



汎銓科技 半導體產業高階製程領航者

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MSSCORPS. (6830)

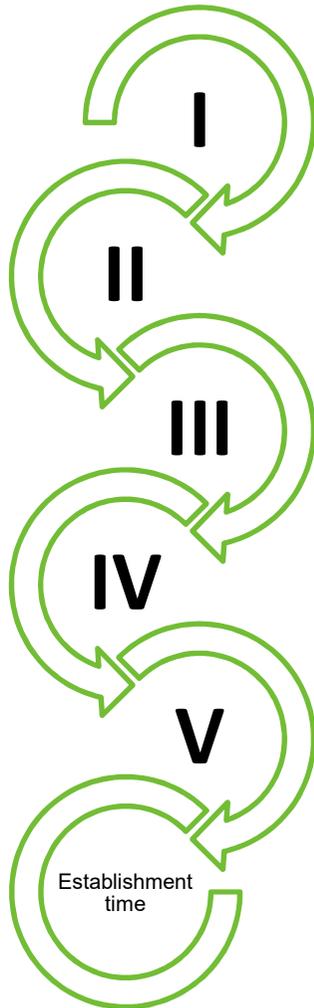
2025 Q3 Operations & Performance

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Company Basic Information



MSSCORPS CO.,LTD.(MSS)

Establishment time : July 27, 2005

IPO time: 31 August, 2022

Founder: Gino Liu

Capital: NT\$518 million / 795 employees

Service items: Materials Analysis(MA) 、 Failure Analysis(FA)

MSS role in the semiconductor industry chain-FA

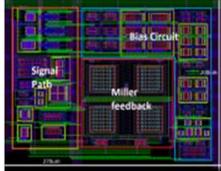
Positioning

Content

FA(Failure Analysis)

(Hospital of ICs)

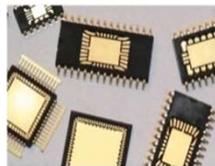
IC design, mask, and RMA



Design debugging and failure root cause investigation are the keys to shorten time to market

- IC circuit repair for designers to find design bugs and confirm **effectiveness of revised design**
- FA method to find failure **root cause** of fail IC after mass production

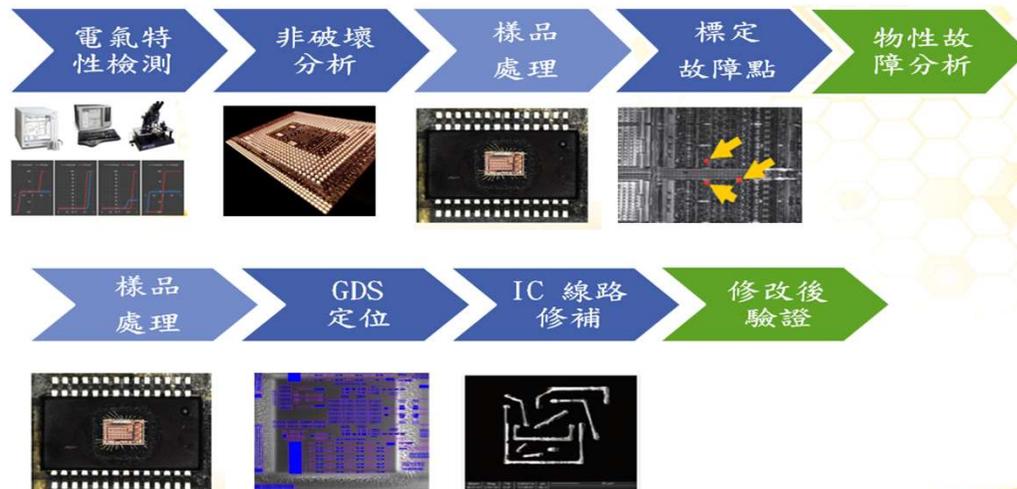
Package/substrate/PCB/FPC



MSS **low-damage methods** developed in MA can be extended to be utilized in back-end industry

- Material diversity, hardness difference, thinner layers, and weaker inter-layer force to cause difficulties for analysis
- Special methods to reduce heat- and electricity-induced **artifacts**

Flow chart



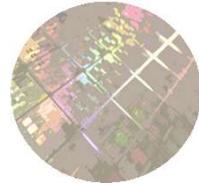
MSS role in the semiconductor industry chain-MA

Positioning

Content

MA(Materials Analysis)

(R&D Pilot)

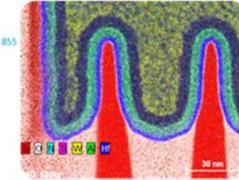
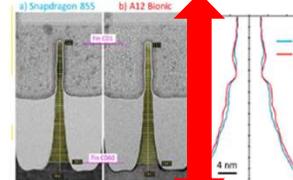
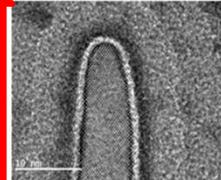
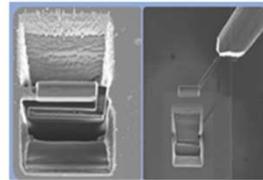


Wafer foundry/equipment/materials

Providing timely correct structural and chemical analyses of specimen of interest to Fab for

- New technology node R&D, to determine **process parameters**, **new materials**, and **process tools**
- Process tool consistency check during transfer from R&D to mass production
- Yield optimization in mass production

Flow chart



Patent Title



Patent period

2020~2039

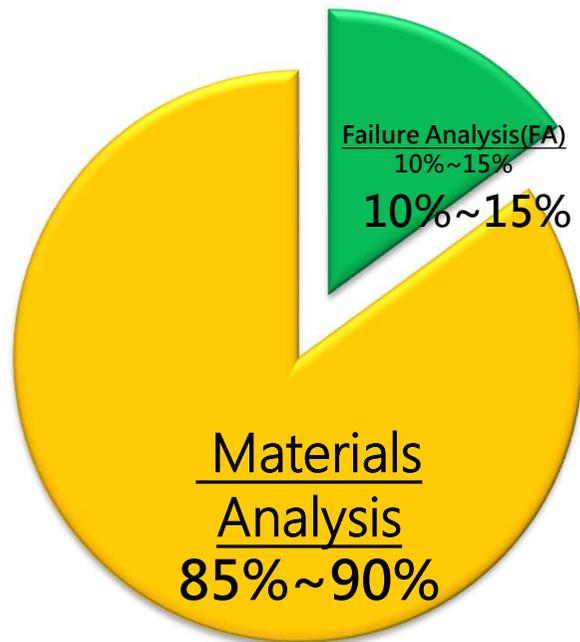
2022~2040

2022~2041

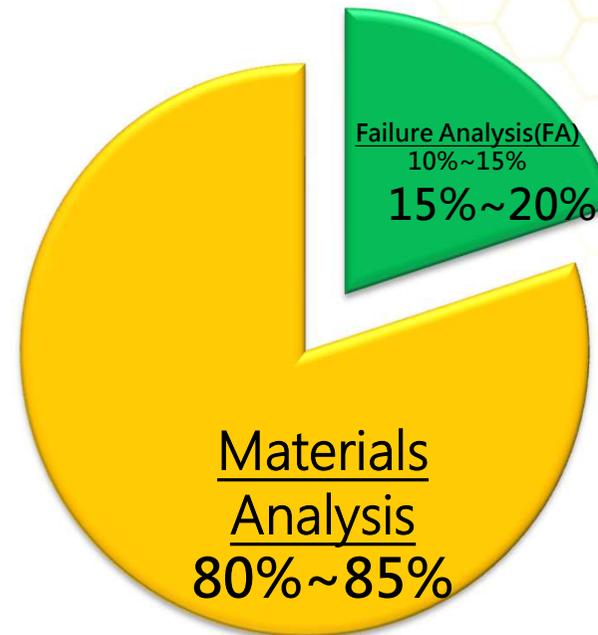
2022~2040

Recent topics of interest to institutional investors:
Changes in product portfolio

