INVESTOR PRESENTATION

April 2025

Safe Harbor Statement

This presentation contains statements about management's future expectations, plans and prospects of our business that constitute forward-looking statements, which are found in various places throughout the presentation, including, but not limited to, statements relating to expectations of orders, net sales, product shipments, expenses, timing of purchases of assembly equipment by customers, gross margins, operating results and capital expenditures. The use of words such as “anticipate”, “estimate”, “expect”, “can”, “intend”, “believes”, “may”, “plan”, “predict”, “project”, “forecast”, “will”, “would”, and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. The financial guidance set forth under the heading “Outlook” contains such forward-looking statements. While these forward-looking statements represent our judgments and expectations concerning the development of our business, a number of risks, uncertainties and other important factors could cause actual developments and results to differ materially from those contained in forward-looking statements, including any inability to maintain continued demand for our products; failure of anticipated orders to materialize or postponement or cancellation of orders, generally without charges; the volatility in the demand for semiconductors and our products and services; the extent and duration of the COVID-19 and other global pandemics and the associated adverse impacts on the global economy, financial markets, global supply chains and our operations as well as those of our customers and suppliers; failure to develop new and enhanced products and introduce them at competitive price levels; failure to adequately decrease costs and expenses as revenues decline; loss of significant customers, including through industry consolidation or the emergence of industry alliances; lengthening of the sales cycle; acts of terrorism and violence; disruption or failure of our information technology systems; consolidation activity and industry alliances in the semiconductor industry that may result in further increased customer concentration, inability to forecast demand and inventory levels for our products; the integrity of product pricing and protection of our intellectual property in foreign jurisdictions; risks, such as changes in trade regulations, conflict minerals regulations, currency fluctuations, political instability and war, associated with substantial foreign customers, suppliers and foreign manufacturing operations, particularly to the extent occurring in the Asia Pacific region where we have a substantial portion of our production facilities; potential instability in foreign capital markets; the risk of failure to successfully manage our diverse operations; any inability to attract and retain skilled personnel, including as a result of restrictions on immigration, travel or the availability of visas for skilled technology workers.

In addition, the United States and other countries have recently levied tariffs and taxes on certain goods and could significantly increase or impose new tariffs on a broad array of goods. They have imposed, and may continue to impose, new trade restrictions and export regulations. Increased or new tariffs and additional taxes, including any retaliatory measures, trade restrictions and export regulations, could negatively impact end-user demand and customer investment in semiconductor equipment, increase Besi’s supply chain complexity and manufacturing costs, decrease margins, reduce the competitiveness of our products or restrict our ability to sell products, provide services or purchase necessary equipment and supplies. Any or all of the foregoing factor could have a material and adverse effect on our business, results of operations or financial condition. In addition, investors should consider those additional risk factors set forth in Besi's annual report for the year ended December 31, 2024 and other key factors that could adversely affect our businesses and financial performance contained in our filings and reports, including our statutory consolidated statements. We expressly disclaim any obligation to update or alter our forward-looking statements whether as a result of new information, future events or otherwise.

Agenda

I. Company Overview

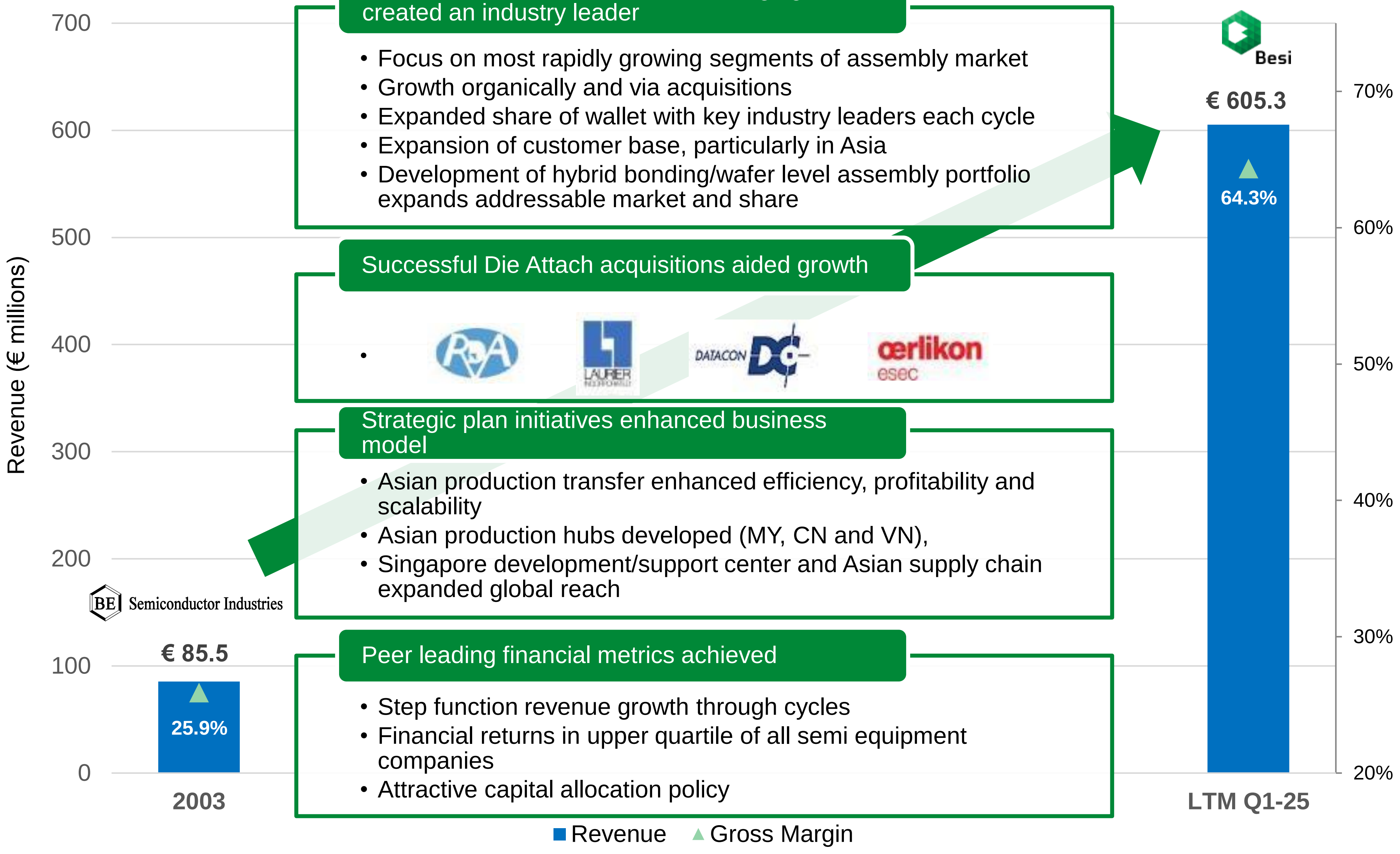
II. Market Overview

III. End-User Market Trends

IV. Financial Update and Summary

I. COMPANY OVERVIEW

Company History



Consistent focus on Advanced Packaging has created an industry leader

- Focus on most rapidly growing segments of assembly market
- Growth organically and via acquisitions
- Expanded share of wallet with key industry leaders each cycle
- Expansion of customer base, particularly in Asia
- Development of hybrid bonding/wafer level assembly portfolio expands addressable market and share

Successful Die Attach acquisitions aided growth

- RoA LAURIER DATACON DC oerlikon esec

Strategic plan initiatives enhanced business model

- Asian production transfer enhanced efficiency, profitability and scalability
- Asian production hubs developed (MY, CN and VN),
- Singapore development/support center and Asian supply chain expanded global reach

Peer leading financial metrics achieved

- Step function revenue growth through cycles
- Financial returns in upper quartile of all semi equipment companies
- Attractive capital allocation policy

Summary Strategy

Strategic Objectives

Maintain best in class technology leadership

Expand presence in wafer level assembly

Increase market presence in addressable markets

Enhance scalability and reduce structural costs

Exceed challenging sustainability metrics for 2026 and 2030

Acquire companies with complementary technologies and products

Reward shareholders via capital allocation policy

Superior Long Term Value Creation

Capital Allocation

Attractive capital allocation program

€ 2.2 billion of dividends and share repurchases since 2011*

Represents ~33% of total revenue

Strategic/Financial

Disciplined execution has created leader in advanced packaging

Best in class financial metrics

Superior through cycle financial performance versus peers

Shareholder Return

Superior Total Returns**:
97% (3 year)
353% (5 year)
2,145% (10 year)

Consistent TSR outperformance versus peers

Upper quartile ranking for all semi-equipment companies

* Includes share repurchases through March 31, 2025 and 2024 dividend
** Through December 31, 2024

Market Positioning: From Processed Wafer to Assembled Chip

Total Semiconductor Manufacturing Equipment 2024 (E): $ 117B

Front end: $ 104.9B
(89%)

Assembly: $ 4.6B
(4%)

Test: $ 7.7B
(7%)

Besi focus

Assembly Process

Dicing	Die Attach	Wire Bond	Packaging	Plating	
	✓		✓	✓	**Leadframe** Wire Bond
	✓		✓		**Substrate** Wire Bond
	✓		✓		**Substrate** Flip Chip / TCB
	✓		✓		**Wafer Level** Hybrid, EMIB, TCB, Flip Chip, FOWLP

✓ Besi offering

Source: TechInsights, March 2025

Industry Leading Assembly Equipment Portfolio

Die Attach (81% of 2024 Revenue)

Multi-Module Attach

Epoxy / Soft Solder

Flip-chip

Direct Lid Attach

Embedded Bridge Attach

Thermo Compression

Hybrid Bonding

Packaging and Plating (19% of 2024 Revenue)

Leadframe Molding

Substrate Molding

Wafer and Panel Molding

Trim and Form

Singulation

Plating

Wet Processing

Serving Blue Chip Customers Across Key End-Markets

Customers

- **Diversified, blue chip customer base**
  - Top 10 customers ~52% of 2024 revenue
  - One customer > 10%
- **Supplying leading IDMs, fabless producers and subcontractors**
  - Sell direct to IDMs
  - Sell to fabless producers via subcontractors
  - 55% IDMs/45% foundries/subcontractors order split in 2024
- **Long-term relationships**
  - Many exceed 50 years

Independent Device Manufacturers (IDMs)

ams OSRAM, BOSCH, infineon, intel, Micron, NXP, qorvo, RENESAS, SAMSUNG, SKYWORKS, ST, TDK, Texas Instruments

Foundries/Subcontractors

ASE GROUP, Amkor Technology, fabrinet, FOXCONN, HUA TIAN, INNOLIGHT, JCET, LG Innotek, PTI, SPIL, tsmc, SHARP, TF 通富微电, TF · AMD, UTAC

Fabless IDMs

AMD, BROADCOM, DELL, DELPHI, FUJITSU, hp, lenovo, MEDIATEK, MOTOROLA MOBILITY, NVIDIA, QUALCOMM

End-User Markets

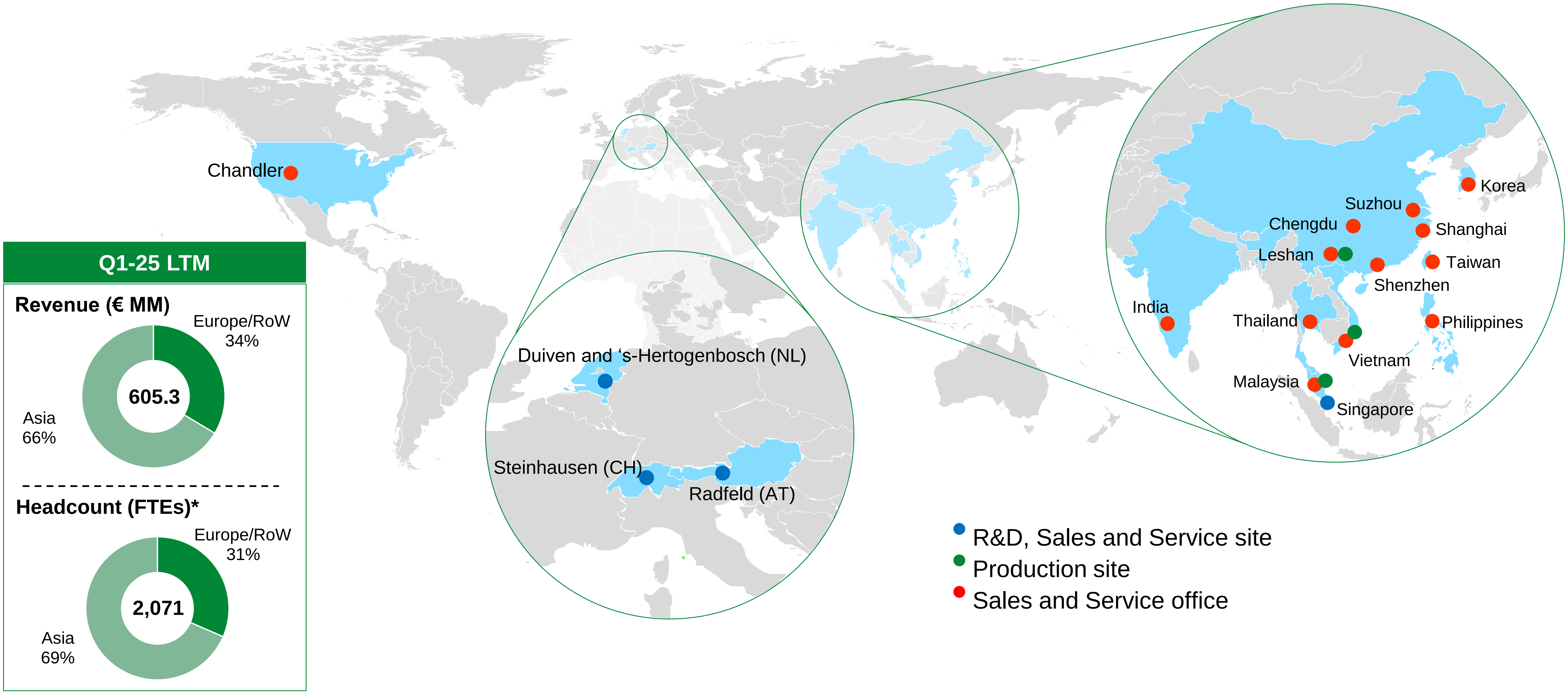
Computing 43%

Mobile 20%

Auto/ Industrial 21%

Fiscal 2024 data.

Global Operations Supported by European Development Centers and Asian Production Footprint/Supply Chain



● R&D, Sales and Service site
● Production site
● Sales and Service office

* Headcount per quarter ending. Including temporary headcount.

