



Investor Presentation

February 5, 2019



Safe Harbor for Forward Looking Statements

Statements in this presentation regarding the future financial and operating results of MKS Instruments, Inc. ("MKS"), MKS' future business prospects, MKS' future growth, - MKS' proposed acquisition of Electro Scientific Industries, Inc. ("ESI"), the expected timetable for completing the acquisition, benefits and synergies of the acquisition, future opportunities for the combined company and any other statements about MKS' or ESI's managements' future expectations, beliefs, goals, plans or prospects constitute forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. 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 also be considered to be forward-looking statements. These statements are only predictions based on current assumptions and expectations. 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 are: the conditions affecting the markets in which MKS and ESI operate, including the fluctuations in capital spending in the semiconductor industry and other advanced manufacturing markets, the economy in general as well as fluctuations in net sales to MKS' and ESI's existing and prospective customers; the ability of the parties to complete the ESI acquisition; the risk that the conditions to the closing of the ESI acquisition, including receipt of required regulatory approvals and approval of ESI shareholders, are not satisfied in a timely manner or at all; litigation relating to the ESI acquisition; unexpected costs, charges or expenses resulting from the ESI acquisition; the risk that disruption from the proposed ESI acquisition materially and adversely affects the respective businesses and operations of MKS and ESI; the ability of MKS to realize the anticipated synergies, cost savings and other benefits of the proposed ESI acquisition, including the risk that the anticipated benefits from the proposed ESI acquisition may not be realized within the expected time period or at all; competition from larger or more established companies in the companies' respective markets; MKS' ability to successfully grow ESI's business; potential adverse reactions or changes to business relationships resulting from the announcement, pendency or completion of the ESI acquisition; the challenges, risks and costs involved with integrating the operations of the companies we have previously acquired, including MKS' most recently completed acquisition of Newport Corporation; the ability of MKS to retain and hire key employees; legislative and regulatory developments; potential fluctuations in quarterly results, the terms of our term loan and the availability and terms of the financing to be incurred in connection with the ESI acquisition; dependence on new product development, rapid technological and market change, acquisition strategy, manufacturing and sourcing risks, volatility of stock price, international operations, financial risk management, and the other factors described in MKS' most recent Annual Report on Form 10-K for the fiscal year ended December 31, 2017 and its most recent quarterly report filed with the SEC and in ESI's Annual Report on Form 10-K for the fiscal year ended March 31, 2018 and its most recent quarterly report filed with the SEC. MKS and ESI are under no obligation to, and expressly disclaim 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.

Important Additional Information Will be Filed with the SEC

ESI plans to file with the SEC and mail to its stockholders a Proxy Statement in connection with the transaction. Additionally, MKS and ESI will file other relevant documents with the SEC in connection with the transaction. The Proxy Statement and other documents to be filed with the SEC by MKS and ESI will contain important information about MKS, ESI, the transaction and related matters. Investors and security holders are urged to read the Proxy Statement and other documents to be filed with the SEC by MKS and ESI carefully when they are available.

Investors and security holders will be able to obtain free copies of the Proxy Statement and other documents filed with the SEC by MKS and ESI through the web site maintained by the SEC at www.sec.gov.

In addition, investors and security holders will be able to obtain free copies of the Proxy Statement from ESI by visiting the Investor Relations section of ESI website (www.esi.com) or by directing a request to ESI, Attn: Investor Relations, at 13900 N.W. Science Park Drive, Portland, Oregon 97229.

MKS and ESI, and their respective directors and executive officers, may be deemed to be participants in the solicitation of proxies in respect of the proposed transaction. Information regarding MKS' directors and executive officers is contained in MKS' Form 10-K for the fiscal year ended December 31, 2017 and its proxy statement dated March 28, 2018, which are filed with the SEC. Information regarding ESI's directors and executive officers is contained in ESI's Form 10-K for the fiscal year ended March 31, 2018 and its proxy statement dated July 10, 2018, which are filed with the SEC. To the extent holdings of securities by such directors or executive officers have changed since the amounts disclosed in each company's respective proxy statement, such changes have been or will be reflected on Statements of Change in Ownership on Form 4 filed with the SEC. Additional information regarding the participants in the solicitation of proxies in respect of the proposed transaction and a description of their direct and indirect interests, by security holdings or otherwise, will be contained in the Proxy Statement and other documents to be filed with the SEC by MKS and ESI when they are available.

Non-GAAP Measures

This presentation includes measures that are not in accordance with U.S. generally accepted accounting principles (“non-GAAP measures”). Non-GAAP measures exclude amortization of acquired intangible assets, asset impairments, costs associated with completed and announced acquisitions, acquisition integration costs, an inventory step-up adjustment related to an acquisition, restructuring charges, certain excess and obsolete inventory charges, fees and expenses related to the repricing of MKS’ term loan, amortization of debt issuance costs, net proceeds from an insurance policy, costs associated with the sale of a business, the tax effect of the 2017 Tax Cut and Jobs Act, the tax effect of legal entity restructurings, other discrete tax benefits and charges, and the related tax effect of these adjustments. These non-GAAP measures should be viewed in addition to, and not as a substitute for, MKS’ reported results, and may be different from non-GAAP measures used by other companies. In addition, these non-GAAP measures are not based on any comprehensive set of accounting rules or principles. MKS management believes the presentation of these non-GAAP measures is useful to investors for comparing prior periods and analyzing ongoing business trends and operating results.

Please see the Appendix entitled “GAAP to Non-GAAP Reconciliations” at the end of this presentation for reconciliations of our non-GAAP measures to the comparable GAAP measures and the definitions of terms used in this presentation.

MKS Key Messages

- 
- **GLOBAL TECHNOLOGY LEADER** in served markets
 - Leveraged to attractive **HIGH GROWTH MARKETS**
 - Track record of **SUSTAINABLE & PROFITABLE GROWTH**
 - **ROBUST & DISCIPLINED** business process

Enabling Technology for 50+ Years

1990



\$7M

2000



\$327M

2010



\$853M

2017



\$1.9B

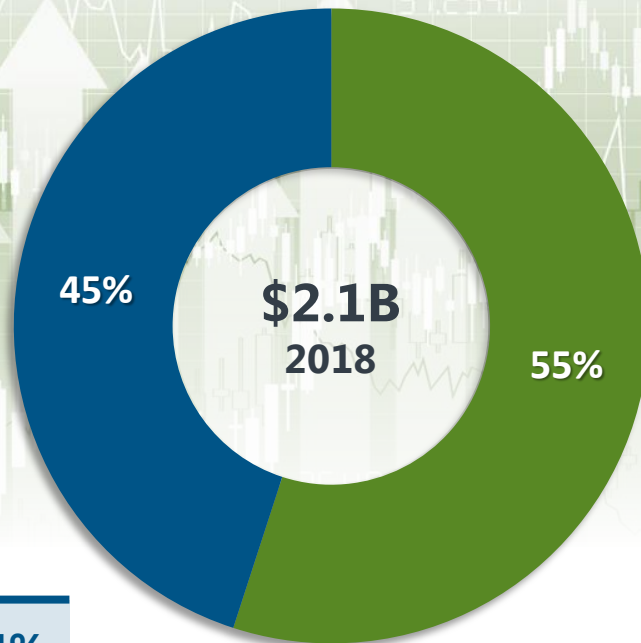
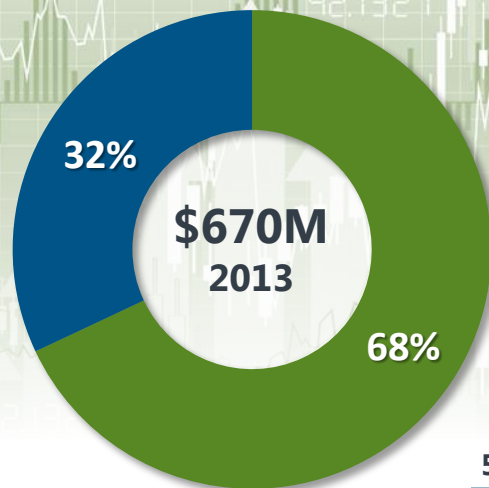
2018+



