



JMC ELECTRONICS CO.,LTD.



TAIEX : 6552

2018/11/06



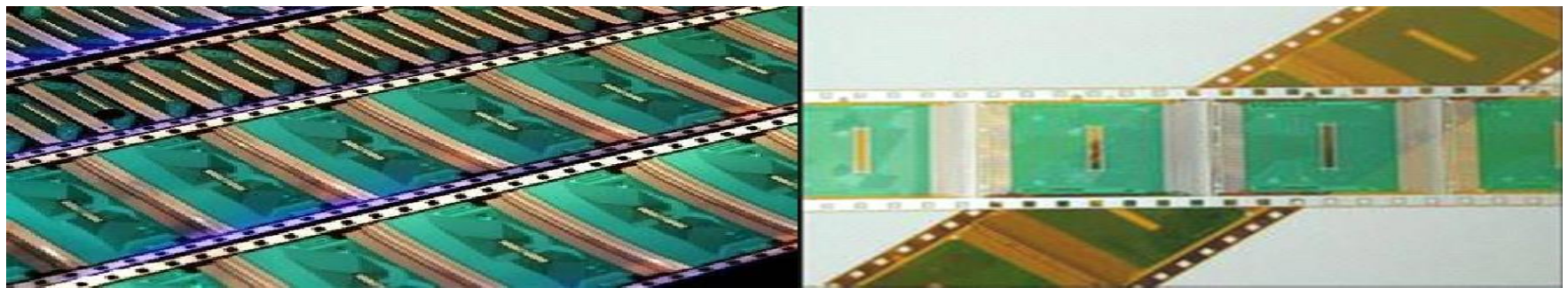
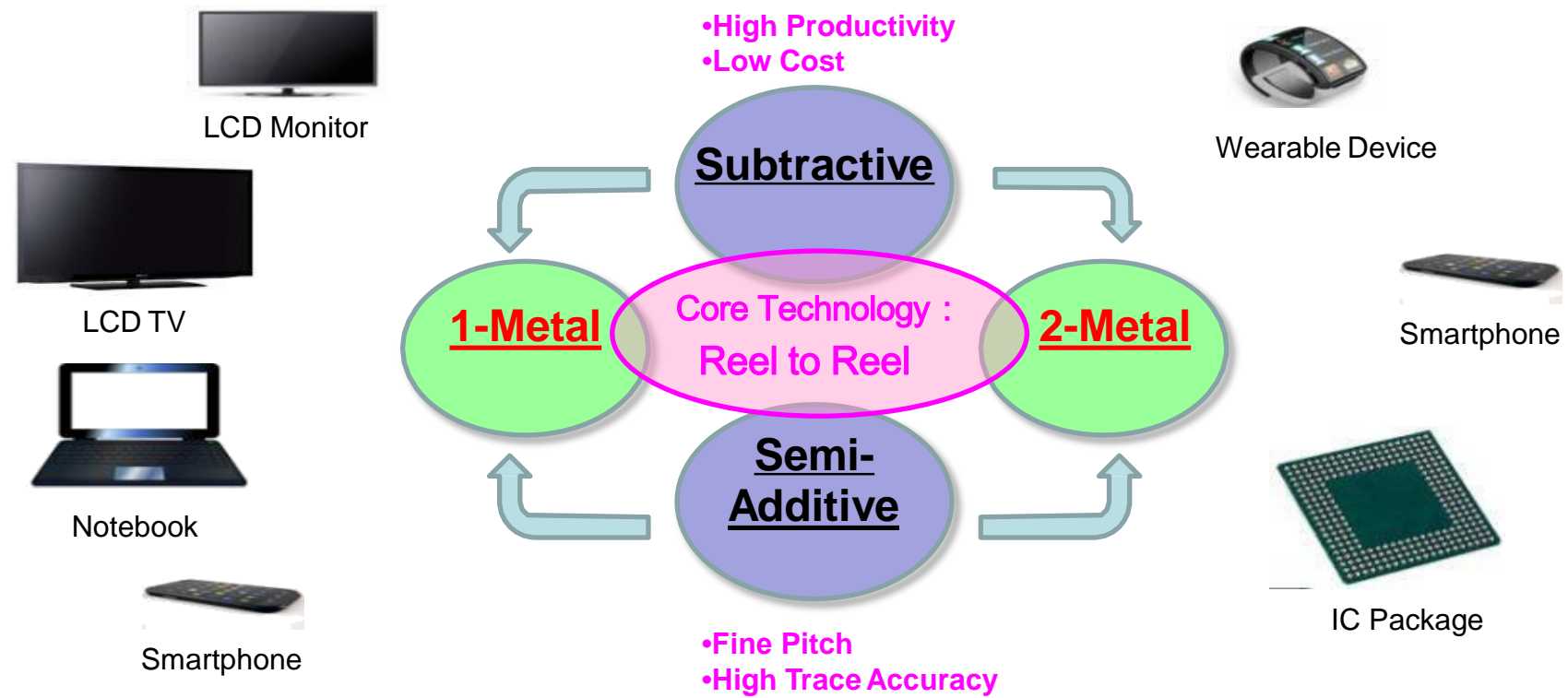
-Professional Reel-to-Reel Fine-Pitch Service