Disciplined, Strategic Execution

2024 Highlights

- ✓ Navigated extended industry downturn at high profitability levels
- ✓ Significant growth in AI related revenue for hybrid bonding and photonics applications
- ✓ Cumulative hybrid bonding orders in excess of 100 units. Adoption expanded to 15 customers
- ✓ Successful new product introductions. Complete wafer level assembly portfolio available
- ✓ Expanding cleanroom capacity and Asian support capabilities in anticipation of advanced packaging growth in 2025
- ✓ Substantially all 2024 sustainability targets met or exceeded
- ✓ First reporting under European Sustainability Reporting Standards (ESRS)
- ✓ Increased energy from renewable sources to 99% versus 71% in 2023

Progress Continues on Besi's Sustainability Agenda

2024 Sustainability Highlights
✓ Met or exceeded substantially most of 2024 targets set in 2022
✓ First reporting under ESRS
✓ Scope 1 & 2 declined by 93% versus 2023 and 97% versus 2021
✓ Increased energy from renewable sources to 99% versus 71% in 2023
✓ Implemented Design-to-X initiative to reduce die attach platform energy consumption by 10%
✓ Developed Climate Transition Plan highlighting key emission reduction levers
✓ Expanded framework to include public policies on Human Rights and Anti-corruption and Bribery
✓ Improved ratings with MSCI, Sustainalytics, ISS ESG and S&P Global

Summary Financials

Year Ended December 31, (€ MM)	**2022**	**2023**	**2024**	**Q1-24**	**Q1-25**
Orders	**663.7**	**548.3**	**586.7**	**127.7**	**131.9**
Growth (%)	*-29%*	*-17%*	*+7%*		*3%*
Revenue	**722.9**	**578.9**	**607.5**	**146.3**	**144.1**
Growth (%)	*-4%*	*-20%*	*+5%*		*-2%*
Gross Profit	**443.1**	**375.8**	**395.9**	**98.3**	**91.7**
Margin (%)	*61%*	*65%*	*65%*	*67%*	*64%*
EBITDA	**317.1**	**239.1**	**224.2**	**47.5**	**46.6**
Margin (%)	44%	41%	37%	32%	32%
Operating Income	**294.1**	**213.4**	**195.6**	**40.7**	**39.3**
Margin (%)	*41%*	*37%*	*32%*	*28%*	*27%*
Net income	**240.6**	**177.1**	**182.0**	**34.0**	**31.5**
Margin (%)	*33%*	*31%*	*30%*	*23%*	*22%*
Net Cash*	**346.5**	**113.0**	**143.8**	**180.9**	**159.4**

Long-term growth in cyclical business

- Increased revenue, profitability and market share per cycle

2024 revenue and net income +4.9% and +2.8% vs. 2023

- Strength in AI for 2.5D and 3D applications
- Orders +7.0% due to increased demand for hybrid bonding and photonics applications
- Gross margins increased to 65.2%

Q1-25 results reflect contrasting growth trends:

- AI strength vs. mainstream assembly weakness
- Orders +3.3% vs. Q1-24
- Operating income relatively flat year over year

Strong margins and profitability

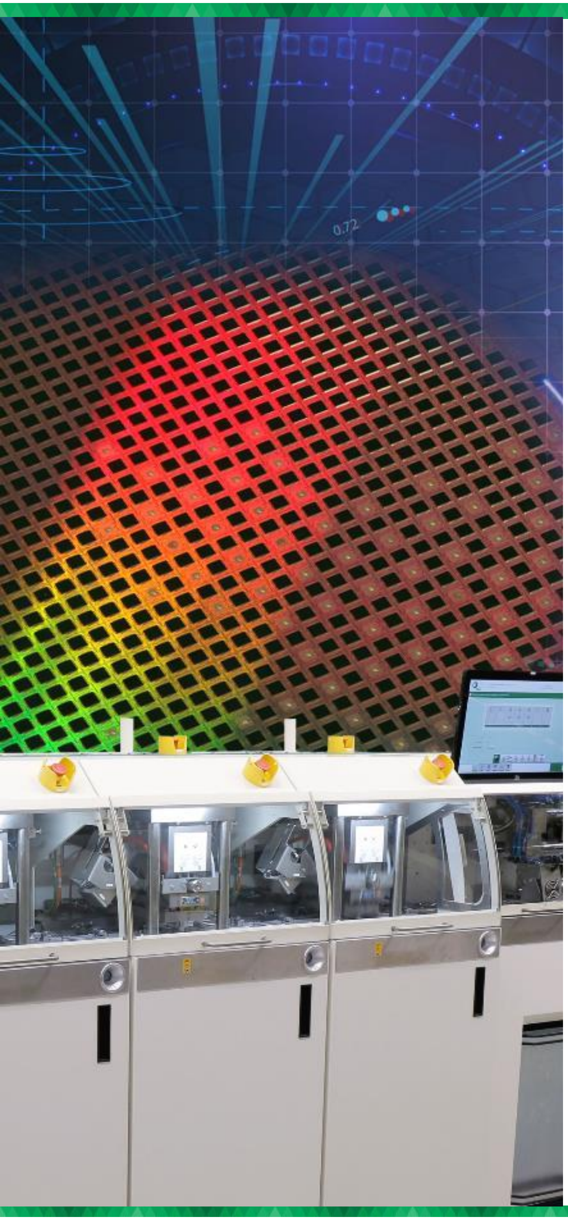
- Attractive gross and net margins maintained through cycles due to favorable product mix, cost control efforts, flexible supply chain

Strong cash generation supports shareholder friendly capital allocation policy

* Calculated as Cash and cash equivalents, including deposits minus total debt. Excludes lease liabilities.

Business Model

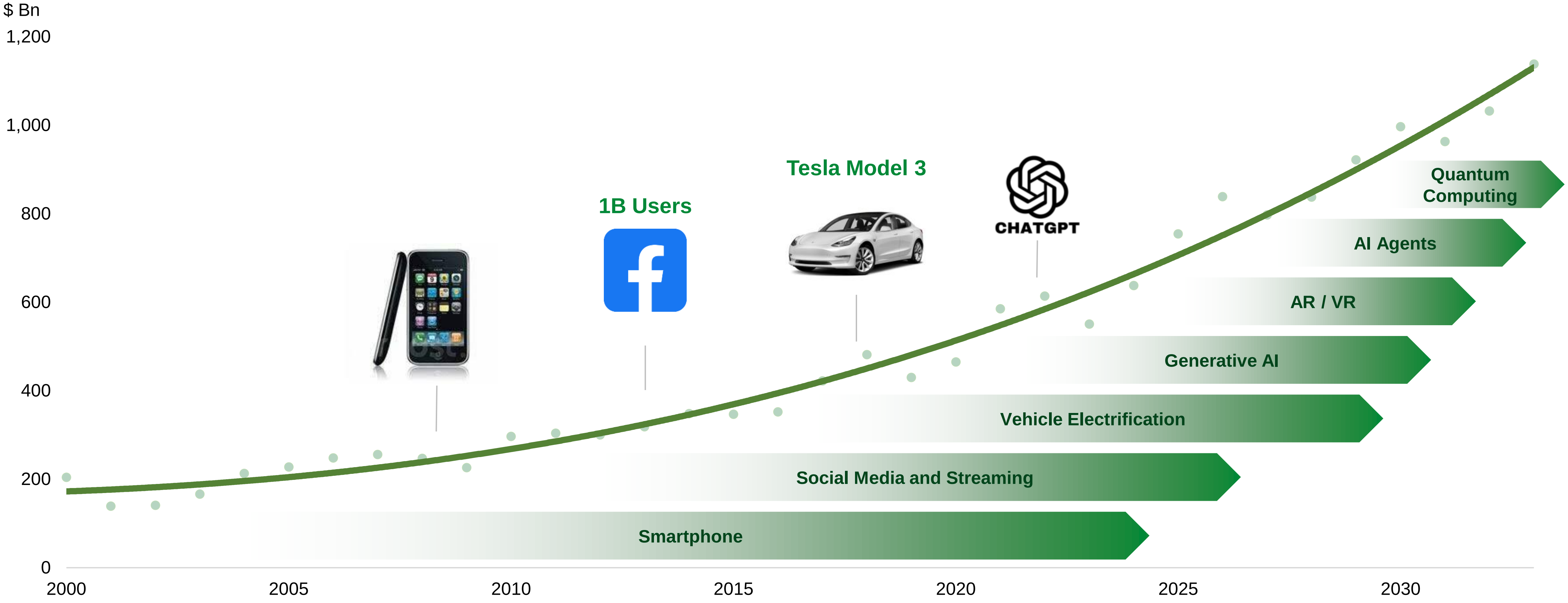
	Objectives
Revenue	€ 1 billion+++
Addressable market share	40%+
Gross margin	62-66%
Operating margin	35-50%
Headcount split	75% Asia/25% Europe/NA
Scope 1 & 2 emissions	Net Zero GHG by 2030
Global energy needs	100% from renewable sources



II. MARKET OVERVIEW

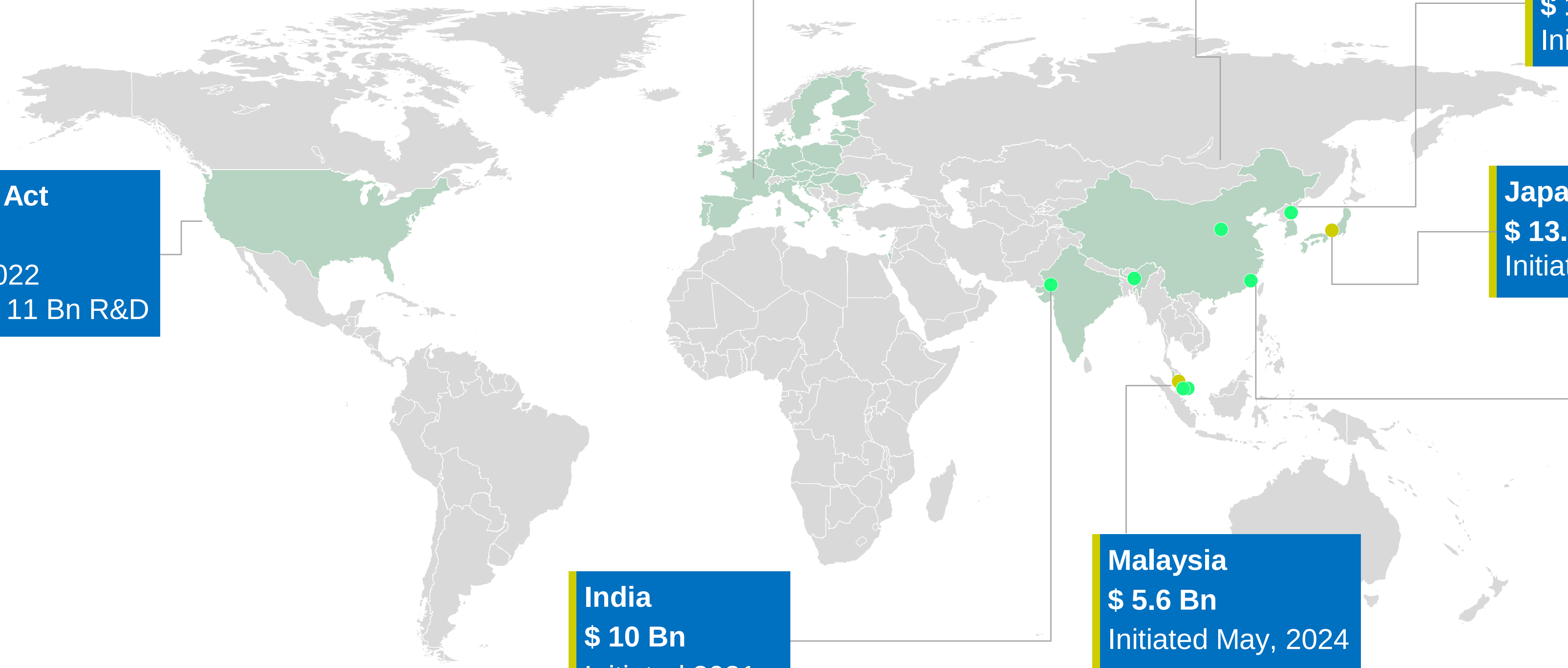
Semiconductor Sales Expected to Reach $1 Trillion by 2030 Driven by Various Megatrends

Annual Semiconductor Sales



Source: TechInsights

Government Funding Helps Drive New Fab Capacity Globally



EU Chips Act
$ 46.5 Bn
Initiated 2023
Includes $ 3.1 Bn R&D

China Big Fund
$ 27 Bn (Phase 2)
Initiated 2019
$ 47.5 Bn (Phase 3)

South Korea
$ 19.7 Bn
Initiated 2022

US Chips Act
$ 52.7 Bn
Initiated 2022
Includes $ 11 Bn R&D

Japan
$ 13.9 Bn
Initiated 2021

Taiwan
$ 16 Bn
Initiated 2023

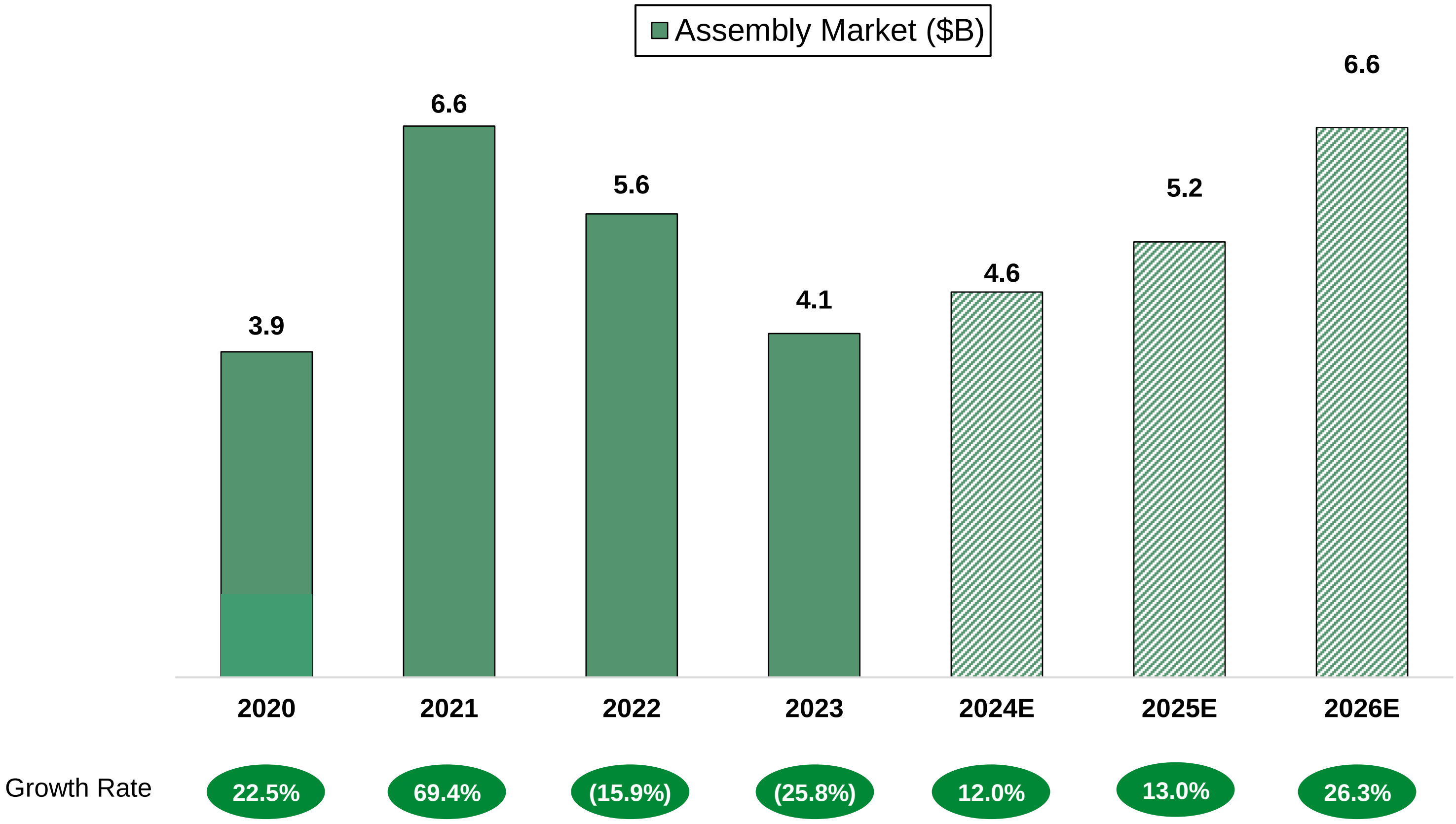
India
$ 10 Bn
Initiated 2021

Malaysia
$ 5.6 Bn
Initiated May, 2024

Source: TechInsights, May 2024; Company estimates

Non-exhaustive list

Assembly Equipment Market Trends



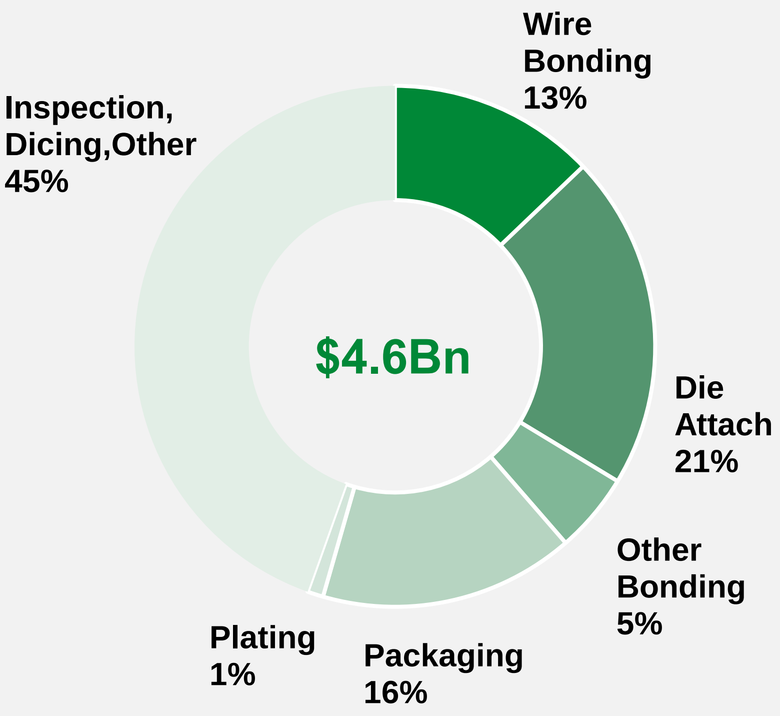
Market expected to recover in 2025/2026
- Estimated to start in H2-25
- Forecast $ 6.6 billion in 2026
  - +60% from 2023 levels
- Growth trajectory subject to many variables

