



ON Semiconductor®

**FINANCIAL ANALYST DAY
SCOTTSDALE, AZ
March 8, 2019**

AGENDA

Introduction – Parag Agarwal 8:00-8:05

Strategic Overview – Keith Jackson 8:05-8:30

Q&A

Markets and Revenue – David Somo 8:40-9:05

Analog Solutions Group – Vince Hopkin 9:05-9:30

Break

Intelligent Sensing Group – Taner Ozcelik 9:45-10:10

Power Solutions Group – Simon Keeton 10:10-10:35

Business unit Q&A / Break

Manufacturing Strategy – Bill Schromm 10:55-11:20

Finance – Bernard Gutmann 11:20-11:45

Final Q&A



SAFE HARBOR STATEMENT AND NON-GAAP AND FORECAST INFORMATION

This presentation contains “forward-looking statements,” as that term is defined in Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. All statements, other than statements of historical facts, included or incorporated in this presentation could be deemed forward-looking statements, particularly statements about the future financial performance of ON Semiconductor, including financial guidance for the year ending December 31, 2019. Forward-looking statements are often characterized by the use of words such as “believes,” “estimates,” “expects,” “projects,” “may,” “will,” “intends,” “plans,” or “anticipates” or by discussions of strategy, plans, or intentions. All forward-looking statements in this presentation are made based on our current expectations, forecasts, estimates, and assumptions and involve risks, uncertainties, and other factors that could cause results or events to differ materially from those expressed in the forward-looking statements. These factors include, among other things: our revenue and operating performance; economic conditions and markets (including current financial conditions); risks related to our ability to meet our assumptions regarding outlook for revenue and gross margin as a percentage of revenue; effects of exchange rate fluctuations; the cyclical nature of the semiconductor industry; changes in demand for our products; changes in inventories at our customers and distributors; technological and product development risks; enforcement and protection of our intellectual property rights and related risks; risks related to the security of our information systems and secured network; availability of raw materials, electricity, gas, water, and other supply chain uncertainties; our ability to effectively shift production to other facilities when required in order to maintain supply continuity for our customers; variable demand and the aggressive pricing environment for semiconductor products; our ability to successfully manufacture in increasing volumes on a cost-effective basis and with acceptable quality for our current products; risks associated with our acquisition of Fairchild Semiconductor International, Inc. and with other acquisitions and dispositions, including our ability to realize the anticipated benefits of our acquisitions and dispositions; risks that acquisitions or dispositions may disrupt our current plans and operations, the risk of unexpected costs, charges, or expenses resulting from acquisitions or dispositions and difficulties arising from integrating and consolidating acquired businesses, our timely filing of financial information with the Securities and Exchange Commission (“SEC”) for acquired businesses, and our ability to accurately predict the future financial performance of acquired businesses); competitor actions, including the adverse impact of competitor product announcements; pricing and gross profit pressures; loss of key customers or distributors; order cancellations or reduced bookings; changes in manufacturing yields; control of costs and expenses and realization of cost savings and synergies from restructurings; significant litigation; risks associated with decisions to expend cash reserves for various uses in accordance with our capital allocation policy such as debt prepayment, stock repurchases, or acquisitions rather than to retain such cash for future needs; risks associated with our substantial leverage and restrictive covenants in our debt agreements that may be in place from time to time; risks associated with our worldwide operations, including changes in trade policies, foreign employment and labor matters associated with unions and collective bargaining arrangements, as well as man-made and/or natural disasters affecting our operations or financial results; the threat or occurrence of international armed conflict and terrorist activities both in the United States and internationally; risks of changes in U.S. or international tax rates or legislation, including the impact of the recent U.S. tax legislation; risks and costs associated with increased and new regulation of corporate governance and disclosure standards; risks related to new legal requirements; and risks involving environmental or other governmental regulation. Additional factors that could affect our future results or events are described under Part I, Item 1A “Risk Factors” in our 2018 Annual Report on Form 10-K filed with the SEC on February 20, 2019 (our “2018 Form 10-K”) and from time-to-time in our other SEC reports. Readers are cautioned not to place undue reliance on forward-looking statements. We assume no obligation to update such information, except as may be required by law. You should carefully consider the trends, risks, and uncertainties described in this presentation, our 2018 Form 10-K, and other reports filed with or furnished to the SEC before making any investment decision with respect to our securities. If any of these trends, risks, or uncertainties actually occurs or continues, our business, financial condition, or operating results could be materially adversely affected, the trading prices of our securities could decline, and you could lose all or part of your investment. All forward-looking statements attributable to us or persons acting on our behalf are expressly qualified in their entirety by this cautionary statement.

This presentation contains historical non-GAAP financial measures, including free cash flow (FCF), non-GAAP earnings per share (EPS), non-GAAP profit before taxes, and ratios based on them. See the Appendix for a description of these financial measures and a reconciliation of all such non-GAAP financial measures to GAAP. This presentation also contains forward-looking non-GAAP financial measures that are adjusted for certain special items. These special items are out of our control and could change significantly from period to period. As a result, we are not able to reasonably estimate and separately present the individual impact of these special items, and we are similarly unable to provide a reconciliation of the non-GAAP measures. The reconciliation that is unavailable would include a forward-looking income statement, balance sheet, and statement of cash flows prepared in accordance with GAAP.



**THINK
ON.**

KEITH JACKSON
PRESIDENT AND CEO



KEY TAKEAWAYS

1

ON's structural transformation is accelerating and showing strong results

2

Enabling secular megatrends in automotive, industrial, and cloud power markets

3

Strong competitive moat – highly defensible & highly diversified business model

4

Strong & consistent execution – expanding margins & accelerating FCF



ACCELERATING STRUCTURAL TRANSFORMATION



ON IS ENABLING KEY MEGATRENDS – SECULAR TRENDS DRIVING STRONG GROWTH

- ADAS, EV/HEV, Machine Vision, Robotics, 5G infrastructure, Server Power management, Alternative energy, Energy efficiency in automotive and industrial systems
- Exposed to fastest growing semiconductor end-markets: Automotive, industrial, cloud power



STRONG COMPETITIVE MOAT & HIGHLY DIVERSIFIED BUSINESS MODEL

- Highly differentiated power semiconductor, sensor and analog technologies
- Industry leading cost structure with formidable manufacturing scale
- Largest customer ~5% of revenue, and highly diversified end-market and geographical exposure



STRONG FREE CASH FLOW GROWTH AND SOLID MARGIN EXPANSION

- ~3.5x FCF growth in last five years
- 460 bps of gross margin and 660 bps of operating margin improvement in last five years
- 3.7x increase in non-GAAP EPS in last five years



ENABLING KEY MEGATRENDS

AUTOMOTIVE

Image sensors, Radar and Lidar for ADAS

Silicon Carbide and silicon power semiconductors for EV/HEV

Power management for automotive CPUs

INDUSTRIAL

Image sensors for machine vision and robotics applications

MV and HV MOSFETs, and power modules for improving energy efficiency of industrial systems

Connectivity and power management for Industrial IoT applications

CLOUD POWER

Analog power management for server CPUs for datacenter and enterprise applications

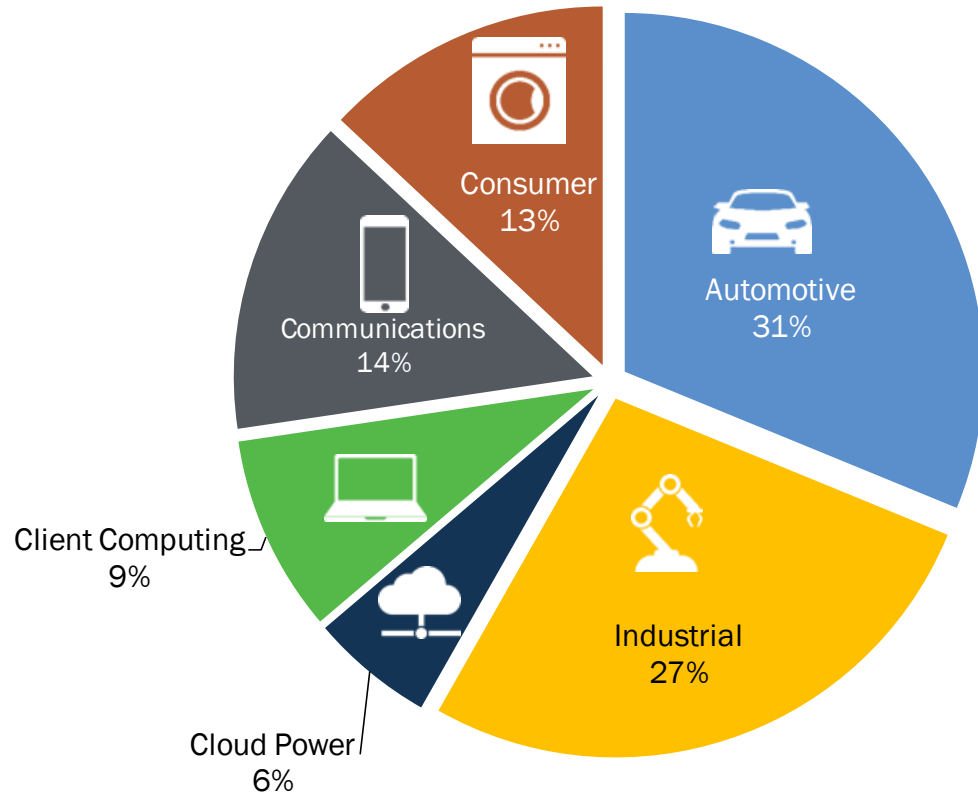
Mid-voltage MOSFETs for 5G infrastructure market

Mid-voltage MOSFETs for power supplies for datacenter applications



EXPOSED TO FASTEST GROWING MARKETS

2018 REVENUE BY MARKET



2018 REVENUE \$5.878B | GROSS MARGIN 38.1%



AUTOMOTIVE

Power semiconductors for electrification, sensors for ADAS, LED lighting, analog power management for automotive processors



INDUSTRIAL

Energy efficiency for industrial systems, machine vision, robotics



CLOUD POWER

Server power management, 5G infrastructure



STRONG COMPETITIVE MOAT

Leading Technical Capabilities

Power semiconductors, Silicon Carbide, Auto/Industrial image sensors, cloud-power, analog power management

Strong track-record in automotive, industrial and cloud power markets

Long Life Cycle Products

Sticky portfolio with long life cycle products for critical applications

Highly diversified customer base

Broad and Synergistic Portfolio

Broad and synergistic product portfolio for power, analog and sensor semiconductors

84,000 SKUs

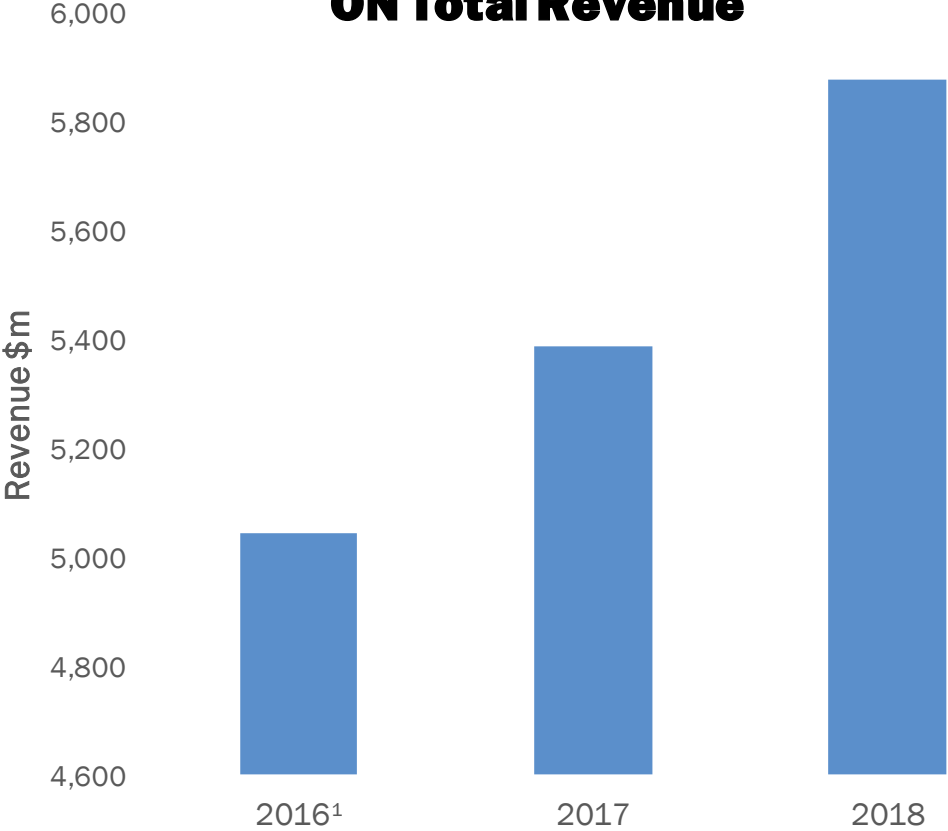
Vast global sales and application engineering network

