Comba

京信通信系統控股有限公司

Comba Telecom Systems Holdings Limited

股份編號 Stock Code : 2342

2018 Annual Results

Corporate Presentation

Persistent • Focus

繼往開來 • 凝心聚力

Innovation • Brilliant

創新發展 • 再創輝煌

IPPC

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Agenda

01 • Financial Highlights

02 • Financial Review

03 • Industry Development

04 • Company Outlook

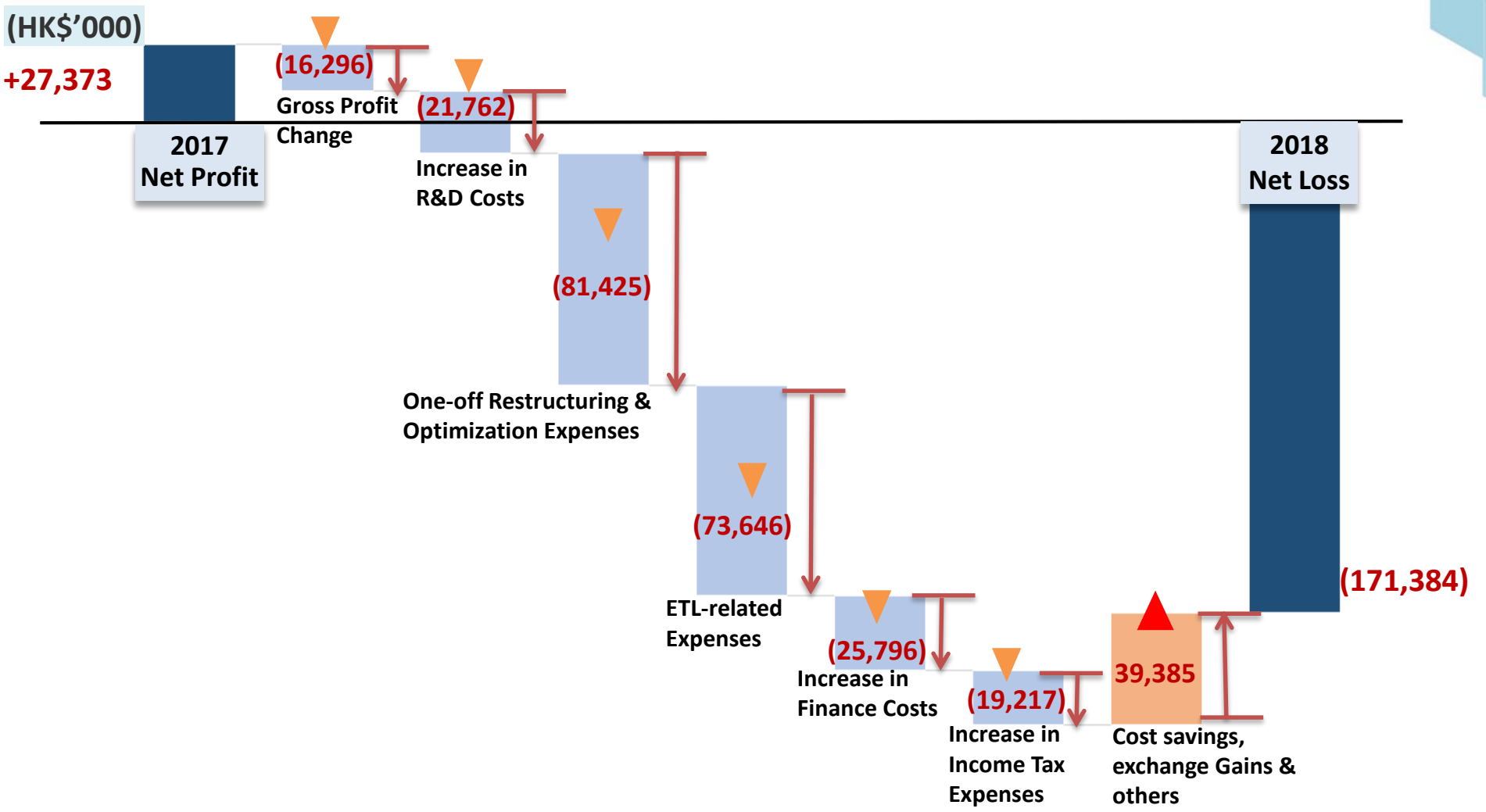
Financial Highlights

- Financial Results
- Expenses Structure
- Key Financial Operating Indicators
- Financial Position
- Operating Cash Flow Analysis

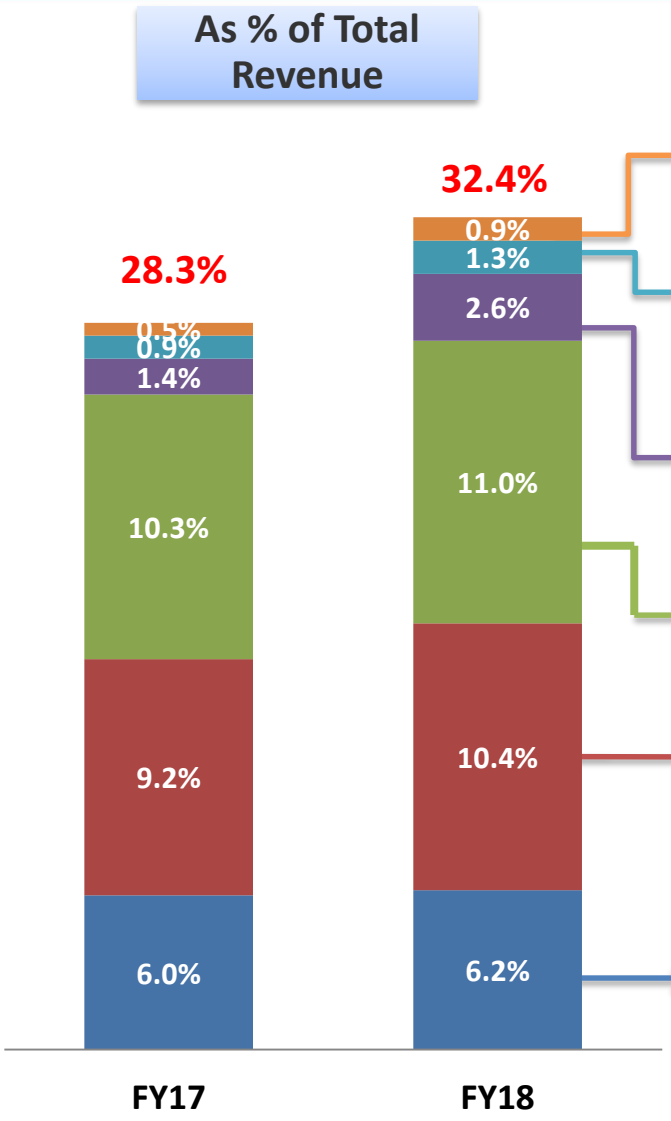
Financial Results

	For the year ended 31 December			For the six months ended
HK$'000	**2018**	**2017**	**Change**	**30 Jun 2018**
Revenue	**5,663,310**	5,563,725	99,585	2,493,733
Gross profit	**1,458,601**	1,474,897	(16,296)	753,992
Gross profit margin	**25.8%**	26.5%	(0.7pp)	30.2%
Operating profit/loss	**(77,277)**	101,095	(178,373)	53,271
Income Tax	**48,402**	29,185	19,217	16,417
Profit/Loss attributable to shareholders	**(171,384)**	27,373	(198,757)	21,028
Net profit/loss margin	**(3.0%)**	0.5%	(3.5pp)	0.8%
Basic earnings/loss per share (HK cents)	**(7.07)**	1.12	(8.19)	0.86

Financial Results(FY2018 vs FY2017)