Secular fundamentals intact:
- AI, Datacenter, HPC, 5G-6G primary drivers
- Investment in new process technologies: hybrid bonding/CSP, CPO
- Onshoring new advanced packaging fabs

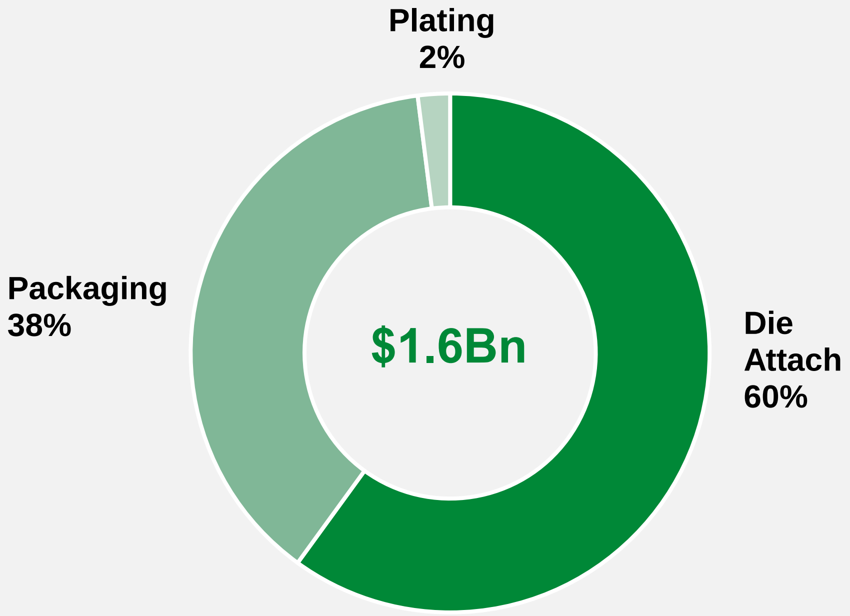
Source: TechInsights, March 2025. Assembly equipment revenue excludes service revenue.

Assembly Equipment Market Composition

Assembly Equipment Market (2024E)



Besi Addressable Market (2024E)



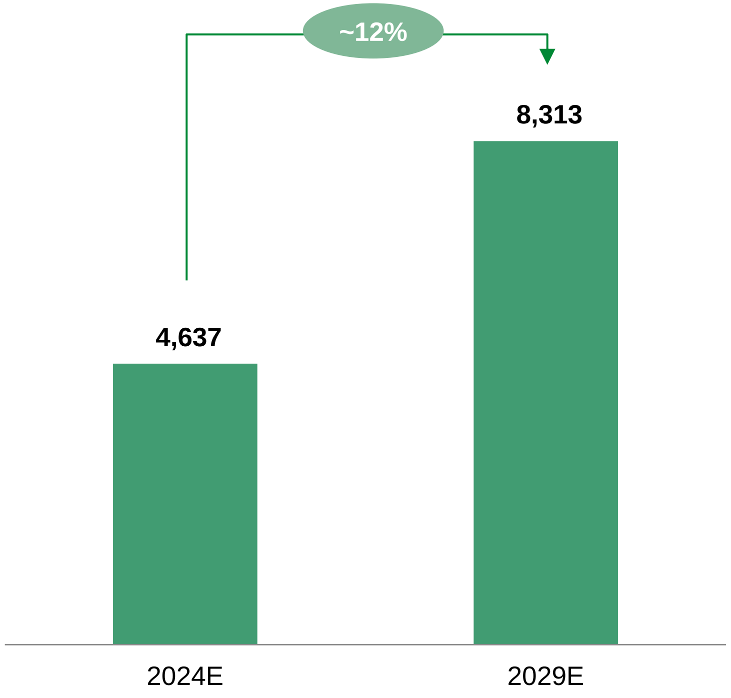
Source: TechInsights, March 2025

Besi Focuses on Highest Growth Segments of Assembly Market

Assembly equipment market

$MM

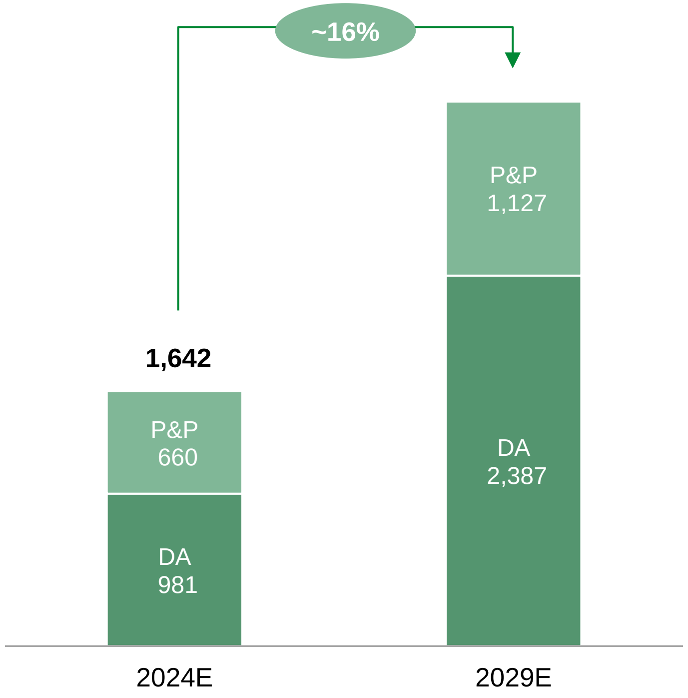
CAGR (2024-2029E)	
Assembly market	~12%



Besi addressable market

$MM

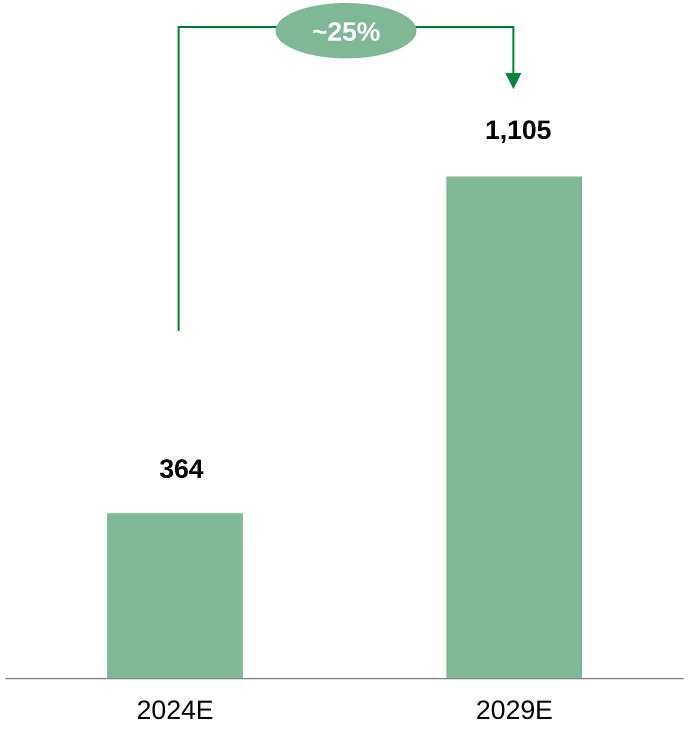
CAGR (2024-2029E)	
Die attach	~19%
Packaging and plating	~11%
Total addressable	~16%



Advanced die placement

$MM

CAGR (2024-2028E)	
Advanced die placement	~25%

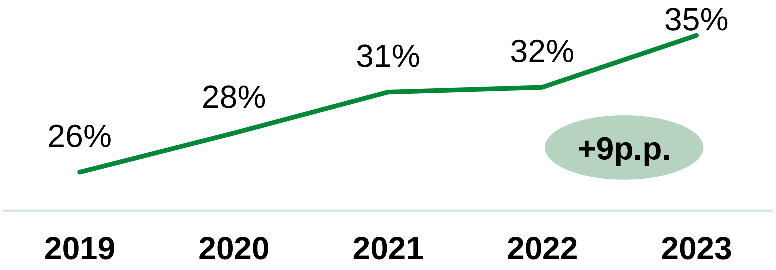


Source: TechInsights, March 2025

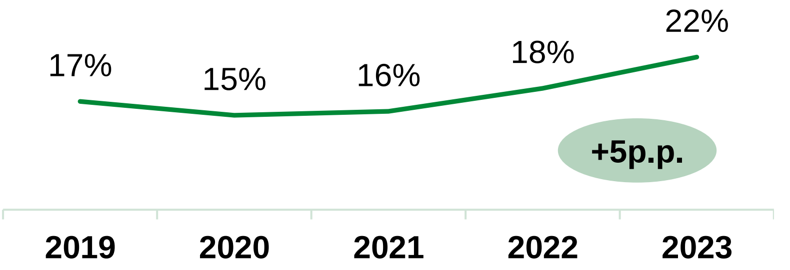
Increasing Market Share in Key Market Segments