2024 Q1~Q3



2025 Q1~Q3



Classification and growth potential of MSS' techniques

分類	屬別	技術名稱	MSS niche	Description
Advanced processes (Angstrom era)	MA	PR protection technology	3rd generation EUV PR protection technology	Metal oxide PR
	MA		Advanced EUV PR protection technology	EUV PR/etch structural analysis
	MA		Selective deposition sample preparation technology	Special ALD deposition
	MA	low-k protection technology	BEOL: low-k structure protection technology	AMAT announces black diamond materials
	MA		BEOL: low-k damage analysis technology	Low-k composition analysis
	MA		Novel 2D materials analysis method	Weak-bonding materials analysis
	MA	Ultra-thin sample method	Ultra-thin sample protection method	2nm/A14 device structural analysis
	MA		FEOL: GAA etch byproduct bonding state analysis	2nm/A14 device composition analysis
	MA		MEOL: ALE etch byproduct comparison platform	
	MA		High aspect ratio structural TEM analysis technology	DRAM cell analysis
MA	Auto-measurement	Artificial intelligence for automatic measurement	Massive/reliable/accurate measurements	
Mature processes	MA	ML ball height/ML defect	Optical component analysis technology; ML ball height/ML defect	CIS
	MA		Wearable device AR/VR product lens integration analysis	Meta Lens/Pancake Lens
	MA	Compound Semiconductor	Epitaxial defect quantitative analysis technology	GaN on Si
	MA		Carrier concentration distribution analysis in compound semiconductors	GaAs/InP/SiC
	MA		Integrated stress analysis technology	PA amplification ability (diffraction pattern analysis)
	MA	OLED	Ultra-low contrast imaging technology for layer structures	Polymer image analysis
	MA	CCL/FCCL	Soft material slicing technology	Non-curtain effect/void
	MA		General materials analysis (SEM/FIB CS/Reversed MA/SIMS)	
IC failure analysis	FA	Compound Semiconductor	High voltage and high temperature test (1000V, 300C)	GaN/SiC
	FA		Ultrathin sample preparation technology for EFA	GaN/GaAs/SiC/3nm HPC InGaAs electrical measurement
	FA	Circuit edit technology	Signal lead technology	Tapping wire to directly measure the single logic gate
	FA		Backside signal lead technology	
	FA		Adding external multiple passive components technology	Advanced process IC
	FA		Precise local RDL removal technology	Dedicated for WLCSP/FO IC
	FA		Flipchip front side FIB technology	Flipchip IC
FA		General failure analysis (decap/delayer/electrical property/CRD/IC Reverse/SAT/3D Xray)		
Silicon photonics	MA	Silicon photonics structure	Large-area rapid cutting method for silicon photonics/Conductive preparation method for silicon photonics/Low-curtain effect cutting method for silicon photonics	Precise parallel lapping and PFIB to increase TEM capacity for silicon photonics
	FA	Silicon photonics photoelectricity test	Light characteristics and attenuation detection for silicon photonics	On the silicon photonics testing platform, the emitted light enters the silicon photonics IC, coupling to the waveguide in the IC, and then passes through different functional components such as
	FA		Optical path abnormality positioning, circuit break, light leakage detection for silicon photonics	
	FA		12-inch silicon photonic photometric platform with fully automatic light scanning	
	MA	Advanced package	PFIB/hybrid metal bond/TSV分析技術	3D IC bond 對準&接面氧化/TSV TEM
	FA	FA for advanced process chips	3nm製程去層技術/um to nm positioning, direct nano probe measurements on devices	通過3家科技公司在3nm產品上的驗證
FA	Advanced package	Large IC packaging and carrier board separation technology/THZ-TDR open /Thermal xyz fa	Patent protection/5um precise positioning	
Abroad	MA	特殊ALD 鍍膜/超薄試片技術	先進光阻保護/low-k結構保護/高深寬TEM 等技術	

Recent topics of interest to legal entities: Changes in the number of employees

2024 VS 2025 Q3

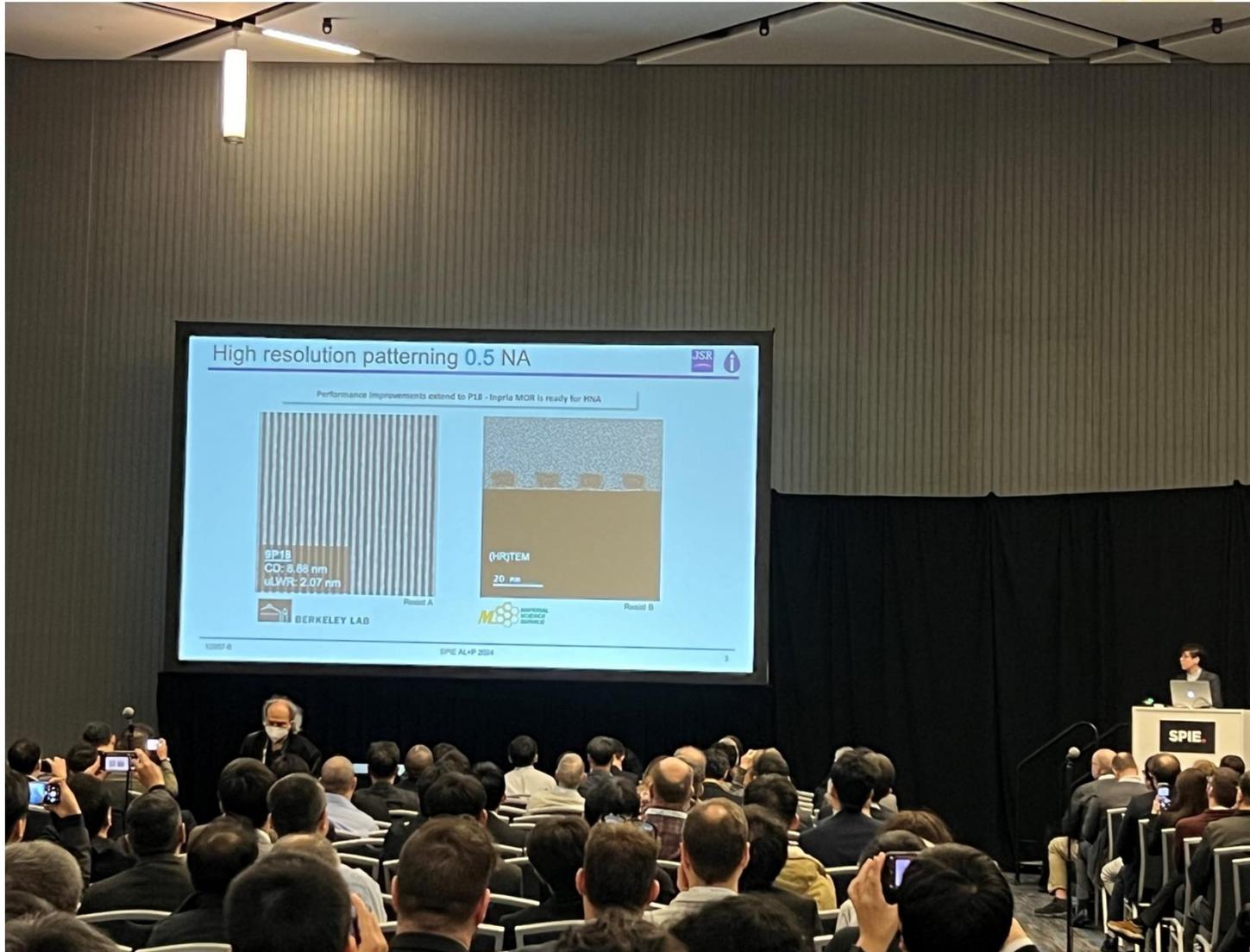
Quarter	Q1	Q2	Q3	Q4
2024 annual headcount	605	615	630	650
2025 annual headcount	680	712	795	-

