.2%	3.1%
Gross Profit (YoY)	-2.5%	2.3%	9.3%	15.5%	4.7%	-15.2%	-4.6%	-0.6%	14.4%	15.1%	16.9%	11.1%

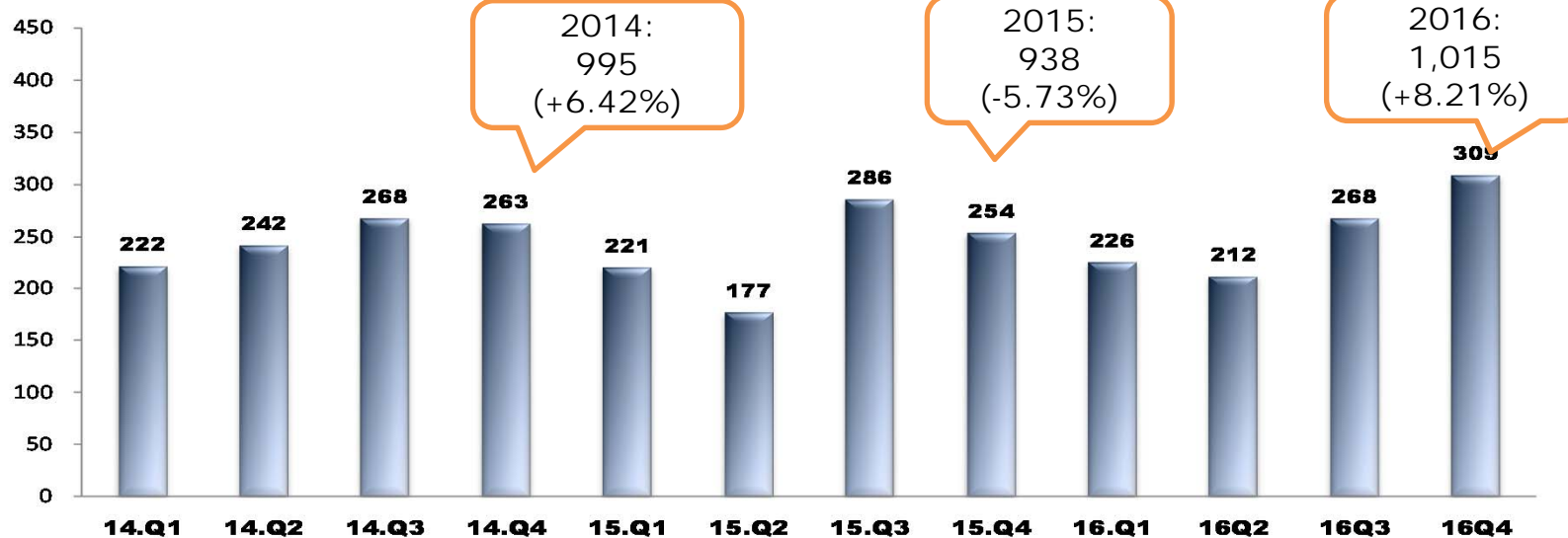
淨利率趨勢

Unit: NT\$ Million

淨利率



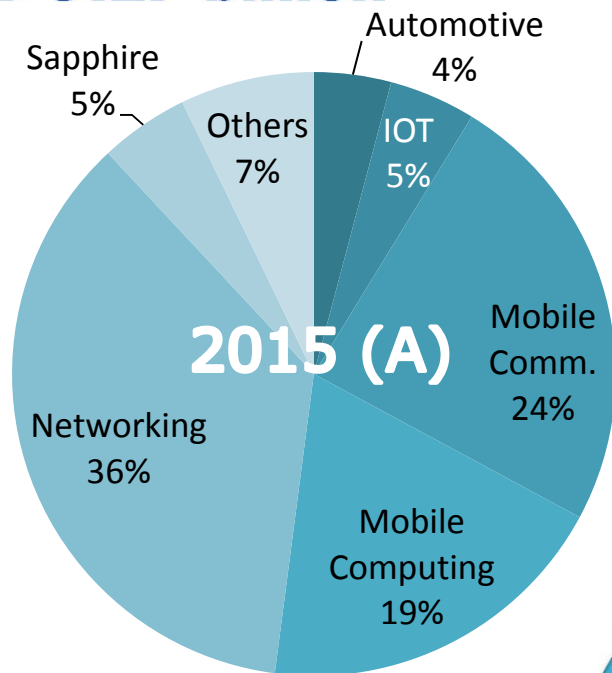
淨利



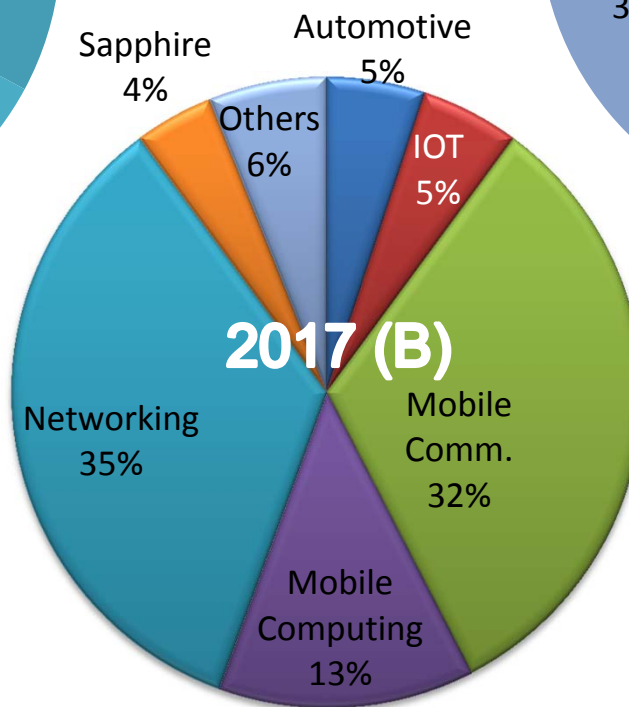
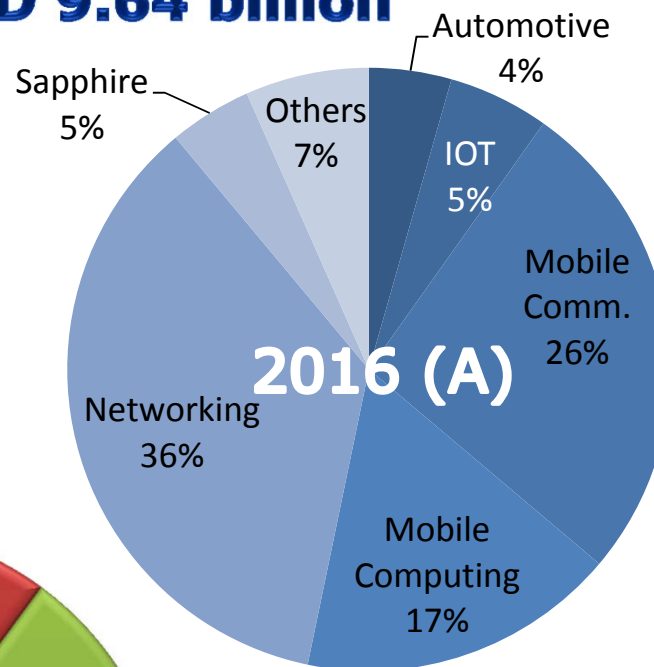
	14.Q1	14.Q2	14.Q3	14.Q4	15.Q1	15.Q2	15.Q3	15.Q4	16.Q1	16.Q2	16.Q3	16.Q4
Net Profit (QoQ)	-8.3%	9.0%	10.7%	-1.9%	-16.0%	-19.9%	61.6%	-11.2%	-11.0%	-6.2%	26.4%	15.3%
Net Profit (YoY)	6.2%	10.0%	1.5%	8.7%	-0.5%	-26.9%	6.7%	-3.4%	2.3%	19.8%	-6.3%	21.7%

