



TaiSol Electronics

7th TAIWAN CEO WEEK ON AIR

NDR Investment Conference

Apr. 6-10, 2020

A background image showing a group of people, including a woman with glasses and a ponytail, looking at a sculpture. The image is dark and serves as a backdrop for the title.

Safe Harbor Notice

This Presentation contains forward-looking statements and is subject to risks and uncertainties. Actual results may differ materially from those contained in the forward-looking statements. The Projections should not be interpreted as legally binding commitments, but rather as flexible information subject to change occasionally.



Agenda

- About TaiSol
- Industry Trends & Opportunities
- New Market Segment for Business Growth
- Financial Performance
- Q & A

About TaiSol





Welcome to TaiSol

Total Thermal Solution

Heat Dissipation and Cooling Applications

[TaiSol Electronics](#), a leading company of advanced thermal management solution for a variety of industries. TaiSol's effort currently focused on 5G applications both in LTE-compatible base station and 5G-compatible smartphone through innovative heat dissipation technology while 5G is accelerating rolling-out globally. TaiSol successfully take the lead of 5G new applications and new market opportunities in creating sustainable growth in 2020s. [Full-year 2019 sales increased 35% to NT\\$4.67 billion from NT\\$3.46 billion last year. Full-year adjusted EPS were NT\\$3.38, compared with NT\\$1.80 in 2018.](#)

About TaiSol

Founded : 1994/9/23

Chairman : YU,CHING-SUNG

Public Listing : TWSE, 2013/12/13

Thermal Solution

- Air Cooling
- Heat Exchanger
- Heat Sinks
- Liquid Cooling
- Air/Liquid Cooled Chasses & Enclosures
- Two phase Cooling
(Heat pipe & Vapor Chamber)
- Thermosyphon Assisted Enclosure

Industries

- Consumer Electronics
- Enterprise Computing
- Telecommunication
(5G Implementation)
- Automotive Appliances
- New Energy Vehicles
- Electrical Rail Transportation
- Mobile Electronics
- Medical/ Industrial

- Global Operations :
- Taipei Head Quarter
 - China R&D and Manufacturing
 - U.S. & Japan Branch Office
 - Global Distributors Network

Milestones & Performance

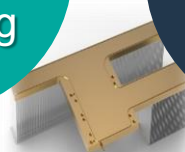
1994
Founded



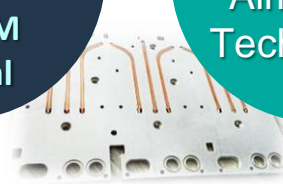
2000
Expanding



2010
Growing



2013
IPO in TW
US\$24M
Capital



2014~
Aiming to
Tech Trend

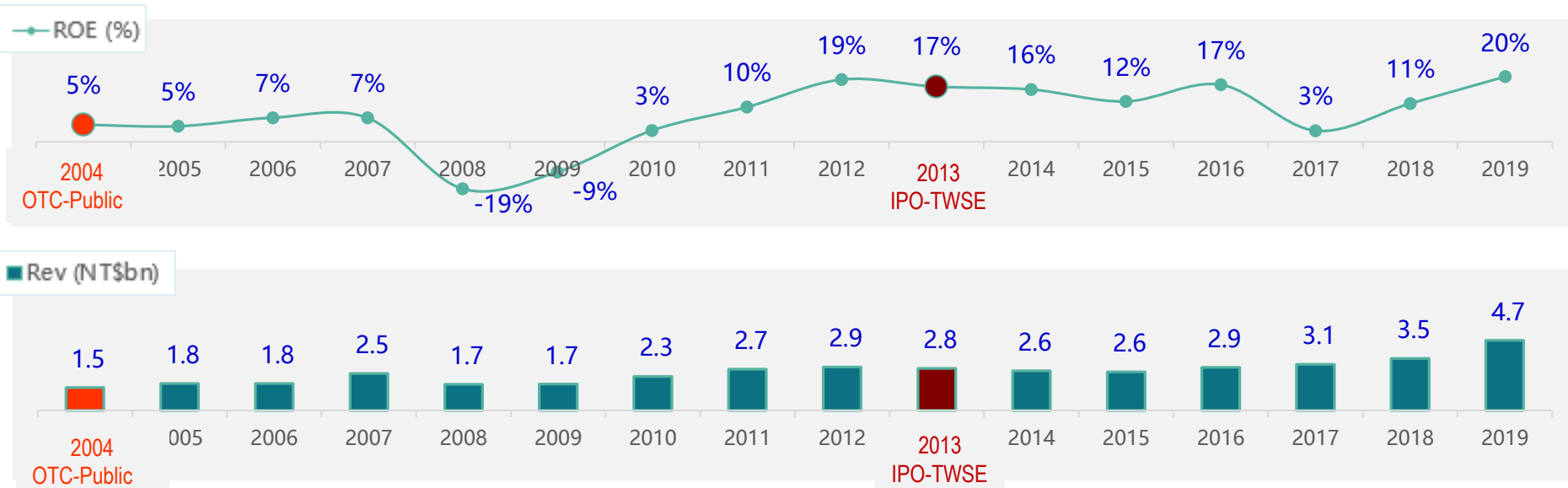


Develop Product Portfolio
of Heat Transferring and
Dissipation Solutions in
various of Industries