Expenses Structure



HK$'000

= YoY Change

Income Tax HK $48,402 ↑HK$19,217 ↑65.8%

- Increase in deferred tax expense

Finance Costs HK $73,657 ↑HK$25,796 ↑53.9%

- More bank borrowings & higher interest rates

Other Expenses HK $144,431 ↑HK$65,107 ↑82.1%

- The increase in depreciation & amortization of ETL

Admin. Expenses HK $621,408 ↑HK$45,731 ↑7.9%

- One-off restructuring & optimization costs

Selling Expenses HK $587,040 ↑HK$76,541 ↑15.0%

- International business expansion
- One-off restructuring & optimization costs

R&D Costs HK $353,090 ↑HK$21,762 ↑6.6%

- New Product Offerings
- Keep abreast of latest 5G technology development

Major Financial Operating Indicators

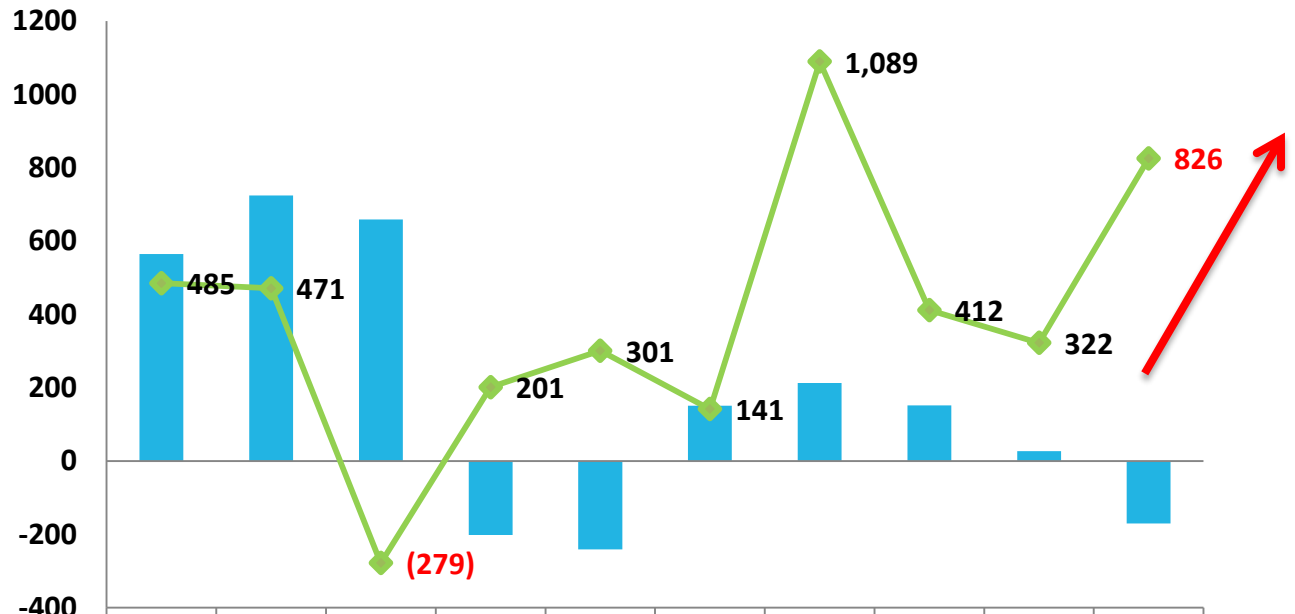
	For the year ended 31 December			For the six months ended
	2018	2017	Change	30 June 2018
Inventory turnover days	**116**	121	▼5 days	156
A/R turnover days	**280**	274	▲6 days	331
A/P turnover days	**347**	294	▲53 days	386
Cash Conversion Cycle	**49**	101	▼52 days	101
Gross Gearing Ratio	**17.7%**	14.5%	▲3.2pp	18.9%
Debt-to-assets ratio	**66.3%**	60.2%	▲6.1pp	62.1%
Return on average equity	**(4.9%)**	0.8%	▼5.7pp	1.1%

Financial Position

HK$'000	As at 31 December 2018	2017	Change	As at 30 June 2018
Net cash/(debt)	**179,310**	(72,261)	▲251,571	(786,320)
Total assets	**11,302,641**	10,891,728	▲3.8%	10,999,355
Total Liabilities	**7,497,027**	6,560,238	▲14.3%	6,825,171
Net assets	**3,278,153**	3,766,311	▼13.0%	3,626,655
NAV per share(HK$)	**1.35**	1.53	▼11.8%	1.50

Operating Cash Flow Analysis

HK$'Mn



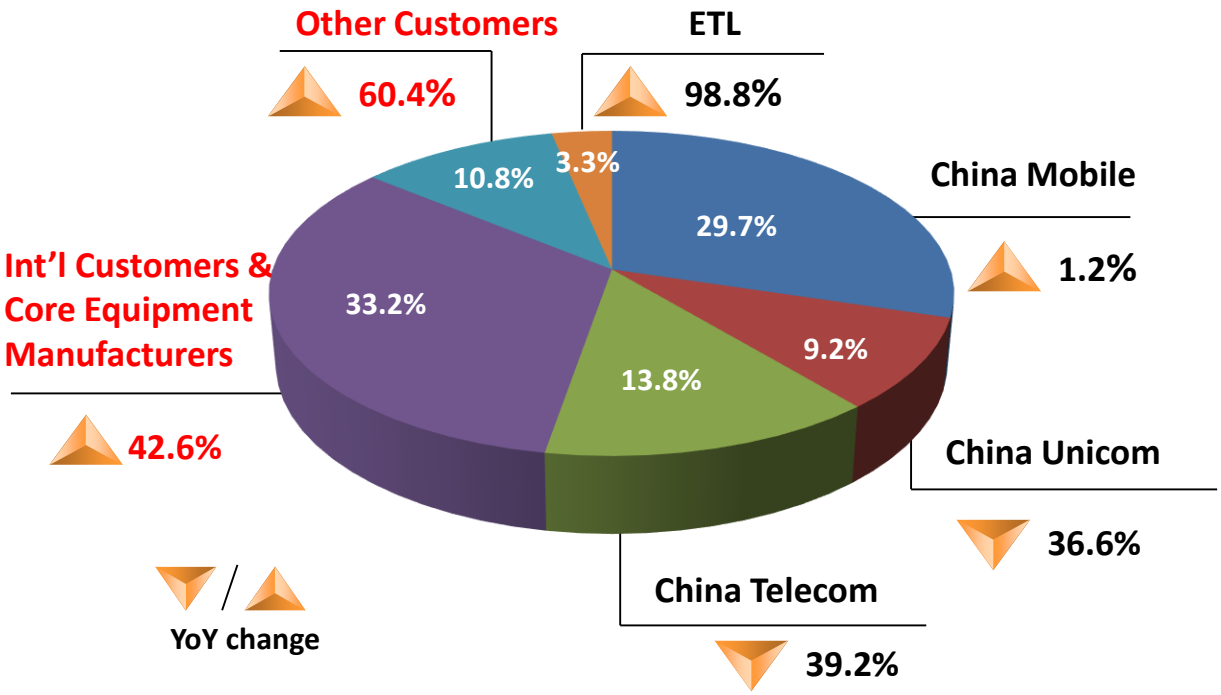
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Profit/(Loss)	565	724	659	-202	-241	151	213	152	27	-171
Operating Cash Flow	485	471	(279)	201	301	141	1,089	412	322	826

Financial Review

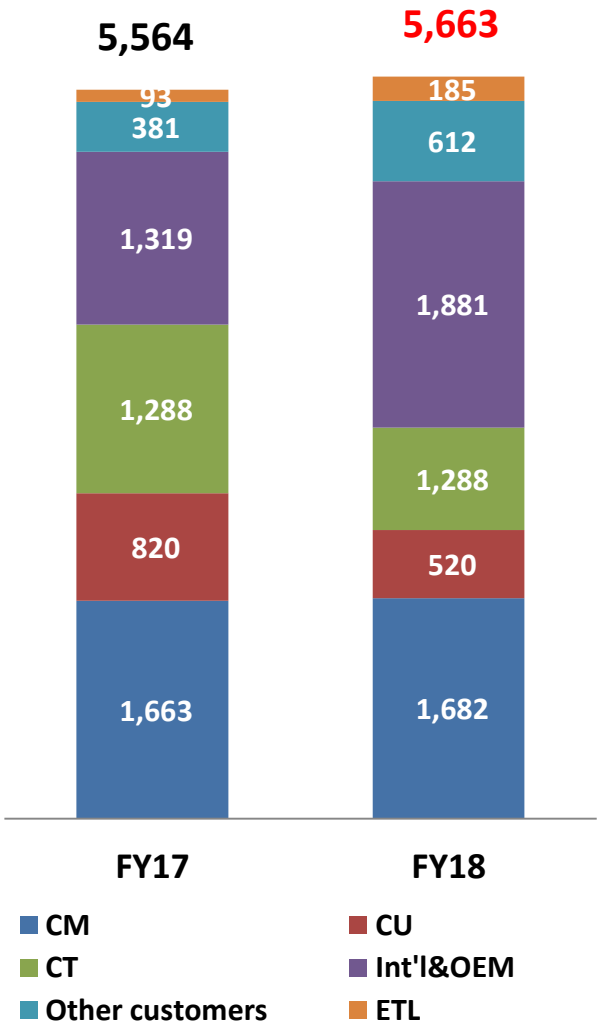
- Revenue Breakdown by Customers
- Revenue Breakdown by Businesses
- Gross Gearing Ratio Analysis
- 2003 - 2018 Financial Performance Analysis

