Elite Material Co., Ltd.

Global leading provider of eco-friendly laminates

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Market position of the company

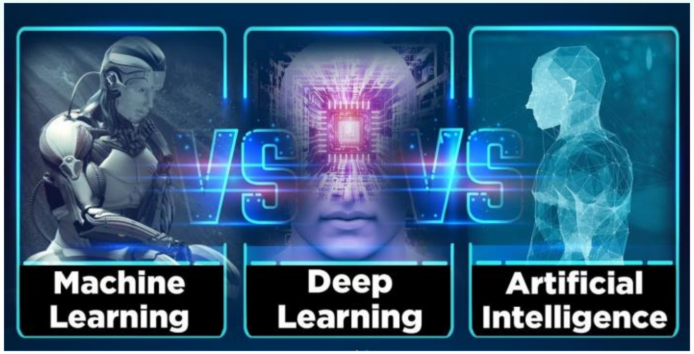
Global No. 1 provider of:

- Halogen-free laminates
- Laminates for HDI (high-density interconnect) PCB
- Laminates for smartphones

HDI growth remains on the upward trend

- Proliferation of HDI PCB applications
- Material upgrade raises the laminate dollar content per square inch

Proliferation of HDI PCB applications



Smartphones

SSD & Memory modules

Ultra thin Laptops & tablets

Gaming

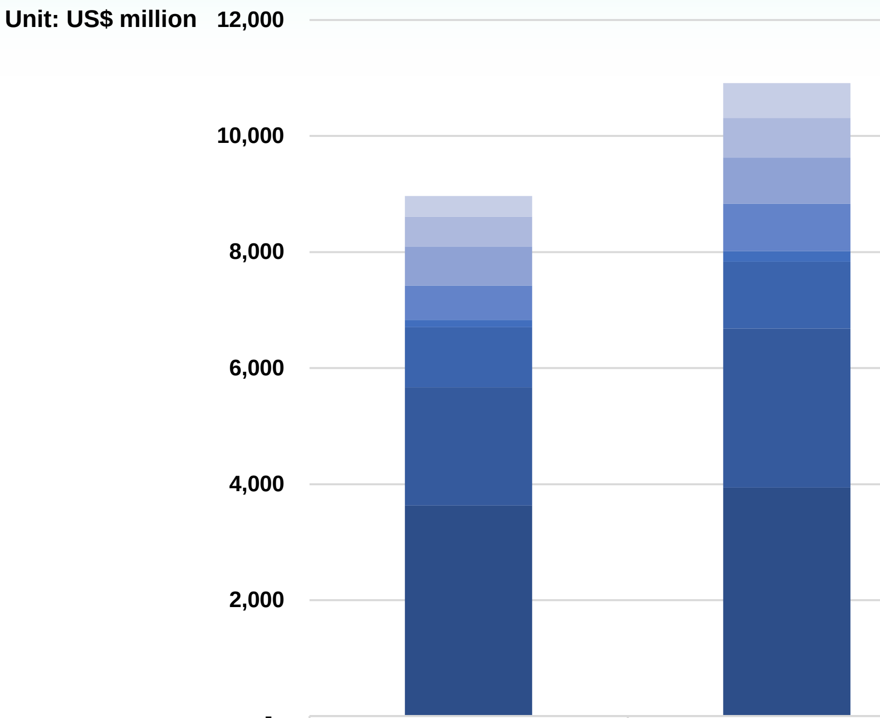
AR/VR

Smart Speakers

Drones

Wearables

Multiple factors drive the growth of HDI



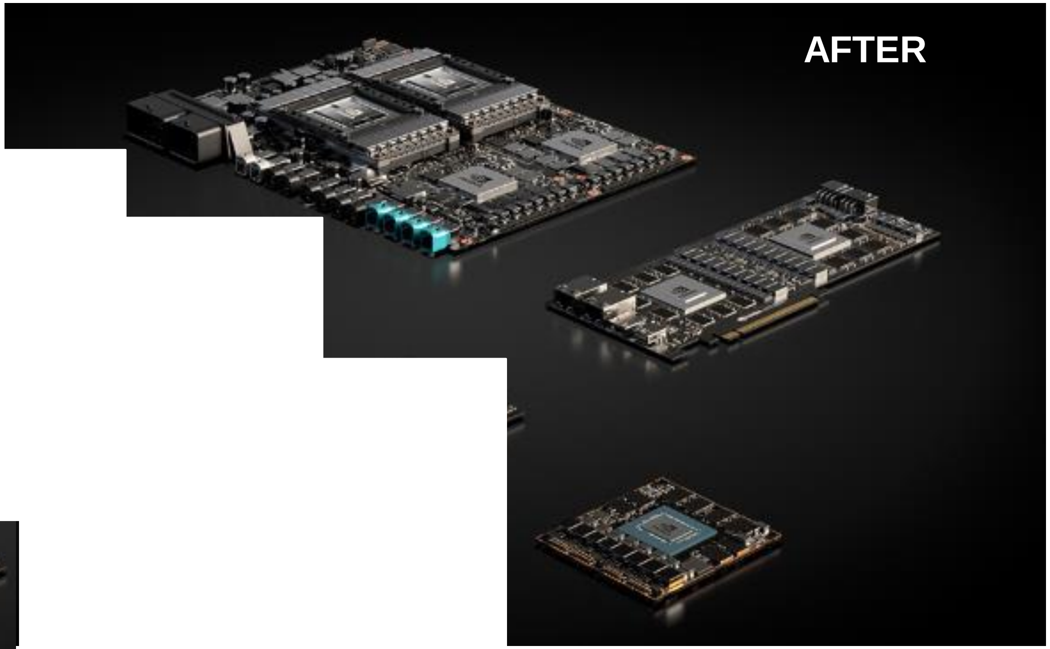
	2017	2022F
Others (Module, SiP, Wearables, etc.)	357	603
Automotive	515	683
Datacom and Telecom Infrastructure	678	794
Portable Consumer	587	816
DRAM & SSD	126	183
Tablet, NB and PC	1,034	1,154
Mobile Phones - Anylayer	2,042	2,739
Mobile Phones - HDI regular	3,629	3,942