Besi Market Share

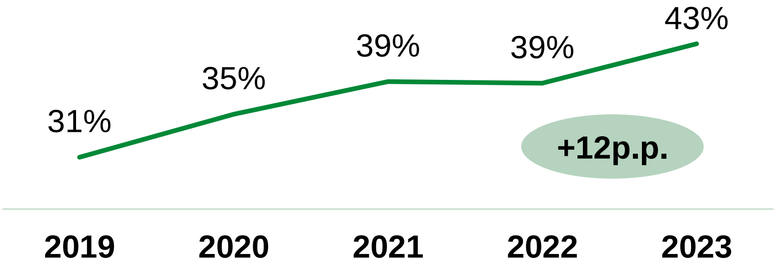
Addressable Market*



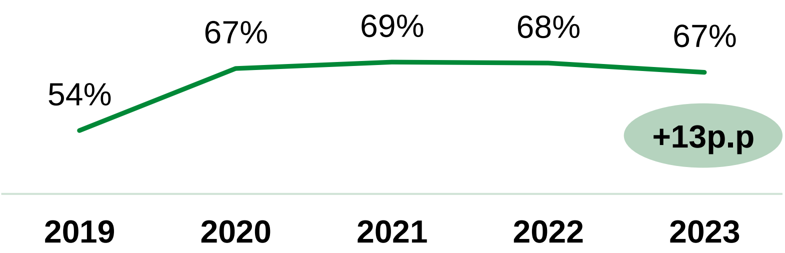
Packaging & Plating



Die Attach



Advanced Die Placement**



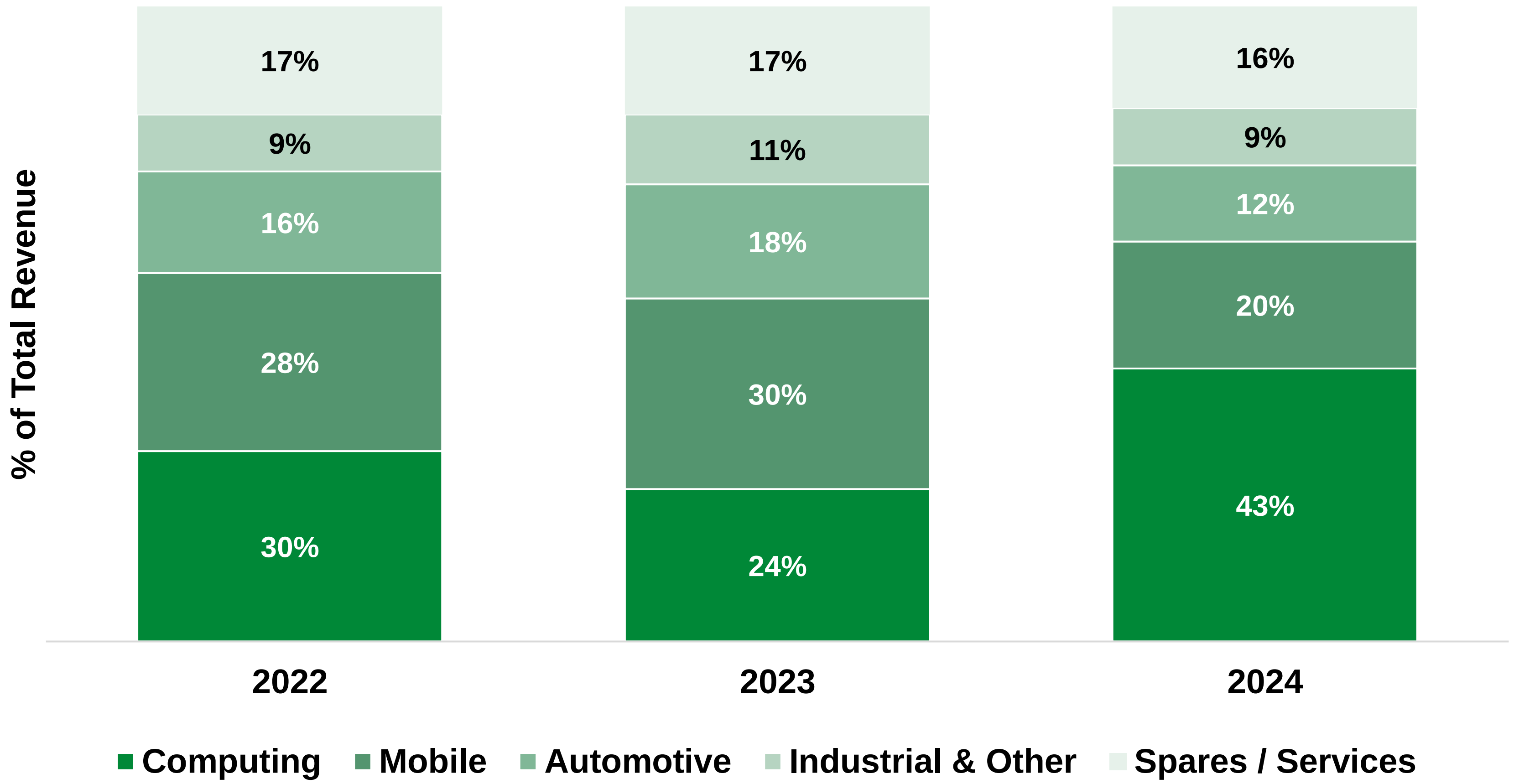
Source: TechInsights, May 2024

* Excludes wire bonding, dicing, and other

** Advanced die placement defined as < 7 micron accuracy per TechInsights

III. END-USER MARKET TRENDS

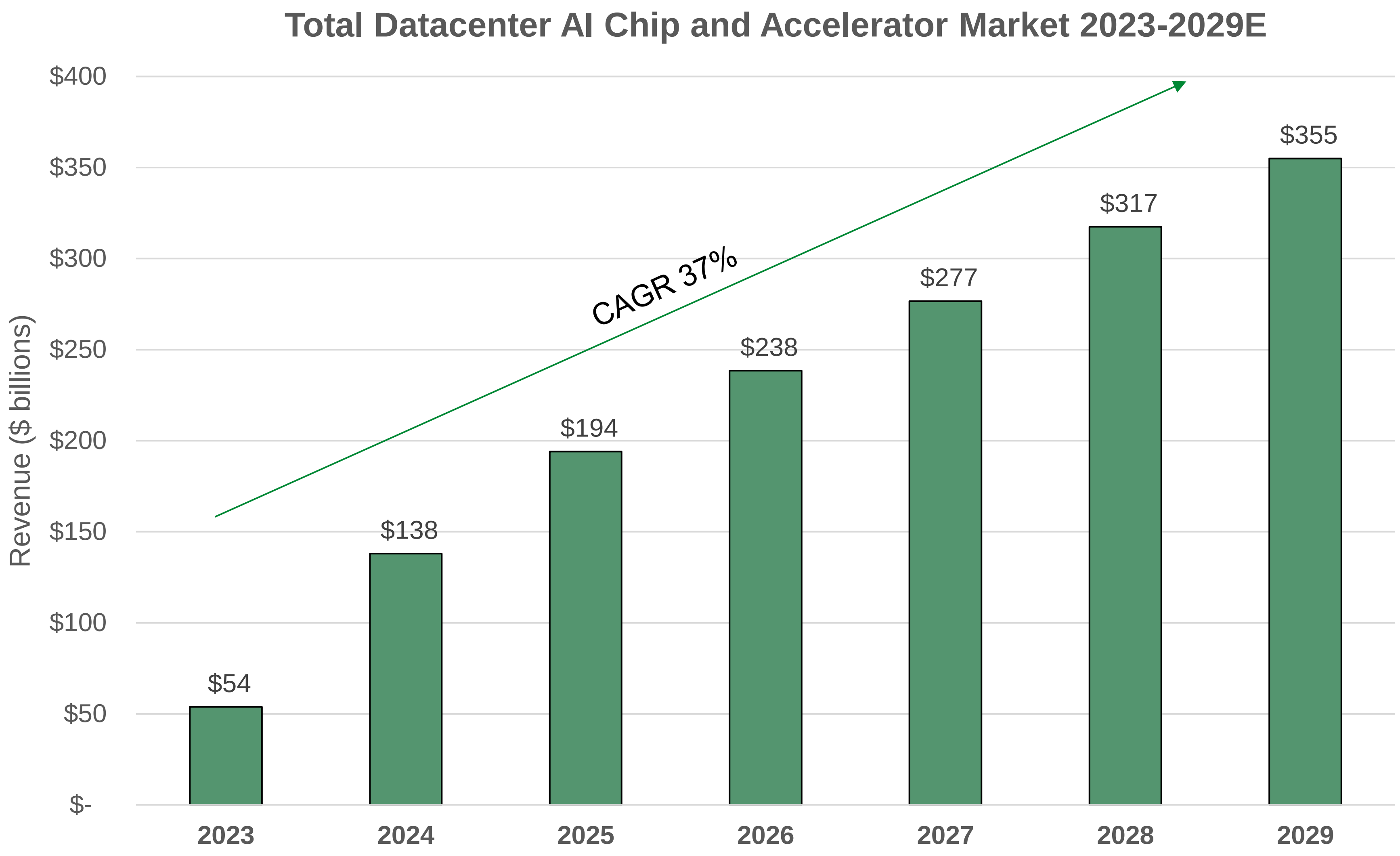
Besi’s End-User Market Trends



Principal Growth Drivers in Besi’s End-User Markets

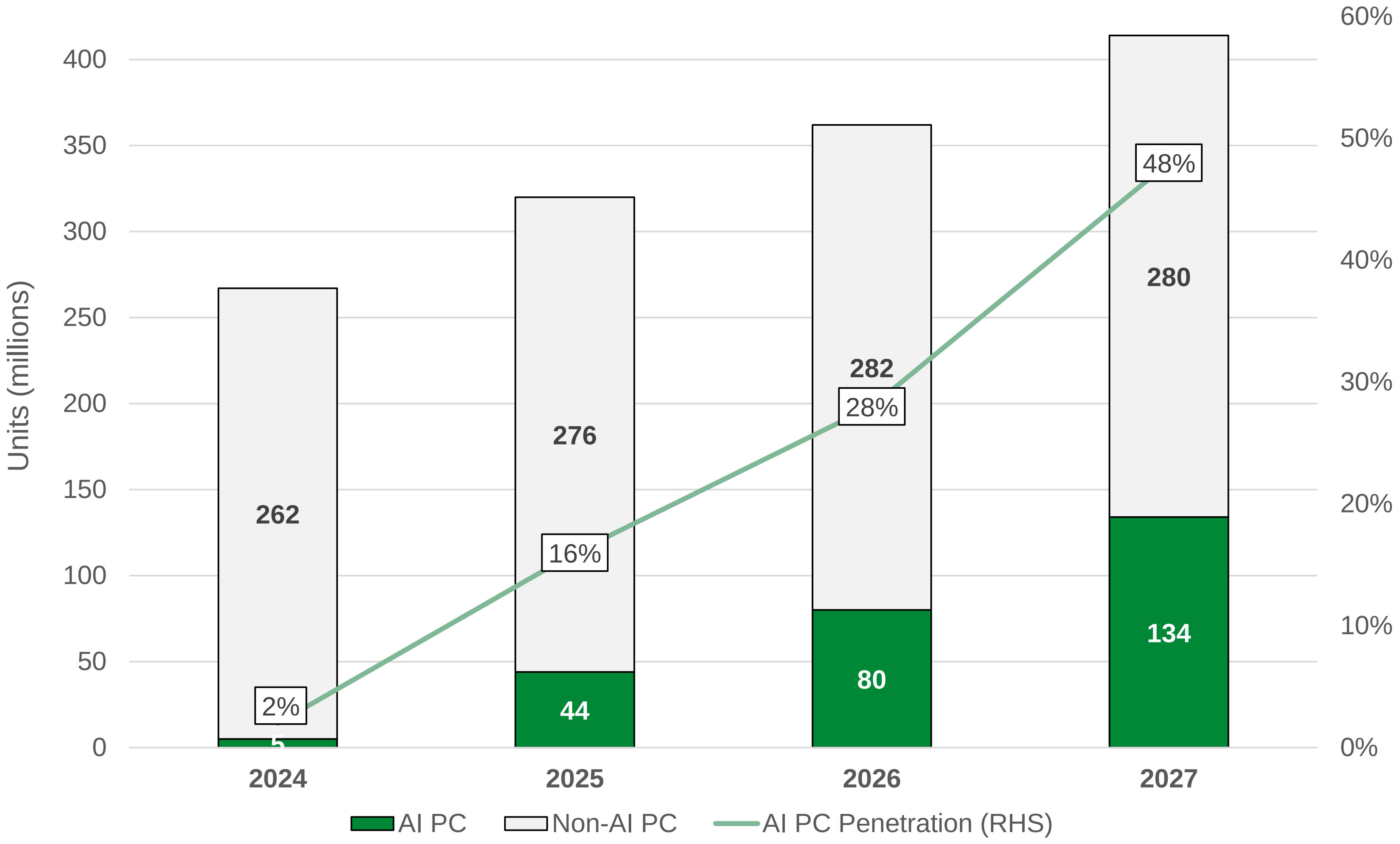
Computing	Mobile	Automotive	Industrial / Other
	 Generated by ImageFX		
Generative AI	**On Device AI**	**Autonomous Driving**	**Factory Automation**
• Datacenters • Edge AI tablets/PC/laptops • Gaming	• Adv. cameras & 3D imaging • 5G advanced → 6G • Under display biometric ID • New AR/VR devices	• Advanced cameras/sensors • Vehicle electrification • SiC & GaN power devices • Connectivity/infotainment	• Smart grid • Industrial IoT • Clean energy

Generative AI Primary Driver of Datacenter Computing Growth



Source: TechInsights, December 2024

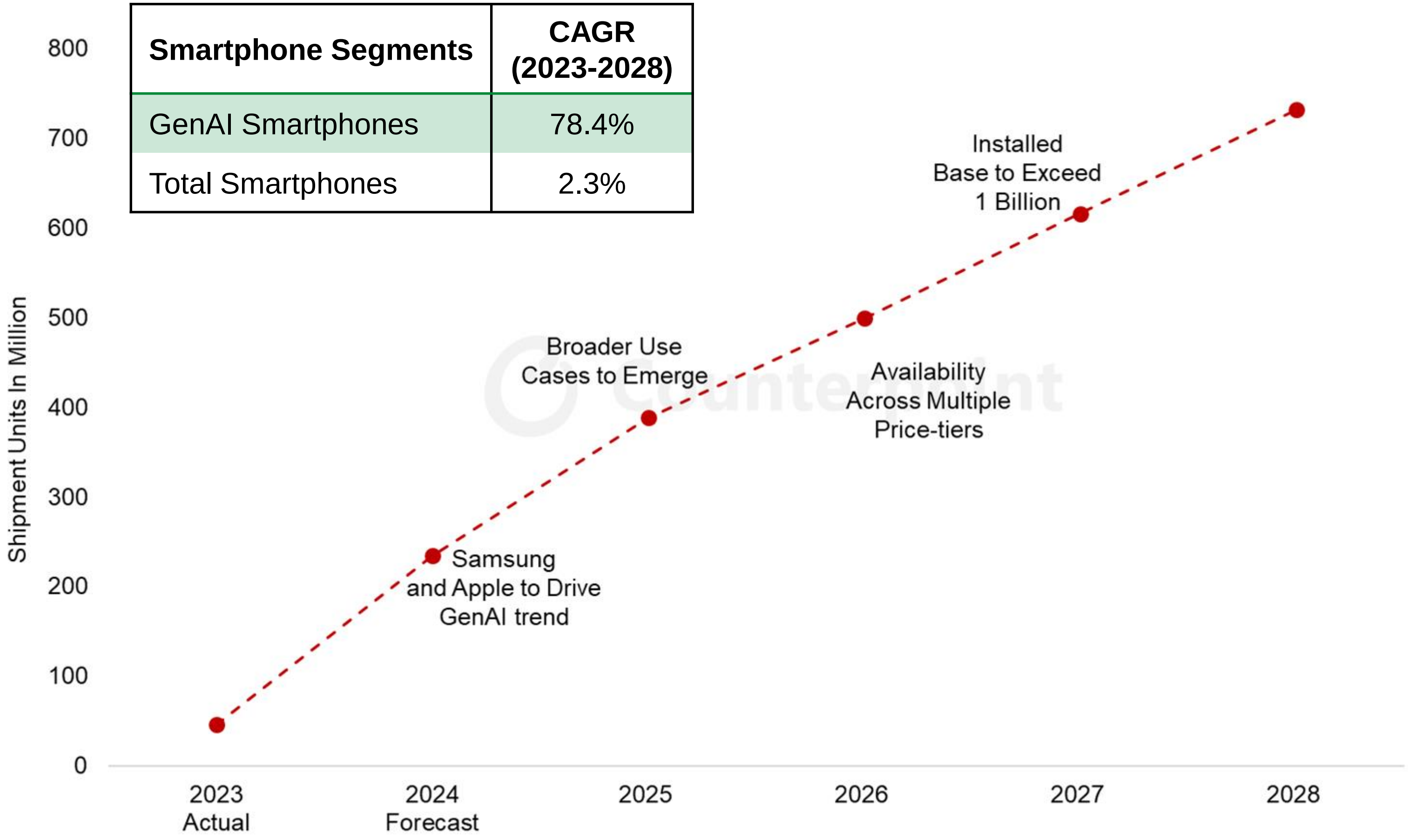
AI PC/Tablets Another Major Driver of Computing Growth

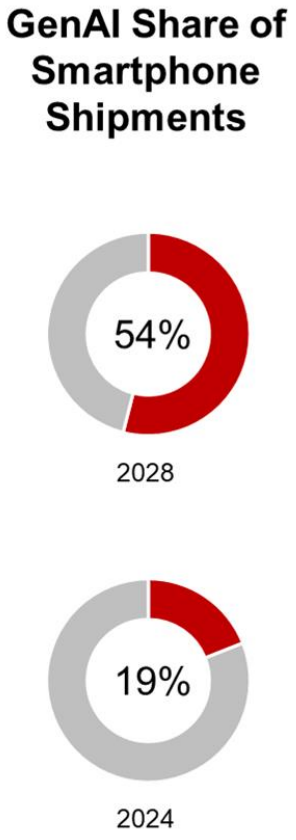


Source: Morgan Stanley Research, May 2024

GenAI Smartphones Fastest Growing Mobile Segment

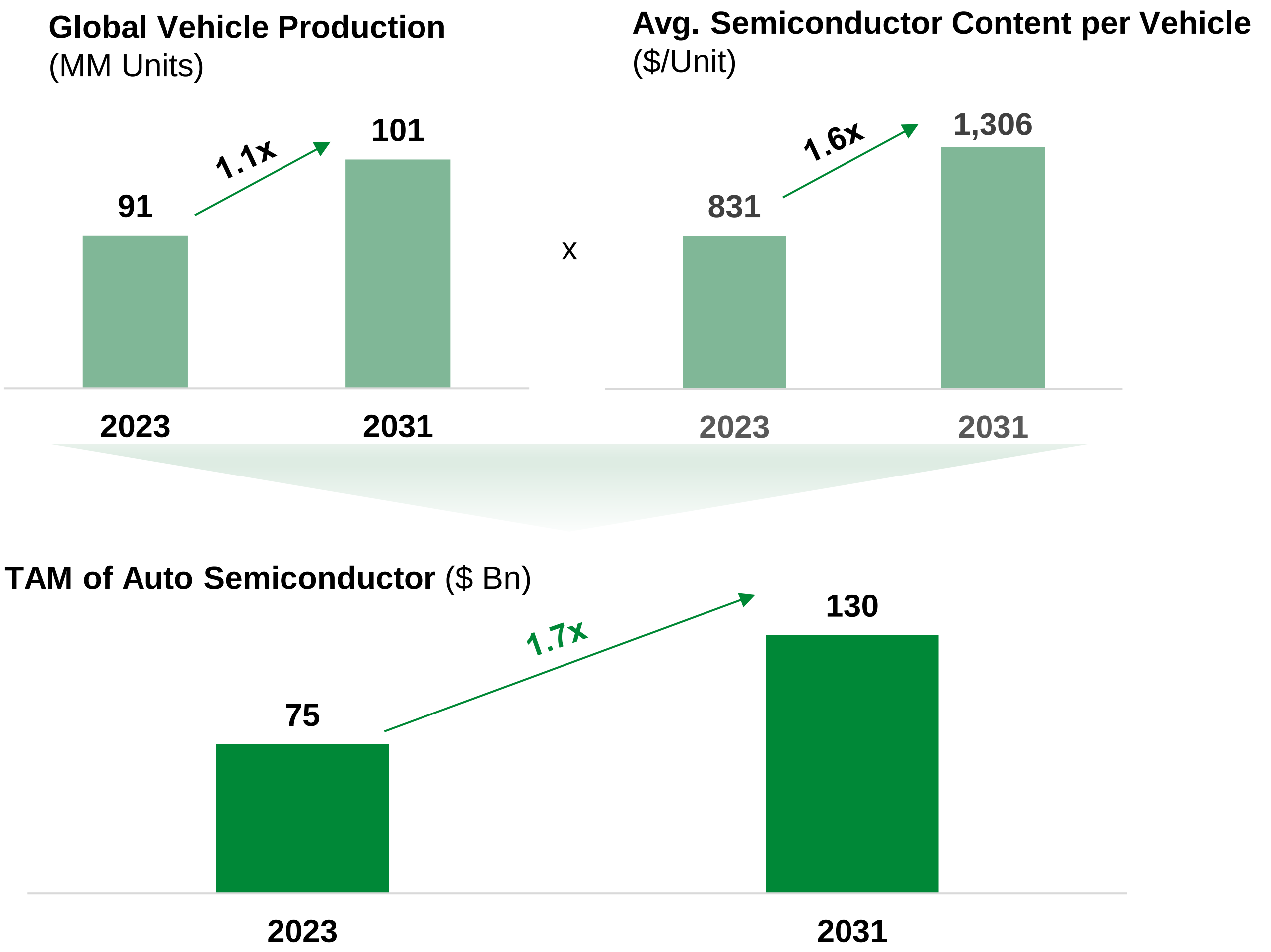
Smartphone Segments	CAGR (2023-2028)
GenAI Smartphones	78.4%
Total Smartphones	2.3%





Source: Counterpoint Research AI 360, October 2024

Favorable Automotive Market Outlook



Source: TechInsights, December 2024

Advanced Packaging Solutions Critical to Development of Next Generation Applications

