



**Foundational Technologies
for a Connected World**

**MKS Instruments, Inc.
April 2025**



Safe Harbor for Forward-Looking Statements

This presentation contains “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 regarding the future financial performance, business prospects and growth of MKS Instruments, Inc. (“MKS”, the “Company”, “our”, or “we”). These statements are only predictions based on current assumptions and expectations. Any statements that are not statements of historical fact (including statements containing the words “will,” “projects,” “intends,” “believes,” “plans,” “anticipates,” “expects,” “estimates,” “forecasts,” “continues” and similar expressions) should be considered forward-looking statements. Actual events or results may differ materially from those in the forward-looking statements set forth herein. Among the important factors that could cause actual events to differ materially from those in the forward-looking statements that we make are the level and terms of our substantial indebtedness and our ability to service such debt; our entry into the chemicals technology business through our acquisition of Atotech Limited (“Atotech”) in August 2022 (the “Atotech Acquisition”) which has exposed us to significant additional liabilities; the risk that we are unable to realize the anticipated benefits of the Atotech Acquisition; legal, reputational, financial and contractual risks resulting from the ransomware event we identified in February 2023, and other risks related to cybersecurity, data privacy and intellectual property; competition from larger, more advanced or more established companies in our markets; the ability to successfully grow our business, including through growth of the Atotech business and growth of the Electro Scientific Industries, Inc. business, which we acquired in February 2019, and financial risks associated with those and potential future acquisitions, including goodwill and intangible asset impairments; manufacturing and sourcing risks, including those associated with limited and sole source suppliers and the impact and duration of supply chain disruptions, component shortages, and price increases; changes in global demand; risks associated with doing business internationally, including geopolitical conflicts, such as the conflict in the Middle East, trade compliance, trade protection measures, such as import tariffs by the United States or retaliatory actions taken by other countries, regulatory restrictions on our products, components or markets, particularly the semiconductor market, and unfavorable currency exchange and tax rate fluctuations, which risks become more significant as we grow our business internationally and in China specifically; conditions affecting the markets in which we operate, including fluctuations in capital spending in the semiconductor, electronics manufacturing and automotive industries, and fluctuations in sales to our major customers; disruptions or delays from third-party service providers upon which our operations may rely; the ability to anticipate and meet customer demand; the challenges, risks and costs involved with integrating or transitioning global operations of the companies we have acquired; risks associated with the attraction and retention of key personnel; potential fluctuations in quarterly results; dependence on new product development; rapid technological and market change; acquisition strategy; volatility of stock price; risks associated with chemical manufacturing and environmental regulation compliance; risks related to defective products; financial and legal risk management; and the other important factors described in MKS’ Annual Report on Form 10-K for the year ended December 31, 2024 and any subsequent Quarterly Reports on Form 10-Q, as filed with the U.S. Securities and Exchange Commission. MKS is under no obligation to, and expressly disclaims any obligation to, update or alter these forward-looking statements, whether as a result of new information, future events or otherwise after the date of this presentation.

Notes on Presentation

Use of Non-GAAP Financial Measures

This presentation includes financial measures that are not in accordance with U.S. generally accepted accounting principles (“Non-GAAP financial measures”). These Non-GAAP financial measures should be viewed in addition to, and not as a substitute for, MKS' reported results under U.S. generally accepted accounting principles (“GAAP”), and may be different from Non-GAAP financial measures used by other companies. In addition, these Non-GAAP financial measures are not based on any comprehensive set of accounting rules or principles. MKS management believes the presentation of these Non-GAAP financial measures is useful to investors for comparing prior periods and analyzing ongoing business trends and operating results.

MKS is not providing a quantitative reconciliation of forward-looking incremental Non-GAAP gross margin or incremental Non-GAAP operating margin to their most directly comparable GAAP financial measures because it is unable to estimate with reasonable certainty the ultimate timing or amount of certain significant items without unreasonable efforts. These items include, but are not limited to, inventory related cost of revenues from business acquisitions, divestitures or discontinuance, acquisition and integration costs, amortization of intangible assets, restructuring costs, goodwill and intangible asset impairments, amortization of debt issuance costs, debt refinancing fees, loss on extinguishment of debt, and the income tax effect of these items.

For further information regarding Non-GAAP financial measures, please refer to the appendix at the end of this presentation.

Totals presented may not sum due to rounding.



MKS Overview



Foundational technology leader

Specializing in **precision solutions** for diverse end markets

Leveraging powerful secular trends

Miniaturization, complexity and chemistry drive many of the innovations that power our world

