

Nanya Technology

KGI Greater China Corporate Day 2017Q4

Presentation to Investors & Analysts, December 14th, 2017

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Safe Harbor

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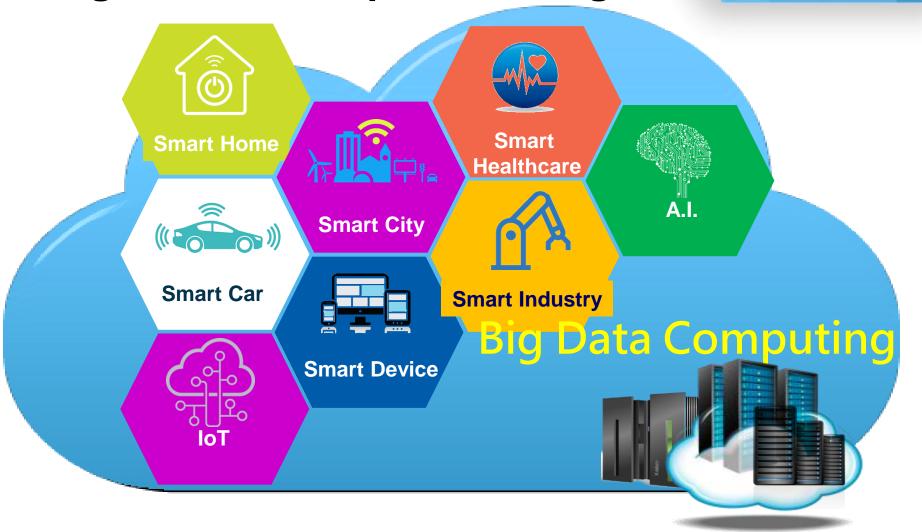
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Outline

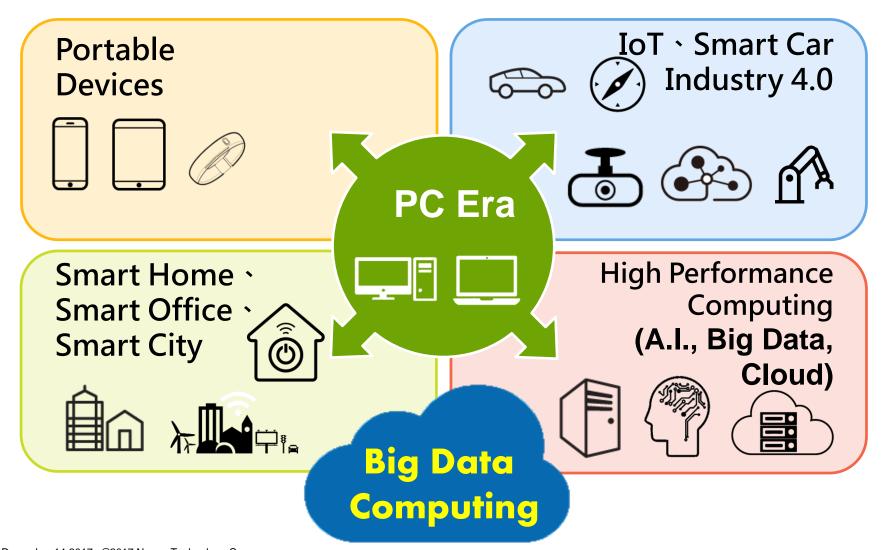
01.	DRAM Industry
02.	Business Strategy
03.	NTC Overview