Besi’s Advanced Packaging Solutions

- Hybrid bonding
- TCB chip-to-wafer
- High accuracy flip-chip
- Fan-out, embedded bridge
- EVO multi module
- Thermal management
- Wafer/substrate molding

2.5D/3D Process Applications

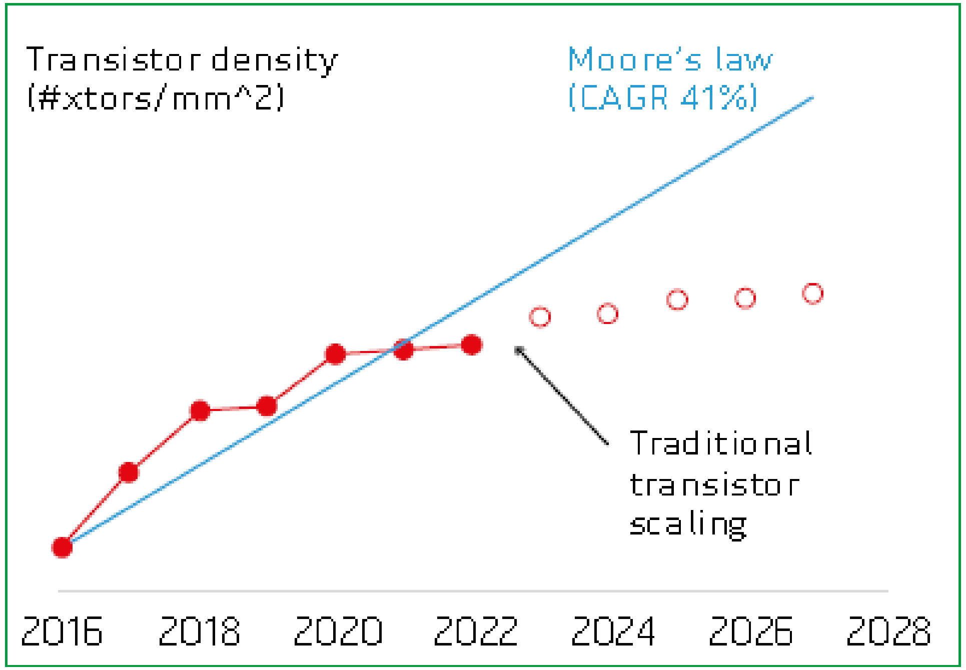
- 3D IC logic
- High Bandwidth Memory (HBM)
- Chip on Wafer on Substrate (CoWos)
- Photonics chiplets
- Die embedding
- Thermal lid attach
- Encapsulation

End-User Applications

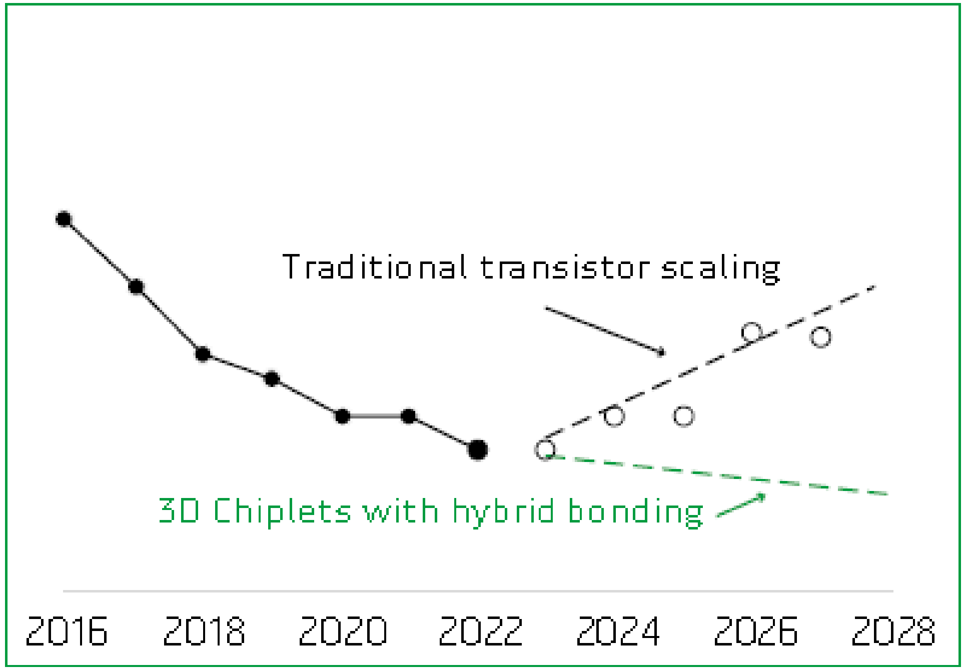
- Mobile:
  - On-device AI
  - Advanced cameras and sensors
  - 5G/6G mobile
- Computing:
  - Datacenters
  - Edge AI laptops/PCs
  - New AR/VR devices
- Auto/Industrial:
  - Autonomous driving
  - Vehicle electrification
  - Smart grid/clean energy

And Extension of Moore's Law

Moore's Law Scaling Is Slowing



Cost Per Transistor Is Increasing

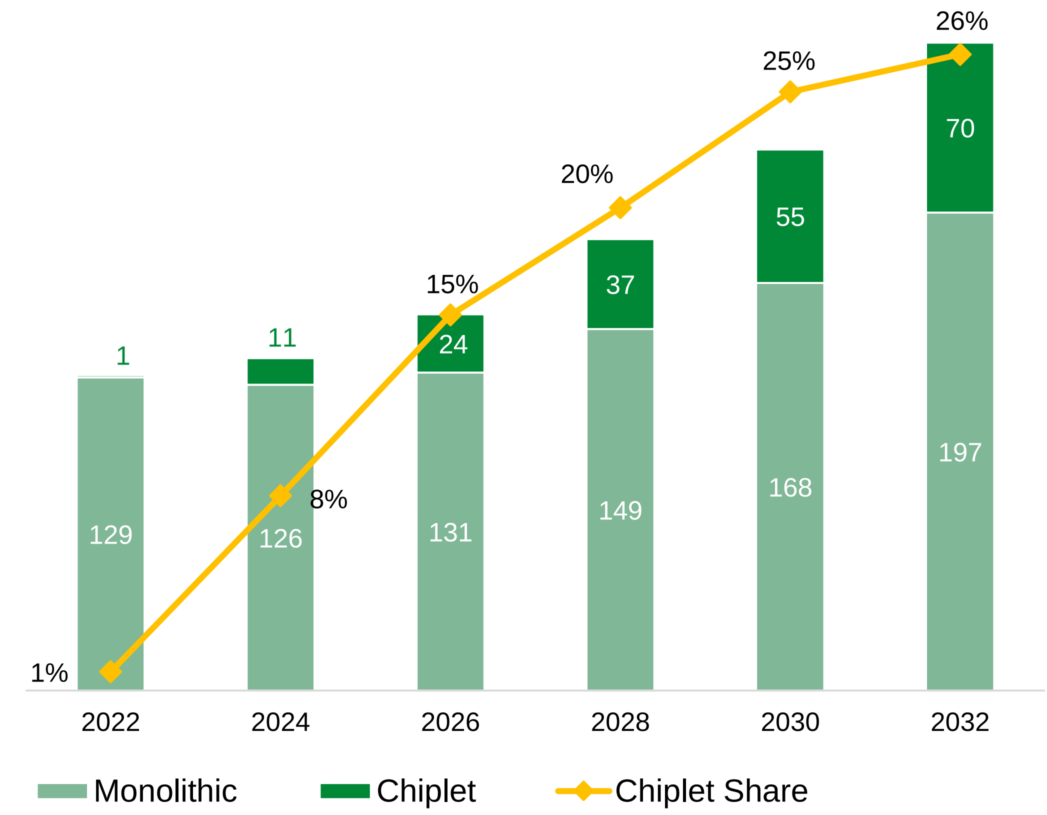


Source: Qualcomm and Besi

Chiplet Usage Increasing Rapidly Due to Favorable Economics for Advanced Applications

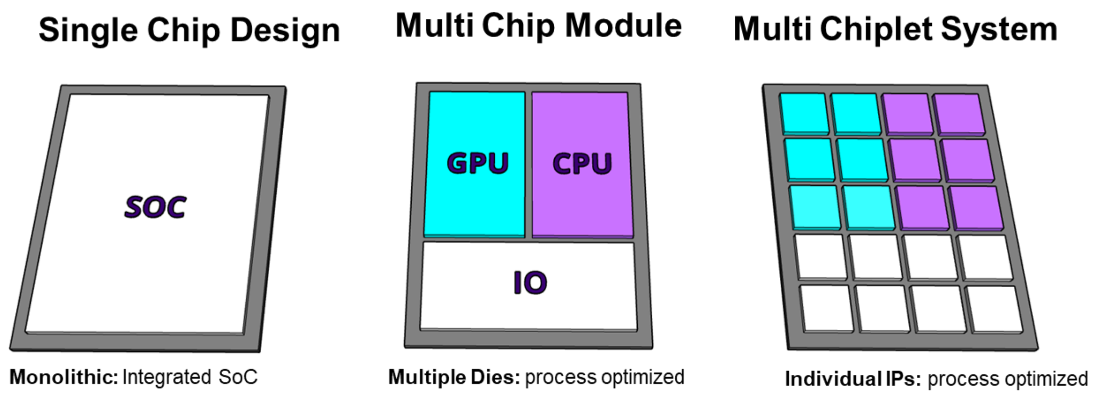
Wafer Foundry Addressable Market

$ Bn



Source: CSM foundry model, ISM foundry model

Chiplet Adoption Drives Higher Capital Intensity



Source: Besi

1 Step → **More die attach steps** → **Dozens**

10µm → **Higher accuracy** → **100nm**

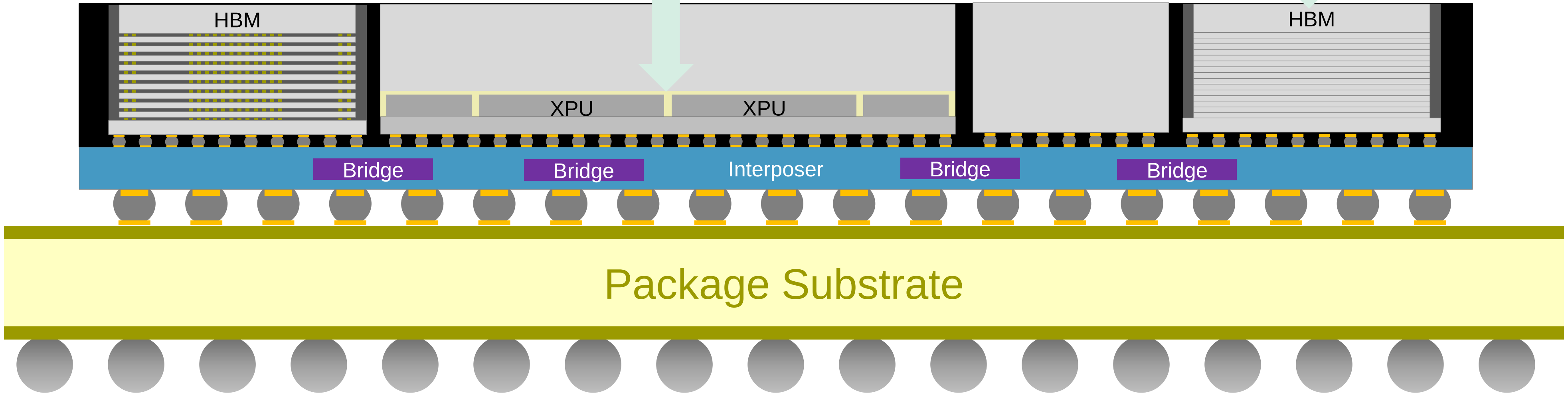
Chiplet Packages Use a Variety of 2.5D/3D Assembly Processes Including Hybrid Bonding and Thermo Compression Bonding (TCB)

High Performance Computing

Hybrid dominant interconnect technology for High Performance Computing

High Bandwidth Memory

Hybrid and TCB complementary technologies – Both needed for next gen HBM

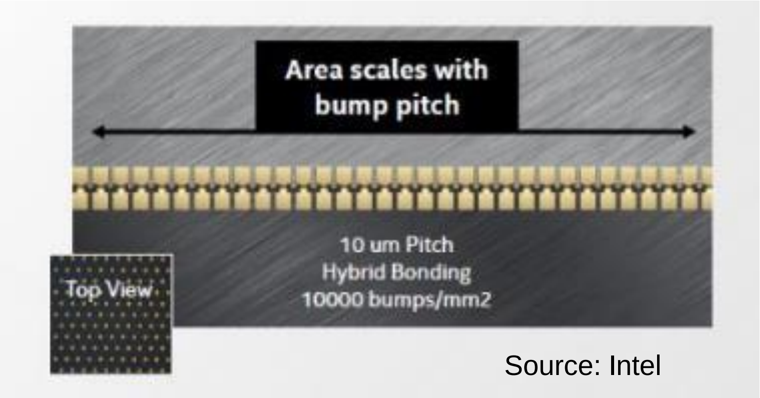


Besi is a leader in Hybrid Bonding and TCB solutions

Note: XPU can be a GPU, CPU or other

Hybrid Bonding Enables Faster, More Complex Devices With Submicron Placement Accuracy and Less Power/Heat Generation

Direct Cu-Cu 3D Interconnect

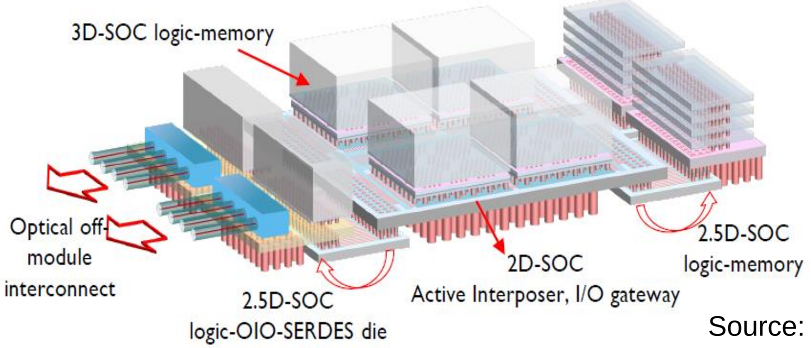


Source: Intel

1,000x increase in contact density

+

Heterogeneous Chiplet Integration



Source: IMEC

More transistors per package

New Chip Architectures

- Quasi-monolithic 3D
- Optimal use of nodes
- Customized designs
- Highly configurable

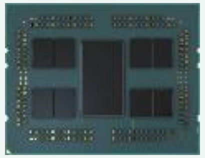
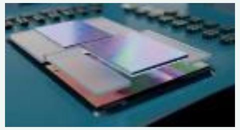
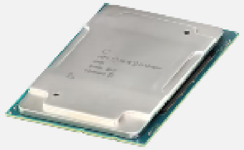
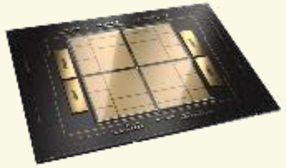
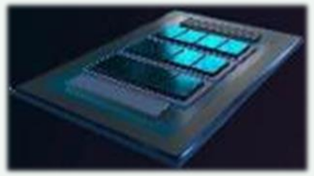
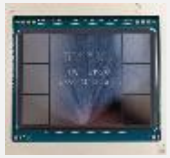
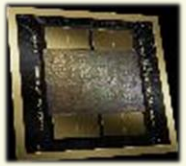
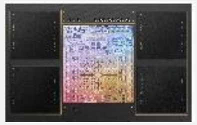
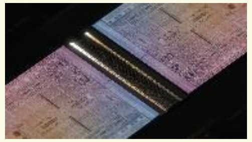
Increased Performance

- Highest compute power
- Increased data transfer
- Higher bandwidth
- Higher speed

Lower Cost of Ownership

- Higher die yield
- Lower energy per bit
- Lower cost per contact
- Lower heat dissipation