產業別佔營收比重

NTD 9.27 billion

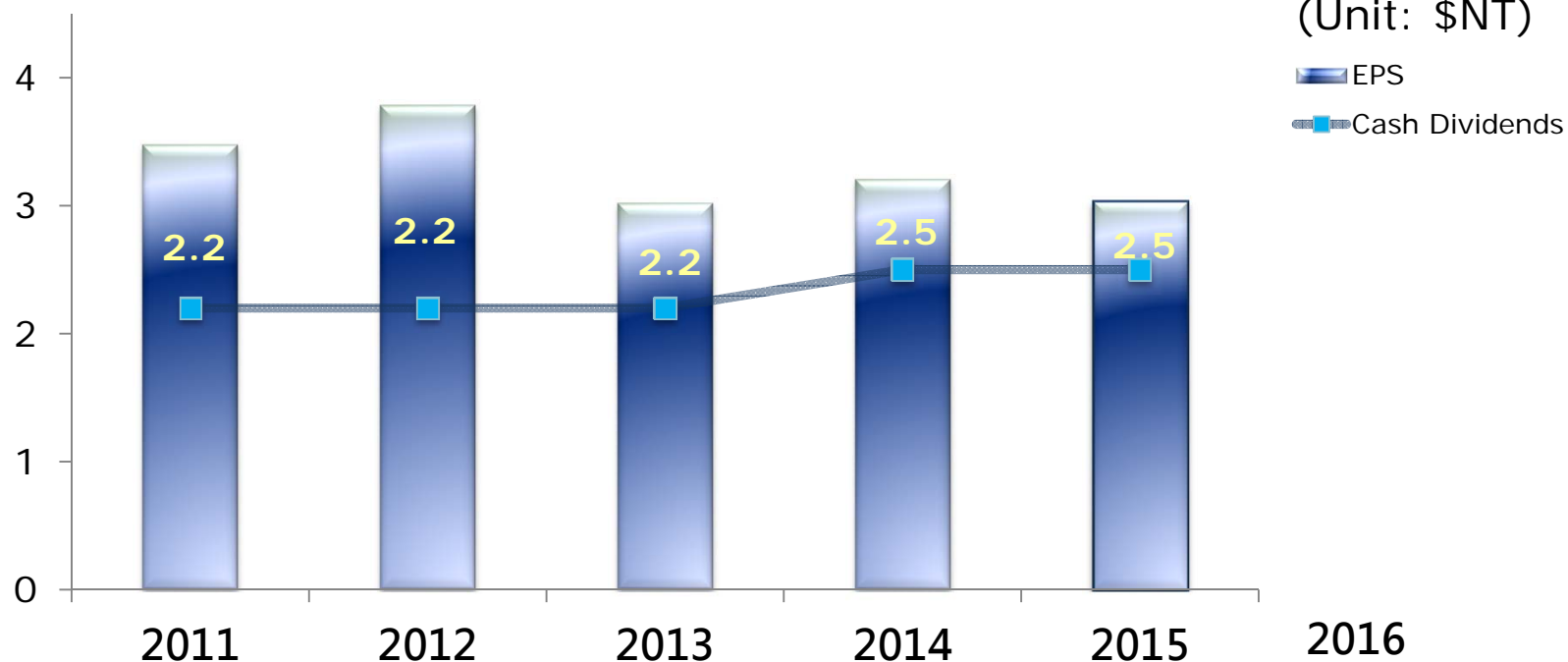


NTD 9.64 billion



股利政策

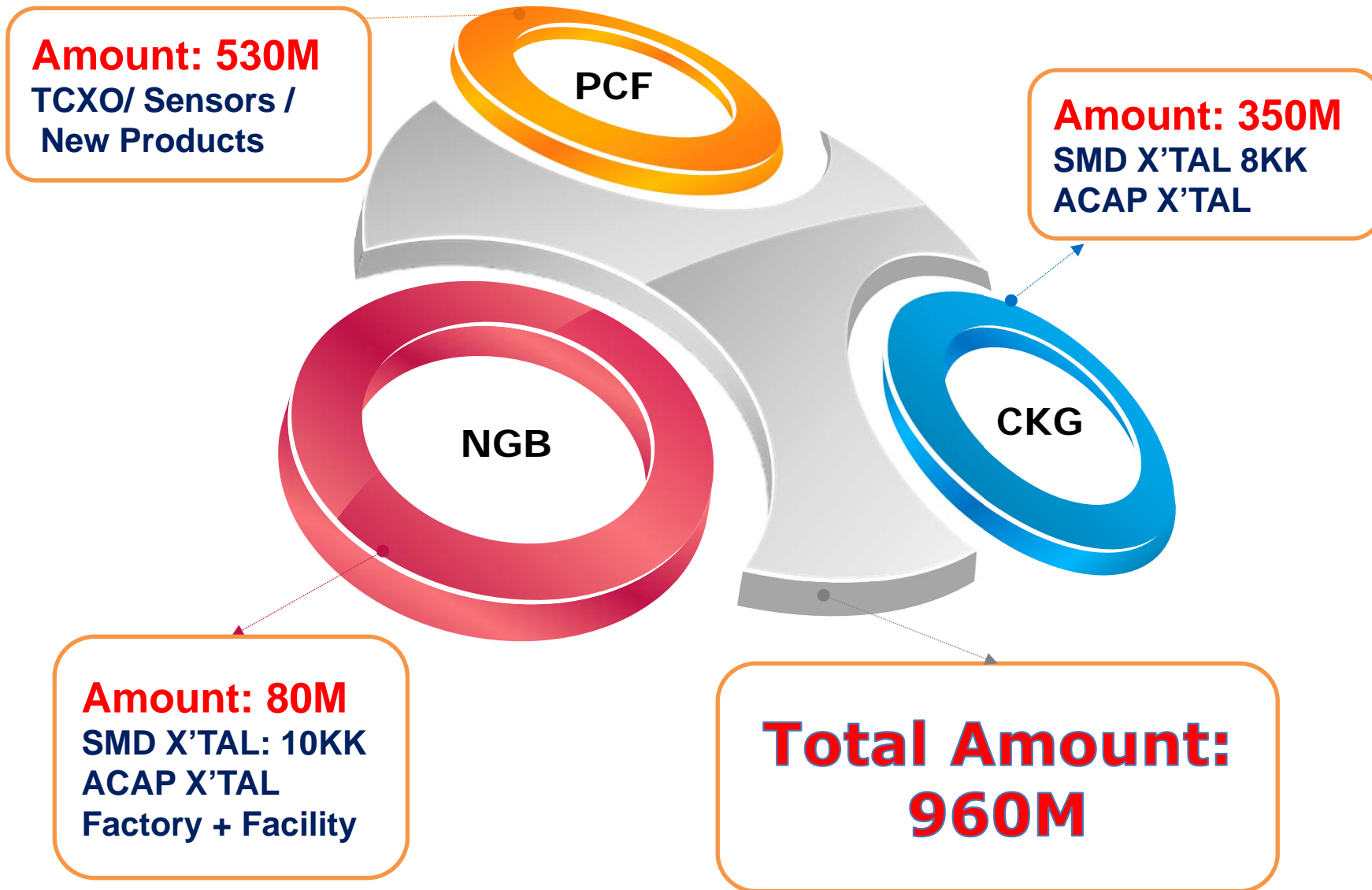
(Unit: \$NT)