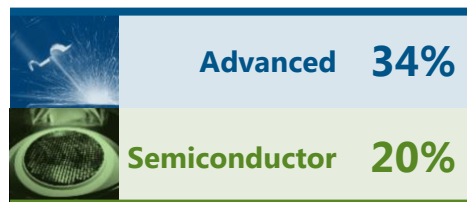
\$2.1B

Well positioned for
sustainable & profitable growth
by solving complex problems

Focused on High Growth Markets




5 Year CAGR



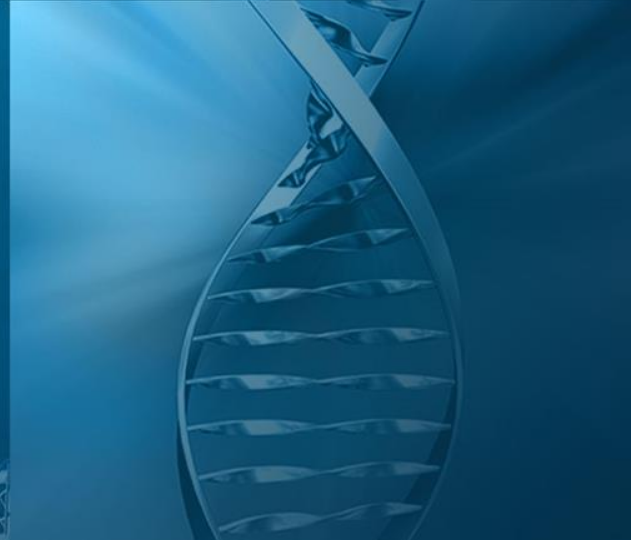
Total 25%

Market Leader with Broad Technology Portfolio

	PRESSURE/ VACUUM	VACUUM COMPONENTS		FLOW	GAS ANALYSIS		PLASMA	POWER	DIGITAL CONTROL	PHOTONICS					LASERS	OPTICS			
	Direct/ Indirect Gauging	Vacuum Comps	Control & Iso Valves	Flow & Gas Delivery	RGA	FTIR	Reactive Gas	RF	Tool, Safety Chamber, Network	Instruments	Vibration Control	Motion	Opto- Mechanics	Laser Measuremt	Lasers	Laser Optics	Gratings/ Filters	IR Optics	Integrated Solutions
	1	1	2	3	3	2	1	2	1	1-2	1-3	3	1	2	1-3	1-2	1-2	2-3	2-3
ADVANCED ENERGY							•	•											
AEROTECH												•							
BROOKS	•			•															
COHERENT														•	•	•			•
CVI MELLES GRIOT															•	•		•	•
DAIHEN							•	•											
EBARA							•												
GENTEC														•					
HORIBA				•	•	•											•		
HUTTINGER								•			•								
II-VI															•	•		•	•
INFICON	•	•			•														•
IPG PHOTONICS															•				•
LUMENTUM															•				
NEWPOWER PLASMA							•	•											
PI												•							
QI/OPTIQ													•			•		•	•
SEMROCK																	•		
SIGMA KOKI											•	•	•			•	•		•
SUMITOMO							•												
THORLABS										•	•	•	•	•	•	•			•
ULVAC	•		•		•														
VAT			•																

Source: Company information

Multiple Growth Opportunities

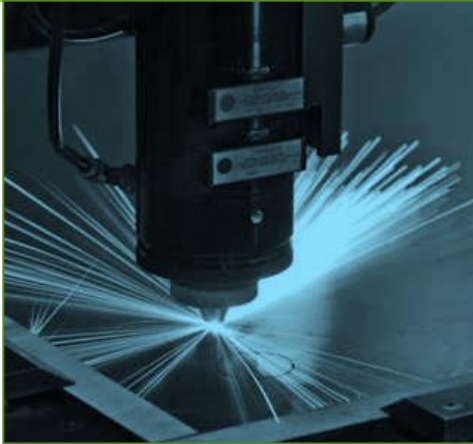


Our Focus: Technology-Intensive Markets



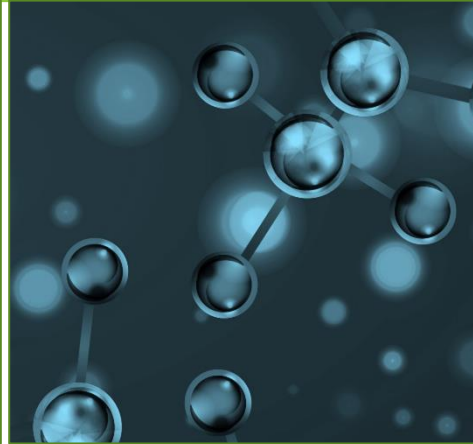
SEMICONDUCTOR

- Deposition Equipment
- Etch Equipment
- Lithography
- Inspection
- Packaging



INDUSTRIAL TECHNOLOGIES

- Electronic Thin Film
- Industrial Manufacturing
- Electronic Component Manufacturing
- Process Industries
- Telecom/Datacom



LIFE & HEALTH SCIENCES

- Analytical & Medical Instrumentation
- Bio-Pharmaceutical
- Medical & Bioimaging
- Medical Devices
- Ophthalmic Surgery

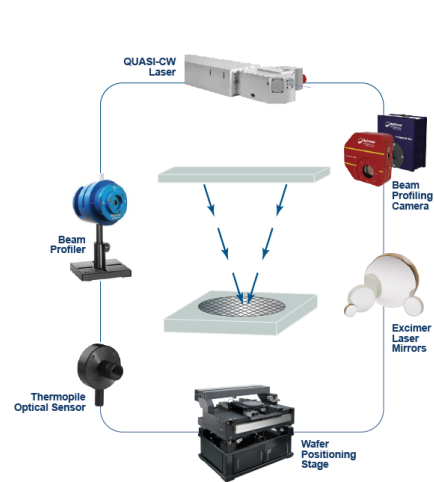


RESEARCH & DEFENSE

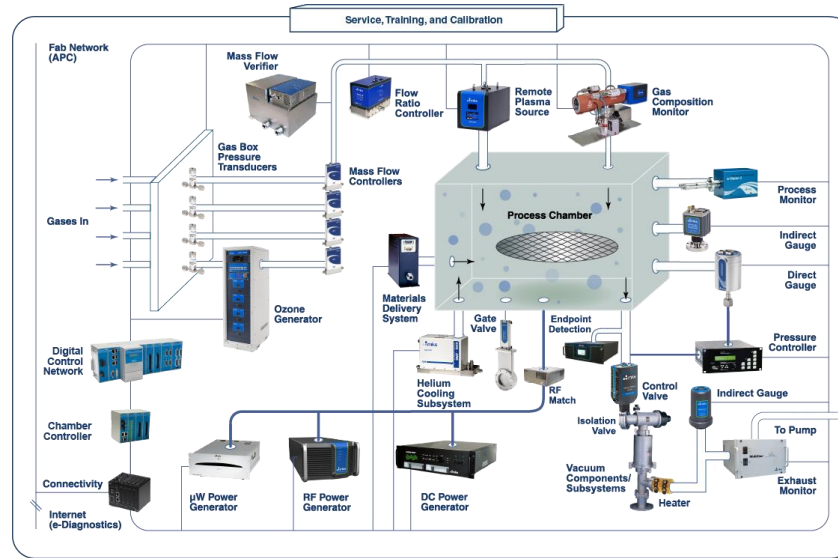
- Atomic & Molecular Physics
- Spectroscopy
- High Energy Physics
- Ultrafast Laser Studies
- Infrared Technology
- Surveillance