Important Process Step In Future Product Roadmaps

	SoC	Split Die	Chiplets and Hybrid Bonding
AMD	Opteron Server CPUs 	1st Gen EPYC CPU (2017) 	2nd Gen EPYC (2019)  3rd Gen EPYC (2022) with Hybrid Bonding 
intel		Sapphire Rapids CPU (2023) 	Clearwater Forest CPU w/ Hybrid Bonding (2025) 
NVIDIA	H100 GPU 	B100 GPU (2024) 	Future chiplet architectures
	M1 MaxCPU 	M1 Ultra CPU (2022) 	

Besi’s Hybrid Bonding Roadmap

Generation 1:
200nm

Industry Standard for Hybrid Bonding

Generation 1+:
100nm

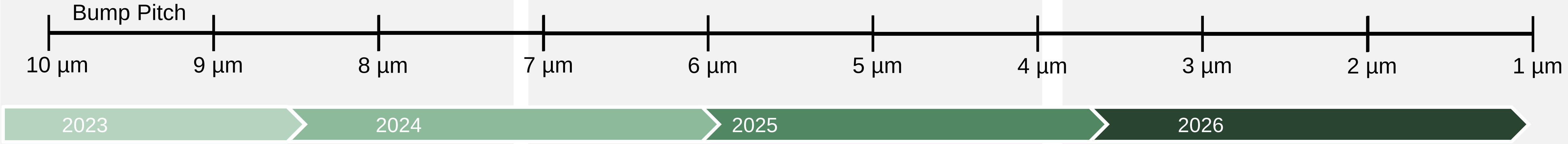
New Standard: 100nm Bonder

10% Productivity increase

Generation 2:
50nm

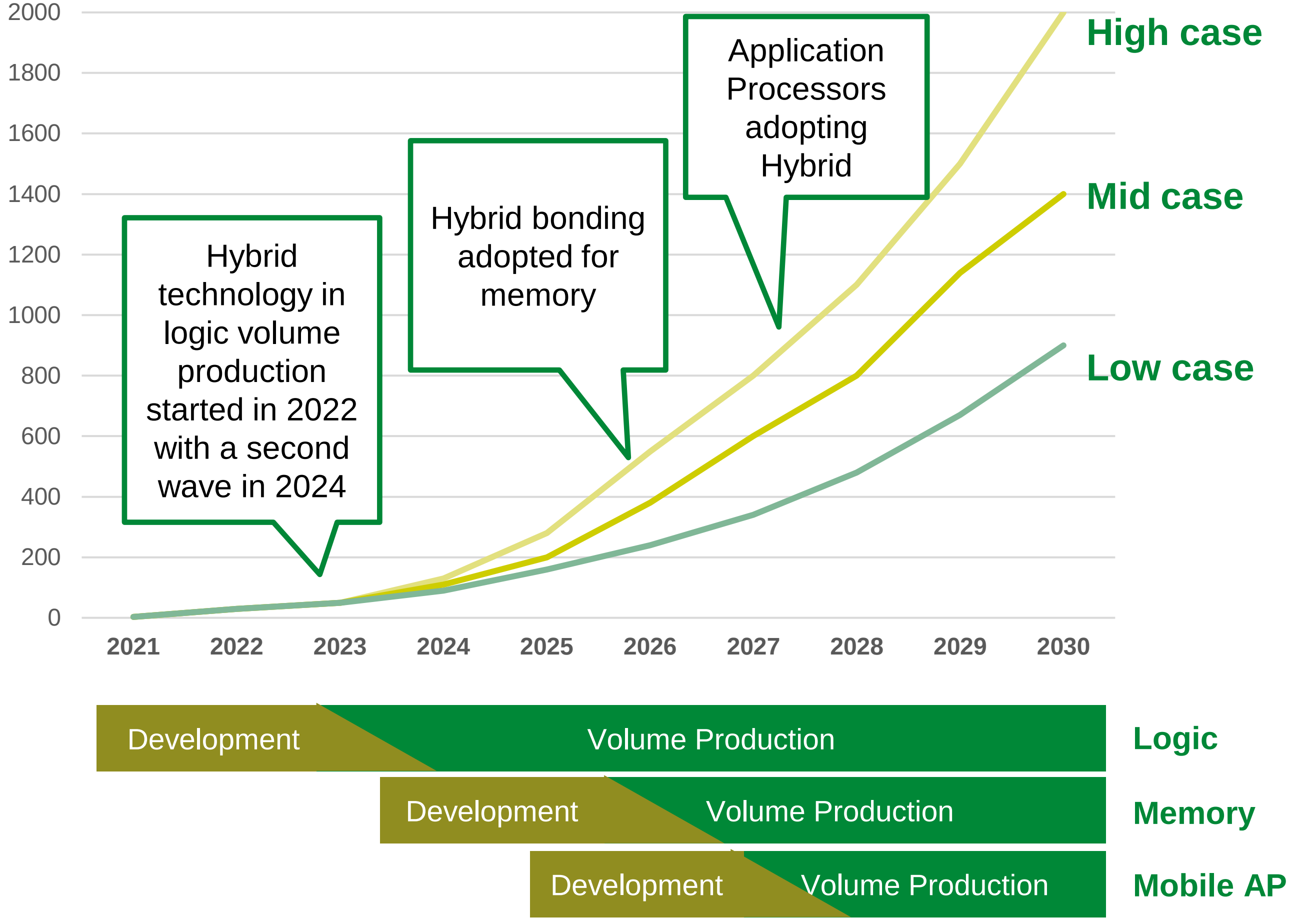
Working on 50nm Bonder

30% Productivity increase



Hybrid Bonding Market Potential – Logic and Memory Cases Confirmed

Total # of installed hybrid bonding systems



Hybrid technology in logic volume production started in 2022 with a second wave in 2024

Hybrid bonding adopted for memory

Application Processors adopting Hybrid

Source: Besi estimates, June 2024

Estimated 900 – 2,000 systems by 2030

Changes vs. prior forecast

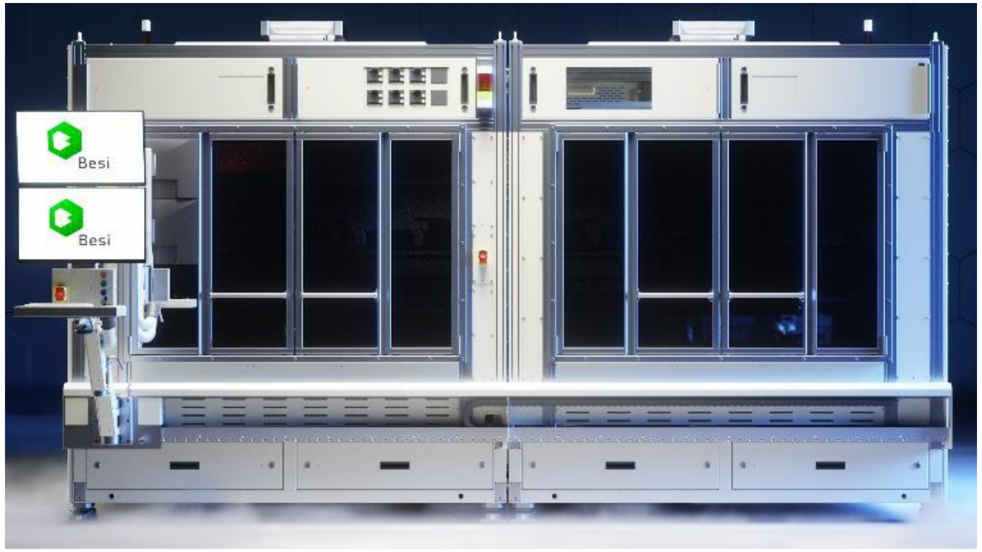
- Market potential for each case increased 6% because of HB adoption expanding from 3-9 customers
- Logic adoption increased with 2nd customer in volume production and capex forecasts of leading players. TSMC projects 100% annual growth until 2026
- Memory adoption confirmed but one year later
  - First Hybrid packaged HBM4(E) 16-high stack in 2026
- Edge AI driving hybrid adoption for mobile AP

Potential upside to estimates:

- Co-packaged optics
- Complex CMOS sensors

TCB Next Complements Hybrid Bonding To Offer Customers Complete Portfolio for Next Gen AI Applications

9800 TC Next Thermo Compression Bonder

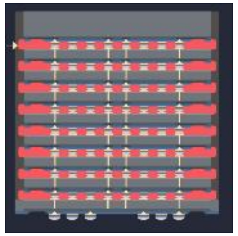


Key Features

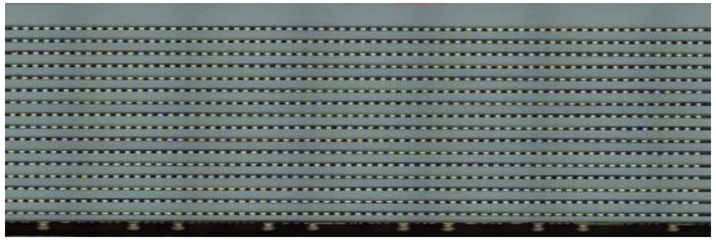
Best in Class C2W TCB for Chiplet Packages

- NCF, NCP, TC-CUF and TC fluxless bonding processes with micro-inert chamber
- Chip-to-Wafer and chip-to-substrate configurations
- 0.5 um placement accuracy for ultra fine pitch chiplets
- High throughput up to 2500 CPH. Dual gantry
- Front-end automation and process control
- AI^x active bond quality monitoring

HBM Stacking up to 16 die high

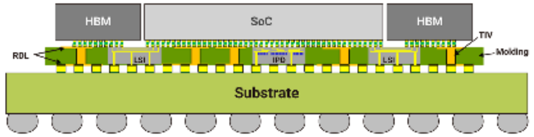


Source: SK Hynix

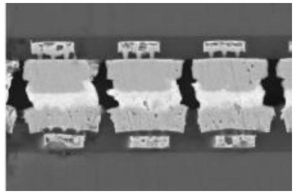


16 HBM die stacking example

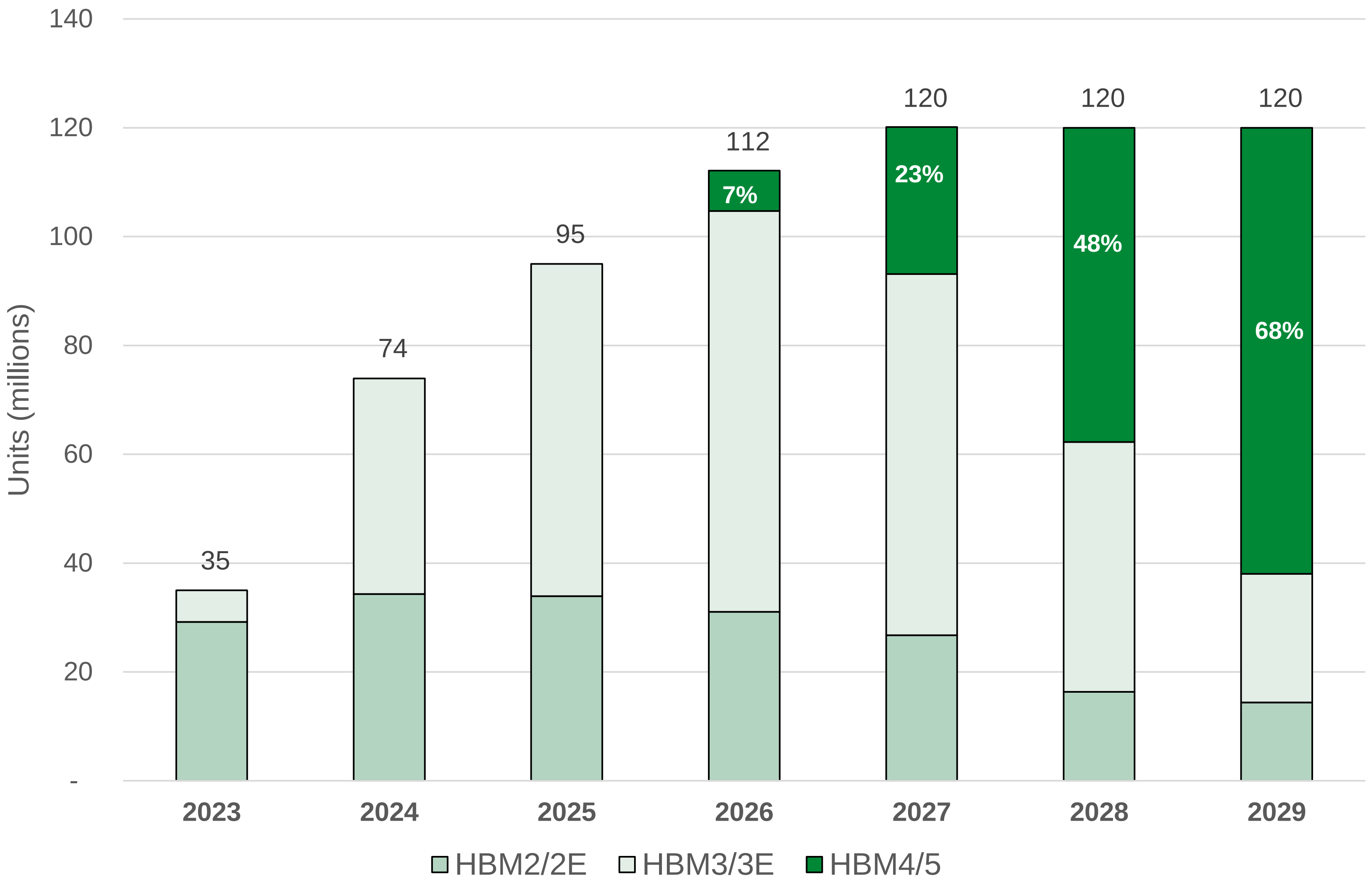
AI XPU and Advanced Logic Applications



Source: TSMC



HBM4/5 Adoption Expected Starting in 2026. Important Drivers for Both Hybrid Bonding and TCB Next Growth



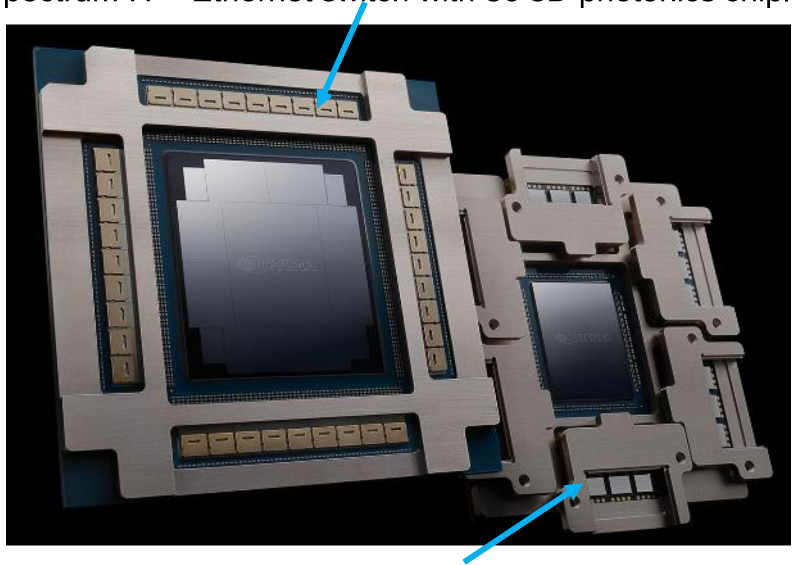
Source: Yole, December 2024

Silicon Photonics Another Driver of 2.5D/3D Assembly Growth

NVIDIA Confirms Hybrid Bonding Adoption In CPO Switches

Introduced family of network switch products using co-packaged optics (CPO) in March 2025