	2011	2012	2013	2014	2015	2016
Earning Per Share	3.48	3.79	3.02	3.21	3.03	3.27(F)
Cash Dividend Per Share	2.2	2.2	2.2	2.5	2.5	-
Stock Price (4/E)	43.55	46.00	43.55	39.90	41.10	-
Payout Ratio(%)	63.22	58.05	72.84	77.88	82.51	-
Yields(%)	5.05	4.78	5.05	6.27	6.08	-

2017年資本支出計畫

(Unit: \$NT)

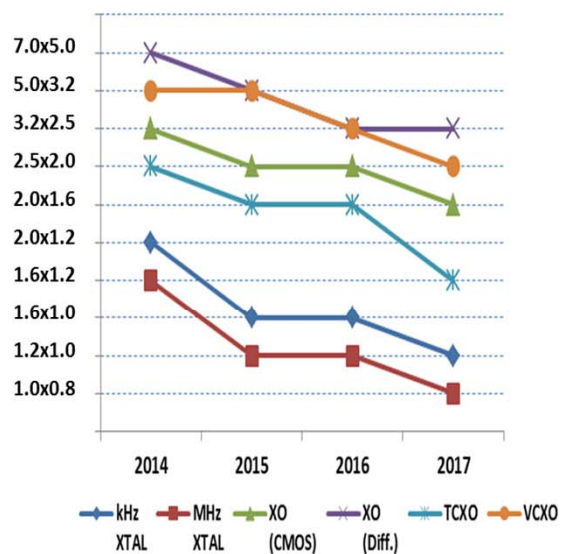


頻率元件發展趨勢

小型化、高精準、高溫、低相噪、高可靠性

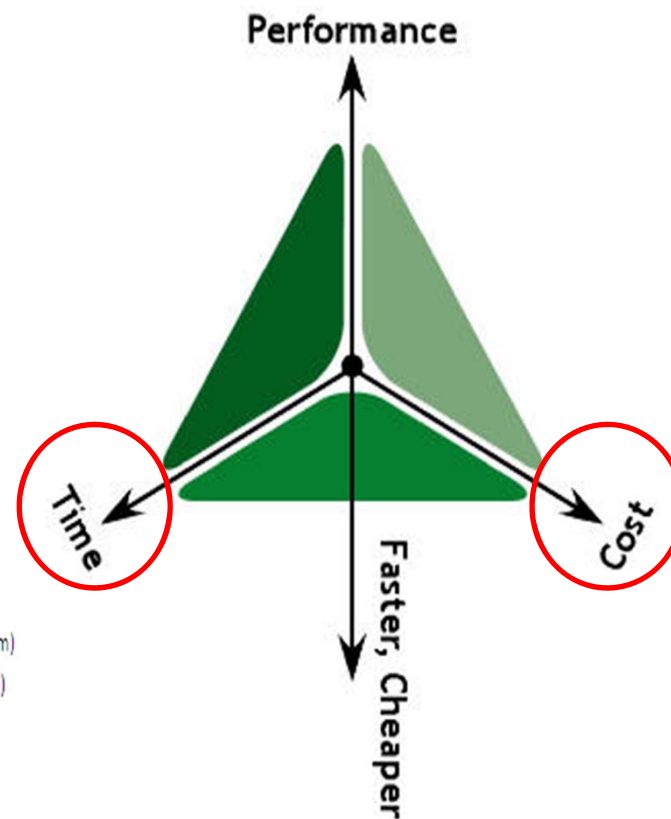
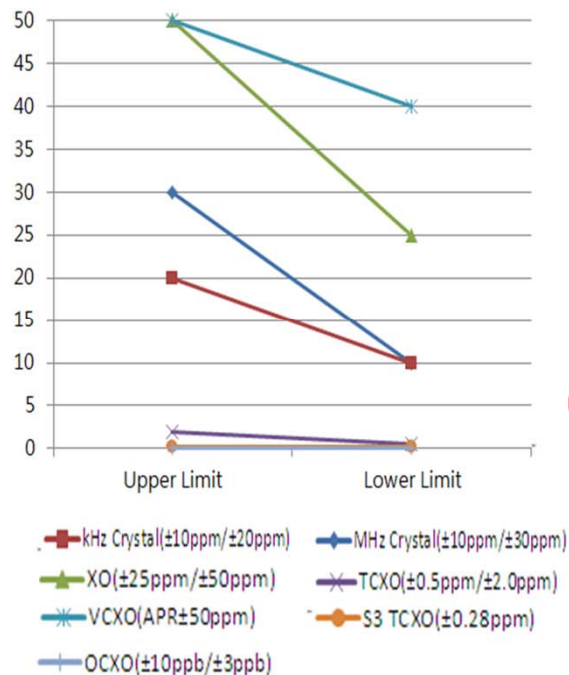
小型化

Size (mm)



