

# MSA Investor Day

March 12, 2018



# Investor Day Agenda

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*"MSA Safety Events" - available for Apple and Android devices through iTunes and Google Play*



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<b>MSA Overview</b>	Bill Lambert, Chairman and CEO
<b>Growth in Focus</b>	Nish Vartanian, President and COO
<b>Productivity and Capital Allocation</b>	Kenneth Krause, SVP, CFO and Treasurer
<b>Segment Review</b>	
<b>MSA Americas</b>	Steve Blanco, President, MSA Americas
<b>MSA International</b>	Bob Leenen, President, MSA International
<b>Break</b>	
<b>Growth Platforms</b>	Jason Traynor, General Manager, Firefighter Safety Jennifer McGurrin, General Manager, Industrial Head Protection and Fall Protection Gustavo Lopez, General Manager, Detection Products
<b>Financial Review</b>	Kenneth Krause, SVP, CFO and Treasurer
<b>Concluding Remarks</b>	Bill Lambert, Chairman and CEO

Except for historical information, certain matters discussed in this document may be forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include, without limitation, all projections and anticipated levels of future performance. These forward looking statements involve risks, uncertainties and other factors that may cause our actual results to differ materially from those discussed herein. Actual results can be affected by any number of factors, many of which are outside of management's control. The factors that could cause such differences include but are not limited to economic conditions, spending patterns of government agencies, competitive pressures, product liability claims, the success of new product introductions, currency exchange rate fluctuations, the impact of acquisitions and related integration activities and the risks of doing business in foreign countries. These risks, uncertainties and other factors are detailed from time to time in our filings with the United States Securities and Exchange Commission ("SEC"). You are strongly urged to review all such filings for a more detailed discussion of such risks and uncertainties. MSA's SEC filings are readily obtainable at no charge at [www.sec.gov](http://www.sec.gov) and on our investor relations website at <http://investors.MSAsafety.com>. MSA undertakes no duty to publicly update any forward looking statements contained herein, except as required by law.



## Non-GAAP Measures

This document includes certain non-GAAP financial measures. The presentation of these financial measures does not comply with U.S. generally accepted accounting principles ("GAAP"). For an explanation of these measures, together with a reconciliation to the most directly comparable GAAP financial measure, see the appendix.

# MSA Overview



**Bill Lambert**  
Chairman and CEO





# MSA Safety



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Ticker

MSA (NYSE)

Employees

~4,700

Headquarters

Cranberry Township, PA

Indices

Russell 2000; S&P MidCap 400

Market Cap

~\$3B

52 week range

\$65.95 – 87.31



A global safety equipment provider with leading positions in attractive markets

# Core Values



## Three Consecutive Years

**2017** | WORLD'S MOST <sup>TM</sup>  
**ETHICAL**  
COMPANIES®  
[WWW.ETHISPHERE.COM](http://WWW.ETHISPHERE.COM)

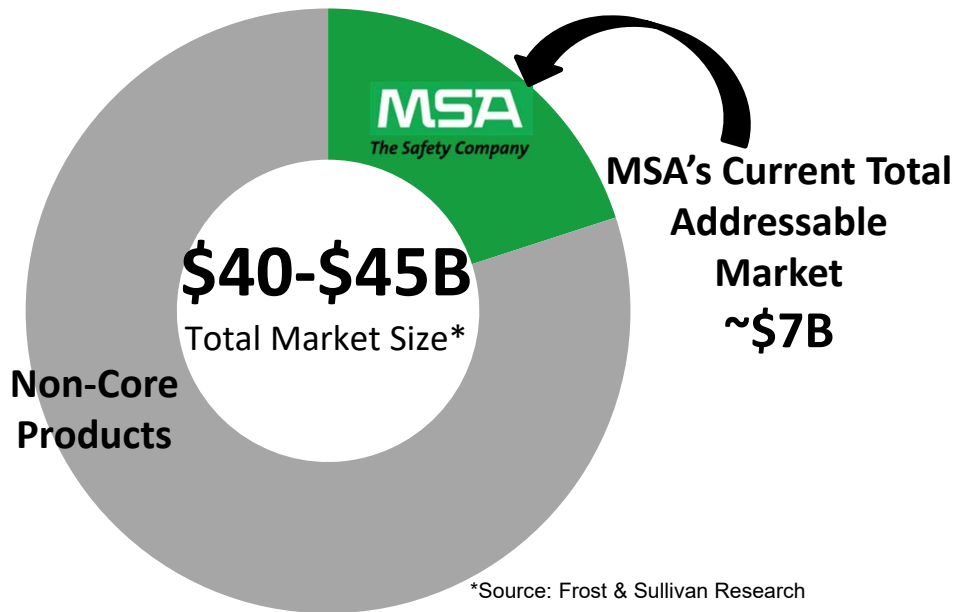
**2016** | WORLD'S MOST <sup>TM</sup>  
**ETHICAL**  
COMPANIES®  
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**2015** | WORLD'S MOST <sup>TM</sup>  
**ETHICAL**  
COMPANIES®  
[WWW.ETHISPHERE.COM](http://WWW.ETHISPHERE.COM)

Integrity is central to our strategy and values

# The Global Safety Market

## Total Market Size



## Growth Drivers



**MSA focuses on sophisticated safety products that require technology differentiation and have high barriers to entry**

# MSA Core Product Portfolio

## Selling Differentiated Core Products...

# Market position

Firefighter  
Safety

1



Self-Contained Breathing Apparatus (SCBA)

1



Firefighter Helmets and Protective Apparel

Gas Detection

1



Fixed Gas and Flame Detection Systems (FGFD)

2



Portable Gas Detection

Personal  
Protective  
Equipment

1



Industrial Head Protection

3



Fall Protection

## ...into Diverse Geographies

MSA Americas  
62%

**\$1.2B**  
2017  
Revenue

MSA International  
38%

## ...and Diverse End Markets

Industrial  
Firefighter Safety  
Utilities

Construction  
Oil & Gas  
Mining

Leading positions in nearly all of our core products




# Results

Strategy driving above-market shareholder returns



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**Execute our strategy  
and deploy capital**



*Core values lay the foundation for success*




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*Develop market-leading, differentiated safety products*




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*Invested \$400M in accretive acquisitions over 2 years*






*Two Great Companies. One Great Connection.*


**Deliver strong financial  
performance**

**+4%**

5 Year  
Total Sales CAGR\*




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**+450 BPS**

5 Year Adjusted  
EBITDA Margin  
Improvement

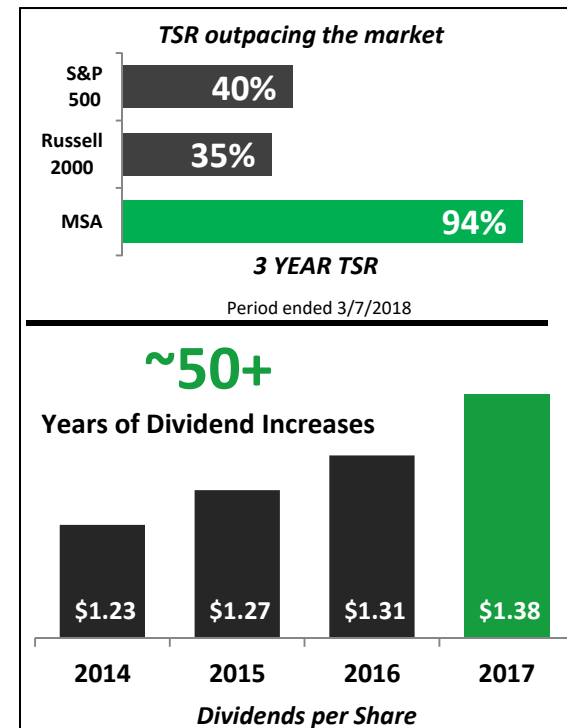
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**100%+**

2017 Free Cash Flow  
Conversion

**Provide superior returns for  
shareholders**



\*CAGRs stated in constant currency. Constant currency revenue growth, organic constant currency SG&A, EBITDA and free cash flow conversion are non-GAAP measures. See reconciliations in appendix.

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# Experienced, Next Generation of MSA Leadership



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## CEO Transition

- Expect to elect Nish as CEO at annual shareholders' meeting in May 2018

## Experienced and Dynamic Leader

- Director of North American Sales and Distribution
- Leader of General Monitors acquisition integration
- President of MSA North America and MSA Americas
- 32 year career at MSA

## Growth Focused Approach

- Strategic vision and communication skills that will inspire and motivate associates to drive toward our long term goals



***Nish Vartanian***

**MSA President and Chief Operating Officer**

# MSA Investor Day 2018 – Key Takeaways



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## Growth in Focus

- MSA is well positioned for mid-single digit revenue growth over the long term



## Productivity and Capital Allocation

- Successful in reducing cost structure and expanding margins over past several years; more runway ahead



## MSA Americas

- Focused on growth across the core portfolio in firefighter safety, industrial personal protective equipment, and gas detection



## MSA International

- Improving profitability in developed markets through targeted initiatives aimed at leveraging channels and reducing complexity; execute growth strategy in emerging markets



## Growth Platforms

- Industry leading innovations and robust new product pipeline support revenue growth targets



## Financial Review

- Expect EBITDA to grow at 1.5-3x revenue growth; committed to strategically deploying capital to drive profitable growth

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# MSA Investor Day





# Growth in Focus



**Nish Vartanian**  
**President and COO**



# MSA's Next Chapter

## Corporate Strategy

...Translated into everyday  
processes and capabilities



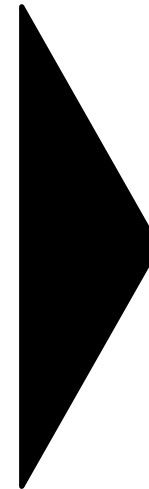
Advance the Core



Achieve operational and process  
excellence



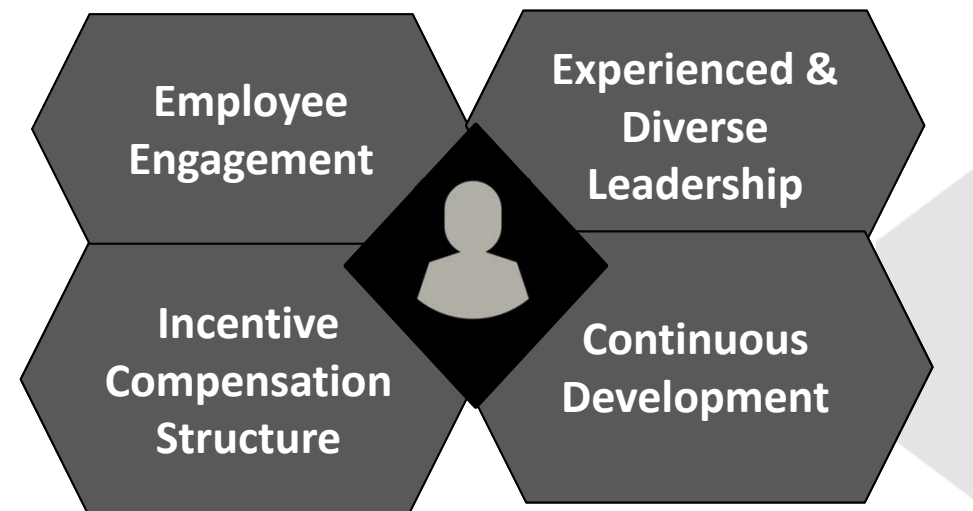
Effective capital deployment



"Growth in Focus" initiative designed to shape the future of MSA



## Competitive Advantage – Top Talent



## Experienced Business Leaders



 **Steve Blanco, President, MSA Americas**

- Joined MSA in 2012 - Previous MSA roles include VP General Manager of U.S. and Canada region and VP of Global Operational Excellence
- Led deployment of MSA Operating System and strong record of execution on key product launches
- Prior to MSA, Steve served as VP of Manufacturing at Eaton Corp. and spent time in engineering, plant management and operational roles at Ford Motor Co.



 **Bob Leenen, President, MSA International**

- Joined MSA in 2012 - Previous MSA roles include Segment CFO of MSA International and Director of Finance of MSA Europe
- Clear understanding of drivers of MSA's International profitability and is an intuitive problem solver
- Prior to MSA, Bob worked in management consulting at Accenture and held financial leadership roles at Ingersoll Rand and Newell Brands




# MSA's High-Performance Culture



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- Our associates around the world are highly engaged and have a strong connection with our Mission, Vision and Values.
- We invest in many development programs to ensure we have a strong pipeline of talent.
- We drive superior performance through our incentive compensation structure.

\*Adjusted operating income and free cash flow are non-GAAP financial measures. See reconciliations in appendix.

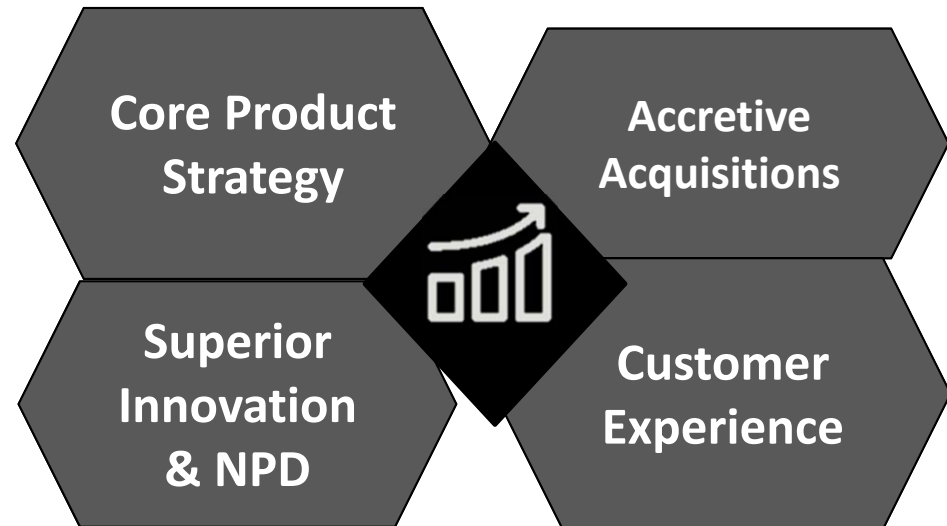
Incentive Compensation Structure <i>Pay for Performance</i>		
<u>Previous Incentive Compensation Metrics</u>	 <u>Recent Results</u>	<u>Current Incentive Compensation Metrics</u>
Operating Margin Expansion	<b>+390 BPS</b> 5 Year Adjusted Operating Margin* Improvement	Revenue Growth & EBITDA Margin Expansion
Working Capital Management	<b>&gt;100%</b> Free Cash Flow Conversion*	Working Capital Management

**Incentive alignment driving growth**



## Competitive Advantage

*Multi-faceted approach to growth*



# Total Addressable Market – MSA Core Products

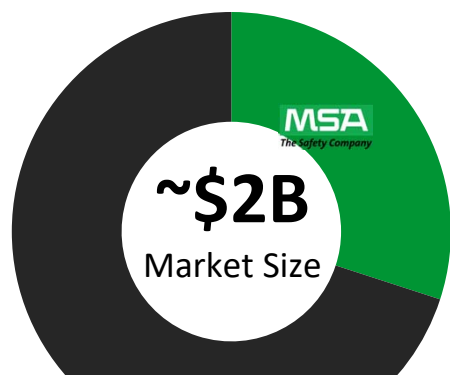


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## Firefighter Safety

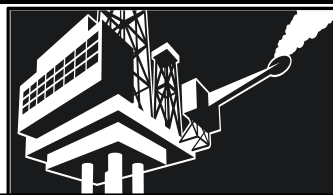
*SCBA, Fire Helmets and Protective Apparel*