1. Company Introduction - Company Snapshot

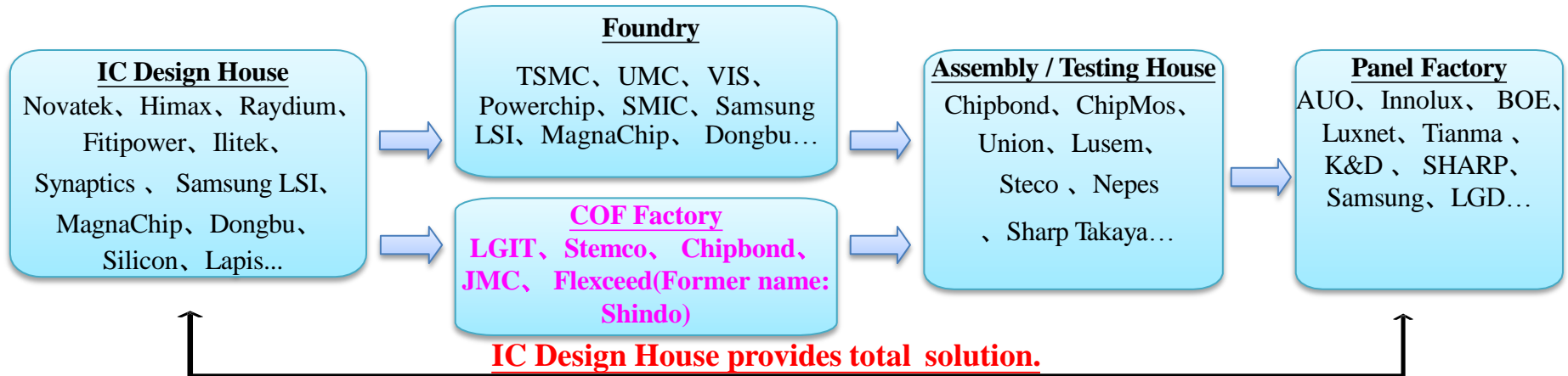
- Established : October 6 ,1973
- Chairman : Canon Huang
- General Manager : Jane Lee
- Capital Stock : 1,000 million
- Major Shareholders : CWE 42%、 ChipMos 19%
- Number of employees as of Sep 30,2018 : 594
- Major Product : COF(Reel to Reel Chip on Film)
- Headquarter : Kaohsiung,Taiwan



1. Company Introduction - Product Application



2. Industry Outlook - Driver IC Supply Chain



Process Technology		1-Metal Subtractive(Etching)	1-Metal Semi-Additive(Plating)	2-Metal
Application	Channel/48mm	<1400 /48mm	1400~1900 /48mm	1900~2500 /48mm
	Channel/70mm	<2000 /70mm	2000~3000 /70mm	3000~4000 /70mm
Capacity	Korea	S社	90~100KK	7-10KK
		L社	120~130KK	5-7KK
	Japan	F社	20KK	2KK Etching
		C社	70~90KK	
	Taiwan	JMC	20KK (The other 20KK not start)	40KK

Recently there are only five COF vendors in the world, and JMC is just one of the two vendors in Taiwan.