Self-Design & Manufacturing of
Heat Pipes Obtained
Qualification of Dell and HP

Extend Cooling Solutions
in Enterprise, Tele-com,
Industrial-scale, and
High-Performed Electronics

Offering **High Power Thermal Management Solution** to Future Front-Edge Technology



Aligning Business with Market Trends



Consumer Electronics

PC
Smartphone
Tablet/Mobile Devices
Gaming/Projector

ICT Technology



Enterprise Computing

Server System
Data Center
Cloud Computing
Work Station

*5G Network
& IoT Application*



Telecom

5G/4G Base Station
Telecom Data Center
Network Equipment
AIoT Devices



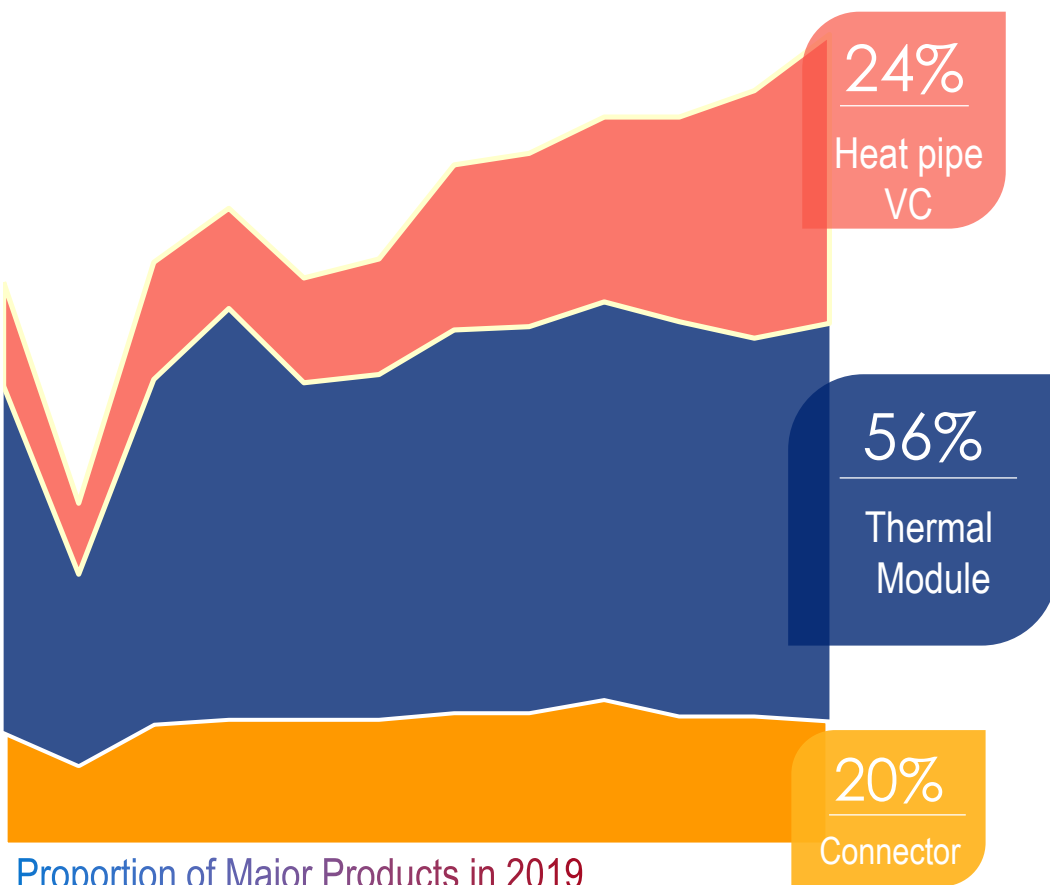
Industrial Application

LED/Lighting
Renewable Energy- Transportation
In-Car Media Platform
IGBT Inverter Power-Module

*IIoT across
the industries*



Revenue Distribution & Growth -- by product --



	2018	2019	
Smartphone	2%	9%	▲ 507%
Others	16%	15%	▲ 27%

	2018	2019	
Telecom	13%	18%	▲ 87%
Server	9%	9%	▲ 33%
Others	39%	29%	▼ 3%

	2018	2019	
Notebook	21%	20%	▲ 29%

2019 Sales Revenue NT\$ **4,669,367,414**

Growth **35%**

Industry Trends & Opportunities



5G Market in China

China's 5G market revenue will amount to approximately ¥560 billion yuan in 2020 and is expected to grow up to ¥4.35 trillion yuan by 2030. The market revenue is predicted to grow the most in 2021.

600 Million connect

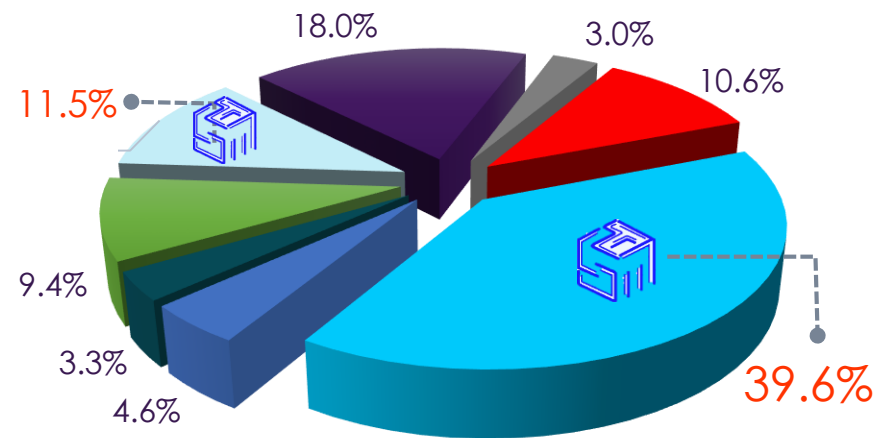
5G connections by 2025
(the most of any nation)