**Market Growth Rate:**

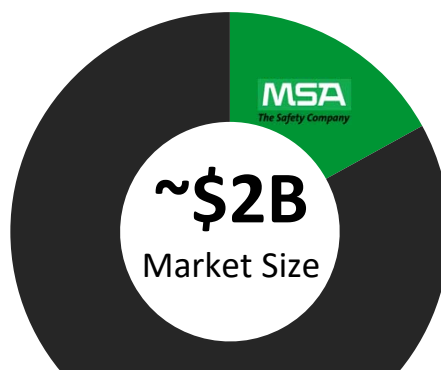
**LSD - MSD**

LSD = Low single digit      MSD = Mid single digit



## Gas Detection

*Fixed and Portable*



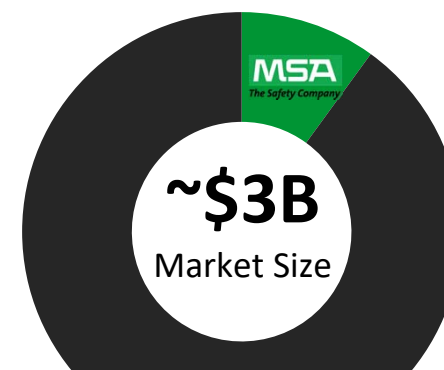
**Market Growth Rate:**

**LSD - MSD**



## Industrial Core PPE

*Head and Fall Protection*















**Market Growth Rate:**

**MSD**

**MSA expects to outpace the market over the long term**

# Core Products


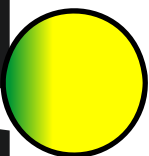
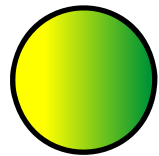
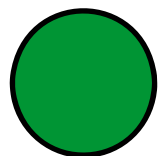
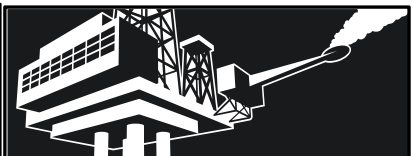
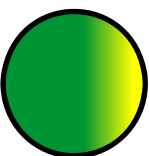
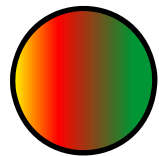
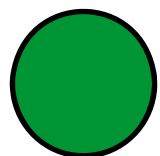

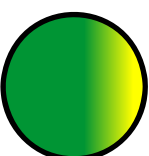
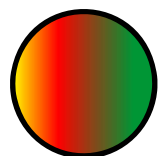
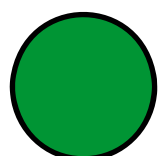

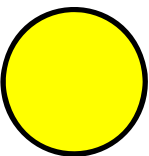
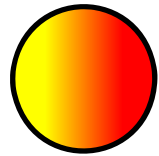
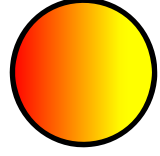
Leading market positions in nearly all of our core products

		% of 2017 MSA Sales	Global Market Position		
			1	2	3
	Breathing Apparatus	25%			
	Firefighter Helmets & Protective Apparel	9%			
	Industrial Head Protection	11%			
	Fall Protection	8%			
	Portable Gas Detection	12%			
	Fixed Gas & Flame Detection (FGFD)	21%			

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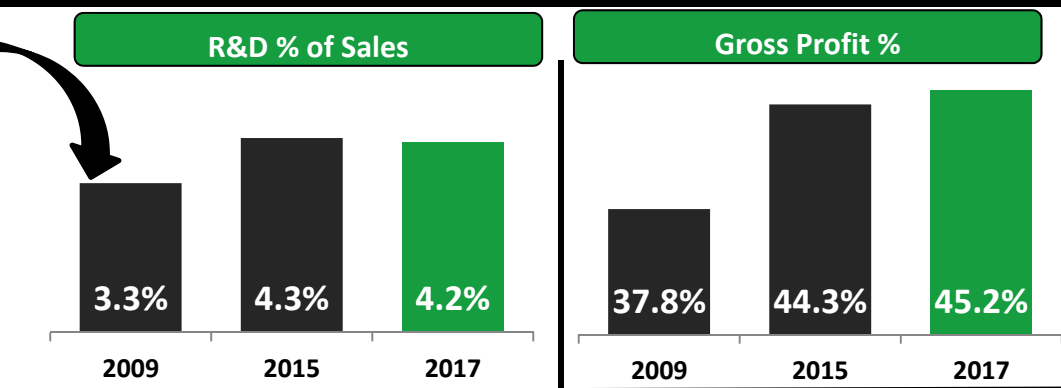
# Summary of Operating Environment

		2011 - 2014	2014 - 2017	2018 Outlook
Firefighter Safety				 <i>Good SCBA demand; Globe integration</i>
Oil & Gas				 <i>Steady recovery; Middle East demand healthy</i>
Industrial				 <i>Global economic rebound; Capital investments accelerating</i>
Other Non-Core				 <i>Recent order activity provides more balanced view for 2018</i>

End market outlook supports mid-single digit organic revenue growth expectation for 2018

# R&D Investments are Critical to Core Strategy

2009:  
Inception of  
“Core Focus”  
Strategy



**740 bps**  
Gross profit  
expansion  
2009 - 2017



F1XF Fire  
Helmet



G1 SCBA



FasTrac III &  
V-Gard 900  
Series



V-Tec SRL



ALTAIR 2x, 5x,  
4XR & Grid



G1 SCBA  
Integrated TIC



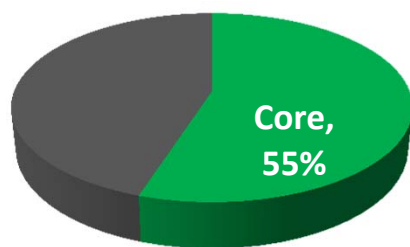
Ultima X5000  
Gas Monitor

Strategic R&D investments in core products support gross profit expansion and competitive differentiation

# MSA Portfolio Value Creation

**Strategically deployed \$700M of capital**

*\$260 million of core product/market revenue where we have leading positions*



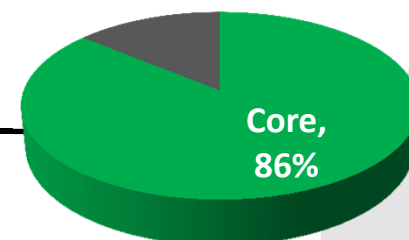
2009

**Divested**

*\$105 million of non-core, low margin business where we did not have leading positions*

North America  
Military Business

South Africa  
Distribution Business



2017

**Acquired and integrated accretive assets in our core products and markets;  
divested lower margin businesses not core to our strategy**

# Latchways Acquisition



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## Products

Leader in highly engineered fall protection solutions

## Markets

- Provides access to attractive market verticals such as utilities, renewable energy and aerospace
- Enhances cross-selling opportunities in these markets

## Geographies

Extends MSA's geographic footprint with strong market share in Europe and the UK



*Two Great Companies. One Great Connection.*

# \$0.13

**GAAP EPS Accretion, Year 1**

*\$0.23 EPS excluding transaction costs and amortization*



Acquired for \$190M in 2015; cost synergies and recovery of base business have driven earnings contributions

# Globe Acquisition



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## Products

No product overlap, turnout gear extends MSA's core product portfolio –  
***head-to-toe solutions for firefighters***

## Markets

- Acquisition establishes MSA as a market leader in U.S. Fire Service personal protective equipment
- We have deep knowledge and history in the U.S. fire service

# \$0.15 - \$0.20

**GAAP EPS Accretion Target Range, Year 1**

*\$0.25 - \$0.30 EPS target range excluding transaction costs and amortization*



**Completed acquisition of Globe for \$215M or 9x EBITDA in 2017;  
Provided GAAP earnings accretion of \$0.10 per share in the first five months of ownership**

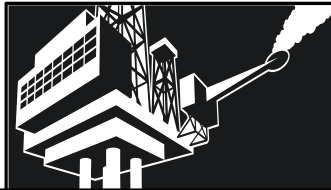


# MSA Revenue Expectations



## Firefighter Safety

*SCBA, Fire Helmets and Protective Apparel*



## Gas Detection

*Fixed and Portable*



## Industrial Core PPE

*Head and Fall Protection*

**+Mid-Single Digit**

*MSA Expected Long Term Revenue Growth Range*

Expect to grow faster than the overall market by investing in new product development and programs that drive profitable growth

# MSA Investor Day



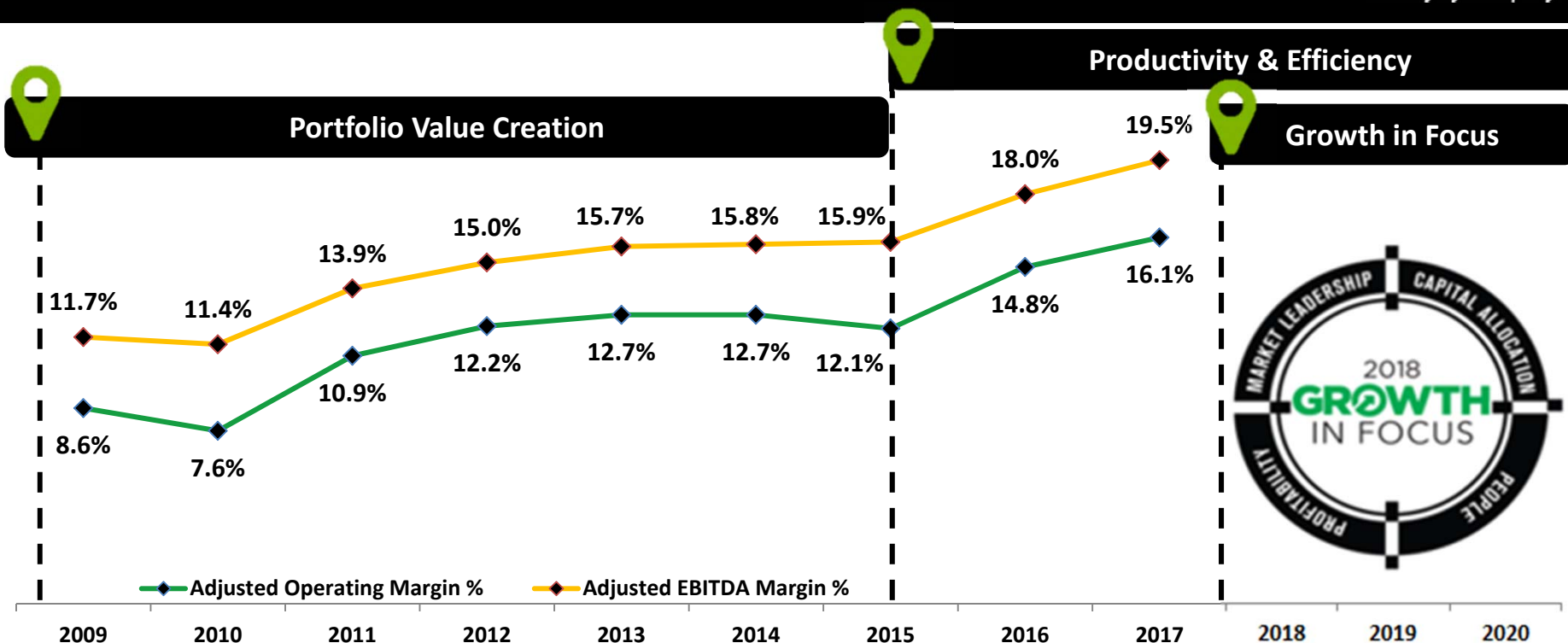
# Productivity and Capital Allocation



**Kenneth Krause**  
SVP, CFO and Treasurer



# Results since inception of core strategy



Adjusted operating margin and Adjusted EBITDA margin are non-GAAP measures. See reconciliations in appendix.

**Portfolio is optimized and we've made progress on streamlining our cost structure – continue to focus on productivity and costs while driving revenue growth**

# Cost Structure

Organic constant currency SG&A is a non-GAAP measure. See reconciliations in appendix.



## Cost Savings Drivers

**Headcount optimization**  
– increased span of control and use of shared service models for back-office functions

**Rationalized geographic footprint** – exited or restructured least profitable geographies

**Implemented cost conscious culture** – employees drive value through continuous improvement and efficiency

**\$315M**

27.9% of Sales

2015 SG&A Expense

**(\$9M)**  
organic constant currency cost savings

**(\$7M)**  
FX translation

**+\$7M**  
Acquisition related costs

**\$306M**

26.6% of Sales

2016 SG&A Expense

**(\$16M)**  
organic constant currency cost savings

**+\$6M**  
Acquisition related costs

**+\$2M**  
FX translation

**\$298M**  
24.9% of Sales

2017 SG&A Expense

**Reduced cost structure by ~\$25M or 300 basis points since 2015**

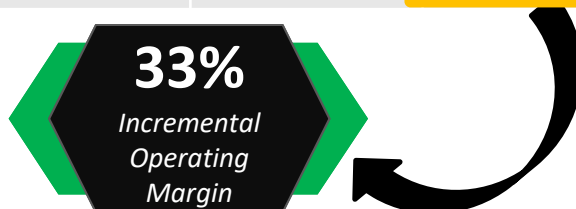


# Strong Incremental Margins on Revenue Gains



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(millions)	Q4 2017	Q3 2017	\$ Change
Revenue	\$346.1	\$296.1	\$50
SG&A Expense	\$75.5	\$72.4	\$3.1
Adjusted Operating Income	\$64.3	\$47.7	\$16.6
Adjusted Operating Margin %	18.6%	16.1%	<b>~33%</b>



*Adjusted operating income is a non-GAAP measure. See reconciliations in appendix.*



## Incremental Margins

### Mix

- Incremental operating margin approached 35% in Q4 on a less favorable mix

### Costs are more fixed than variable


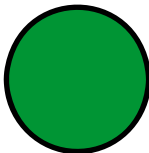
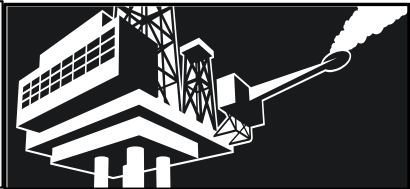
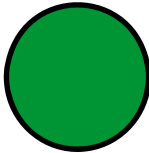

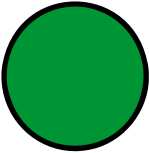
- SG&A increases 4% on revenue increase of 17%

### Cost structure streamline is working

- MSA's incremental margin profile has expanded significantly

**Fundamental shift in profitability in 2016 - 2017;  
Well positioned to drive operating leverage on future revenue growth**

# Core Products – Growth Rates Through Economic Cycles

		2011 – 2014*	2014 – 2017*	2018 Outlook
Firefighter Safety		3%	13%	 <i>Good SCBA demand; Globe integration</i>
Gas Detection		9%	-%	 <i>Steady recovery; Middle East demand healthy</i>
Industrial Core PPE		12%	-%	 <i>Global economic rebound; Capital investments accelerating</i>

\*CAGRs stated in constant currency on an organic basis to highlight underlying business trends in each cycle. Constant currency organic revenue is a non-GAAP measure. See reconciliations in appendix.