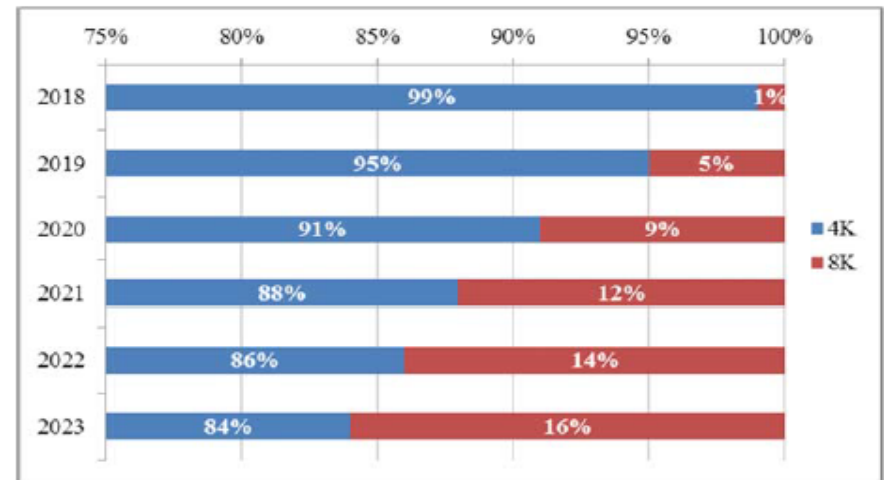
3. Market Overview - The Development Trend of Screen Panel ?

✓ The demand of 4K is slightly increasing ; 8K will be a big growth.

- ◎ The main design of TV is 4K right now, and the market keeps growing up. Therefore, the overall COF demand for large- sized panels is slightly increasing.
- ◎ The panel factories already launch their new products ,8K TV, and the next TV product plan is also heading towards 8K. Thus, market expects 8K TV panel will be the next opportunity for COF demand growth.



65吋以上面板市場4K、8K面板滲透率預估



Data Source: The Capital Group

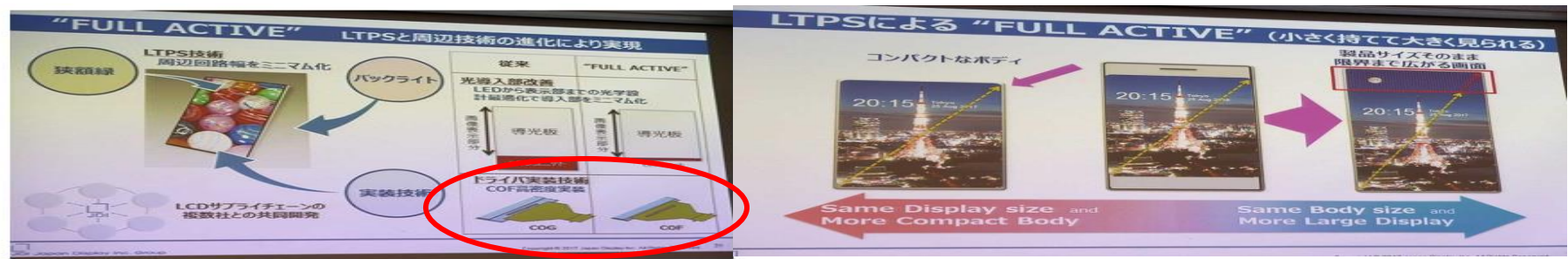
✓ The design trend of other screen panel.

- ◎ NB and Tablet computer panels come to full-screen design.
- ◎ Automotive panels...?