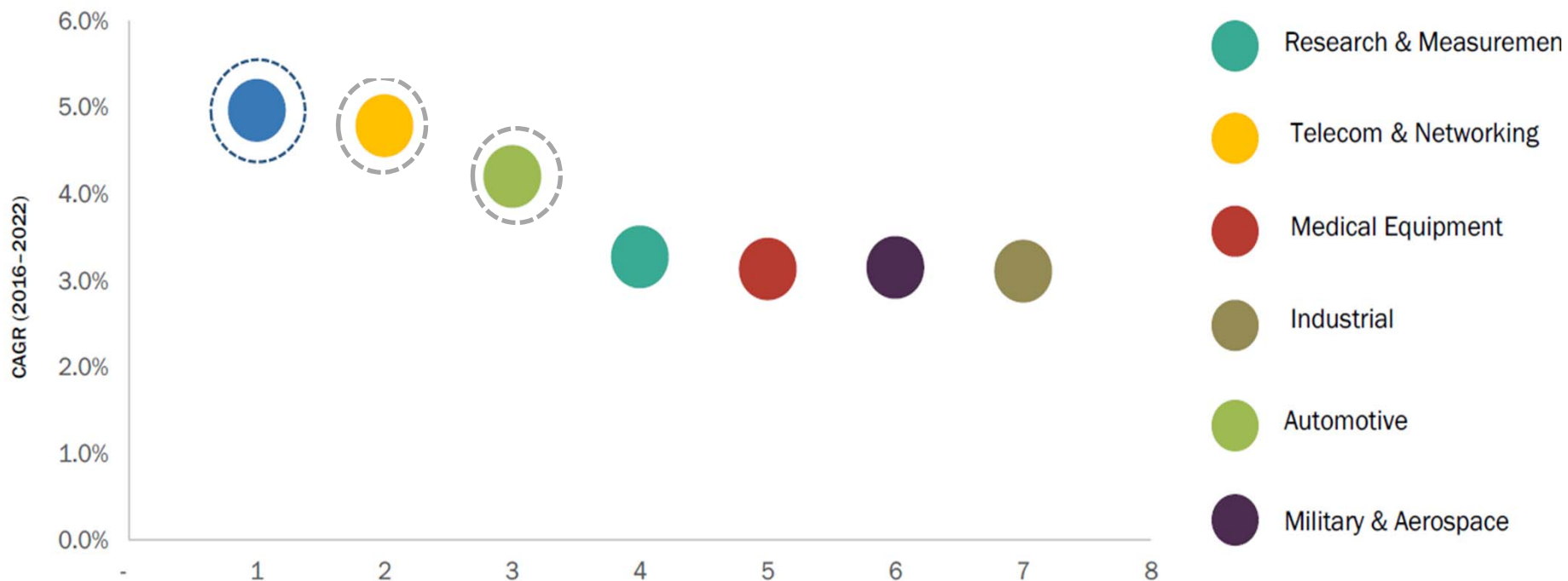
高精準

Stability (ppm)



各產業成長動力帶動新創廠商增加

消費性電子、通訊與網路設備、車用電子仍是相對成長快速的產業



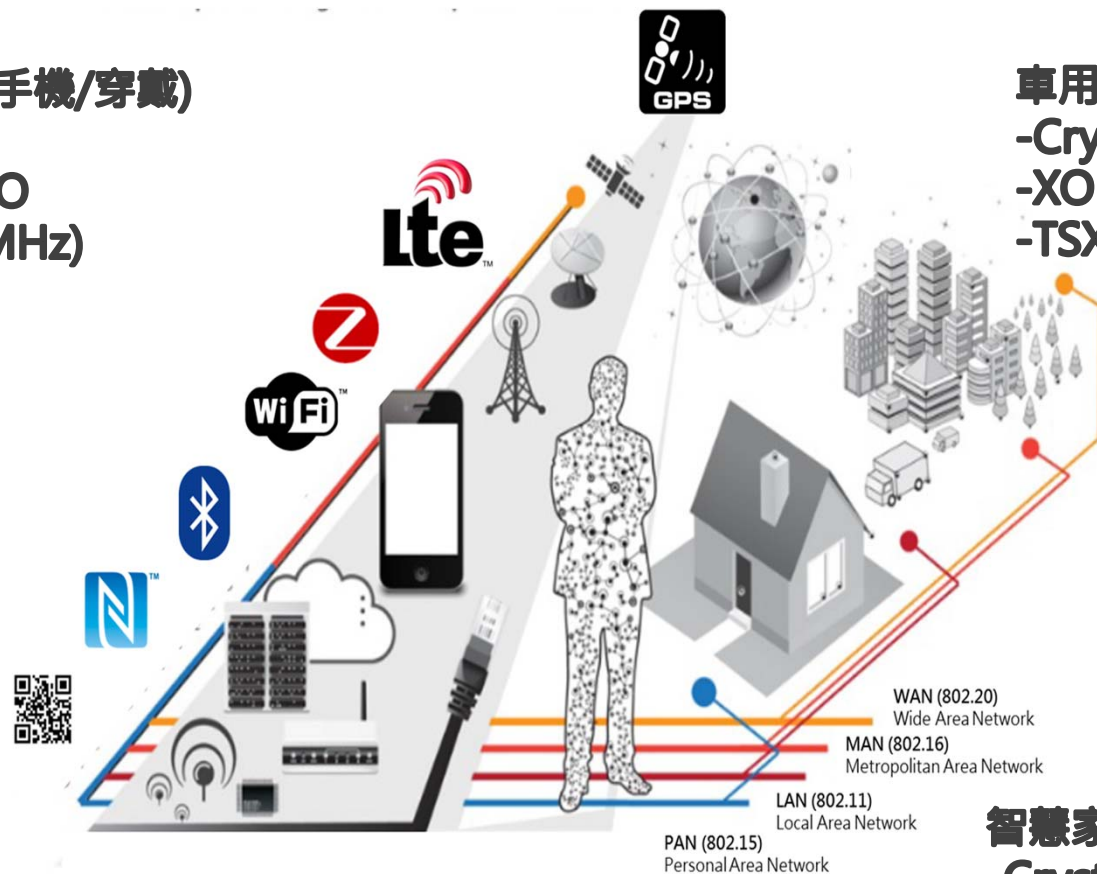
(Source: MARKETANDMARKETS)

消費電子(手機/穿戴)

- SENSOR
- TSX/TCXO
- Crystal(MHz)