**End market outlook supports mid-single digit organic revenue growth expectation for 2018**

# Recent Incoming Order Pace

*Notable uptick throughout the portfolio in 2H 2017*

Industrial PPE	
1H 2017	2H 2017
✓	✓



**+8%**

Consolidated  
Incoming Orders

Gas Detection	
1H 2017	2H 2017
—	✓



**+11%**

Consolidated  
Incoming Orders

SCBA	
1H 2017	2H 2017
!	✓



**+26%**

Consolidated  
Incoming Orders

Strong order pace and sequentially higher backlog at the end of 2017 provides support for mid-single digit organic revenue growth expectations for 2018

# Cost Structure Snapshot



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## FY2017 Cost Structure ~\$1B

~\$640M

**Cost of Products Sold**

\*Excludes sustaining engineering expense for existing products of approximately \$20M

~\$300M

**SG&A Expense**

~\$70M

**R&D Investment**

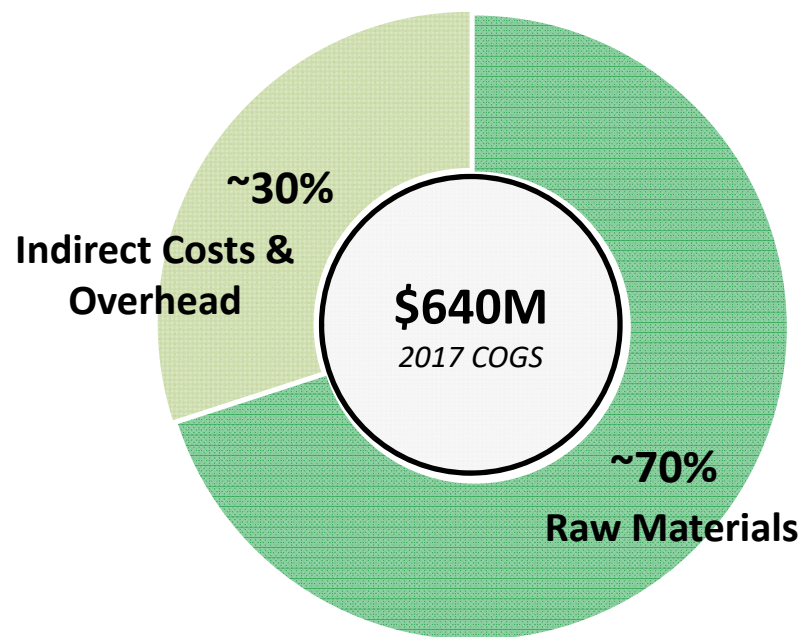
\*Includes sustaining engineering expense for existing products of approximately \$20M

**Actionable Costs**

**NPD is key competitive advantage:  
Continue to invest in NPD R&D  
at 4 – 4.5% of sales**

**Great progress made, but more runway ahead to reduce cost structure through productivity and efficiency**

# Cost of Sales: Opportunity Areas

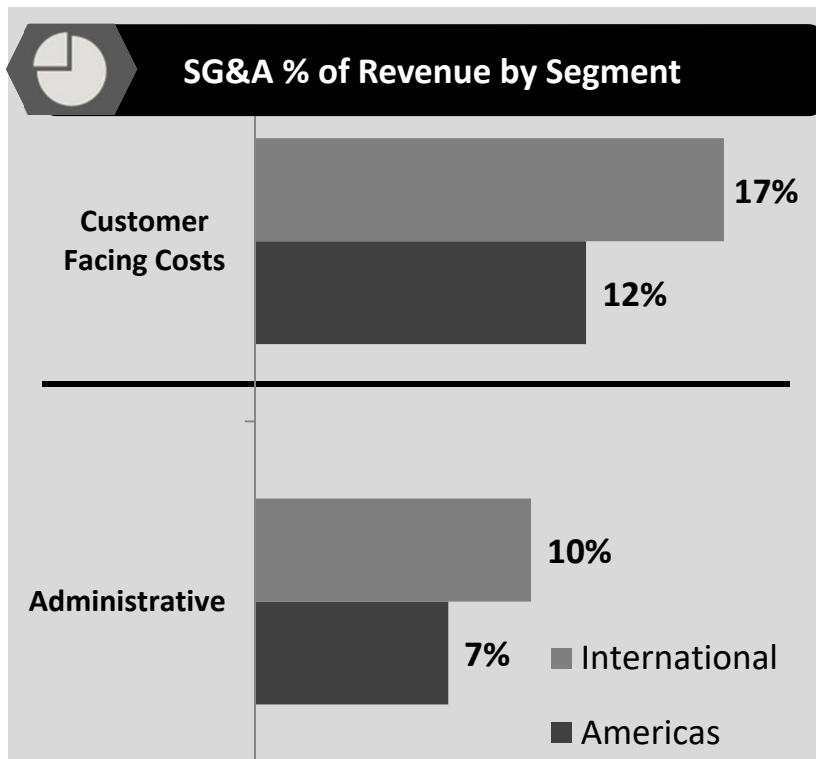


Cost Savings Focus Areas	
Sourcing	<ul style="list-style-type: none"><li>Fragmented supplier base</li><li>Off-shoring materials</li></ul>
Value Engineering	<ul style="list-style-type: none"><li>Reducing product costs through engineering efficiencies</li><li>Nearly 15% reduction in G1 SCBA product costs since launch</li></ul>
Indirect Costs	<ul style="list-style-type: none"><li>Recently executed global freight RFP, rationalized number of providers and centralized administration.</li></ul>

Driving manufacturing and supply chain efficiency is a strategic priority



# SG&A Expense: Opportunity Areas



Cost Savings Focus Areas	
Optimize International Channels of Distribution	<ul style="list-style-type: none"> <li>Streamline MSA International distribution strategy to reduce selling and administrative costs</li> </ul>
Leverage Technology Investments	<ul style="list-style-type: none"> <li>Enable global process excellence through SAP → expand shared service models and gain better line of sight into global cost structure</li> </ul>
Reduce Complexity	<ul style="list-style-type: none"> <li>Streamline MSA International footprint and reduce complexity in legal structure and sales approach</li> </ul>

**Ongoing value creation programs focused on reducing International cost structure and leveraging technology platforms to reduce administrative costs**

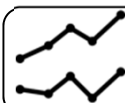
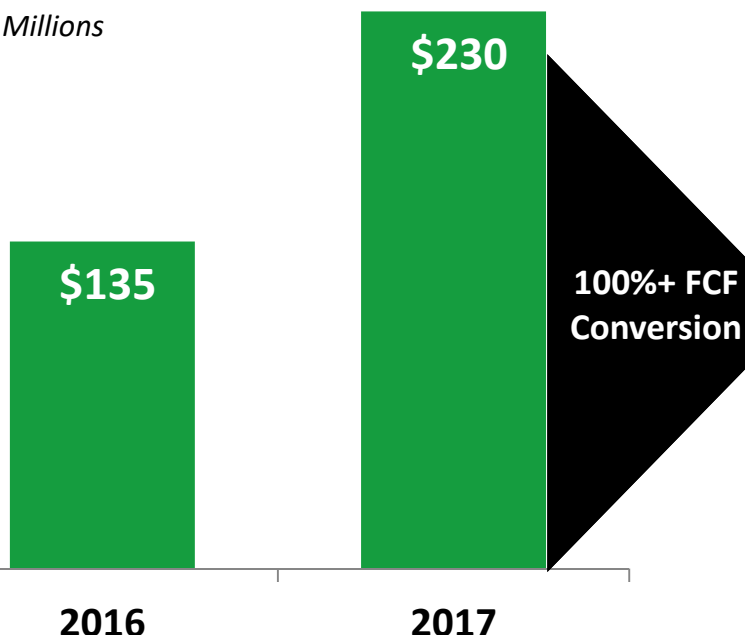
# Capital Allocation: MSA's Strategy



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## Operating Cash Flow

Millions



## Investing for Growth *and quickly delivering*

**\$216<sub>M</sub>**

2017  
Acquisition Investment  
(Globe)

**\$67<sub>M</sub>**

2017 R&D & Sustaining  
Engineering Investment



## Return Value to Shareholders

*Continuing to fund an increasing dividend*

**\$53<sub>M</sub>**

2017 Dividend  
Payments

**\$17<sub>M</sub>**

2017 Share  
Repurchase

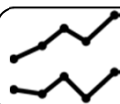
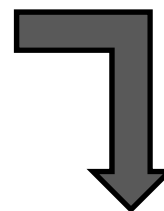
Free cash flow conversion is a non-GAAP measure. See reconciliations in appendix.

**Free cash flow conversion of 100%+ provides capacity to invest in growth initiatives and reduce leverage while continuing legacy of ~50 consecutive years of dividend increases**

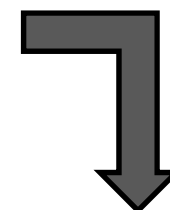
# Impact of U.S. Tax Reform: Cash Repatriation



Repatriate \$75 - \$100M of cash  
from MSA foreign affiliates



Invest for Growth



Return Value to Shareholders

Cash repatriation and lower ETR expected to provide additional flexibility to execute our established capital allocation strategy

# Impact of U.S. Tax Reform: Effective Tax Rate

## Historical Effective Tax Rate

■ U.S. ■ International

Pre-tax  
Income:



Average  
5 year  
ETR:  
~31%



2012

2013

2014

2015

2016

2017

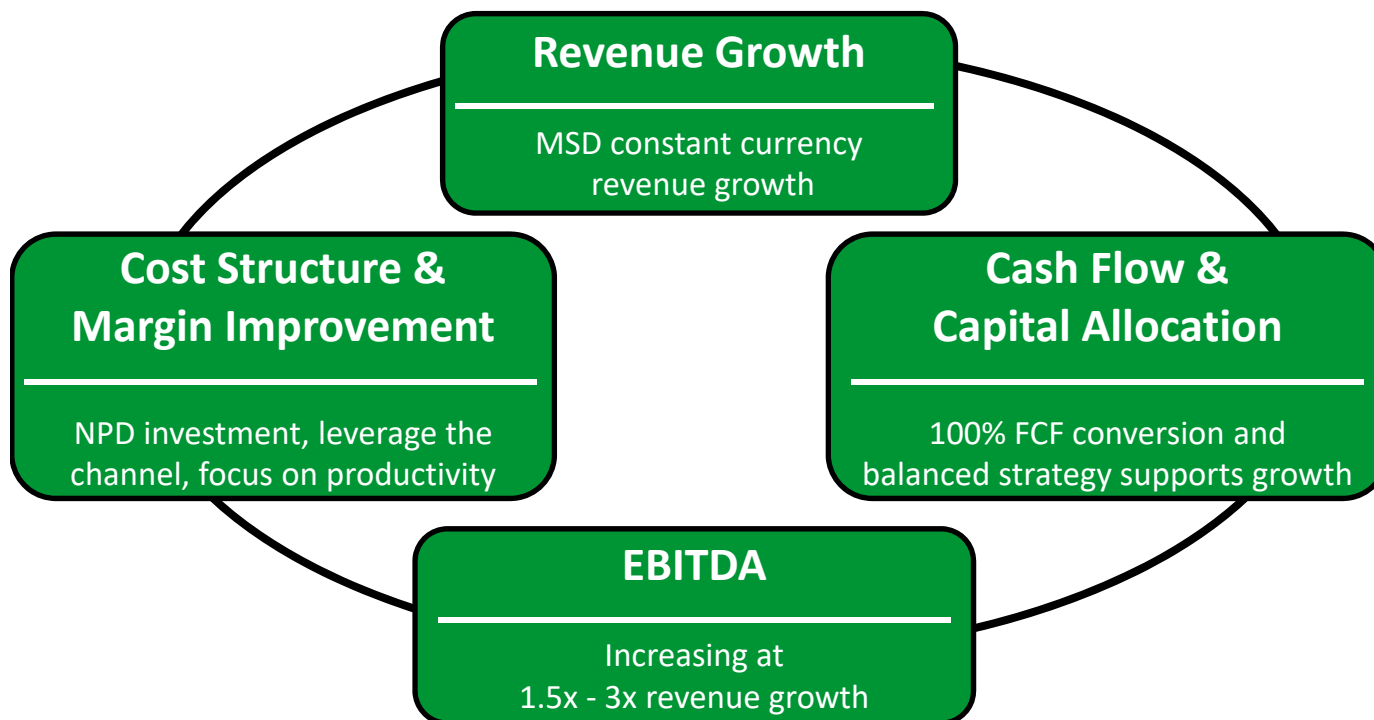
2018E

Stated on an adjusted basis to highlight underlying tax rate trend. Adjusted ETR is a non-GAAP measure. See reconciliations in appendix.

**Expect consolidated effective tax rate of 23%-24% for 2018**

# What's Next for MSA?

*Driving profitable growth is our priority*



**Expect to grow EBITDA at 1.5x – 3x revenue growth over next several years**

# MSA Investor Day





# MSA Americas



**Steve Blanco**  
**President, MSA Americas**



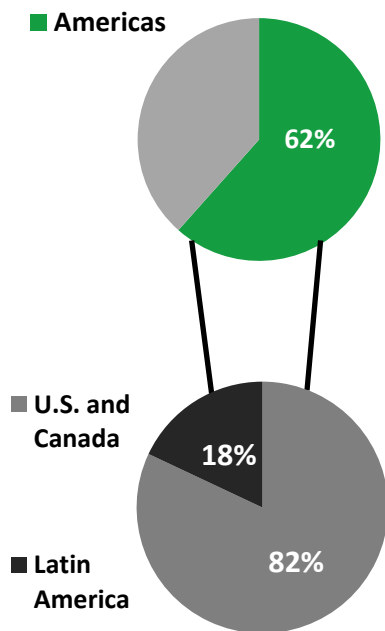
# MSA Americas

## Segment snapshot



43

### Revenue by Geography



### Historical Trends



#### Revenue

**+6%**

3 Year CAGR\*



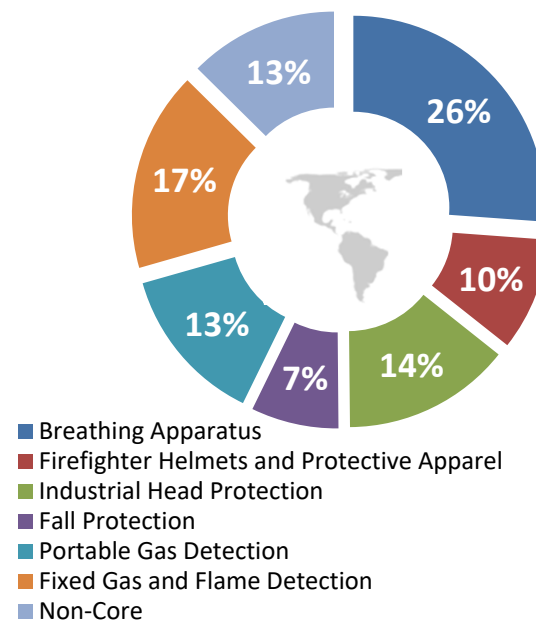
#### Adjusted Operating Margin

**+470 bps**

3 Year Expansion\*

Revenue CAGR stated in constant currency. Constant currency revenue and adjusted operating margin are non-GAAP measures. See reconciliations in appendix.