Formidable manufacturing scale and industry leading cost structure

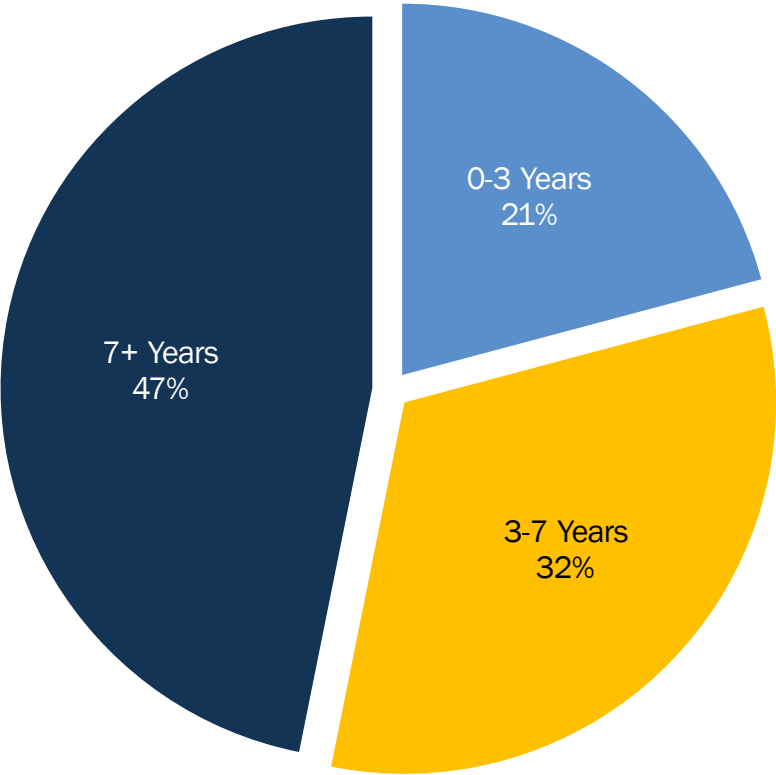


STICKY PRODUCTS WITH STRONG GROWTH

ON Total Revenue



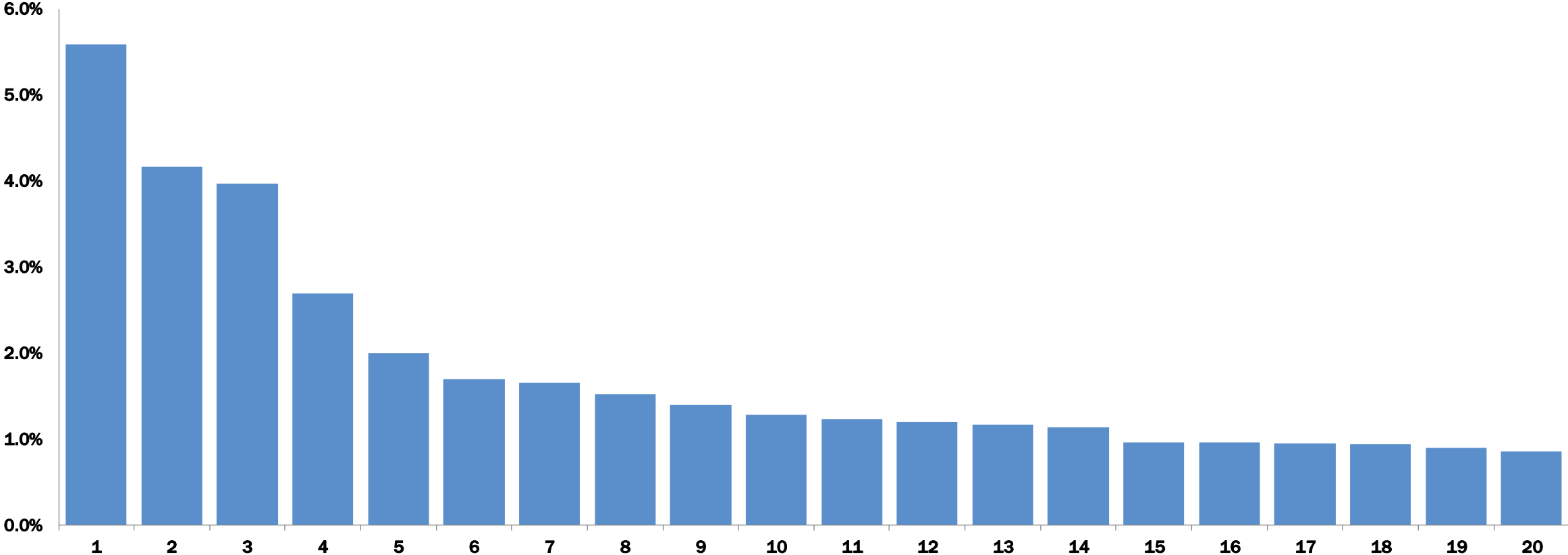
2018 PRODUCT LONGEVITY MIX



¹: FY2016 represents Q4' 16 Annualized values.



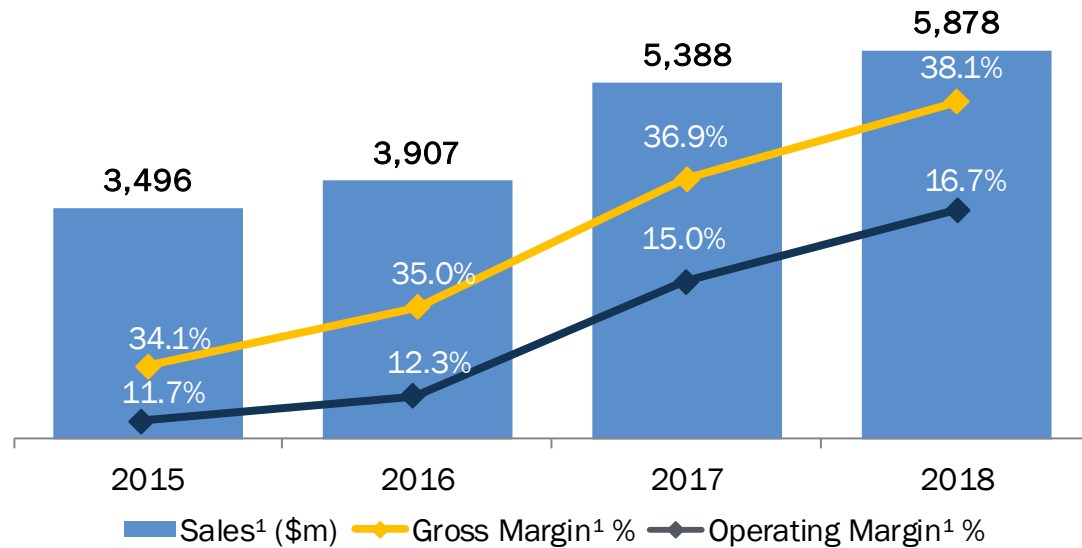
CUSTOMER DIVERSITY



TOP 20 END CUSTOMERS REPRESENT 36% OF 2018 REVENUE



RESULTS SUPPORT ACCELERATING TRANSFORMATION

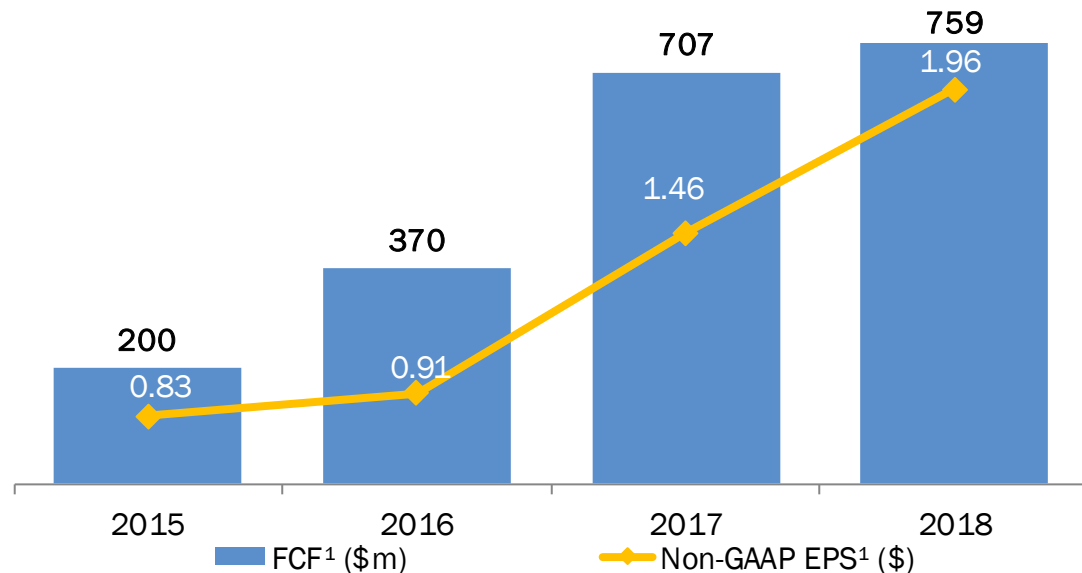


SOLID MARGIN PERFORMANCE

400 bps non-GAAP gross margin & 500 bps non-GAAP operating margin expansion during 2015-18

IMPRESSIVE EPS & FCF GROWTH

2.3x non-GAAP EPS and 3.8x FCF growth from 2015-18



STRONG OPERATING LEVERAGE

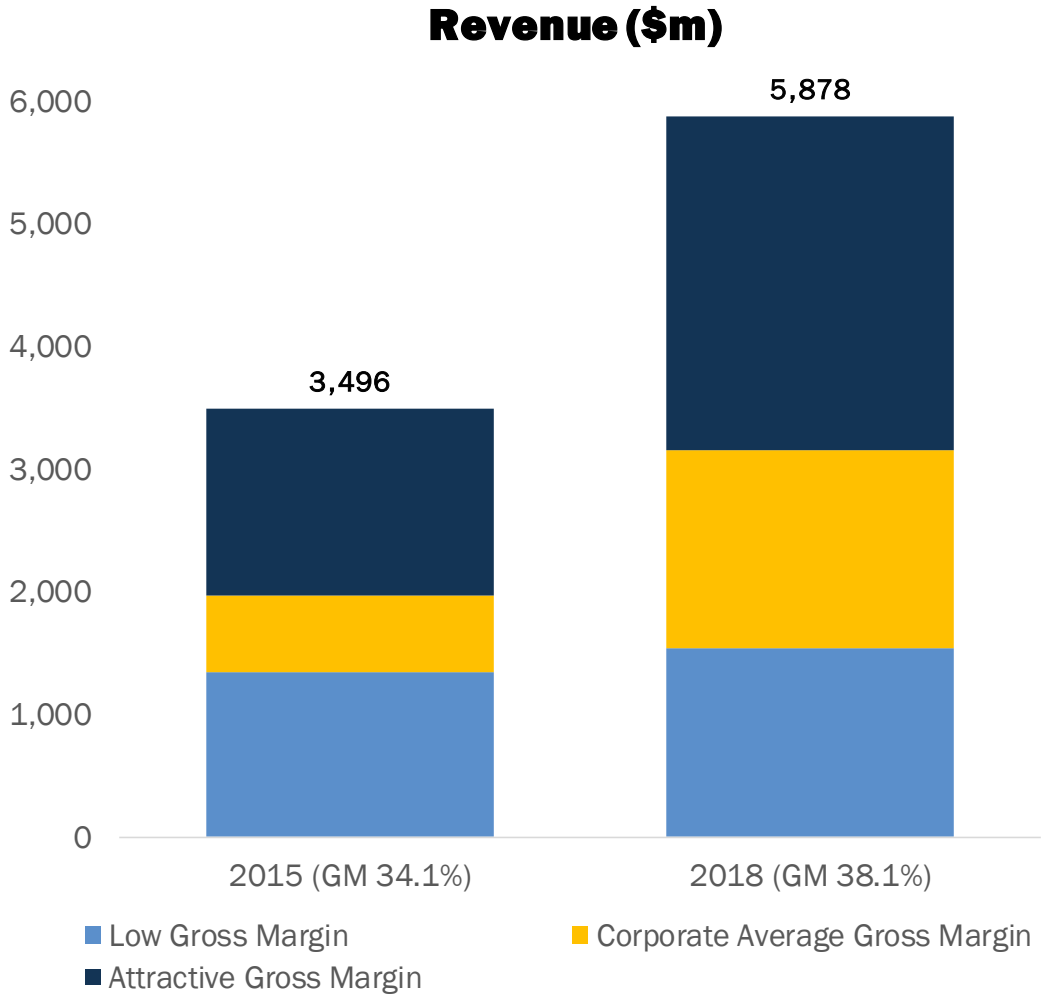
131% growth in non-GAAP operating profit vs. 68% growth in revenue from 2015-18

CONSISTENT EXECUTION

Consistently exceeded consensus non-GAAP EPS estimates



GROWTH DRIVEN BY HIGH VALUE REVENUE



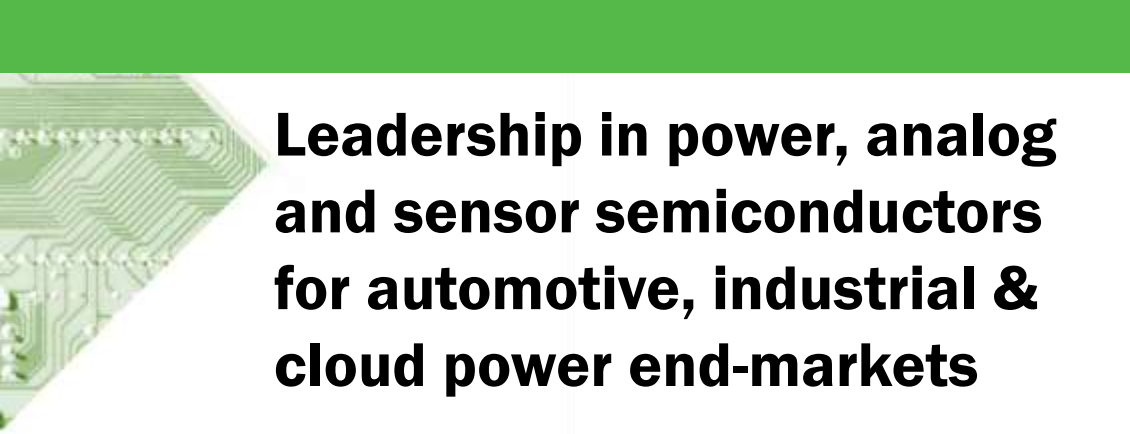
PROVIDING ENABLING TECHNOLOGIES
Enabling EV/HEV, Autonomous driving, ADAS, Machine vision, factory automation, energy efficiency