Vigorous Development of Big Data Era

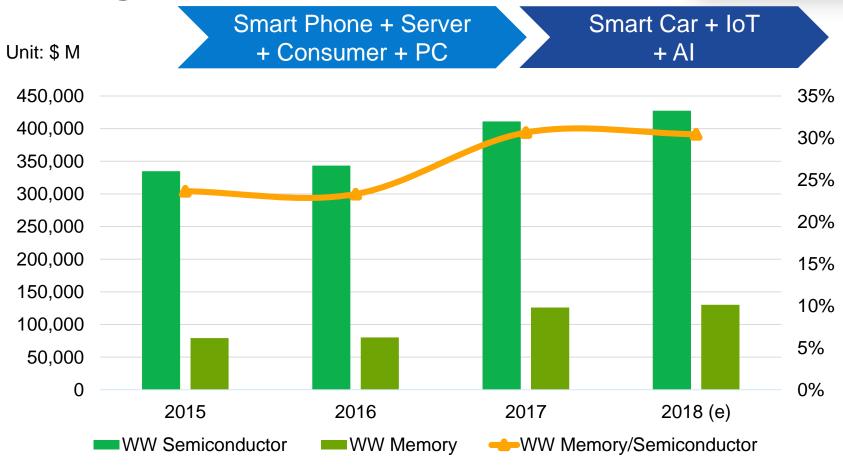


 AI, IoT, Smart Car and High Performance Computing are expediting the proliferation of semiconductor

DRAM Essential to Electronic Devices



Strong Momentum of Semiconductor Industry

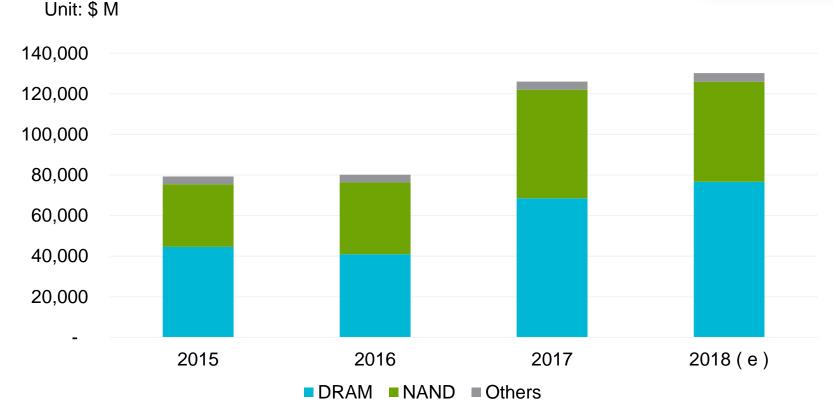


Source: Gartner Sep'17

- In 2017, semiconductor YoY revised upward to 20%, total revenue \$411.1B
- In 2017, Memory YoY revised upward to 57%, total revenue \$126B
- In 2017, Memory accounts for 31% of total semiconductor revenue



Memory Industry Growth Solid

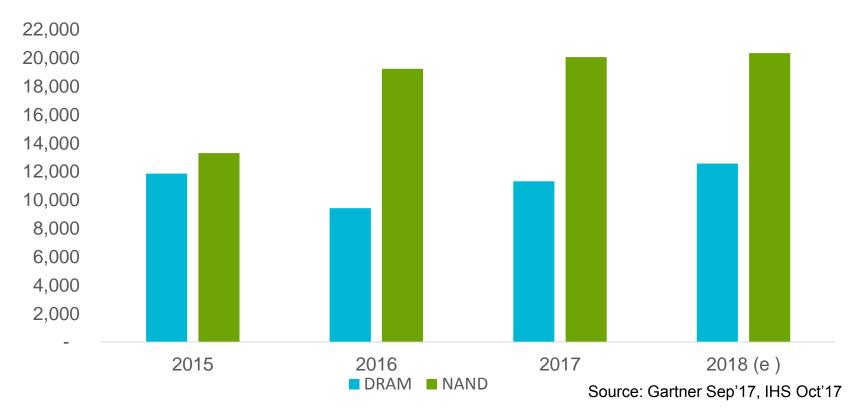


- Source: Gartner Sep'17
- In 2017, Memory annual revenue will exceed \$120B mark
- In 2017, 67% YoY and \$68.5B revenue of DRAM is forecasted
- In 2017, 57% YoY and \$53.5B market size of NAND is predicted
- DRAM + NAND consisting of 97% memory market