### Revenue by Product



**Mid-single digit revenue growth and strong operating leverage driven by productivity improvements**

# MSA Americas

*Operating margins benefit from mature channels of distribution*



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## Industrial PPE Safety

O&G • Utilities • Industrial • Construction

### Indirect

Over 800 industrial distributors

SCBA	✓
Firefighter helmets and protective apparel	
Industrial head protection	✓
Portable gas detection	✓
FGFD	
Fall protection	✓

## Infrastructure Protection

O&G • Utilities • Industrial •

### Indirect

75 FGFD Rep agencies that exclusively sell MSA products

✓

## Firefighter Safety

### Indirect

Over 150 firefighter safety distributors

✓
✓
✓

**Selling diverse products to a broad customer base across a number of end markets;  
80% of revenue pushed through distribution – supports 25% operating margin in Americas**

# MSA Americas

*Growing our share in key areas of industrial PPE safety*



45



## Industrial Head Protection

### Brand Equity

**#1**

Market Position

**92%**

Of participants in field trials chose the Fas-Trac III suspension over competitive brands

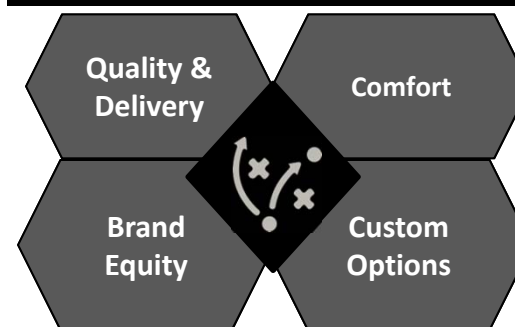
### Customization

**>40%**

Of V-Gard units sold in 2017 in Americas included customized logos – enabled by MSA's proprietary Logo Express Online software

### Growth Drivers

- Foundational PPE in developed and emerging markets
- Distribution of hard hats creates a continuing sales platform for other MSA products



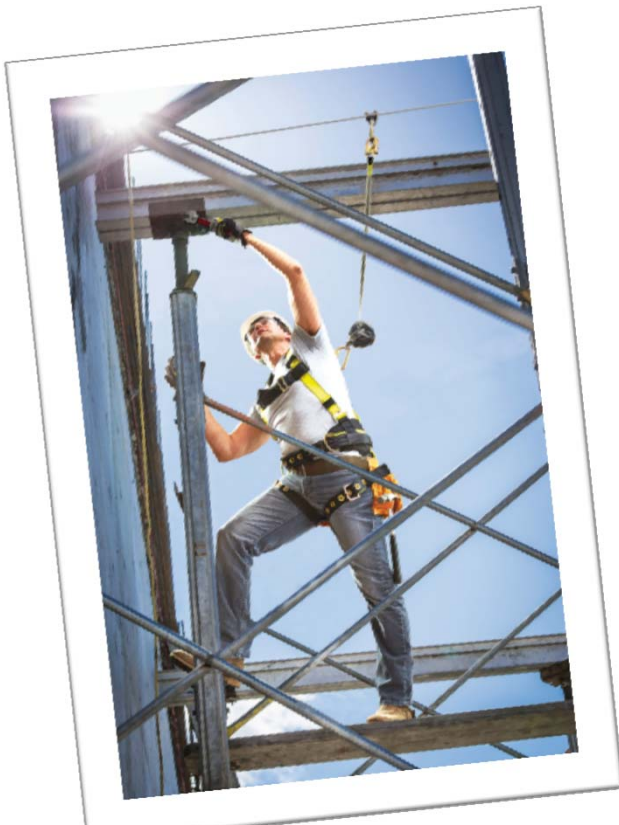
**Market leading position and strong growth platform for the future**

# MSA Americas

Growing our share in key areas of industrial PPE safety



46



## Fall Protection

### Synergies & Results

**+22%**

Revenue growth in Americas fall protection in 2017

*Leveraging Latchways technology and MSA distribution*

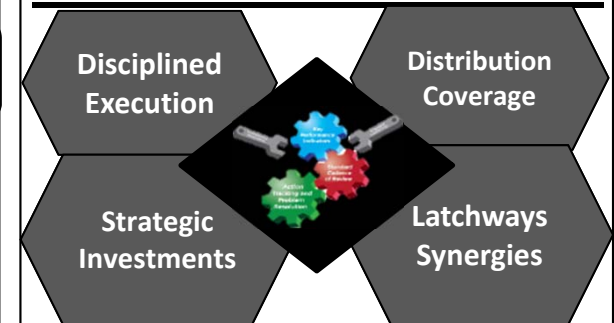
**Doubling Down on Largest and Fastest Growing Market**

**2x**

Doubled our sales force representation in fall protection in 2017

### Growth Drivers

- Latchways product synergies
- New strategic investments in sales and channels to drive growth
- Disciplined Execution through MSA Operating System deployment



**Fastest growing product in Americas in 2017; well positioned to continue growth trajectory**



# MSA Americas

Growing our share in key areas of industrial PPE safety



47



## Portable Gas Detection

### Results

**+8%**

2017 Revenue  
growth in  
Americas portable  
instruments

**+80 bps**

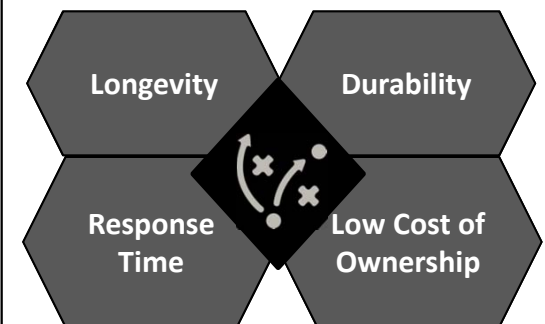
2017 Gross margin  
expansion in  
Americas portable  
instruments

### Value Proposition

*Lower cost of ownership is highly  
effective in key industrial markets  
such as petrochemical,  
automotive, and oil & gas*

### Growth Drivers

- Proprietary sensor technology differentiates MSA's products



Sensor technology and extreme durability support our strong market position



# MSA Americas

*New FGFD innovations provide opportunity in infrastructure protection market*



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Protect and replace large installed base and capture share with the new platform's differentiating features...



Lower Cost of Ownership

XCell sensors with TruCal technology



Bluetooth Connectivity

Dual Sensor Input

Drive value through market share gains and recurring revenue in future years related to maintenance on installed base

# MSA Americas

Market leader in North America firefighter safety



49



## Innovation driving growth

*G1 SCBA is a revolutionary platform – 17% of G1 SCBA's invoiced in 2017 included our first-to-market integrated thermal imaging camera*

## Market leader

*Gained nearly 20 points of market share in SCBA over 3 years through R&D investment; acquired Globe in 2017 – leader in turnout gear*

## Head-to-toe solutions & acquisition synergies

*Full portfolio of SCBA, helmets and turnout gear – selling SCBA to long-standing Globe distributors*

## Expect continued runway in replacement cycle & further Emerging Market opportunities

*Q4 2017 SCBA incoming orders were highest of entire replacement cycle; secured key wins in Latin American market in 2017 and see opportunities ahead*

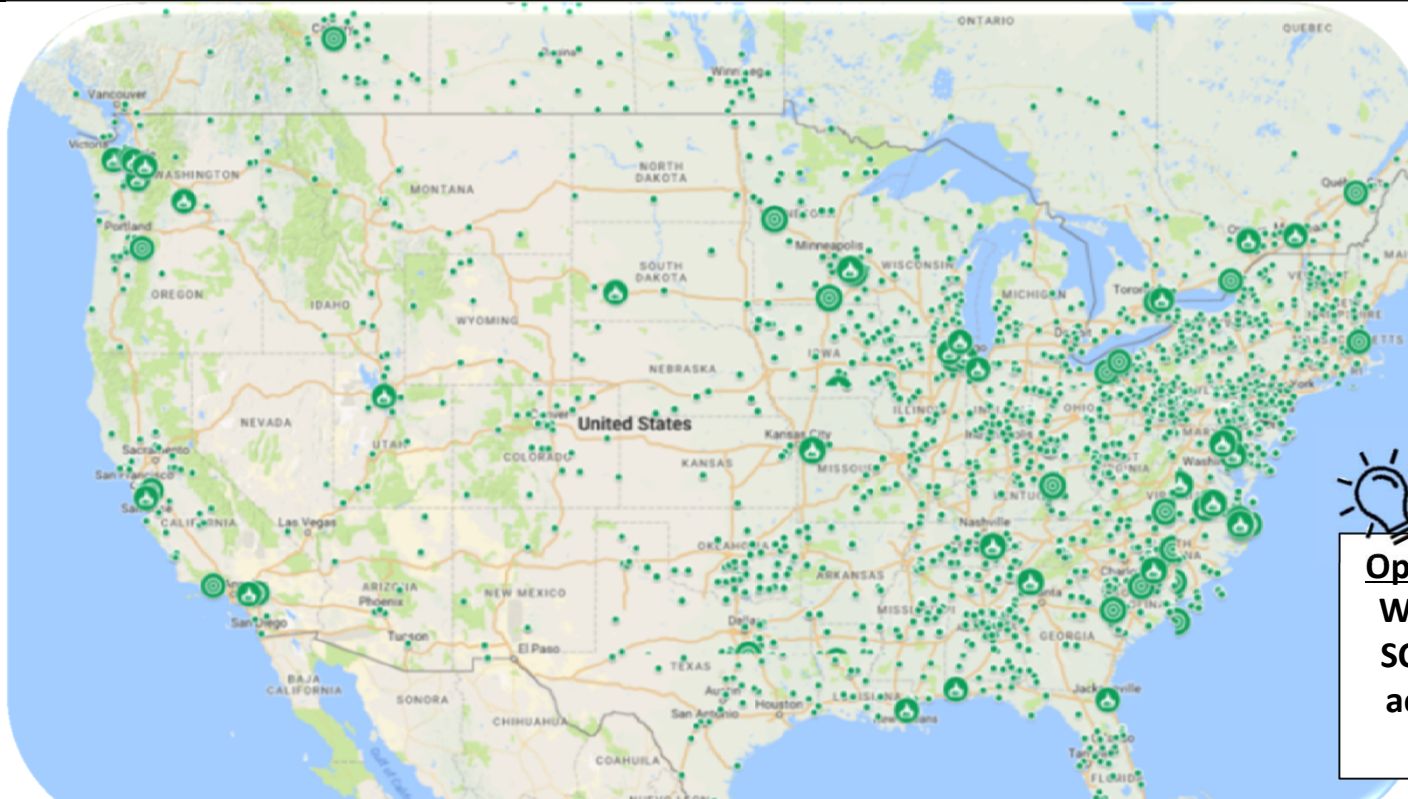
**Leading innovator in firefighter safety market in developed and emerging markets of Americas; sizable SCBA backlog heading into 2018**




# MSA Americas

*G1 SCBA revolutionary platform driving market share gains in the Americas*



50



-  G1 Win
-  G1 Win: \$1M Retention
-  G1 Win: \$1M Conversion



## Opportunities in Latin America

We have already supplied G1 SCBA to 30 fire departments across seven Latin American countries

**Leading market position in replacement cycle; significant conversion and retention opportunities identified throughout the Americas are expected to support elevated SCBA volume through 2021**

# MSA Americas

## Summary



Strong historical revenue growth and operating margin expansion results

2H 2017 incoming order pace highlights favorable macro conditions in key end markets

Tailwinds expected from stronger industrial markets, Latin American growth opportunities and continued product innovation

MSA Americas well positioned to drive revenue growth in 2018 and beyond



# MSA Investor Day



# MSA International



**Bob Leenen**  
**President, MSA International**

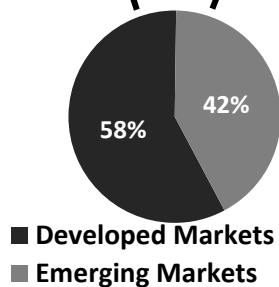
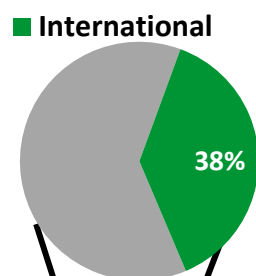




# MSA International

## Segment snapshot

### Revenue by Geography



### Historical Trend



Revenue

**+3%**

3 Year CAGR\*



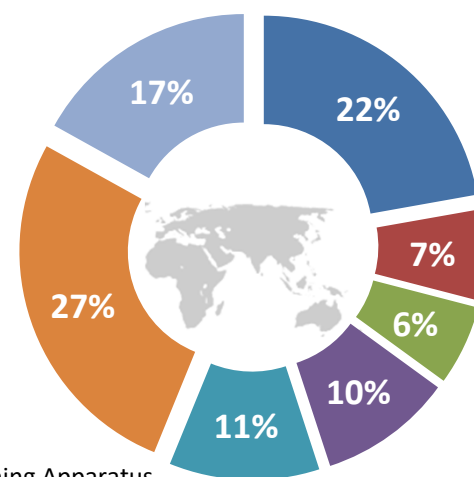
Adjusted Operating  
Margin

**(10) bps**

3 Year Change\*

Revenue CAGR stated in constant currency. Constant currency revenue and adjusted operating margin are non-GAAP measures. See reconciliations in appendix.

### Revenue by Product



- Breathing Apparatus
- Firefighter Helmets and Protective Apparel
- Industrial Head Protection
- Fall Protection
- Portable Gas Detection
- Fixed Gas and Flame Detection
- Non-Core

**MSA International is a diverse region with substantial unfulfilled revenue and profitability potential**

## Europe 2.0 Transformation 2012 – 2015: One MSA-Europe



- 14 IT systems to 1 IT system  
– 100% of MSA Europe on SAP ECC 6.0



- 10 warehouses to 1  
centralized warehouse in  
Berlin operated by 3PL



- Established Principal  
Operating Company in  
Switzerland in 2015



- Below 10% effective tax rate  
guaranteed through 2024



Complete



In Progress

Substantial  
transformation,  
but our work is  
not done...