Revenue Breakdown by Customers

For the year ended 31 December 2018



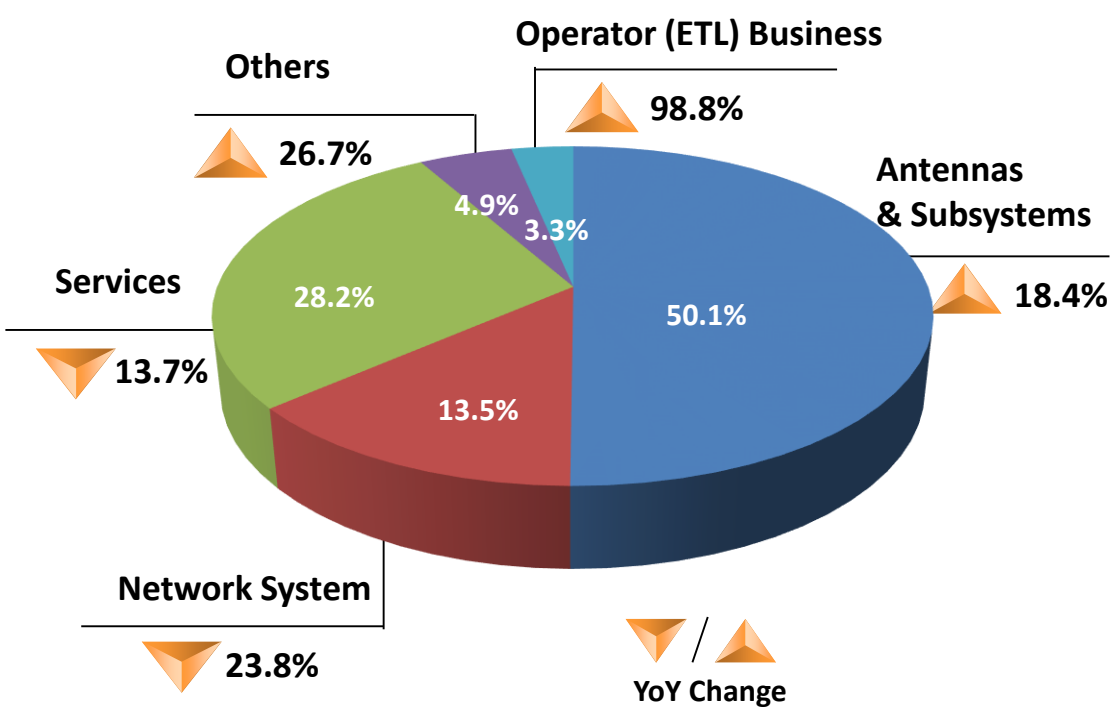
Revenue (HK$'Mn)



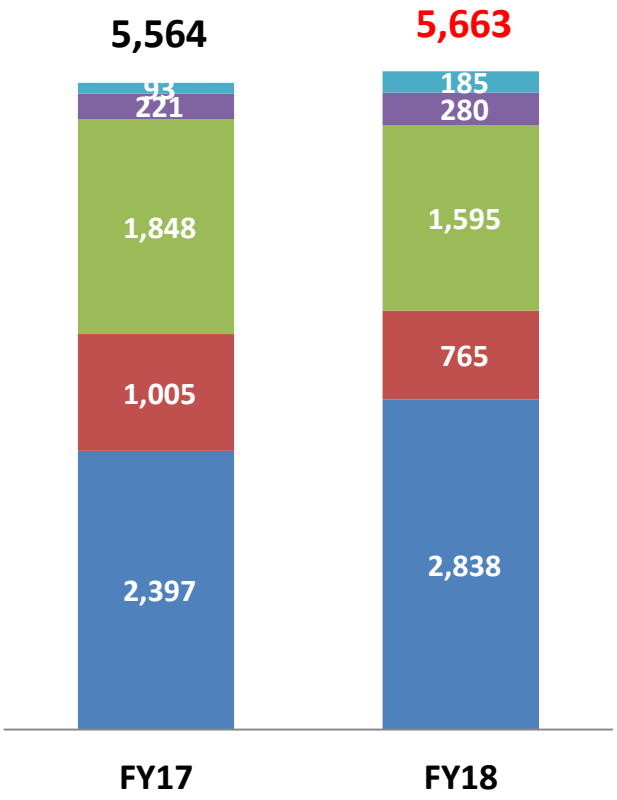
- ***Other Customers****(Mainly include China Tower and Rail Transit Communications Customers "RTC")*
  - *China Tower amounted for 4.4%, up 26.0% yoy;*
  - *RTC amounted for 2.7%, up 374.6% yoy.*
- ***ETL was consolidated since July 31, 2017***

Revenue Breakdown by Businesses

For the year ended 31 December 2018



Revenue (HK$'Mn)



- ***Network System Business*** *(Wireless Access &Wireless Enhancement)*

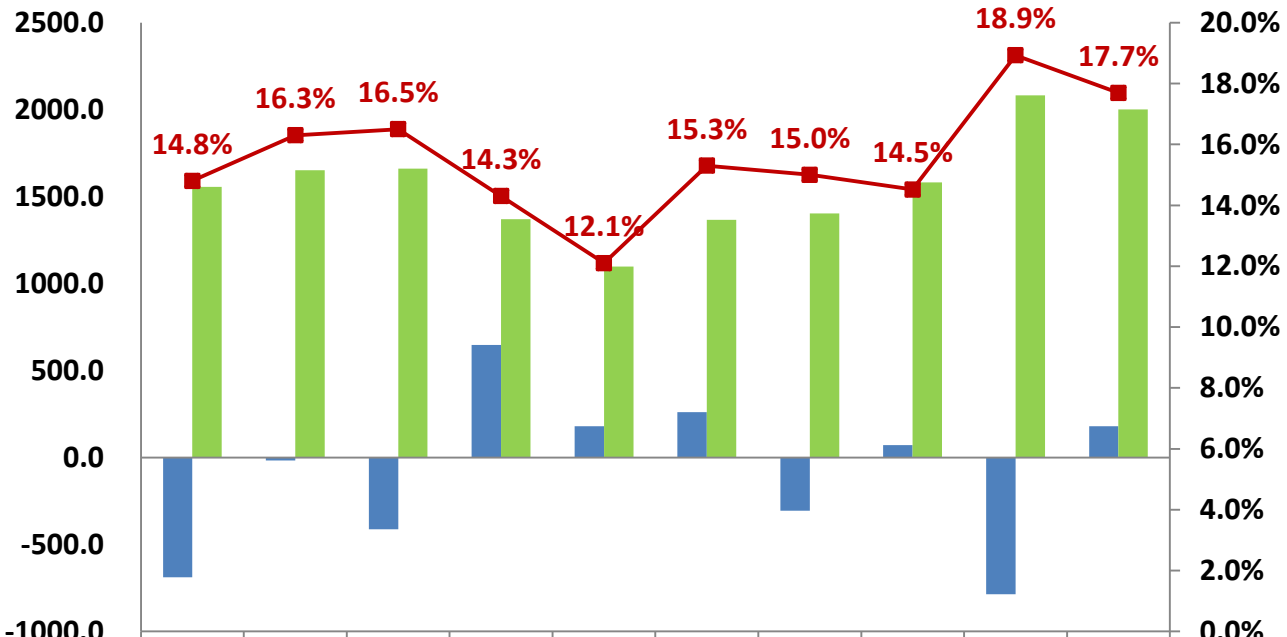
  --Among which, wireless access and wireless enhancement accounted for 2.9% and 10.6% respectively.

