



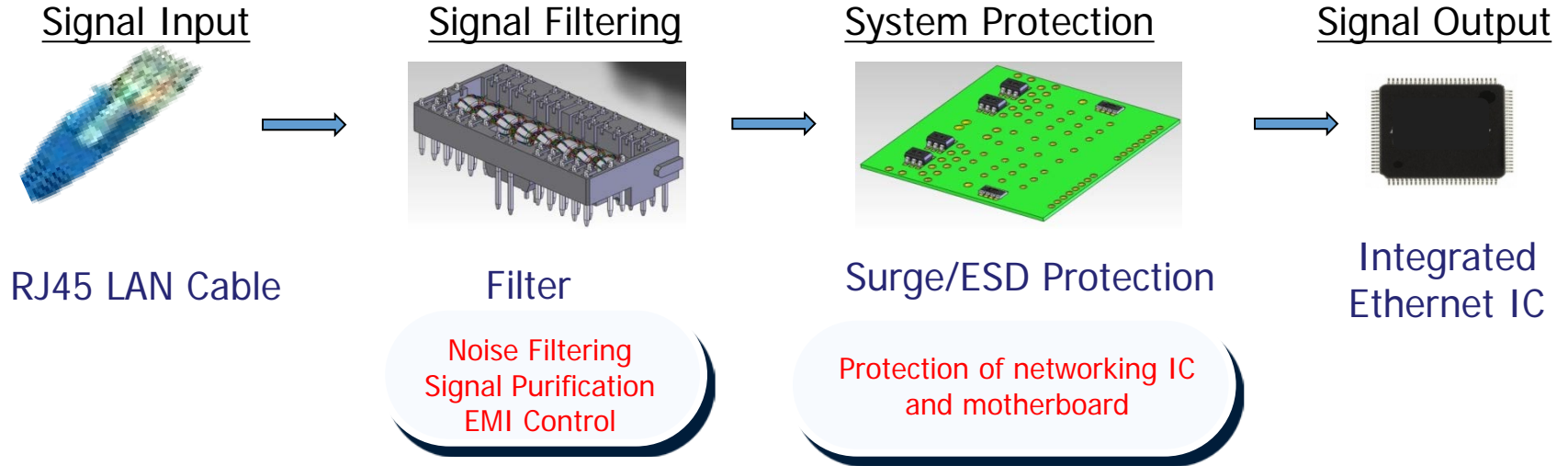
# UDE 湧德電子

3689

Gary Chen

Dec. 2020

# UDE Possesses Excellent Electromagnetic Signal Processing and Customization Capability



Customized high frequency electromagnetic impedance design to match customer systems

**Goal : Maintain high S/N ratio to guarantee complete and rapid signal transmission to the network IC on client motherboard**

# High Entry Barriers for Conventional Connector Producers

RJ45 port production requires mastery of conventional connector production techniques and additional techniques specific to high speed data transfer