\$173+ Billion invest

5G network invest by 2025
(most on 5G base station & equipment)

550,000+ Units BS

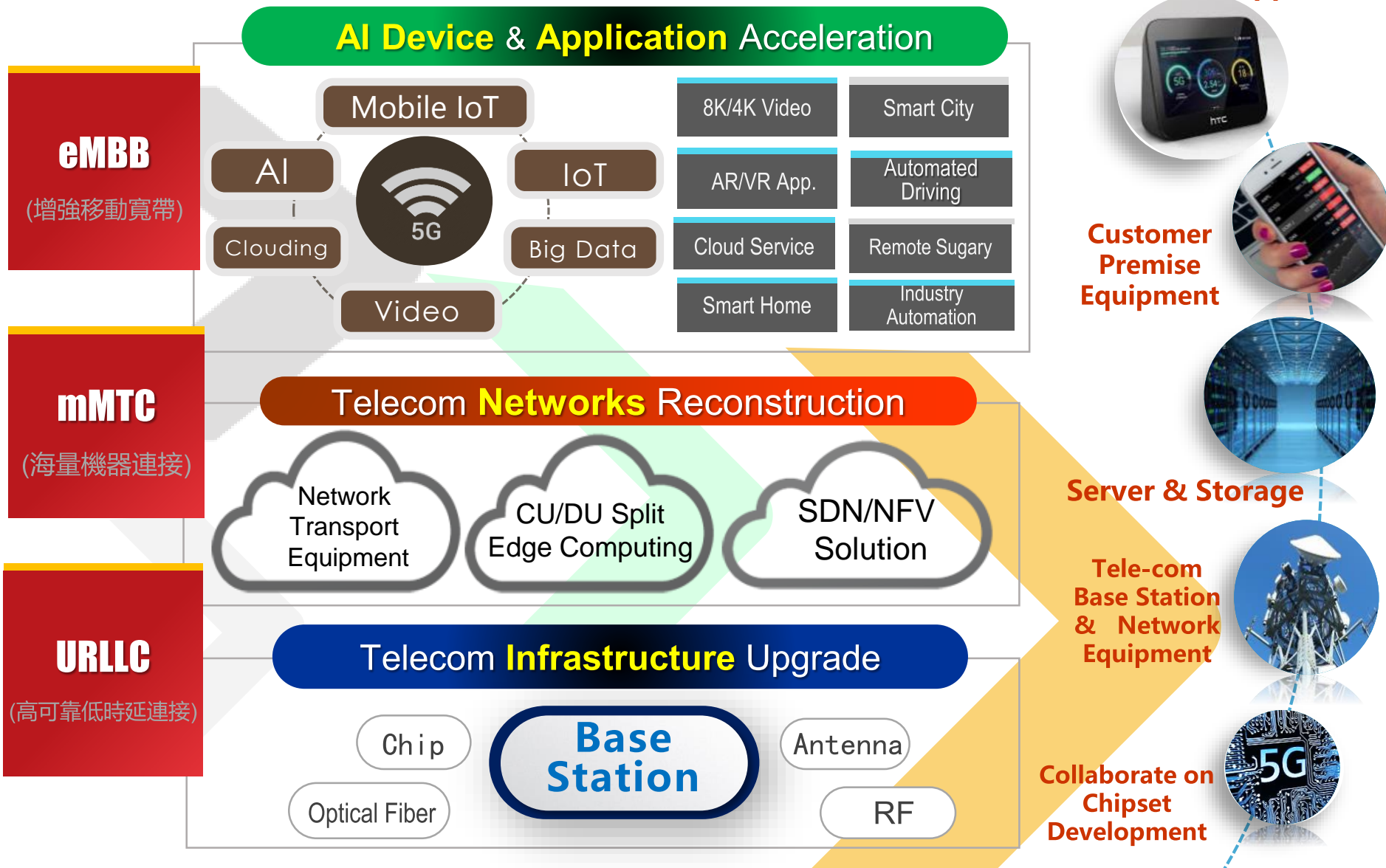
5G base stations running by 2020
(three major telecom operators)



Item	Proportion of investment %
Base Station Antenna 基站天線	3.0%
Base Station Radio Frequency 基站射頻	10.6%
Communication Network Equipment 通信網絡設備	39.6%
Optical Module 光模塊	4.6%
Optical Fiber & Cable 光纖光纜	3.3%
Network Planning & Operation 網絡規劃運維	9.4%
System Integration & Application Service 系統集成與應用服務	11.5%
Others 其它	18.0%
Between 2019 and 2025	¥1.2 trillion

Source: GSMA, CIICT, and Qianzhan Industry Research Inst, 2019

5G Applications & Business Opportunities





New Market Segment for Business Growth

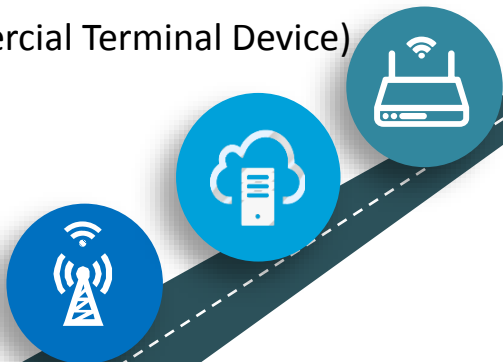
Market Segmentation & Product Positioning