- ***Others*** *(Wireless Transmission & Rail Transit Communications)*

- ***The Operator(ETL)Business*** *was consolidated since July 31, 2017.*

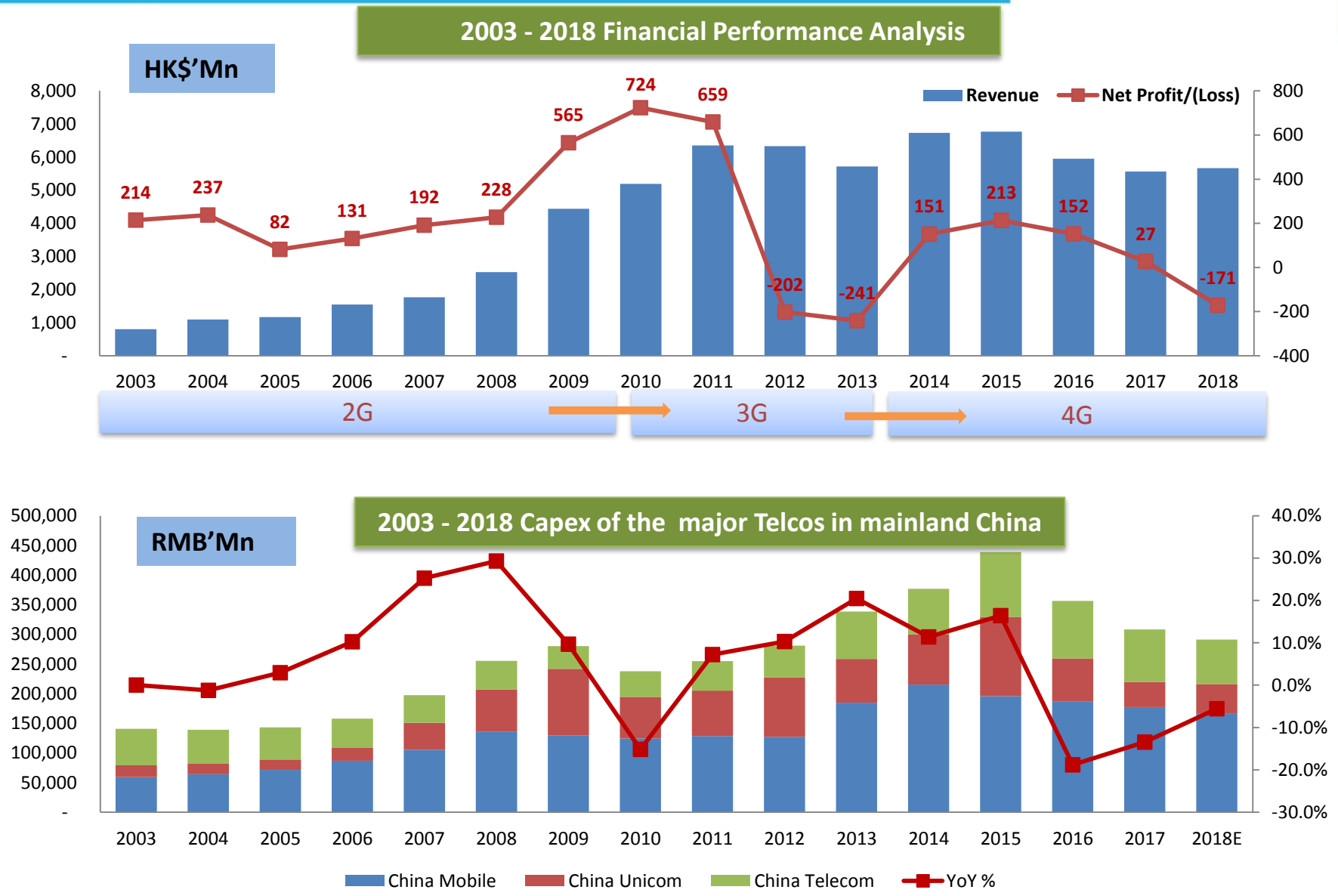
Gross Gearing Ratio Analysis

HK$'Mn (Except %)



	1H14	FY14	1H15	FY15	1H16	FY16	1H17	FY17	1H18	FY18
Net Cash/(Debt)	-687.5	-17.1	-411.5	647.8	179.8	260.8	-304.8	72.3	-786.3	179.3
Interest-bearing Bank Borrowings	1555.5	1651.0	1661.1	1370.8	1097.4	1366.8	1403.2	1582.4	2082.1	2000.1
Gross Gearing Ratio	14.8%	16.3%	16.5%	14.3%	12.1%	15.3%	15.0%	14.5%	18.9%	17.7%

2003 – 2018 Financial Performance Analysis

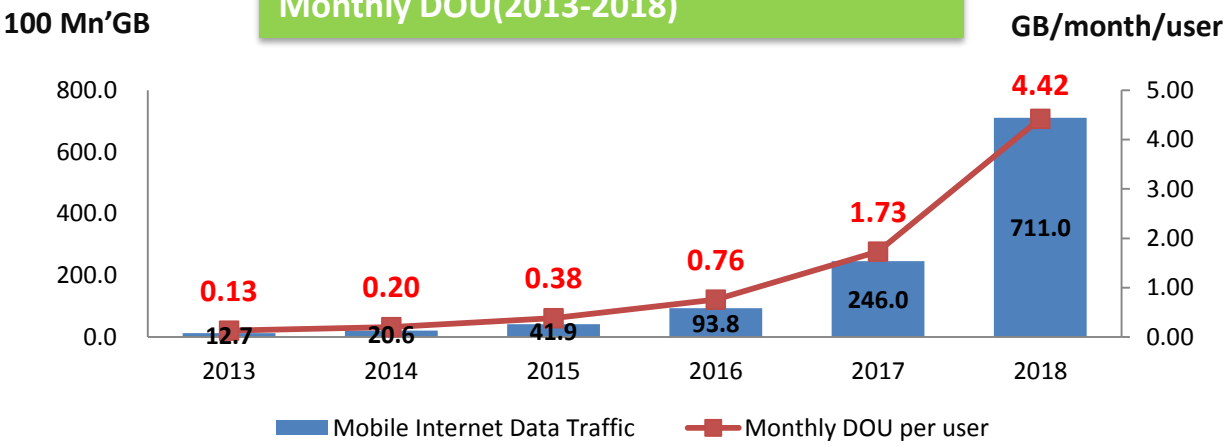


Industry Development

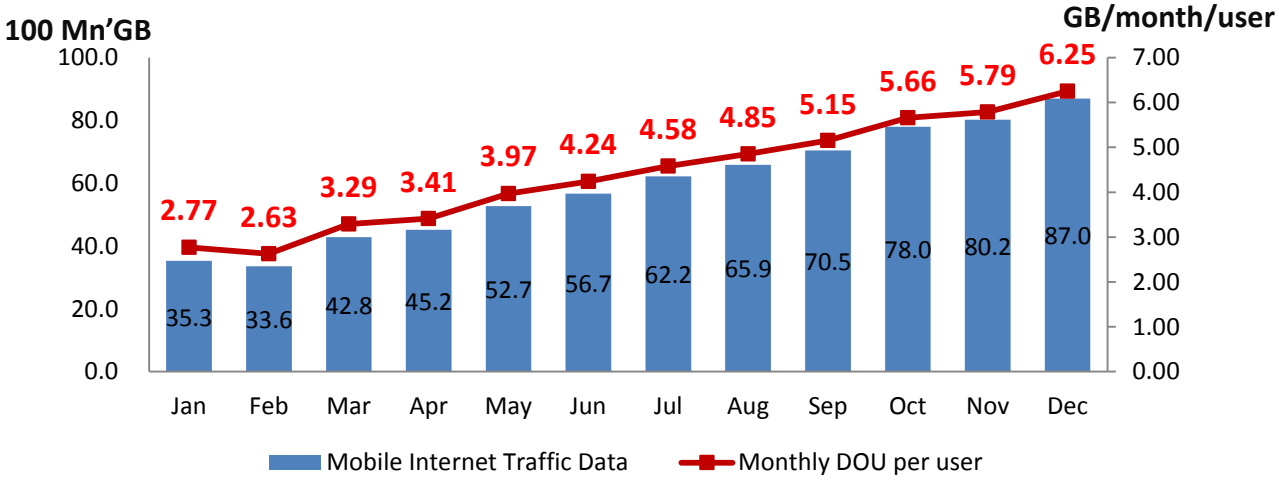
- Post-4G Era: Data Traffic Keeps Climbing
- Post-4G Era: Chinese Telcos「Speed Upgrade &Tariff Reduction」
- 5G Commercial Use Schedule & Network Construction Timeline
- Trends in Wireless Network Architecture: Openness & Decoupling