## Conventional Connector

Mechanical Precision

Structural Design

Precision Injection

High Speed Stamping

Precise Mold Design

## RJ45 Port (RJM)

High Speed Transmission

Electronic Fine Tuning

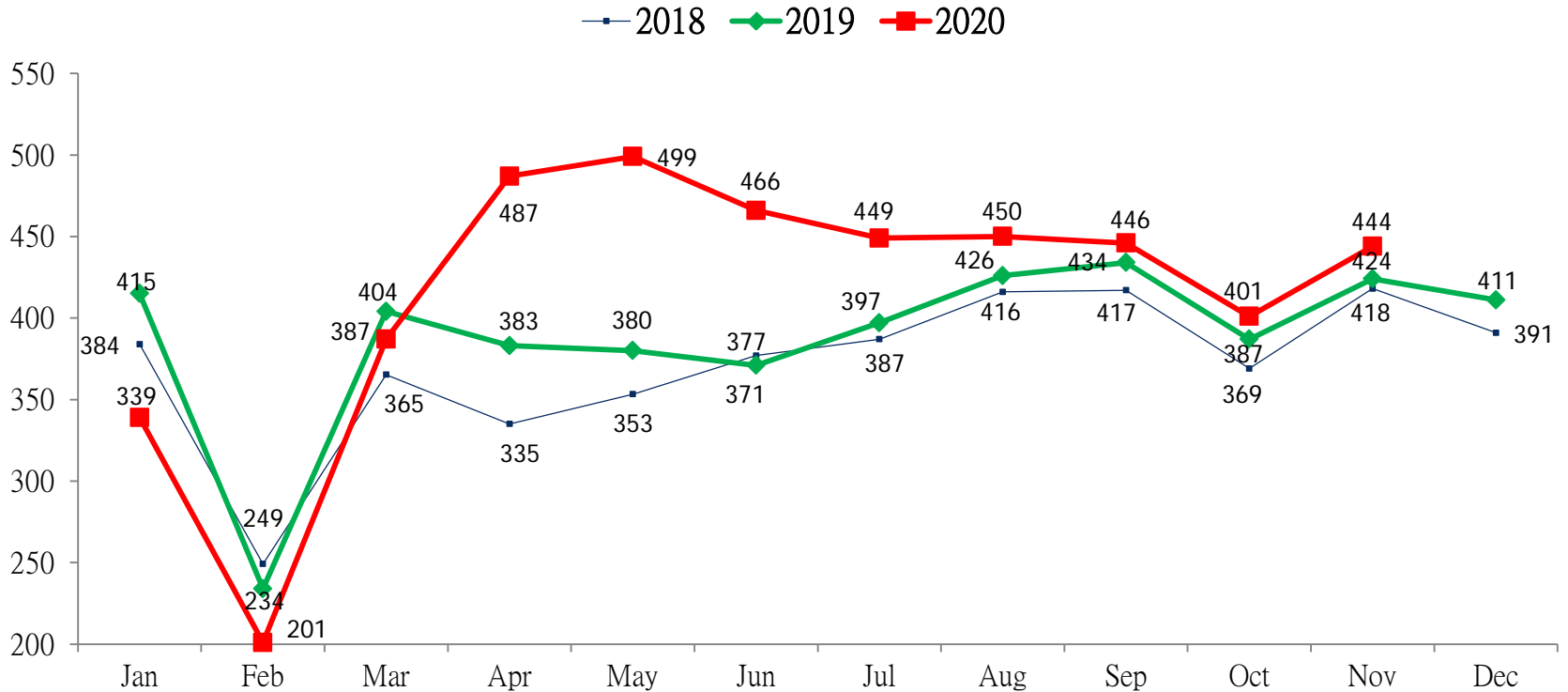
Noise and EMI Reduction

Network and MB Protection

Circuit Design

# Monthly Revenue Trend

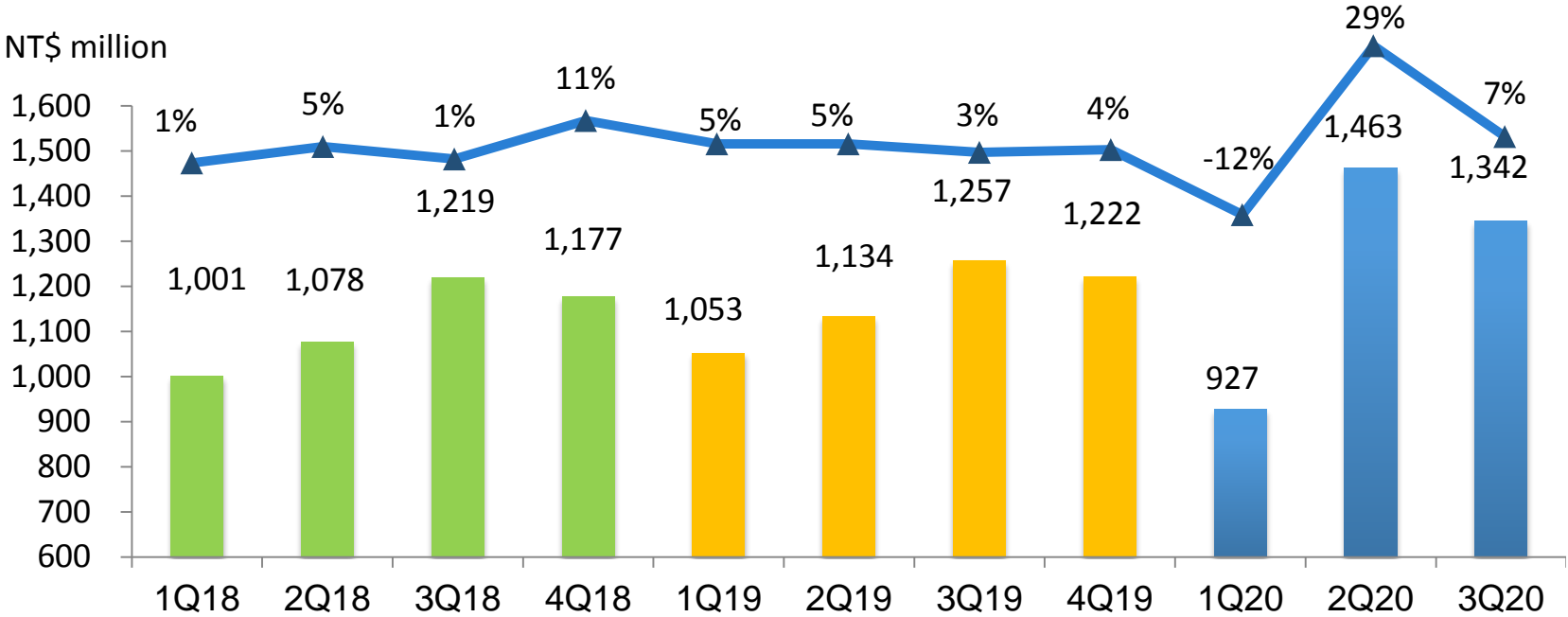
NT\$ million



# Quarterly Revenue Trend

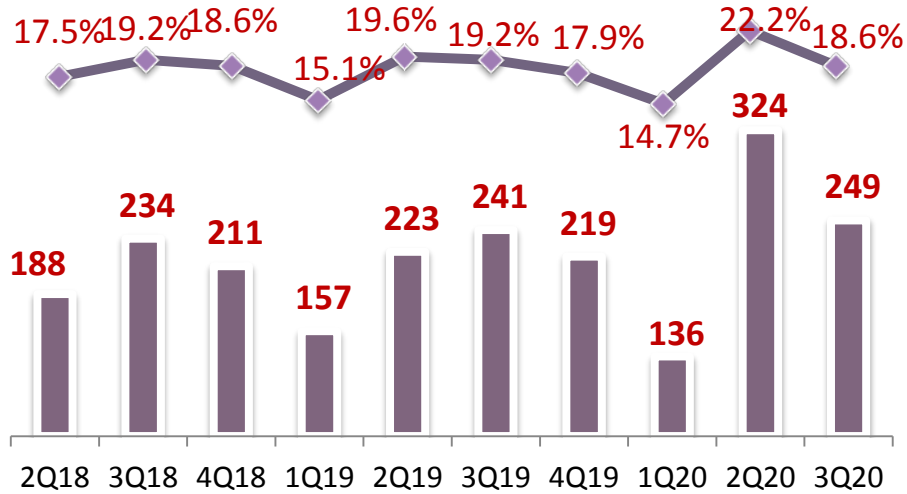
## YoY Growth

NT\$ million



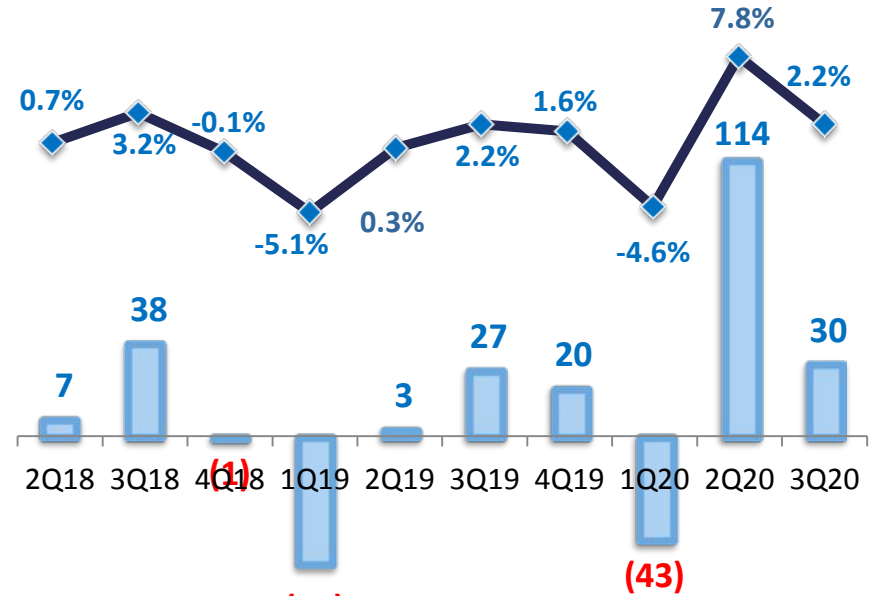