Memory Industry Capex



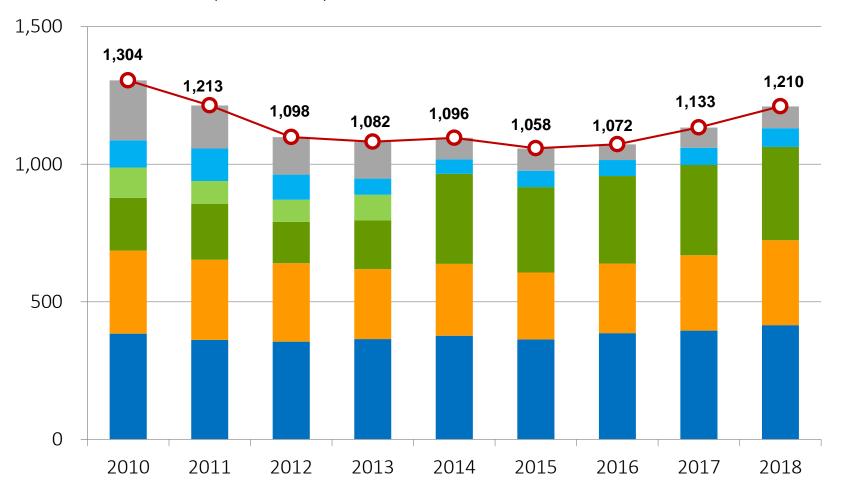


- Significant NAND capex expected for 3D NAND capacity ramp-up
- DRAM capex mainly for advanced technology conversion and maintaining current capacity level
- DRAM capacity addition expected to come on-line from 2H'18
- Annual bit growth forecast: DRAM 20%~25%, NAND 40%~45%



WW DRAM Capacity

WW DRAM Wafer Start (K/M, 300mm)



■ WW DRAM average monthly capacity will moderately increase to 1,210K/M in 2018

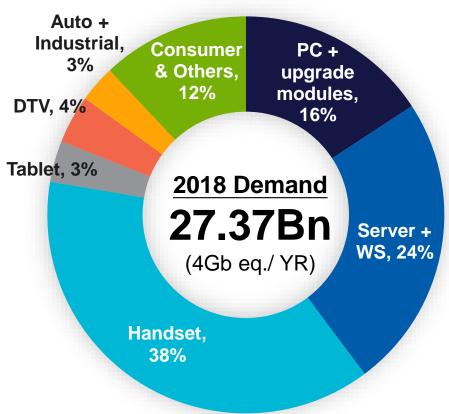
Source: DRAMeXchange, inSpectrum, IHS, NTC MKT



Demand Forecast for 2018

23% YoY bit demand growth forecasted for 2018

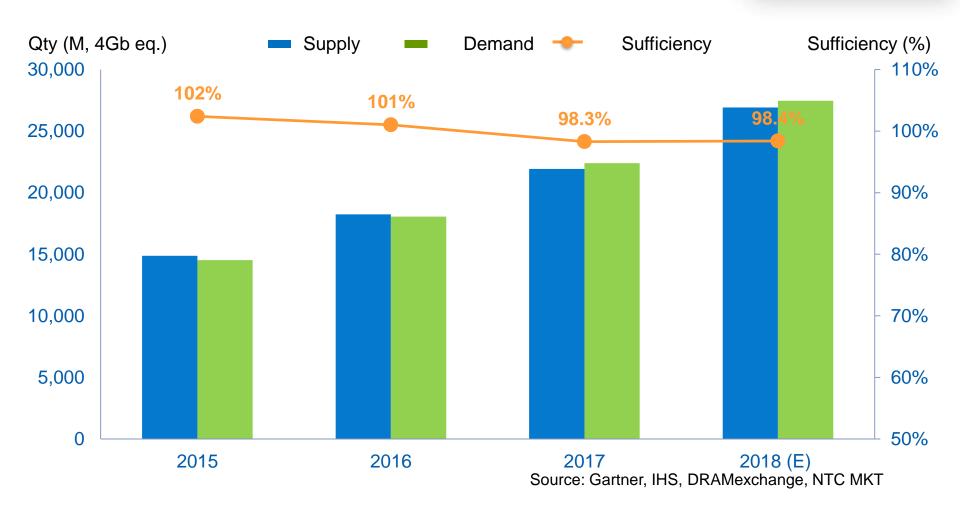
Unit: QTY(Mu) C/B(GB)		QTY	C/B	Bit Growth
Cloud	Server + Work Station	17.4	188	34%
P2P	РС	255	6.0	4%
	Tablet	155	3.0	13%
	Smart phone	1,600	3.2	22%
	TV	225	2.4	17%
M2M	Auto 🧬	95	1.8	101%



Consumer & others includes: STB, Storage (HDD/SSD), Printer, Game Console, Graphic card, DSC, IP Camera, Industrial, smart watch, etc.