3. Market Overview - The Trend Of Small Size Panel ? (1)

✓ Smartphone panels turn to COF because of the full-screen design.

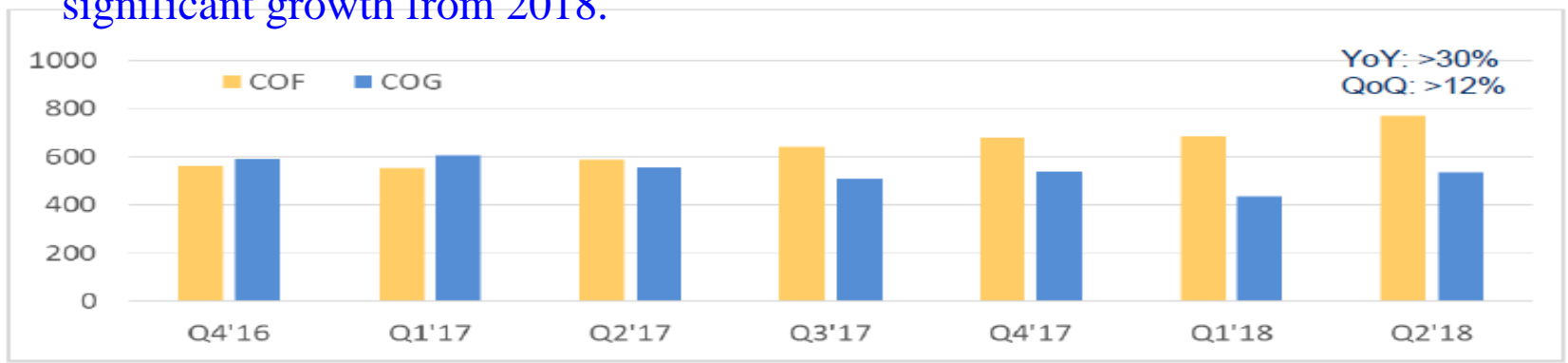
◎ Due to the trend of full-screen panel, smartphone panels turn to fine pitch COF instead of COG.



Data Source: The pictures are taken from website.

✓ COF for smartphone LTPS and TFT LCD is significant growth.

◎ LTPS and TFT LCD panels for smartphones use TDDI for COF demand is significant growth from 2018.



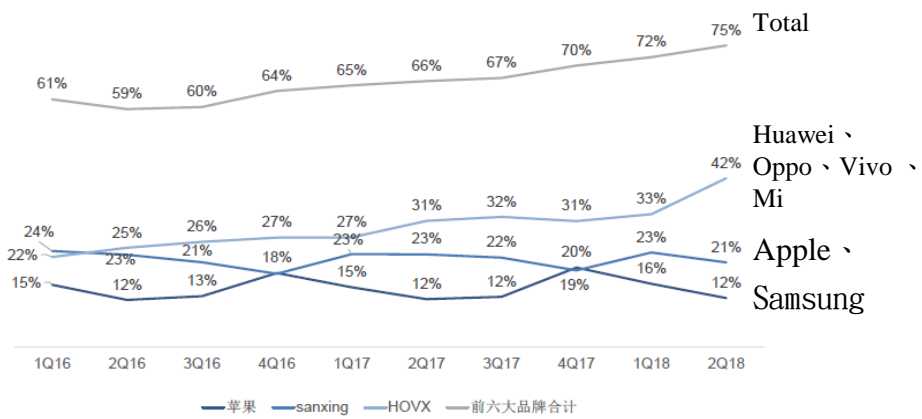
3. Market Overview - The Trend Of Small Size Panel ? (2)

✓ AMOLED panels for smartphones will use more COF capacity.

◎ Next stage -- AMOLED panels for mobile phones will require more COF capacity.