# Gross Profit and Operating Profit

## Gross Margin %



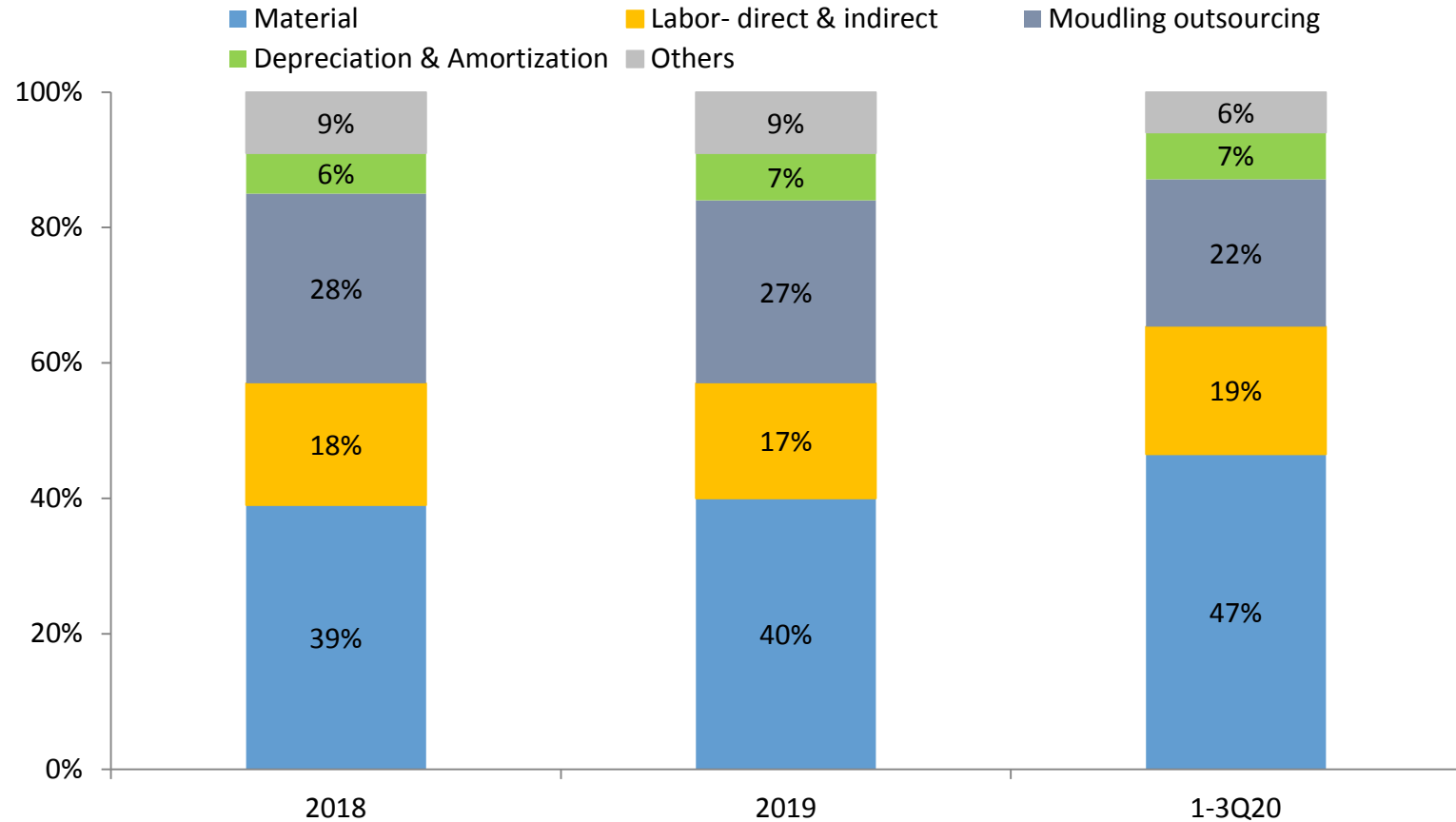
Gross Profit NT\$ million

## Operating Margin %

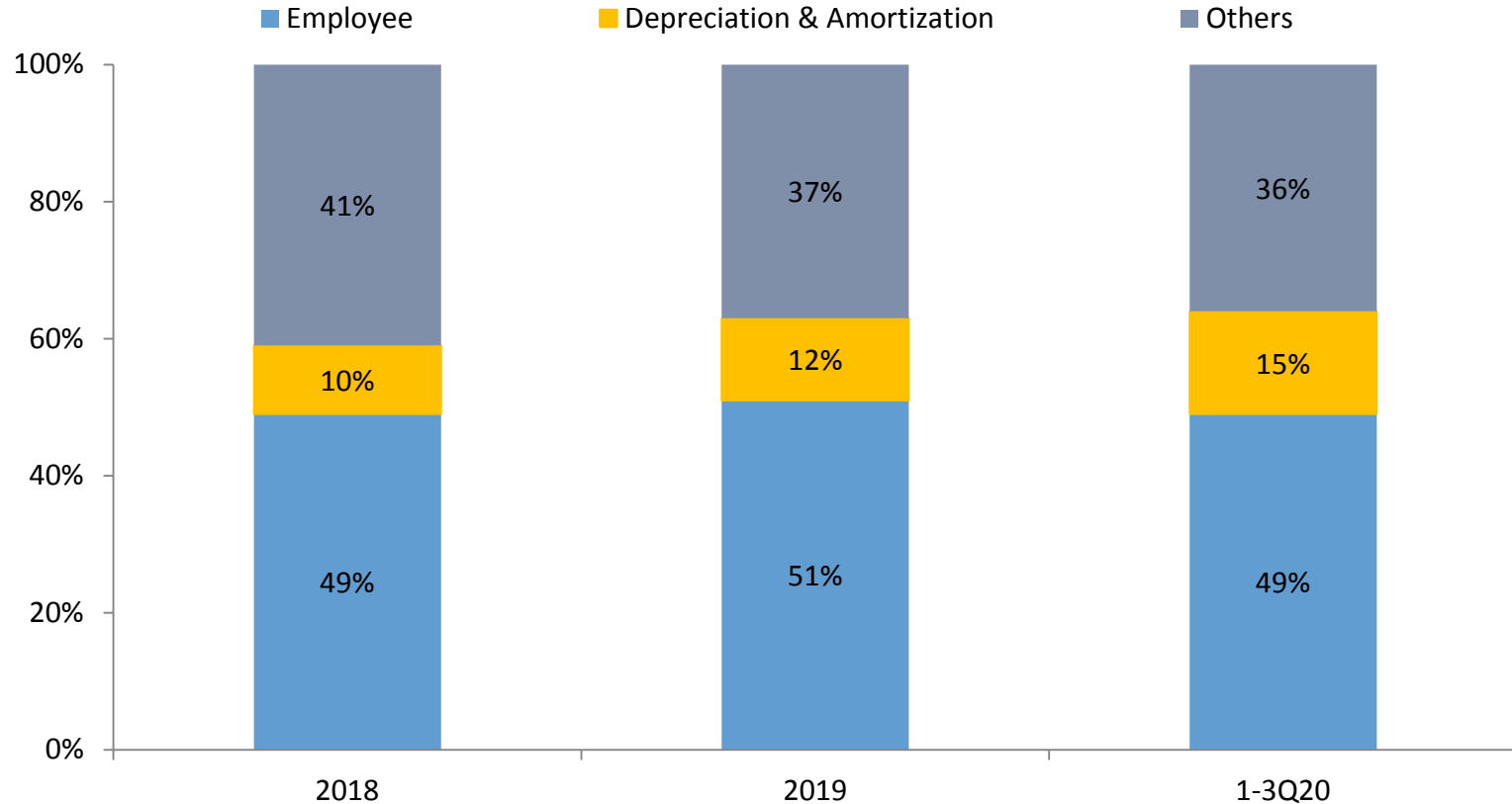


Operating Profit NT\$ million

# Operating Costs Structure



# Operating Expenses Structure

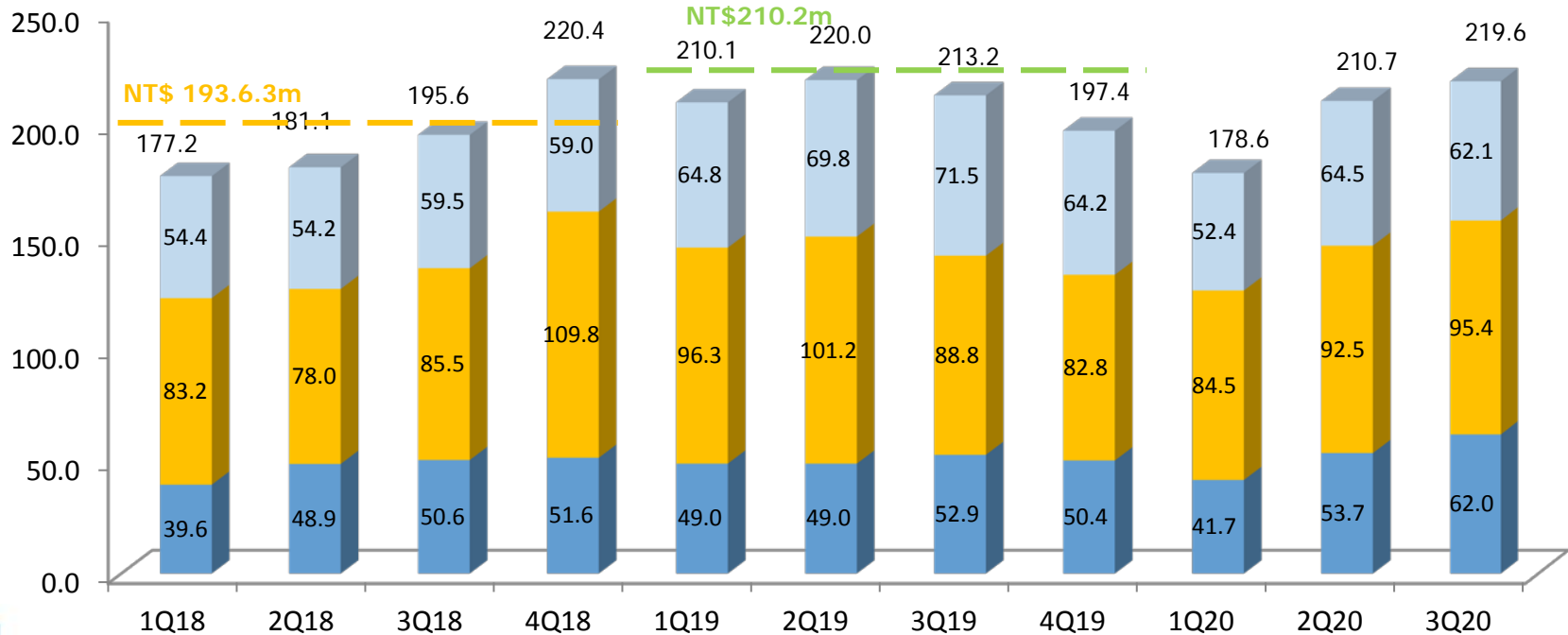




# Operating Expenses by Function

NT\$ million

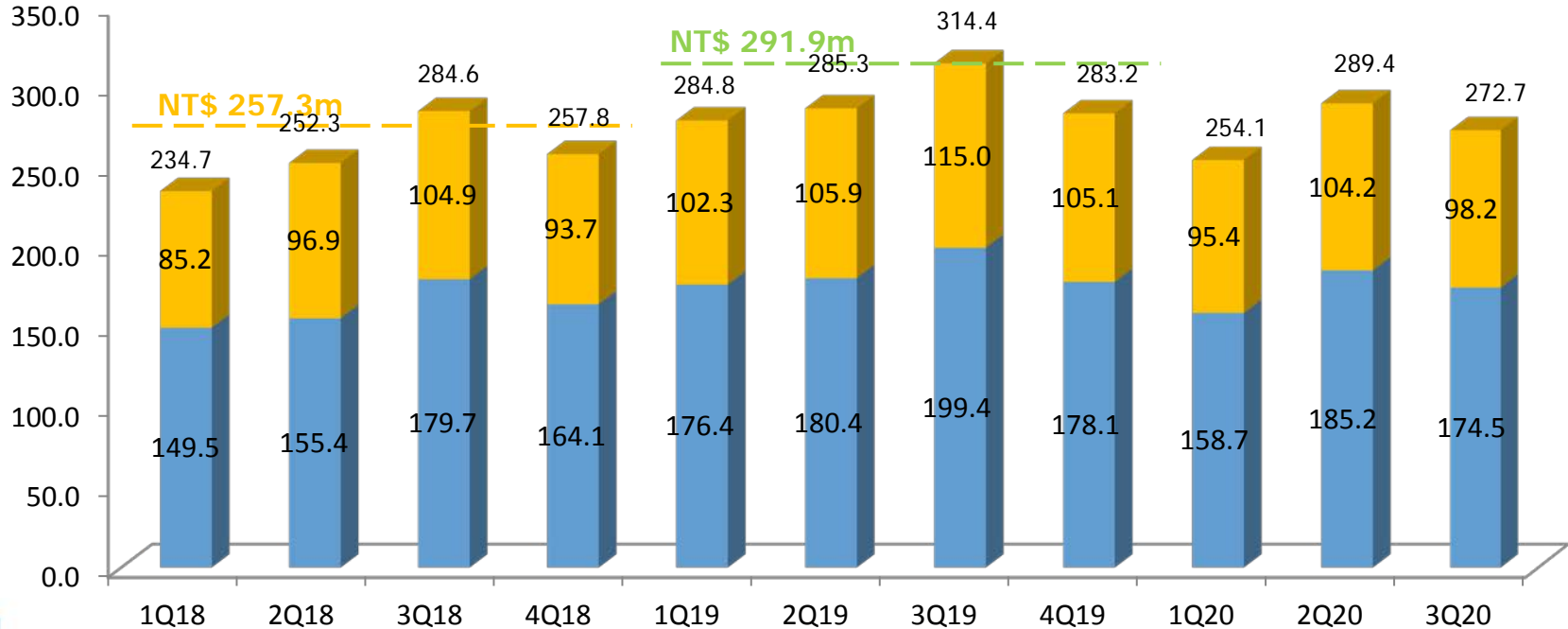
■ Selling ■ G&A ■ R&D



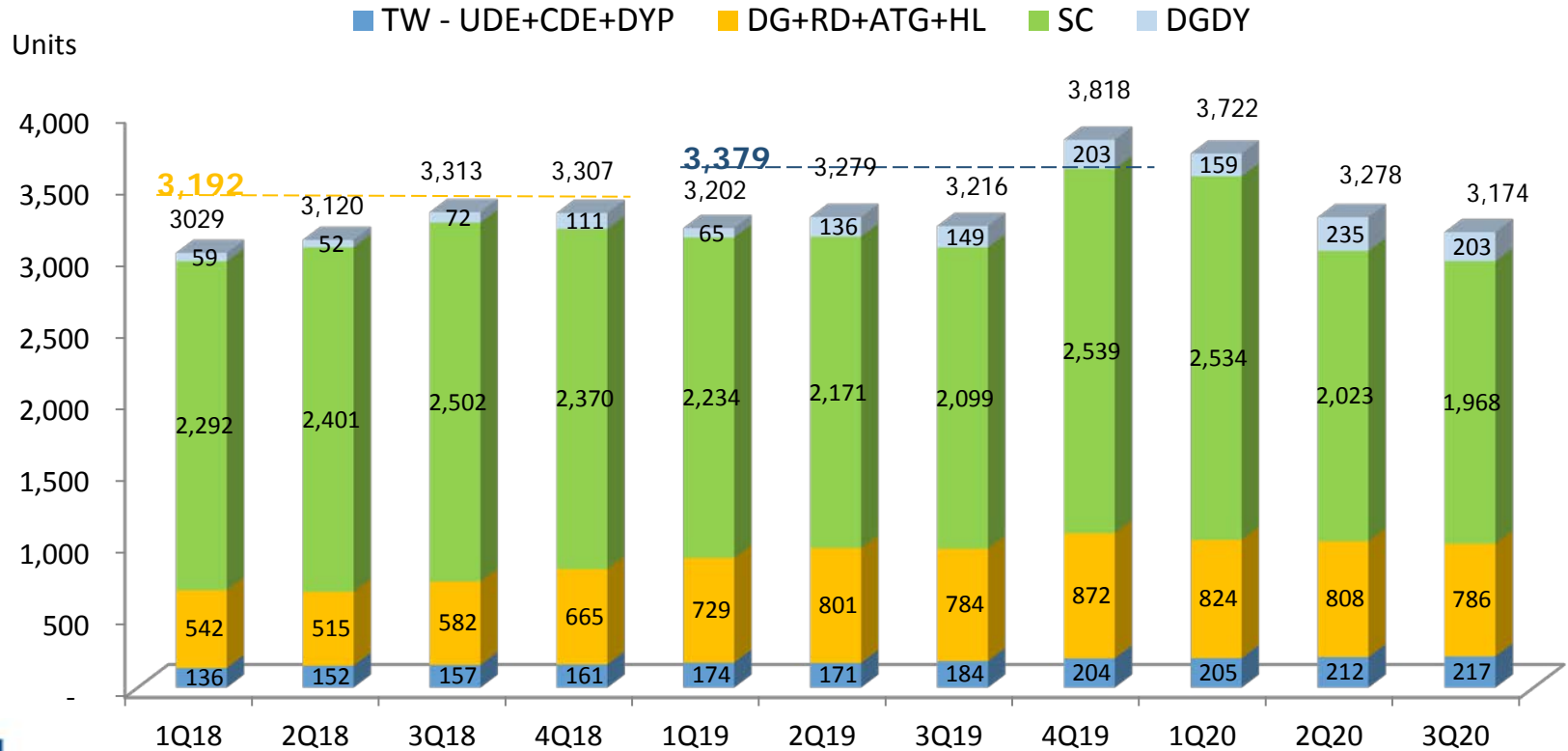
# Manpower Costs & Expenses

NT\$ million

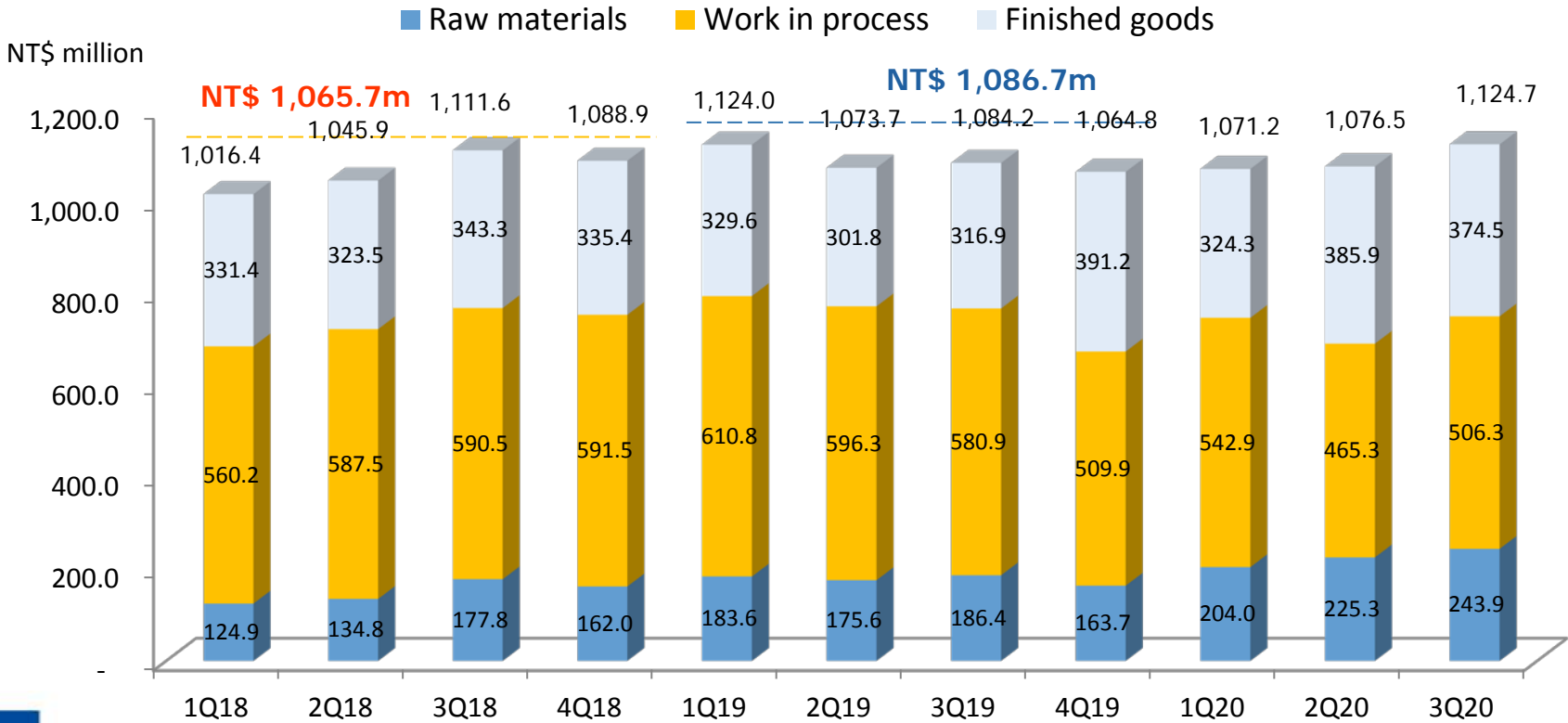
■ Operating cost    ■ Operating expenses