Extended Leadership in the Semiconductor Market

FRONT END

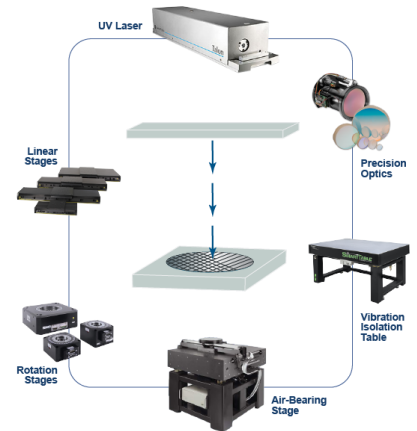


**LITHOGRAPHY
& INSPECTION**



**DEPOSITION,
ETCH & CLEAN**

BACK END



**PACKAGING &
INSPECTION**

High Growth Semiconductor Opportunity

ATOMIC LAYER PROCESSING

New process technologies create opportunities to expand SAM and gain share

- Ozone
- Pressure, Flow, Valves
- Power Solutions

HIGH ASPECT RATIO

In logic and memory, device architectures require more power and control to process tomorrow's most critical features

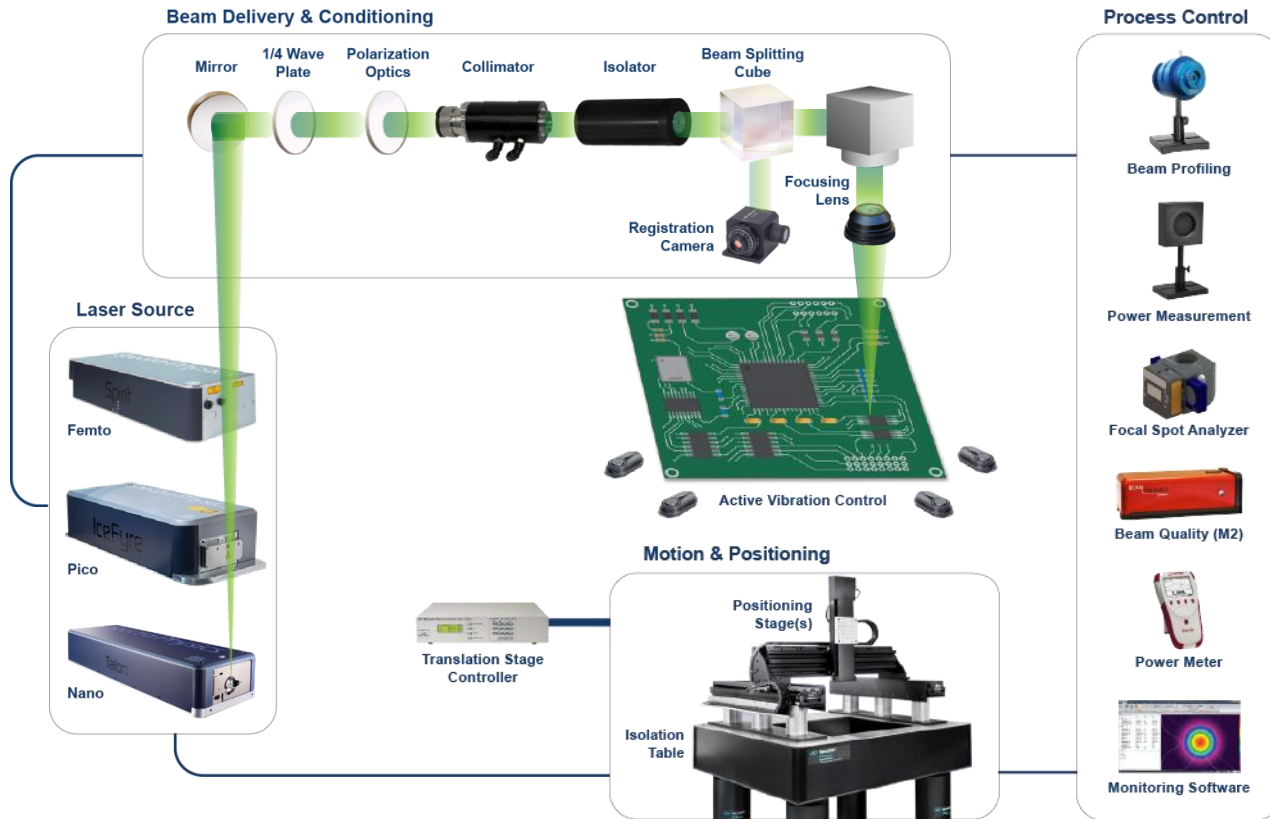
- High power, high finesse RF
- On-wafer remote plasma processing

KEY ENABLING TECHNOLOGIES

Across our diverse portfolio, we have several key technologies that enable our customers