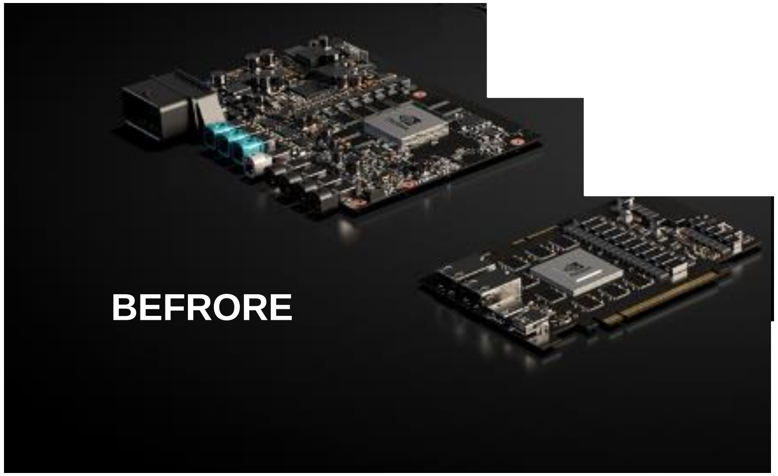
Source: Prismark

- **CAGR of overall HDI growth is forecast to be 4.0% from 2017 to 2022.**
- **Any-layer HDI consumed by mobile phones is predicted to have a CAGR of 6.05% during the forecast period.**
  - Implication: Laminate $ content rises, though the total number of smartphone units is considered to be stagnant.
- **SSD & DRAM would have the highest CAGR of 7.75%.**
- **Increasing electronic content of automotive vehicles, e.g. ADAS, telematics, and infotainment systems, leads to HDI growth, projected to have a CAGR of 5.81%.**
- **PCBs in datacom & telecom infrastructure begin to adopt fine line/pitch design.**
  - Implication 1: HDI construction technique becomes common for infrastructure beginning from PCIe Gen 4 and Gen 5.
  - Implication 2: The upgrade at material and construction technique for infrastructure is an irreversible trend while 5G era is approaching.