EMERGENCE AS POWER SEMI LEADER
Emerged as #2 player in power semiconductors and a credible alternative to the market leader

PENETRATING NEW ATTRACTIVE MARKETS
Server power management, 5G infrastructure



STRATEGIC INTENT



Leadership in power, analog and sensor semiconductors for automotive, industrial & cloud power end-markets



Enable disruption - Drive growth by providing enabling technologies for emerging and disrupting megatrends



Deliver consistent business performance and strong execution



Improve margins, capital efficiency, and free cash flow



M&A STRATEGY

Value based approach - Goal is to create value for shareholders

- Transactions need to be accretive to stock price
- Return on investment has to be significantly above cost of capital

Deals have to make solid strategic sense

- Augment presence in automotive, industrial, and cloud power markets
- Expand scale and synergies to improve cost structure

M&A is critical part of ON's strategy

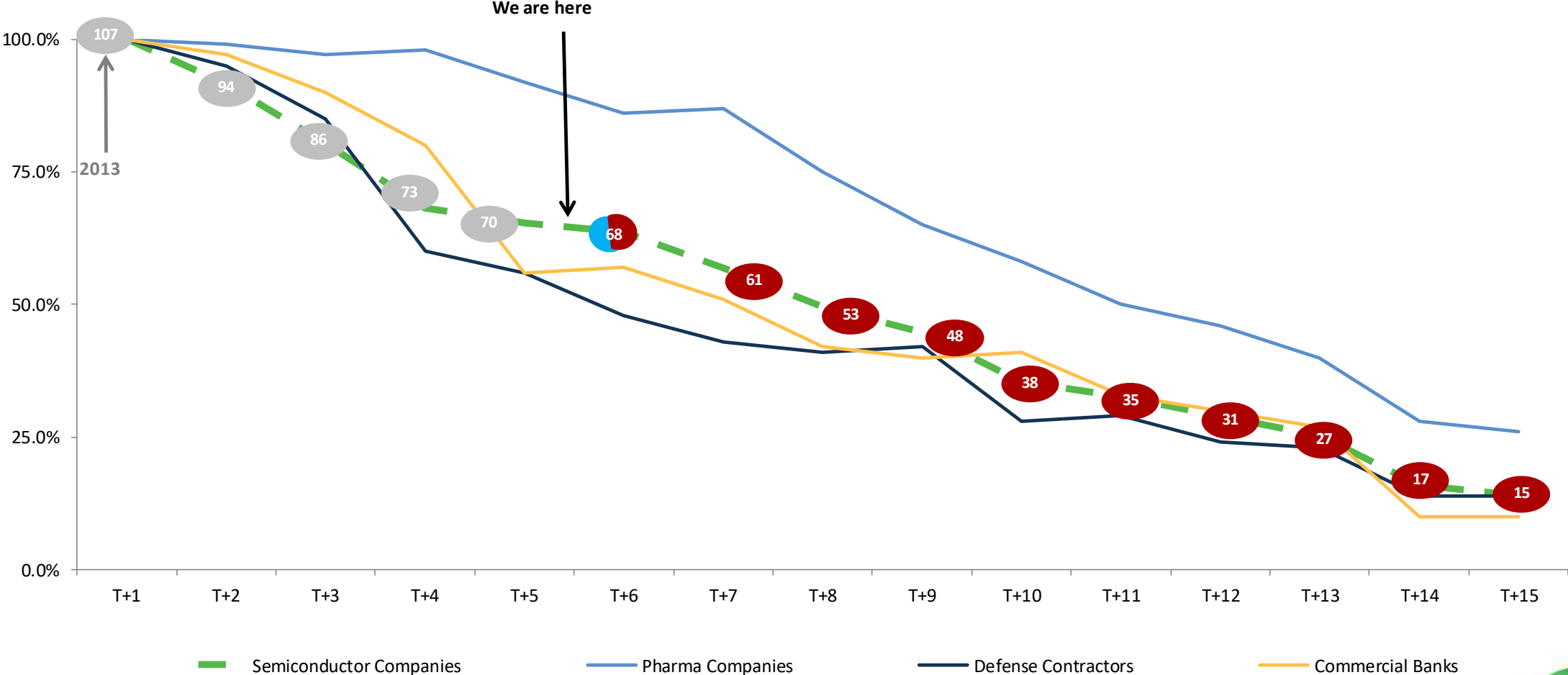
- Strong competency in M&A
- Significant opportunity to generate shareholder value through synergies as semiconductor industry consolidates



THOUGHTS ON INDUSTRY CONSOLIDATION

Large Companies as a % of Beginning

Progression of Consolidation
15 Years of Consolidation



We are here

2013



Source: Morgan Stanley
Notes: There were 40+ completed acquisitions and 6 new additions of semiconductor companies between 2013 and 2017

SUSTAINABILITY AND ESG

2019 Barron's 100 Most Sustainable Companies

- ON Semiconductor was ranked 59 on the list of 100 Most Sustainable Companies in the U.S. The company was scored on 5 key areas: shareholders, employees, customers, community and planet.

2018 North America Dow Jones Sustainability Index



- ON Semiconductor was added to the North America Dow Jones Sustainability Index as one of four semiconductor companies in 2018.

Founding Member: CSR Board

- ON Semiconductor is a founding member of CSR Board.org. This group of companies, from different industries, is dedicated to being good corporate citizens through making an impact globally with their sustainability and corporate social responsibility programs.

World's Most Ethical Companies®

- ON Semiconductor has been named among world's most ethical companies for four consecutive years by Ethisphere Institute. ON is one of only three honorees in semiconductor industry category in 2019.



Green Savings

- 137 individual projects focused on energy conservation, waste reduction, chemical recycling, material optimization and water conservation led to the company saving an estimated \$7.3 million in 2018.

EcoVadis

- In 2017, ON Semiconductor scored 85/100 in a 3rd party assessment of our environment, labor & human rights, fair business, and sustainable procurement practices. We were ranked in the top 1% of 150 companies in our category.



TARGET MODEL 2022

	2016	2018	2022 MODEL
REVENUE	\$3.9 BILLION	\$5.9 BILLION	\$7.1 BILLION
GROSS MARGIN¹	35.0%	38.1%	43.0%
OPERATING EXPENSES¹	22.7%	21.4%	21.0%
OPERATING MARGIN¹	12.3%	16.7%	22.0%
PROFIT BEFORE TAX¹	\$412 MILLION	\$893 MILLION	\$1,500 MILLION
CASH TAX RATE	6.7%	6.0%	17.5%
NON-GAAP EPS¹	\$0.91	\$1.96	\$3.00
FREE CASH FLOW¹	\$370 MILLION	\$759 MILLION	\$1,200 MILLION



SUMMARY

1

Compelling value proposition – Secular growth, highly defensible model, expanding margins & free cash flow

2

Providing enabling technologies driving secular megatrends in automotive, industrial, and cloud power markets

3

Highly defensible business model with strong competitive position & diverse customer base

4

Solid financial performance – expanding margins and accelerating FCF¹



**Questions
&
Answers**



**THINK
ON.**

DAVID SOMO
SENIOR VICE PRESIDENT
STRATEGY, MARKETING
& SOLUTIONS ENGINEERING



KEY TAKEAWAYS

1 Significant content increases in auto, industrial and cloud power key driver of ON's revenue – approximately 65% of business exposed to these secular drivers

2 Automotive Growth Accelerators – Automated Driving (ADAS & Surround View), Vehicle Electrification and Advanced Lighting Systems

3 Industrial Growth Accelerators – Energy Infrastructure, Industrial Power & Motion Control, Industrial Automation and Industrial IoT (IIoT)

4 Cloud Power Growth Accelerators – Hyperscale Datacenters, 5G infrastructure



KEY MEGATRENDS TO DRIVE STRONG GROWTH

AUTOMOTIVE

Expected 4 year revenue CAGR of 9%

Strong relationships with global tier-1 integrators and OEMs

Providing enabling technologies for EV/HEV, ADAS, Surround View, LED lighting and connectivity

INDUSTRIAL

Expected 4 year revenue CAGR of 6%

Broad presence with leading global industrial OEMs and strong distribution footprint

Providing enabling technologies for improving energy efficiency and industrial automation

CLOUD POWER

Expected 4 year revenue CAGR of 13%

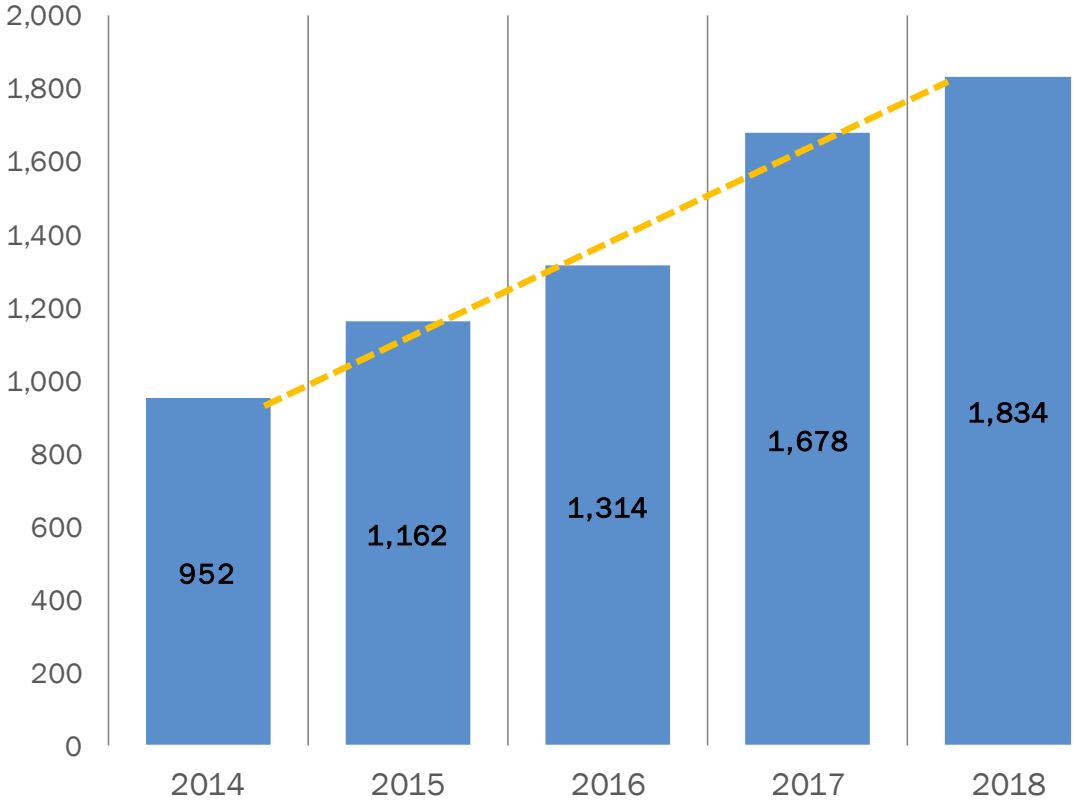
Leveraging relationships with computing and communications customers to penetrate new markets

Providing enabling power management technologies for servers and 5G infrastructure



AUTOMOTIVE – EXPECTED REVENUE CAGR 9%

Revenue (\$m)



ELECTRIC VEHICLES – 42% TAM CAGR FOR 2017-22

Up to \$500 in power semiconductor content

LED LIGHTING – 24% TAM CAGR FOR 2017-22

LED Driver, Power Management, Motor Control and In-Vehicle Networking

ADAS & AUTONOMOUS DRIVING – 18% TAM CAGR FOR 2017-22

Imaging, Radar, LiDAR, Power Management, Ultrasonic



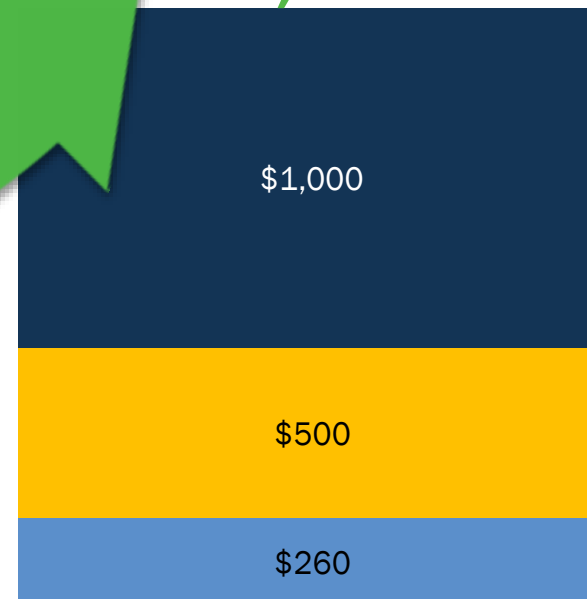
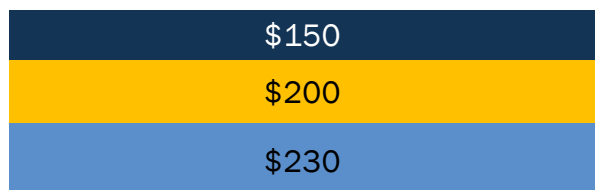
STEEP RISE IN AUTOMOTIVE ADDRESSABLE CONTENT