5G Implementation

Dong Guan TaiSol

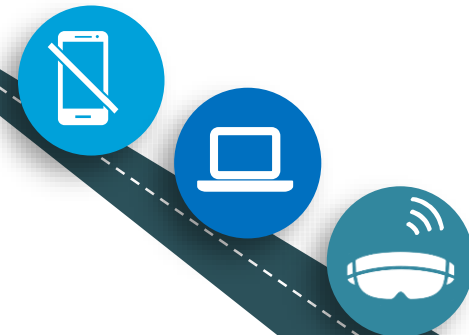
- Telecommunication Base Station
- Server, Storage and Networking
- Hyperscale Cloud Computing
- Customer-Premise Equipment
(Commercial Terminal Device)



Mobile Electronics

Suzhou TaiSol
Siyang TaiSol

- Smartphone
- Ultra-thin Tablets and Notebooks
- Wearable Device
- Smart IoT-Connected Device



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Driving Growth with next-era Applications

Telecom Base Station Network Equipment



- Wireless Access Equipment
- Switching Equipment
- Transmission Equipment

End-Devices (CPE) & Applications



- Smartphone
- Wearable Device
- Smart Network
- Mobile Smart Hub/Device

Telecom Base Station Network Equipment



- Wireless Access Equipment
- Switching Equipment
- Transmission Equipment

THERMAL ENCLOSURE FOR
HIGH POWER SYSTEMS

THERMOSYPHON
INTEGRATED
HEAT SINK

(ACTIVE ANTENNA UNIT,
AAU EMPLOYED)