PCB design of networking infrastructure is migrating

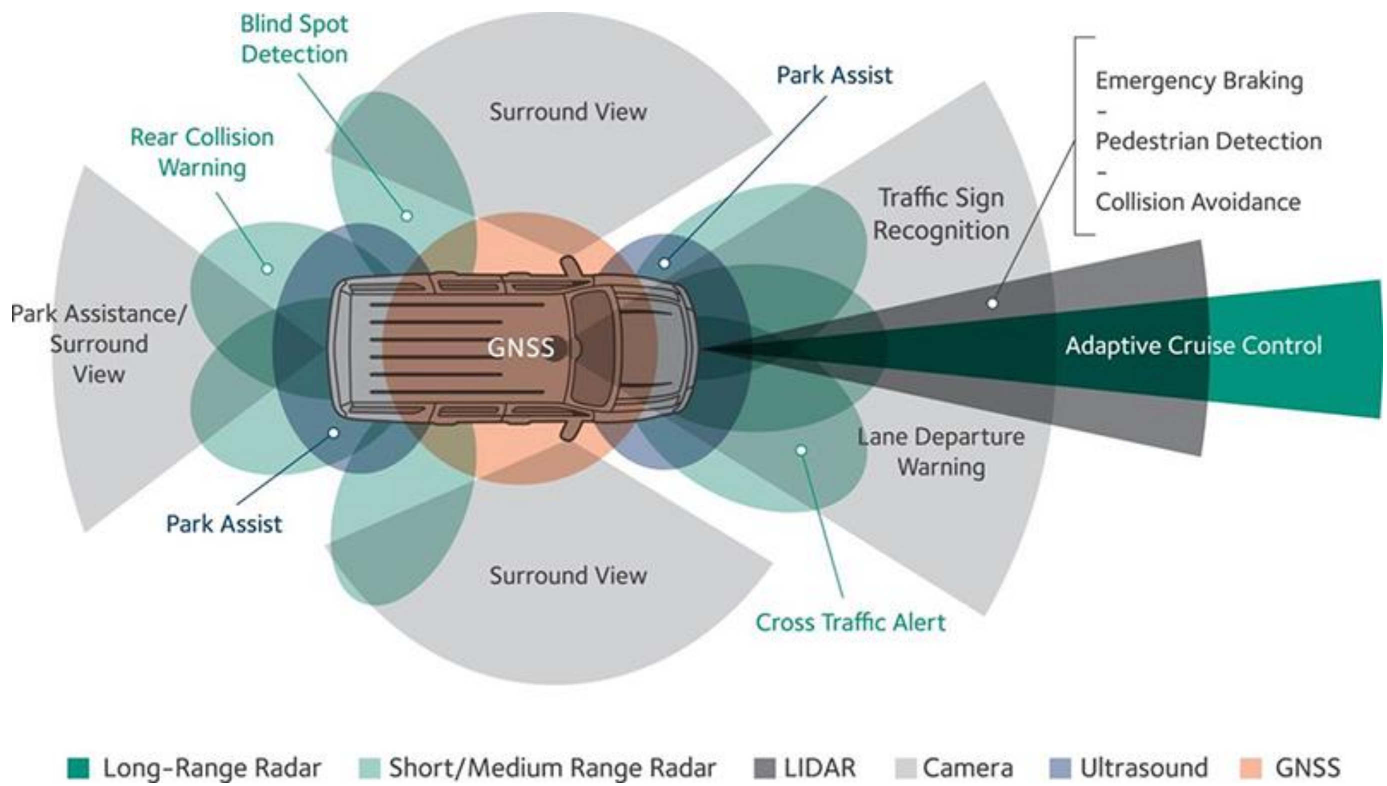
- **Trend 1: Halogen-free. HF laminates are preferred or required.**
  - New platforms of PCIe 4 include, but are not limited to, Intel's Whitely, request only halogen-free laminates.
- **Trend 2: HDI. AI semiconductors, GPUs and CPUs, and heterogeneous integration of semiconductors increase pin counts substantially.**
  - Fine line/pitch HDI architecture design by PCB constructors becomes common.
- **Trend 3: Multi-lamination, which is a must in HDI construction technique.**
- **Decades of experiences and knowledge EMC accumulated in HF and HDI now a competitive advantage unrivalled by peers.**