From MSS perspective, the current “Analytical testing market”

Four major growth drivers starting in 2026

- ❑ Advanced manufacturing processes have entered the angstrom generation. MSS continues to invest heavily in technology, and its newly completed SAC-TEM Center has recently passed customer audit approval and will begin operations to contribute to revenue. ◦ MOR APT SAC TEM
- ❑ Silicon photonics metrology and positioning analysis is patented and its production capacity for robustness testing of RD silicon photonics devices is continuously expanding. In 2026, testing equipment for PD & QA will be launched for sale.
- ❑ The US AI major client in MSS's "AI Zone" continues to expand... ◦
- ❑ With the completion of global exhibitions in Taiwan, Mainland China, the United States, and Japan, the combined revenue of overseas subsidiaries has shown significant growth.

- Participating in the research and development of next-generation high NA EUV exposure machines using MOR (metal oxide) EUV photoresist.



首頁 » 設計揭密 » APT：原子級精度的先進製程材料分析技術

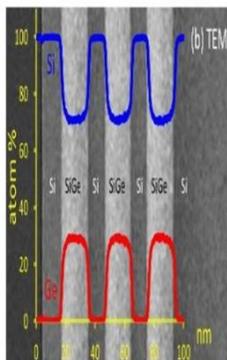
APT：原子級精度的先進製程材料分析技術

作者：汎銓科技

類別：設計揭密

2025-12-09

(0) 評論



原子針尖斷層影像儀(APT)具備原子級空間解析與高靈敏度化學分析能力，能精確重建三維原子分佈，以因應先進製程與埃米級材料分析挑戰...

隨著搭載台積電(TSMC) N3P製程應用處理器進入市場，智慧型手機、高效能運算(HPC)、人工智慧(AI)以及車用電子等領域對於先進半導體製程的需求持續升高。製程技術的每一世代演進，不僅使元件幾何尺寸持續縮小，也為材料分析在解析度與靈敏度方面帶來前所未有的技術挑戰。當電晶體結構邁向原子尺度、3D整合度持續提高，對材料的空間解析度與化學訊號偵測靈敏度，皆提出了較前一代更為嚴苛的規格要求。

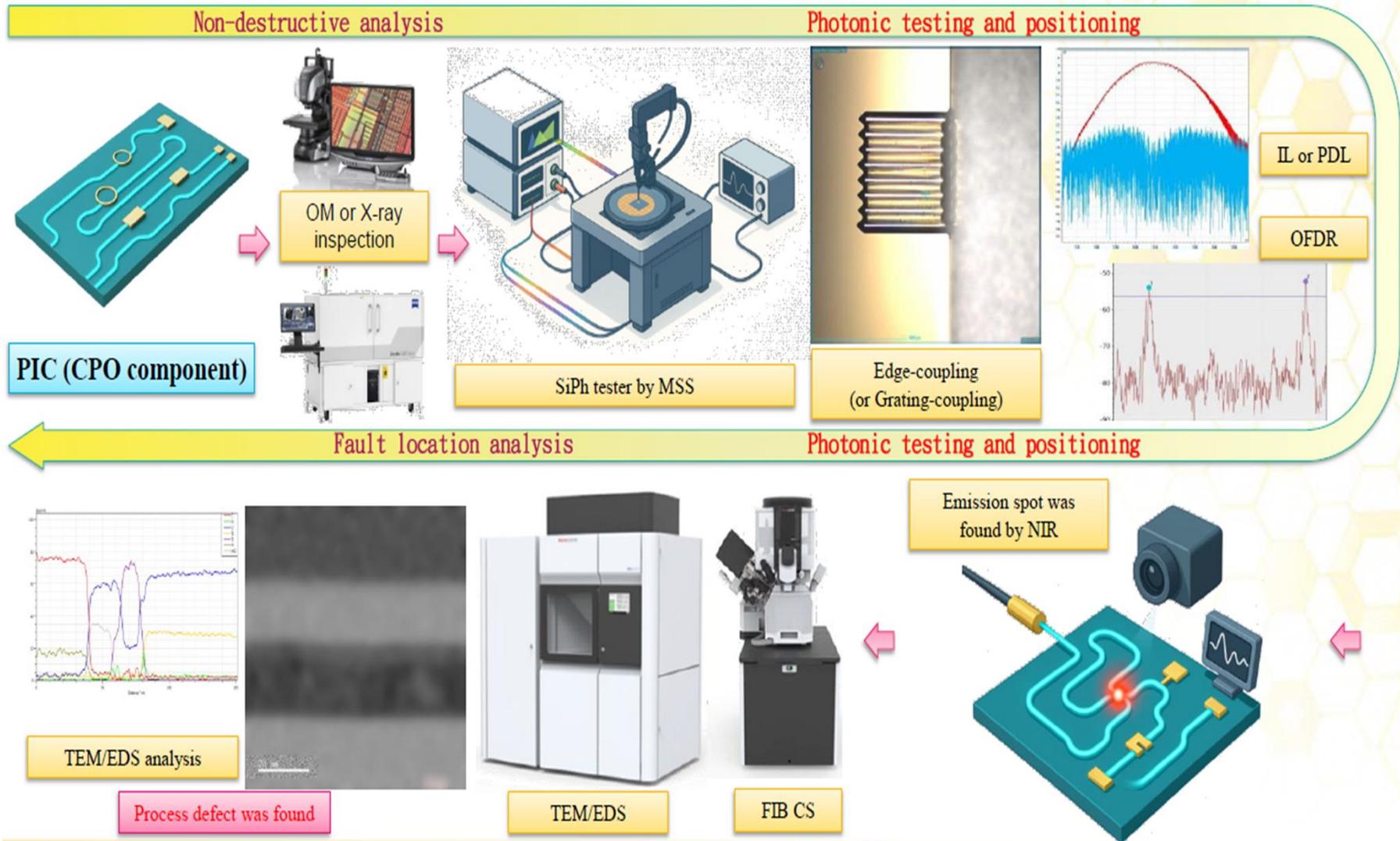


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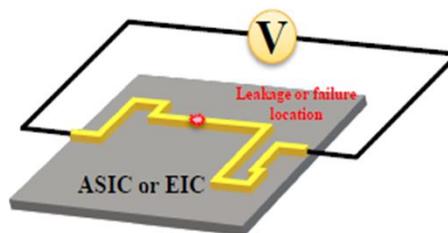
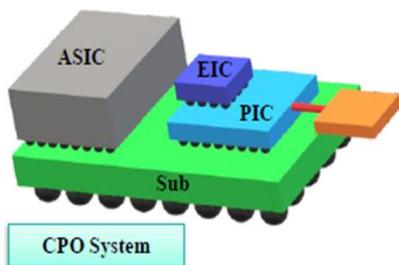
Analysis flow for PIC (or CPO component)



How do we test and analyze a PIC?