## Looking Forward

*Take further steps to improve European  
operating margin*



- Key leadership changes



- Realignment of  
customer facing  
organization



- Channels optimization



- Reduce cost structure

**Strong sense of urgency to reduce complexity and improve profitability by better leveraging the foundation established during Europe 2.0 transformation**

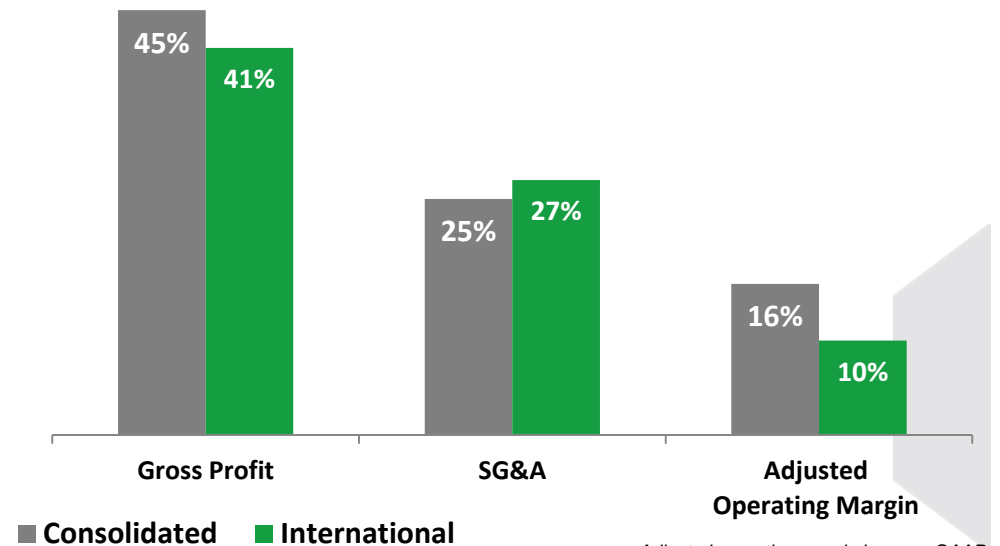
# MSA International

vs. MSA Consolidated

## Operational Metrics

	MSA Consolidated	MSA International
2017 Revenue	\$1.2B	\$460M
% of Sales through Distribution	~75%	~60%
# of Customers	~30k	~18k
# of Employees	4,700	2,000

## % of 2017 Sales



*Adjusted operating margin is a non-GAAP measure. See reconciliations in appendix.*

**MSA International generates ~1/3 of overall MSA revenue, but serves ~2/3 of our global customers → Unfocused and fragmented go-to-market strategy increases complexity and hinders profitability, primarily in Europe**

## Action Plan



**Shift small end user customers to distributors**



**Deploy channel partner incentives**



**Differentiate service levels**



**Improve geographic coverage**

**Executing channels optimization strategy is critical to reduce complexity and drive profitable growth in Europe**



Channels optimization will enable a streamlined affiliate footprint and more efficient operations

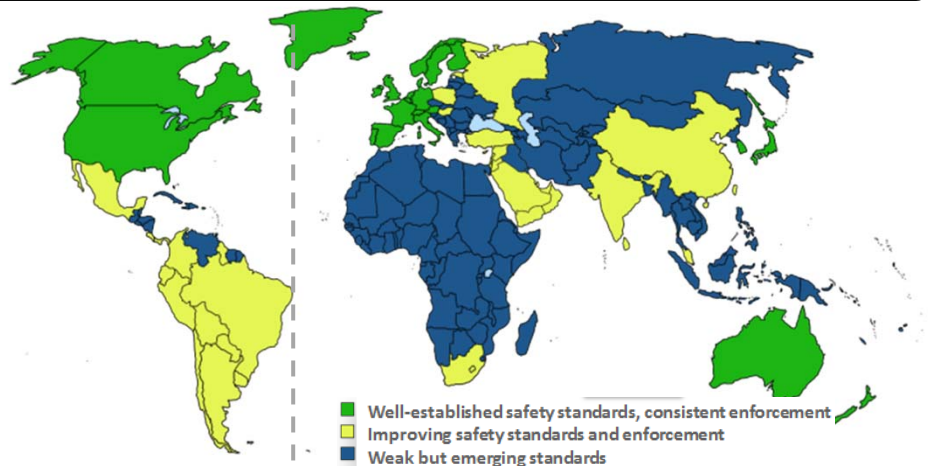
# MSA International

Accelerate revenue growth in emerging markets – 26% of total MSA revenue



59

## Global Presence in Key Markets



Latin America

Emerging European Markets

Middle East /Africa/ India

China and South East Asia

## Growth Drivers

GDP Growth

Population Growth

Strong Industrial & Commodities Base

Safety Standards

Employment Levels

## MSA Strategies

- Channels optimization
- Global strategic account management
- Upskill sales organization to sell features and benefits
- Reflect developing market requirements in NPD
- Invest in sales resources in highest growth geographies
- Local management with full P&L responsibility

Healthy profitability profile, favorable fundamentals and track record of success



# MSA International

## Summary



- MSA International includes large and attractive markets
- Developed Markets: Focus on improving profitability
- Emerging Markets: Drive accelerated revenue growth
- Sense of urgency has never been stronger – mobilized to drive results

**Driving emerging markets revenue growth and improving profitability in developed markets is the key to MSA International value creation**

# MSA Investor Day



# Firefighter Safety



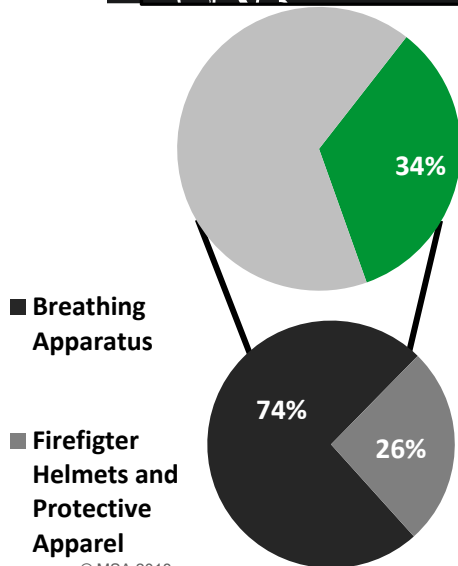
**Jason Traynor**  
**General Manager**



# Firefighter Safety

## Product category snapshot

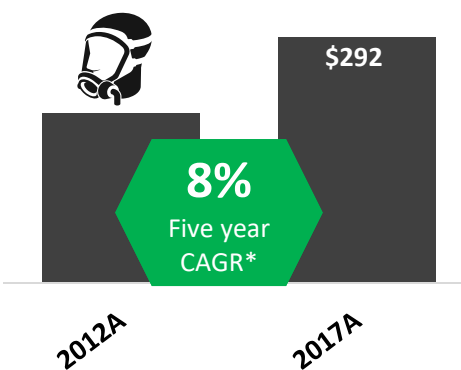
### Firefighter Safety Revenue Contribution to MSA



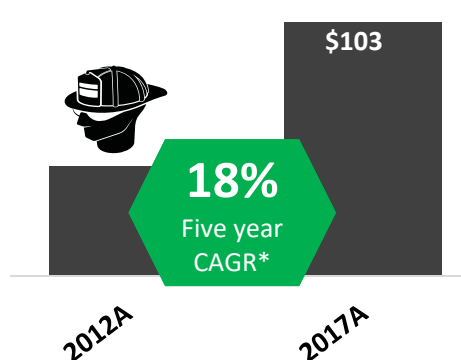
© MSA 2018

### 5 Year Revenue Trend

Breathing Apparatus

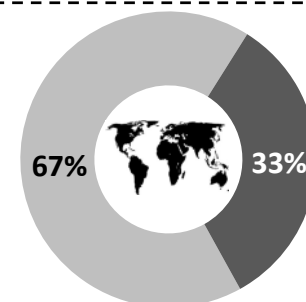
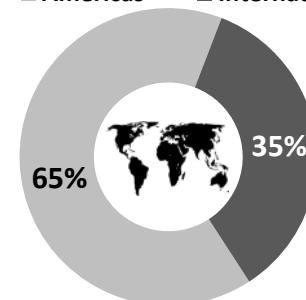


Helmets & Apparel



### MSA Revenue by Segment

■ Americas ■ International



MSAsafety.com

\*CAGRs stated in constant currency. Constant currency revenue is a non-GAAP financial measure. See reconciliation in appendix.

# Drivers of Sustainable Growth



Competitive Conversion and Market Share Gains



Geographic Expansion in MSA International



Head-to-Toe Firefighter Protection



Connected Firefighter and Cloud Connectivity



Accelerated organic growth driven by Market Share, Share of Wallet, and Software as a Service



# Growth Through Innovation | MSA G1 SCBA



N. America Market Share Leader



Sustained Gross Margin Expansion



Platform of the Future

**MSA G1 SCBA launched in 2014 and delivering unprecedented market share growth**



# Expanding the Platform | Industrial G1 SCBA



Global Oil, Gas, Petrochemical Solution



Targeted for Emerging Market Regions



Multi-Platform Economies of Scale

**Delivering a single face piece approach for a complete Respiratory Protection solution**

# International Fire Expansion | MSA M1 SCBA



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Expanded Addressable Market



Customer Defined Modularity



SCBA + Fire Helmet Connection

G1 Based, Modular design to address fragmented International market requirements

# Head-to-Toe Firefighter Safety | MSA + Globe



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Global Fire Service Leadership



Head-To-Toe Connected System



MSA Globe Geographic Expansion



Establishing a firefighting system that is more valuable than the sum of its parts

# Global Fire Service Connectivity | MSA Cloud



69



Enhancing Firefighter Safety through a connected system of smart products and cloud computing

# MSA Investor Day





# Industrial Core Personal Protective Equipment (“PPE”)



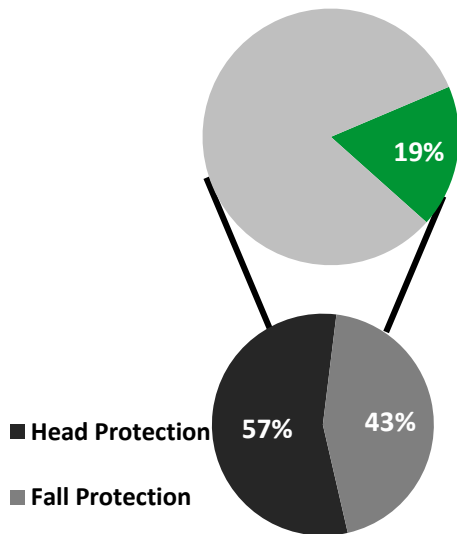
**Jennifer McGurrin**  
**General Manager**



# Industrial Core PPE

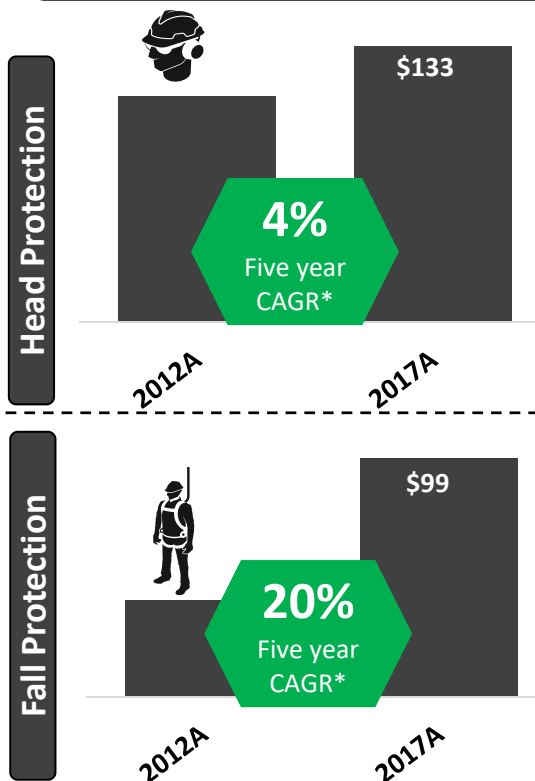
Product category snapshot

## Industrial Core PPE Revenue Contribution to MSA



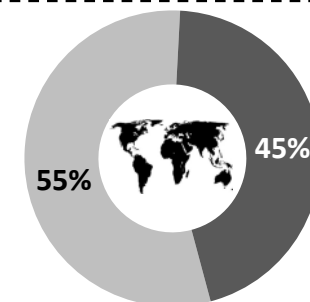
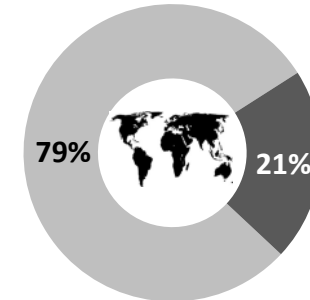
© MSA 2018

## 5 Year Revenue Trend



## MSA Revenue by Segment

Americas International



\*CAGRs stated in constant currency. Constant currency revenue is a non-GAAP financial measure. See reconciliation in appendix.

[MSAsafety.com](http://MSAsafety.com)



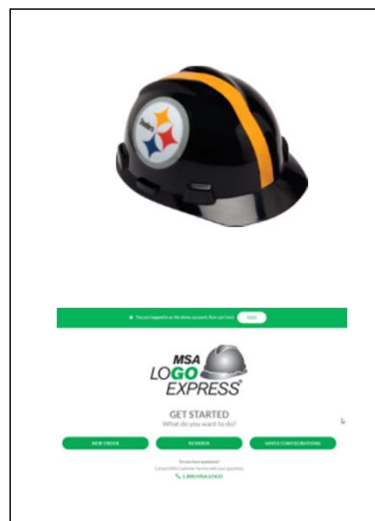
# Industrial Head Protection

*Success to Date*

## Product Portfolio

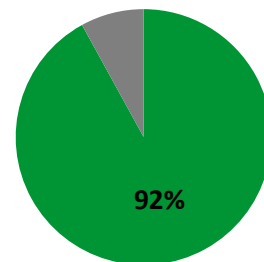


## Mass Customization



## Quality/Comfort

Helmet Preference\*



■ MSA ■ Competitor

\*MSA Voice of Customer research

## Customer Reach



**MSA is the global market leader with strong brand equity**

# Industrial Head Protection

## *Future Outlook*



Insight-driven **innovation**  
focused on comfort, style, and  
integrated accessories



Improve **customer experience**  
via new customization options,  
ease of ordering, and timely  
delivery



**Innovation and customization are critical for future growth**

# Fall Protection

*Success to Date*

## Focus



## Innovation



## Brand



Growth achieved through effective execution and product differentiation

# Fall Protection

## Future Outlook

### Innovation



Comfort

Ease of Use

Lower Cost of Ownership



Industry-leading innovation is the centerpiece of growth

# MSA Investor Day





# Gas Detection



**Gustavo Lopez – General Manager**

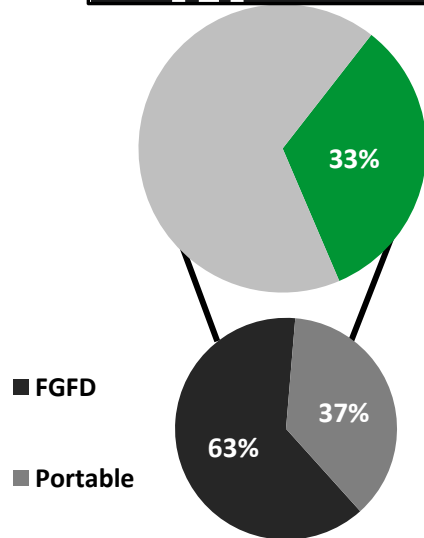
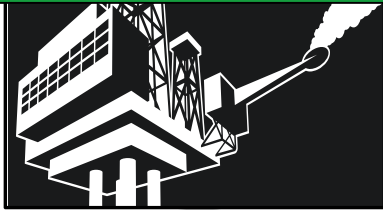




# Gas Detection

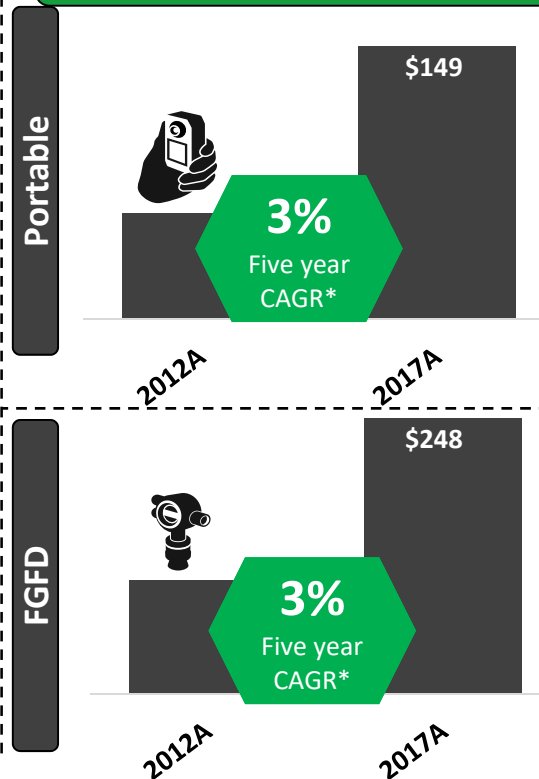
## Product category snapshot

### Gas Detection Revenue Contribution to MSA



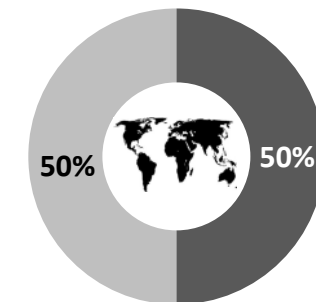
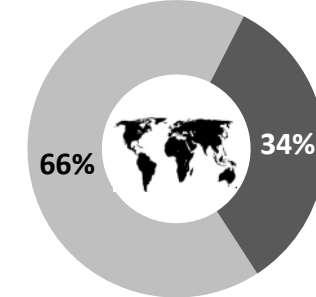
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### 5 Year Revenue Trend



### MSA Revenue by Segment

■ Americas ■ International



\*CAGRs stated in constant currency. Constant currency revenue is a non-GAAP financial measure. See reconciliation in appendix.