DRAM Demand/Supply Sufficiency



Favorable DRAM market conditions expected to continue throughout 2018

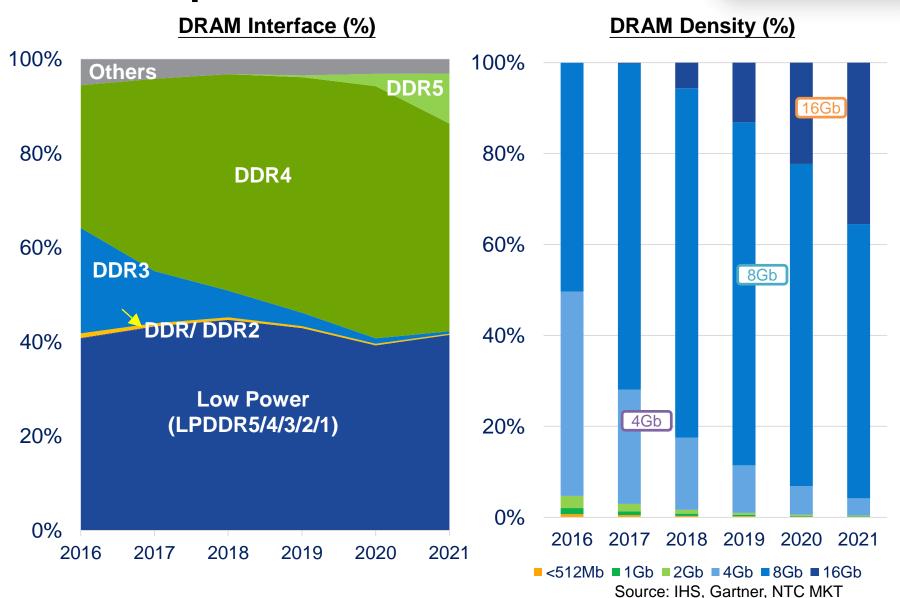


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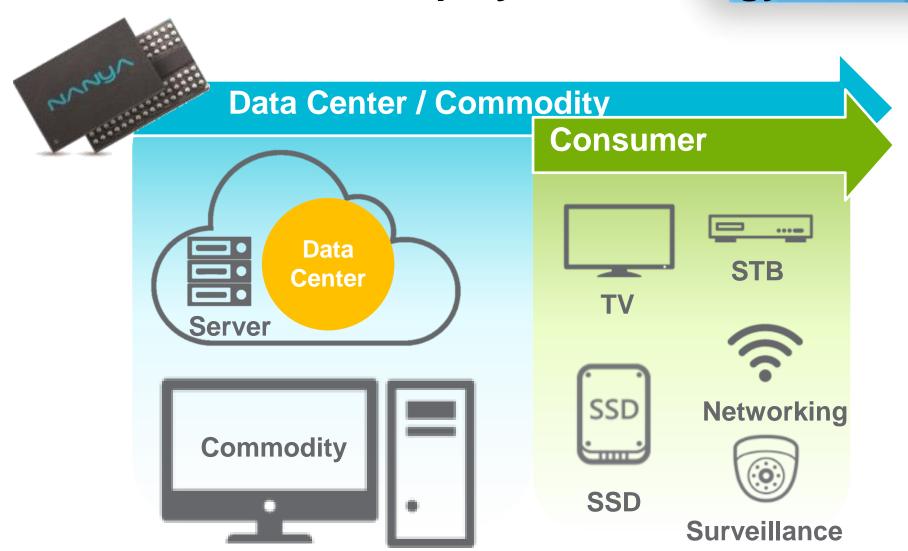
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DRAM Specification Trend Forecast