極為相似的流程，而在電換成光的製程中。況銓把多年 MA / FA 經驗無縫移植到 SiPh 分析!!



分析流程	典型分析設備	典型EIC檢查項目	CPO and SiPh 如何應對?
非破壞定位	<ul style="list-style-type: none"> ·OM ·SAT ·2D / 3D X-ray (CT) ·NIR image 	<ul style="list-style-type: none"> ·焊點 / Bump、Void ·RDL 斷裂、金屬橋接 ·Crack、Delamination ·矽裂紋 & 封裝氣泡 	<ul style="list-style-type: none"> ·OM 檢測PIC or CPO元件 ·CPO 封裝也會有傳統封裝問題 ·CPO 封裝體也可以2D/3D X-ray檢測 ·PIC 同樣可以IR檢查
電性 / 定位	<ul style="list-style-type: none"> ·I-V Curve ·EOTPR ·OBIRCH ·InGaAs / Thermal 	<ul style="list-style-type: none"> ·曲線異常 (Leakage / Short) ·訊號異常點 → 斷點定位 ·發熱點 → 金屬短路 ·發光點 → 靜電或擊穿點 	<ul style="list-style-type: none"> ·光路如何入光 / 對光? ·光路的光功率如何測試? ·光路斷裂如何定位? ·光路漏光怎麼尋找?
破壞性 深入分析	<ul style="list-style-type: none"> ·SEM / DB-FIB ·TEM ·EDX ·AFM ·SIMS 	<ul style="list-style-type: none"> ·Back-end 檢查與量測觀察層次或異常 ·Front-end 檢查異常觀察Gate Oxide Breakdown等 ·元素分布 ·粗糙度分析 ·Si Wafer or GaN 磊晶檢查 	<ul style="list-style-type: none"> ·FIB-SEM 斷面觀察：波導寬度、齒深 ·TEM / HR-STEM：Si/SiN/SiO₂ 介面 ·EDX：元素分布 ·AFM：側壁 / 頂面粗糙度 < 1 nm RMS ·SIMS：調變器摻硼 / 磷配置

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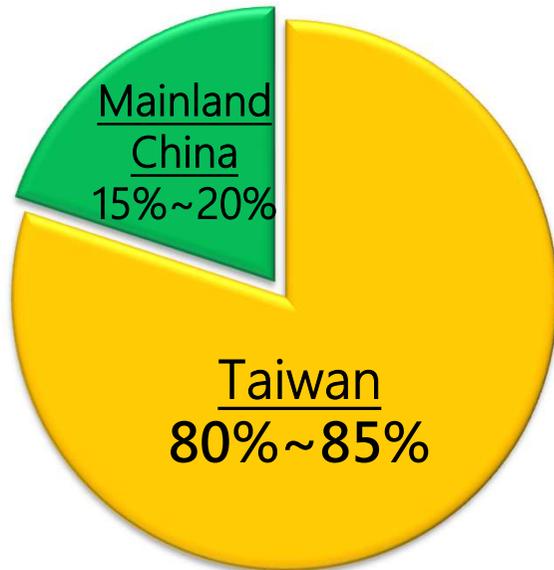
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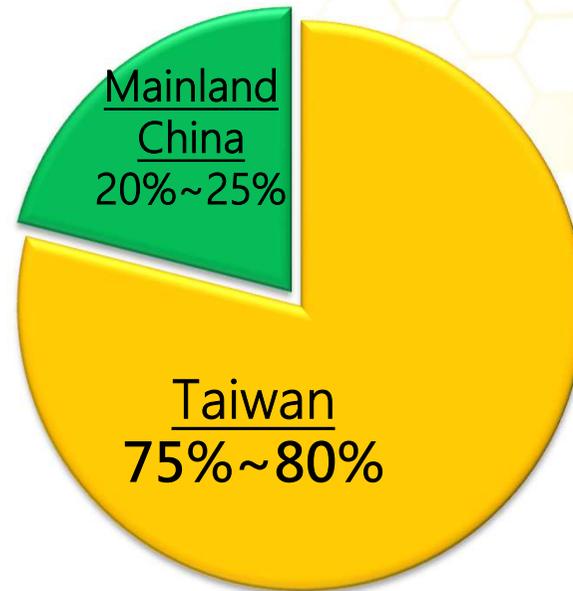
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Recent topics of interest to institutional investors:
Changes in market composition