車用電子

- Crystal
- XO
- TSX/TCXO



通訊設備、路由器、基地台

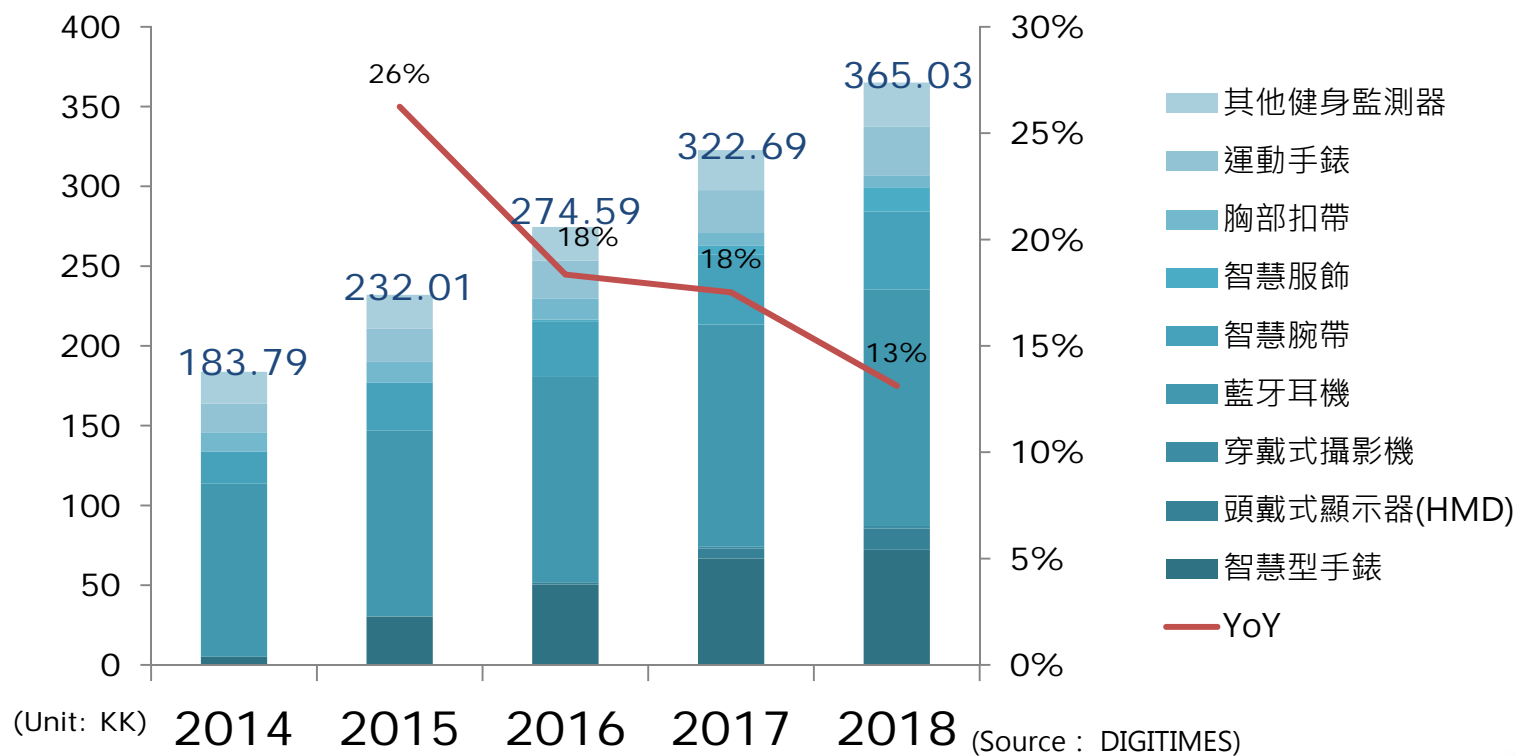
- XO/VCXO
- S3-TCXO
- OCXO

智慧家庭、VR/AR、無人機

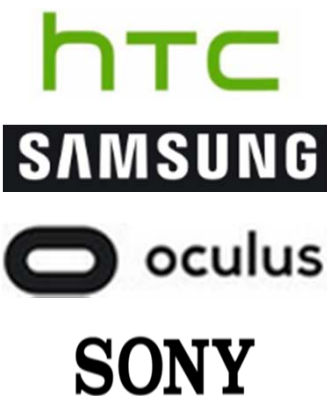
- Crystal
- XO
- TSX/TCXO

Source: IDC

智能穿戴裝置邁入成長期



Key Players

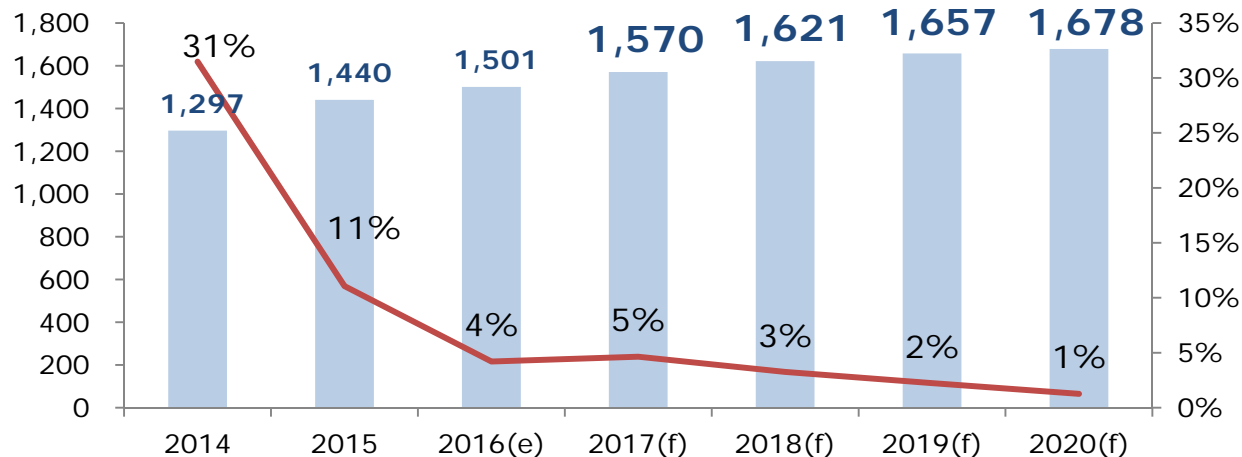


-2017年預估出貨量逼近3.2億台，智慧型手錶/手環
整體銷售成長快速



Smartphone需求維持約15億台/年

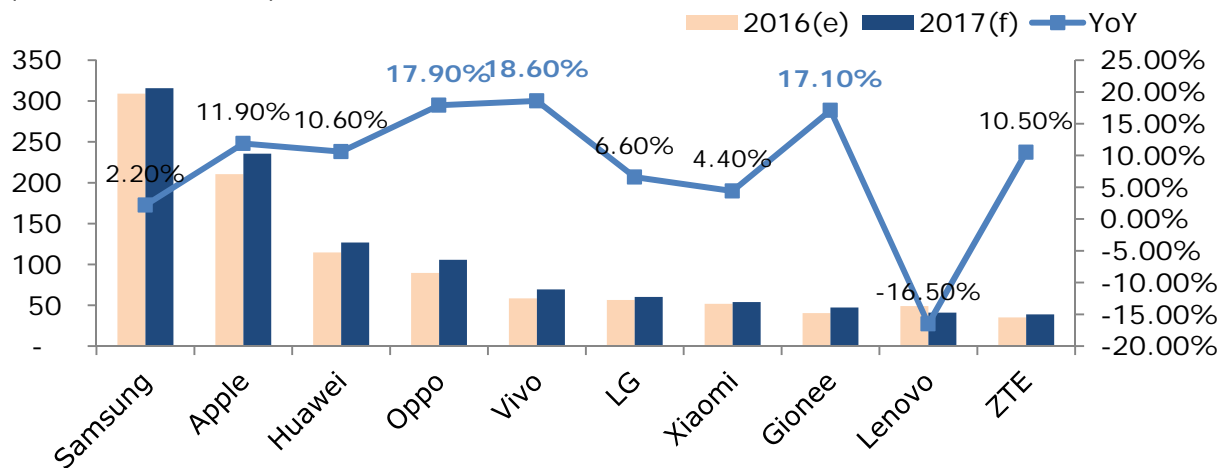
Worldwide Mobile Phone Market by Device Type · 2014-2020



-SAMSUNG、Apple的微幅衰退、中國手機市佔持續擴大

-Top 10中，陸系業者佔7席，Huawei/Oppo/Vivo分佔三至五名

(Source : DIGITIMES)