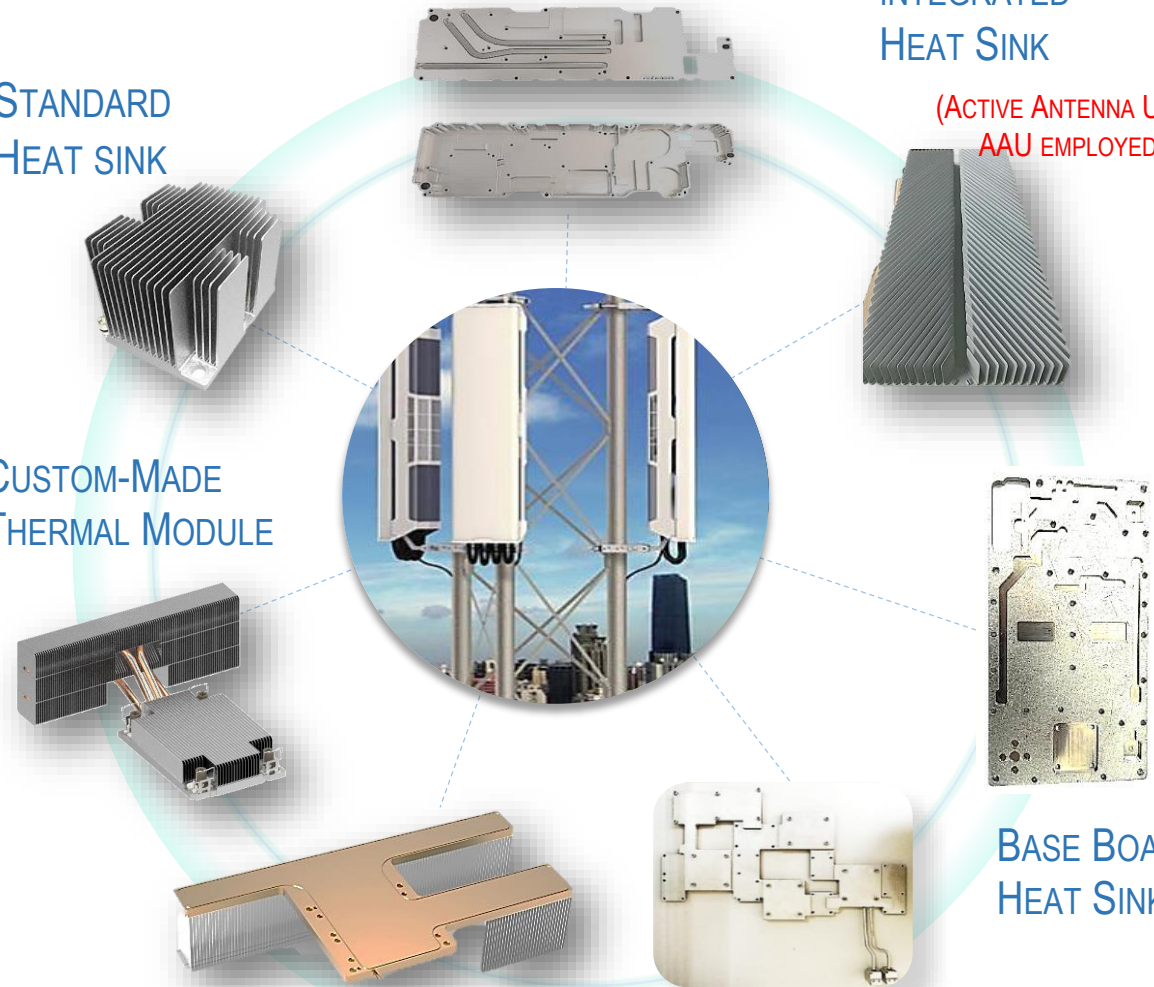
STANDARD
HEAT SINK

CUSTOM-MADE
THERMAL MODULE

BASE BOARD
HEAT SINK

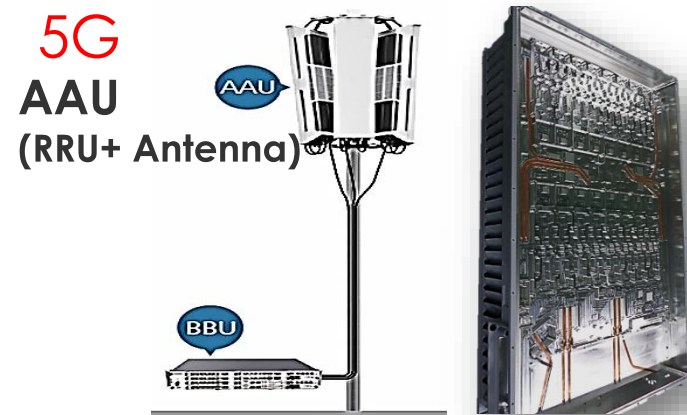
VAPOR CHAMBER
THERMAL MODULE

LIQUID COOLING
SYSTEM



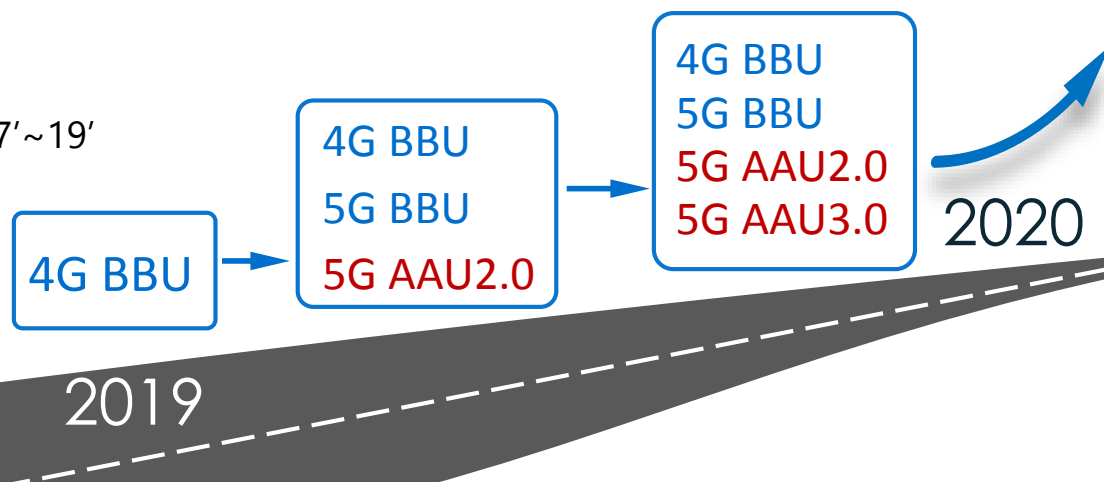
5G Thermal Solution in Telecom

- Main Customer shipped 50,000 sets of AAU2.0 in 2019, (1Base Station assembled with 3 AAUs) and expected to win one-third shares of 5G Base Station in China.
- AAU3.0 technical details fixed among Jul. to Sep. 2019, and final specification fixed on Nov. 2019, TaiSol maintain first priority of customer's qualified suppliers. Tooling modification keep on going and performing pre-mass production on Q1,2020.
- China telecom supplier postponed AAU3.0 business until Dec. 2019, batch production in Q1,2020 and mass production in Q2. Main Customer total demands expanding to 5,000sets/day.



💡 China pushes forward with 5G amid coronavirus disruption, three major telecom operators have announced that they will be charging on with plans to build at least 550,000 new 5G base stations up by the end of 2020.

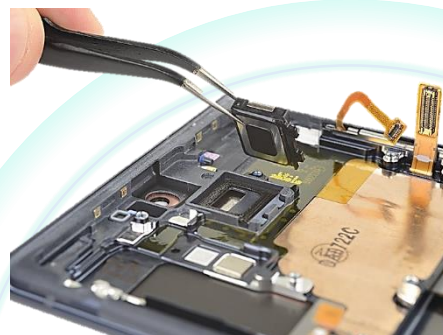
TaiSol Awarded "Best Delivery Supplier" since 17'~19'