Attractive **growth** profile

Positioned for strong **cash generation**, with track record of execution

Our Foundational Technology Leadership



\$3.6B

2024
REVENUE



\$271M

2024
R&D INVESTMENT



\$914M

2024
ADJUSTED EBITDA



~1,900

ENGINEERS &
SCIENTISTS¹



20

LEADING POSITIONS IN
PRODUCT CATEGORIES²



>85%

OF WAFER FABRICATION
EQUIPMENT APPLICATIONS
SERVED



~70%

OF CRITICAL STEPS TO
MANUFACTURE PACKAGE
SUBSTRATES AND PCBs³

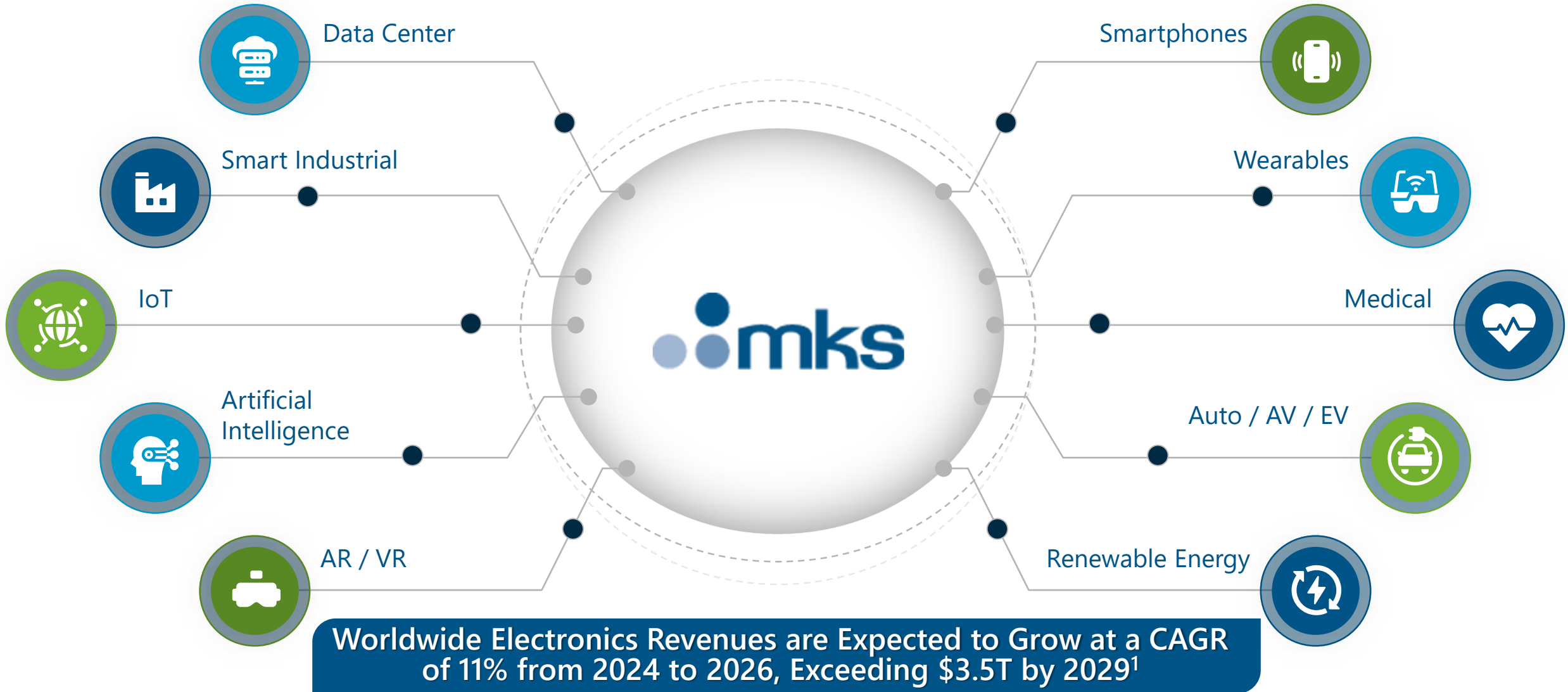


~3,200

PATENTS
WORLDWIDE¹

¹ Number of engineers & scientists and number of worldwide patents as of December 31, 2024. ² Product categories where TechInsights and/or MKS estimate MKS is #1 or #2 in segment share. ³ Internal Company estimate

MKS is Foundational to Our Connected World



Worldwide Electronics Revenues are Expected to Grow at a CAGR of 11% from 2024 to 2026, Exceeding \$3.5T by 2029¹

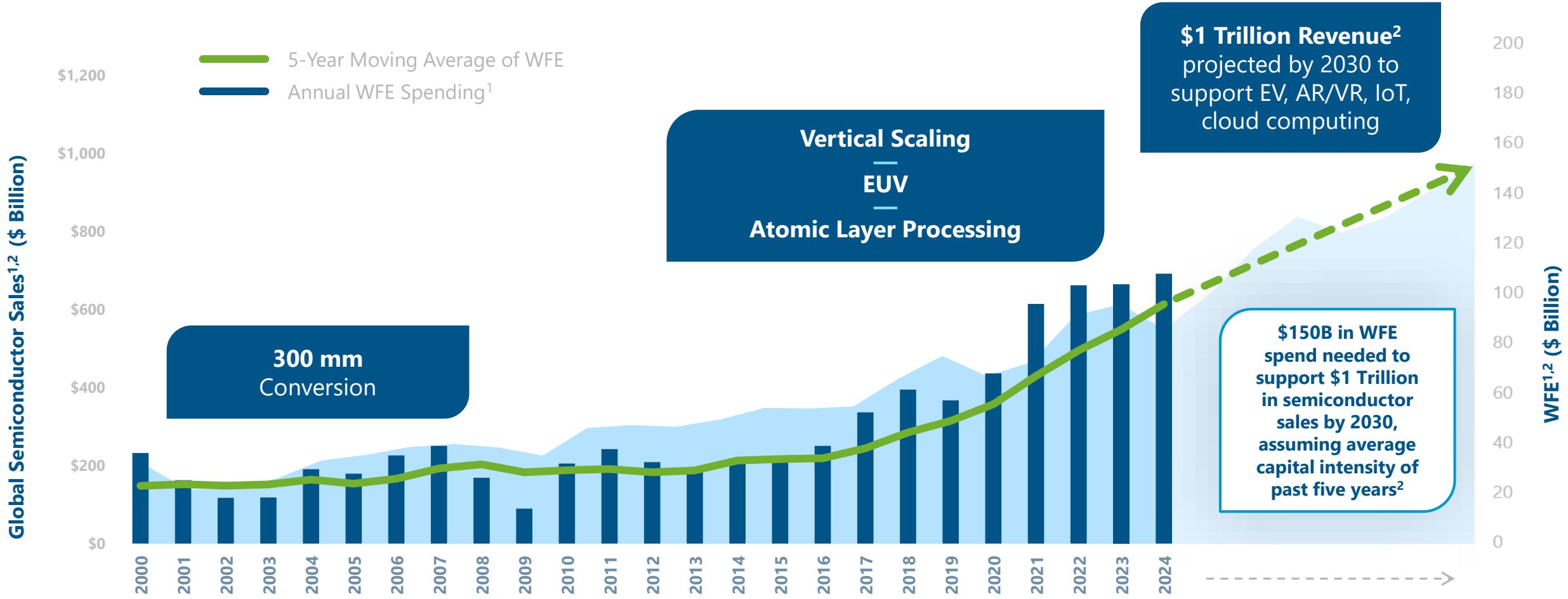
¹ TechInsights Worldwide OEM Electronics Production (December 2024)



Our Markets & Opportunity



Advanced Electronics Is Driving Significant Secular Semi Demand And Wafer Fab Equipment (WFE) Investment



¹Historical data provided by TechInsights ²Projections for 2025-2029 provided by TechInsights and projection for 2030 represents internal Company estimates.