# Manpower by location



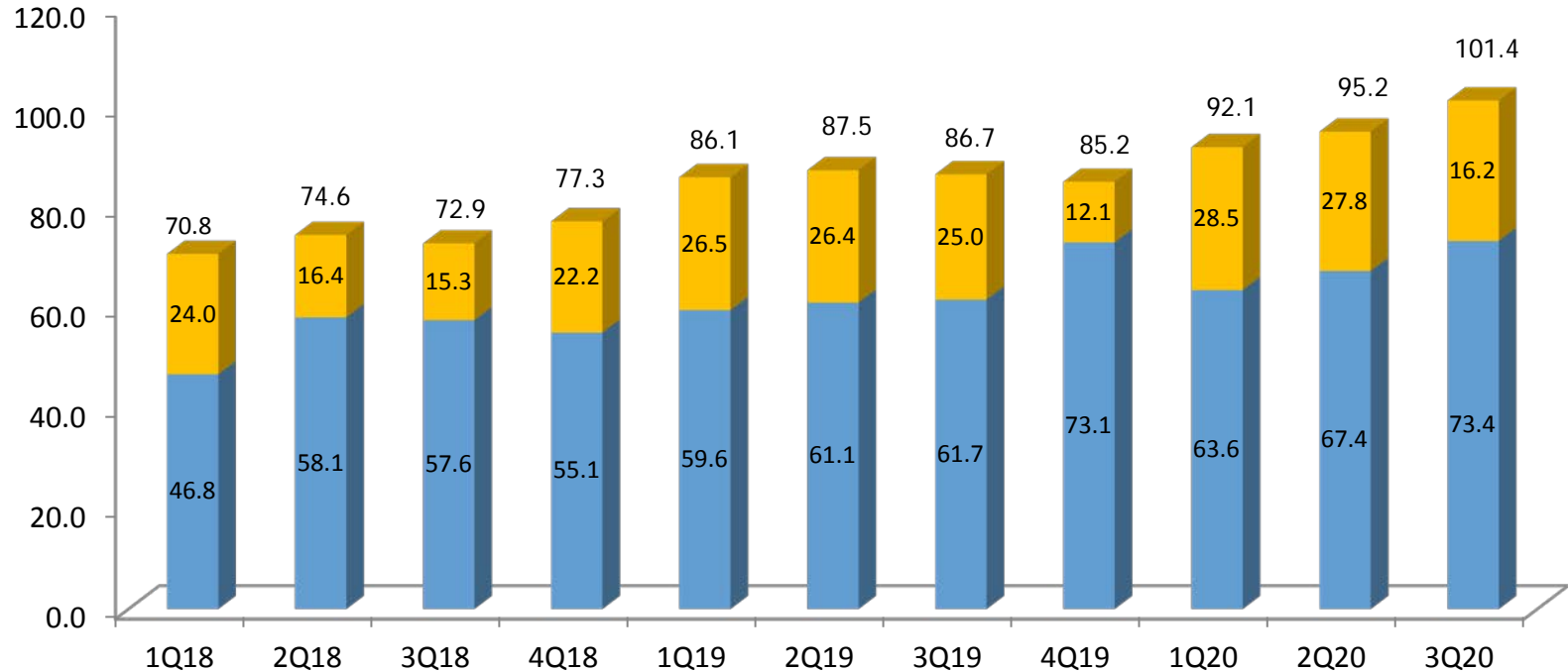
# Inventory



# Depreciation & Amortization

NT\$ million

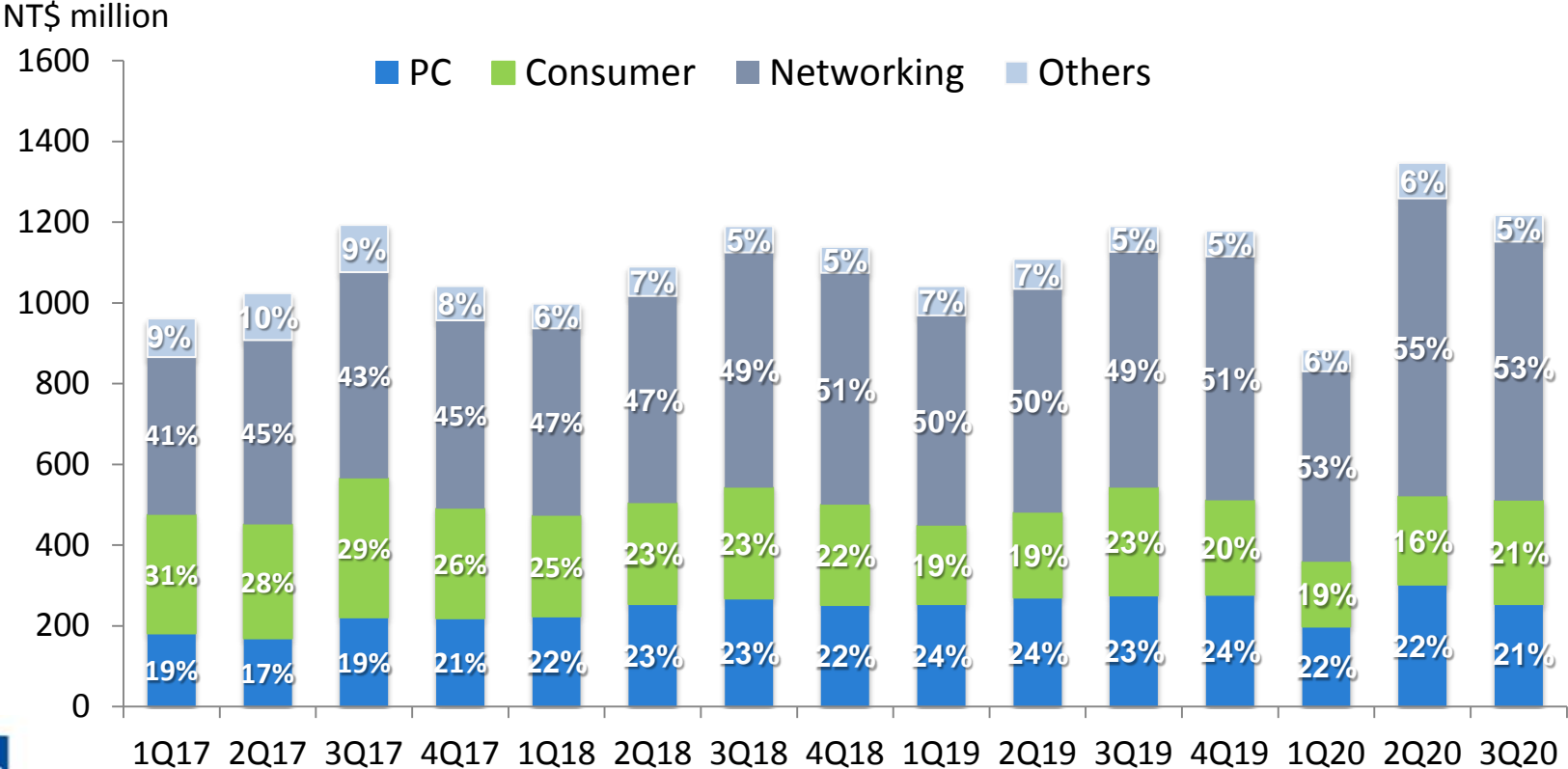
■ Operating costs ■ Operating expenses



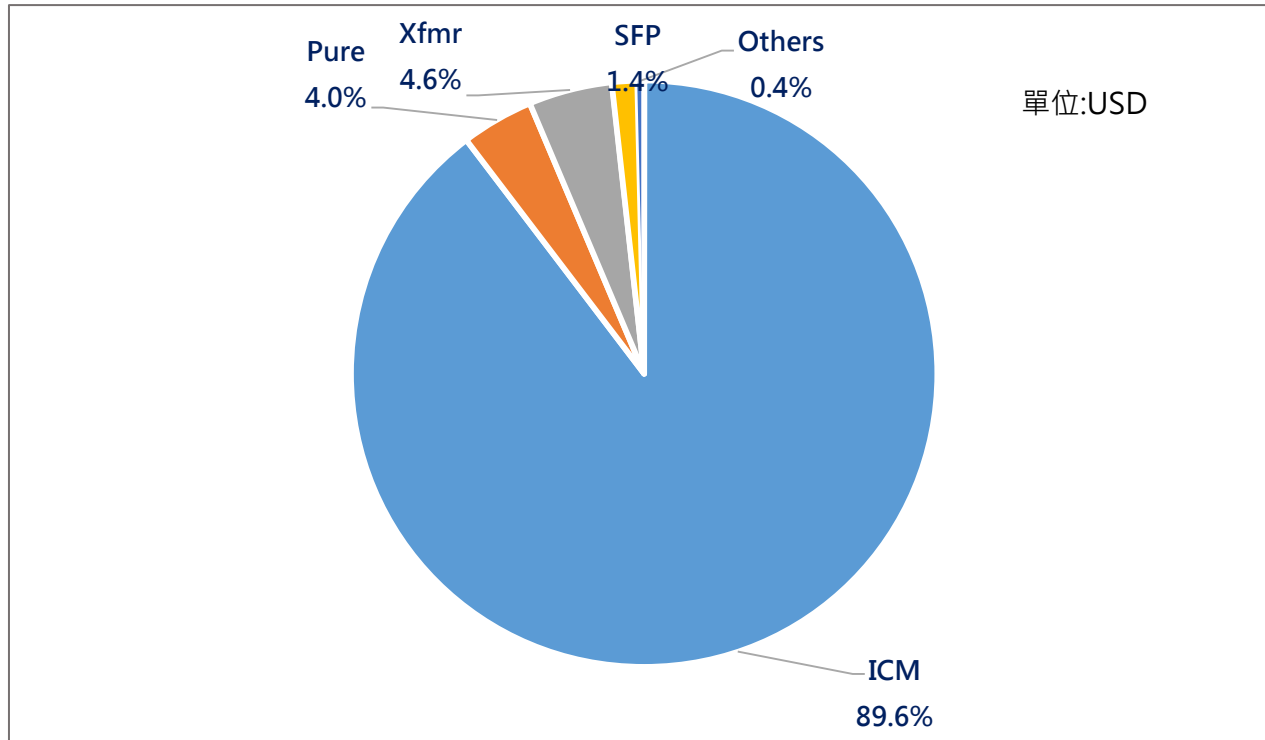


# Marketing Overview

# Sales Breakdown by Main Application-RJ45 Related



# 2020 Sales breakdown by product





# 2020 Sales breakdown by product line

NT\$ million	Product		%	YoY(%)
RJ45 Related	Integrated RJ45	0/10/100M	18.1%	-11.6%
		1G	51.3%	-16.2%
		2.5G/5G/10G	15.5%	153.8%
	Pure RJ45		4.2%	72.0%
	LAN Transformer		4.2%	31.4%
	Others(Audio Jack/USB/SFP..)		2.1%	145.9%
Silicon Rubber			4.5%	158.0%
Total			100.0%	4.1%

# Top 10 Customers

<u>Rank</u>	<u>Company</u>	<u>%</u>
1	F	9.78
2	C	7.46
3	F	6.09
4	A	4.96
5	S	4.76
6	P	4.73
7	K	4.28
8	W	4.27
9	A	4.07
10	G	4.01