End-Devices (CPE) & Applications

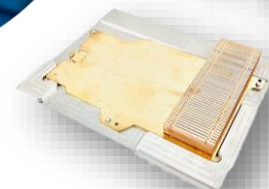


- Smartphone
- Wearable Device
- Smart Network
- Mobile Smart Hub/Device



Smartphone/ Mobile Devices

- High power ultra-slim heat pipe
- Ultra-slim vapor chamber



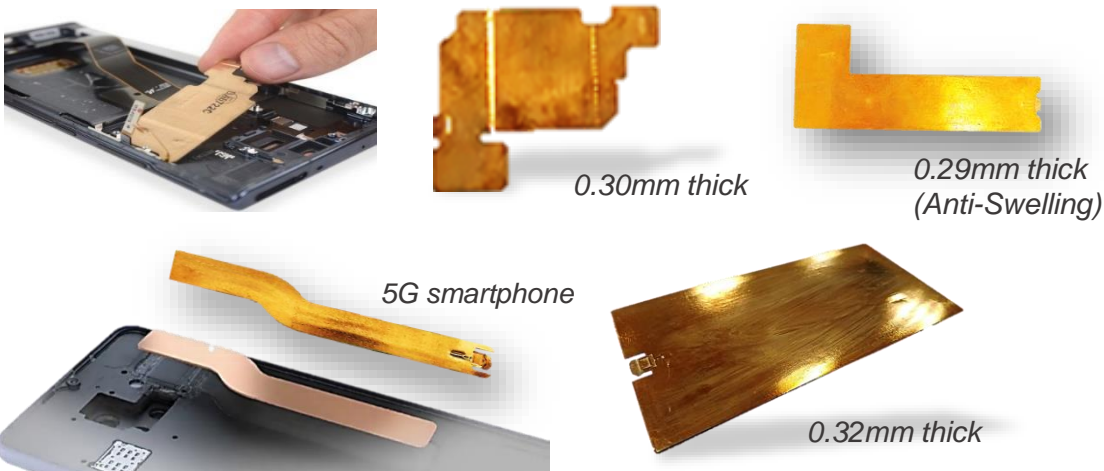
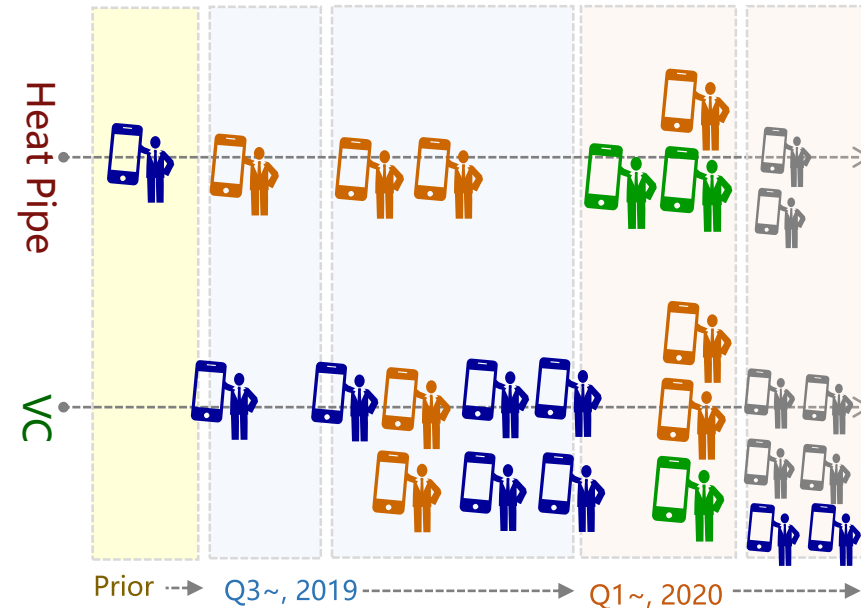
Mobile Broadband Application

- Heat pipe heat sink assembly
- Thermal module with VC soldering



Thermal Solution in Smartphone/Mobile Devices

- Heat pipe applied on smartphone shipped in Q4, 2018.
- VC applied on smartphone shipped in Q3, 2019.
- Heat pipe and VC shipped at the same time now. VC continuously expand capacity base on customer requirements. Sales performance has been enhanced per month since July, 2019.
- VC shipment reach 3KK/M, and heat pipe shipment maintain 2KK/M by the end of 2019. Open orders are scheduled until March, 2020 and new projects from major brands keep on going.



💡 Demand for VC grow exponentially for upcoming years to support 5G smartphones. Working with [Samsung](#), [Huawei](#), [Oppo/Vivo](#) and [Xiaomi](#) which embracing VC cooling solution against heat better than heat pipe is set to expand significantly from 5G since 2020.

Financial Performance



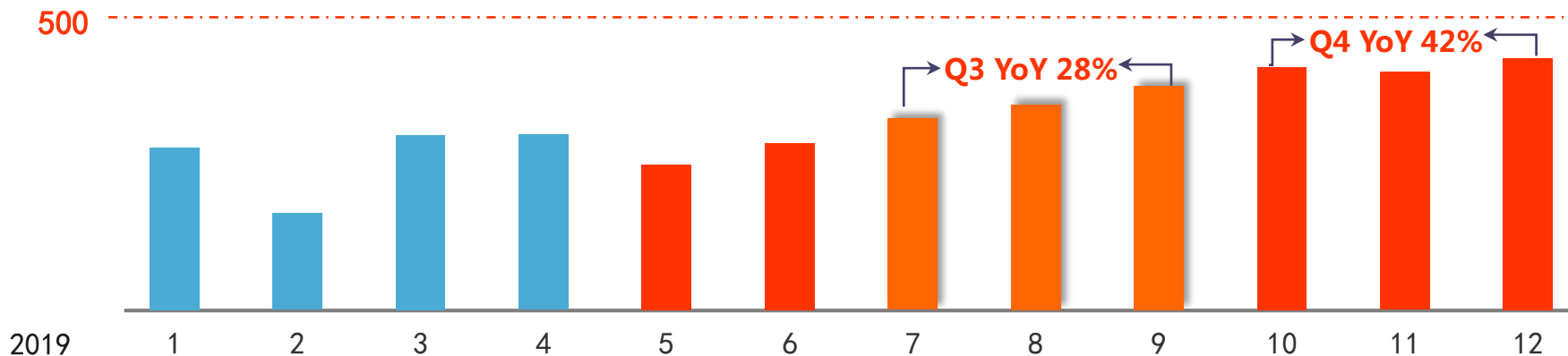
Annual Growth & 2019 Sales Performance

Focusing on 5G industry applications. Rolling out 5G deployment by telecom base station equipment, meanwhile involving into a diversity 5G appliances such as smartphone, mobile device, AIoT end-device, data center & clouding computing, electronic system of EV, new energy and future transportation.