Post-4G Era: Data Traffic Keeps Climbing

Increase in Mobile Internet Data Traffic & Monthly DOU(2013-2018)



Monthly Mobile Internet Data Traffic & DOU in 2018



The increase in data traffic boosts the construction of information Infrastructure

Stimulates the demand for the broad & in-depth coverage of 4G

To pave the way for 5G

Data Source: Official website of MIIT of China

Post-4G Era: Chinese Telcos 「Speed Upgrade &Tariff Reduction」

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Speed Upgrade

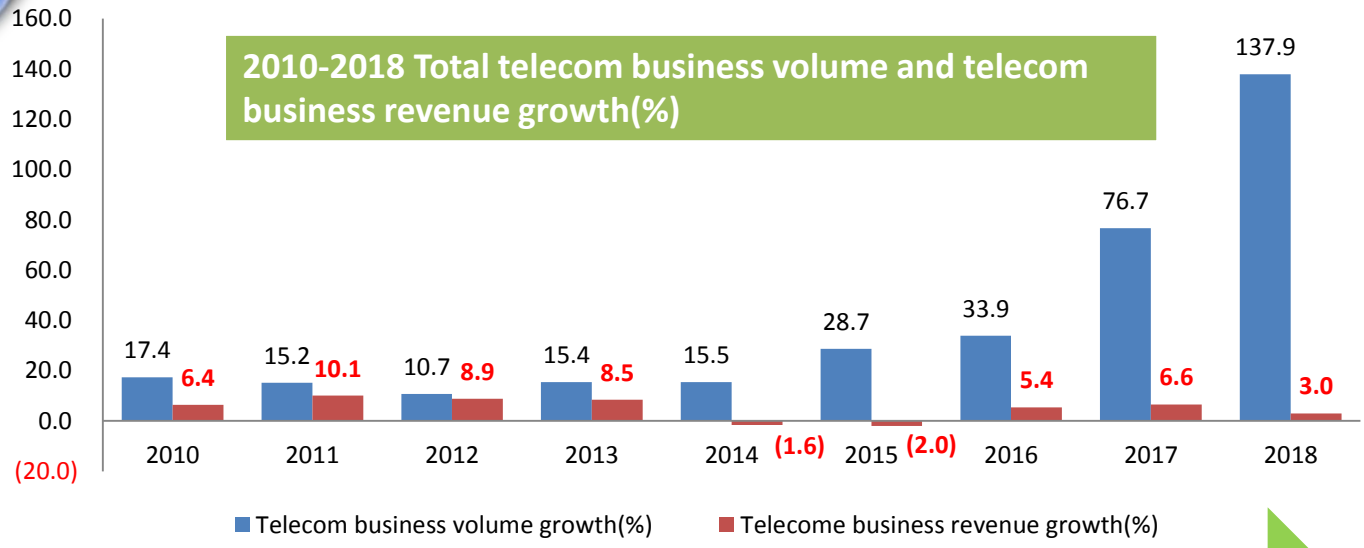
Tariff Reduction

SASAC

- 「The three major operators in China -- China Telecom, China Unicom and China Mobile -- have exceeded the target of "speed upgrade & tariff reduction" ahead of schedule in 2018, with a cumulative profit surrender of more than RMB120 billion yuan.」

MIIT

- In 2019, the MIIT will continue to carry out actions of "speed upgrade & tariff reduction", such as lowering the cost of roaming between the mainland and Hong Kong and Macao by a large margin, so as to improve the supporting capacity of the Internet and unleash the potential of the digital economy.



Data Source: Official website of MIIT of China

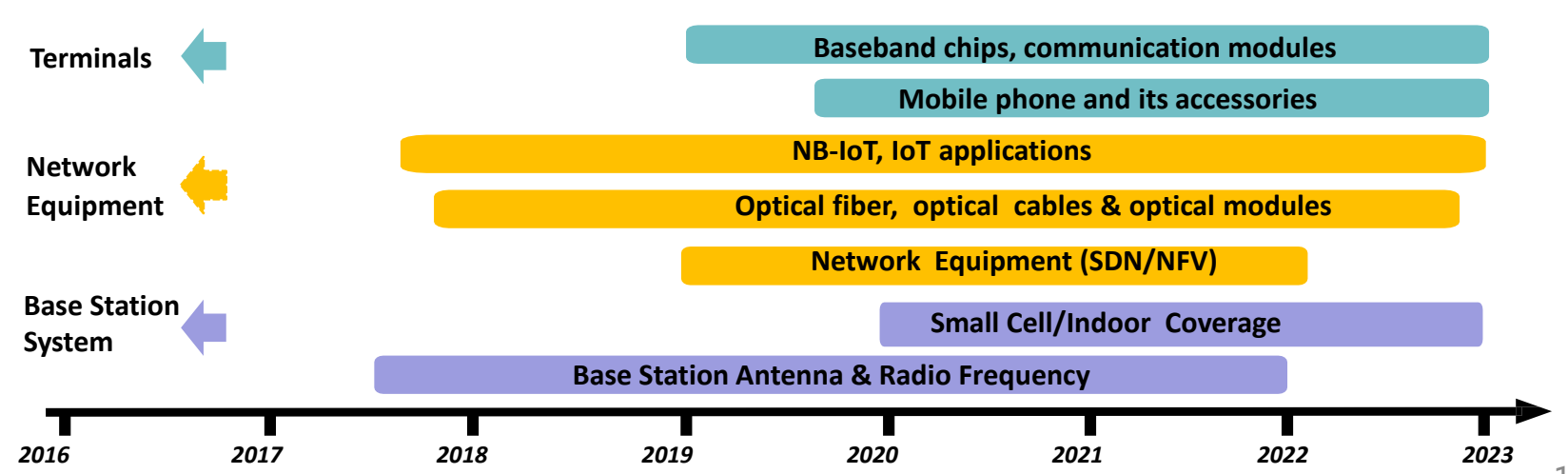
Due to the policy of "speed upgrade & tariff reduction", telcos were greatly impacted with "business volume growth increased vs revenue growth decreased". The cost-effective technologies, products and solutions of Comba will help telcos reduce costs and increase efficiency in network construction.

5G Commercial Use Schedule & Network Construction Timeline

China, US, Europe, Japan and Korea are actively preempting the commercial deployment of 5G

Country	5G frequency spectrum			Time of commercial use		
	Low frequency	Middle frequency	High frequency	2019	2020	2021-
		√	√	5G trial commercial use	5G commercial use	
	√	√	√		5G commercial use	
	√	√	√			5G commercial use
		√	√		5G commercial use	
		√	√		5G commercial use	

China 5G Network Construction Timeline



Trends in Wireless Network Architecture: Openness & Decoupling

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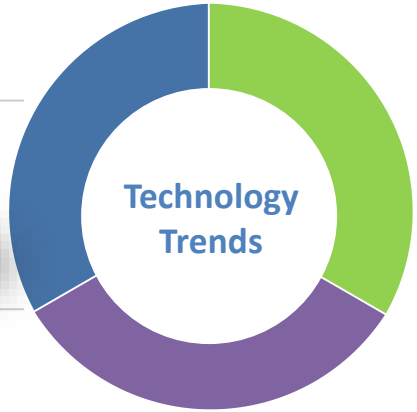
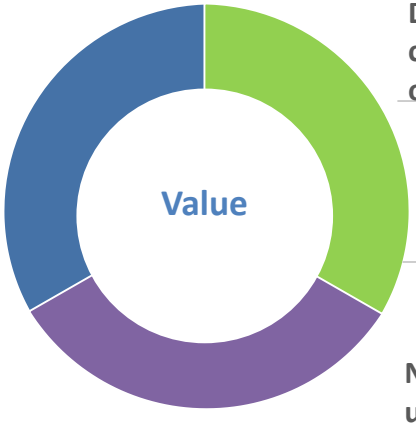
Open Interface

Software & Hardware Decoupling





Decrease of network construction and operation cost

Break the monopoly & promote innovation

Network is easy to upgrade in future

Industry Alliance

TELECOM INFRA PROJECT

3GPP A GLOBAL INITIATIVE

O-RAN ALLIANCE

Challenge

- Industry chain lacks scale system manufacturer
- The power consumption and dimension of general hardware platform can not meet the commercial requirements
- It is still in the stage of technical feasibility study and the commercial time point is not yet determined