# Market growth momentum



# Networking - Server Market

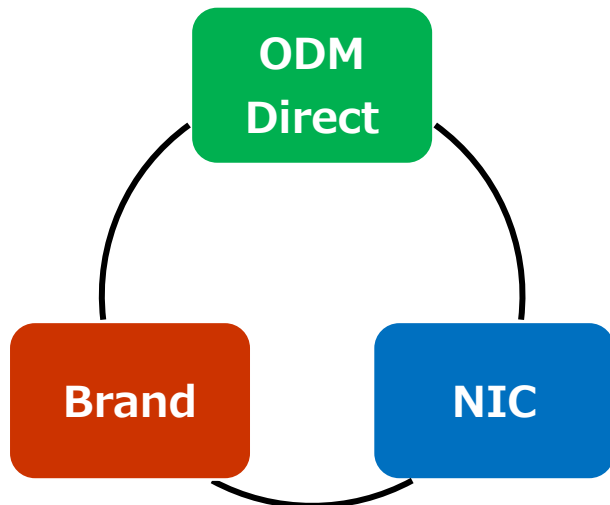
FOXCONN

wistron



inspur 浪潮

Lenovo



英業達  
Inventec



Mellanox  
TECHNOLOGIES

# Networking - 5G & WiFi6

**NETGEAR**

**ARUBA**  
networks

 **RUCKUS**  
an ARRIS company

eero | amazon

  
cisco  
Meraki



**FOXCONN**

**Accton**

**SERCOM**  
中磊電子

**WNC**

**ALPHA**

 **ASKEY**

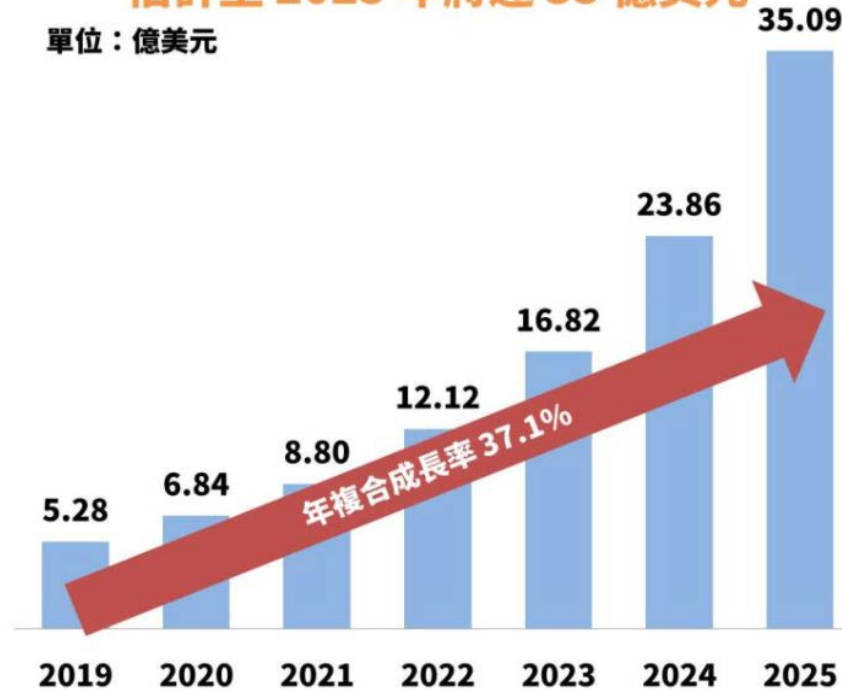
  
**COMPAL**

# Networking - 5G & WiFi6

全球「小型基地台」市場規模

估計至 2025 年將達 35 億美元

單位：億美元



Source: CMoney 產業研究中心

# Consumer Market Overview



TV/Monitor



**Panasonic**

Printer/MTF



**Canon**

STB



BD/BDR

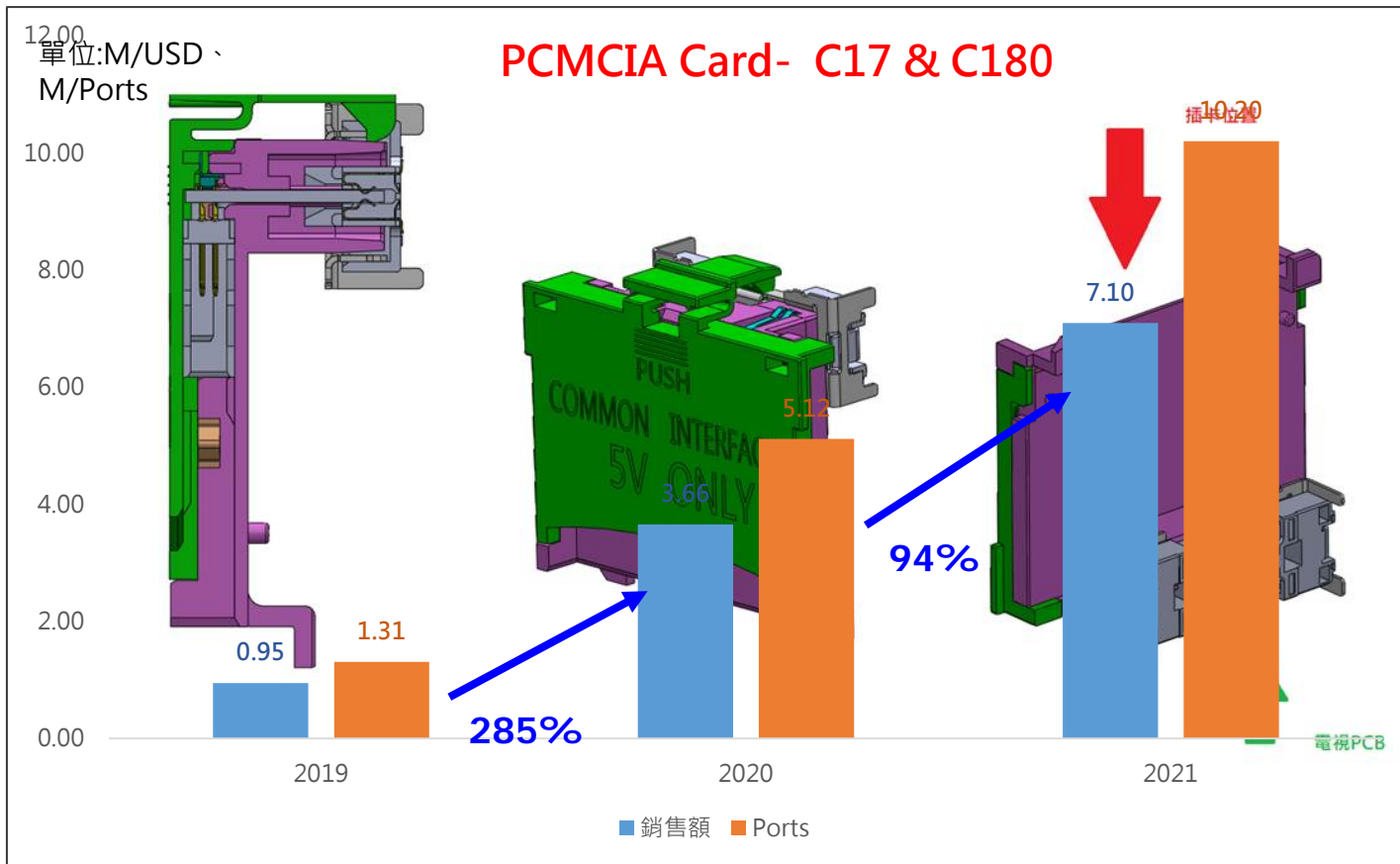


**EPSON®**  
EXCEED YOUR VISION

Others



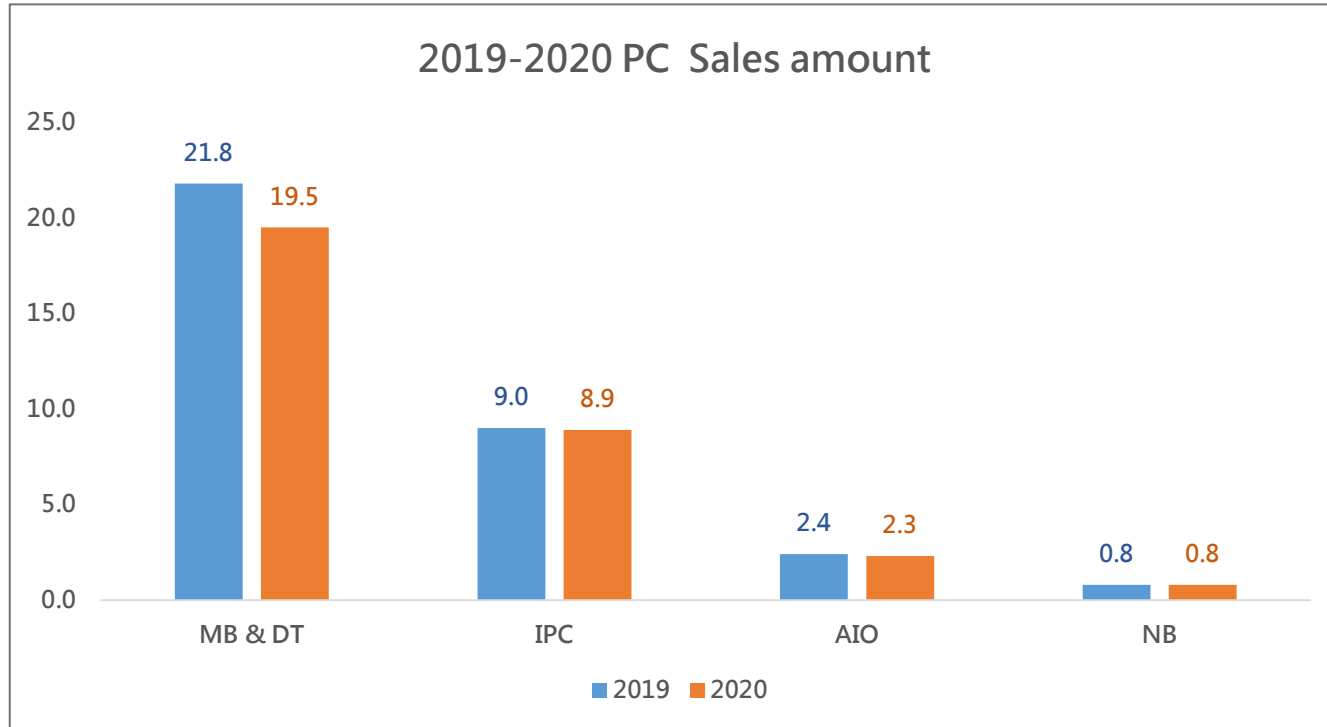
# Consumer - Customized



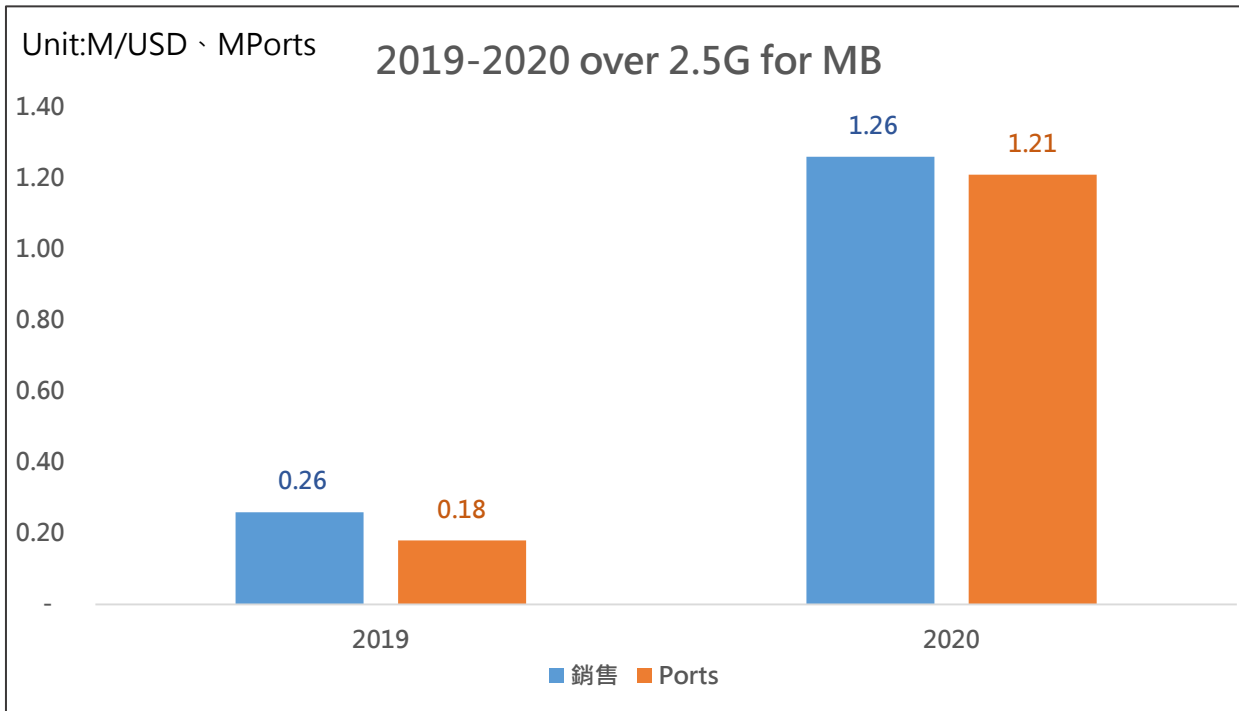


# PC Market Overview

Unit : M/USD



# PC – over 2.5G for MB



# 2021 BUSINESS ESTIMATE

**ICM**

**Flat**

**Pure**


**Growing**

**X'fmer**

**Growing**

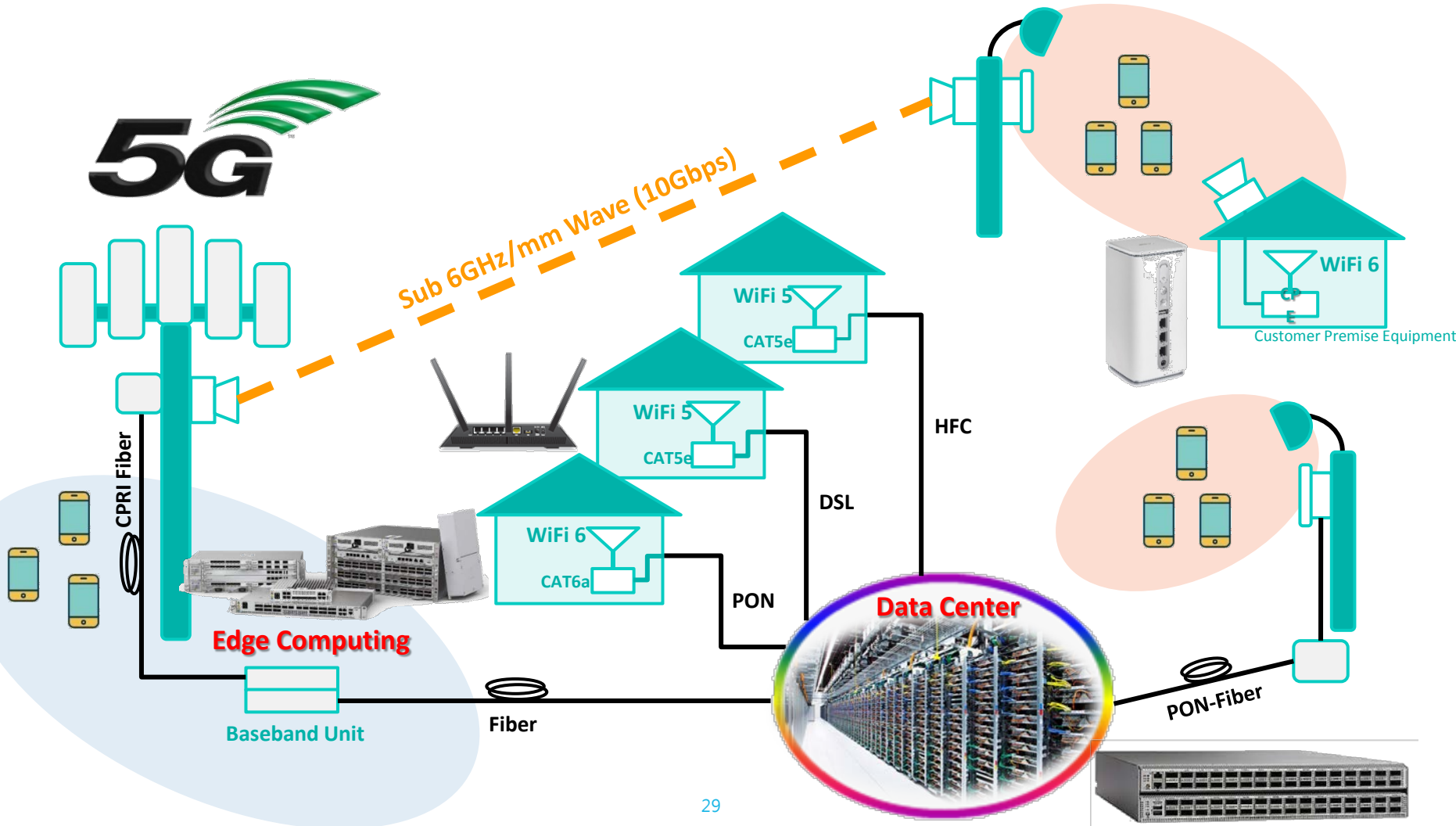