Annual Sales Growth



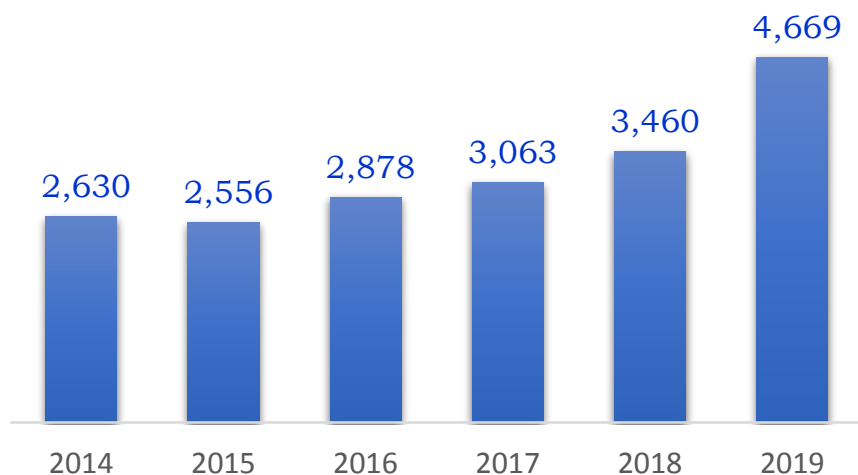
(NT\$ Million)



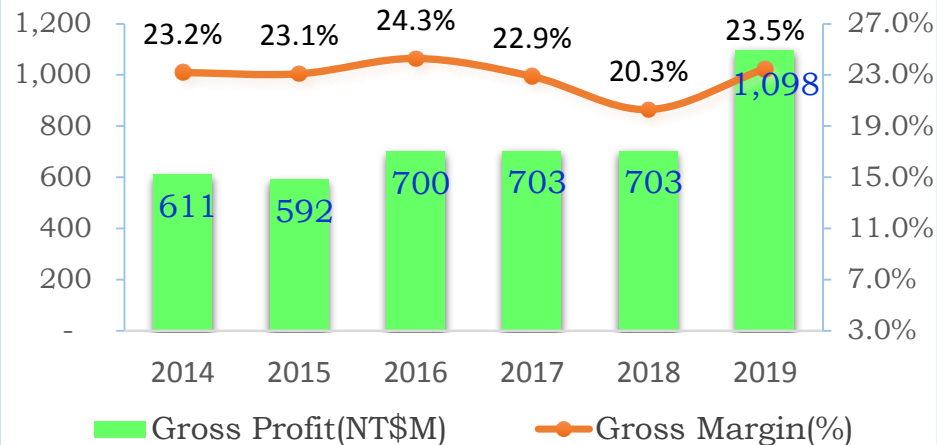
Sales	348	207	375	376	311	358	410	432	455	462	447	488
Growth	31%	28%	26%	69%	18%	41%	39%	16%	31%	60%	34%	35%

Financial Performance

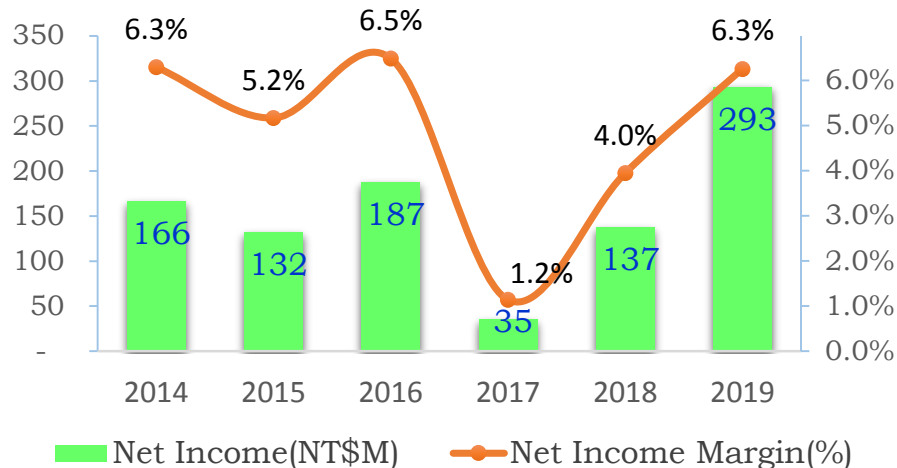
Revenue(NT\$M)