LEVEL 2 EV

LEVEL 4 EV

\$580

\$1,760



2018

2022

- Radar Sensors
- Medium Voltage Discrete
- High Voltage Discretes
- Power Modules
- Matrix / Pixel Lighting

- Lidar
- Sensor Fusion
- Wide-band Gap
- Laser lighting

■ Body Convenience & Passive Safety

■ Electrification

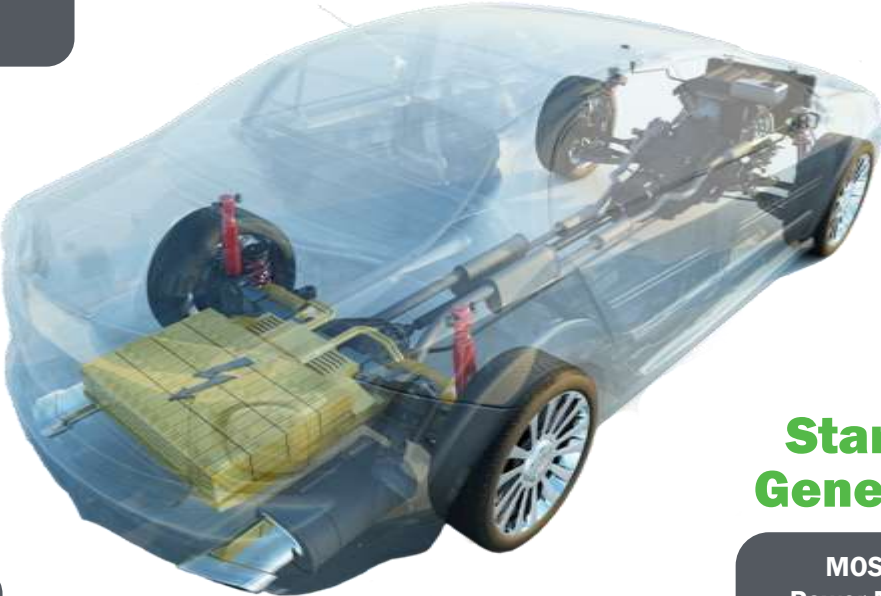
■ Advanced Safety



VEHICLE ELECTRIFICATION



I.C.E.



PHEV/BEV

ON Content
Up to \$40

OBC

- IGBTs, SiC FETs
- PIMs
- DC-DC
- IVN

Auxiliary Motor Control

- IPMs
- Motor Drivers
- MOSFETs
- IVN

Main Drive

- IGBTs, SiC FETs
- PIMs
- DC-DC
- IVN

HV-48V-12V

- MOSFETs
- SiC, GaN
- Power Modules
- DC-DC

Starter-Generator

- MOSFETs
- Power Modules
- Gate Driver,
- Current Sense

ON Content
Up to \$500



AUTOMATED DRIVING

Level 0

*Passive Safety
(Seat Belt & Airbags)*



ON Content
Up to \$10

Level 2

*Limited Autonomy
(ADAS, Viewing, ACC, LDWS, Auto-Braking)*



ON Content
Up to \$150

Level 4

*High Automation
(Self-driving with ability of driver to intervene)*



Image Courtesy of Waymo

ON Content
Up to \$1,000

Power Management

PMIC , Drivers, DC-DC, LDO, IVN

+

Power

Power MOSFETs, Discretes

+

Sensors & Fusion

Image, Radar , Lidar
Ultrasonic,
Processing



ADVANCED LIGHTING

*HID &
Incandescent
Lamps*



LED



Image Property of Mercedes Benz

ON Content
Up to \$3

ON Content
Up to \$30

Interior and Rear

LED Drivers,
Power Management,
IVN, Discretes

+

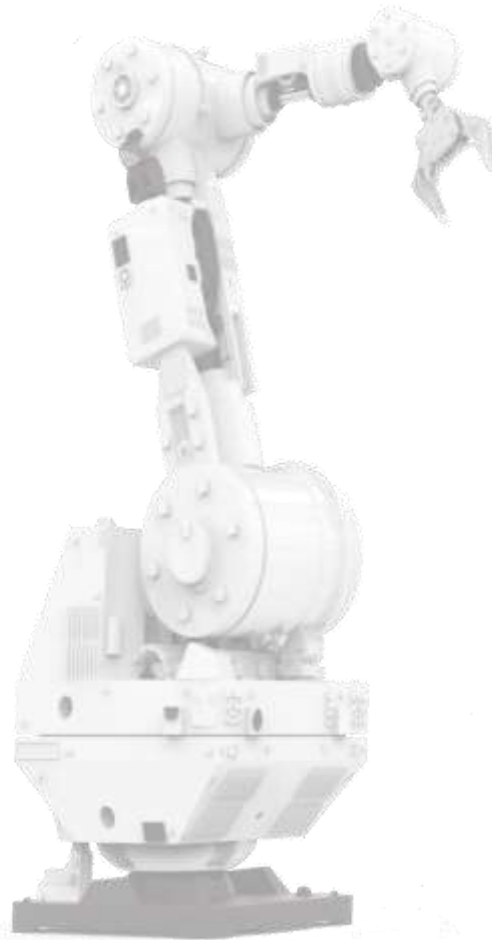
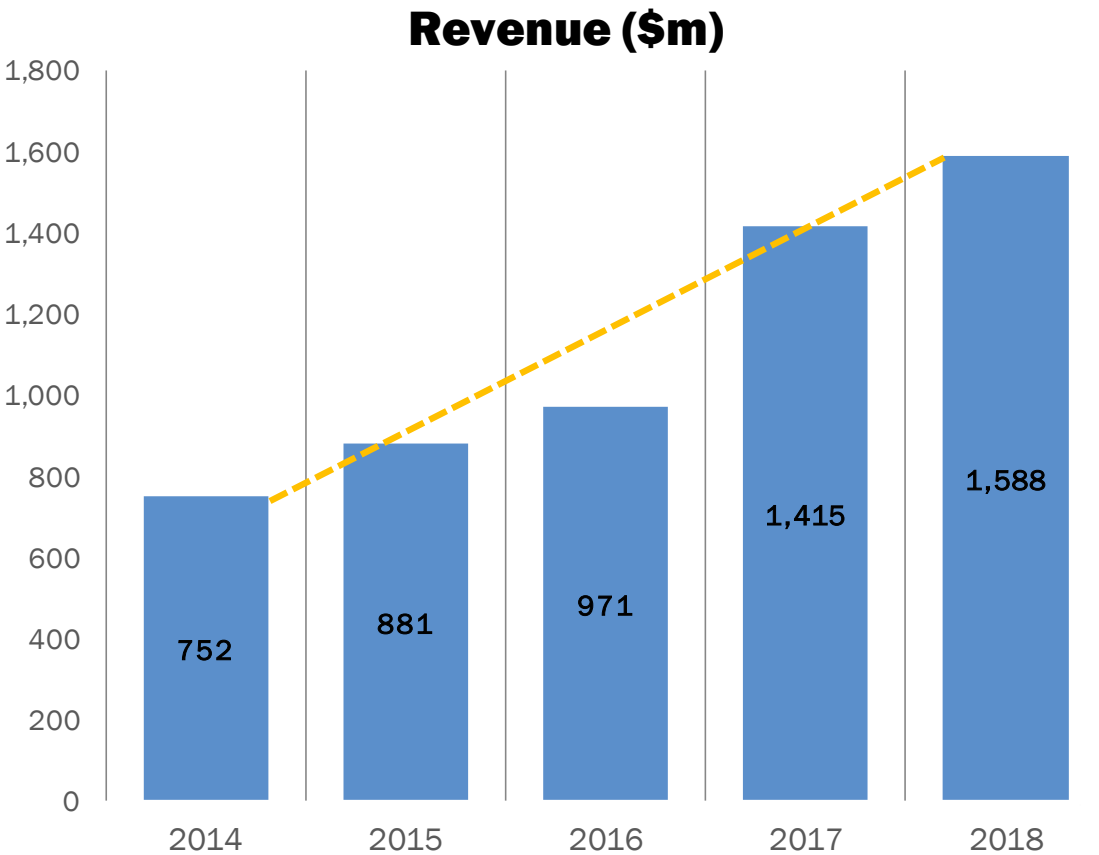
Front

LED, Matrix Beam, Pixel,
Laser drivers,
Power Management,
IVN, Discretes



HID: High intensity discharge

INDUSTRIAL – EXPECTED REVENUE CAGR 6%



ENERGY INFRASTRUCTURE – 19% TAM CAGR FOR 2017-22

Up to \$650 content in solar inverter vs. none in coal
Early stage of long-term infrastructure shift

INDUSTRIAL POWER & MOTORS – 5% TAM CAGR FOR 2017-22

Need for power efficiency driving higher content - 6x the MOSFETs in BLDC motor, 6x the IGBTs in Industrial motors

INDUSTRIAL AUTOMATION – 17% TAM CAGR FOR 2017-22

Robotics, machine vision, connectivity, and power



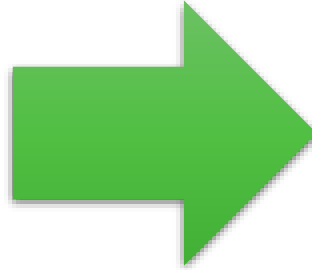
ENERGY INFRASTRUCTURE

Coal Power Plant



ON Content

\$0



Solar Farm



ON Content

\$650

Inverter

PIMs
SJ MOSFETs
SiC FETs and Diodes

+

Boost Converter

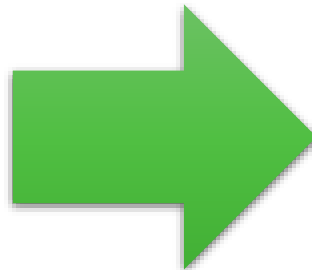
PIMs
SJ MOSFETs
SiC FETs and Diodes

Gas Pump



ON Content

\$0



EV Charging Station



ON Content

\$500

DC-DC LLC

SJ MOSFETs
SiC FETs & Diodes

+

Power Factor Correction

IGBTs, SJ MOSFETs
Power Modules
SiC FETs and diodes



INDUSTRIAL POWER AND MOTORS

AC Induction Drive

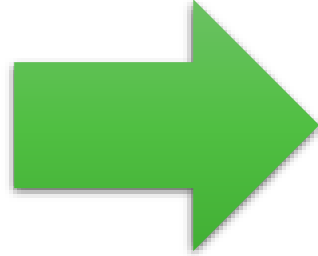


ON Content
\$0

Variable Frequency Drive



ON Content
\$40



Power Conversion

IGBTs, SJ MOSFETs
SiC FETs & Diodes
PFC Controllers



Power Factor Correction

IGBTs, SJ MOSFETs
Power Modules
SiC FETs and Diodes



Motor Inverter

IGBTs, SJ MOSFETs
Power Modules
SiC FETs and Diodes



INDUSTRIAL AUTOMATION

Human Manufacturing



ON Content
\$0

Robotic Manufacturing



ON Content
\$250

Machine Vision

Image Sensors

+

Motor Drive

MV MOSFETs
Motor Drivers
Power Modules

+

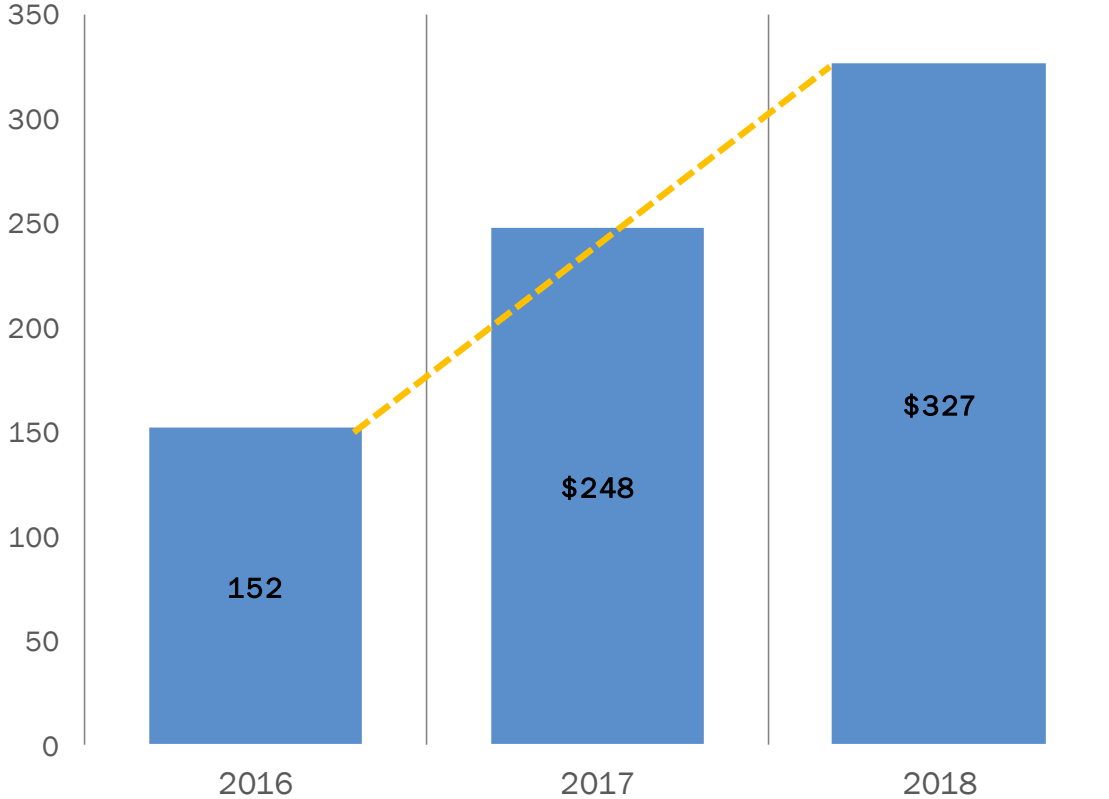
Power Conversion

SJ MOSFETs
SiC FETs & Diodes
PFC Controllers
MV MOSFETs



CLOUD POWER – EXPECTED REVENUE CAGR 13%

Revenue (\$m)