2024 Q1~Q3



2025 Q1~Q3



MSS 全球佈局運營

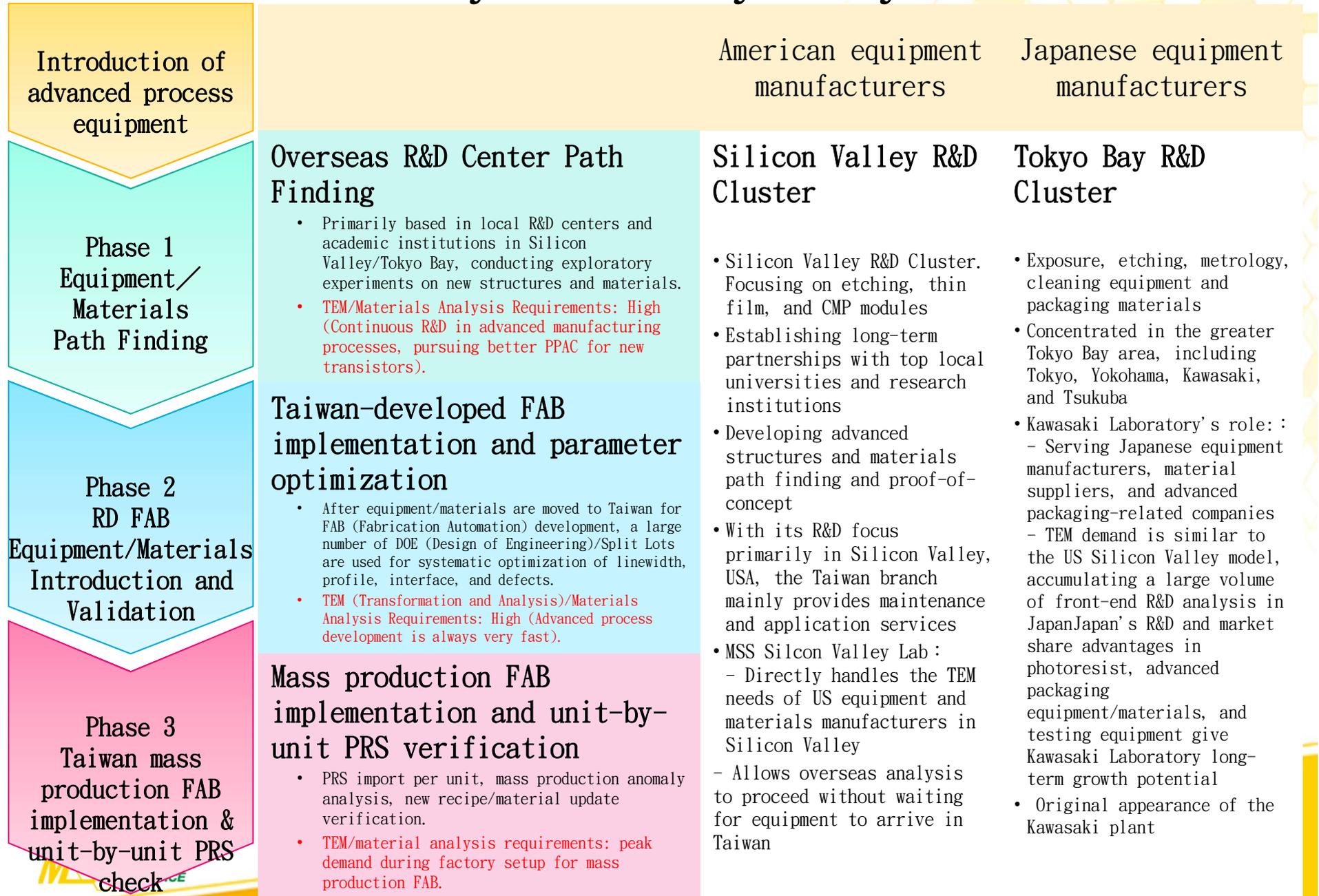


- ❑ The operations headquarters has expanded to include a dedicated "Silicon Photonics Testing and Positioning Analysis" area.
- ❑ Materials Analysis Headquarters + Zhubei Plant 2: Materials analysis for 2nm and below processes.
- ❑ Zhubei Plant 1 is now shared with customer as an "AI Research Zone."
- ❑ Angstrom-Generation Materials Analysis - "SAC-TEM Center" is operational.
- ❑ MSS USA CORP.: Official service commences in September 2025.
- ❑ MSS Japan Co., Ltd.: Official service commences in September 2025.
- ❑ The Shenzhen branch completed its factory construction by the end of June 2025 and began official service in August.

Semiconductor equipment/materials research and development

Introduction of advanced process equipment		American equipment manufacturers	Japanese equipment manufacturers
Phase 1 Equipment/ Materials Path Finding	R&D Center Path Finding <ul style="list-style-type: none"> • Equipment manufacturers (such as Txx, Lxx, etc.) develop Etch and other equipment in their respective R&D centers. • Define equipment parameters and specifications. • Define process capabilities (Process Window), and select matching materials. 	Silicon Valley, USA (Research and Development Center)	The Greater Tokyo Bay area of Japan (Tokyo, Yokohama, Kawasaki, Tsukuba, etc.)
Phase 2 RD FAB Equipment/Materials Introduction and Validation	Client-side demo and parameter optimization <ul style="list-style-type: none"> • The prototype machine was moved closer to the client's location. • The client's R&D engineers operated it. • The client's parameters and materials were optimized. • Indicators such as throughput, yield, CD control, and surface roughness were compared to determine the machine/standard recipe. 	Hsinchu (FAB Research and Development)	Hsinchu (FAB Research and Development)
Phase 3 Taiwan mass production FAB implementation & unit-by-unit PRS check	Technology transfer to mass production <ul style="list-style-type: none"> • Replicate the same materials and process recipe. • For each newly introduced piece of equipment, a Process Release Spec (PRS) must be executed on a case-by-case basis. • Only after confirming that the equipment performs consistently with the R&D FAB benchmark equipment in key performance indicators (CD, profile, defects, throughput, etc.) will it be included in the formal mass production schedule. 	Hsinchu/Tainan/Taichung (Mass Production FAB)	Hsinchu/Tainan/Taichung (Mass Production FAB)

Silicon Valley and Tokyo Bay TEM Demand

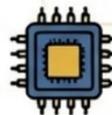


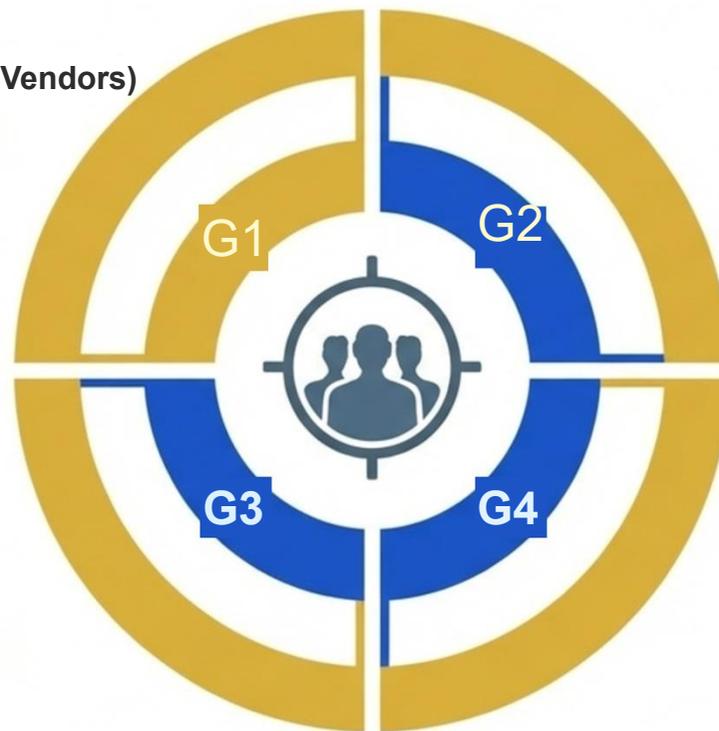


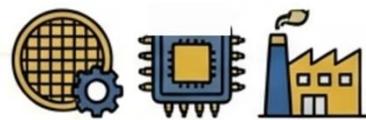
汎銓美國MSS USA CORP矽谷實驗室團隊（汎銓提供）

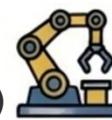
Diverse testing and analysis needs and target customer groups

 (Foundry & Supporting Vendors)

(IC Design House) 



 (IDM)

(Equipment Vendors) 

Our winning Strategies: Technological barriers and trust assets



(Advanced Technical Capability)



(Intellectual Property Protection)



(Tier 1 Customer Relationships)



(Addressing the Talent Gap)



Appendix, Financial Information

Consolidated Income Statement

(NTD/Thousand Dollars)	2025 Q3	2024 Q3	
Labor income	1,586,453	1,462,654	8.46%
Gross profit	347,013	409,983	(15.36%)
Gross Profit Margin %	22	28	
Operating expenses	(316,831)	(287,439)	10.23%
Non-operating income and expenses	(30,055)	(27,300)	10.09%
Net profit before tax	127	95,244	
Income tax expense	(33,141)	(50,505)	
Net profit for this period	(33,014)	44,739	Turning from profit to loss
EPS(Dollars)	(0.64)	0.94	