- Power/Match
- Remote Plasma Processing
- Reactive Gas
- Vacuum Measurement

Surround the WorkpieceSM



Industrial Microprocessing: Paradigm Shift

2007-2013

THEN

TOUCHSCREEN
PATTERNING

PC BOARD
DEPANELING

PACKAGE
CUTTING

ENCLOSURE
MARKING



FLEX PCB
DRILLING

CAMERA
WINDOW
CUTTING

CERAMIC
SCRIBING

MOBILE | TOUCH DISPLAYS

2014-2018

NOW

GLASS
CUTTING

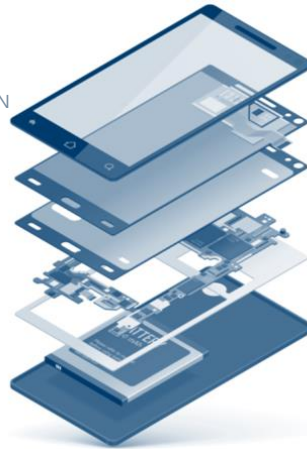
TOUCHSCREEN
PATTERNING

PC BOARD
DEPANELING

PACKAGE
CUTTING

ENCLOSURE
MARKING

ENCLOSURE
DRILLING &
CUTTING



FILM
CUTTING

FLEX PCB
DRILLING

CAMERA
WINDOW
CUTTING

CERAMIC
SCRIBING

RESISTOR
TRIMMING

MOBILE | IoT | TOUCH DISPLAYS

2020+

FUTURE

COMPOSITE MATERIALS
PROCESSING

GLASS
CUTTING

TOUCHSCREEN
PATTERNING

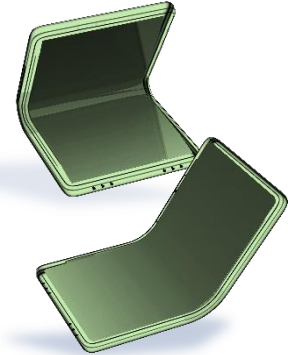
PC BOARD
DEPANELING

PACKAGE
CUTTING

ENCLOSURE
MARKING

ENCLOSURE
DRILLING &
CUTTING

SURFACE
FUNCTIONALIZATION



NANOMATERIAL
PROCESSING

FILM
CUTTING

FLEX PCB
DRILLING

CAMERA
WINDOW
CUTTING

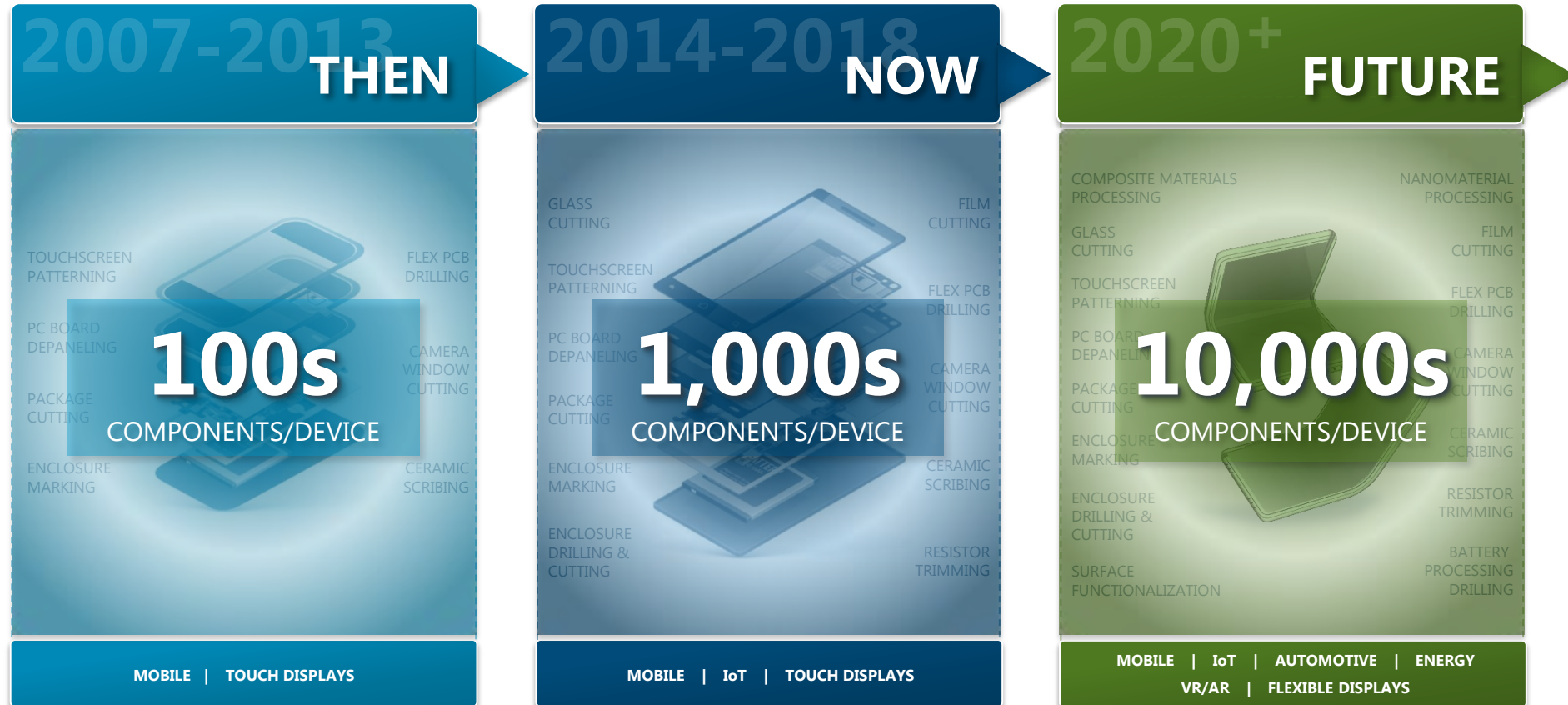
CERAMIC
SCRIBING

RESISTOR
TRIMMING

BATTERY
PROCESSING
DRILLING

MOBILE | IoT | AUTOMOTIVE | ENERGY
VR/AR | FLEXIBLE DISPLAYS

Industrial Microprocessing: Paradigm Shift



High Growth Industrial Technology Segments

ELECTRONICS MANUFACTURING

Electronics and electrical component manufacturing including **flexible circuits**, **printed circuit boards** and all electrical components

- Lasers
- Power
- Vibration Control

ELECTRONIC THIN FILM

Thin film applications with similar manufacturing requirements to Semi

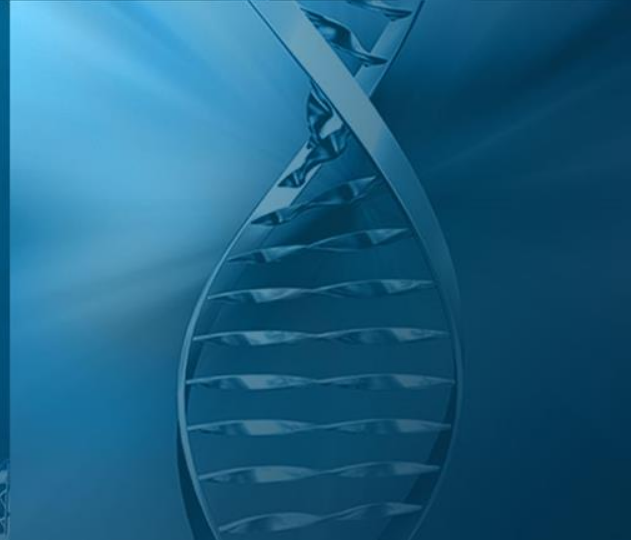
- Lasers
- Pressure, Flow, Valves
- Power, Plasma, Ozone

INDUSTRIAL MANUFACTURING

Material processing in applications such as **cutting**, **welding**, **embossing**; discrete assembly operations

- Lasers
- Power
- Motion
- Pressure, Flow

ESI Announcement



MKS to Acquire Electro Scientific Industries (ESI)



esi®

EXECUTING ON A

Key Strategy for MKS

- Acquiring a market leading technology company that serves common markets with complementary customer solutions
- Expands Industrial segments of PCB, Electronic Thin Film, and Electronic Component manufacturing
- Expands MKS' addressable market by \$2.2B and adds \$304M in CY17 Revenue
- Expected to be accretive to Non-GAAP earnings and free cash flow in the first 12 months

Complementary Technology Leaders



Founded 1961

Headquarters in Andover, MA

CY 2017 Revenue of \$1.9B

4,900+ Employees

1,500+ Global Patents

R&D Spending ~\$133M

R&D Headcount ~750+

Leadership in

- UV and ultrafast lasers
- Motion, photonics & optics
- RF power & plasma
- Vacuum processing; precise control of pressure, flow & composition

Source 2017 MKSI 10K



Founded 1944

Headquarters in Portland, OR

CY 2017 Revenue of \$304M

600+ Employees*

1,000+ Global Patents*

R&D Spending ~\$35M

R&D Headcount ~140+*

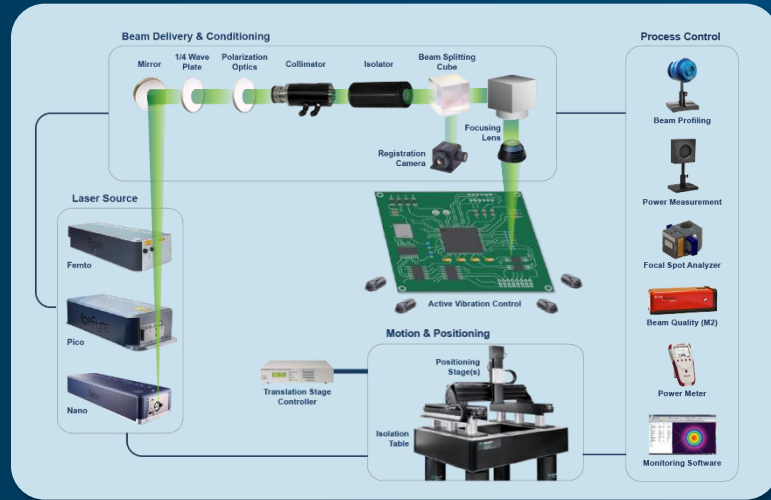
Leadership in

- Laser-based process equipment
 - Advanced PCB processing
 - Semi manufacturing
 - Component manufacturing

* Fiscal Year 2018 ESIO 10K



Surround the WorkpieceSM



EXTEND and differentiate leadership in the use of UV lasers for advanced manufacturing