Lines Are Blurring as Complexity Increases

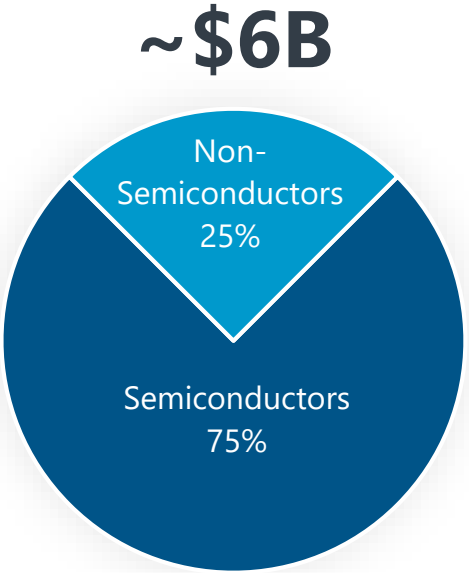
MKS is Positioned to Help Enable the Future of Next-Generation Devices



Significant Serviceable Addressable Market (SAM) Expansion

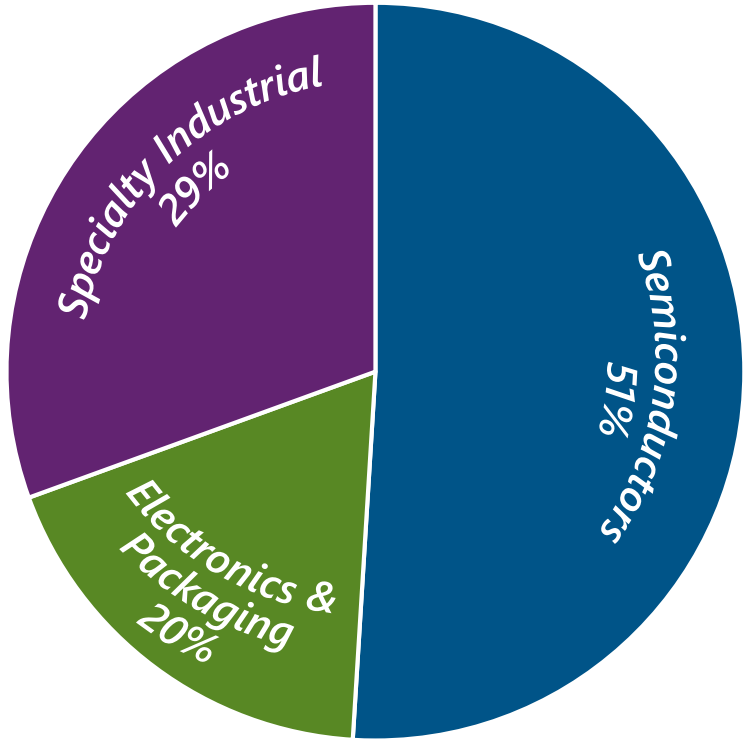


SAM in 2015¹



SAM in 2024¹

\$25B



¹ Internal Company estimates

Levered to Attractive End Markets

Technology Leadership and Differentiation Position MKS for Strong Performance in \$25B SAM¹

Semiconductor

(42% of FY2024 Revenue)

Critical solutions provider for semiconductor manufacturing

- Increasing demand and manufacturing complexity drive strong customer investment
- Long-term, deep relationships with consolidated customer base

Market

SAM

\$13B¹

Electronics & Packaging

(26% of FY2024 Revenue)

Foundational enabler of next-generation electronic devices

- Well-positioned with chemistry and photonics expertise
- Long-term, deep customer relationships
- Early innings of market penetration

Market

SAM

\$5B¹

Specialty Industrial

(32% of FY2024 Revenue)

Extending MKS expertise across broad end markets

- Leadership positions
- Differentiated technology
- Exposure across diverse set of applications

Market

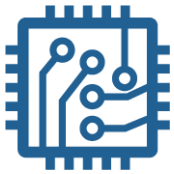
SAM

\$8B¹

¹ Internal Company estimates of 2024 SAM. Market SAM does not sum to total SAM due to rounding.

Built to Capitalize on Secular Trends

Semiconductor



*Deposition, Etch,
Lithography,
Inspection / Metrology,
Wet Processing*

Smaller Geometries (nm)

Vertical Scaling

Novel Materials

← **MINIATURIZATION** →

← **COMPLEXITY** →

← **CHEMISTRY** →

Electronics & Packaging



*Laser-Based
Manufacturing;
Next-Gen Interconnect*

Finer Features (μm)

More Layers

Novel Materials

Enabling the Core Building Blocks of Advanced Electronic Devices

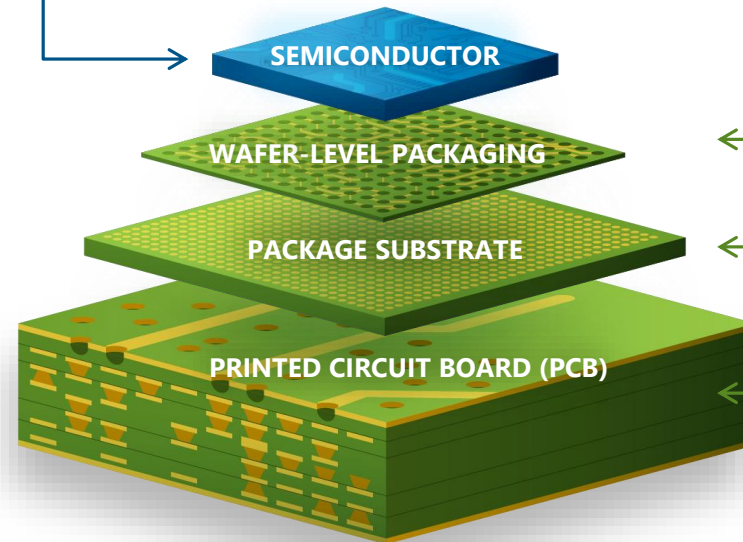


Semiconductor

Critical subsystems for **semiconductor** manufacturing

> *Leader in critical vacuum subsystems for deposition and etch, and emerging provider of photonics for lithography, metrology and inspection*

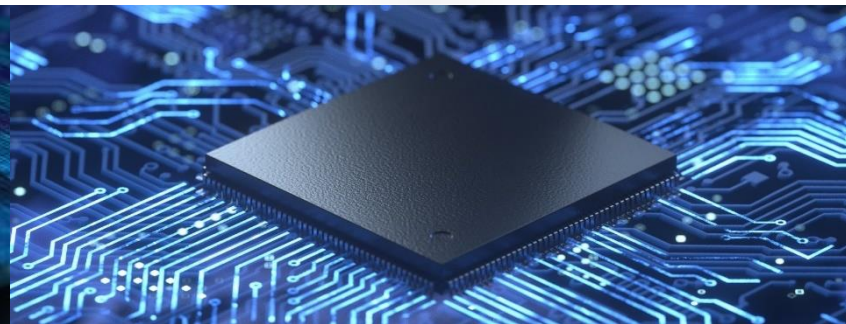
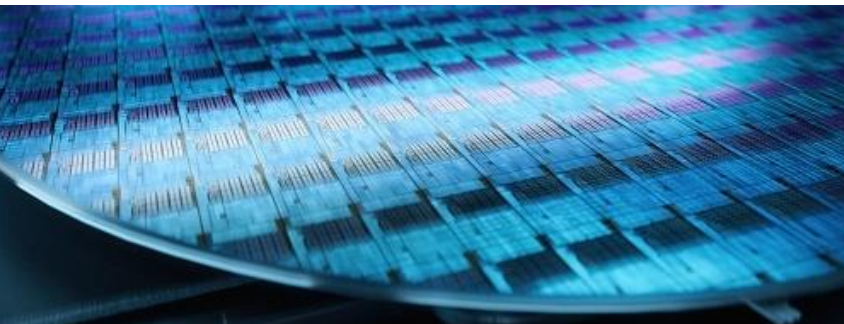
High Performance Compute Architecture