Source: nVidia

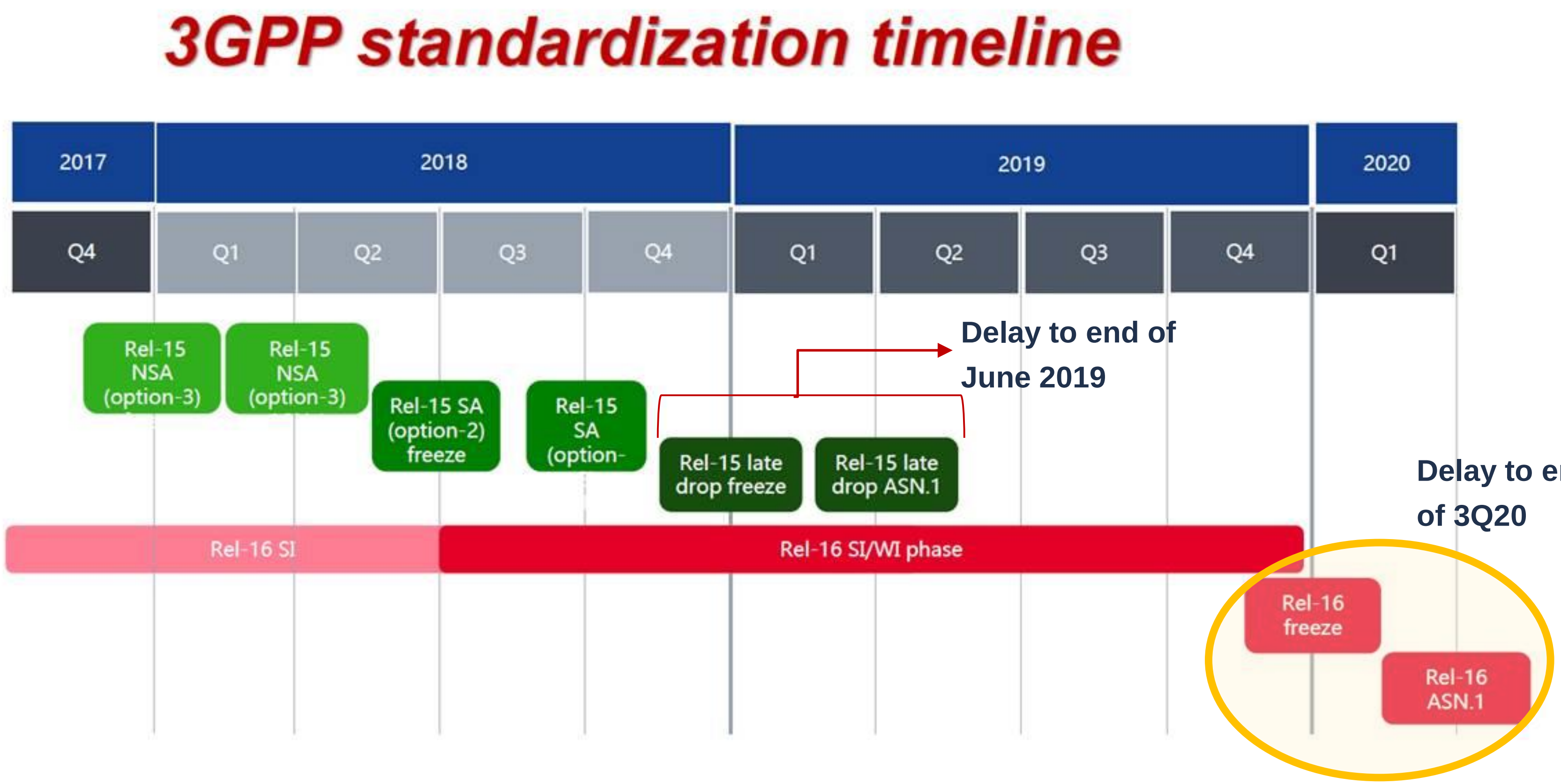
Increasing electronic content per car



- **Autonomous and Safety**
  - Radar
  - Camera / Vision system
  - In-vehicle server / AI Module
  - Chassis and safety ECUs
  - Active sensing ECUs
- **Connectivity and Infotainment**
  - V2X connection
  - Central gateway
  - Intelligent CarKey
  - GNSS (Global Navigation Satellite System)
  - Infotainment ECU / Module / e-Cockpit (WiFi, Bluetooth, Wireless access, Memory, Cellular, Navi)

Controversial opinion about the global 5G roadmap

- On 16th December 2018, Balazs Berftenyi, Chairman of 3GPP announced that the finalization of Release-15 late drop will be postponed for three months.

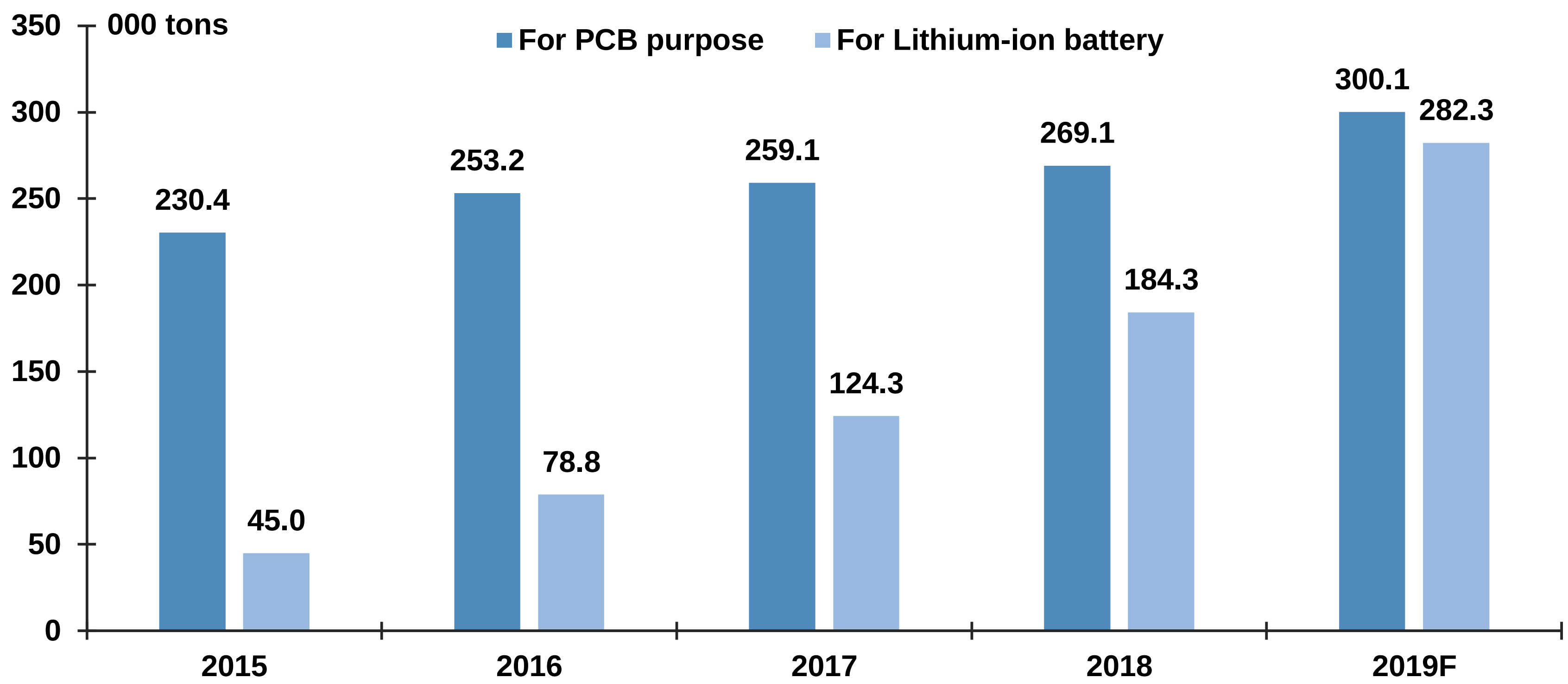


Source: 3GPP website; www.3GPP.org

Cost pressure is expected to be relieved

- Capacity of copper foils consumed by PCBs is forecast to increase by 11.5% YoY, from 269,100 tons in 2018 to 300,100 tons in 2019.
- Processing fee of copper foil manufacturers is expected to remain flat or even trend down.