COMBINE applications knowledge (beam / Workpiece) with systems and technologies

DRIVE opportunities within both the Systems and Component businesses

ACCELERATE pursuit of additional Industrial applications of laser processing

Significant Potential Growth Opportunities

INDUSTRIAL MACHINING
\$1.0B

MARKING

ENGRAVING

FINE METAL DRILLING

SEMICONDUCTOR
\$170M

WAFER MARKING

WAFER SCRIBING/DICING

WAFER TRIM

PRINTED CIRCUIT BOARDS
\$1.0B

FLEX PCB VIA DRILLING

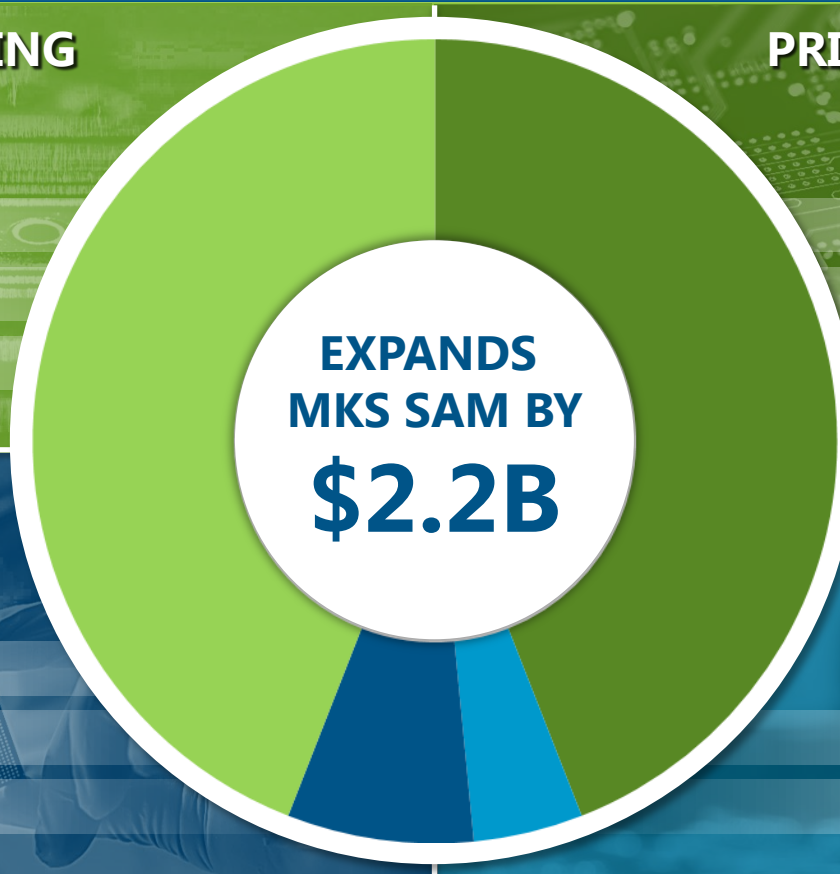
HDI PCB VIA DRILLING

IC PACKAGING VIA DRILLING

ELECTRONIC COMPONENTS
\$100M

MLCC TESTING

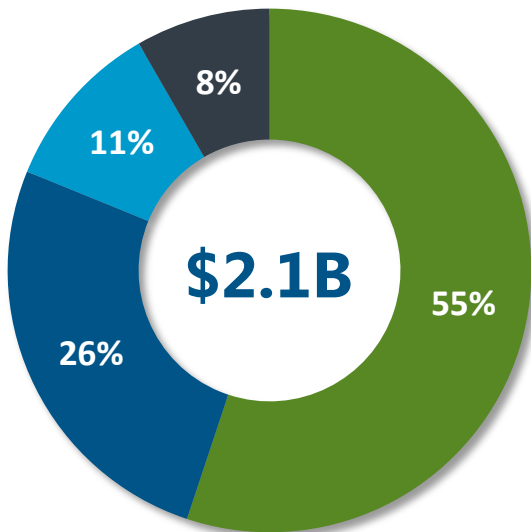
RESISTOR TRIM



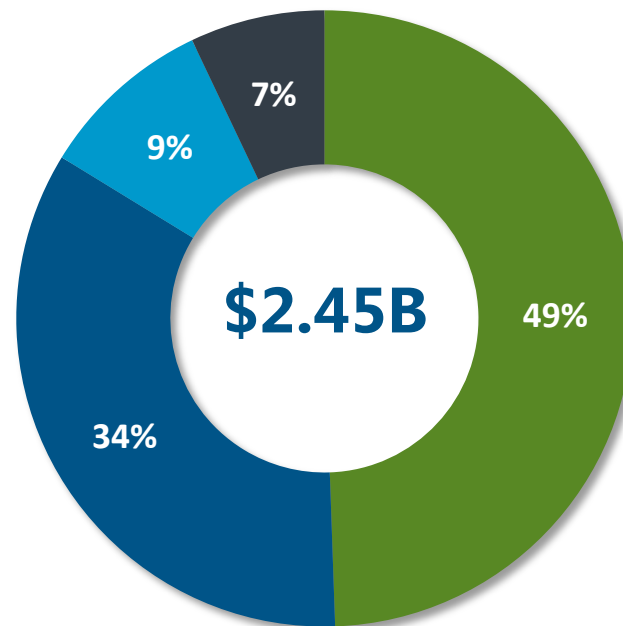
EXPANDS
MKS SAM BY
\$2.2B

Balanced and Diversified End Markets

MKSI by End Market in 2018



Pro Forma Combined in 2018



Semi

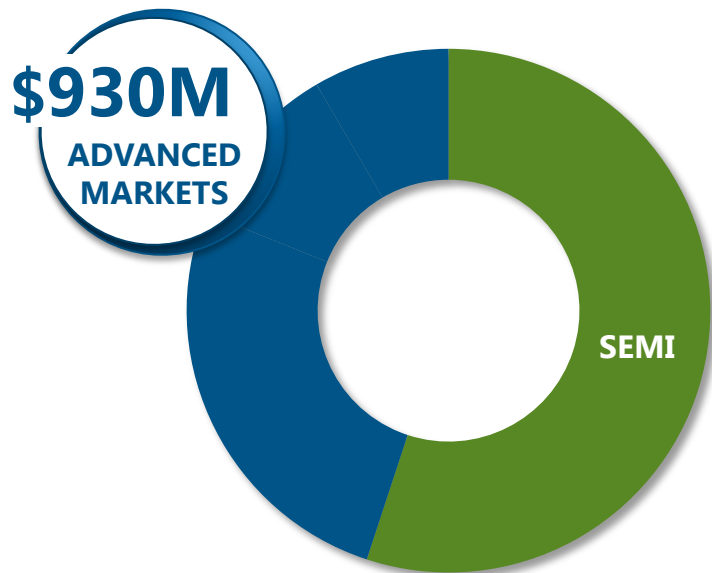
Industrial

Research & Defense

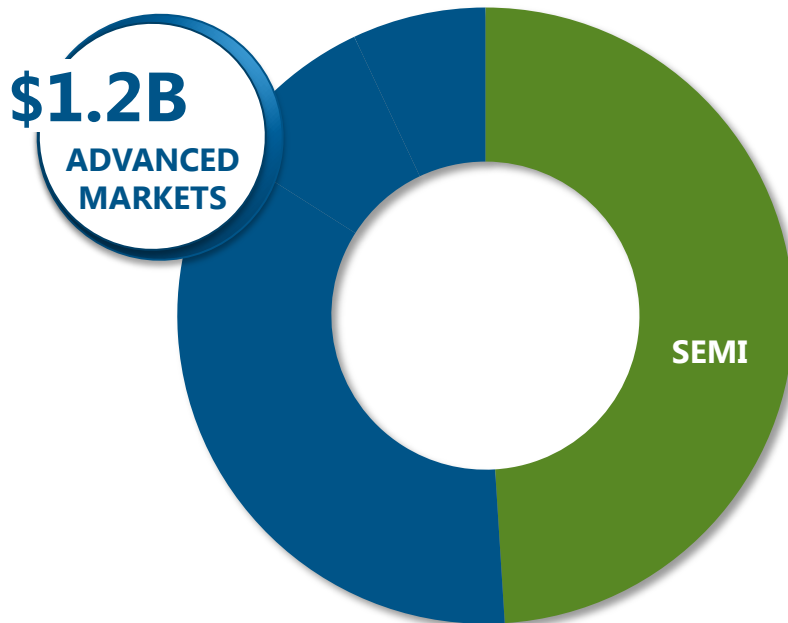
LHS

Strengthens Advanced Market Growth

MKSI by End Market in 2018



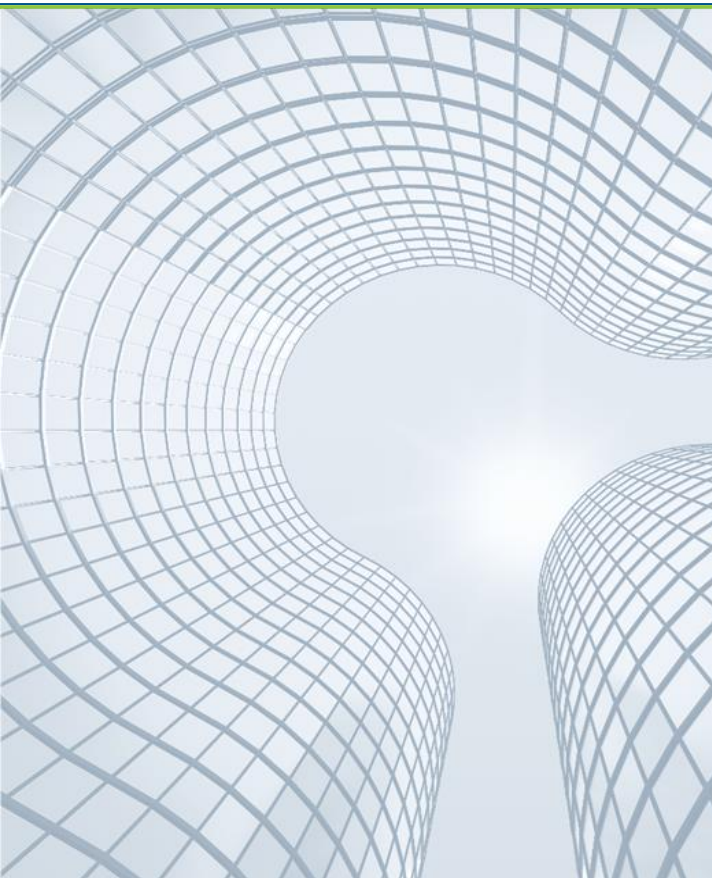
Pro Forma Combined in 2018



34% increase in Advanced Market revenue

* Revenue is combined 2018 data from MKSI and ESI

Transaction Overview



Per Share Consideration	<ul style="list-style-type: none">• \$30.00 all cash transaction
Transaction Consideration	<ul style="list-style-type: none">• \$1 billion
Synergies and EPS Impact	<ul style="list-style-type: none">• \$15M within 18-36 months• Accretive to Non-GAAP EPS and free cashflow in first 12 months after closing