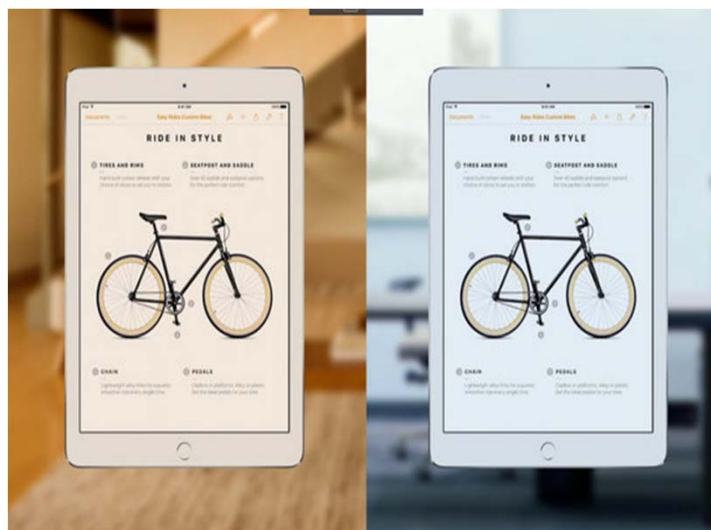
(Unit: KK) (Source : TrendForce)