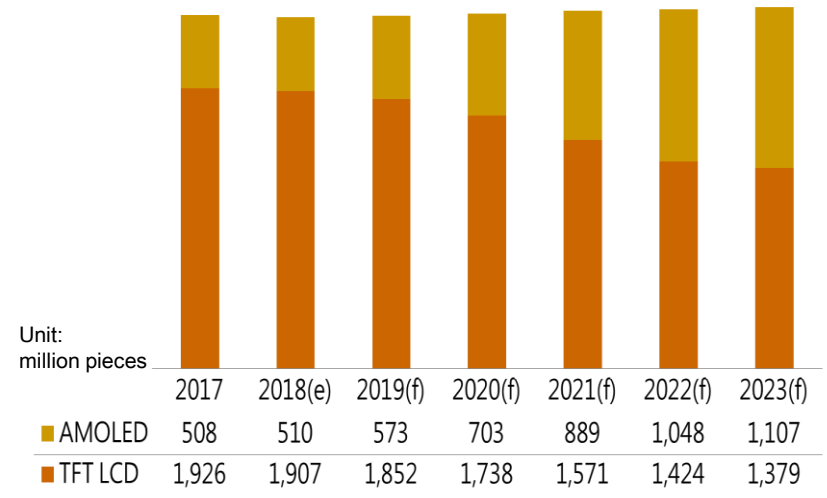
Factor	Content	Analysis	Impact on shipments
COF industry shutted down the plant and new technology competition.	Japan and Korea decrease their small and medium-sized panels of TFT LCD capacity and turn to AMOLED.	Samsung Display, LG Display and Japan Display shutted down many TFT LCD lines during 2015 to 2018, and which the Korean did were most the 5 th to 7 th generation lines.	The signal of the global capacity of small and medium-sized panels significant declines in production capacity so that the application of smartphone screen panels has been replaced by AMOLED.
The progress of AMOLED technology of China is not as expected.	In China, there will be 6 AMOLED lines in the process of mass production during 2018 to 2019. However, it takes 1 or 2 years to compete with LTPS TFT LCD in terms of cost and yield.	Although BOE and Tianma have already produced 6 generations of AMOLED new lines, the current shipments are still based on LTPS TFT LCD.	The time point for smartphone applications to turn to AMOLED will fall from 2021 to 2022.

三星、苹果、HOVX 全球智能手机市占率



资料来源：IDC，广发证券(香港)
注：HOVX 包含华为、Oppo、Vivo、小米

Global smartphone panel shipments change and forecast - technology



资料来源：DIGITIMES Research，2018/9



-Professional Reel-to-Reel Fine-Pitch Service

4. Technology Development - Application Plan & Strategy

Process Technology	1-Metal COF		2-Metal COF
	Subtrative(Etching)	Semi-additive(Plating)	Semi+Sub
	Pitch: 22um => 20um	Pitch: 20/18/16um => 14um	Pitch: 22/22um => 20/20um
Targeted Market	*COF for Large-size panel	*4K2K / 8K4K High-end panel - Thicker Copper COF (12um) for Heat Dissipation *COF for smartphone with fine pitch & high pin count *COF for wearable device	*COF for 8K4K High-end TV panel *COF for smartphone with high pin count over 3000channel *Memory IC & Logic IC with Thin film substrate *High-end LED Substrate
Product Application	DDI for TV(FHD/4K)	DDI for TV(FHD/4K)	DDI for TV(8K)
	DDI for Wearable LCD (Pitch ≥ 20um)	DDI for Wearable LCD (Pitch < 20um)	
	DDI for Mobile LCD TDDI for Mobile LCD (Pitch ≥ 20um)	DDI for Mobile LCD TDDI for Mobile LCD (Pitch < 20um)	TDDI for Mobile LCD (Special Requirement)
		DDI for Flexible OLED (Channel ≤ 2500)	DDI for Flexible OLED (Channel > 2500)
			Logistic IC Substrate
			DRAM IC Substrate
			DDI Substrate for LED



4. Technology Development - Application Plan & Strategy

JMC provides a full range of product solutions for you.