5G INFRASTRUCTURE – 247% TAM CAGR FOR 2017-22

5x the MOSFET usage in a 5G radio
3-5x the number of base stations as 4G
Analog power management

SERVER – 15% TAM CAGR FOR 2017-22

Increasing rack power every generation requires high performance MV MOSFETs to meet efficiency targets
Analog power management for CPU, accelerators and memory



5G NETWORKS

4G: 2x2 TxRx



ON Content
\$9

5G: MMIMO & Beamforming



ON Content
\$170

Digital & Auxiliary Power

MV MOSFETs
Power Stages
Point of Load
PMICs

+

Radio Power

IGBTs, SJ MOSFETs
Power Modules
SiC FETs and Diodes

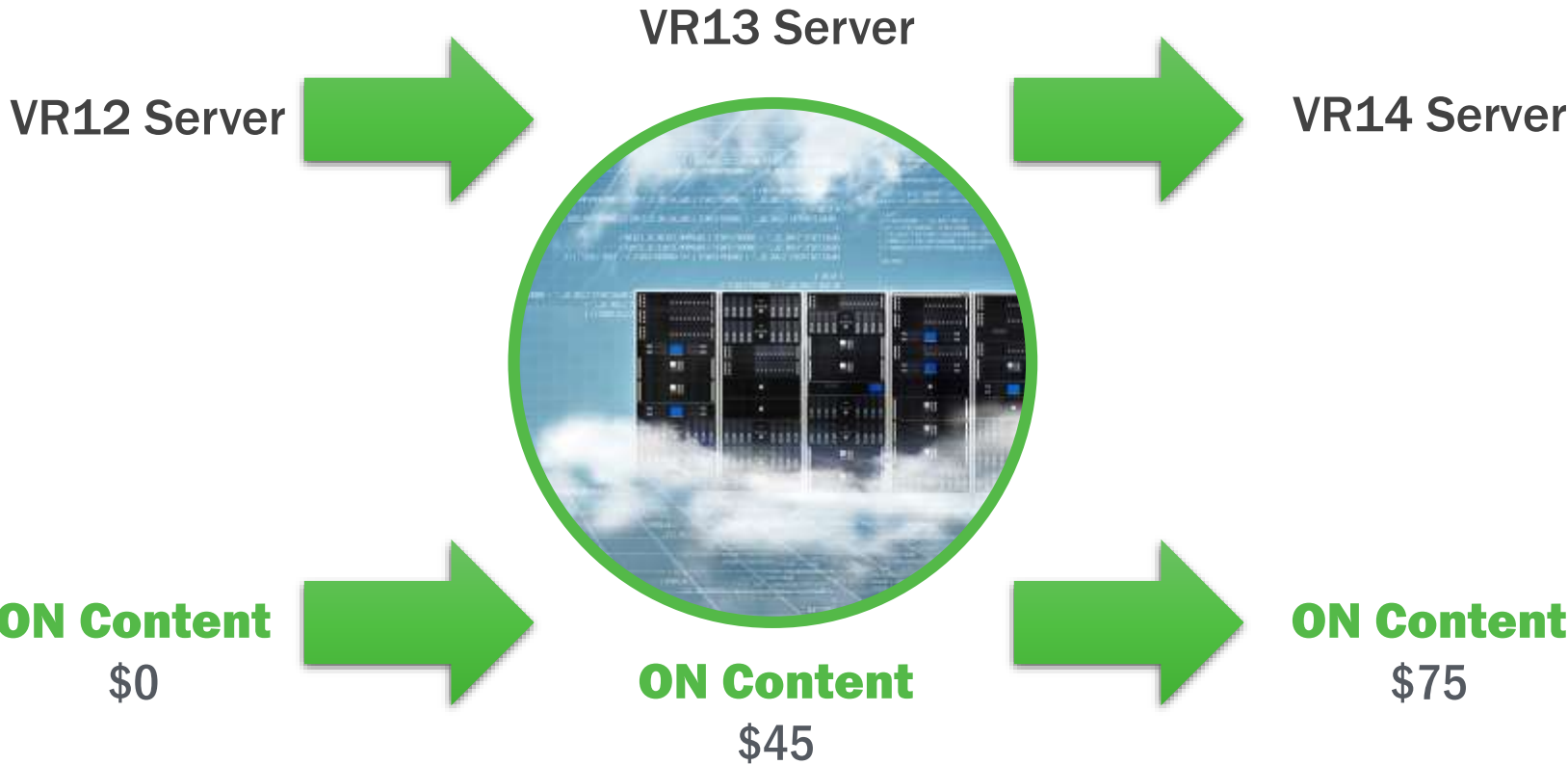
+

AC-DC Power Supply

SJ MOSFETs
SiC FETs & Diodes
PFC Controllers
MV MOSFETs



SERVERS



Core & Memory Power

VR14 Digital Controller
Smart Power Stage

+

Auxiliary Power

MV MOSFETs
Point of Load
eFuse

+

AC-DC Power Supply

SJ MOSFETS
SiC FETs & Diodes
PFC Controllers



SUMMARY

1

High exposure to key secular growth applications in Automotive, Industrial and Cloud Power drives significant content increase leading to outsized growth

2

Positioned for leadership in automated driving and vehicle electrification with industry's best sensor and power portfolio

3

Comprehensive sensor, power management, motor control and connectivity solutions driving above market growth in Industrial power and IIoT

4

Robust growth in Cloud Power servers and 5G infrastructure with new solutions and significant power content increases



**THINK
ON.**

ANALOG SOLUTIONS GROUP
VINCE HOPKIN
EXECUTIVE VICE PRESIDENT



KEY TAKEAWAYS

1 Driving secular growth through content increase in automotive, industrial and cloud power

2 Differentiation through ultra low power consumption, integration and high reliability

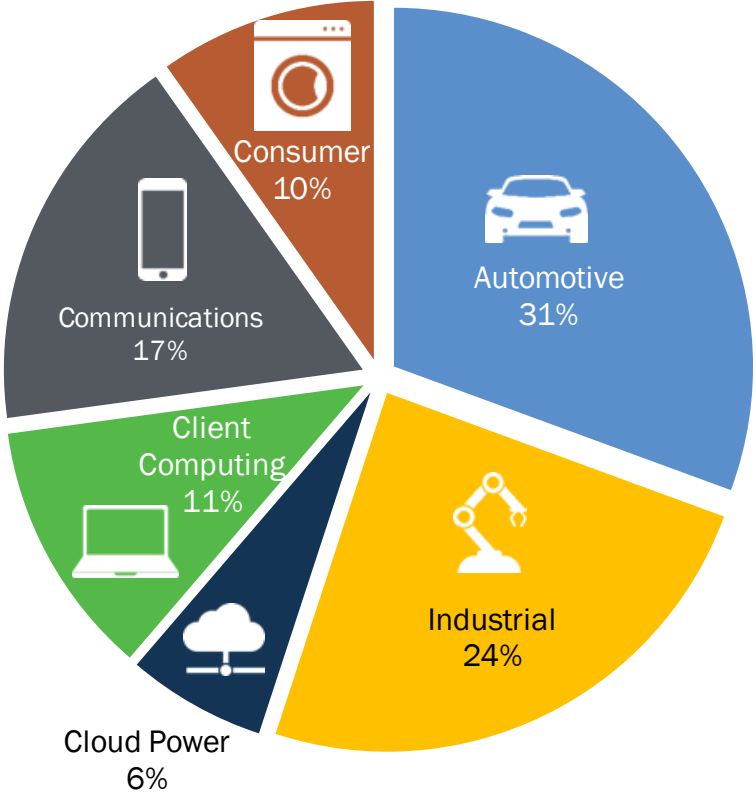
3 Leveraging analog power management expertise in auto and cloud markets

4 Margin expansion through portfolio optimization and improving efficiencies



ANALOG SOLUTIONS GROUP (ASG)

2018 REVENUE BY MARKET



AUTOMOTIVE

Leader in LED front lighting, sensor interface ICs, ADAS power management



INDUSTRIAL

Leader in power conversion, power safety (ground fault/arc fault protection), and industrial ASIC



CLOUD POWER

Leader in smart power stage for server CPUs

2018 REVENUE \$2.071B | GROSS MARGIN 42.4%



ASG STRATEGIC INTENT



Invest in analog power management for automotive, industrial, and cloud power markets with ultra low-power differentiation



Expand margins through portfolio optimization and operational improvements



Leverage synergistic portfolios with ON's other business groups to provide a total solution



Enable disruption - Drive growth by providing enabling technologies for emerging and disrupting megatrends



ASG STRATEGIC POSITIONING - HOW WE WIN



1

Participate in product categories in which we have competitive advantage - High volume analog, highly efficient and robust power management



2

Leverage differentiation in ultra low power consumption, power efficiency, integration, and high reliability



3

Focus on automotive, industrial and cloud power markets - High natural barriers to market entry, longevity, high percentage of sole-source products, and better margin profile



4

Leverage our manufacturing capabilities - stable/controllable supply, lower cost, highest quality



GROWTH OPPORTUNITIES IN STRATEGIC MARKETS

AUTOMOTIVE

31% of ASG revenue

TAM (2022) of \$30B

2017-22 TAM CAGR of 6.2%

Key Solutions

ADAS Power Solutions

Sensor Interfaces

LED Lighting

Intelligent Power

INDUSTRIAL

24% of ASG revenue

TAM (2022) of \$40B

2017-22 TAM CAGR of 7.1%

Key Solutions

Ultra Low Power Wireless
Connectivity

Advanced Motor Drivers

Embedded MCUs

CLOUD POWER

6% of ASG revenue

TAM (2022) of \$2.7B

2017-22 TAM CAGR of 16%

Key Solutions

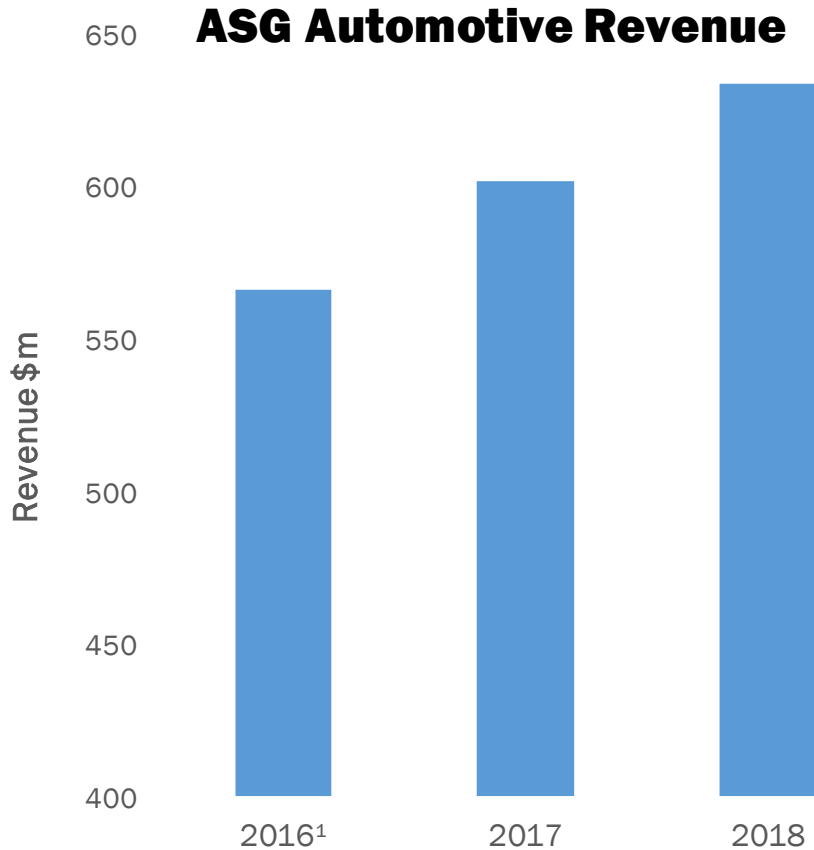
Multi-Phase Power Control

Smart Power Stage

PoL Power Conversion



ASG AUTOMOTIVE BUSINESS



LIGHTING

#1 supplier of LED lighting solutions
Most competitive offerings in the industry

ULTRASONIC SENSOR INTERFACES

Greater than 20% growth in sensor content/car
Greater than 35% revenue growth 2018/2017