Electronics & Packaging

Subsystems, equipment & materials for **electronics & packaging**

> *Differentiated combination of electronics chemistry and laser drilling solutions to accelerate customer roadmaps in advanced PCB design and manufacturing*



Positioned to Address Major Process Inflections in the AI Era

Applying Broad Expertise to Enable Faster Processing Speeds

INFLECTION

Vertical Scaling

Horizontal Shrink

Advanced Packaging

MKS SOLUTIONS

MKS RF Power, Vacuum and Optical solutions for advanced etch and deposition

MKS Photonics solutions (Optics, Motion) and broad Vacuum portfolio are critical for advanced Logic and Foundry applications

MKS Vacuum, Photonics and Materials solutions address a wide array of packaging applications

APPLICATIONS

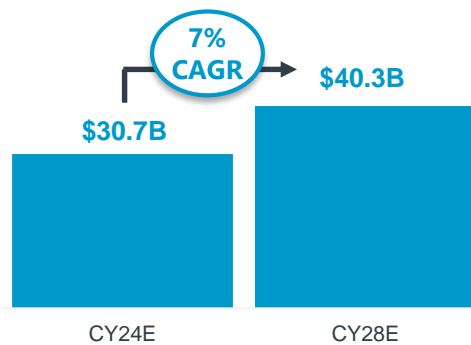
3D NAND, Logic
Gate All-Around (GAA)
Atomic Layer Deposition and Etching (ALD and ALE)

3nm/2nm, 1a DRAM
EUV and High-NA EUV

Through Silicon Via (TSV)
2.5D and 3D chip packaging

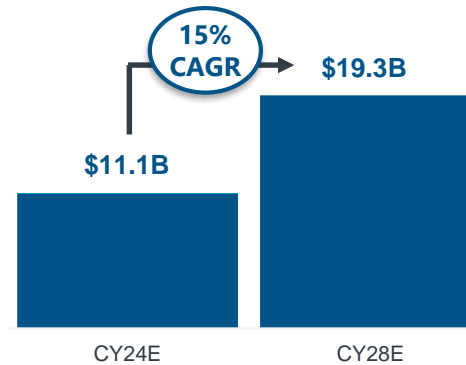
STRONG SECULAR TAILWINDS

Worldwide Capital Spend on Memory¹



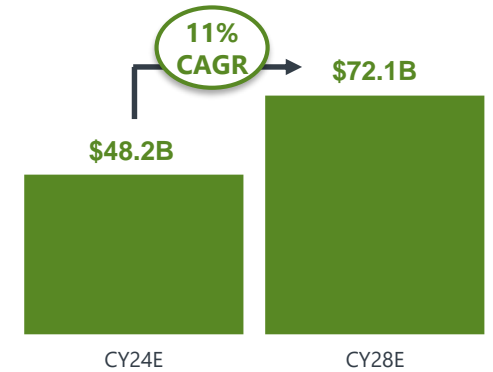
¹ TechInsights, Wafer Fab Equipment Sales by Application (December 2024)

Worldwide EUV Scanners Market Size²



² TechInsights Wafer Fab Equipment (WFE) Market History And Forecast (December 2024)

Worldwide Advanced Packaging Market Size³



³ Prismark Semiconductor and Packaging Report (December 2024)

Broad Platform of Market-Leading Solutions

Surround the Wafer®

Surround the Workpiece® + Optimize the Interconnect®

VACUUM					PHOTONICS					MATERIALS	
#1 Pressure Sensing & Control	#1 Remote Plasma Sources	#1 Microwave Power	#1 Tool, Safety Chamber, Network	#1 Ozone	#1 UV Nanosecond Pulsed Lasers	#1 Flex PCB Via Drilling Systems	#1 Laser Measurement Instruments	#1 High Performance Gratings	#1 Vibration Control	#1 Electronic Plating Chemistries	#1 Horizontal PCB Plating Equipment
#2 Vacuum Valves	#2 Optical Fiber Thermometry	#2 IR Gas Analysis	#2 RGA	#3 RF Power Supplies		#2 Opto-Mechanics	#2 IR Optics	#3 Precision Motion	#3 UV Ultrafast Lasers	#2 Decorative Surface Finishing	#2 Functional Coatings for Corrosion & Wear Resistance
#3 Flow & Gas Delivery											

MKS CORE PRODUCT PORTFOLIO
1999 (IPO)



24 Acquisitions since IPO | #1 and #2 Segment Share in 20 Categories

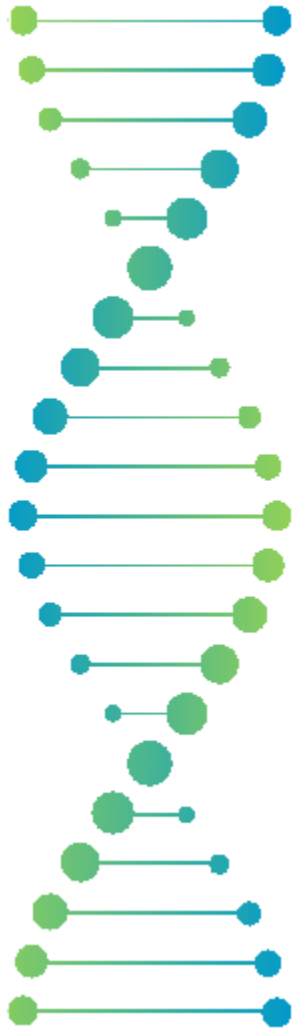
Sources: Vacuum segment rankings from TechInsights 2024 report; Photonics and Materials segment rankings based on internal company analyses conducted between 2023-2024.