High-end TV
& AMOLED TV

High-end Smartphone
& wearable device

Memory IC 、 Logic IC
& LED Substrate

Subtractive

1. Fine Pitch
(20um Pitch)
2. High Pin count
(1440 Channel)

Semi-Additive

1. Thicker Copper COF(12um)
2. Fine Pitch (18/16/14um Pitch)
3. High Pin count
(48mm-1900 Channel)
(70mm-3000 Channel)

2-Metal

1. Thin Film Substrate
2. High Pin count
(48mm-2500 Channel)
(70mm-4000 Channel)
3. High-end LED Substrate

Competitive advantages

- ⊙ Fast production and high efficiency.
- ⊙ Independent technical ability and stable production yield.

Competitive advantages

- ⊙ High precision size controlled COF products, and can improve the assembly of the panel module rate; help customers to lower total cost.
- ⊙ High production yield and good quality stability; absolute competitive advantage in production costs.

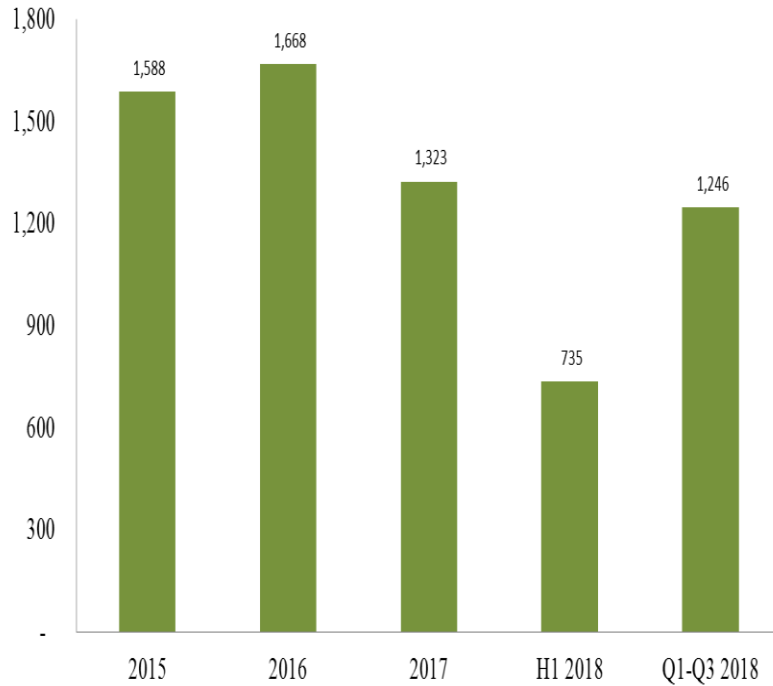
Competitive advantages

- ⊙ New process technology development capabilities.
- ⊙ Equipment design capability.
- ⊙ Good cost control.