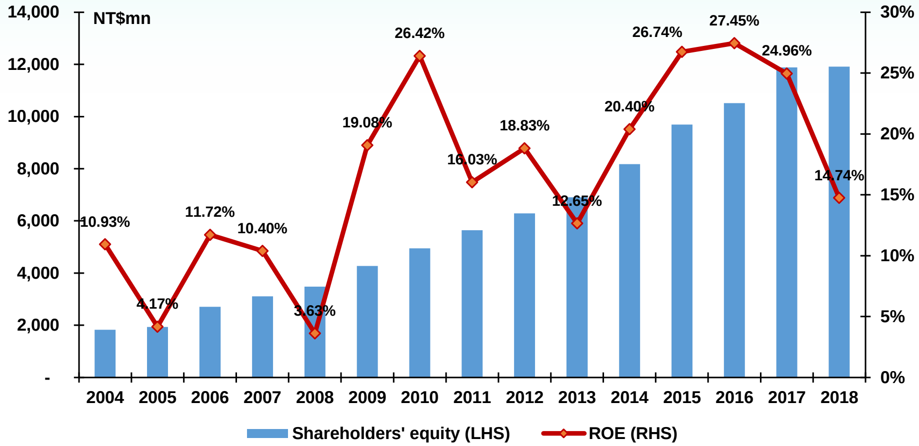
Capacity of copper foils



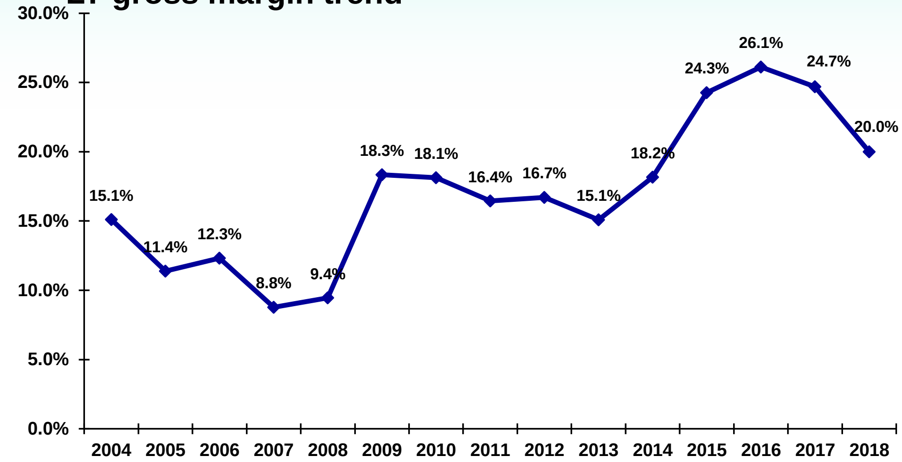
Source: TPCA (Taiwan Printed Circuit Association)