Strategy & Business Drivers



Our Unique DNA is What Makes MKS Successful



Broad Domain & Process Expertise

Vacuum

Photonics

Materials

Deep & Collaborative Customer & Ecosystem Relationships

Identify
Inflection Points

Develop
Integrated
Design Cycles

Solve
Complex
Problems

Innovation Multiplier

Cross-selling to
New & Existing
Customers

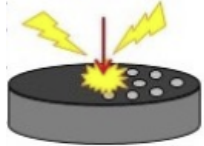
Accelerating Time
to Market

Innovating New
Processes

MKS is a Key Enabler for the Majority of Semiconductor Process Steps

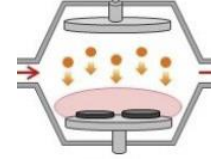
DEPOSITION

Pressure & Vacuum Measurement
Gas Delivery & Pressure Control
Plasma & Reactive Gas
RF Power
Temperature Sensing



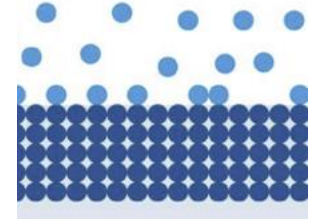
ETCH

Pressure & Vacuum Measurement
Gas Delivery & Pressure Control
Plasma & Reactive Gas
RF Power
Temperature Sensing



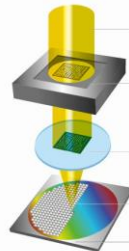
WET PROCESSING

Reactive Gases



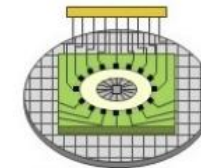
LITHOGRAPHY

Optics & Optical Subsystems
Precision Motion
Vibration Control
Light Source Assemblies



METROLOGY & INSPECTION

Optics & Optical Subsystems
Lasers
Precision Motion
High Performance
DUV Thin Film Coating

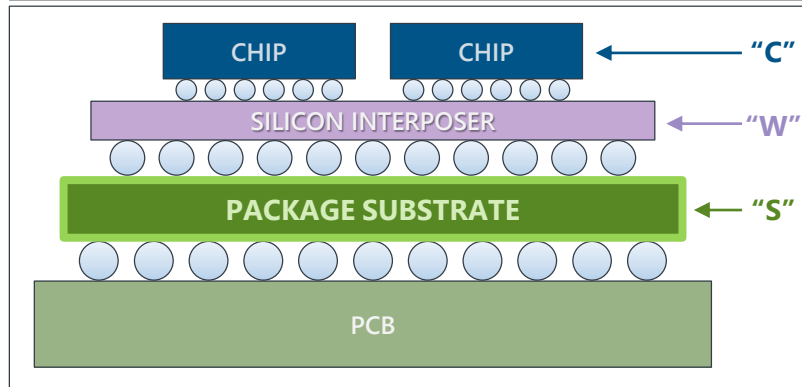


MKS' technology leadership across critical fabrication steps

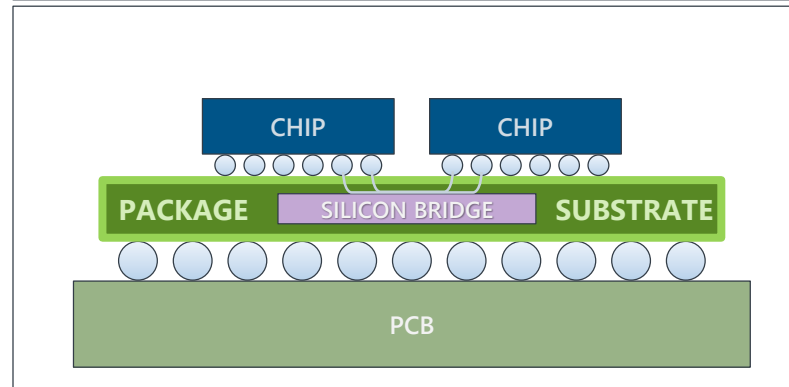
addresses >85% of wafer fabrication applications to enable higher yields and throughput

Package Substrate: Key Building Block of Advanced Packaging

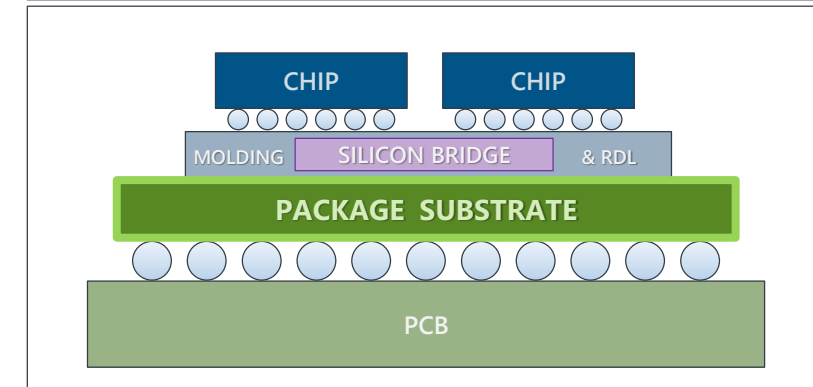
Chip-on-Wafer-on-Substrate (CoWoS®)¹



Embedded Multi-Die Interconnect Bridge (EMIB)²



Elevated Fanout Bridge (EFB)



Greater complexity to deliver higher performance substrates at optimal yields:

- ▶ Lines/spaces and interconnecting vias are getting smaller
- ▶ Size of substrate is getting larger
- ▶ Layer count is growing