20nm DDR4 8Gb Deployment Strategy



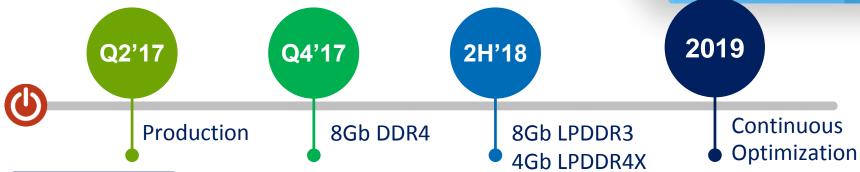
Comprehensive DRAM Product Portfolio

Technology	30/42nm	20 nm		
Spec.	DDR/DDR2/DDR3LPDDR1/LPDDR2/LPDDR3Custom	DDR3/DDR4LPDDR3/LPDDR4Custom		
Density	512Mb/1Gb/2Gb/4Gb	1Gb/2Gb/4Gb/6Gb/8Gb		
Grade	Commercial / Industrial / Automotive			
Lifecycle	Long-life and stable supply			

■ 20nm enable DDR4 and LPDDR4 offerings to fully fulfill diversified requirements







20nm Production Plan

- Q4'17
 - 38K/M wafer start
 - >20K/M wafer output
 - Bit output to exceed 30nm node in December

Product Schedule

- Q2'17: 4Gb DDR3 verified and mass production
- Q4'17: 8Gb DDR4 mass production, shipment from December
- 2H'18: 8Gb LPDDR3 & 4Gb LPDDR4X rollout

Monthly Capacity Mix

38K/20nm + 30K/30nm



NTC as Key DRAM Supplier

Advanced Technology

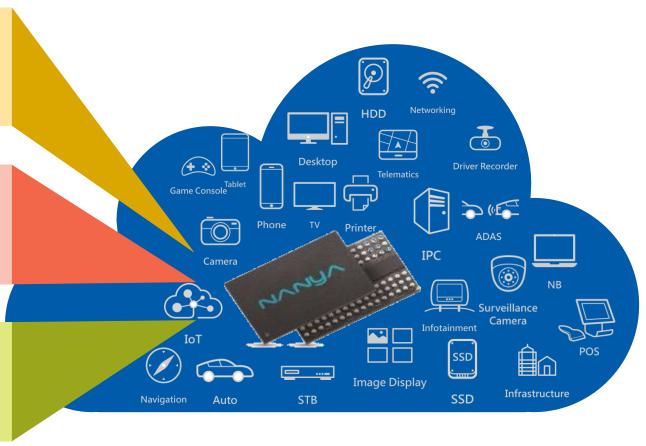
20nm in production and new generation technology development

New Product Design

DDR4/LPDDR4
Custom Products

New Product Development

Product Verification
SiP (System in Package)
Auto & Industrial





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Q1'17 ~ Q3'17 P&L Results

	NANYA			
NT\$B: Billion	Q3 2017	1H 2017	Q1- Q3 2017	
Revenue	13.3B	24.8B	38.1B	
Gross Profit Gross Margin (%)	5.9B 44.2%	10.4B 42.0 %	16.3B 42.8 %	
Operating Income Operating Margin (%)	4.2B 31.9 %	8.0B 32.3 %	12.3B 32.1%	
Non-operating Income	4.3B	3.3B	7.6B	
Net Income Net Margin (%)	8.5B 64.3 %	9.8B 39.3%	18.3B 48.0%	
Capital	27.5B	27.5B	27.5B	
EPS (NT\$)	3.09	3.55	6.65	