Pro Forma Capitalization <small>(as if the transaction had closed on June 30, 2018)</small>	<ul style="list-style-type: none">• Cash of approximately \$400M• Up to \$650M of new debt, total term loan debt of ~\$1.0B• Pro forma gross debt/EBITDA at closing 1.3X⁽¹⁾• Pro forma net debt/EBITDA at closing 0.8X⁽¹⁾ <p><small>(1) Based upon \$650M in debt financing and combined Pro Forma June 30, 2018 adjusted EBITDA as calculated in Appendix</small></p>
Financial and Capital Return Policy	<ul style="list-style-type: none">• Focus on de-levering• This transaction does not impact our ability to continue quarterly dividend payments
Expected Closing	<ul style="list-style-type: none">• First quarter 2019

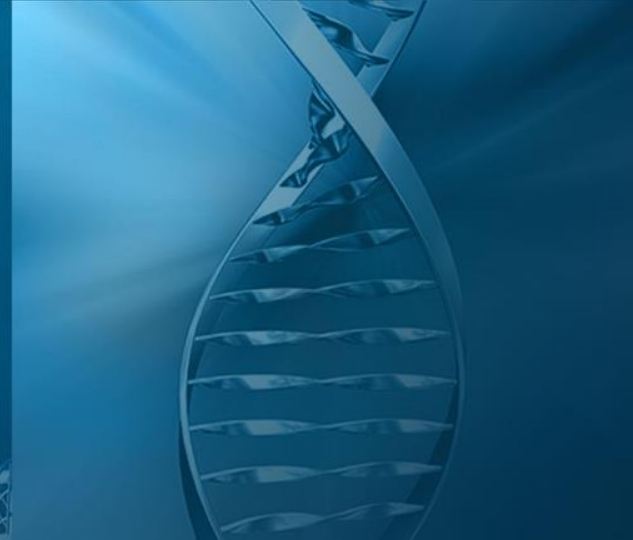
MKS and ESI

- UV and ultrafast lasers
- Motion, photonics and optics
- RF power and plasma
- Vacuum processing; precise control of pressure, flow and composition



- Laser-based process equipment
 - Advanced PCB processing
 - Semi manufacturing
 - Component manufacturing

Strong Financial Execution & Performance



Focused Financial Management

TRACK RECORD OF STRONG PERFORMANCE

- Multiyear record of strong financial performance and operating leverage
- Significant operating leverage in business model

CAPITAL DEPLOYMENT FOCUSED ON VALUE CREATION

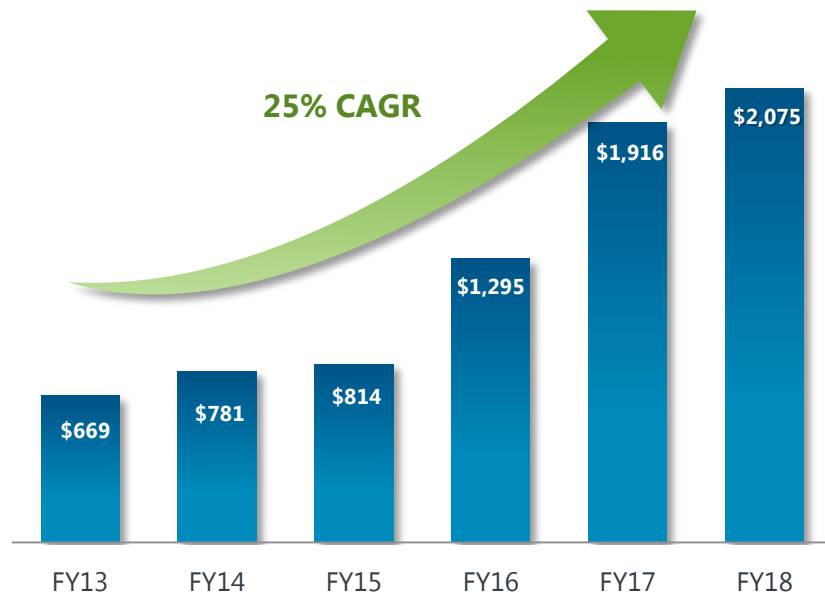
- Strong emphasis toward generating organic growth and funding M&A strategy
- Successful execution of disciplined acquisition strategy

CULTURE OF CONTINUOUS IMPROVEMENTS

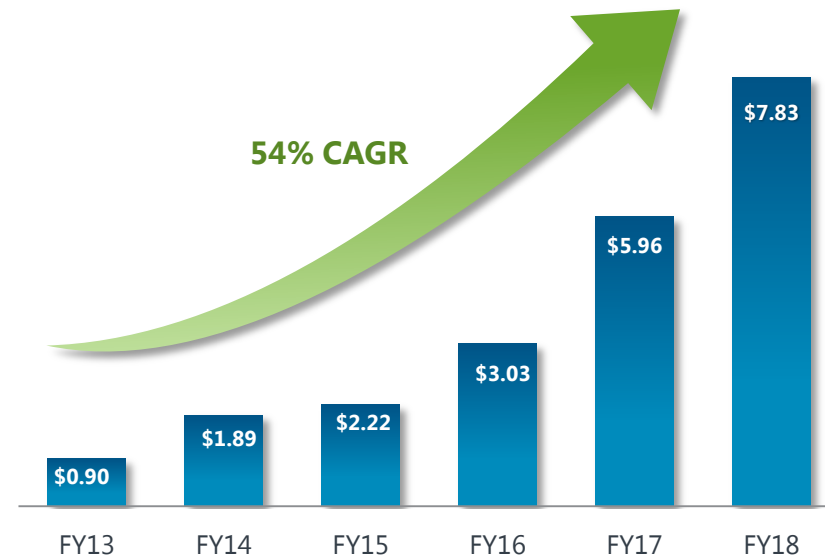
- Deep culture of continuous profitability improvement
- Resulting in over 760% increase in Non-GAAP EPS from 2013 to 2018