PA22X
Invisible Window
Samsung Note7



PA22R RGB



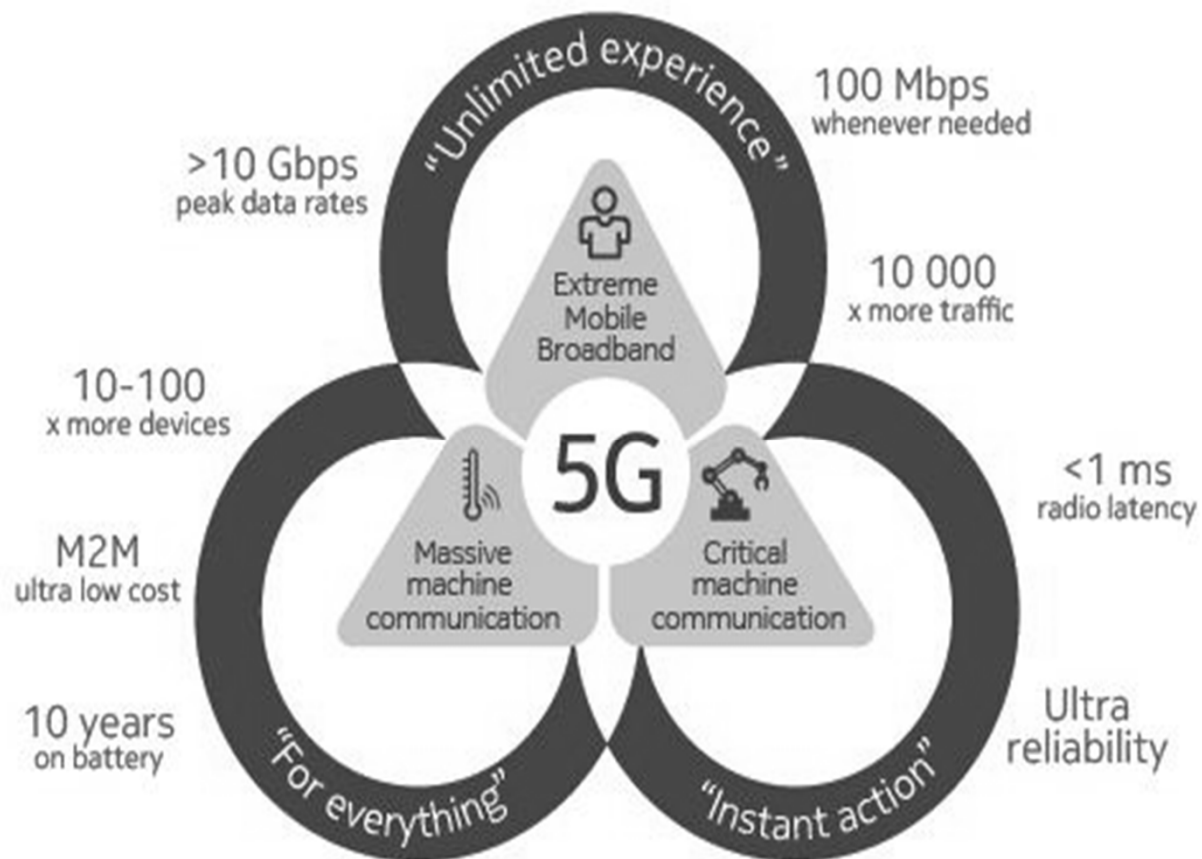
PA246 Slim Bezel
MI Mix



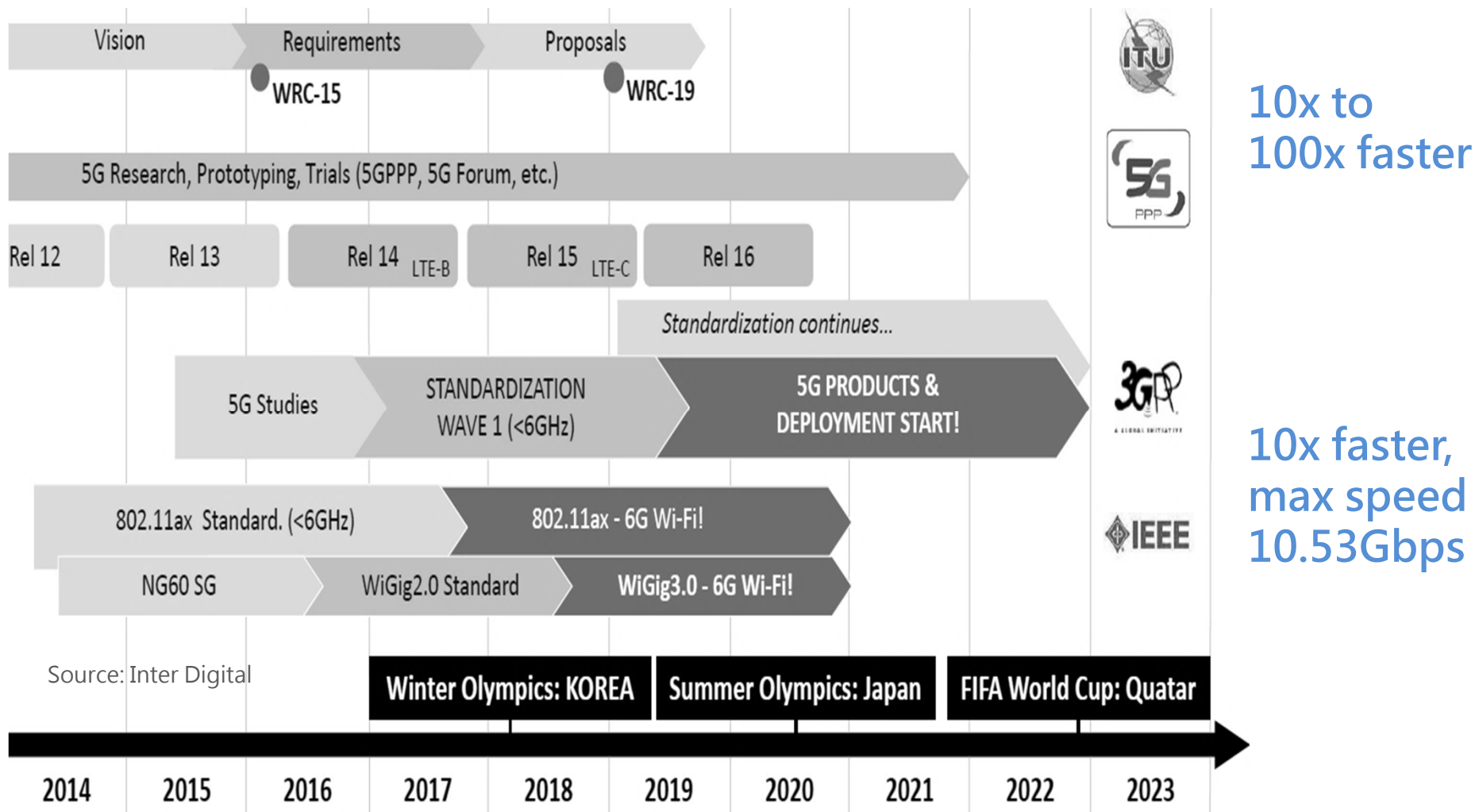
PAXXX
RGB+ToF



5G 效能需求

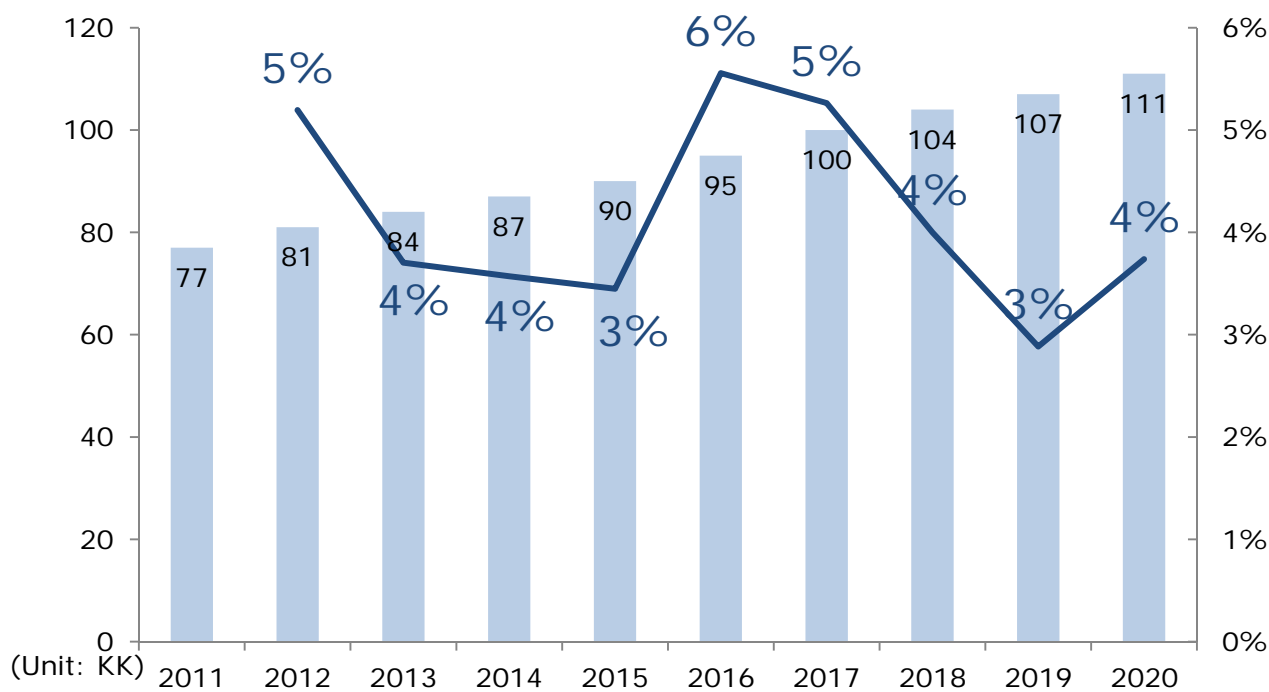
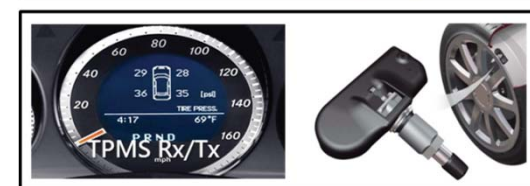
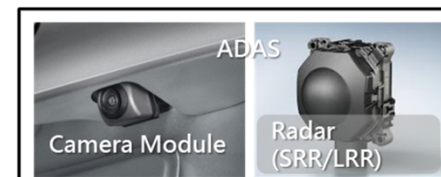