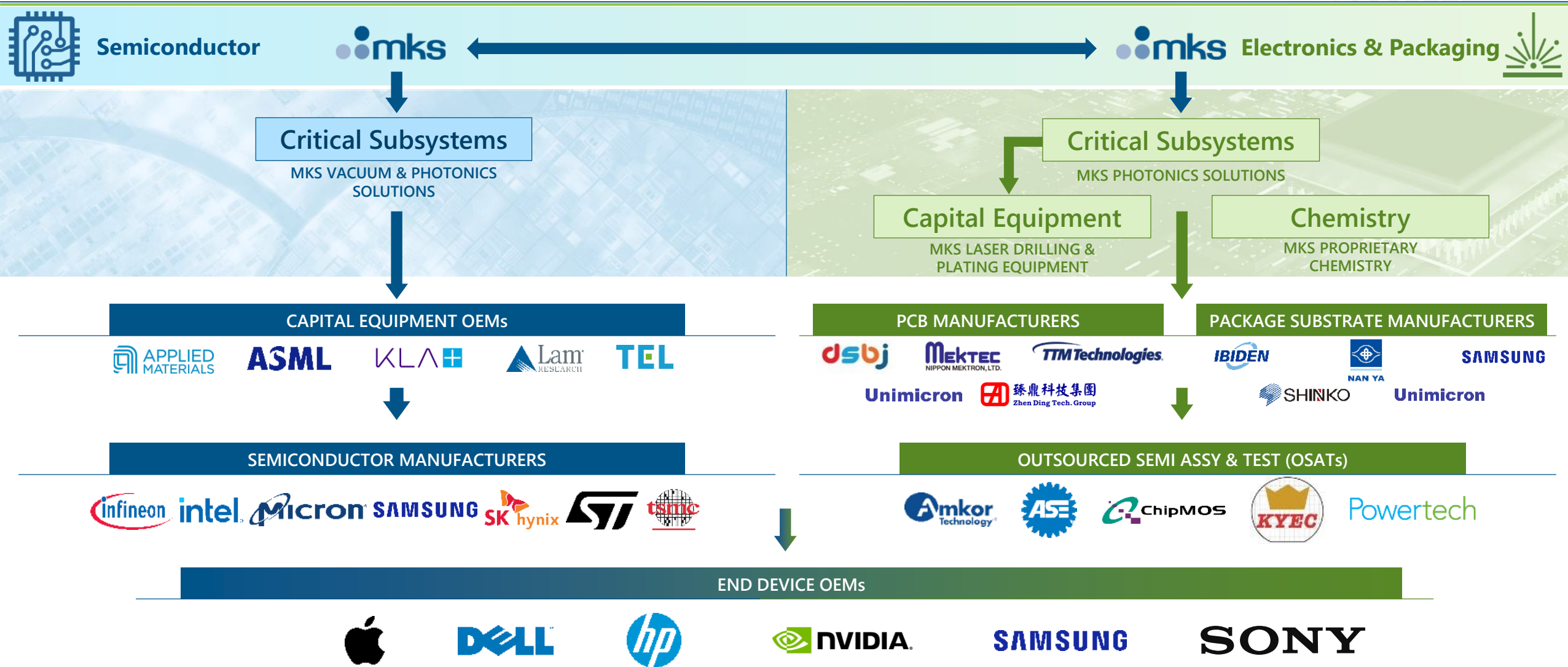
MKS' unique combination of laser drilling, chemistry & plating equipment addresses ~70% of the critical steps to manufacture Package Substrates and PCBs³

¹ CoWoS is a registered trademark of Taiwan Semiconductor Manufacturing Company Limited

² EMIB is an Intel Corporation packaging technology

³ Internal Company estimate

Mission Critical Supplier Across the Entire Advanced Electronics Supply Chain



This graphic presents a representative sample of top companies in each segment. Companies are not necessarily customers and/or end-customers of MKS.



Financial Profile

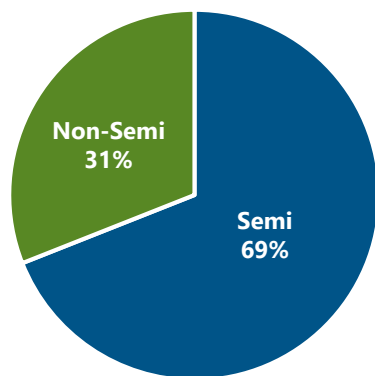


Evolution into a Broad Foundational Technology Provider

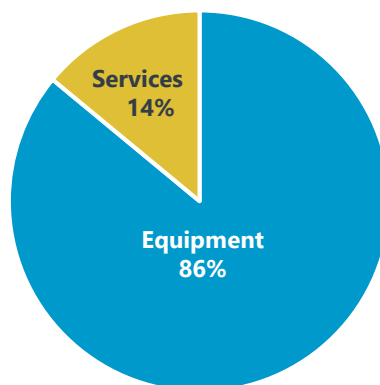
Significantly Expanded Financial and Operational Scale to Drive Growth Across a Broader Array of End Markets