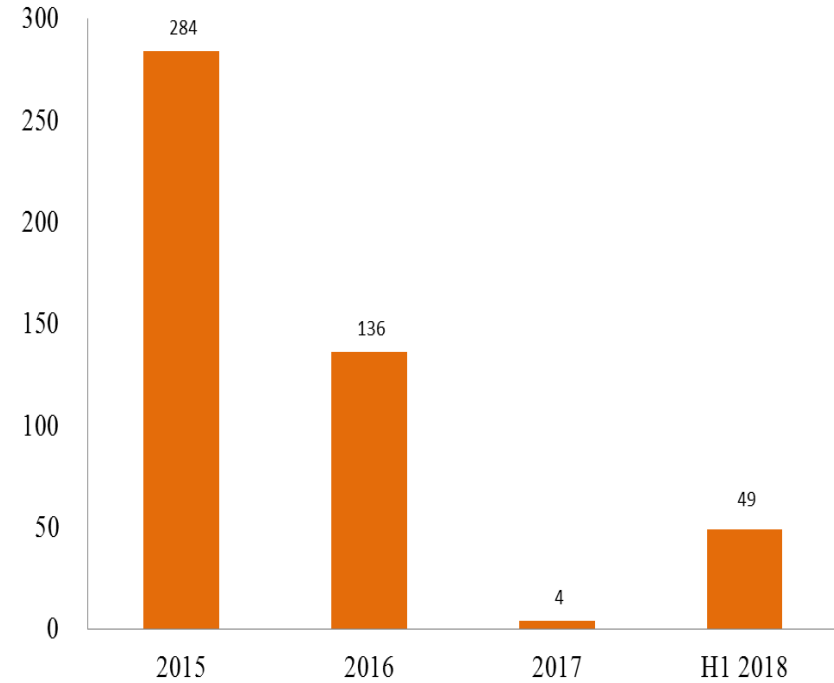


5. Financial Results - Results Highlights

Revenue



Net Income

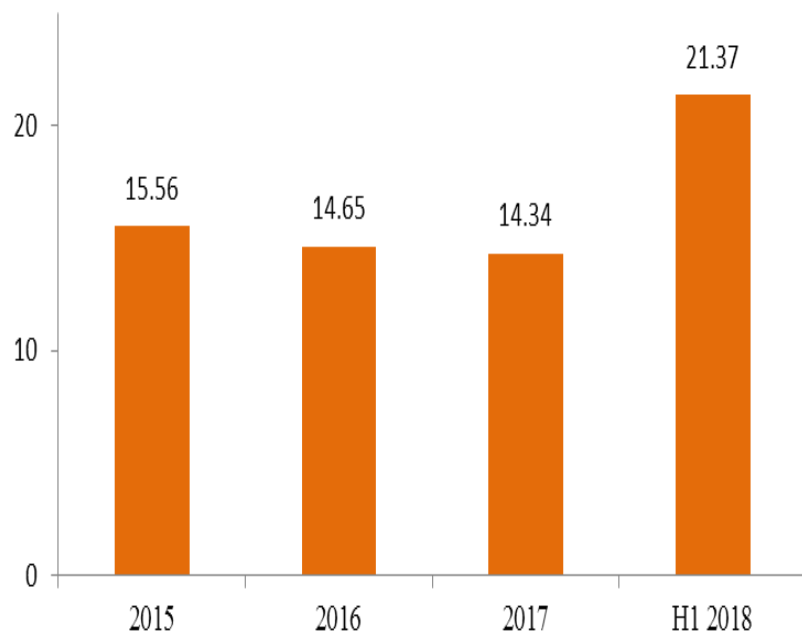


(In NT\$ Million)

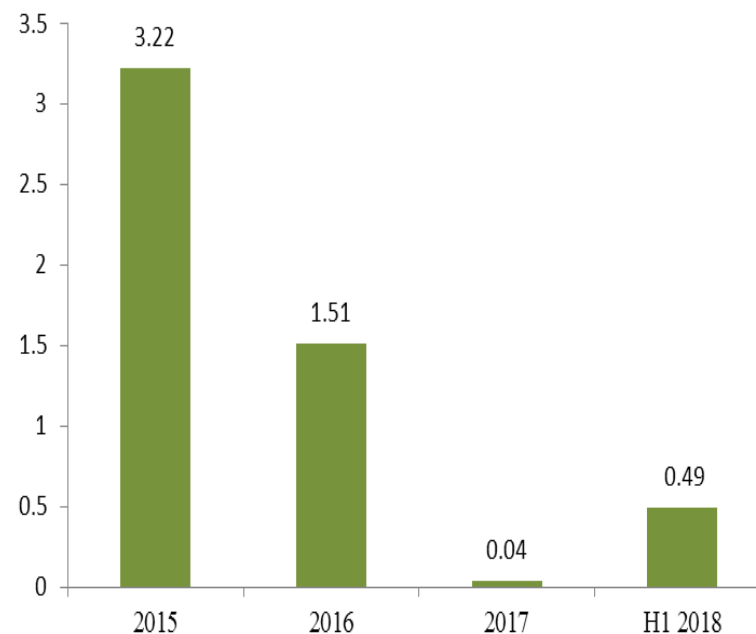
	2015	2016	2017	H1 2018	Q1-Q3 2018
Revenue	1,588	1,668	1,323	735	1,246
Net Income	284	136	4	49	?