5G 發展進程



車用電子2017年仍將持續成長

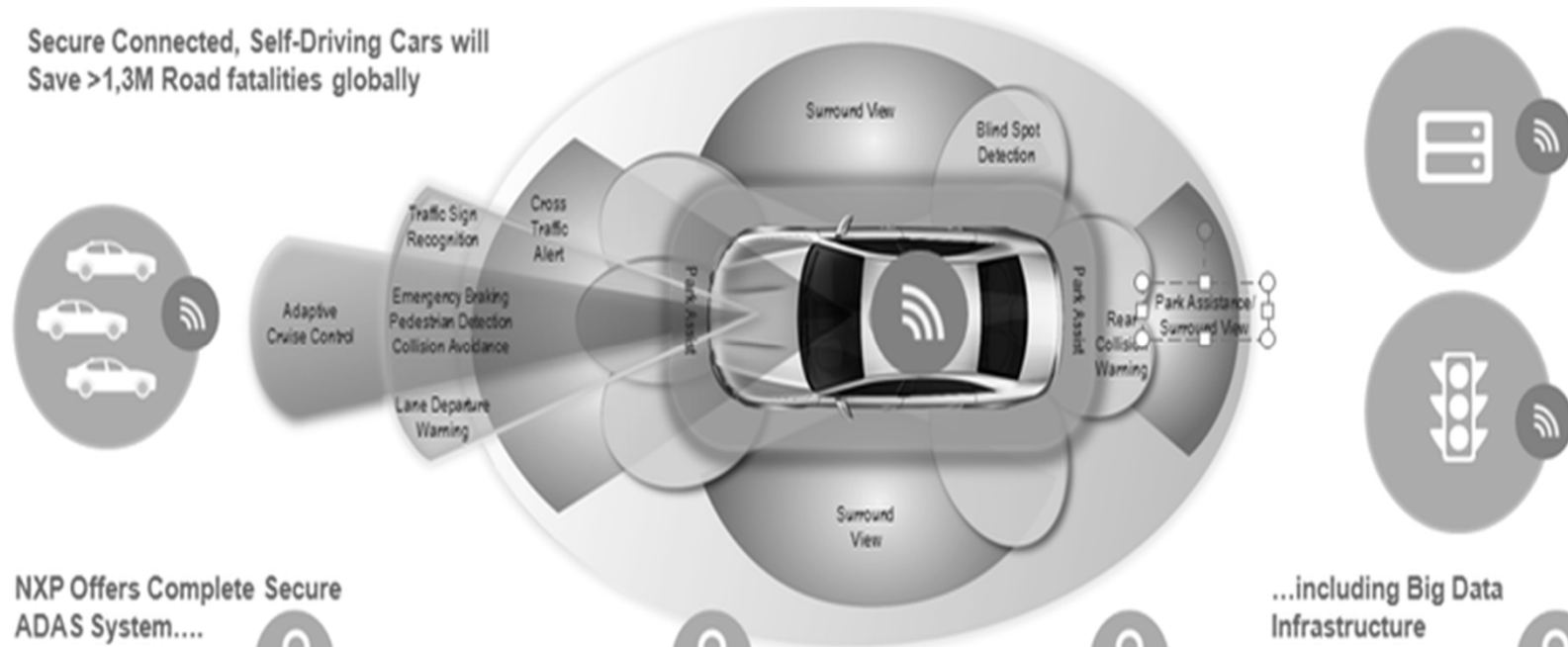
-汽車電子產品比重增加，新應用帶動零組件需求



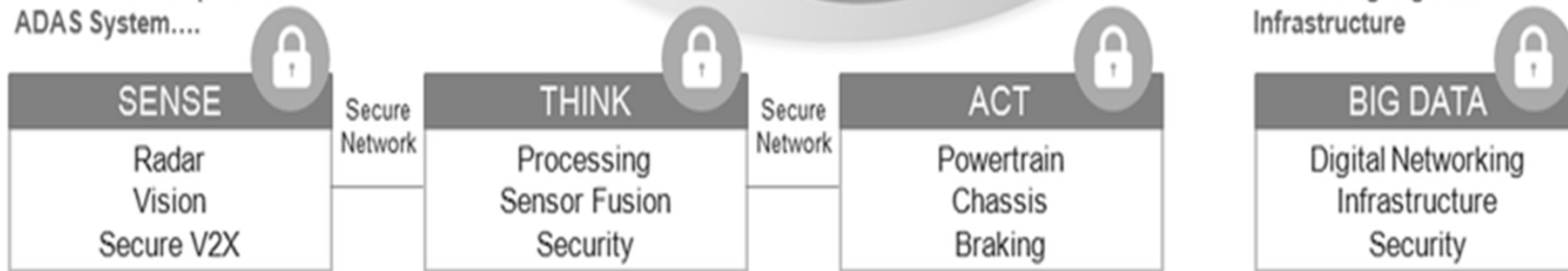
全球汽車銷售量預估，2011-2020

無人駕駛、車聯網、ADAS系統

Secure Connected, Self-Driving Cars will
Save >1,3M Road fatalities globally



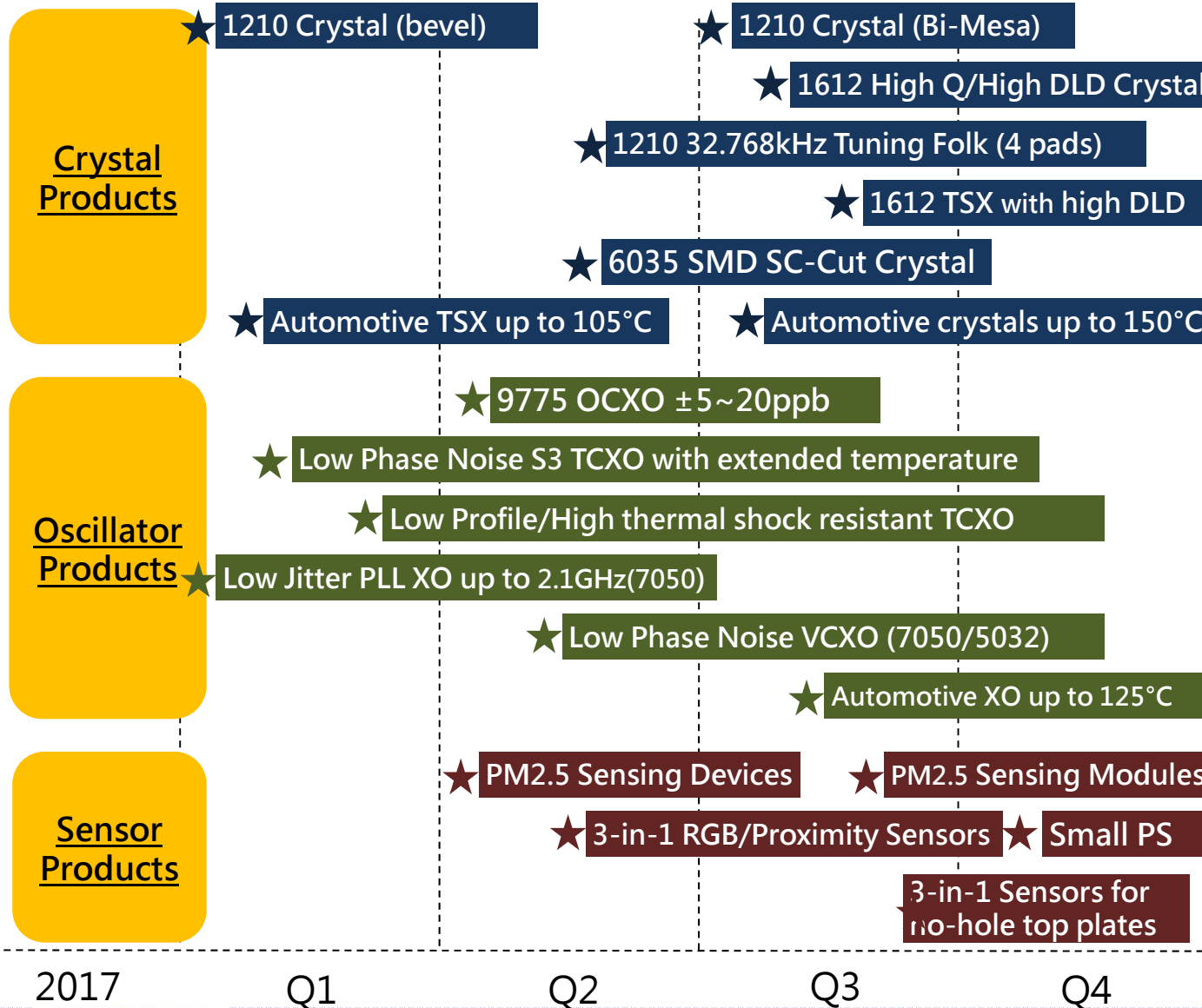
NXP Offers Complete Secure
ADAS System....



...including Big Data
Infrastructure



SECURE CONNECTIONS
FOR A SMARTER WORLD



Crystals

- Small, high performance crystals for cellphones
- Wide temperature range crystal and TSX for automotive applications

Oscillators

- Low phase noise XO, S3-TCXO, and OCXO for telecomm applications
- Thin/robust TCXO for high-end cellphones
- Wide temperature range XO and TCXO for automotive applications

Sensors

- Optical sensors for cellphone applications
- PM2.5 modules

2017

Q1

Q2

Q3

Q4

Think of Frequency, Think of

TXC