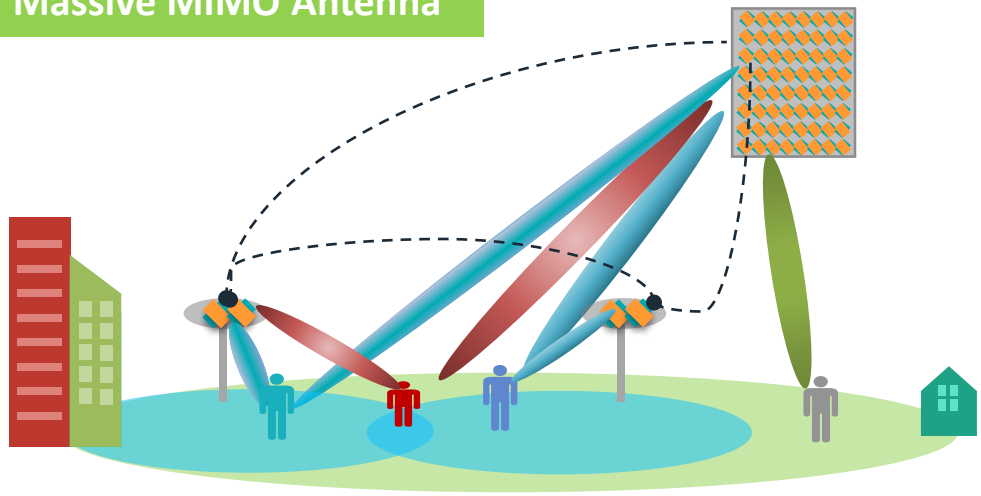
「Openness」，「Decoupling」of high flexibility, low cost wireless network ecological environment will bring huge opportunities to Comba. Comba is actively participating in the ecological construction of ORAN.

Company Outlook

- Antenna Products
- Indoor Coverage Products & Solutions
- Market Expansion
- Sound Operation & Delicacy Management
- Strategic Outlook

5G Era: Antenna Product Forms

5G Massive MIMO Antenna



- 5G base station antenna will exist in two forms : **AAU and Passive Antenna**. Miniaturized, multi-frequency, active and Massive MIMO are the evolution directions of the mobile communication antenna.
- The multi-transmit and multi-receive system with Massive MIMO antenna greatly improved spectrum utilization, data transmission stability and reliability.
- **In 2018, in addition to ultra-multi-frequency antennas and TDD+FDD hybrid antennas, Comba also launched Massive MIMO antennas in the global 5G trial network.**

Dielectric Filter

Dielectric filter

Traditional metal cavity filter

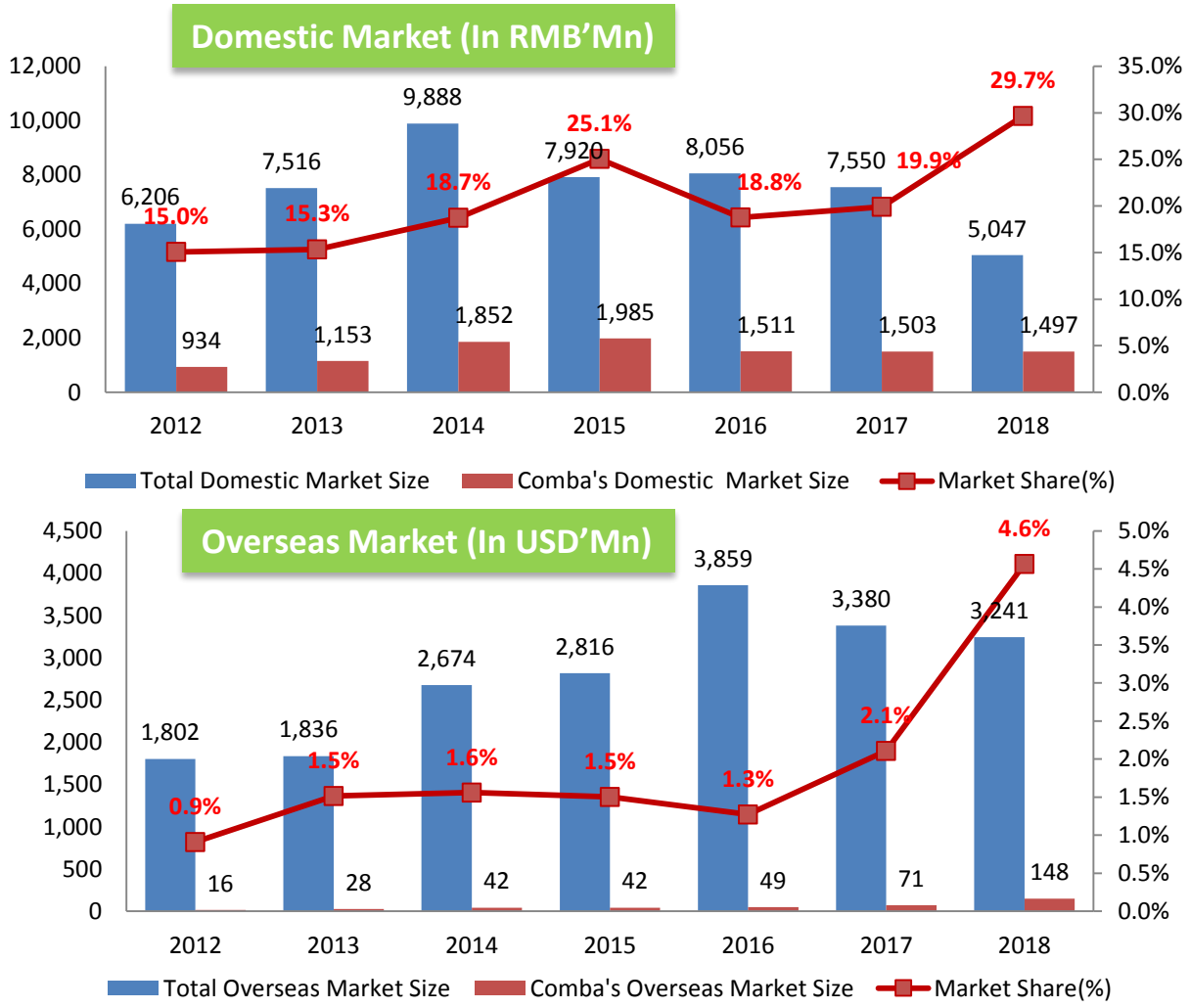
Form of Application: AFU Integration

The integration of dielectric filter and antenna is the key to realize AAU technology

- To satisfy Massive MIMO, there are more and more stringent requirements on filters in order to meet the weight and size requirements of devices.
- Dielectric filter is **small in size, light in weight, high in performance** and easy to integrate, which will become the development direction of 5G AAU filter. **In the era of 5G, dielectric filter is expected to become a favorite in the industry.**
- **In 2018, Comba officially launched the medium and high frequency base station dielectric filter for 5G.**

Looking ahead, Comba will rely on the dual advantages in the fields of antenna and dielectric filter to better prepare for the arrival of 5G!

Comba Antenna Products



Notes:

1. Overseas market size data is from the annual report of American EJL Wireless Research(" EJL ");
2. The size of the overseas market in 2018 is derived from the forecast data in the 2017 EJL report;
3. As 5G is still at the trial stage, the above data does not include the market size of 5G Massive MIMO.

1. Comba has been named as a " global Tier 1 Supplier" for 7 consecutive years since 2011 by EJL Wireless Research;
2. As at December 31, 2018, the Antenna Business Unit has applied 1,260 patents at home and abroad in Antenna and Radio Frequency field;
3. Global Top 3 market share for 9 consecutive years, among which, Top 1 in 2014 and Top 2 from 2015 to 2017.
4. Benefitted from the telco's low frequency re-farming and deployment of NB-IoT in the post-4G cycle.
5. The overseas market expands rapidly, there still needs a large volume of antenna for sub-3GHz base stations, esp. the vast growth potential for overseas markets.