**SFF**

**Growing**



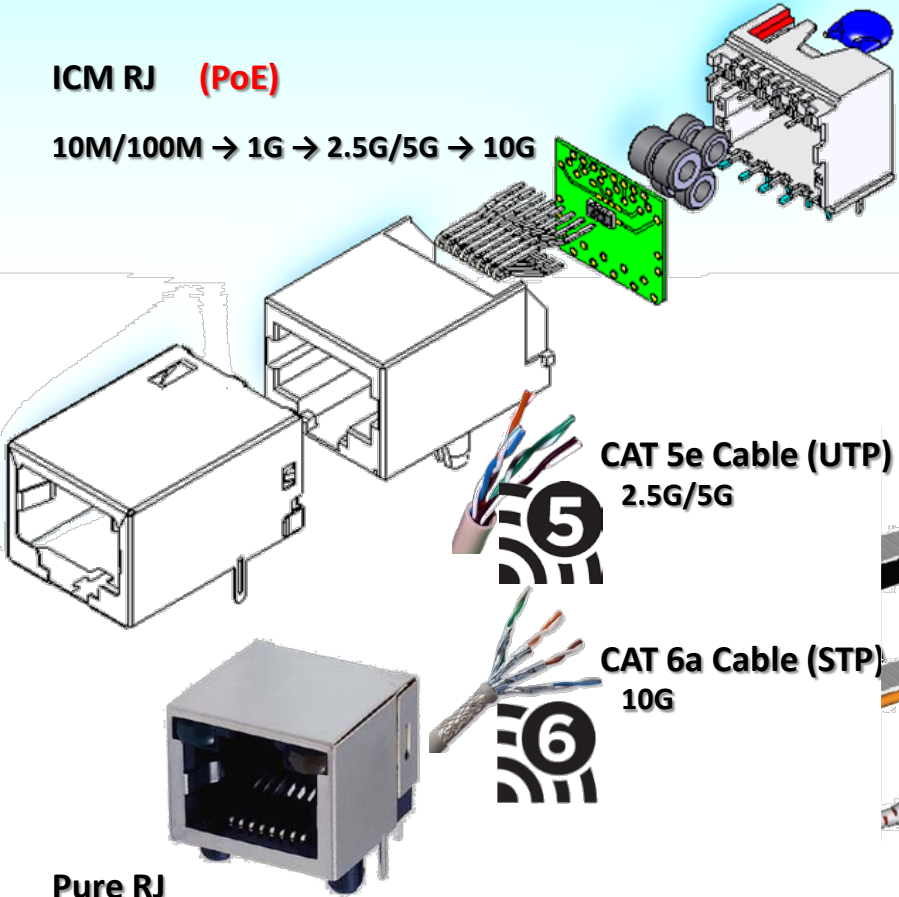
# UDE Technology Roadmap

# 5G



**ICM RJ (PoE)**

10M/100M → 1G → 2.5G/5G → 10G



**CAT 5e Cable (UTP)**  
2.5G/5G

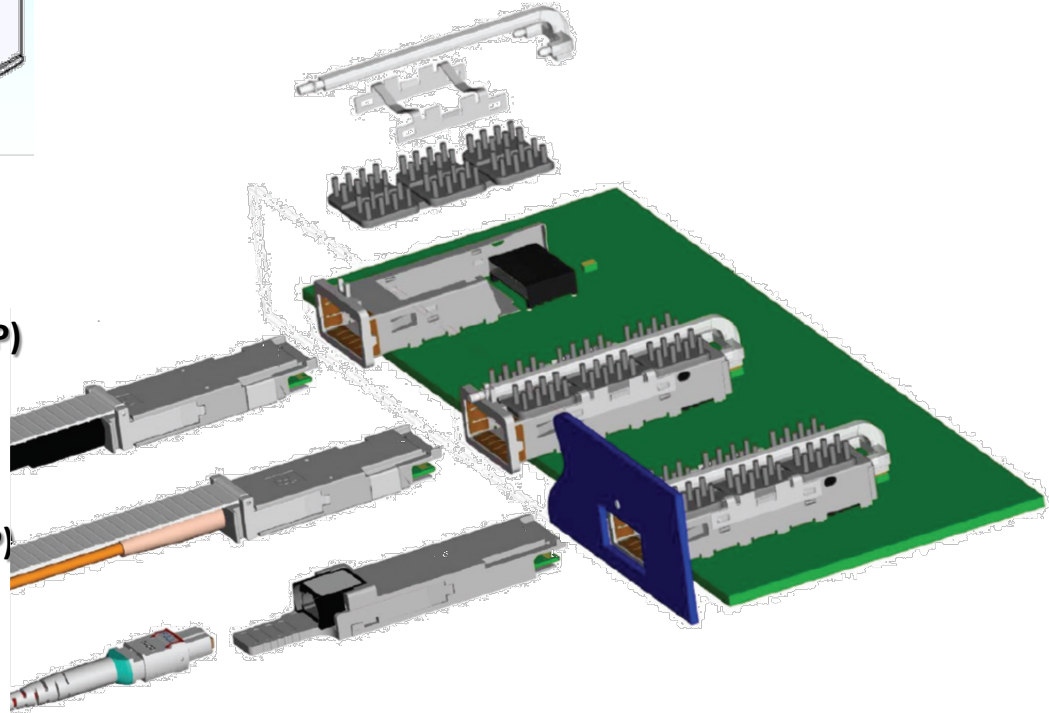


**CAT 6a Cable (STP)**  
10G



**Pure RJ**

10M/100M → 1G → 2.5G/5G → 10G



**SFF Series (SFP, SFP+, SFP28, QSFP+, SFP DD, QSFP28, QSFP DD, OSFP)**

1G → 10G → 25G → 40G → 50G → 100G → 200G → 400G → 800G

# SFF Product development list

SFF各類型產品開發狀態 “V”已量產，“O”已送樣，“X”待開發，“空白”不開發												
系列	速度	1X1 conn	1X1 Cage	1X2 Cage	1X4 Cage	2X1 conn	2X1 Cage	2X2 Cage	2X3 Cage	2X4 Cage	2X6 Cage	2X8 Cage
SFP	1G	V	V	V	V	V	V	V	X	O	O	
SFP+	10G	V	V	V	V	V	V	V	X	O	O	O
SFP28	25G	V	V	V	V	V	V	V	X	O	O	X
QSFP+	40G	V	V	V	X	V	O	X	X			
QSFP28(雙)	100G					V	O	O	O			
QSFP28-A	100G	V	V	V	X							
QSFP-DD	400G	V	V	V	X	O	O					

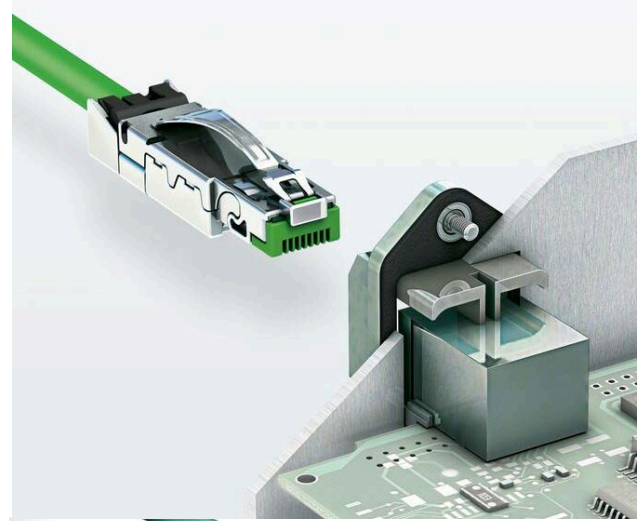
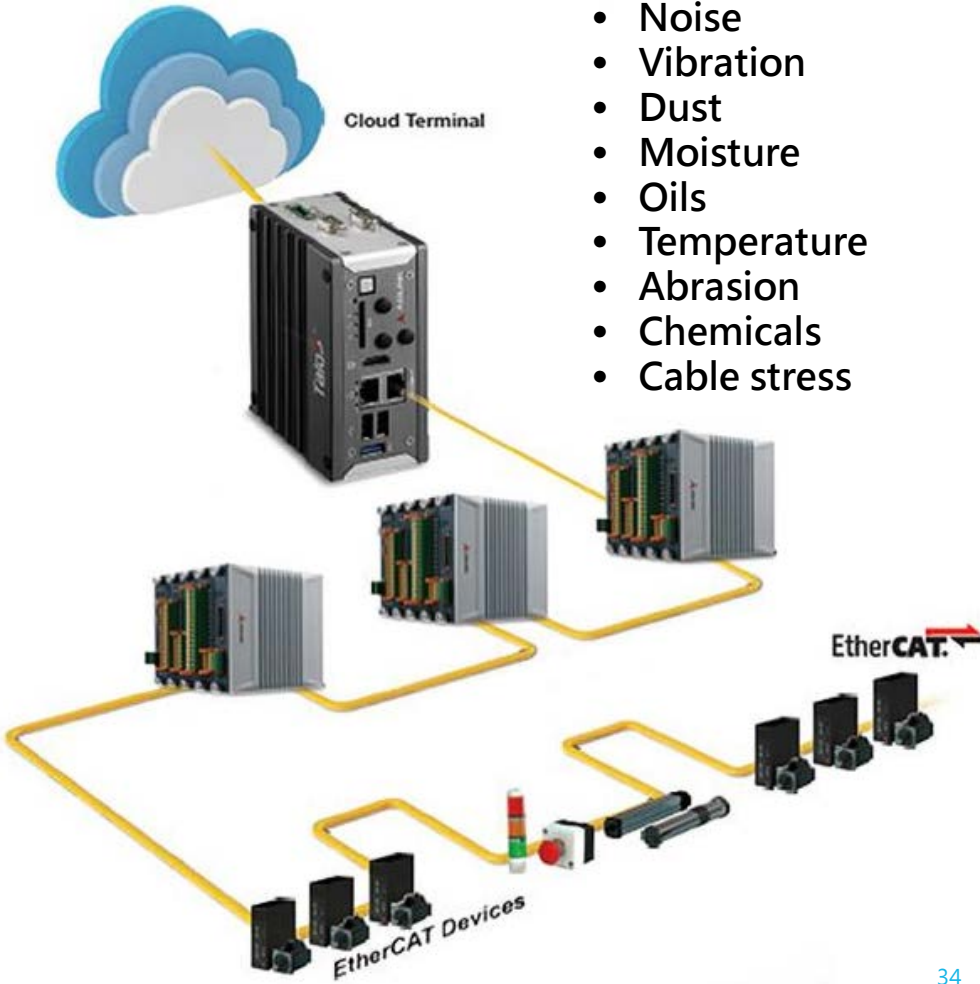
以上為UDE自主設計開發之產品狀態.