2015

REVENUE MIX

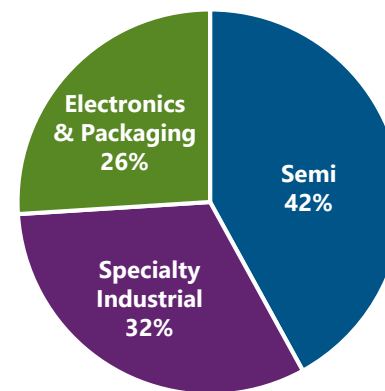


REVENUE STREAM

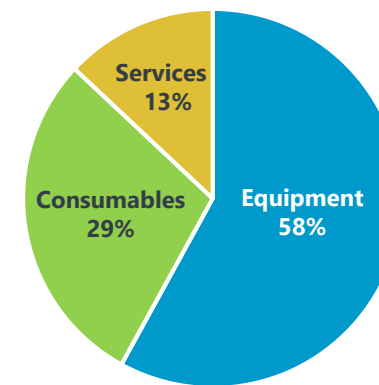


2024

REVENUE MIX



REVENUE STREAM



\$0.8B **\$0.2B** **49%** **14%**

Revenue

Adjusted
EBITDA

Top 10 Customer
Concentration

Services

\$3.6B **\$0.9B** **30%** **42%**

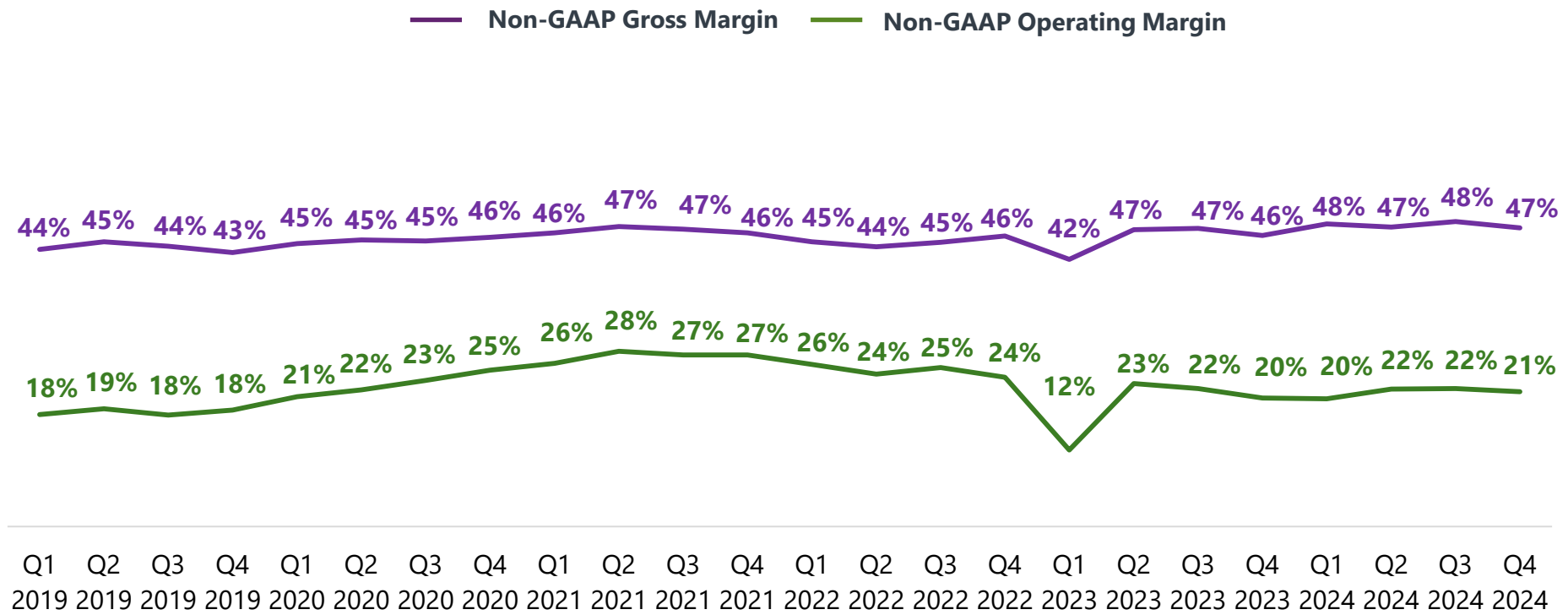
Revenue

Adjusted
EBITDA

Top 10 Customer
Concentration

Consumables
+ Services

Strong Margin Profile with Significant Operating Leverage To Drive Outsized Earnings Growth Across Cycles



↑ ESI Acquisition Closed
 ↑ Photon Control Acquisition Closed
 ↑ Atotech Acquisition Closed
 ↑ Ransomware Incident

TARGETED INCREMENTAL REVENUE FALL THROUGH¹

~50%

Incremental Non-GAAP Gross Margin

~40%

Incremental Non-GAAP Operating Margin

¹ Company estimates of incremental non-GAAP gross margin and incremental non-GAAP operating margin in aggregate for the period 2023 through 2027 assuming a 2022 revenue baseline.

Financial Discipline is Core to MKS' DNA

Experienced leadership with **proven execution track record**

Profitability Management

- Monthly profit and cash optimization program
- Centers of excellence
- Targeted R&D investment approach

Operating Flexibility

- Highly variable cost structure
- Asset-light capacity model
- Leverage multiple low-cost regions

M&A Execution

- Track record of delivering on synergies and deleveraging
- Comprehensive approach to technology and market synergies
- Disciplined M&A is a component of our growth strategy

Capital Deployment Focused on Long-Term Value Creation

Primary Use of Near-term Free Cash Flow is for De-levering

1

ORGANIC GROWTH & DIVIDENDS

Strong organic investments

Maintain dividend

Expected long-term capex 3% - 5%
of revenue

2

DEBT MANAGEMENT

Accelerated debt paydown

Opportunistic re-pricings

Maintain strong liquidity

3

M&A / BUYBACK

Maximize long-term
shareholder value

Disciplined M&A is a component
of our growth strategy

Opportunistic share buybacks

May 2024 Convertible Note Offering Improves Financial Profile

\$1.4 Billion of 1.25% Convertible Senior Notes due 2030

Substantially all proceeds of offering used to pay down approximately \$1.2B of existing USD Term Loan B and to purchase capped calls



\$1.4 billion
Convertible Senior
Notes due 2030
extends existing
maturities



Cash savings from
lower interest
expense supports
further
deleveraging



Replaced secured
debt with unsecured
debt, allowing further
financial flexibility



Related capped call
transactions
expected to reduce
potential stock
dilution

Illustrative Convertible Senior Note Scenarios

- \$1.4B principal to be settled in cash
- Conversion obligations in excess of the principal amount can be settled at MKS' election, in cash, common stock or a combination of cash and common stock
- Capped call increases the effective conversion price for MKS from \$154.32 to \$237.42 per \$1,000 principal amount of notes, and therefore reduces the potential dilution from conversion of the notes

Potential Price Per Share ⁽¹⁾	Relevance of Stock Price	Net Shares Issuable On Convertible Notes	Shares Received from Capped Call ⁽²⁾	Total Dilutive Potential Shares for GAAP EPS Calculations ⁽³⁾	Actual Dilution at Conversion of Notes ⁽⁴⁾
\$118.71	Price at issuance of notes	0	(0)	0	0
\$154.32	Conversion price of notes	0	(0)	0	0
\$200.62	Provisional call trigger	2.1	(2.1)	2.1	0
\$237.42	Capped call exercise price	3.2	(3.2)	3.2	0
\$250.00	Example average quarterly stock price	3.5	(3.0)	3.5	0.5
\$300.00	Example average quarterly stock price	4.4	(2.5)	4.4	1.9
\$350.00	Example average quarterly stock price	5.1	(2.2)	5.1	2.9
\$400.00	Example average quarterly stock price	5.6	(1.9)	5.6	3.7
\$450.00	Example average quarterly stock price	6.0	(1.7)	6.0	4.3
\$500.00	Example average quarterly stock price	6.3	(1.5)	6.3	4.8

(1) Although dilution continues beyond \$500.00, data is not presented above \$500.00.

(2) The capped call only offsets the actual dilution from the notes upon conversion or settlement.

(3) Represents incremental shares to be included in determination of diluted EPS in accordance with GAAP.

(4) Number of shares that represent the actual dilution from the notes at conversion taking into account the exercise of the capped call.