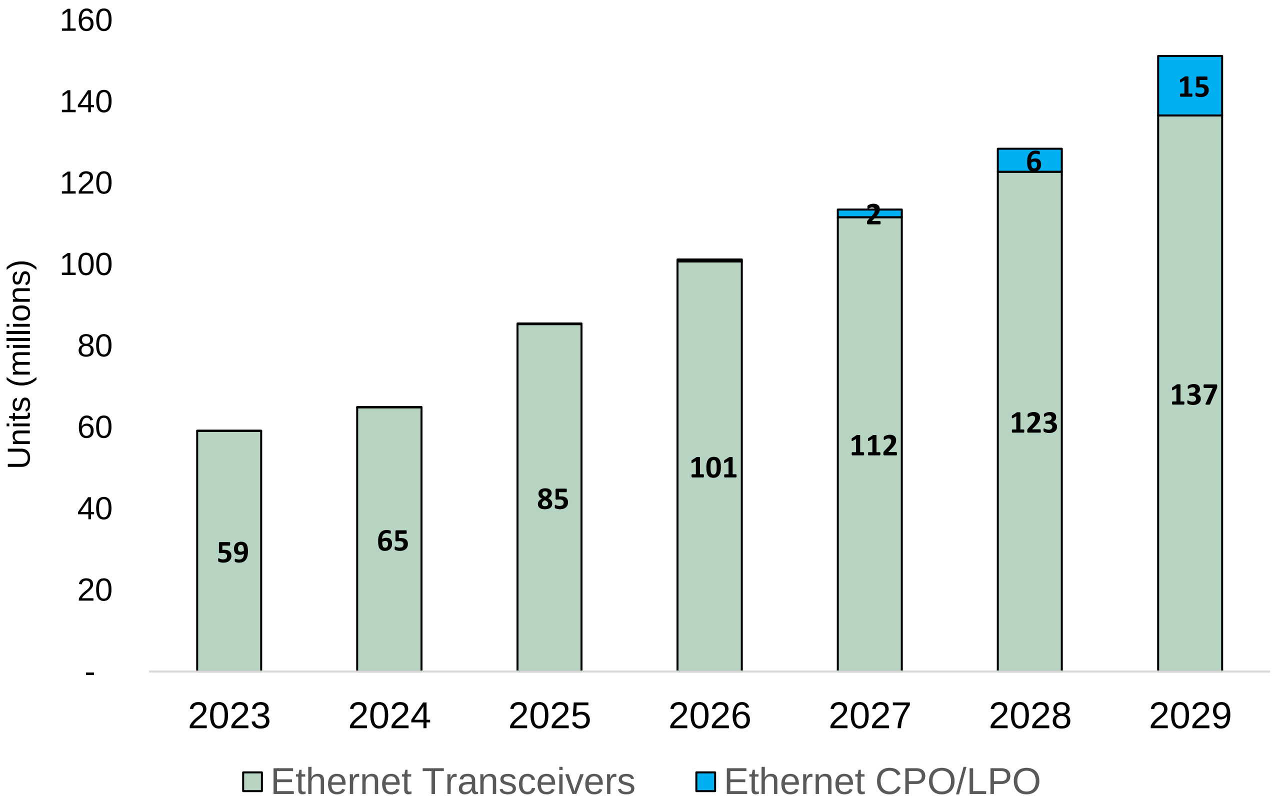
Spectrum-X™ Ethernet switch with 36 3D photonics chiplets



Quantum-X800 InfiniBand switch with 18 3D Photonics chiplets

- TSMC's COUPE technology uses hybrid bonding to assemble the 3D photonic chiplets
- Multiple hybrid bonded chiplets per switch device

Ethernet Transceiver Unit Shipment Forecast* 2023 – 2029

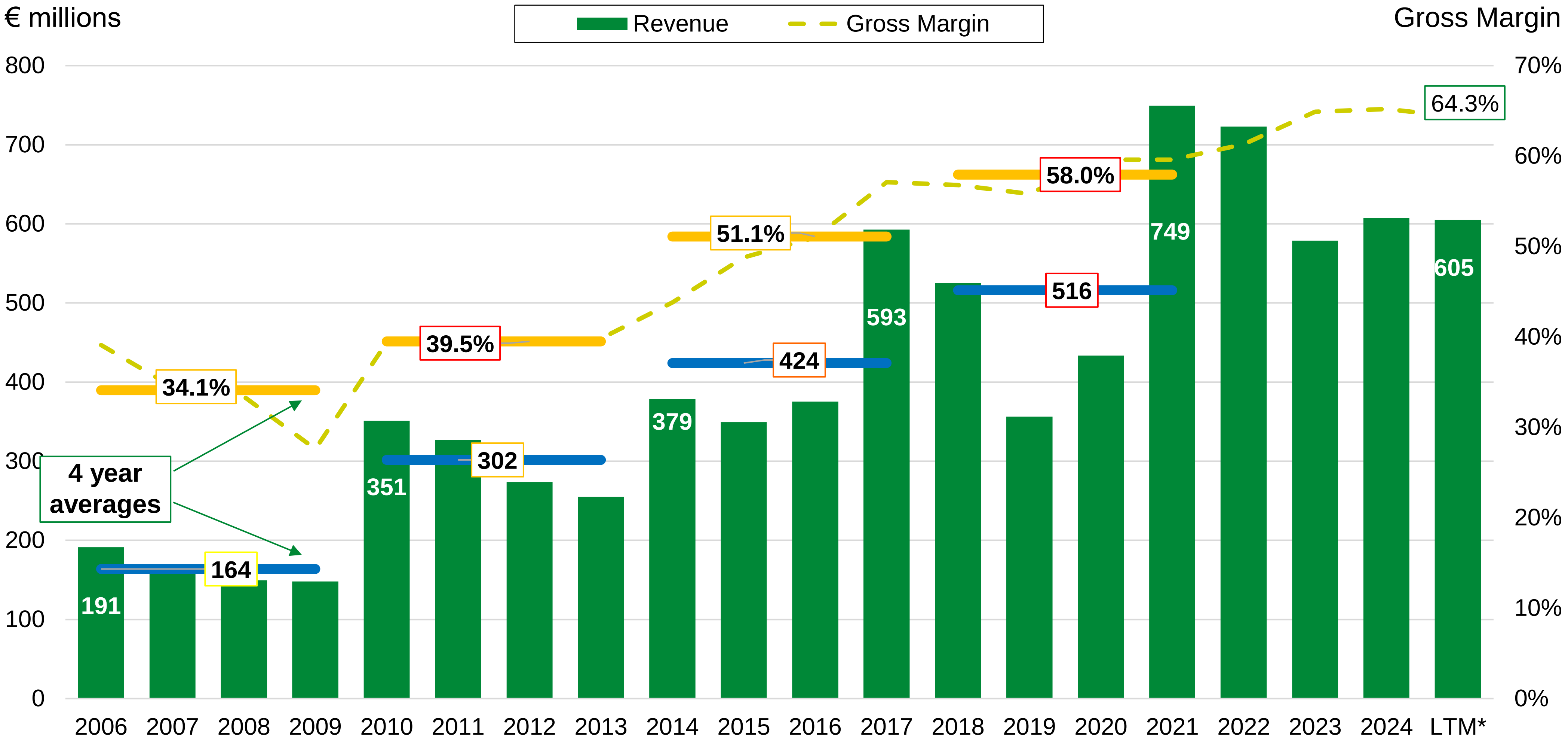


* Includes external pluggable optical transceivers and co-packaged optics.

Source: LightCounting October 2024

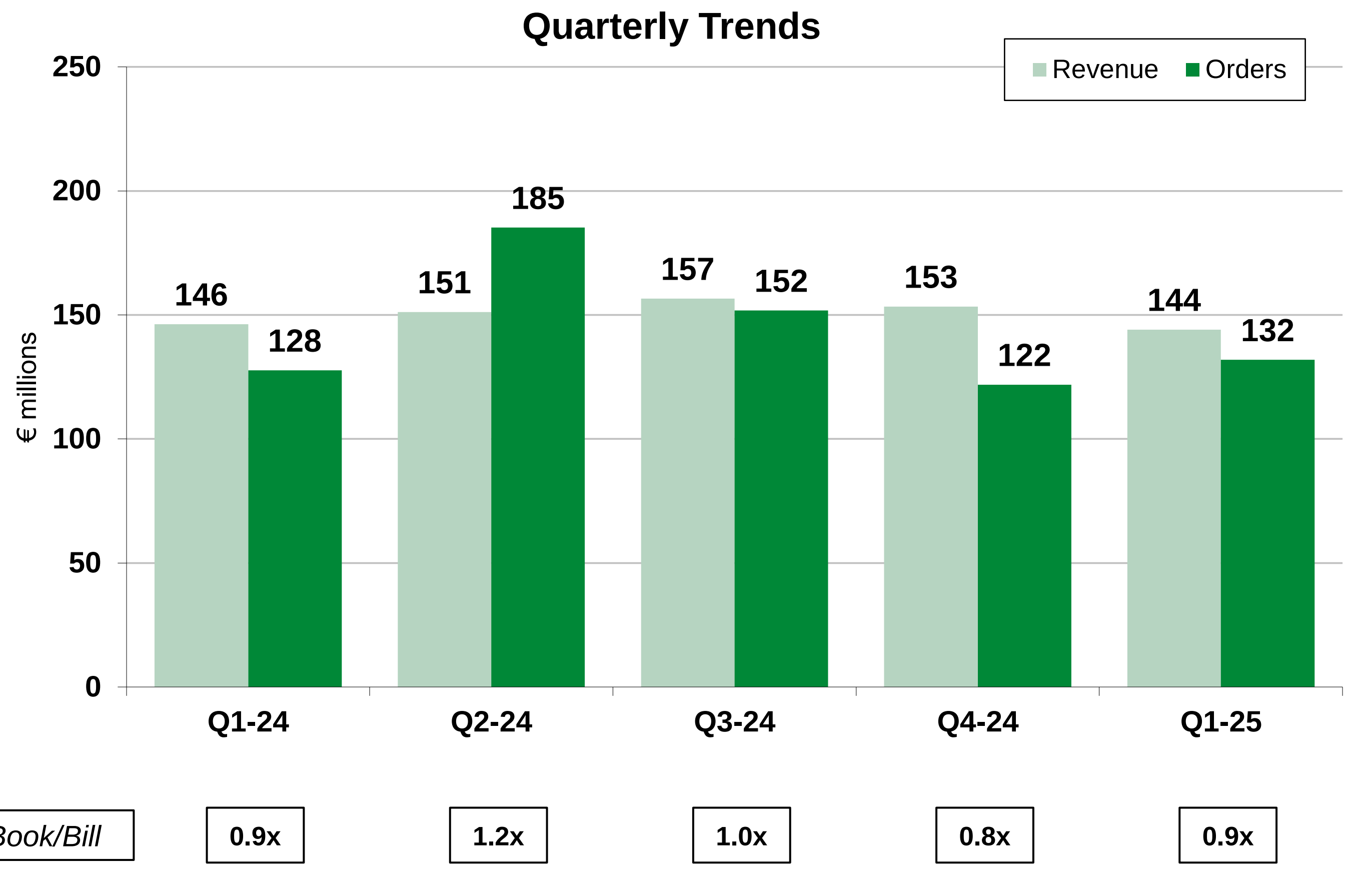
IV. FINANCIAL UPDATE AND SUMMARY

Through Cycle Revenue and Gross Margin Trends



* LTM per Q1-25

Revenue/Order Trends



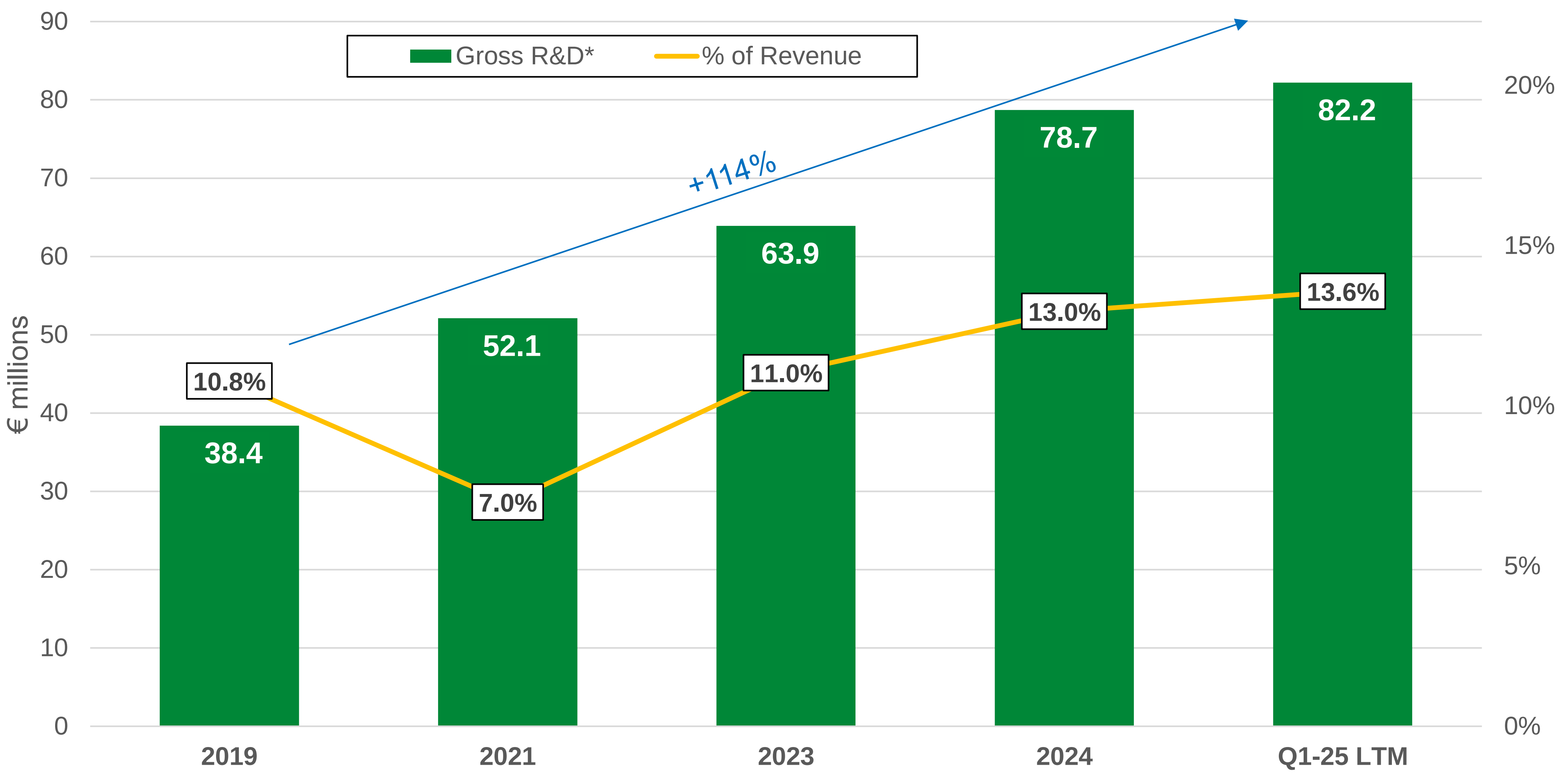
Q1-25 vs. Q4-24

- **Revenue: -€ 9.3 million (-6.1%)**
  - Lower demand for high-end mobile applications
- **Orders: +€ 10.0 million (+8.2%)**
  - Increased demand for AI related datacenter applications by Asian subcontractors