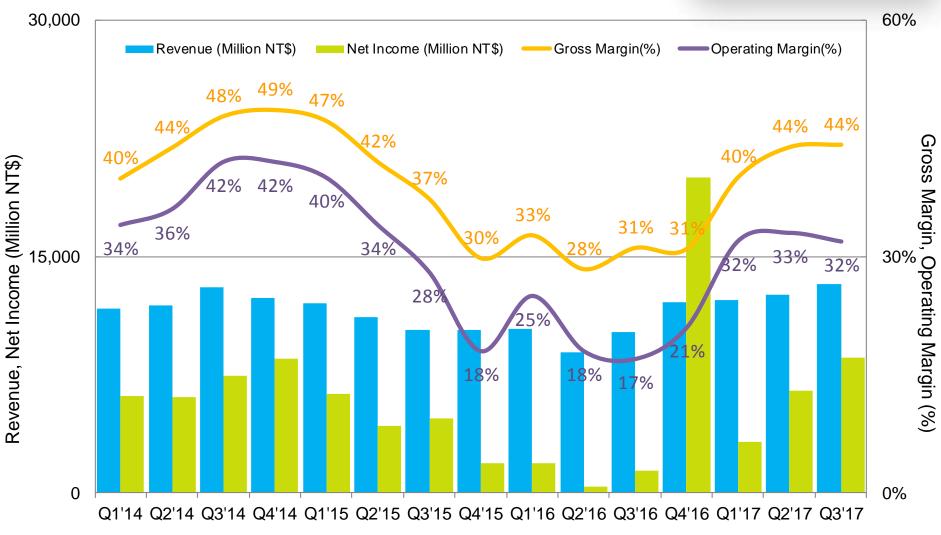
Company highlights

- 1Q'17 Net Income of NT\$ 3,275M, Net Margin 26.8%, EPS NT\$ 1.19
- 2Q'17 Net Income of NT\$ 6,490M, Net Margin 51.4%, EPS NT\$ 2.36

^{*} Financial numbers are reviewed by CPA



Financial Highlights



■ 20nm ramp-up will further enhance operating results



Q1'17 ~ Q3'17 Cash Flows

(Unit: Million NT\$)	Q1~Q3 2017	2016	2015
Beginning Balance	9,102	3,104	7,268
Cash from Operating Activities	13,835	15,945	18,522
Capital expenditures	-26,530	-22,336	-3,842
Long-term & Short-term loans	-2,439	-6,351	-14,382
Investments and others	30,572	18,740	-4,463
Ending Balance	24,540	9,102	3,104
Free Cash Flow (1)	-12,695	-6,391	14,680

⁽¹⁾ Free Cash Flow = Cash from operating activities – Capital expenditures



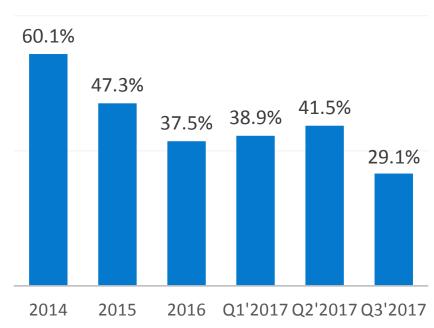
Monthly Revenue & Debt Ratio

Y2017 Monthly Revenue

Net operating revenues (Million NT\$) 5,745 4,067 4,193 4,317 4,193 4,115 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov

 Successful 20nm ramp-up resulting in revenue growth in Q4'17

Debt/Asset Ratio

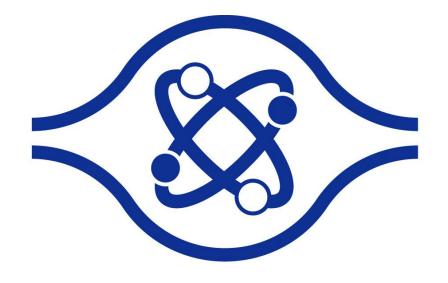


- Debt/Asset ratio down to 29.1% at the end of the 30th of September, 2017
- Debt ratio to be further reduced in Q4'17 by repaying FPG borrowings and Bank loans



Key Takeaways

- Tight supply continued into Q1'18, solid ASP movement
- 2018 DRAM market in balance and healthy expected
- Nanya Technology Operation Focuses:
 - Mid-teen bit growth in Q4'17 and 20nm bit output exceeding 30nm in December expected
 - 20nm capacity ramp-up, ~45% YoY bit output in 2018 forecasted
 - Launch 20nm DDR4 8Gb to enhance participation in Server segment
 - Expand 20nm product line up for diversified applications



N/NUJ/N Thanks & Questions