## Key pillars for growth strategy



Market share expansion in MSA International



Leverage large global installed base of FGFD



Competitive conversions with new X5000



Connected eco-system and Cloud services

**Continue to outpace market growth with product innovations and new Software as a Service approach**

# Gas Detection Value Proposition



## Customer Need

*Lower Down-Time*

*Reliability, fast response time, extended maintenance cycles*



## Enabling Technology

*MSA's proprietary sensor technology has unique self-adjusting capabilities*



## Breakthrough Products

*Gas Detectors with lowest total cost of ownership and enabled for connectivity drive MSA's leadership position*

**Connected Devices with Revolutionary Sensor Technology**

# Driving new insights with connectivity



Empower our customers with insight from our ecosystem to drive safer behaviors

## Gas Detection positioned well for profitable growth



Sustainable growth driven by new product innovations & technology leadership



MSA's connected eco-system will generate further growth opportunities outside of our traditional business

**Build on MSA's core competency with an eye to the future**



# MSA Investor Day





# Financial Review



**Kenneth Krause**  
**SVP, CFO and Treasurer**



# Historical Revenue and EBITDA Growth



86

2012 – 2017  
5 Year Trend

## Revenue

**+7%**

Core Product CAGR  
Constant Currency

**+4%**

Total Sales CAGR  
Constant Currency

## Gross Profit

**+110** BPS

Gross Profit  
Expansion

Pricing

Manufacturing costs

Product mix

## EBITDA

**+450** BPS

EBITDA Margin  
Expansion

Gross Profit

SG&A Expense

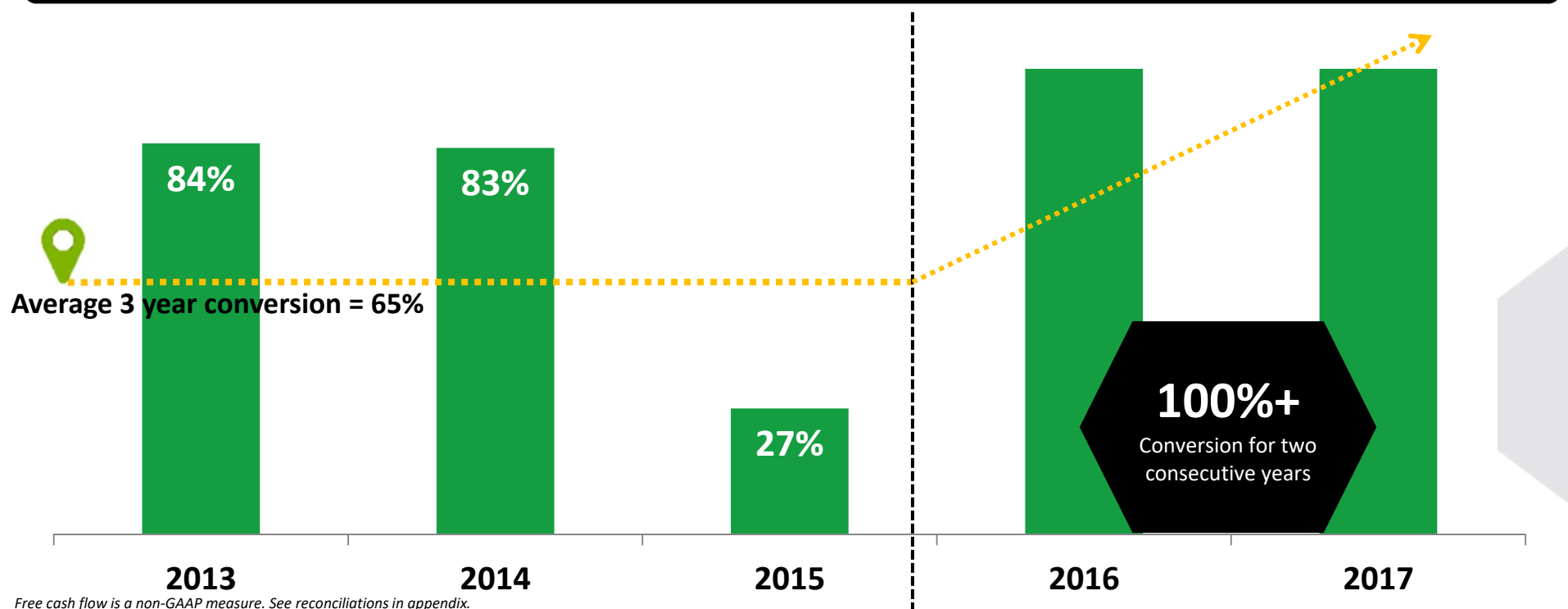
R&D

*Constant currency revenue and EBITDA are non-GAAP measures. See reconciliations in appendix.*

**Margin expansion and cost reduction strategies have driven a step-change in profitability**

# Free Cash Flow Strengthening in Recent Years

## Free Cash Flow Conversion

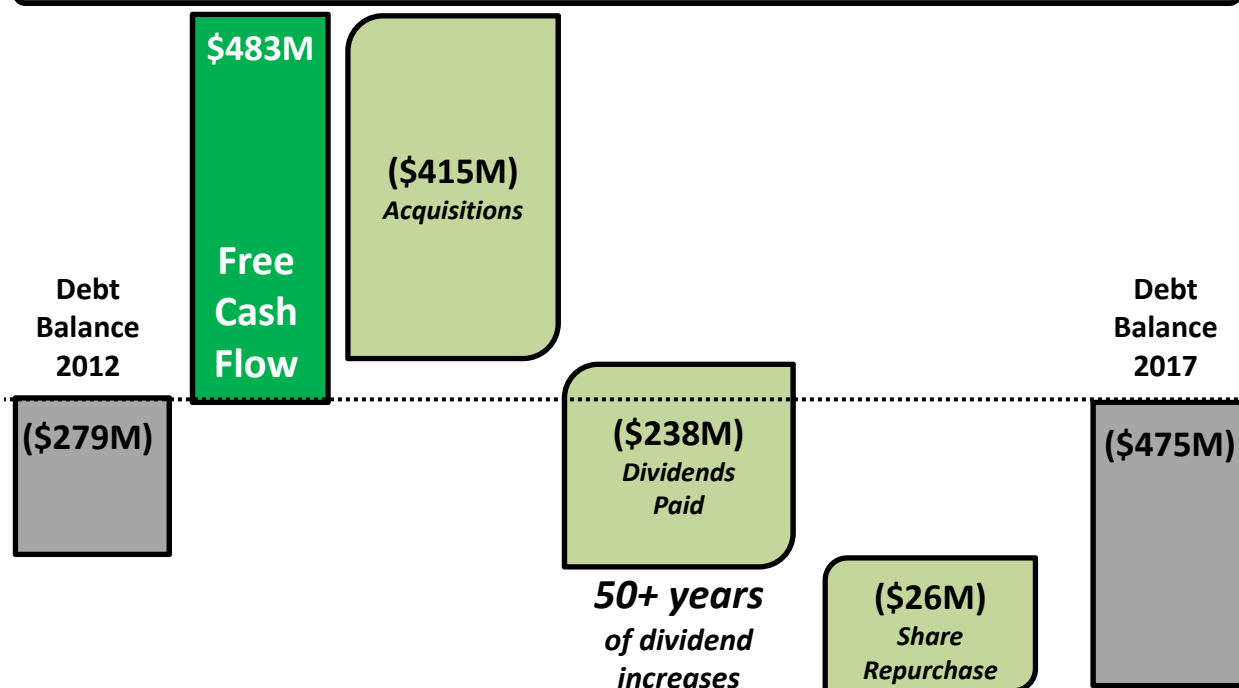


Free cash flow is a non-GAAP measure. See reconciliations in appendix.

**Working capital management driving meaningful improvement in cash flow conversion**

# Historical Capital Allocation

Strategically Deploy Capital to Drive Growth – 5 Year Cumulative Trend



Capital Allocation  
Priorities

Invest in Growth

Fund Increasing Dividend

Reduce Leverage

Repurchase Shares

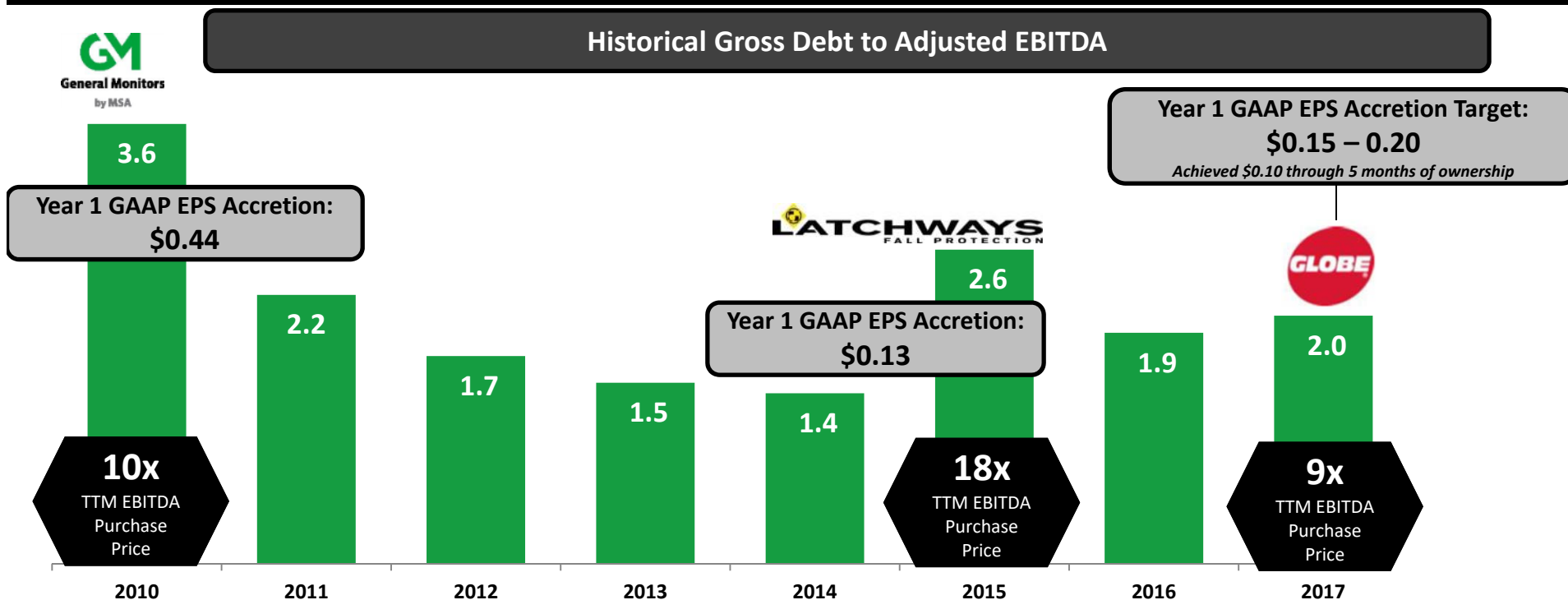
Investing in growth and returning value to shareholders while maintaining healthy leverage