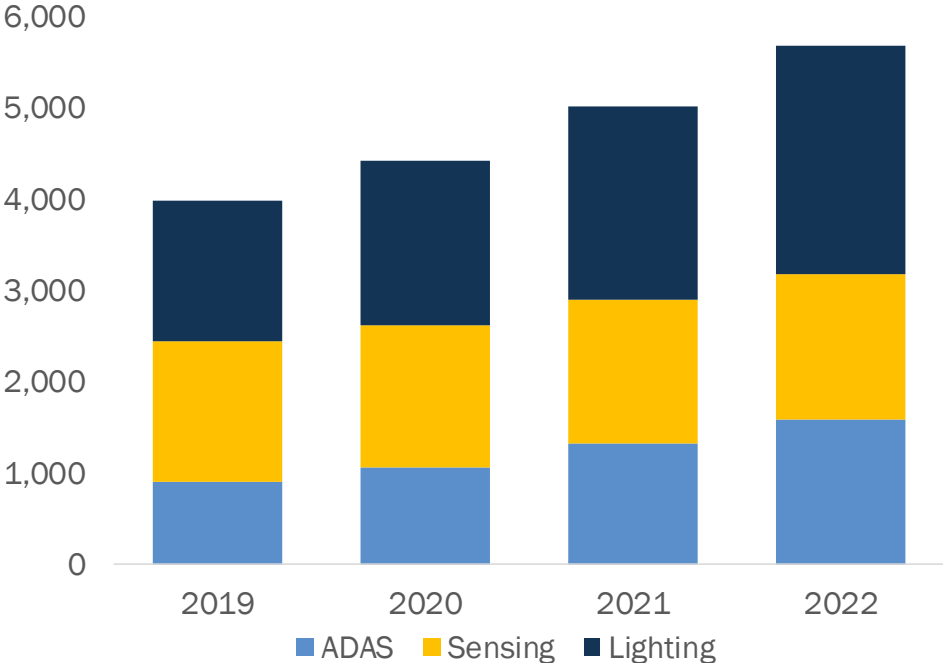
ADAS POWER & AUTONOMOUS DRIVING

Only ASIL certified power management
supplier for the two leading ADAS
processing platforms



ASG KEY AUTOMOTIVE GROWTH DRIVERS

ASG Automotive TAM (\$m)



FRONT, INTERIOR AND CONVENIENCE LIGHTING

\$25 per car: LED power, adaptive lighting

SAFETY AND DRIVE TRAIN SENSING

\$50 per car: signal conditioning, networking, and power management

INVESTING IN ADAS POWER

\$40 per car: multi-phase ASIL power management and power stage



NEW CONTENT DRIVING GROWTH

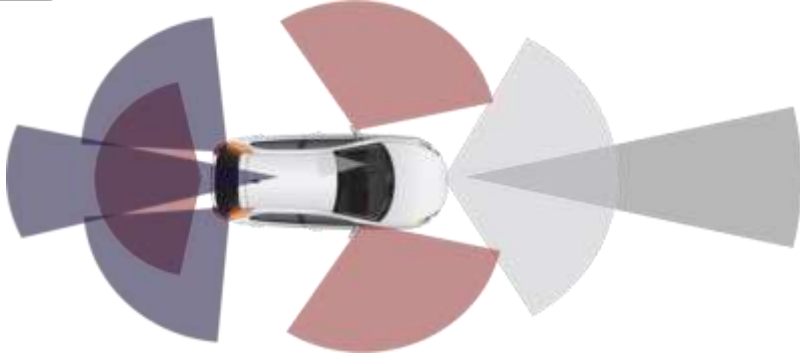


Limited Assistance

ASG Content
\$50



Sensing
Ultrasonic
Pressure
Position



Advanced Driver Assistance

In Vehicle Network
LIN/CAN/FlexRay
SBC
Embedded MCU

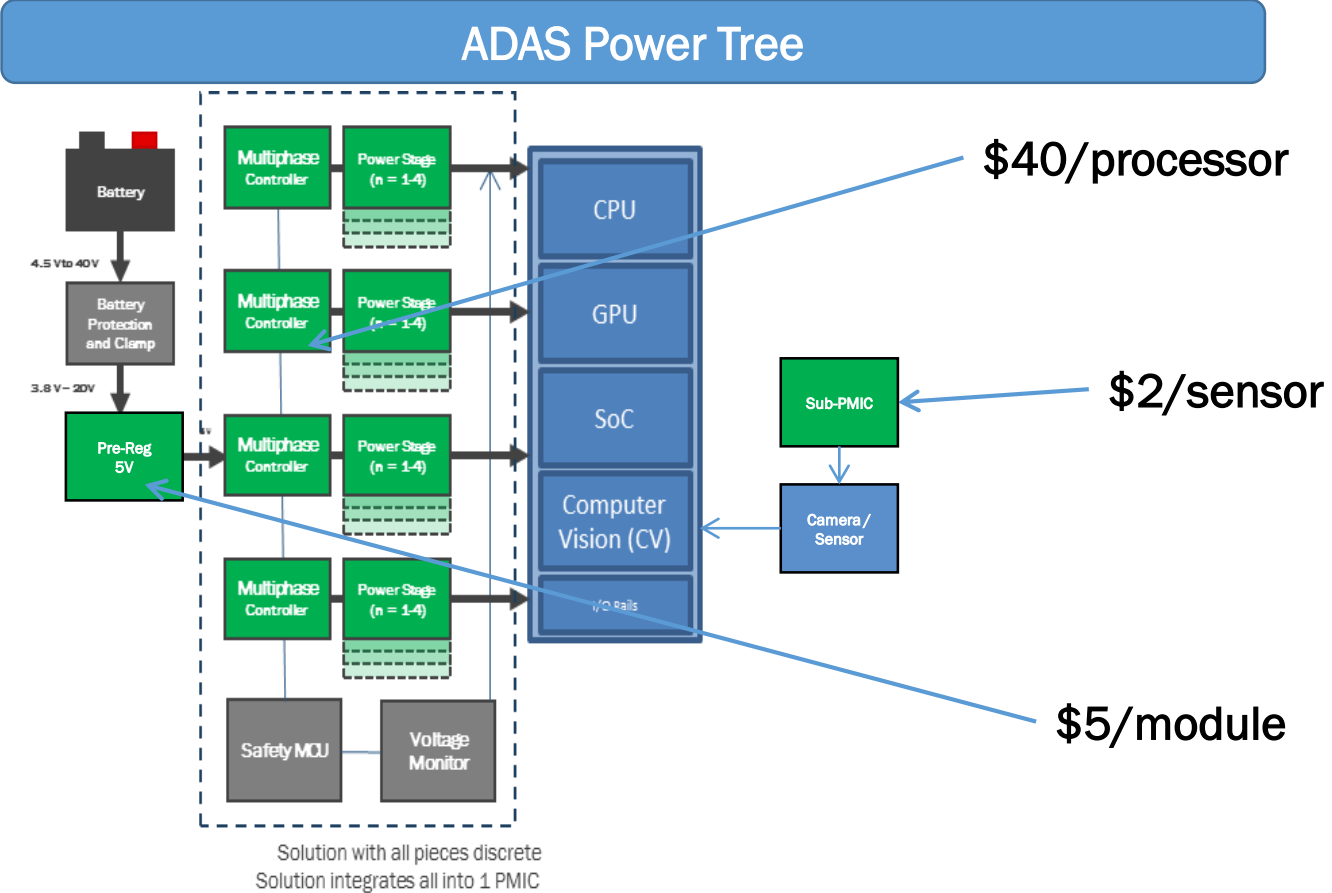
ASG Content
\$500

Safety, Comfort
LED lighting
HVAC motor drivers

ADAS Power
Multi-phase Control
Power Stage
PoL



ADAS POWER MANAGEMENT



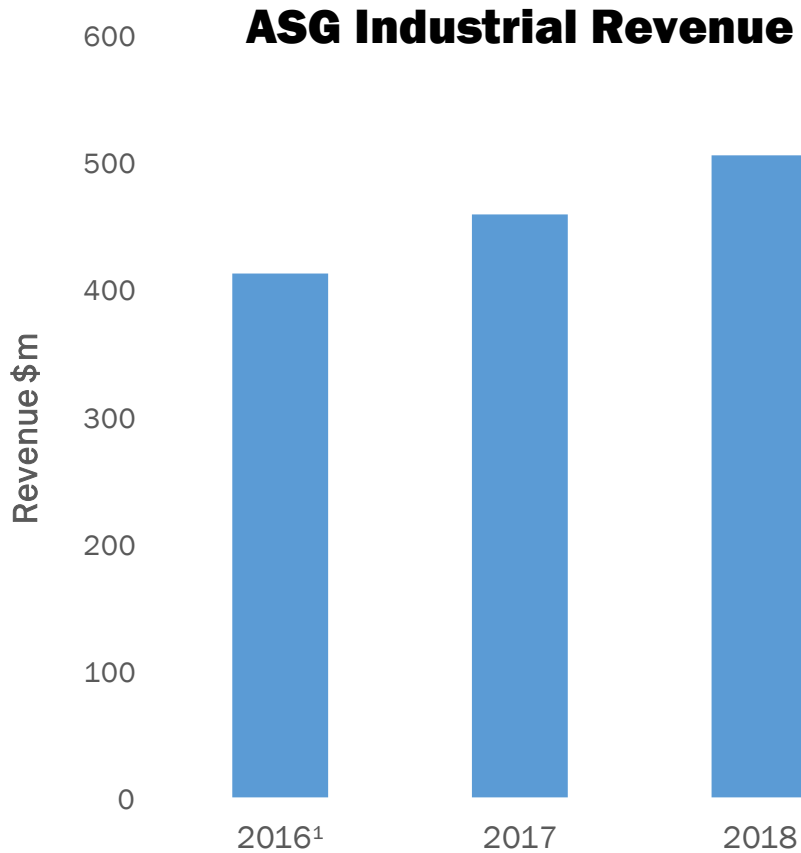
ONLY PROVIDER OF ASIL QUALIFIED MULTI-PHASE POWER SOLUTIONS FOR LEADING ADAS PROCESSORS

#1 SUPPLIER OF BATTERY CONNECTED POWER CONVERSION SOLUTIONS

ON'S AUTOMOTIVE IMAGE SENSING LEADERSHIP DRIVES OPPORTUNITIES IN ADAS POWER MANAGEMENT



ASG INDUSTRIAL BUSINESS



WORLDS LOWEST POWER BLE

Strong opportunity funnel
Connecting the Personal Area Network

ULTRA LOW POWER CONNECTIVITY

Experiencing strong revenue growth
Multi-protocol software based radio

USB 3.X AND HIGH SPEED INTERFACES

\$300M of new SAM
Signal management and conditioning

EMBEDDED PROCESSING

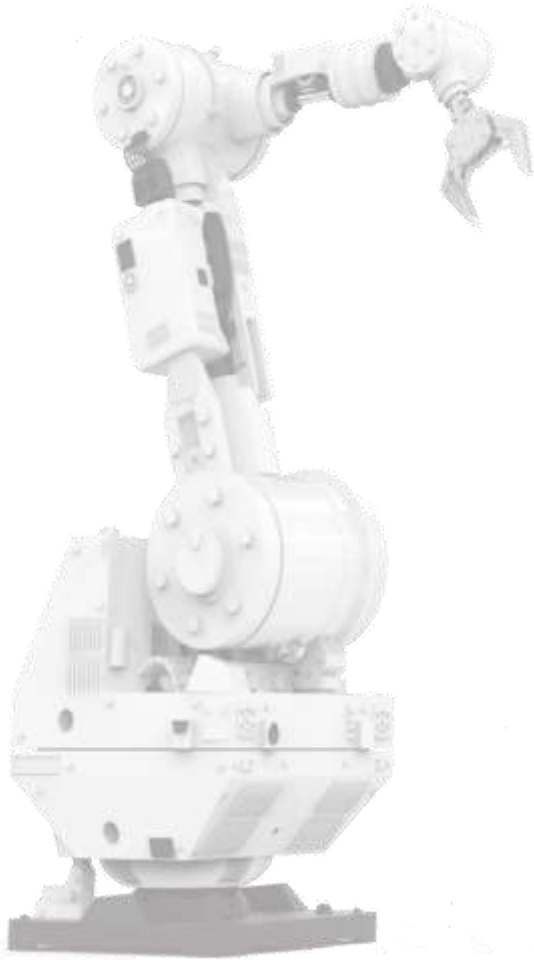
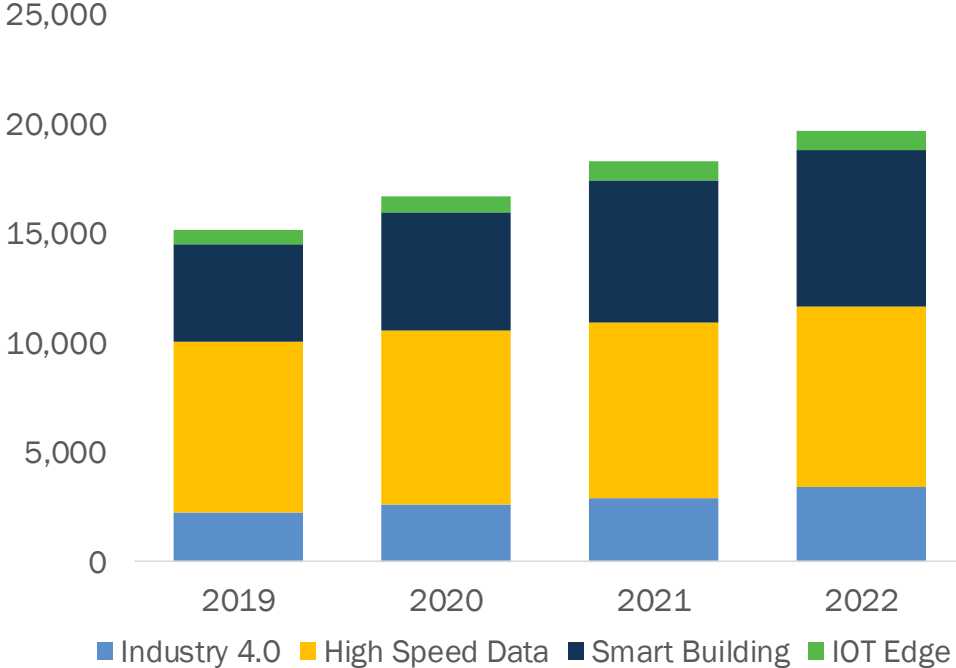
Intelligence for power, sensing and industrial automation



¹: 2016 represents Q4' 16 Annualized values.