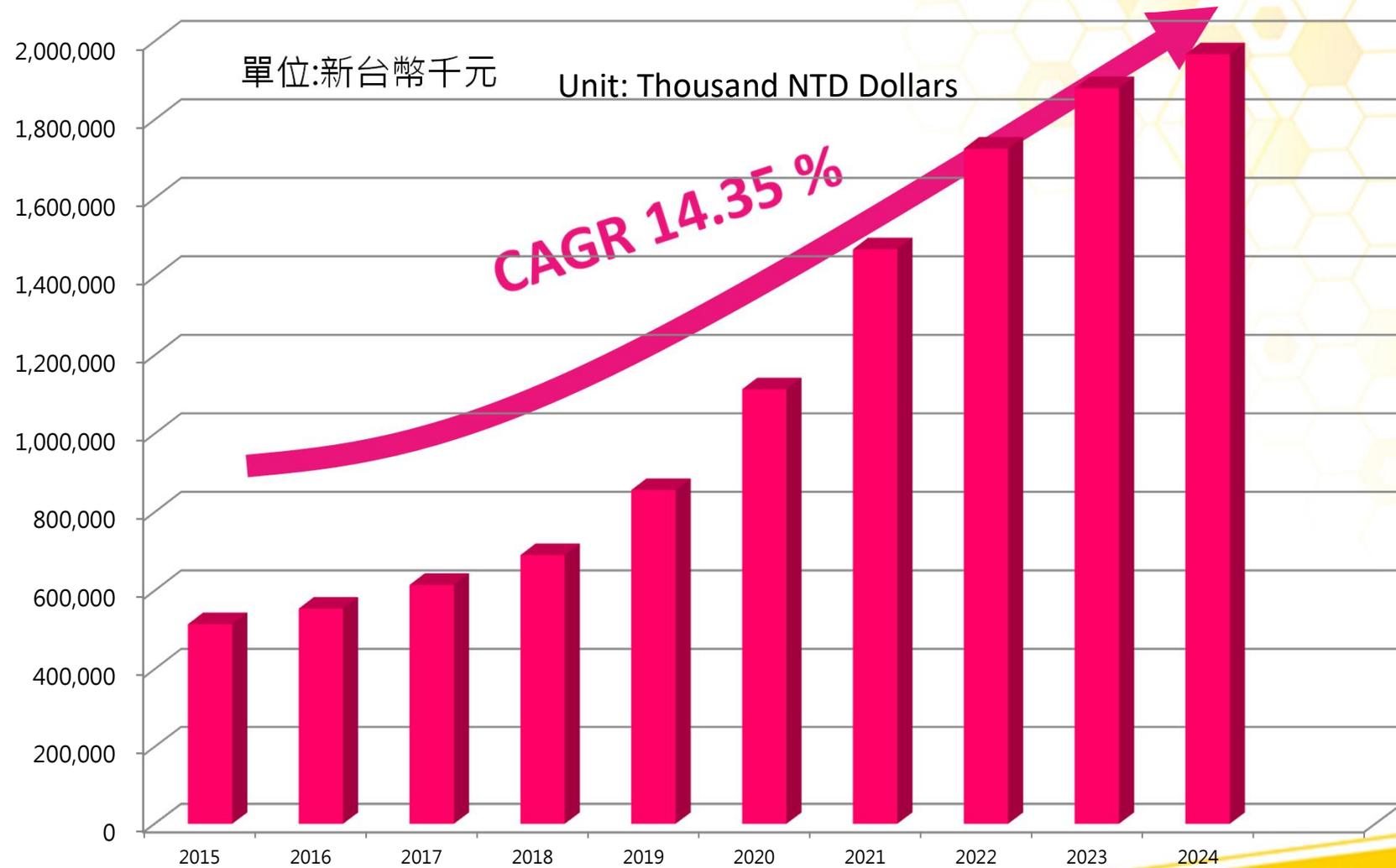
Consolidated Balance Sheet

(NTD/Thousand Dollars)	2025/09/30		2024/09/30	
	Amount	%	Amount	%
Cash and cash equivalents	890,465	15%	1,493,720	25%
Accounts Receivable	725,458	12%	711,255	12%
Prepayments and other current assets	224,604	4%	156,965	2%
Real estate, plant and equipment	3,509,878	59%	2,789,660	47%
Right-of-use assets and other non-current assets	622,805	10%	859,367	14%
Total Assets	5,973,210	100%	6,010,967	100%
Short-term borrowings and long-term borrowings due within one year	445,971	8%	190,710	3%
Accounts payable and other payables	310,354	5%	266,203	5%
Convertible corporate bonds maturing within one year	476,840	8%	-	-
Other current liabilities	158,618	2%	155,413	2%
Convertible bonds	-	-	465,047	8%
Long-term loans	1,316,707	22%	1,514,426	25%
Other non-current liabilities	277,414	5%	293,850	5%
Total Liabilities	2,985,904	50%	2,885,649	48%
Total Equity	2,987,306	50%	3,125,318	52%