# Leverage

*History of leveraging up for accretive acquisitions and quickly delevering*



89



*\*Debt to EBITDA is a non-GAAP measure. See reconciliations in appendix.*

**Target gross leverage range of 1.5x – 3.5x EBITDA over the long term; will lever up higher for attractive assets**

# M&A Strategy



## M&A Criteria *Key metrics*

Sales growth profile

EPS accretion in year 1

EBITDA margin &  
cash flow accretion

ROIC hurdles WACC in 3-5 years



## Strategic Rationale *Provides access to...*

Products

Markets

Geographies

Channels

Disciplined and comprehensive approach to M&A

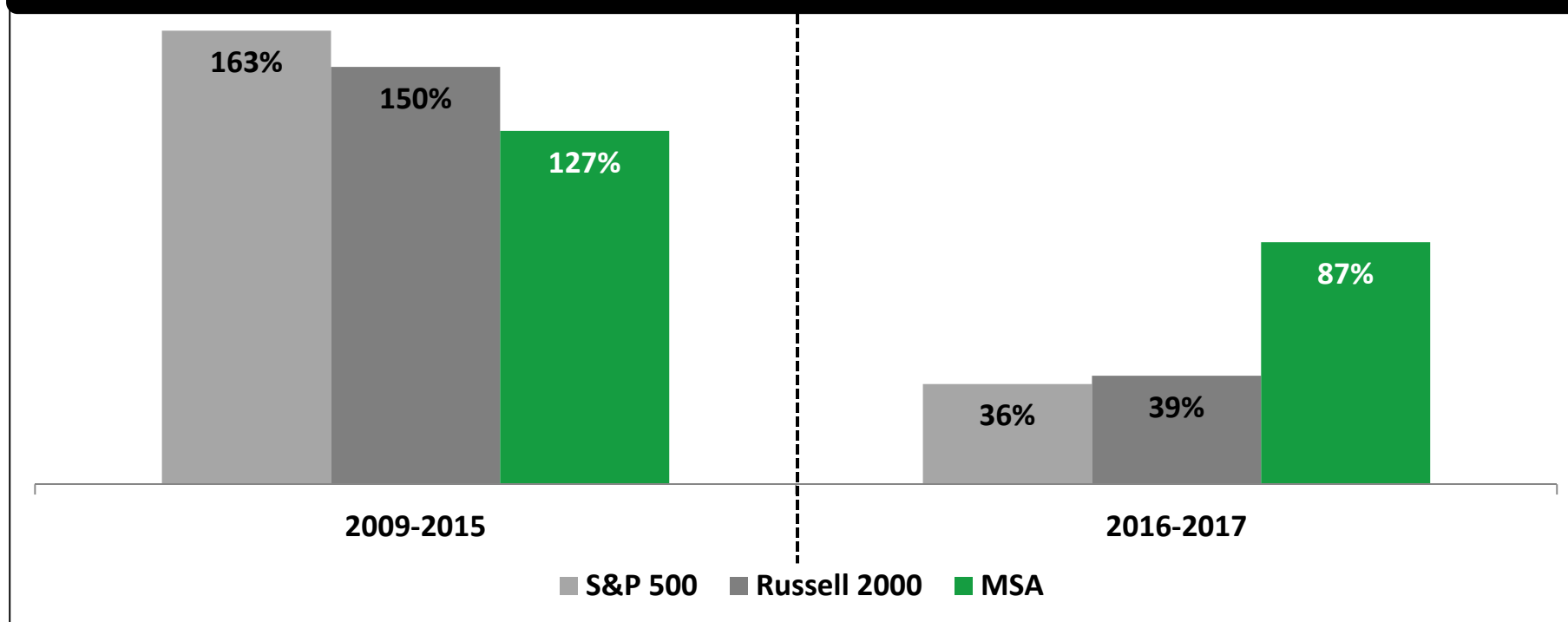


# Step-Change in EBITDA shifts trend in Shareholder Return



91

## Total Shareholder Return



Double-digit EBITDA growth in 2016 and 2017 drives superior shareholder returns

# Delivering on our Commitments



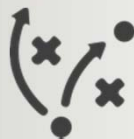
92

Targets	Achieve mid-single digit revenue growth	+7% Core Product 5 Year CAGR Constant Currency	+4% Total Sales 5 Year CAGR Constant Currency	✓
	Drive EPS accretion in year 1 of acquisitions	\$0.13 Latchways Year 1 GAAP EPS	\$0.10 Globe 1 <sup>st</sup> 5 Months GAAP EPS	✓
	Drive significant operating margin expansion	270 BPS 2016 Adjusted Operating Margin Expansion	130 BPS 2017 Adjusted Operating Margin Expansion	✓
	Reduce Cost Structure by \$20M over 2 Years	\$25M 2016 & 2017 Organic Constant Currency SG&A Savings		✓
	Improve Working Capital and Generate 100% Cash Flow Conversion	100%+ 2016 & 2017 Free Cash Flow Conversion		✓
	Continue to Fund an Increasing Dividend	50+ Years of Dividend Increases		✓

MSA has a track record of delivering on financial performance commitments

# 2018 Outlook

## Growth



- Expect strong industrial performance and continued elevated demand in firefighter safety
- ***Expect Mid-Single Digit Organic Revenue Growth***

## Cost Structure



- Continue to focus on controlling discretionary costs
- ***Make strategic investments to drive profitable growth***

## Tax Reform



- Expect to repatriate \$75-\$100M of cash from foreign affiliates
- ***Expect effective tax rate of 23-24%***

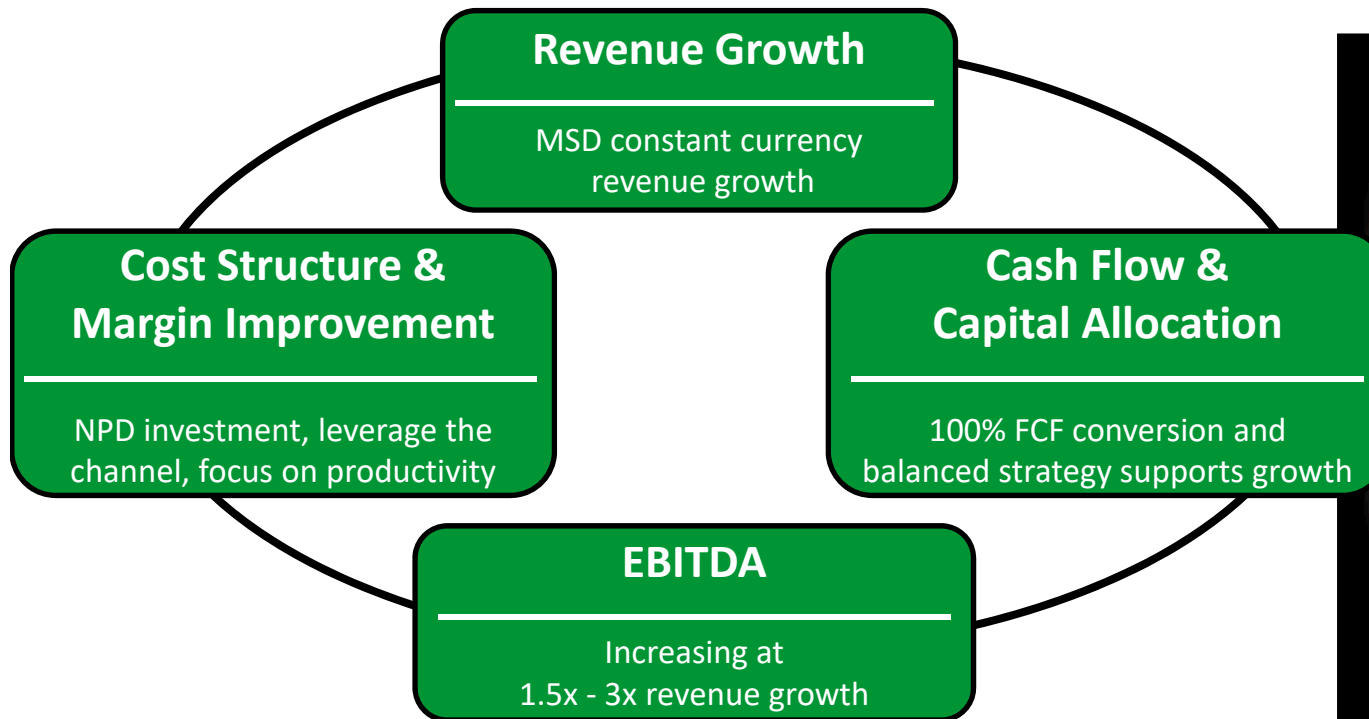
## Capital Deployment



- Continue to evaluate M&A opportunities, invest in R&D, return cash to shareholders via dividend, and de-lever
- ***Target 100% FCF Conversion***

**Expecting continued earnings expansion and strong cash flow in 2018**

# Long Term Financial Expectations



Expect MSD revenue growth and EBITDA growth of 1.5-3x revenue growth over next several years

# MSA Investor Day



# Summary



**Bill Lambert**  
**Chairman and CEO**





# MSA Investor Day 2018 – Key Takeaways



## Growth in Focus

- MSA is well positioned for mid-single digit revenue growth over the long term



## Productivity and Capital Allocation

- Successful in reducing cost structure and expanding margins over past several years; with more runway ahead



## MSA Americas

- Focused on growth across the core portfolio in firefighter safety, industrial personal protective equipment, and gas detection



## MSA International

- Improving profitability in developed markets through targeted initiatives aimed at leveraging channels and reducing complexity; execute growth strategy in emerging markets



## Growth Platforms

- Industry leading innovations and robust new product pipeline support revenue growth targets



## Financial Review

- Expect EBITDA to grow at 1.5-3x revenue growth; committed to strategically deploying capital to drive profitable growth

# MSA Investor Day



# Appendix

## Reconciliations of Non-GAAP Financial Measures



# Reconciliation of Non-GAAP Financial Measures

Constant currency revenue growth: 2017



	Breathing Apparatus	Firefighter Helmets and Protective Apparel	Industrial Head Protection	Portable Gas Detection	Fixed Gas and Flame Detection	Fall Protection	Core Sales	Non-Core Sales	Net Sales
GAAP reported sales change	(4)%	97 %	13 %	4%	4 %	2%	8 %	(12)%	4 %
Plus: Currency translation effects	— %	(1)%	(2)%	—%	(2)%	2%	(1)%	(2)%	(1)%
Constant currency sales change	(4)%	96 %	11 %	4%	2 %	4%	7 %	(14)%	3 %
Less: Acquisitions	— %	89 %	— %	—%	— %	—%	5 %	— %	4 %
Organic constant currency change	(4)%	7 %	11 %	4%	2 %	4%	2 %	(14)%	(1)%

Management believes that constant currency revenue growth is a useful metric for investors, as foreign currency translation can have a material impact on revenue growth trends. Constant currency revenue growth highlights ongoing business performance excluding the impact of fluctuating foreign currencies, which is outside of management's control. Organic constant currency revenue growth is defined as constant currency revenue growth excluding acquisitions. Management believes that organic constant currency revenue growth is a useful measure for investors to provide an understanding of MSA's standalone results. There can be no assurances that MSA's definition of constant currency revenue growth or organic constant currency revenue growth is consistent with that of other companies. As such, management believes that it is appropriate to consider revenue growth determined on a GAAP basis in addition to these non-GAAP financial measures.



# Reconciliation of Non-GAAP Financial Measures

Constant currency revenue CAGR: 2012 - 2017



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	Breathing Apparatus	Firefighter Helmets and Protective Apparel	Industrial Head Protection	Portable Gas Detection	Fixed Gas and Flame Detection	Fall Protection	Core Sales	Non-Core Sales	Net Sales
GAAP reported sales change	6%	16%	1%	1%	2%	18%	5%	(11)%	2%
Plus: Currency translation effects	2%	2%	3%	2%	1%	2%	2%	3 %	2%
Constant currency sales change	8%	18%	4%	3%	3%	20%	7%	(8)%	4%
Less: Acquisitions	—%	13%	—%	—%	—%	19%	2%	— %	2%
Organic constant currency change	8%	5%	4%	3%	3%	1%	5%	(8)%	2%

Management believes that constant currency revenue growth is a useful metric for investors, as foreign currency translation can have a material impact on revenue growth trends. Constant currency revenue growth highlights ongoing business performance excluding the impact of fluctuating foreign currencies, which is outside of management's control. Organic constant currency revenue growth is defined as constant currency revenue growth excluding acquisitions. Management believes that organic constant currency revenue growth is a useful measure for investors to provide an understanding of MSA's standalone results. There can be no assurances that MSA's definition of constant currency revenue growth or organic constant currency revenue growth is consistent with that of other companies. As such, management believes that it is appropriate to consider revenue growth determined on a GAAP basis in addition to these non-GAAP financial measures.

# Reconciliation of Non-GAAP Financial Measures

Constant currency revenue CAGR: 2014 - 2017



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	Firefighter Safety	Industrial Core PPE	Gas Detection	Core Sales	Non-Core Sales	Net Sales
GAAP reported sales change	14%	6%	(2)%	5%	(11)%	2%
Plus: Currency translation effects	3%	3%	2 %	3%	3 %	3%
Constant currency sales change	17%	9%	— %	8%	(8)%	5%
Less: Acquisitions	4%	9%	— %	4%	— %	3%
Organic constant currency change	13%	—%	— %	4%	(8)%	2%

Management believes that constant currency revenue growth is a useful metric for investors, as foreign currency translation can have a material impact on revenue growth trends. Constant currency revenue growth highlights ongoing business performance excluding the impact of fluctuating foreign currencies, which is outside of management's control. Organic constant currency revenue growth is defined as constant currency revenue growth excluding acquisitions. Management believes that organic constant currency revenue growth is a useful measure for investors to provide an understanding of MSA's standalone results. There can be no assurances that MSA's definition of constant currency revenue growth or organic constant currency revenue growth is consistent with that of other companies. As such, management believes that it is appropriate to consider revenue growth determined on a GAAP basis in addition to these non-GAAP financial measures.



# Reconciliation of Non-GAAP Financial Measures

Constant currency revenue CAGR: 2014 - 2017



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	Consolidated	Americas	International
GAAP reported sales change	2%	4%	(1)%
Plus: Currency translation effects	3%	2%	4 %
Constant currency sales change	5%	6%	3 %
Less: Acquisitions	3%	3%	3 %
Organic constant currency change	2%	3%	— %

Management believes that constant currency revenue growth is a useful metric for investors, as foreign currency translation can have a material impact on revenue growth trends. Constant currency revenue growth highlights ongoing business performance excluding the impact of fluctuating foreign currencies, which is outside of management's control. Organic constant currency revenue growth is defined as constant currency revenue growth excluding acquisitions. Management believes that organic constant currency revenue growth is a useful measure for investors to provide an understanding of MSA's standalone results. There can be no assurances that MSA's definition of constant currency revenue growth or organic constant currency revenue growth is consistent with that of other companies. As such, management believes that it is appropriate to consider revenue growth determined on a GAAP basis in addition to these non-GAAP financial measures.

# Reconciliation of Non-GAAP Financial Measures

Constant currency revenue CAGR: 2011 - 2014



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	Firefighter Safety	Industrial Core PPE	Gas Detection	Core Sales	Non-Core Sales	Net Sales
GAAP reported sales change	1%	8%	8%	6%	(12)%	1%
Plus: Currency translation effects	2%	4%	1%	2%	1 %	2%
Constant currency sales change	3%	12%	9%	8%	(11)%	3%
Less: Acquisitions	—%	—%	—%	—%	— %	—%
Organic constant currency change	3%	12%	9%	8%	(11)%	3%

Management believes that constant currency revenue growth is a useful metric for investors, as foreign currency translation can have a material impact on revenue growth trends. Constant currency revenue growth highlights ongoing business performance excluding the impact of fluctuating foreign currencies, which is outside of management's control. Organic constant currency revenue growth is defined as constant currency revenue growth excluding acquisitions. Management believes that organic constant currency revenue growth is a useful measure for investors to provide an understanding of MSA's standalone results. There can be no assurances that MSA's definition of constant currency revenue growth or organic constant currency revenue growth is consistent with that of other companies. As such, management believes that it is appropriate to consider revenue growth determined on a GAAP basis in addition to these non-GAAP financial measures.

# Reconciliation of Non-GAAP Financial Measures

## Organic constant currency SG&A expense



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	Twelve Months Ended December 31,		% Change		Twelve Months Ended December 31,		% Change
	2017	2016			2016	2015	
GAAP reported SG&A expense	\$ 297,801	\$ 306,144	(3)%	GAAP reported SG&A expense	\$306,144	\$ 315,270	(3)%
Plus: currency translation effects	—	2,279		Plus: currency translation effects	—	(6,906)	
Constant currency SG&A expense	297,801	308,423	(3)%	Constant currency SG&A expense	306,144	308,364	(1)%
Less: Acquisitions and strategic transaction costs	9,783	3,994		Less: Acquisitions and strategic transaction costs	17,632	10,694	
Organic constant currency SG&A expense	<u>288,018</u>	<u>304,429</u>	(5)%	Organic constant currency SG&A expense	<u>288,512</u>	<u>297,670</u>	(3)%

Management believes that organic constant currency SG&A expense is a useful metric for investors to measure the effectiveness of the company's cost reduction programs. Constant currency SG&A expense highlights spending patterns excluding fluctuating foreign currencies. Organic constant currency SG&A expense highlights the impact of acquisitions and strategic transaction costs. These metrics provide investors with a greater level of clarity into spending levels on a year-over-year basis. There can be no assurances that MSA's definition of organic constant currency SG&A expense is consistent with that of other companies. As such, management believes that it is appropriate to consider SG&A expense determined on a GAAP basis in addition to this non-GAAP financial measure.