Multiyear Record of Strong Financial Performance

REVENUE AS REPORTED (in millions)



NON-GAAP EPS



Successful Execution of Disciplined Acquisition Strategy

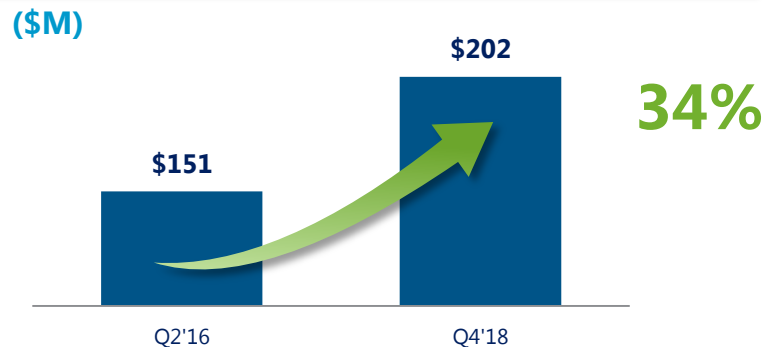


Completed Over 15 Acquisitions Since 2000

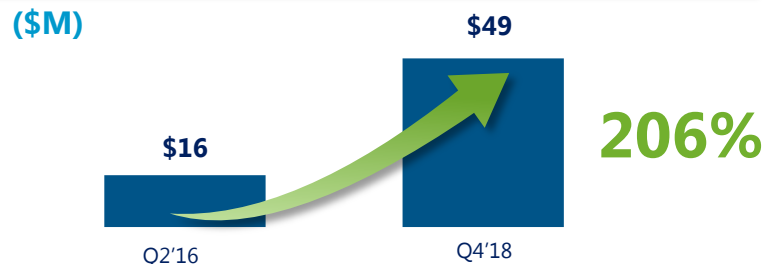
Strong Post-Acquisition Performance from Newport

- Newport, now our Light and Motion Division, has experienced a **34% increase** in quarterly revenues
- Since closing, L&M has delivered a **206% increase** in quarterly non-GAAP operating income on a pro forma basis
- Synergy expectations for the Newport acquisition were revised upward from \$35 million to **\$40 million two years** post-acquisition