ASG KEY INDUSTRIAL GROWTH DRIVERS

ASG Industrial Market TAM (\$m)



IOT EDGE CONNECTIVITY

Edge connectivity 2018-22 revenue CAGR of 15%
Rapid Growth in Industrial Connectivity

SMART BUILDING & HOME CONTROL

More than 8% 2018-22 revenue CAGR
Voice control solutions adding more than \$250M of new opportunity

HIGH SPEED DATA

Greater than 30% 2018-22 revenue CAGR
Interface controls solutions of USB type-C

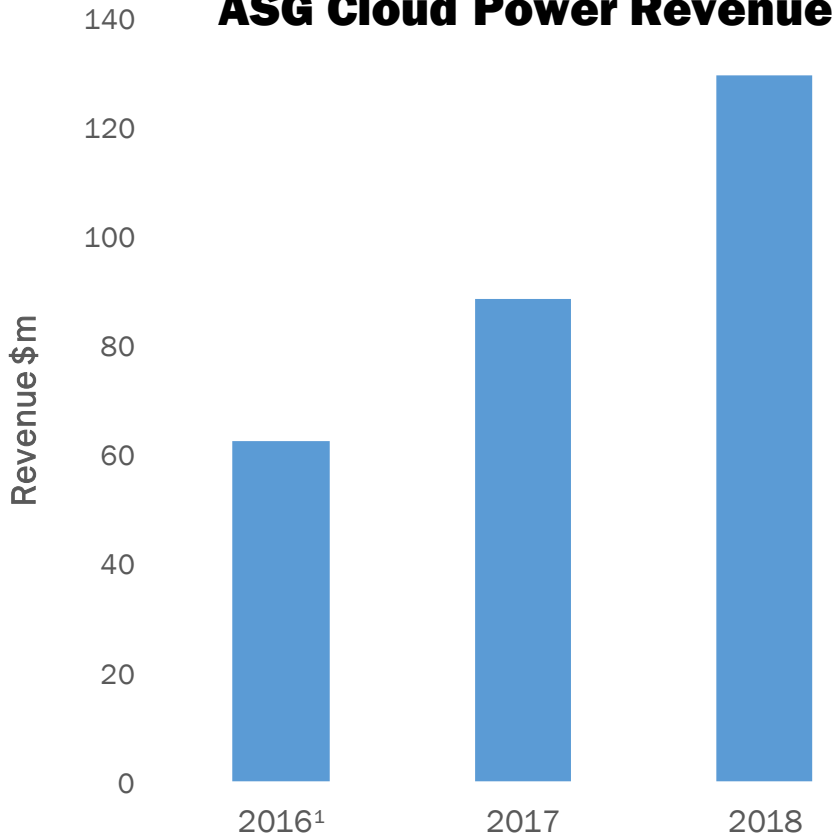
INDUSTRY 4.0

Content Growing more than 30%
Working closely with leading motor and robotics manufacturers on intelligent motion solutions



ASG CLOUD POWER BUSINESS

ASG Cloud Power Revenue



MULTI-PHASE POWER CONTROL

\$600M of new opportunity in 2019
Greater than \$75 per server in 2021

SMART POWER STAGE

The 2nd largest silicon content after processor
Greater than \$150 content per AI Accelerator

POINT OF LOAD

\$100 per 5G base station; \$20 per server

BACK PLANE POWER CONVERSION

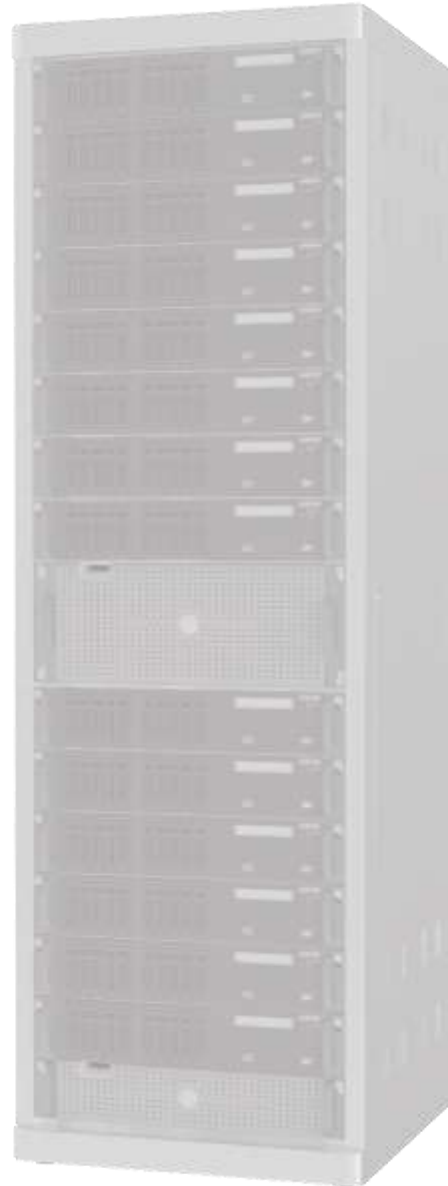
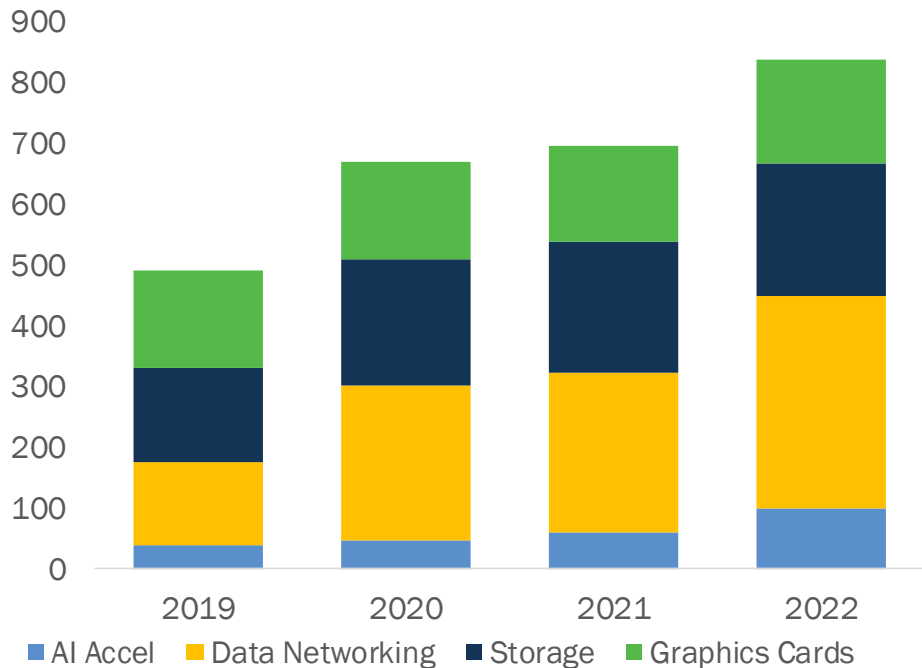
Expansion SAM for 48V solutions



¹: FY2016 represents 04' 16 Annualized values.

ASG KEY CLOUD POWER GROWTH DRIVERS

ASG Cloud Power Market TAM (\$m)



AI ACCELERATORS

Growing more than **115%/year** during 2018-22
Smart power stage for high performance GPU's

5G and Data Networking

Growing more than **110%/year** during 2018-22

Complete solutions for every power node

LARGE SCALE STORAGE

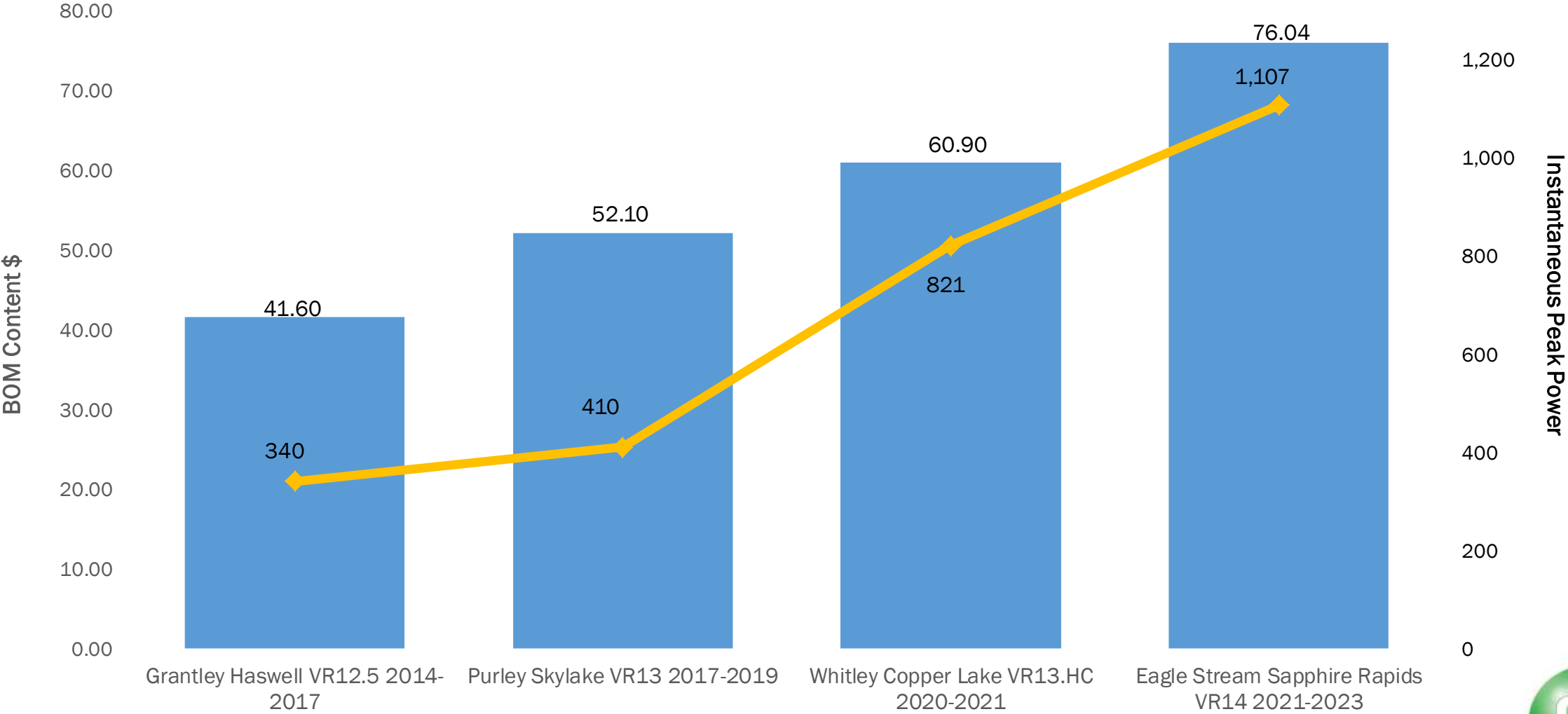
Growing more than **70%/year** during 2018-22
Power solutions for network processors and storage devices