Operating and financial results

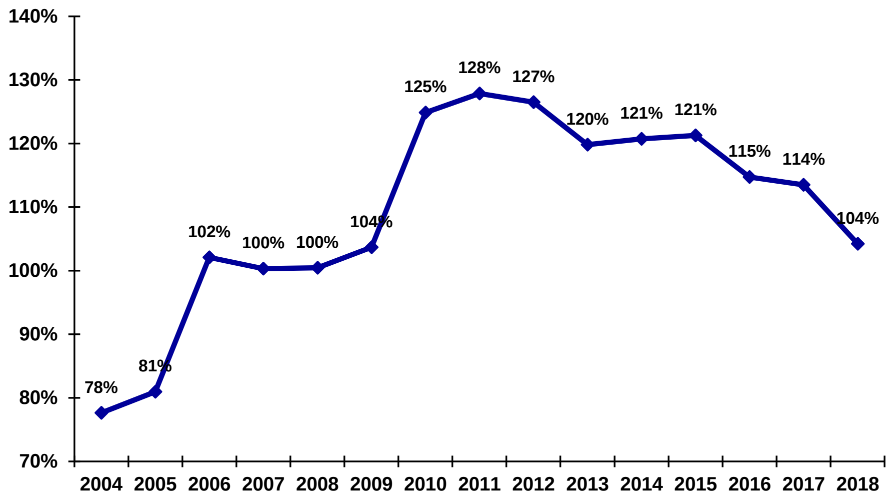
ROE trend



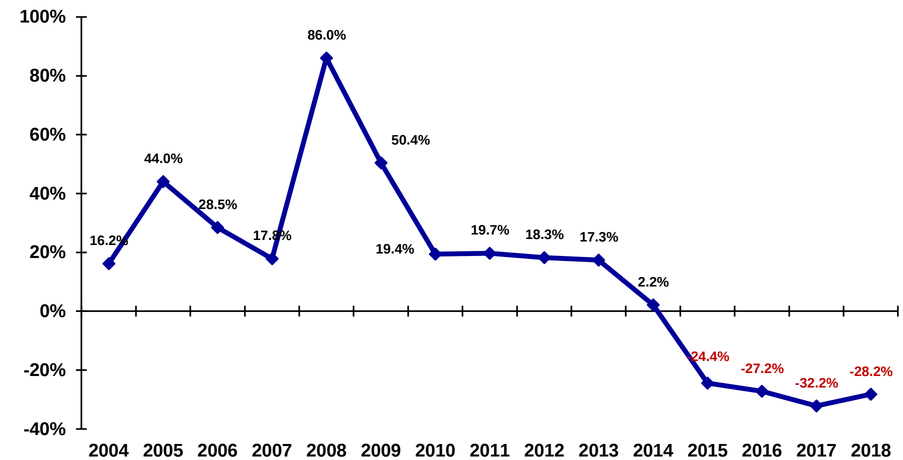
LT gross margin trend



Asset turnover ratio