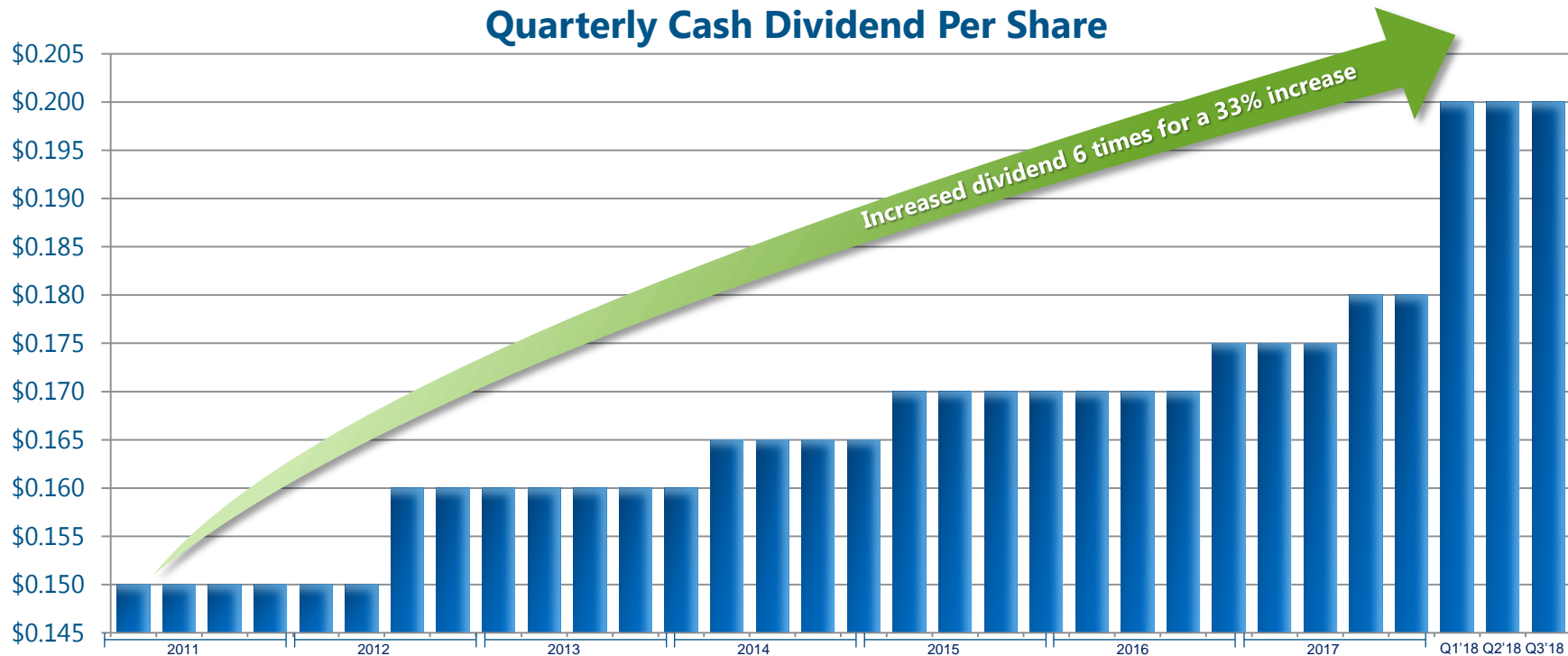
L&M Revenue



L&M Non-GAAP Operating Income



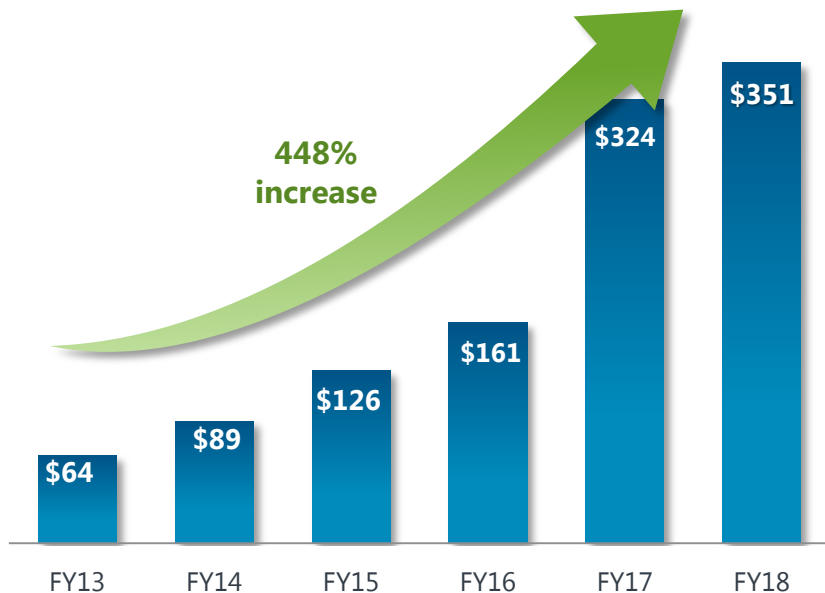
Track Record of Increasing Dividends



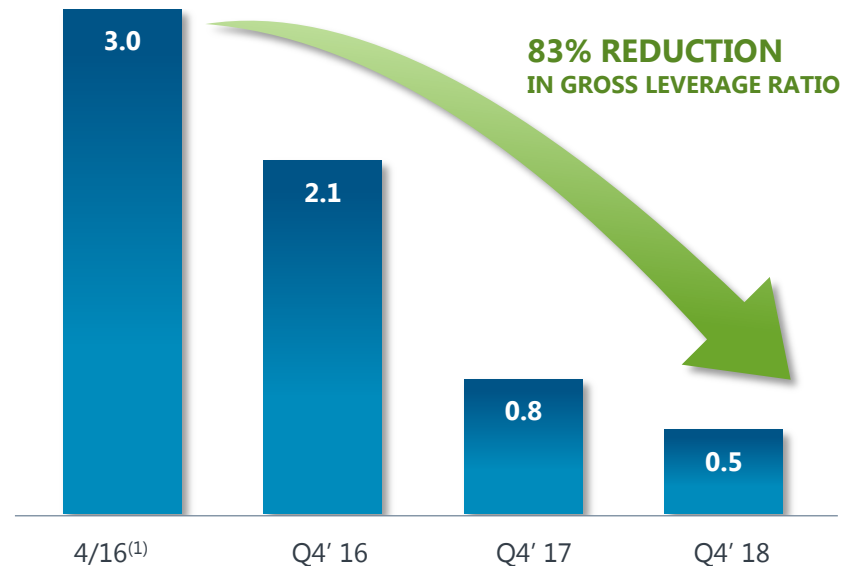
Dividend growth is a reflection of confidence in Free Cash Flow generation

Strong Balance Sheet Supports Growth

ROBUST FREE CASH FLOW⁽²⁾ GENERATION (in millions)



SIGNIFICANT DELEVERAGING ACHIEVED



(1) Acquisition of Newport Corporation closed on April 29, 2016. April, June and December 2016 periods are pro forma as if the acquisition of Newport Corporation closed on January 1, 2016.

(2) Free Cash Flow equals cash flow from operations less capital expenditures.

GAAP to Non-GAAP Reconciliations & Pro-forma Information



Combined Pro Forma Income Statement⁽¹⁾

Trailing twelve months ended June 30, 2018

	<u>MKS</u>	<u>ESI</u>	<u>Combined</u>
Net Revenues	\$ 2,125	\$ 406	\$ 2,531
Gross Profit	1,004	188	1,192
Operating Expenses	440	79	520
Other Expenses, net	51	3	53
Operating Income	513	105	619
Interest Income (Expense) and Other, net	(25)	-	(25)
Profit before Tax	488	105	593
Income Tax Expense (Benefit)	106	(38)	68
Net Income	<u>\$ 382</u>	<u>\$ 144</u>	<u>\$ 525</u>
EBITDA			
Interest Income (Expense), net	20	-	20
Income Tax Expense (Benefit)	106	(38)	68
Depreciation	37	7	44
Amortization	44	-	44
EBITDA	588	112	700
Non-GAAP Items (excluding Amortization) ⁽²⁾	10	11	21
Stock Compensation	26	5	31
Adjusted EBITDA	<u>\$ 624</u>	<u>\$ 128</u>	<u>\$ 752</u>

(1) Pro forma combined results do not include transaction related adjustments or synergies.

(2) Non-GAAP items include restructurings, costs associated with completed and announced acquisitions, certain excess and obsolete inventory charges and sale of certain inventory previously reduced to its net realizable value.

GAAP Net Income Per Share to Non-GAAP Earnings Per Share Reconciliations

(in thousands, except per share data) Year Ended December 31,

	2018	2017	2016	2015	2014	2013
Net income per share	\$ 7.15	\$ 6.16	\$ 1.94	\$ 2.28	\$ 2.16	\$ 0.67
Adjustments (net of tax, if applicable)						
Acquisition and integration costs	(0.02)	0.10	0.50	-	0.01	-
Acquisition inventory step-up	-	-	0.28	-	0.04	-
Expenses related to sale of a business	-	0.02	-	-	-	-
Excess and obsolete inventory charge	-	0.02	-	-	-	0.12
Sale of previously written down inventory	-	-	-	(0.04)	-	-
Fees and expenses related to repricing of term loan	0.01	0.01	0.02	-	-	-
Amortization of debt issuance costs	0.07	0.17	0.13	-	-	-
Restructuring	0.06	0.07	0.01	0.04	0.05	0.03
Executive retirement costs	-	-	-	-	-	0.05
Environmental costs	0.02	-	-	-	-	-
Asset impairment	0.12	0.12	0.09	-	-	-
Gain on sale of business	-	(1.36)	-	-	-	-
Net proceeds from an insurance policy	-	-	(0.02)	-	-	(0.02)
Amortization of intangible assets	0.79	0.83	0.66	0.13	0.09	0.04
Windfall tax benefit on stock-based compensation	(0.15)	(0.20)	-	-	-	-
Withholding tax on dividends	(0.05)	0.25	0.02	-	-	-
Special tax (benefit)/expense	-	-	-	(0.14)	(0.39)	0.05
Tax benefit from legal entity restructuring	-	-	(0.09)	-	-	-
Effect of US tax reform	-	0.08	-	-	-	-
Pro forma tax adjustments	(0.21)	(0.31)	(0.51)	(0.05)	(0.07)	(0.04)
Non-GAAP net earnings per share	\$ 7.79	\$ 5.96	\$ 3.03	\$ 2.22	\$ 1.89	\$ 0.90
Weighted average shares outstanding	55,000	55,074	54,051	53,560	53,515	53,481

Light & Motion Division GAAP Operating Income to Non-GAAP Operating Income Reconciliation

	Q2 '16	Q3 '16	Q4 '16	Q1 '17	Q2 '17	Q3 '17	Q4 '17	Q1 '18	Q2 '18	Q3 '18
Income from operations	(\$23.7)	\$5.1	\$11.0	\$18.2	\$13.9	\$28.9	\$40.4	\$43.4	\$47.5	\$42.3
Adjustments:										
Acquisition and integration costs (Note 1)	21.7	0.7	(0.3)	0.4	0.2	-	(0.3)	-	(1.2)	-
Acquisition inventory step-up (Note 2)	10.1	5.0	-	-	-	-	-	-	-	-
Excess and obsolete inventory charge (Note 3)	-	-	-	-	1.2	-	-	-	-	-
Restructuring (Note 4)	-	-	-	(0.1)	2.0	-	0.8	0.2	0.2	0.7
Asset impairment (Note 5)	-	-	-	-	6.7	-	-	-	-	-
Environmental costs (Note 6)	-	-	-	-	-	-	-	1.0	-	-
Amortization of intangible assets	7.9	10.8	11.0	10.8	9.8	9.3	9.1	9.5	9.2	9.0
Non-GAAP income from operations	\$16.0	\$21.6	\$21.7	\$29.3	\$33.8	\$38.3	\$50.0	\$54.1	\$55.7	\$52.0
Sales	\$ 151	\$ 151	\$ 153	\$ 159	\$ 171	\$ 178	\$ 201	\$ 206	\$ 205	\$ 201
% of Sales	10.6%	14.3%	14.2%	18.4%	19.8%	21.5%	24.9%	26.2%	27.2%	25.8%

Note 1: Acquisition and integration costs related to the acquisition of Newport Corporation by MKS Instruments, Inc. (the "Newport Merger"), which closed during the second quarter of 2016. During the second quarter of 2018, we reversed a portion of these costs due to severance provisions that were not met.

Note 2: Step-up adjustments recorded in cost of sales relate to the step-up of inventory to fair value as a result of the Newport Merger.

Note 3: Adjustment recorded in cost of sales related to excess and obsolete inventory charges related to the discontinuation of a product line in connection with the consolidation of two manufacturing sites.

Note 4: Restructuring costs recorded during fiscal year 2017, primarily relate to the consolidation of two manufacturing plants. Restructuring costs recorded during fiscal year 2018 primarily relate to severance costs related to a reduction in workforce and also include severance costs related to transferring a portion of our shared accounting functions in the United States to a third party.

Note 5: An impairment charge was recorded, primarily related to the write-off of goodwill and intangible assets in conjunction with the consolidation of two manufacturing plants.

Note 6: Environmental costs recorded relate to an EPA-designated Superfund site, which was acquired as part of the Newport Merger.



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