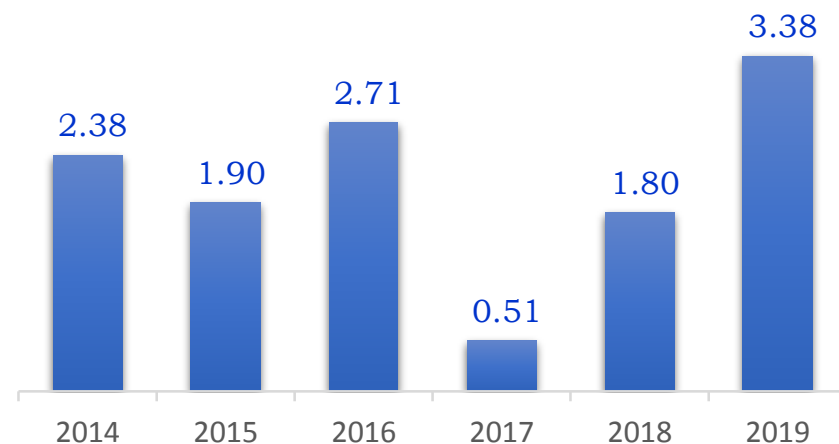
Gross Profit/Gross Margin



Net Income/Net Income Margin



EPS(NT\$)

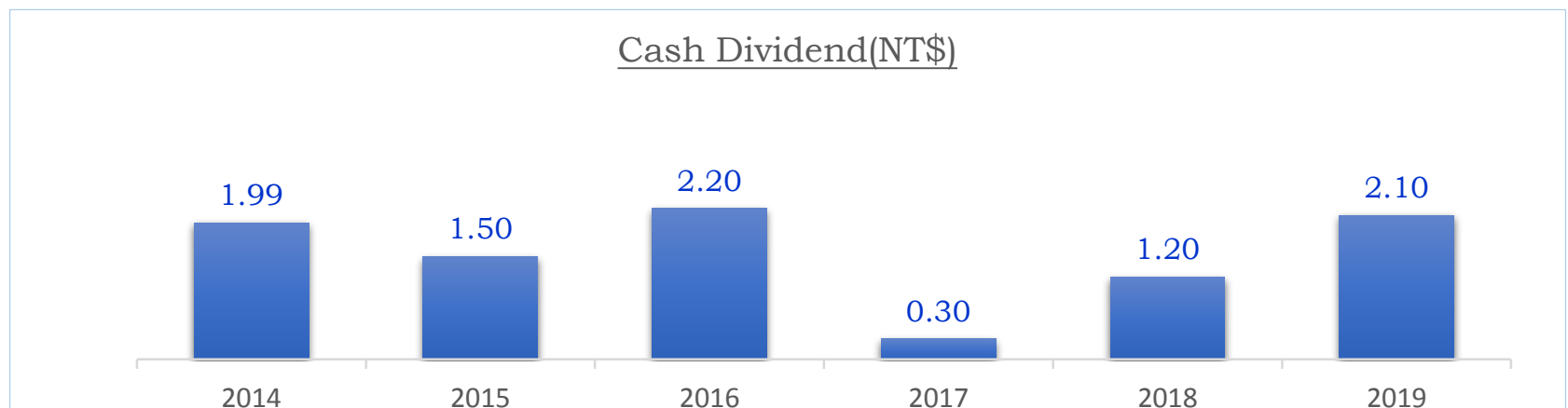


Dividend Distribution

Earning per share : NT\$ **3.38**

Cash Dividend : NT\$ **2.10**

(NT\$)	2014	2015	2016	2017	2018	2019
EPS	2.38	1.90	2.71	0.51	1.80	3.38
DIVIDEND P/S	1.99	1.50	2.20	0.30	1.20	2.10



Comprehensive Income Statement

NT\$ MILLION	2017	2018	2019	YOY
REVENUE	3,063	3,459	4,669	34.96%
GROSS PROFIT	703	703	1,098	56.04%
OPERATING EXPENSES	571	565	655	15.99%
OPERATING PROFIT	132	139	443	219.23%
NON OPERATING INCOME	(79)	26	(25)	
INCOME BEFORE TAX	53	164	418	154.13%
TAX EXPENSE	18	28	125	
NET INCOME TO PARENT	35	137	293	113.73%
EPS(NT\$)	0.51	1.80	3.38	87.78%
GROSS MARGIN	22.94%	20.33%	23.51%	
OPERATING EXPENSE RATIO	18.63%	16.33%	14.03%	
OPERATING MARGIN	4.30%	4.01%	9.48%	
NET MARGIN	1.15%	3.96%	6.27%	

Consolidated Balance Sheet

NT\$ MILLION	2017	2018	2019	YOY
TOTAL ASSETS	2,569	3,525	4,332	22.90%
CASH & CASH EQUIVALENTS	411	711	600	(21.28%)
A/R	1,214	1,639	2,140	30.39%
INVENTORIES	342	439	460	4.64%
PROPERTY, PLANT AND EQUIPMENT	350	367	537	46.37%
TOTAL LIABILITIES	1,581	2,131	2,727	27.94%
A/P	307	384	220	(42.73%)
BANK LOANS	867	1,032	1,177	14.07%
TOTAL EQUITY	988	1,394	1,605	15.20%
A/R TURNOVER DAYS	130	151	148	
INVENTORY TURNOVER DAYS	49	51	45	
A/P TURNOVER DAYS	122	125	112	
ROE	3.36%	11.49%	19.51%	
ROA	1.54%	4.61%	7.8%	

-Thank you -



Q & A

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