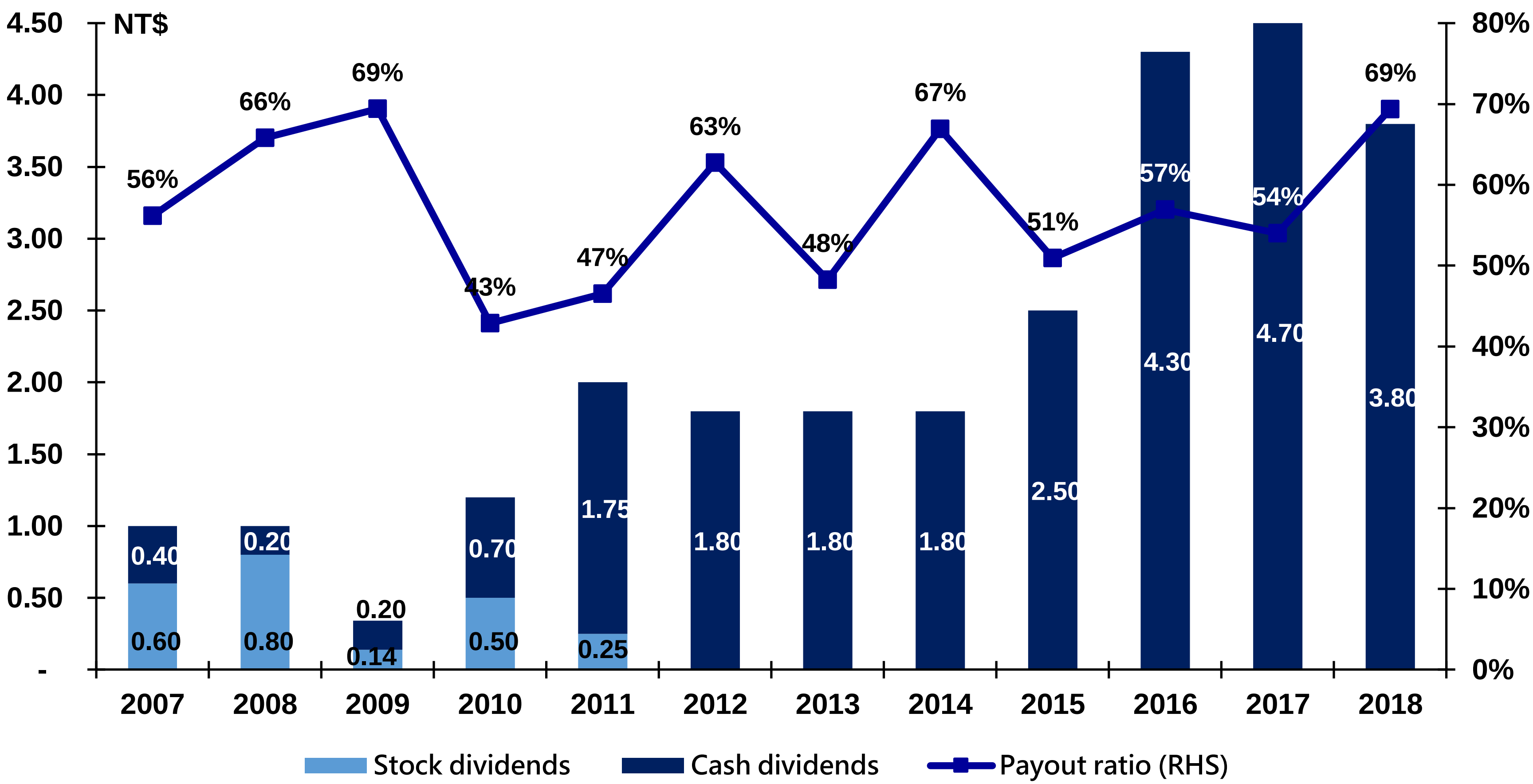


Net debt/equity ratio



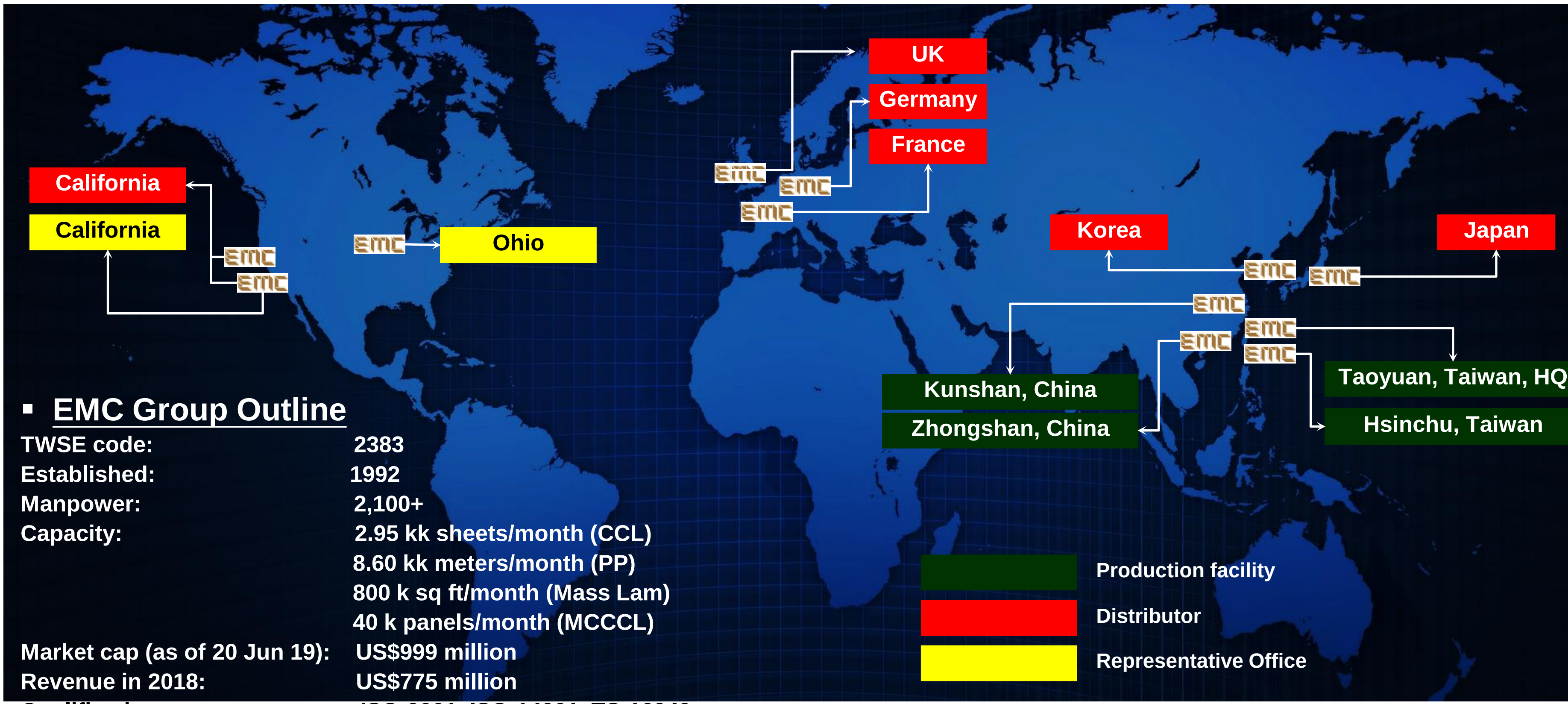
Note: Net debt = Interest-bearing debts – cash amount