Q1-25 vs. Q1-24

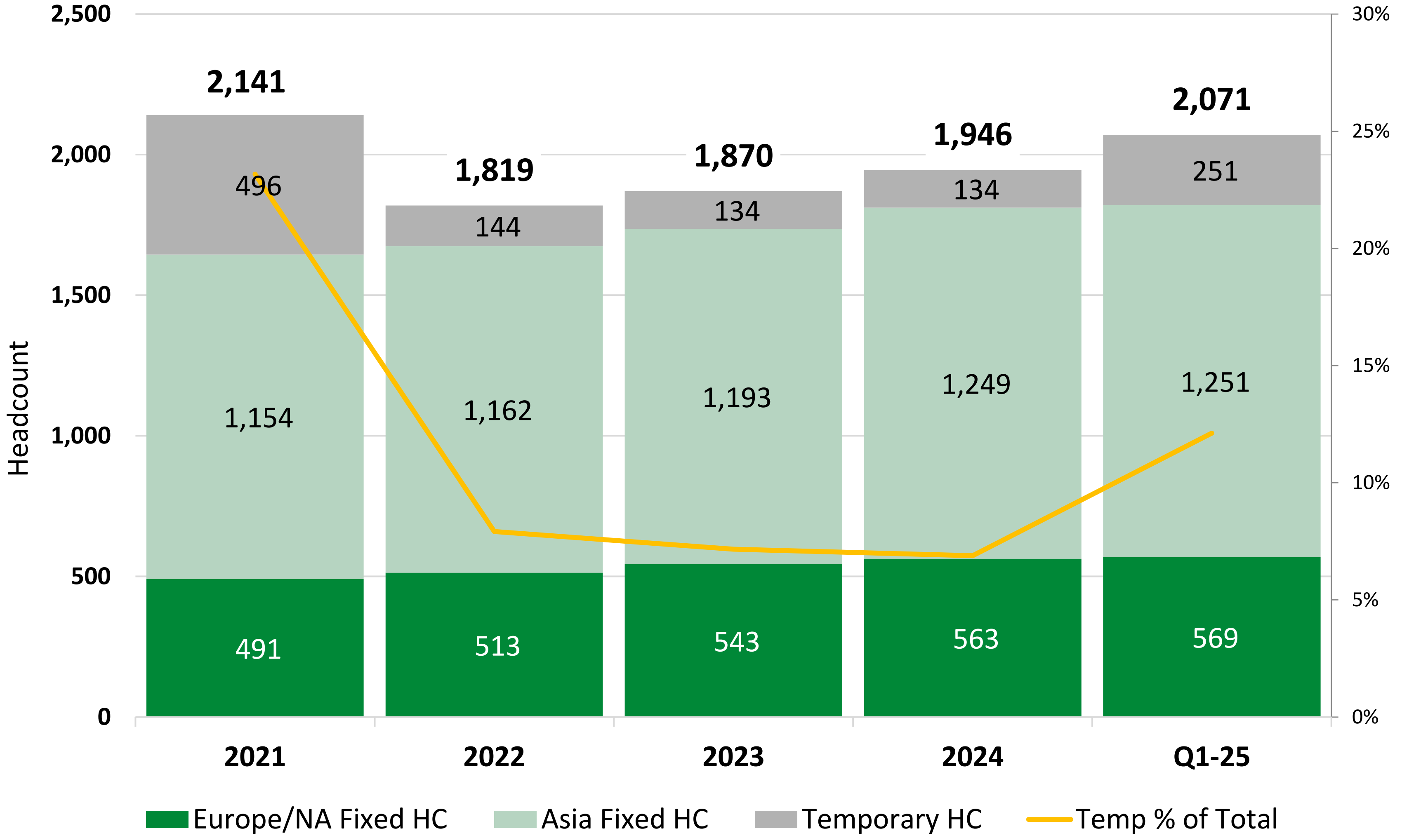
- **Revenue: -€ 2.2 million (-1.5%)**
  - Ongoing weakness in mobile and auto
  - Offset: increased hybrid bonding and AI related computing applications
- **Orders: +€ 4.2 million (+3.3%)**
  - Increased bookings for hybrid bonding and other advanced computing applications

Significant Expansion of R&D Spending in Support of New Product Introductions



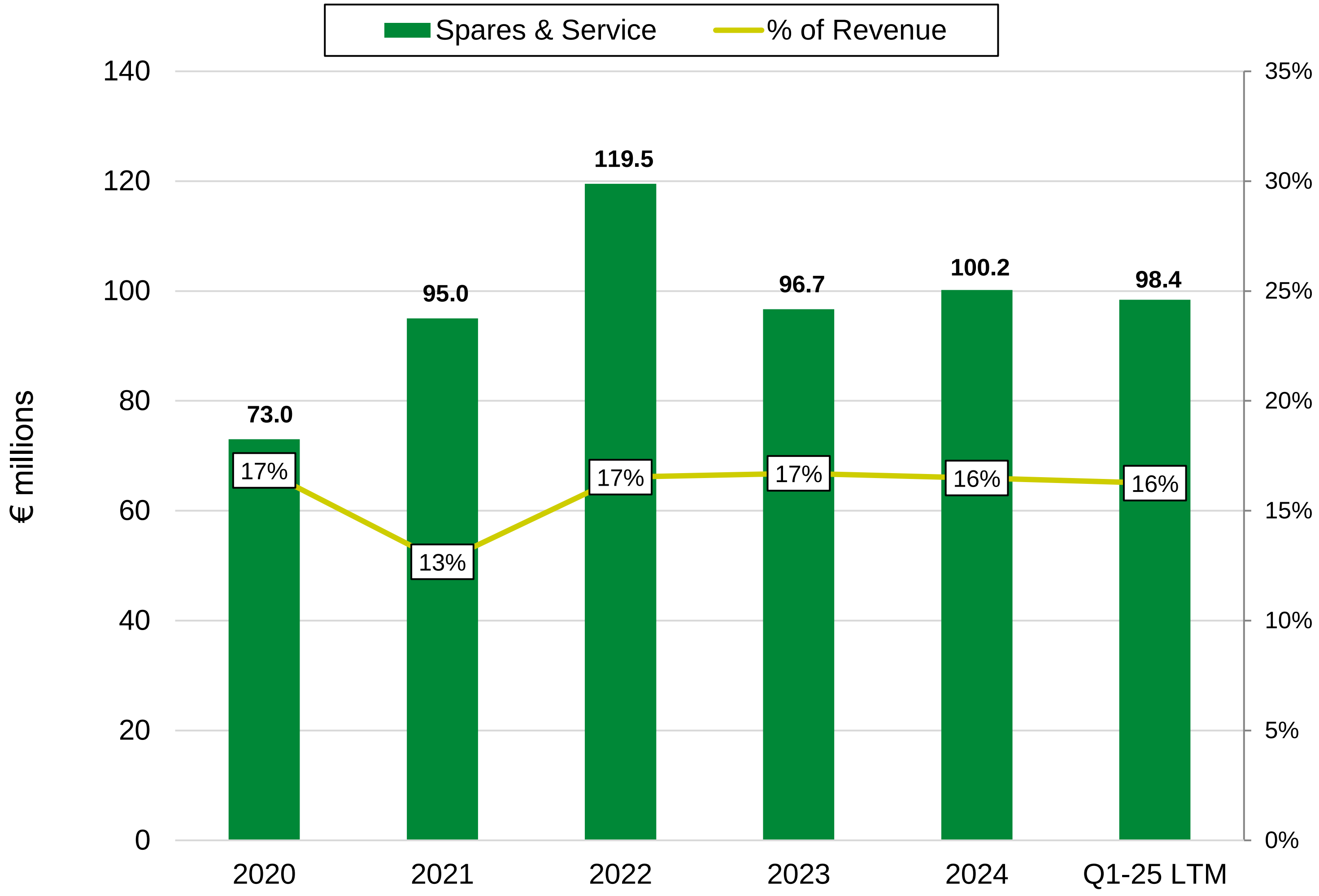
* Gross R&D spending excludes impact from capitalization/amortization of R&D costs

Headcount Trends



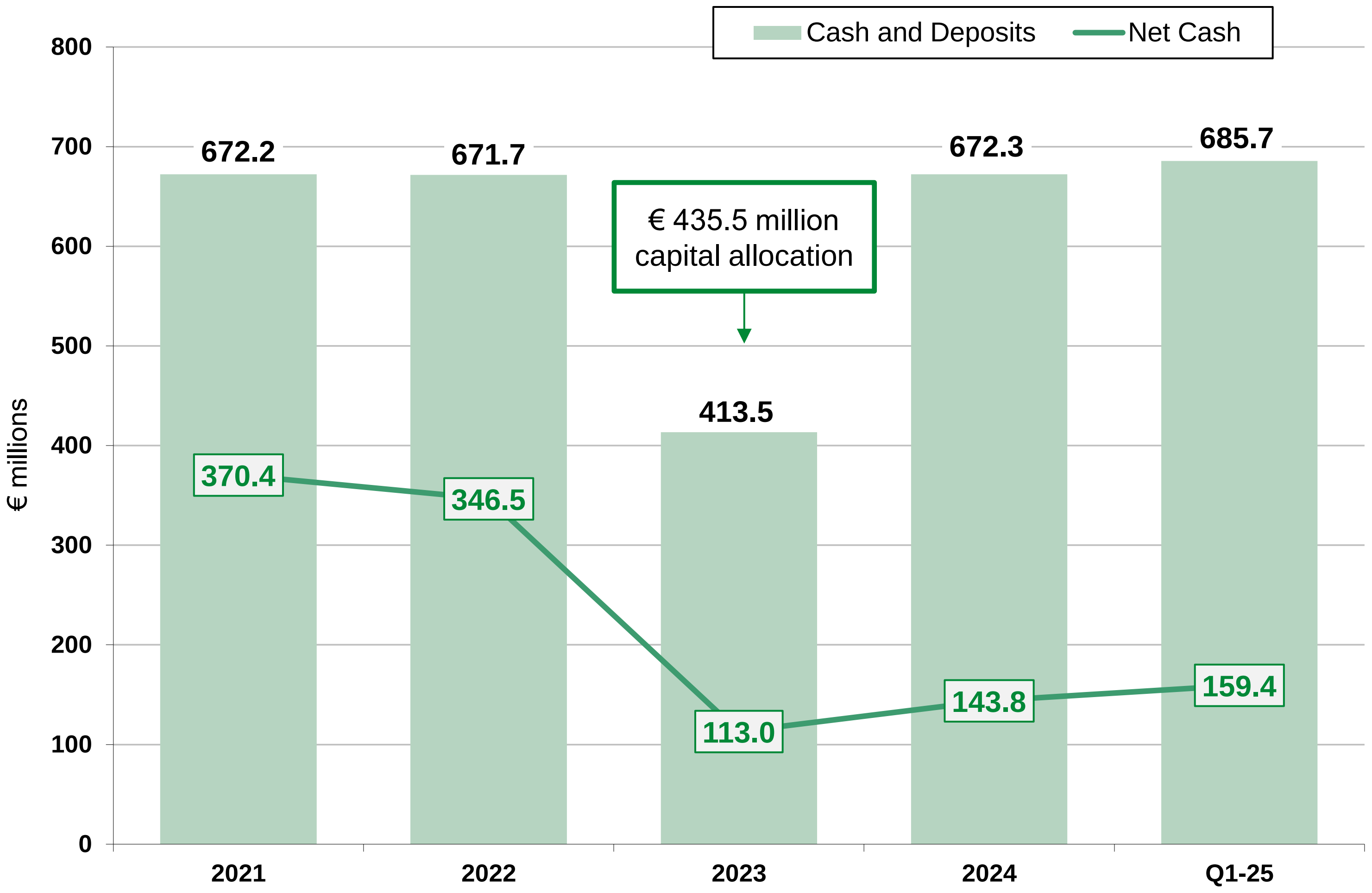
- Increasing European and Asian fixed headcount to support wafer level assembly expansion

Spares/Service Activities Important Area of Growth



- **Revenue +37% since 2020**
- **Represent ~16% of revenue**
  - Diverse customer base
  - Less cyclical part of business
  - Highly profitable
- **Revenue will increase as installed base grows, particularly wafer level**

Strong Liquidity Position Maintained
Q1-25 Cash and Net Cash Position Increased Sequentially



€ 435.5 million capital allocation

<u>Q1-25 vs. Q4-24</u>

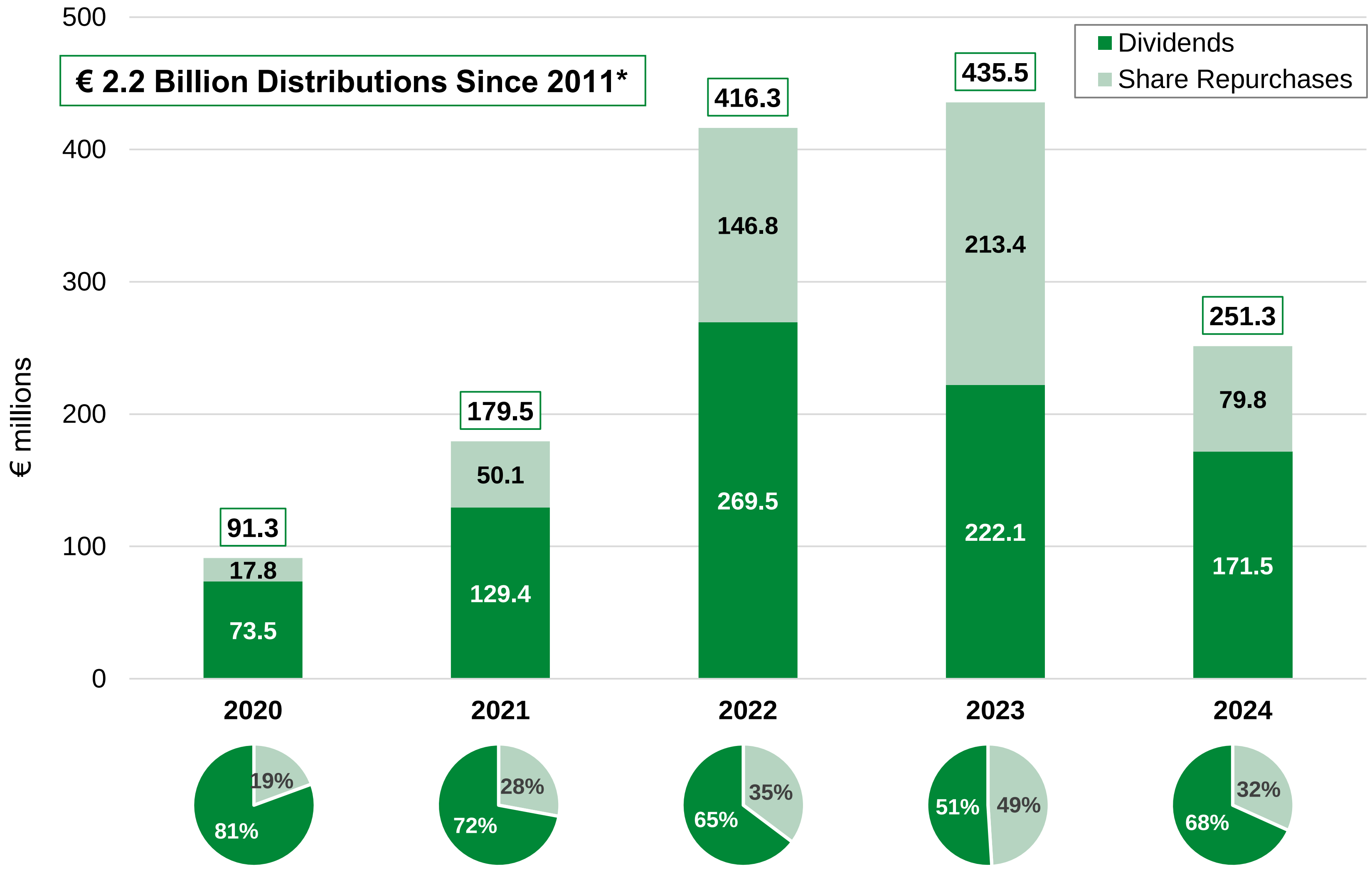
- Cash and deposits of € 685.7 million
  - + € 13.4 million primarily due to:
    - + € 44.4 million cash flow from operations
    - - € 22.1 million capital allocation
    - - € 6.7 million capitalized R&D
    - - € 1.7 million capex

- Net cash of € 159.4 million = 26.3% of LTM revenue
  - + € 15.6 million or +10.8%

Debt outstanding:

Convertible Notes:	€ 197.7 million
Senior Notes:	€ 350.0 million

Attractive Capital Allocation Policy Continues



- **€ 251.3 million distributed in 2024**
- **New € 100 million share repurchase program:**
  - € 51.4 million purchased through Q1-25
- **Treasury shares equal 2.0% of TSO**
- **€ 2.18 dividend approved for 2024**
  - 95% pay-out ratio

* Includes approved 2024 dividend and repurchases through March 31, 2025.

Guidance Q2-25

Revenue

Q1-25	Q2-25
€ 144.1	+10% to -10%

Gross Margin

Q1-25	Q2-25
63.6%	62%-64%

Total Operating Expenses

Q1-25	Q2-25
€ 52.5	0% to -10%

€ in millions

Investment Considerations

Assembly market ever more critical in semiconductor value chain

Disciplined strategic focus has created an industry leader

Long term secular trends drive advanced packaging growth

Wafer level assembly for AI applications promising new growth opportunity

Market presence has grown via key IDMs, supply chains and partners

Tech leadership and scalability result in superior financial returns

Commitment to sustainable growth and fighting climate change

Attractive capital allocation policy