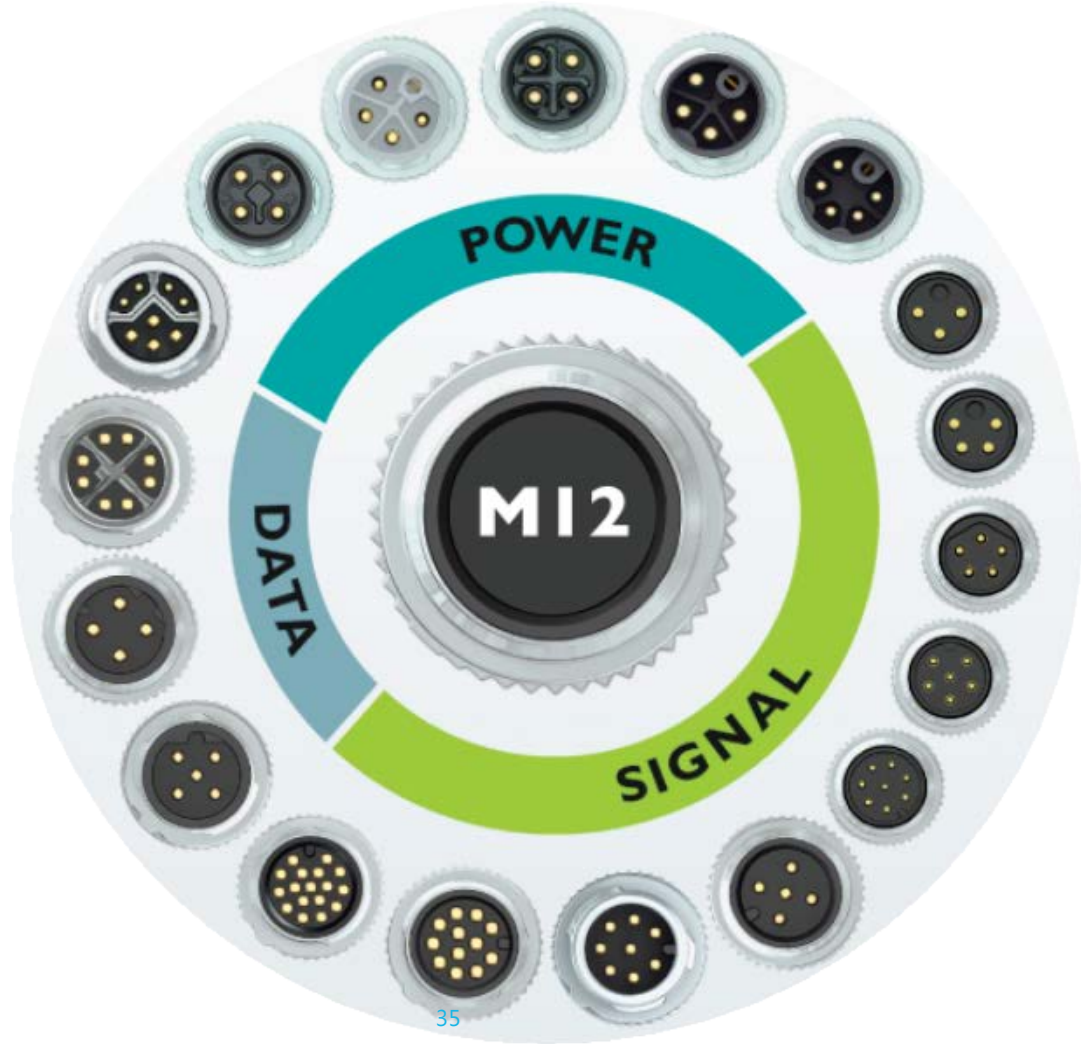
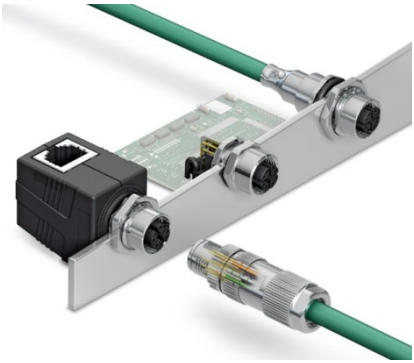
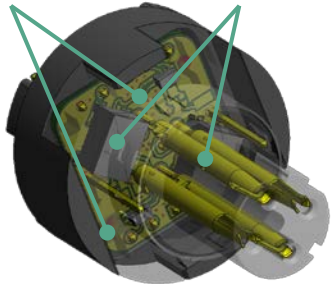


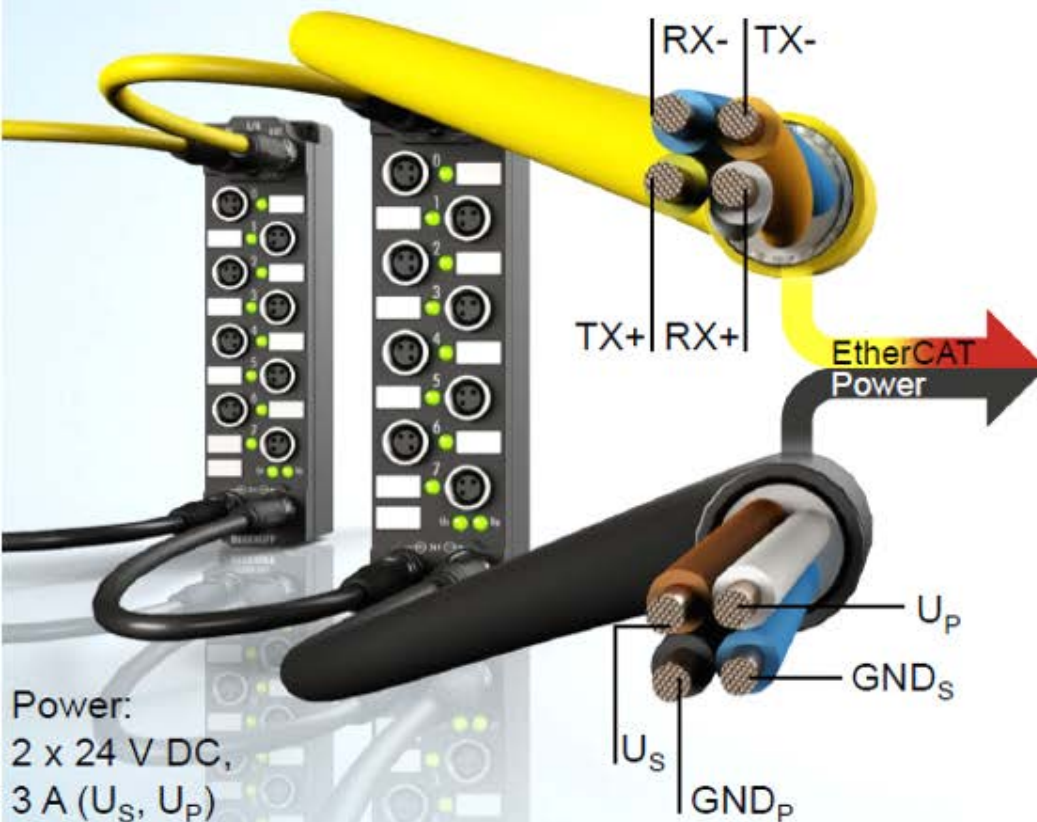


- Noise
- Vibration
- Dust
- Moisture
- Oils
- Temperature
- Abrasion
- Chemicals
- Cable stress



CMC Transformer





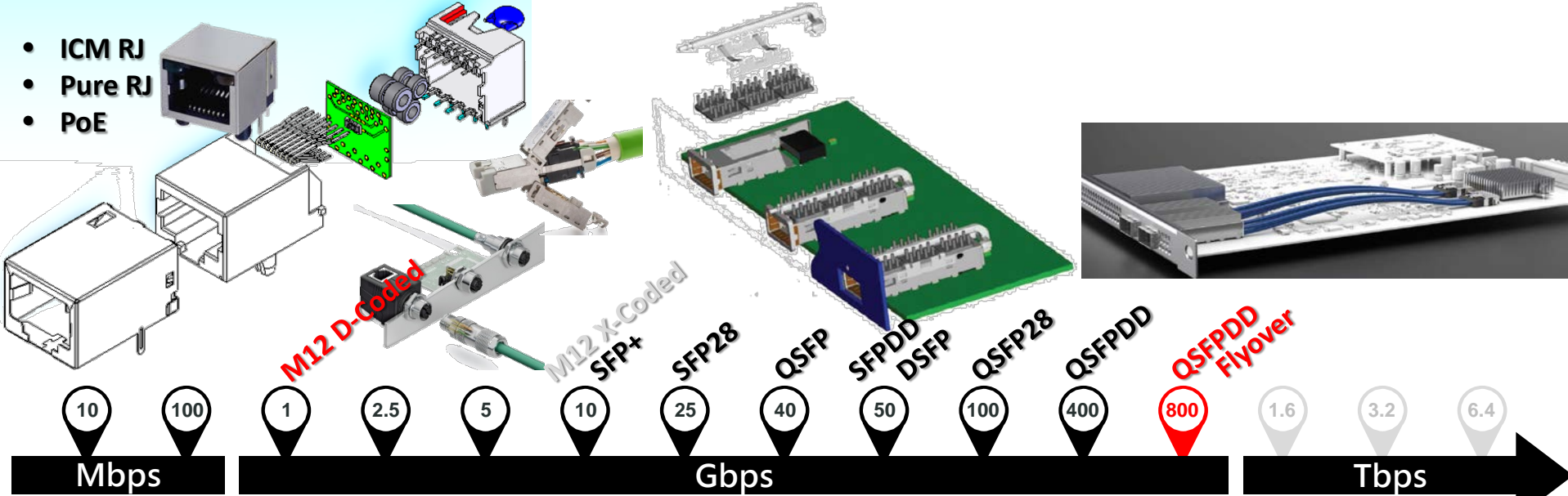
Power:  
2 x 24 V DC,  
3 A ( $U_S$ ,  $U_P$ )