5G Era: Technology Evolution for Indoor Coverage

70-80% of voice and data traffic is consumed indoors

Hot spots are **short of capacity**

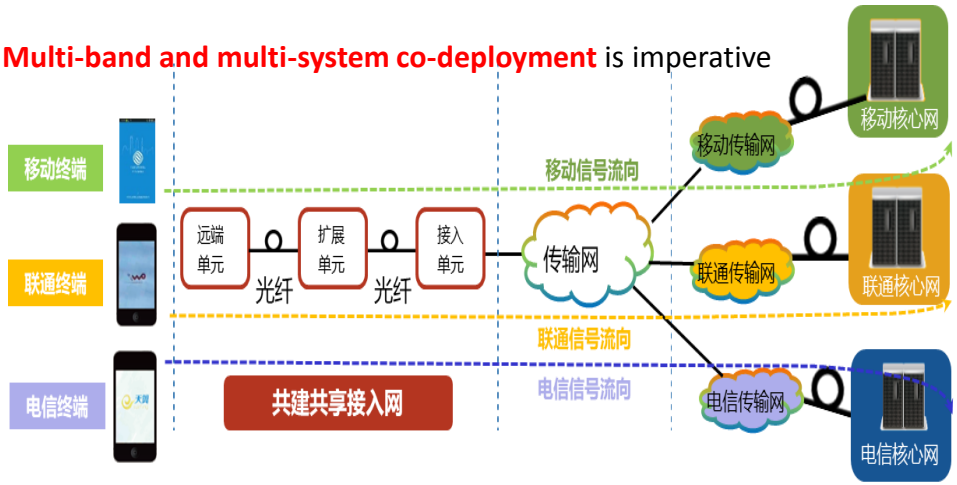
5G higher frequency spectrum causes **weak coverage or coverage blind area of macro station**

Intensive deployment of macro station will be **difficult and with high cost**

Base Station Types in 5G era

Type	Transmission Power for single carrier	Coverage (theoretical radius)
Macro Base Station	>12.6w	>200m
Micro Base Station	500mw-12.6w	50-200m
PiCo Cell	100mw-500mw	20-50m
Femto Cell	<100mw	10-20m

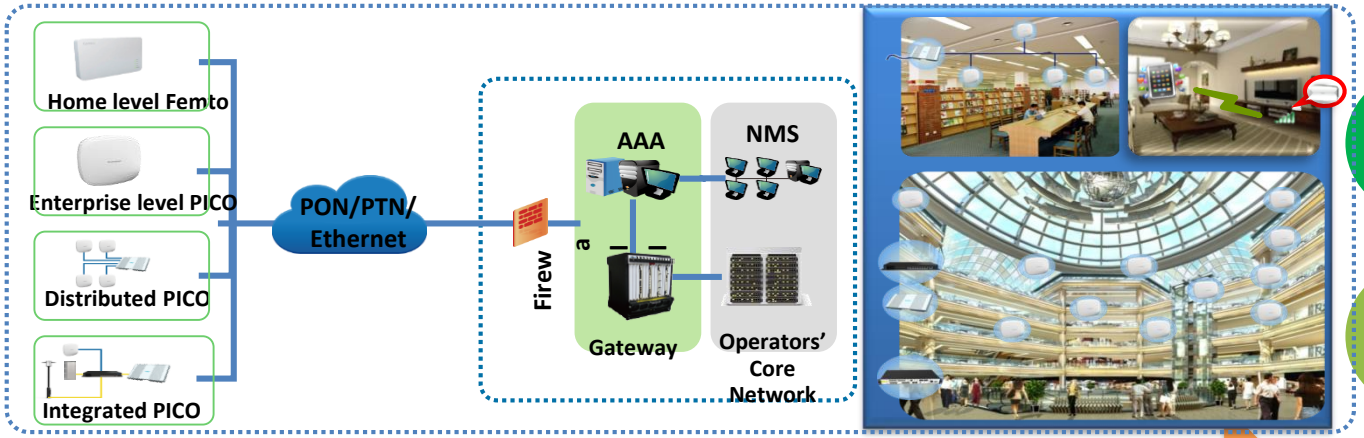
Multi-band and multi-system co-deployment is imperative



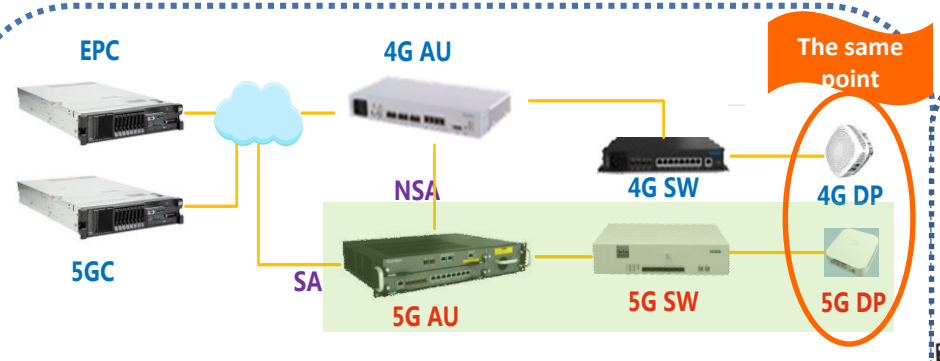
- In the 2G/3G period, the main forms of coverage are outdoor macro base stations and indoor DAS. However, with the explosive growth of data traffic in the later 4G network and the gradual increase of the frequency of 5G base stations, the coverage of single base station decreases, **the operators are paying more and more attention to the small cell products. Facing 5G, digital indoor coverage will gradually become the new standard for indoor network construction.**
- **Co-deploying and co-sharing the indoor network** and improving the network deployment density is an effective solution to improve the data traffic of future 5G network by 1000 times and the user experience rate by 10-100 times.

Comba has been committed to the R& D of small base stations for many years, which will usher in the opportunities brought by the surging demand for indoor capacity coverage.

Comba Indoor Coverage Product - Small Cell



At the end of 2018, Comba took the lead to launch the 5G digital indoor coverage solutions



- Three-level architecture: AU+SW+DP, all-fiber distribution network, to meet the needs of large capacity;
- support both SA and NSA at the same time, flexibly respond to the needs of 5G network architecture;
- 4G/5G DP deployment at the same point, the coverage does not shrink, reducing the cost of network construction;
- Fully IP deployed, SW supports general switches;
- The software configuration supports CU/DU separation and co-installation, flexibly respond to requirements;

Comba's 5G iCell

1. Initiated the R& D in Small Cell in 2009, Comba is the leading enterprise in Small Cell with the most number of small cells putting for commercial use;
2. As at December 31, 2018, Comba has applied 1,000+ patents for indoor coverage ;
3. Small Cell product series includes home-level, enterprise-level, high-power and distributed small cells, supporting 2G, 3G and 4G.
4. Capable of full access network solution and product development ranging from small cell, gateway, network management and EPC.
5. Post-4G cycle will benefit from explosive growth of data traffic and the operators' cost reduction and performance improvement.

China's Domestic Operator Market

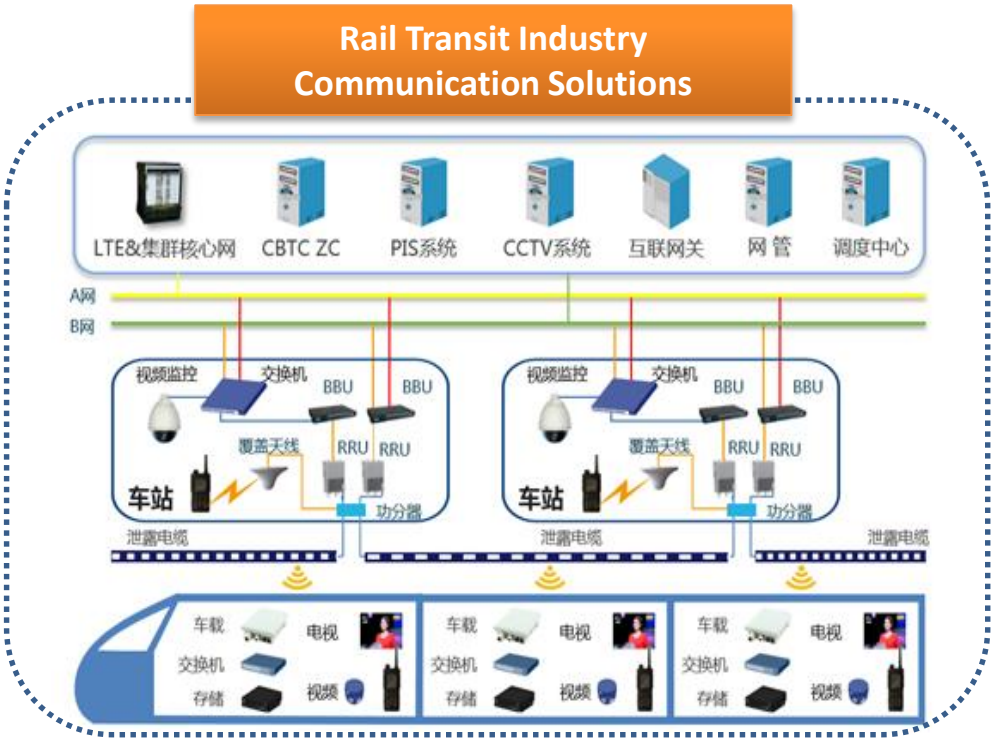
- In 2018, Revenue from the three mainland China operators fell 20.8% yoy, mainly due to lower capex and some tender delays from operators;
- In 2019, **in regards to the antenna business**, the group will continue to strengthen the leading position in the market, strive for achieving good results in the centralized and provincial-level procurements of the three major operators, such as **the "4488" antenna projects and NB-IoT antenna projects of China Mobile, L900 low-frequency re-farming antenna projects of China Unicom, L800 low frequency re-farming antenna projects of China Telecom, and the new-type high-speed railway train antenna, camouflage antenna projects and others for all the three operators;**
- In 2019, **in regards to the network system (indoor coverage) business**, in addition to actively promoting **the implementation of the centralized procurement project of China mobile's 4G extended PicoCells,** the Company will also actively promote the **centralized procurement and provincial-level procurement of small cells of China telecom and China unicom.** At the same time, the Group will also continue to deepen and promote **network enhancement DAS product business;**
- **In 2019, operators will pay more attention to the cost and efficiency of network construction as well as the satisfaction of indoor coverage demand. The group will seize the opportunity to control costs and reduce expenses and actively promote cost-effective network construction solutions.**