(in millions, except price per share)

Investment Highlights

Highly differentiated and foundational technologies address the demands and complexity of advanced electronic devices **for the AI era**

Mission critical and **embedded supplier**, serving **>85% of the overall WFE market** and **~70%** of the critical steps for **Package Substrates and Advanced PCBs**¹

Disciplined capital structure strategy focused primarily on **near-term de-leveraging and optimizing cost of capital**

Resilient and well diversified financial profile with **strong margins**

Differentiated business model with significant operating leverage, positioned to **drive earnings growth**

¹ Internal Company estimate

Appendix

Non-GAAP Reconciliations

Non-GAAP Gross Margin and Non-GAAP Operating Margin¹

(\$ million, except percentages)	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20	Q2'20	Q3'20	Q4'20	Q1'21	Q2'21	Q3'21	Q4'21	Q1'22	Q2'22	Q3'22	Q4'22	Q1'23	Q2'23	Q3'23	Q4'23	Q1'24	Q2'24	Q3'24	Q4'24	FY2023	FY2024
Total net revenues	\$464	\$474	\$463	\$500	\$536	\$544	\$590	\$660	\$694	\$750	\$742	\$764	\$742	\$765	\$954	\$1,085	\$794	\$1,003	\$932	\$893	\$868	\$887	\$896	\$935	\$3,622	\$3,586
Gross profit	\$198	\$211	\$205	\$216	\$240	\$246	\$262	\$302	\$322	\$355	\$348	\$355	\$334	\$338	\$390	\$485	\$335	\$470	\$426	\$411	\$415	\$419	\$432	\$441	\$1,642	\$1,708
Gross margin	42.7%	44.5%	44.3%	43.3%	44.7%	45.3%	44.4%	45.7%	46.4%	47.4%	47.0%	46.4%	45.0%	44.2%	40.8%	44.7%	42.2%	46.9%	45.7%	46.0%	47.8%	47.3%	48.2%	47.2%	45.3%	47.6%
Excess and obsolete charge from discontinued product line	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	13	-
Acquisition inventory step-up	5	3	-	-	-	-	-	-	-	-	-	-	-	-	39	13	-	-	-	-	-	-	-	-	-	-
Inventory charge related to exit of product groups	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-GAAP gross profit	\$203	\$214	\$205	\$216	\$240	\$247	\$266	\$302	\$322	\$355	\$348	\$355	\$334	\$338	\$429	\$498	\$335	\$470	\$439	\$411	\$415	\$419	\$432	\$441	\$1,655	\$1,708
Non-GAAP gross margin	43.8%	45.0%	44.3%	43.3%	44.7%	45.3%	45.1%	45.7%	46.4%	47.4%	47.0%	46.4%	45.0%	44.2%	44.9%	45.9%	42.2%	46.9%	47.1%	46.0%	47.8%	47.3%	48.2%	47.2%	45.7%	47.6%
Total net revenues	\$464	\$474	\$463	\$500	\$536	\$544	\$590	\$660	\$694	\$750	\$742	\$764	\$742	\$765	\$954	\$1,085	\$794	\$1,003	\$932	\$893	\$868	\$887	\$896	\$935	\$3,622	\$3,586
Income (loss) from operations	\$23	\$64	\$67	\$66	\$90	\$101	\$116	\$147	\$156	\$186	\$175	\$182	\$172	\$164	\$118	\$163	\$1	(\$1,696)	\$118	\$24	\$106	\$127	\$128	\$135	(\$1,554)	\$498
Operating margin	5.0%	13.5%	14.5%	13.2%	16.8%	18.6%	19.7%	22.3%	22.5%	24.8%	23.6%	23.8%	23.1%	21.5%	12.4%	15.0%	0.1%	(169.1%)	12.6%	2.7%	12.2%	14.4%	14.3%	14.5%	(42.9%)	13.9%
Excess and obsolete charge from discontinued product line	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	-	-	13	-
Acquisition inventory step-up	5	3	-	-	-	-	-	-	-	-	-	-	-	-	39	13	-	-	-	-	-	-	-	-	-	-
Acquisition and integration costs	30	3	2	2	2	1	1	-	6	6	9	9	8	2	31	11	6	5	3	3	1	2	3	3	16	9
Restructuring	2	1	2	2	-	3	3	3	5	3	2	1	2	3	5	1	1	11	1	7	3	2	1	1	20	6
Amortization of intangible assets	16	18	17	17	16	14	13	13	12	13	15	15	15	15	47	69	81	76	68	70	62	61	61	61	295	245
Goodwill and intangible asset impairment	-	-	-	5	1	-	-	1	-	-	-	-	-	-	-	-	-	1,827	-	75	-	-	-	-	1,902	-
Gain on sale of long-lived assets	-	-	(7)	-	-	-	-	-	-	-	-	-	(7)	-	-	-	-	-	(2)	-	-	-	-	-	(2)	-
Fees and expense related to the Term Loan Facility	6	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	3	-	2	-	2	5
Ransomware incident	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	4	2	1	-	-	-	-	15	-
Inventory charge related to exit of product groups	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
COVID-19 related net credits	-	-	-	-	-	(1)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Environmental costs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Non-GAAP income from operations	\$82	\$88	\$81	\$92	\$110	\$118	\$136	\$163	\$179	\$208	\$201	\$207	\$190	\$184	\$240	\$257	\$96	\$227	\$203	\$182	\$175	\$192	\$195	\$199	\$707	\$763
Non-GAAP operating margin	17.7%	18.6%	17.6%	18.4%	20.5%	21.6%	23.1%	24.7%	25.8%	27.7%	27.1%	27.1%	25.6%	24.1%	25.1%	23.6%	12.1%	22.6%	21.8%	20.3%	20.2%	21.7%	21.8%	21.3%	19.5%	21.3%

¹ For additional information regarding these adjustments, please refer to the corresponding quarterly earnings release available on MKS' investor website at investor.mks.com.

Reconciliations

Adjusted EBITDA¹

	<u>2015</u>	<u>2024</u>
Net income (loss)	\$122	\$190
Other expense, (income), net	-	(2)
Interest (income), expense, net	(3)	263
(Benefit) provision for income taxes	37	(10)
Depreciation and amortization	22	348
Stock-based compensation	13	48
Excess and obsolete charge from discontinued product line	-	-
Acquisition and integration costs	-	9
Restructuring	2	6
Goodwill and intangible asset impairments	-	-
Gain on sale of long-lived assets	-	-
Sale of previously written down inventory	(2)	-
Ransomware incident	-	-
Fees and expense related to the Term Loan Facility	-	5
Loss on debt extinguishment	-	57
Adjusted EBITDA¹	\$192	\$914

¹ For additional information regarding these adjustments, please refer to the corresponding annual earnings release available on MKS' investor website at investor.mks.com. In the fourth quarter of 2023, we modified our definition of Adjusted EBITDA to exclude other expense, net from this non-GAAP measure. Other expense, net primarily relates to changes in foreign exchange rates. We believe this change enhances investor insight into our operational performance. We have applied this modified definition of Adjusted EBITDA to all periods presented.
(in million)