5. Financial Results - Results Highlights

Debt ratio



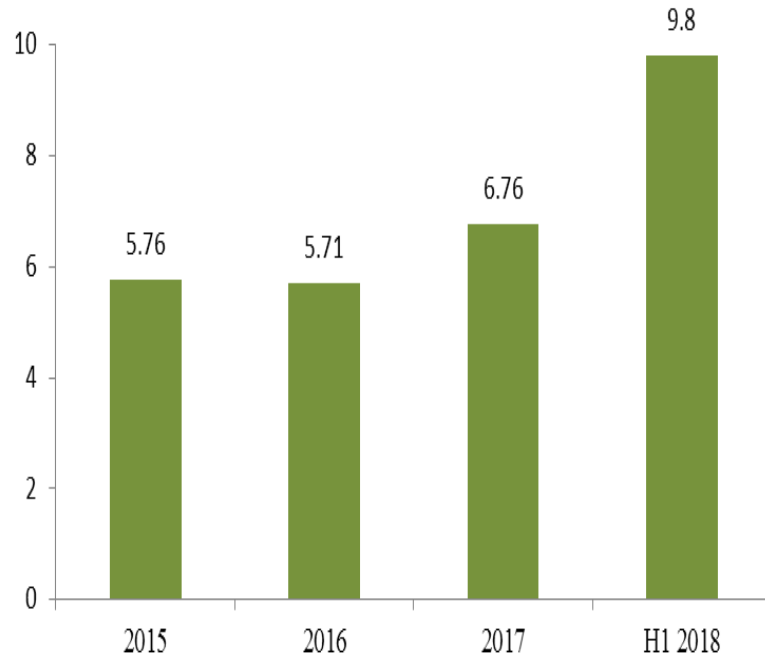
EPS(NT\$)



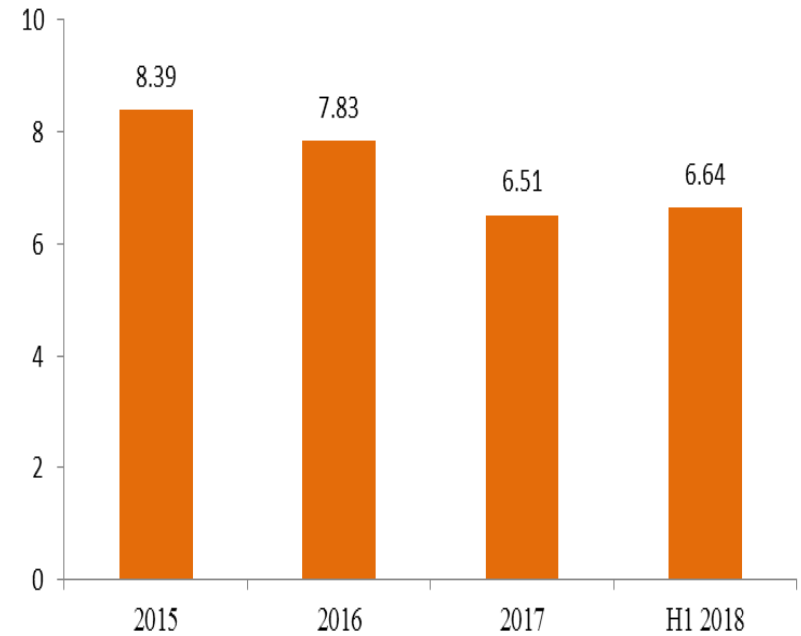
	2015	2016	2017	H1 2018
Debt ratio(%)	15.56	14.65	14.34	21.37
EPS(NT\$)	3.22	1.51	0.04	0.49

5. Financial Results - Results Highlights

A/R Turnover ratio



Inventory Turnover ratio



	2015	2016	2017	H1 2018
A/R Turnover ratio(times)	5.76	5.71	6.76	9.80
Inventory Turnover ratio(times)	8.39	7.83	6.51	6.64

Thank You