International &OEM Market

- In 2008, revenue from international and OEM business increased by 42.6% YoY, with major breakthroughs made in cooperation with major operators, and significant improvement achieved in key regions such as India, Asia-pacific and Brazil.
- The development of mobile communication services is uneven between developed and undeveloped regions in the world, and countries or regions that have not built relatively advanced 4G network will continue to be the potential growth point of the communication industry in the future.
- **In 2019, the group will continue to focus on strengthening cooperation with operators and major equipment manufacturers, focusing on key customers and key products per different regions.**
- **In 2019, while consolidating and deepening the existing cooperative customers, the Group will expand the product portfolios and market in developed countries.**

Rail Transit Communications Market

- After years of exploration, **the group is committed to providing communication system integration and product supply services for the rail transit industry.**
- The mainland China will intensify the development of urban rail transit. Among which, the total demand of the rail transit communication market in 2018-2020 is shown in the right figure:



- In 2018, the revenue from rail transit communication business **increased significantly by 374.6%** yoy, realized the leap from 0 to 1, and the business performance showed the momentum of rapid growth.
- **In 2019, the Group will continue to stabilize and expand the rail transit communication market, and create communication system with good quality, high efficiency and the highest cost-effective solutions for the rail transit industry.**

New Businesses

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Operator ETL

- At the end of 2017, the Group announced to invest in the construction of ETL's 4G network;
- In 2018, the construction includes: **1) a new 4G LTE cellular network covering the whole country of Laos; 2) the expansion of the national optical fiber transmission network; 3) the upgrade of the existing 2G/3G network; 4) the introduction of integrated billing system supporting flexible marketing;**
- ETL is expected to achieve 4G network coverage in the capital vientiane and major cities in the north and south as soon as possible.

Intelligent Manufacturing

- Based on the deep understanding and practice of manufacturing pain points, combined with the advantages in equipment interconnection, industrial network, intelligent control and edge computing technology, **Comba intelligent manufacturing business is committed to providing flexible intelligent manufacturing, digital factory and industrial Internet solutions for manufacturing enterprises and industrial parks.**
- In 2018, **the Group launched intelligent products such as AGV mobile robots and smart cameras,** and will continue to explore industrial Internet applications in 2019.

Facial Recognition

- ***ScanViS ID*** system -- an integrated facial recognition and analysis solution for access control system and attendance record;
- ***ScanViS ID*** facial recognition solution can complete verification within one second on average, effectively achieving fast and safe admission control management and user admission experience;
- **Comba assisted the mobile world congress in 2019 「MWC19」 to provide fast and secure face recognition admission solution.**

Sound Operation & Delicacy Management

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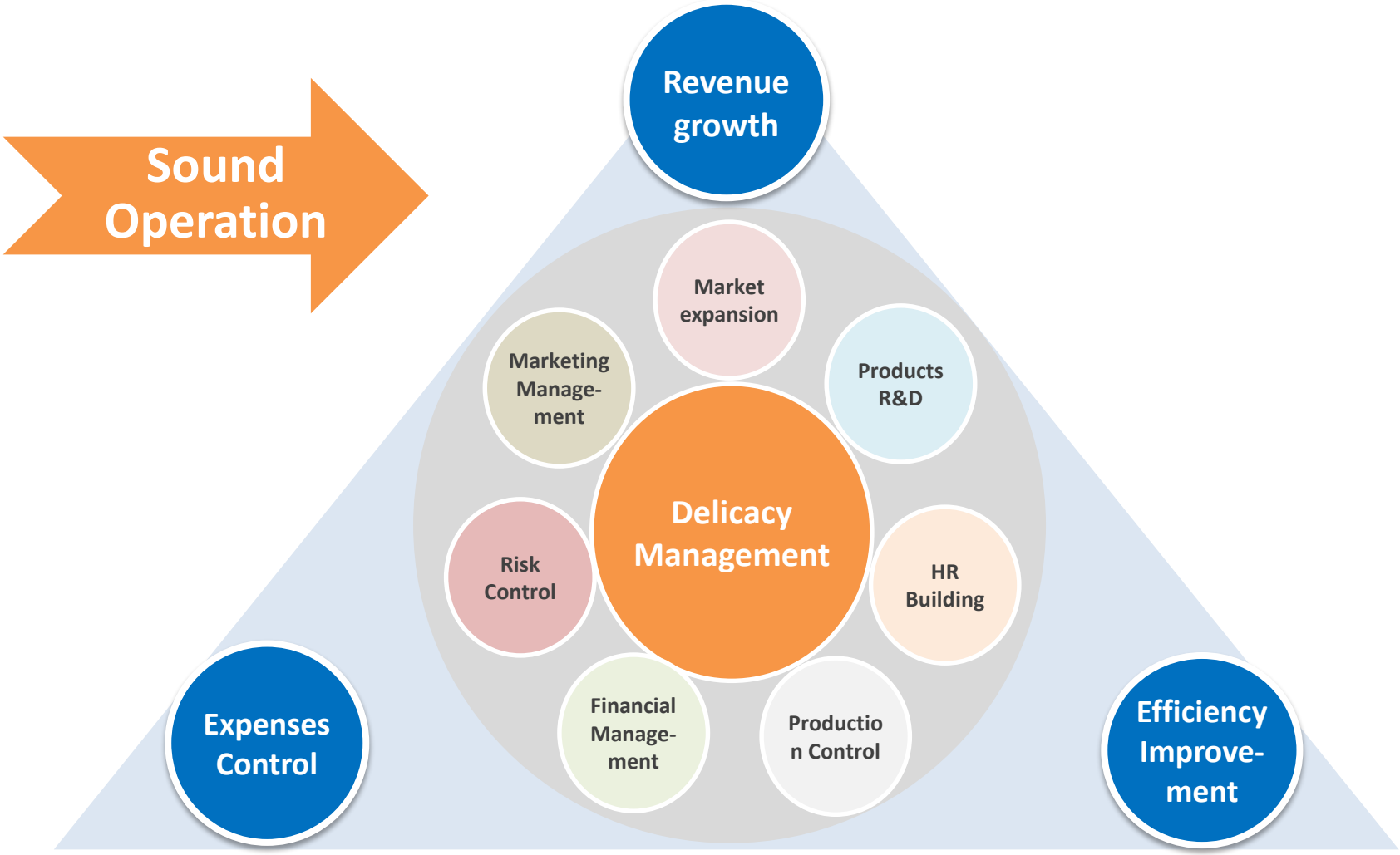

Strategic Outlook

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Focus on the Core Businesses

- Indoor Coverage
- Antenna & Subsystems
- Services

Innovative Development

- Rail Transit Communication
- ETL
- Intelligent Manufacturing and other new businesses

Rapid Growth of Financial Performance