Consolidated Cash Flow Statement

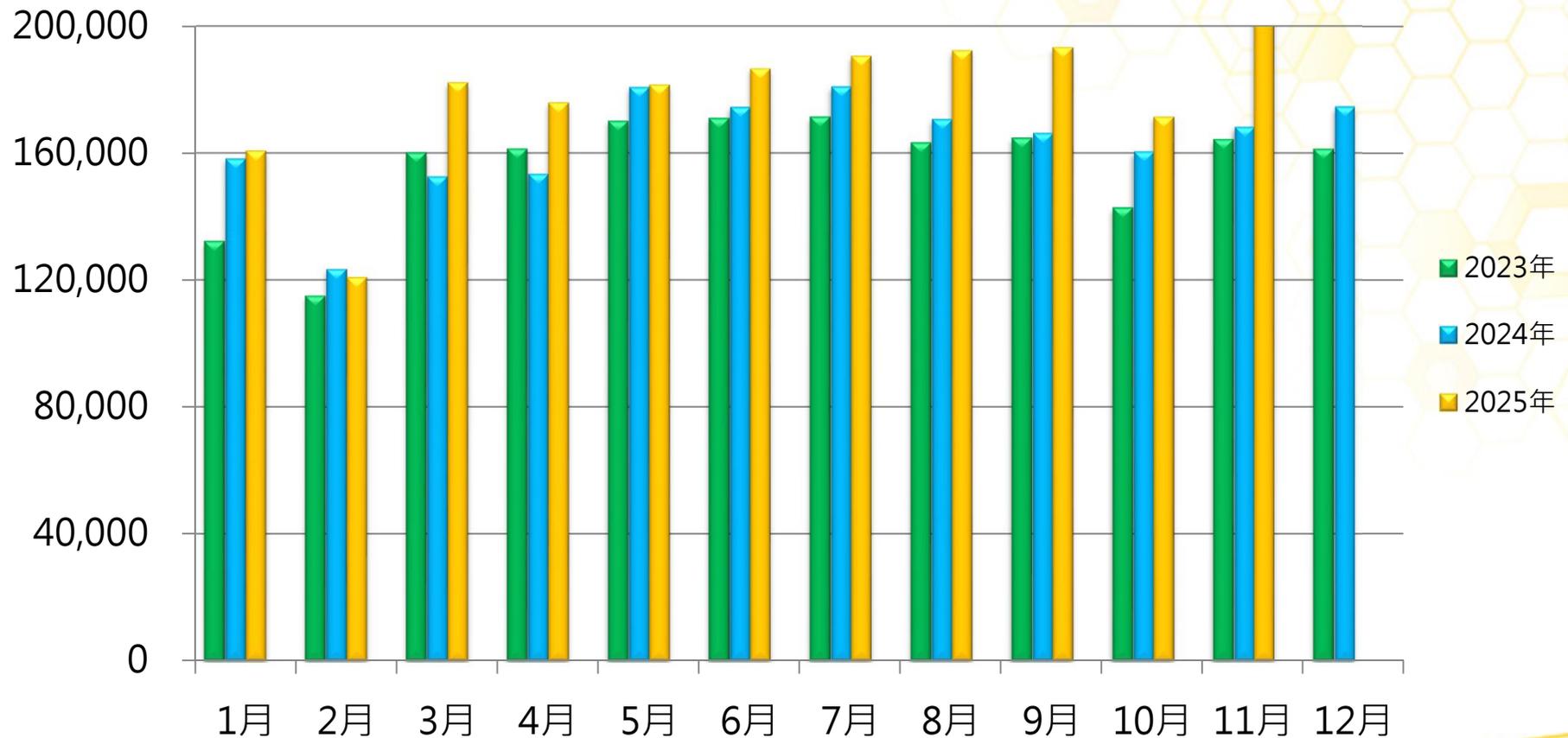
(NTD/Thousand Dollars)	2025 Q3	2024 Q3
Beginning cash and cash equivalents	1,181,200	622,110
Cash flow from operating activities	526,623	481,531
Purchase of real estate, factory buildings and equipment	(887,576)	(1,252,307)
Borrowing long-term and short-term loans	359,000	1,366,000
Repayment of long-term and short-term loans	(168,480)	(587,595)
Issuance of convertible corporate bonds	-	551,380
Cash capital increase	-	600,000
Others	(120,302)	(287,399)
Cash and cash equivalents at the end of the period	890,465	1,493,720

Revenue growth trend over the past decade



2023~2025 monthly revenue trends

Unit: Thousand NTD Dollars



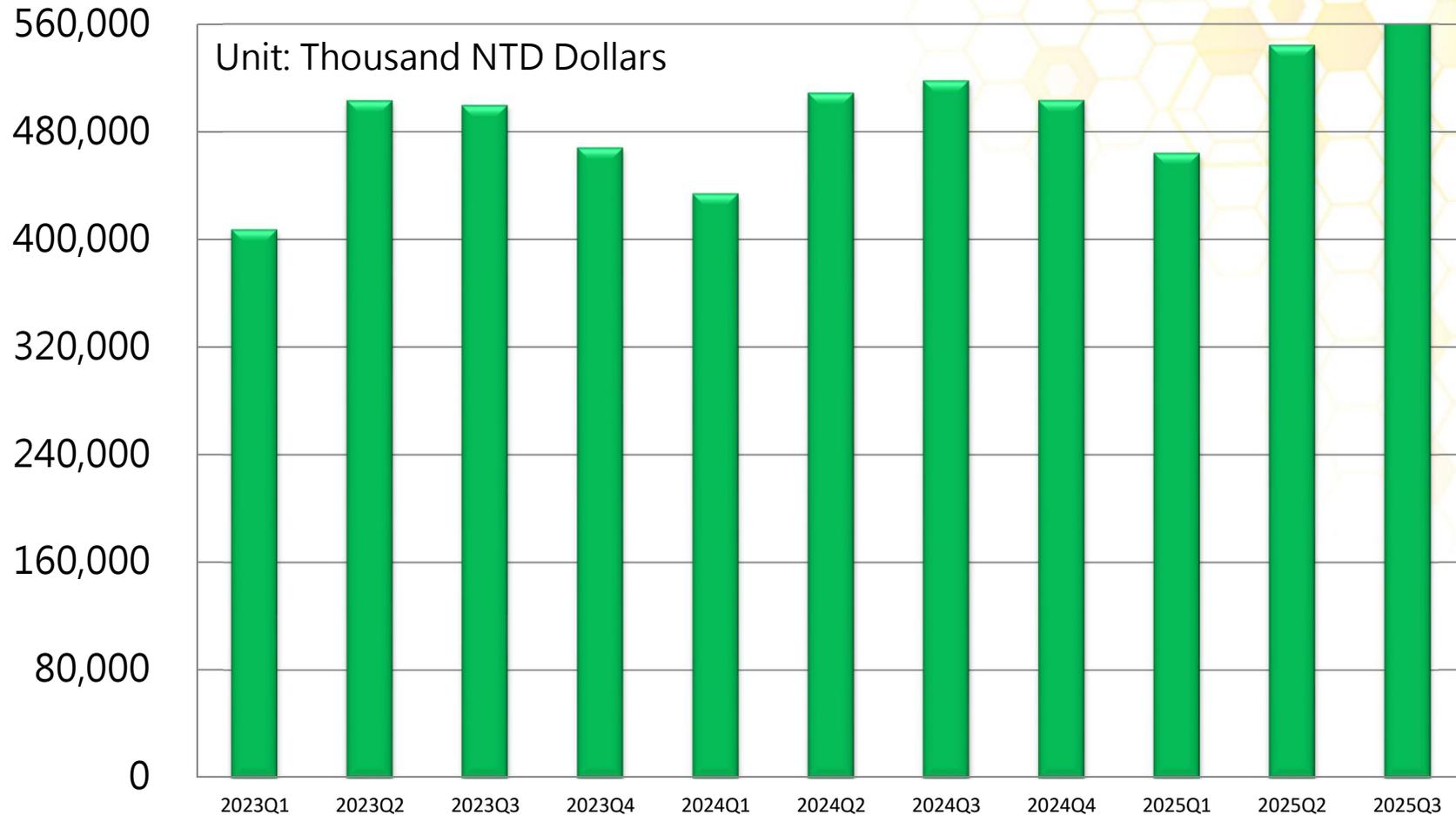
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民國114年12月