Dividend payout history



APPENDIX

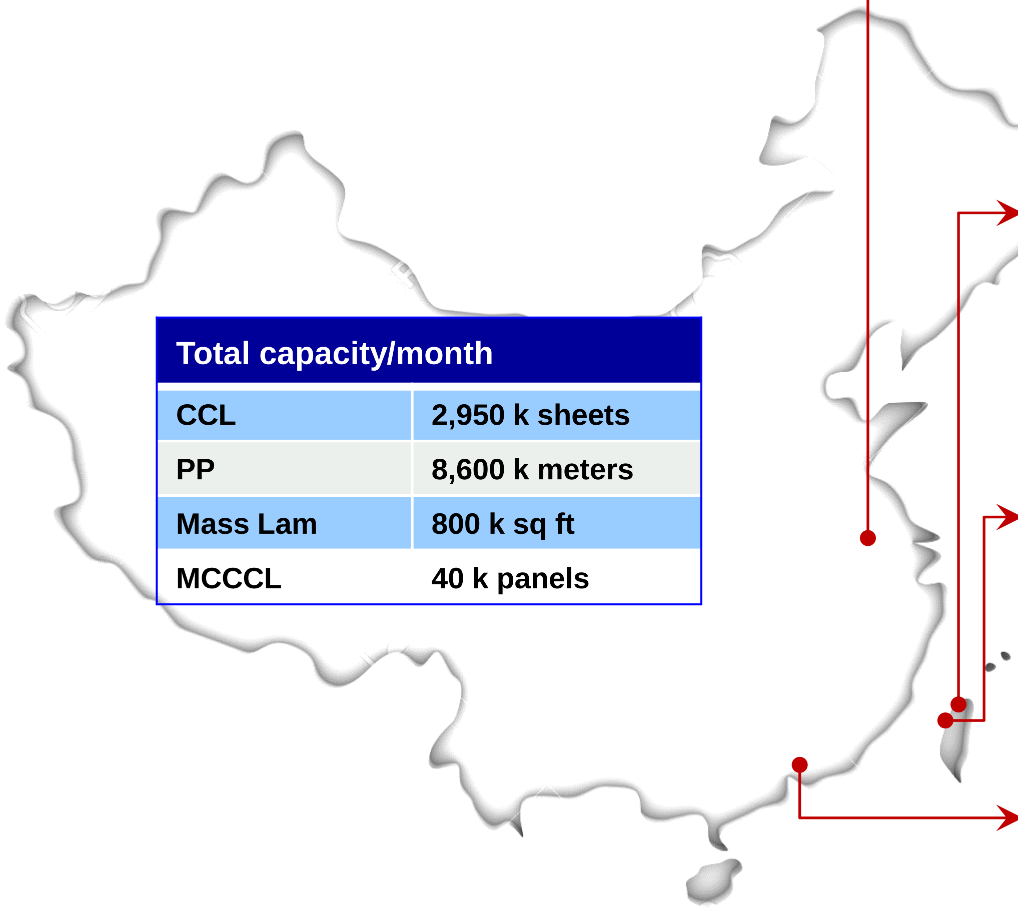
Company profile – global footprint



- EMC Group Outline

TWSE code:	2383
Established:	1992
Manpower:	2,100+
Capacity:	2.95 kk sheets/month (CCL) 8.60 kk meters/month (PP) 800 k sq ft/month (Mass Lam) 40 k panels/month (MCCCL)
Market cap (as of 20 Jun 19):	US$999 million
Revenue in 2018:	US$775 million
Qualifications:	ISO-9001, ISO-14001, TS-16949 QC080000, AS9100C, and Sony Green Partner
UL file number:	E150504

Production site and monthly capacity



Total capacity/month	
CCL	2,950 k sheets
PP	8,600 k meters
Mass Lam	800 k sq ft
MCCCL	40 k panels

EMC (KS) Kunshan	
CCL	1,350 k sheets
PP	3,300 k meters
Manpower	850+

EMC (TW) Taoyuan	
CCL	500 k sheets
PP	1,800 k meters
Manpower	500+

EMC (TW) Hsinchu	
CCL	150 k sheets
PP	1,400 k meters
Mass Lam	800 k sq ft
MCCCL	40 k panels
Manpower	250+

EMC (ZS) Zhongshan	
CCL	950 k sheets
PP	2,100 k meters
Manpower	600+

1Q19 P&L summary

Unit: NT$ million

	1Q19	4Q18	QoQ	1Q18	YoY
Revenue	5,072	5,404	-6.1%	5,312	-4.5%
Gross profit	1,074	979	9.7%	1,002	7.1%
Operating profit	652	557	17.0%	562	15.9%
Interest income (expenses)	9	7	33.0%	6	59.2%
Other income (expenses)	18	43	-58.1%	(8)	na
Income before tax	679	607	11.9%	560	21.2%
Tax expenses	203	180	13.0%	284	-28.5%
Net income	476	427	11.4%	276	72.3%
EPS (NT$) - basic	1.49	1.34	11.4%	0.86	72.3%
Gross margin (%)	21.2%	18.1%		18.9%	
Operating margin (%)	12.9%	10.3%		10.6%	
Net margin (%)	9.4%	7.9%		5.2%	

Five-year consolidated P&L summary

Unit: NT$ million

	2014	2015	2016	2017	2018	1Q18	1Q19	YoY
Revenue	18,885	20,870	22,070	23,610	22,891	5,312	5,072	-4.5%
Gross profit	3,431	5,064	5,766	5,828	4,576	1,002	1,074	7.1%
Operating profit	1,598	3,249	3,939	4,007	2,755	562	652	15.9%
Interest income (expenses)	(47)	(36)	(27)	16	34	6	9	59.2%
Other income (expenses)	287	117	6	6	38	(8)	18	na
Income before tax	1,838	3,331	3,917	4,028	2,827	560	679	21.2%
Tax expenses	297	938	1,143	1,233	1,072	284	203	-28.5%
Net income	1,542	2,392	2,774	2,795	1,754	276	476	72.3%
EPS (NT$) - basic	4.82	7.48	8.68	8.74	5.49	0.86	1.49	72.3%
Gross margin (%)	18.2%	24.3%	26.1%	24.7%	20.0%	18.9%	21.2%	
Operating margin (%)	8.5%	15.6%	17.8%	17.0%	12.0%	10.6%	12.9%	
Net margin (%)	8.2%	11.5%	12.6%	11.8%	7.7%	5.2%	9.4%	