2-cable connection: EtherCAT and power supply



One cable solution: EtherCAT P

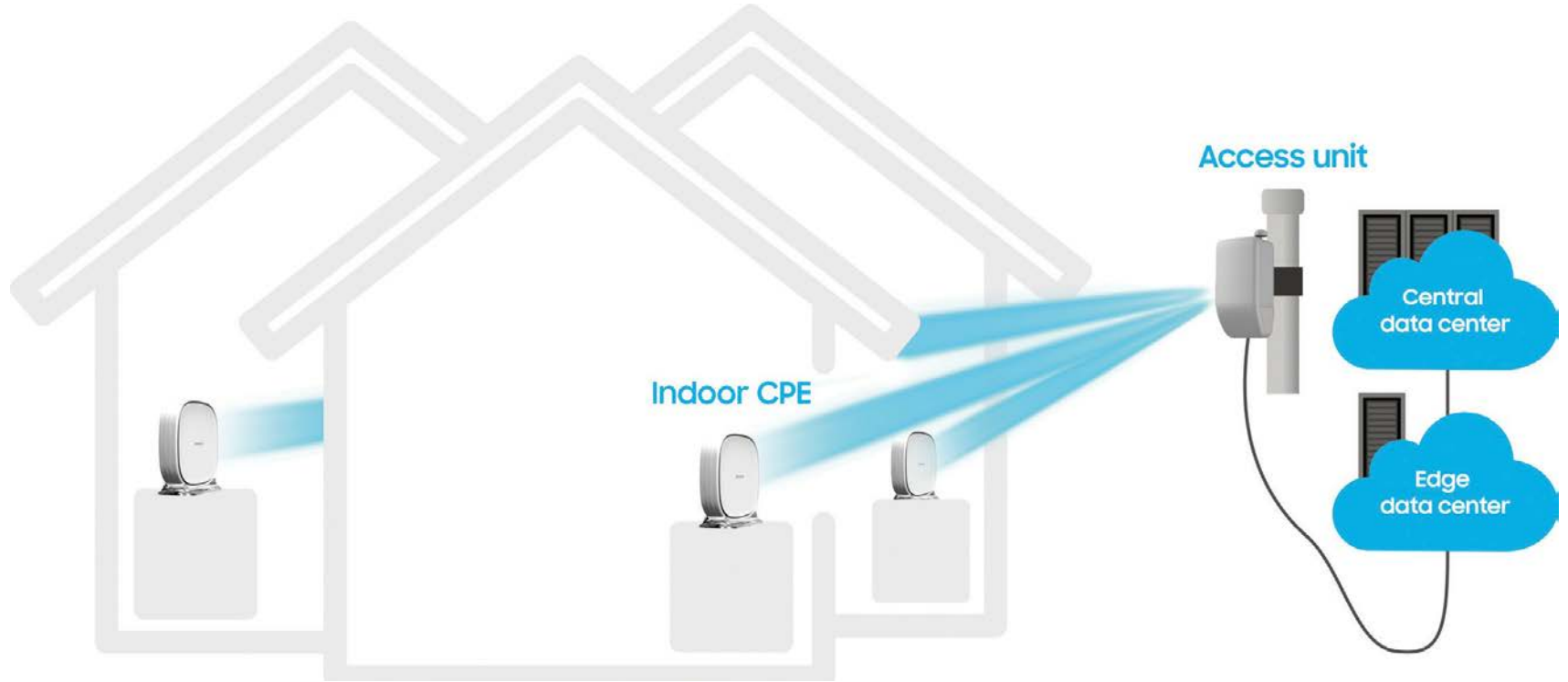
- ICM RJ
- Pure RJ
- PoE



- Desktop
- Notebook
- Printer
- Blue-Ray DVD
- Set top Box
- TV



# 5G Fixed Wireless Access



# UDPS Manufacturing System

Toyota production system(TPS)  
Lean production system  
Flexible production system  
Digital smart factory

# UDPS - Implementation framework



- 工程流程化
- Delivery設計
- 物與情報流
- 十九項調查



- QC工程表
- QM表
- W\_W分析
- 八字展開法

自工程



平準化

思考技術

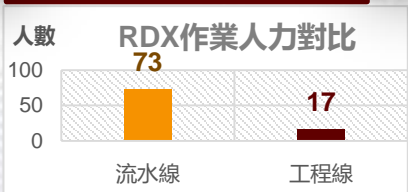
PDCA/目的，應有之姿，條件管理、原理，W\_W、八字展開  
 企業文化(自省、感恩、尊重、執行力、創新)



## 線內平衡率



## 1 無價值+浪費作業



10-20人/線WIP數百,浪費作業合理化.通過動作經濟原則對產線作業進行ECRS改善

2005~2008



80-100人/線WIP數K,人工作業拆流水線建工程線



拆除流水線,合併作業內容,站立作業

## 2 標準作業+少人化



2010~2011



作業內容進一步合併,進行易行化改善,提升作業效率易行化:通過動素分析,進行簡化作業改善

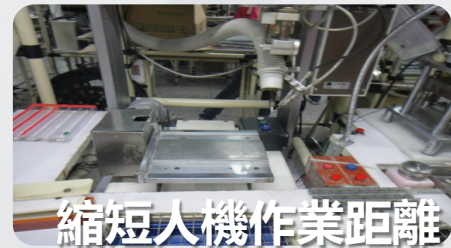
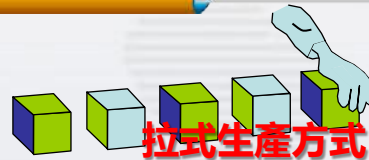


## 3 管理變革+生產方式革新

3-10人/線WIP數十,生產方式革新,作業距離,推行(培訓)標準作業,換線作業改善,新人培訓,可動率管理檢討



2011~2013



縮短人機作業距離

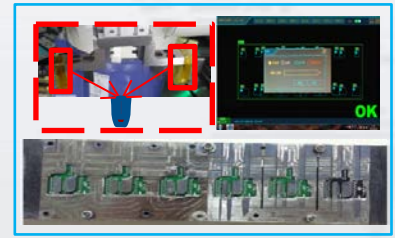


2013~2015

3-10人/線WIP數十  
導入簡易自動化,降低作業難度,新人+多能工培訓線體競賽, 施行積分制,改善換線,導自動化機台開始建立T/T線&彈性線

- 1.員工轉型升級-多能工化
- 2.設備模塊化,泛用化改善
- 3.自動組裝機台開發,T/T彈性產線的設計,機械手臂與CCD自動檢測的運用

2015~2016



2016~2017

- 1.開發7條機械手臂線體
- 2.效果:7條線省人23人
- 3.改善項目:機械手浸錫焊,機械手折料帶, CCD焊點,機械手組裝HSG,鐳射焊/測試手臂

- 1.7條機械手臂線體
- 2.改善效果:PPH60.8提升117%
- 3.改善項目:數字化產線, LCR傳輸數據,軟件扫码調檔軟件自動異常檢知,自動報警

2017~2018



8

數字化+無紙化

9

人工智能

10

人工智能+智慧分析

11



2018~2019

## 生產排程智慧化

- 物料需求管理
- 先進計劃排程
- 智慧人力/設備調配



2019~2020



AGV收料作業

保養智能分析

人工智慧報表



2020~2021

2021~

- 1.7條機械手臂線體
- 2.改善效果:數位化,無紙化
- 3.改善項目:電子O/I,機臺異常自動報警,排程/JIT加料/報表自動生成分析,電子總署板,大數據分析



## 品管智能化建設

- 設備預防維護
- 智動產品檢測系統



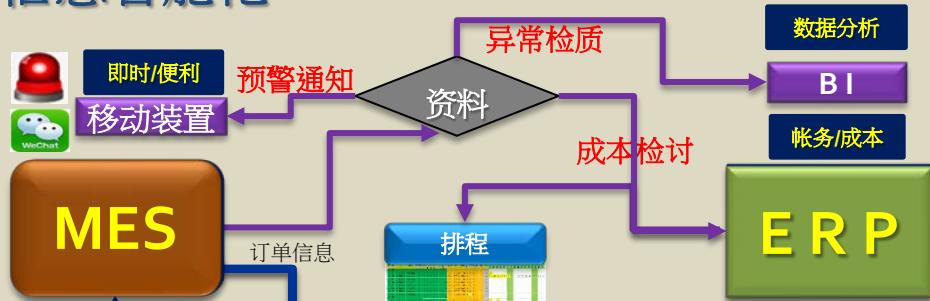
## 智慧工廠建設

- 中央廠務決策中心
- 設備狀態自動反饋維護
- 智働化生產排程/供料
- 智働化機械手臂控制
- 人工智慧影像檢測系統
- 人工智慧報表管理

-AGV自動加料



# ●信息智能化



# ●生产智能化



# ●物流智能化



Smart factory system  
integration



# Building a smart factory



PDA捡投，放料上机台



生产专家系统  
Production Expert System...



## 物流智能化

1. 智能捡投
2. 智能配送
3. 智能收货
4. 智能库管
5. 智能出货



## 信息智能化

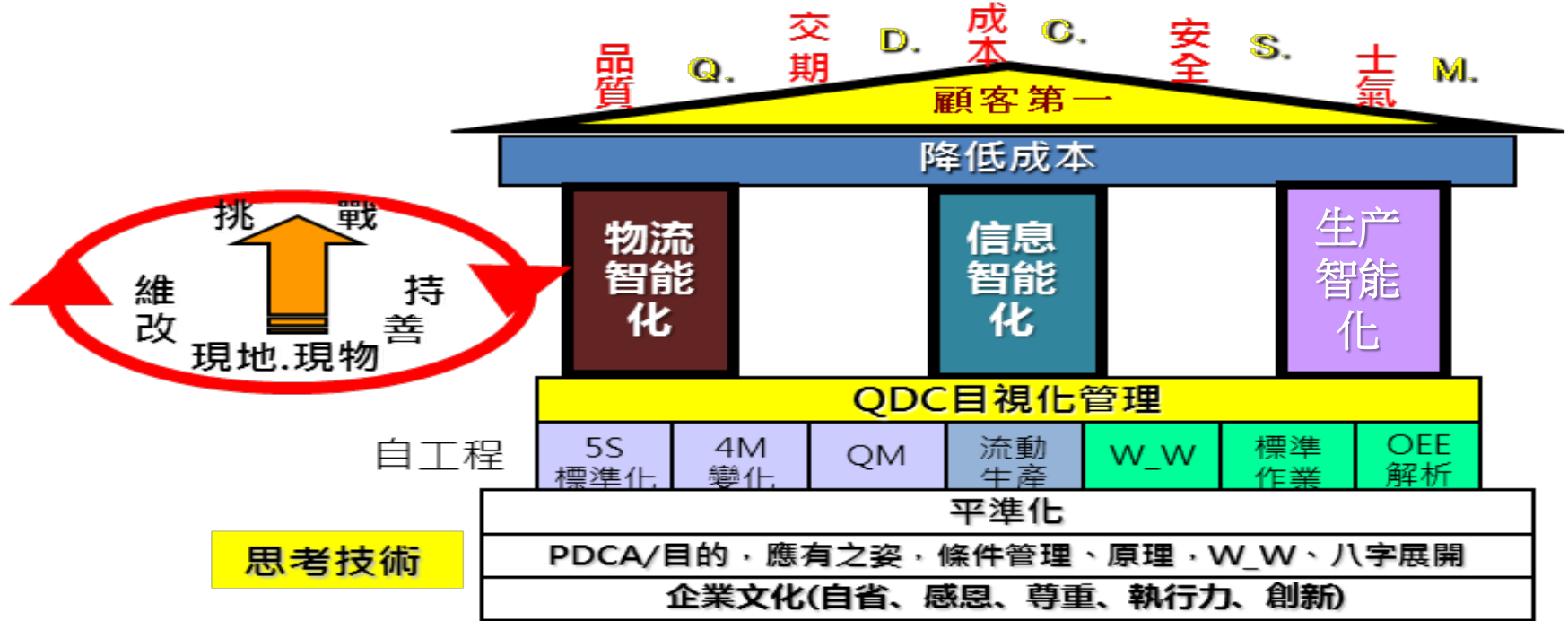
1. 生产数据分析
2. 数据异常分析
3. 异常自动报警
4. 数据手机互连
5. 生产汇总共享



## 生产智能化

1. 设备数据采集
2. 设备数据分析
3. 设备异常报警
4. 设备数据互连
5. 设备盘点共享

# UDPS- System structure



# Current status of subsidiaries

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泉德 CDE : SMD type inductance

德洋 DYP : Silicone product

艾特捷 ATG : Automation equipment /  
Parts foundry production

翰聯 HL : Assembly customized wire