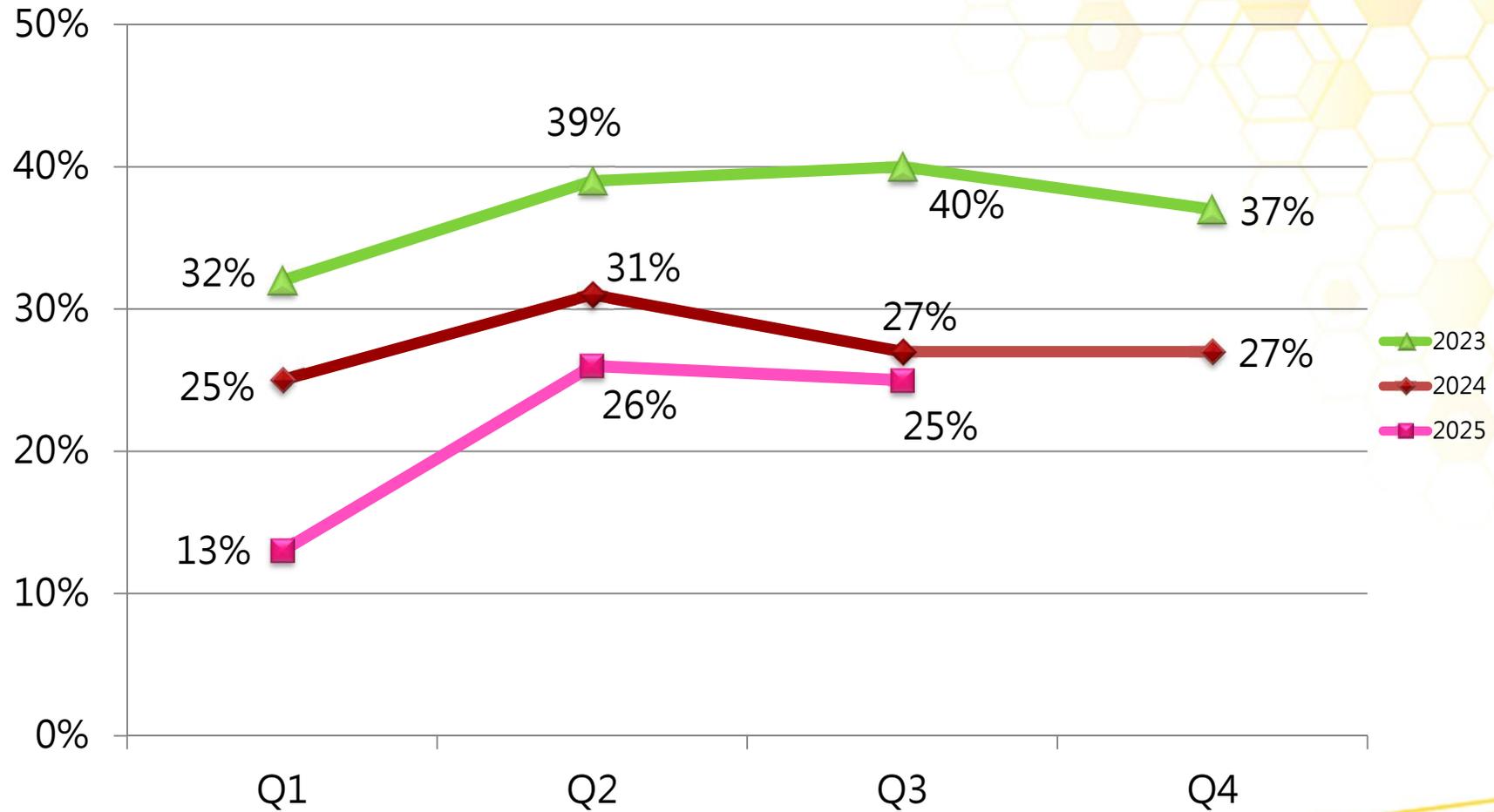
單位：新台幣仟元

項目	營業收入淨額
本月：	213,484
去年同期：	174,821
增減金額：	38,663
增減百分比：	22.12
本年累計：	2,178,647
去年累計：	1,966,669
增減金額：	211,978
增減百分比：	10.78
備註/營收變化原因說明：	

2022~2025 Quarterly Revenue Trends

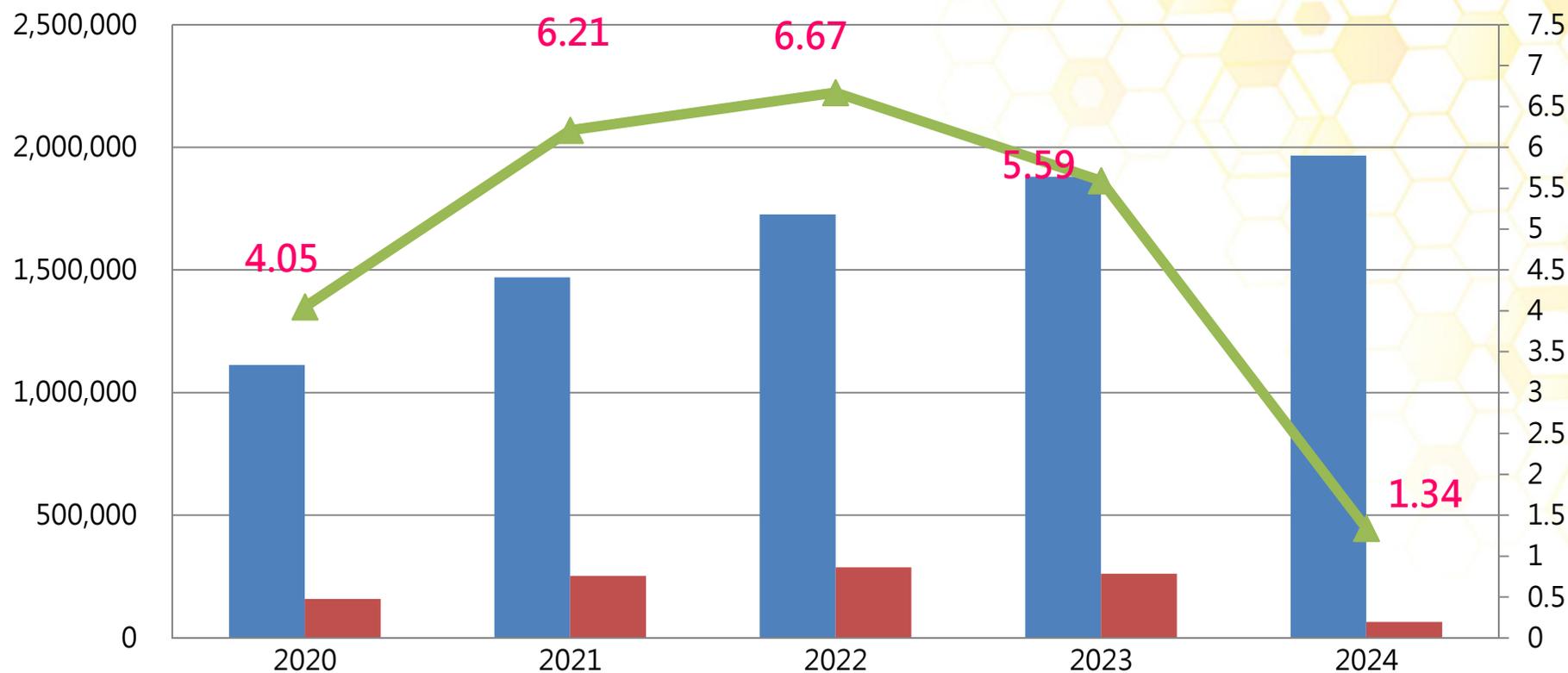


2023~2025 Gross profit margin analysis for each quarter



Recent five years' profit performance and dividend distribution

單位:新台幣千元/元 Unit: Thousand NTD Dollars



Revenue	1,113,184	1,469,881	1,726,427	1,880,575	1,966,669
Net profit	159,106	252,493	287,998	261,280	64,963
EPS	4.05	6.21	6.67	5.59	1.34
Dividend distribution	2.5	4.5	5.5	4.5	1





Thank you for listening, and
welcome your guidance.



Your best R&D partner

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