# Reconciliation of Non-GAAP Financial Measures

## *Adjusted operating income/adjusted operating margin*



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	Q4 2017	Q3 2017
Sales to external customers	\$ 346,140	\$ 296,129
Operating income (loss)	(30,996)	40,617
Operating margin %	(9.0)%	13.7%
Restructuring and other charges	712	3,214
Currency exchange losses, net	1,133	562
Other operating expense	93,476	3,346
Adjusted operating income	64,325	47,739
Adjusted operating margin %	18.6 %	16.1%

Adjusted operating income (loss) and adjusted operating margin are the measures used by the chief operating decision maker to evaluate segment performance and allocate resources. As such, management believes that adjusted operating income (loss) and adjusted operating margin are useful metrics for investors. Adjusted operating income (loss) is defined as operating income excluding restructuring and other charges, currency exchange (gains) losses and other operating expense. Adjusted operating margin is defined as adjusted operating income (loss) divided by segment sales to external customers. Adjusted operating income (loss) and adjusted operating margin are not recognized terms under GAAP and therefore do not purport to be alternatives to operating income or operating margin as a measure of operating performance. The Company's definition of adjusted operating income (loss) and adjusted operating margin may not be comparable to similarly titled measures of other companies. As such, management believes that it is appropriate to consider operating income determined on a GAAP basis in addition to these non-GAAP measures.



# Reconciliation of Non-GAAP Financial Measures

## Adjusted operating income/adjusted operating margin



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	Americas	International	Corporate	Consolidated
Twelve Months Ended December 31, 2017				
Sales to external customers	\$ 736,847	\$ 459,962	—	\$ 1,196,809
Operating income				43,345
Operating margin %				3.6%
Restructuring and other charges				17,632
Currency exchange losses, net				5,127
Other operating expense				126,432
Adjusted operating income (loss)	184,287	45,461	(37,212)	\$ 192,536
Adjusted operating margin %	25.0%	9.9%		16.1%
Twelve Months Ended December 31, 2016				
Sales to external customers	\$ 678,433	\$ 471,097	—	\$ 1,149,530
Operating income				164,192
Operating margin %				14.3%
Restructuring and other charges				5,694
Currency exchange losses, net				766
Other operating expense				—
Adjusted operating income (loss)	162,788	46,491	(38,627)	\$ 170,652
Adjusted operating margin %	24.0%	9.9%		14.8%

# Reconciliation of Non-GAAP Financial Measures

## Adjusted operating income/adjusted operating margin



108

	Americas	International	Corporate	Consolidated
Twelve Months Ended December 31, 2015				
Sales to external customers	\$ 704,754	\$ 426,029	—	\$ 1,130,783
Operating income				122,741
Operating margin %				10.9%
Restructuring and other charges				12,258
Currency exchange losses, net				2,204
Other operating expense				—
Adjusted operating income (loss)	141,971	33,501	(38,269)	\$ 137,203
Adjusted operating margin %	20.1%	7.9%		12.1%
Twelve Months Ended December 31, 2014				
Sales to external customers	\$ 663,655	\$ 470,230	—	\$ 1,133,885
Operating income				134,281
Operating margin %				11.8%
Restructuring and other charges				8,515
Currency exchange losses, net				1,509
Other operating expense				—
Adjusted operating income (loss)	134,819	46,847	(37,361)	\$ 144,305
Adjusted operating margin %	20.3%	10.0%		12.7%



# Reconciliation of Non-GAAP Financial Measures

## Adjusted operating income/adjusted operating margin



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	2009	2010	2011	2012	2013	2014	2015	2016	2017
Sales to external customers	\$ 865,718	\$ 922,552	\$ 1,112,814	\$ 1,110,043	\$ 1,112,058	\$ 1,133,885	\$ 1,130,783	\$ 1,149,530	\$ 1,196,809
Operating income	63,798	56,302	109,733	129,811	130,985	134,281	122,741	164,192	43,345
Operating margin %	7.4%	6.1%	9.9%	11.7%	11.8%	11.8%	10.9%	14.3%	3.6%
Restructuring and other charges	11,378	14,121	8,559	2,787	5,344	8,515	12,258	5,694	17,632
Currency exchange (gains) losses, net	(1,078)	(377)	3,051	3,192	5,452	1,509	2,204	766	5,127
Other operating expense	—	—	—	—	—	—	—	—	126,432
Adjusted operating income	<u>\$ 74,098</u>	<u>\$ 70,046</u>	<u>\$ 121,342</u>	<u>\$ 135,790</u>	<u>\$ 141,781</u>	<u>\$ 144,305</u>	<u>\$ 137,203</u>	<u>\$ 170,652</u>	<u>\$ 192,536</u>
Adjusted operating margin %	8.6%	7.6%	10.9%	12.2%	12.7%	12.7%	12.1%	14.8%	16.1%

Adjusted operating income (loss) and adjusted operating margin are the measures used by the chief operating decision maker to evaluate segment performance and allocate resources. As such, management believes that adjusted operating income (loss) and adjusted operating margin are useful metrics for investors. Adjusted operating income (loss) is defined as operating income excluding restructuring and other charges, currency exchange (gains) losses and other operating expense. Adjusted operating margin is defined as adjusted operating income (loss) divided by segment sales to external customers. Adjusted operating income (loss) and adjusted operating margin are not recognized terms under GAAP and therefore do not purport to be alternatives to operating income or operating margin as a measure of operating performance. The Company's definition of adjusted operating income (loss) and adjusted operating margin may not be comparable to similarly titled measures of other companies. As such, management believes that it is appropriate to consider operating income determined on a GAAP basis in addition to these non-GAAP measures.

# Reconciliation of Non-GAAP Financial Measures

## Adjusted EBITDA/adjusted EBITDA margin



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	2009	2010	2011	2012	2013	2014	2015	2016	2017
Income from continuing operations attributable to MSA Safety Inc.	\$ 42,072	\$ 35,886	\$ 67,518	\$ 87,557	\$ 85,858	\$ 87,447	\$ 69,590	\$ 92,691	\$ 26,027
Provision for income taxes	21,232	17,335	33,806	41,401	35,145	41,044	44,407	57,804	2,819
Interest expense	7,079	8,694	14,116	11,344	10,677	9,851	10,854	16,411	15,360
Depreciation and amortization	27,362	29,192	32,866	31,702	30,764	29,921	31,684	35,273	37,877
Restructuring and other charges	11,378	14,121	8,559	2,787	5,344	8,515	12,258	5,694	17,632
Strategic transaction costs	—	6,500	—	—	—	—	7,462	2,531	4,225
Other (income) expense, net	(6,333)	(5,948)	(5,458)	(10,876)	175	(2,765)	861	(4,130)	(1,790)
Currency exchange (gains) losses, net	(1,078)	(377)	3,051	3,192	5,452	1,509	2,204	766	5,127
Self-insured legal settlements and defense costs	—	—	—	—	1,697	3,893	982	341	126,432
Adjusted EBITDA	<u>\$101,712</u>	<u>\$105,403</u>	<u>\$ 154,458</u>	<u>\$ 167,107</u>	<u>\$ 175,112</u>	<u>\$ 179,415</u>	<u>\$ 180,302</u>	<u>\$ 207,381</u>	<u>\$ 233,709</u>
Net Sales	865,718	922,552	1,112,814	1,110,443	1,112,058	1,133,885	1,130,783	1,149,530	1,196,809
Adjusted EBITDA margin	11.7%	11.4%	13.9%	15.0%	15.7%	15.8%	15.9%	18.0%	19.5%

Adjusted EBITDA is a non-GAAP financial measure. MSA defines this measure as net income attributable to the Company, excluding interest, taxes, depreciation and amortization, restructuring charges, self-insured legal settlements and defense costs, currency exchange gains/losses, strategic transaction costs and other income. Management believes this information is useful for investors to analyze ongoing profitability trends of the Company. MSA defines adjusted EBITDA margin as adjusted EBITDA divided by net sales. Adjusted EBITDA and adjusted EBITDA margin, as defined herein, may not be comparable to similarly titled measures reported by other companies. Furthermore, this performance measure does not take into account certain significant items that directly affect net income. These non-GAAP measures should be considered in addition to GAAP measures such as net income.

# Reconciliation of Non-GAAP Financial Measures

## Debt to adjusted EBITDA



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	2009	2010	2011	2012	2013	2014	2015	2016	2017
Adjusted EBITDA	\$101,712	\$105,403	\$ 154,458	\$ 167,107	\$ 175,112	\$ 179,415	\$ 180,302	\$ 207,381	\$ 233,709
Total end-of-period debt	98,440	377,257	342,309	279,000	267,334	251,667	466,626	390,502	474,512
Debt to adjusted EBITDA	1.0	3.6	2.2	1.7	1.5	1.4	2.6	1.9	2.0

Debt to adjusted EBITDA ratio is a non-GAAP measure defined as total long term debt and debt maturing within one year divided by adjusted EBITDA, as reconciled above. This ratio is frequently used by investors and credit agencies and management believes this measures provides relevant and useful information.

# Reconciliation of Non-GAAP Financial Measures

*Globe earnings per diluted share excluding transaction costs and purchase accounting amortization*



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	Twelve Months Ended December 31, 2017	
	Reconciliation of Earnings	Reconciliation of Earnings Per Diluted Share
Globe GAAP earnings	\$ 3,739	\$ 0.10
Transaction costs	1,778	0.05
Purchase accounting amortization	1,710	0.04
Income tax expense on adjustments	(1,221)	(0.03)
Globe earnings excluding transaction costs and purchase accounting amortization	<u>\$ 6,006</u>	<u>\$ 0.16</u>

Management believes that Globe earnings per diluted share excluding transaction costs and purchase accounting amortization is a useful measure for investors, as management uses this measure to assess the profitability of MSA's recent acquisition of firefighter turnout gear manufacturer Globe. There can be no assurances that MSA's metrics are consistent with that of other companies. As such, management believes that it is appropriate to consider both Globe net income determined on a GAAP basis as well as Globe earnings per diluted share excluding transaction costs and purchase accounting amortization.

# Reconciliation of Non-GAAP Financial Measures

*Latchways earnings per diluted share excluding transaction costs and purchase accounting amortization*



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*The Safety Company*

	Twelve Months Ended December 31, 2016	
	Reconciliation of Earnings	Reconciliation of Earnings Per Diluted Share
Latchways GAAP earnings	\$ 4,405	\$ 0.13
Transaction costs	548	0.01
Purchase accounting amortization	4,942	0.12
Income tax expense on adjustments	(1,071)	(0.03)
Latchways earnings excluding transaction costs and purchase accounting amortization	<u>\$ 8,824</u>	<u>\$ 0.23</u>

Management believes that Latchways earnings per diluted share excluding transaction costs and purchase accounting amortization is a useful measure for investors, as management uses this measure to assess the profitability of MSA's recent acquisition of firefighter turnout gear manufacturer Latchways. There can be no assurances that MSA's metrics are consistent with that of other companies. As such, management believes that it is appropriate to consider both Latchways net income determined on a GAAP basis as well as Latchways earnings per diluted share excluding transaction costs and purchase accounting amortization.

# Reconciliation of Non-GAAP Financial Measures

*General Monitors earnings per diluted share excluding transaction costs and purchase accounting amortization*



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	Twelve Months Ended December 31, 2011	
	Reconciliation of Earnings	Reconciliation of Earnings Per Diluted Share
General Monitors GAAP earnings	\$ 16,100	\$ 0.44
Transaction costs	—	—
Purchase accounting amortization	5,500	0.15
Income tax expense on adjustments	(1,925)	(0.06)
General Monitors earnings excluding transaction costs and purchase accounting amortization	<u>\$ 19,675</u>	<u>\$ 0.53</u>

Management believes that General Monitors earnings per diluted share excluding transaction costs and purchase accounting amortization is a useful measure for investors, as management uses this measure to assess the profitability of MSA's recent acquisition of firefighter turnout gear manufacturer General Monitors. There can be no assurances that MSA's metrics are consistent with that of other companies. As such, management believes that it is appropriate to consider both General Monitors net income determined on a GAAP basis as well as General Monitors earnings per diluted share excluding transaction costs and purchase accounting amortization.



# Reconciliation of Non-GAAP Financial Measures

## Adjusted effective tax rate



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	2012	2013	2014	2015	2016	2017
GAAP reported effective tax rate	32.0%	29.3%	32.3%	40.0%	38.1%	9.5 %
Less: Tax benefit associated with other operating expense	—%	—%	—%	—%	—%	(22.9)%
Less: Charges associated with U.S. Tax Reform	—%	—%	—%	—%	—%	12.7 %
Less: Tax benefit associated with ASU 2016-09: <i>Improvements to employee share-based payment</i>	—%	—%	—%	—%	—%	(5.3)%
Less: Tax benefit associated with European reorganization	—%	—%	—%	6.9%	4.3%	(1.6)%
Adjusted effective tax rate	<u>32.0%</u>	<u>29.3%</u>	<u>32.3%</u>	<u>33.1%</u>	<u>33.8%</u>	<u>26.6 %</u>

Management believes that its adjusted effective tax rate is a useful measure for investors. The adjusted effective tax rate excludes tax charges associated with U.S. Tax Reform and tax benefits associated with other operating expense, ASU 2016-09 improvements to employee share-based payment accounting and the company's European reorganization. These tax charges/benefits reflect items that are unrelated to the ongoing operations of the company. There can be no assurances that MSA's metric is consistent with metrics used by other companies. As such, management believes that it is appropriate to consider MSA's effective tax rate determined on a GAAP basis as well as this non-GAAP measure.

# Reconciliation of Non-GAAP Financial Measures

## Free cash flow



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	2012	2013	2014	2015	2016	2017
Cash flow from operating activities	\$ 150,476	\$ 110,781	\$ 107,031	\$ 55,254	\$ 134,984	\$ 230,336
Capital expenditures	(32,200)	(36,517)	(33,583)	(36,241)	(25,523)	(23,725)
Free cash flow	<u>\$ 118,276</u>	<u>\$ 74,264</u>	<u>\$ 73,448</u>	<u>\$ 19,013</u>	<u>\$ 109,461</u>	<u>\$ 206,611</u>
Net income attributable to MSA Safety Incorporated	90,637	88,247	88,506	70,807	91,936	26,027
Free cash flow conversion	130%	84%	83%	27%	119%	794%

Management believes that free cash flow is a meaningful measure for investors. Management reviews cash from operations after deducting capital expenditures because these expenditures are necessary to promote growth of MSA's business and are likely to produce cash from operations in future periods. It is important to note that free cash flow does not reflect the residual cash balance of the company for discretionary spending since other items, including debt and dividend payments, are deducted from free cash flow before arriving at the company's ending cash balance. Management defines free cash flow conversion as free cash flow divided by net income attributable to MSA. There can be no assurances that MSA's definition of free cash flow is consistent with that of other companies. As such, management believes that it is appropriate to consider cash from operating activities determined on a GAAP basis as well as free cash flow.