HIGH END GRAPHICS CARDS

Growing more than **40%/year** during 2018-22
Smart power stage for GPU's

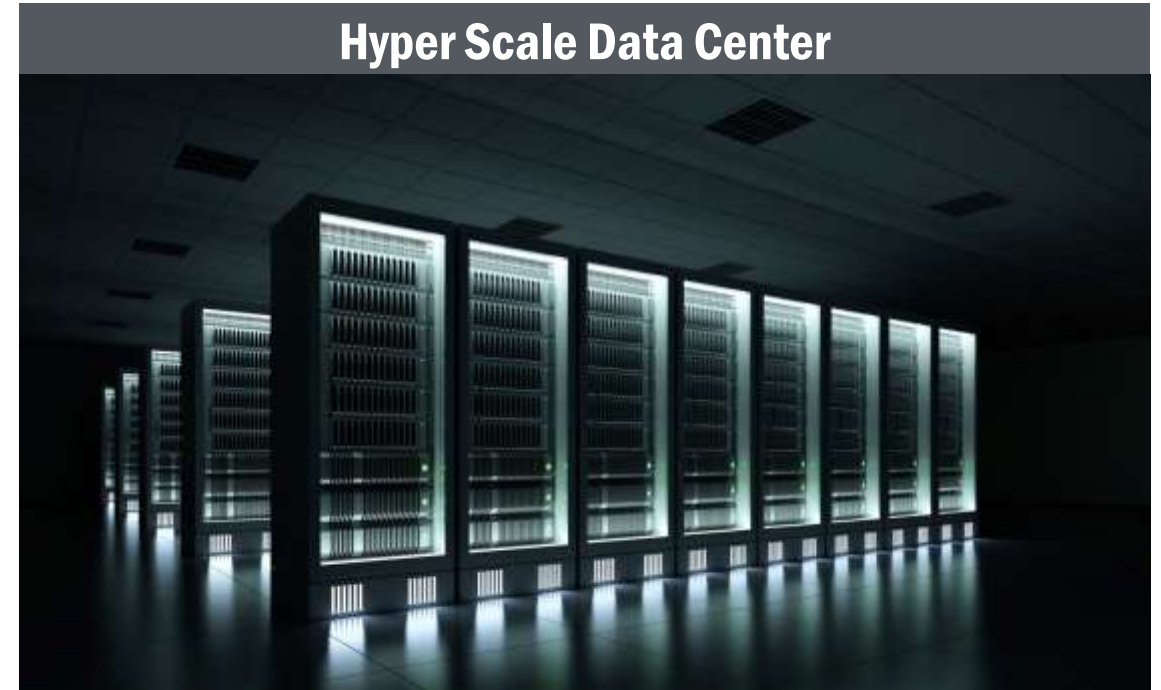
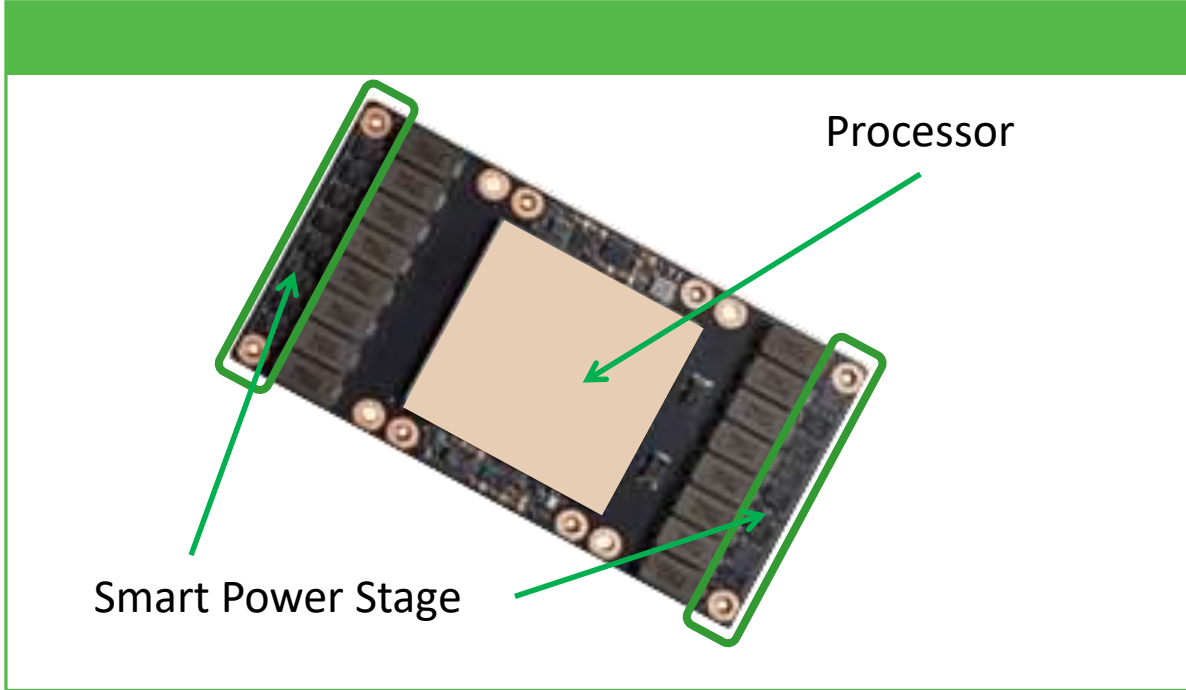


STEEP GROWTH IN ADDRESSABLE SERVER CONTENT



Sources: Romley PDG, Rev2.1, Jun 2012, Grantley PDG, Rev2.2, Jun 2015, Purley PDG, Rev1.5, Aug 2016, DCG Power Summit, Aug 2016, Intel Meeting, May 2017, Intel Power Summit, Q2 2018

SERVER POWER MANAGEMENT DELIVERS SOLID VALUE



After processor, smart power stages are the second largest component of silicon BOM

Number of servers in a typical data center - 3M

PUE (Power Usage Effectiveness) - 1.8

Server Operating Lifetime - 4.5 years

Lifetime Energy Savings of \$38 million



ASG MARGIN FOCUS

Portfolio management

- High-value focused investments
- Strategic divestitures and rebalancing R&D spending to accelerate mix improvements

Focus on secular growth applications

- Cloud power solutions driving rapid high margin growth
- Low power connectivity
- Embedded solutions
- ADAS
- Medical

Operational Improvements

- Scale strengthens ON Semiconductor's buying power
- Strategic capital investments reduce dependency on external manufacturing
- Continued technology advancements



SUMMARY

1

Secular content increase in auto, industrial and cloud applications to drive strong growth

2

Drive towards leadership position in markets in which we participate – differentiate through power management and reliability expertise

3

Accelerating traction in cloud power and ADAS power markets

4

Margin expansion through portfolio optimization and improving efficiencies



Break



**THINK
ON.**

INTELLIGENT SENSING GROUP

**TANER OZCELIK
SENIOR VICE PRESIDENT**



KEY TAKEAWAYS

1

Accelerating momentum in ADAS due to increasing content and expanding portfolio

2

Further strengthening leadership position in automotive – extending competitive lead through innovation

3

Leadership in industrial with growth in machine vision and robotics

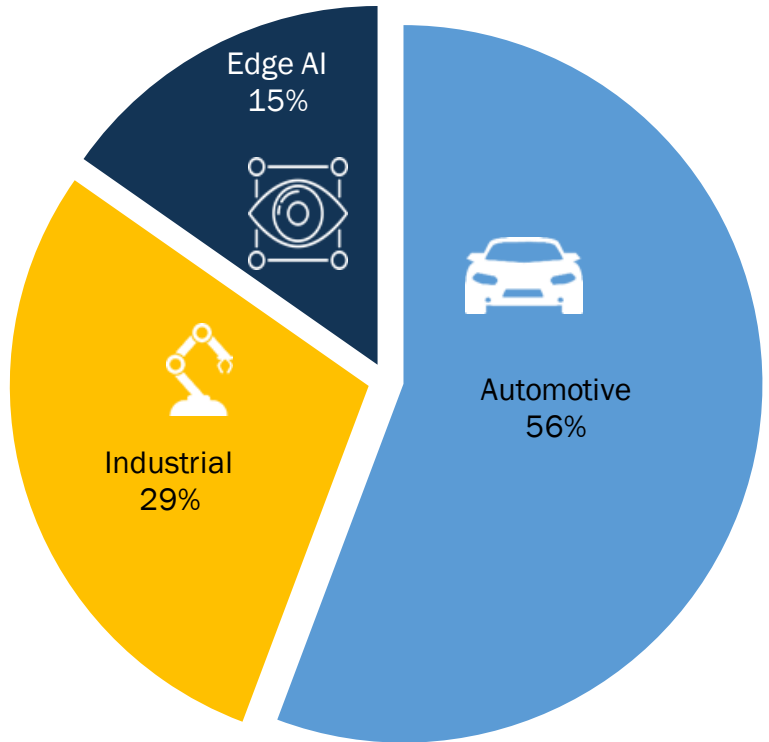
4

Rapidly improving margin profile and financials



INTELLIGENT SENSING GROUP (ISG)

2018 Revenue by Market



2018 REVENUE \$769M | GROSS MARGIN 41%

AUTOMOTIVE

#1 market share
Technology leadership
Broadest product and customer portfolio

INDUSTRIAL

#1 market share in machine vision
Technology leadership
Inspection, Scanning, Automation, Security, Robotics

EDGE AI

Leading global shutter technology
Retail, Smart building, Robotics, Consumer



ISG STRATEGIC INTENT AND GOALS



Sustain #1 position in Automotive and Machine Vision markets through continuous innovation and technology leadership



Enable next generation ADAS by offering complete range of sensors including Radar and cost effective LiDAR



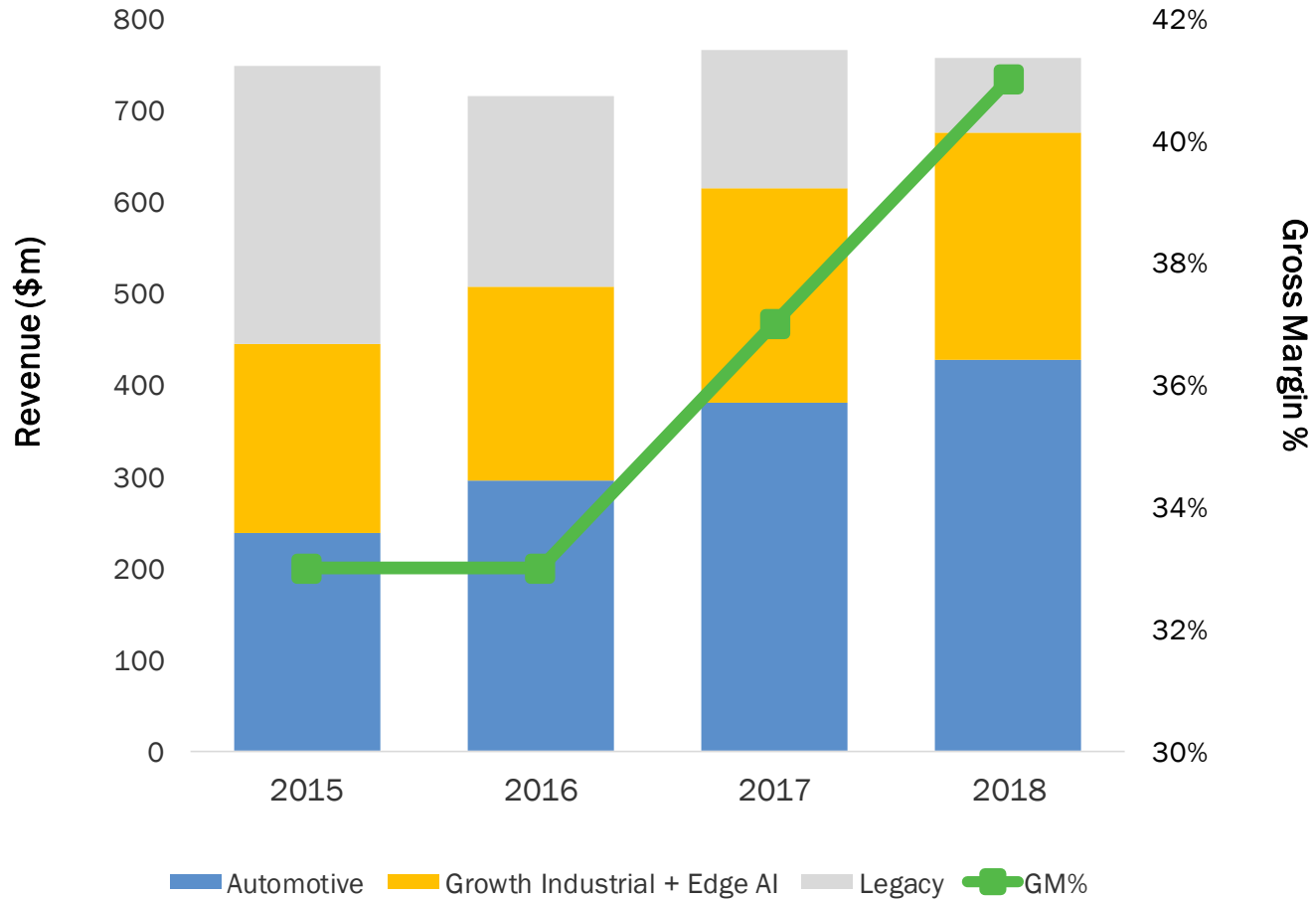
Expand margins through portfolio optimization and operational Improvements



Enable disruption - Drive growth by providing enabling technologies for emerging and disrupting megatrends



SHIFT IN ISG PRODUCT MIX & MARGIN IMPROVEMENT



STRONG AUTOMOTIVE GROWTH

2014-18 ISG automotive revenue CAGR 24%

EXIT LOW MARGIN MARKETS

Mobile image sensors and low-end security

NEW DIFFERENTIATED PRODUCTS

New product performance and features increase ASP

IMPRESSIVE GROSS MARGIN EXPANSION

~800 bps gross margin improvement during 2016-18



ISG STRATEGIC POSITIONING - HOW WE WIN



1

First mover's advantage in automotive - Most automotive imaging/ADAS software tailored to ON image sensors – high switching costs



2

Leading the market in most critical performance metrics – High dynamic range (HDR), Low Light, LED flicker mitigation (LFM), Cyber Security, ASIL



3

Comprehensive automotive portfolio addressing all imaging segments, expanding LiDAR and Radar



4

Broad industrial and edge AI portfolio, offering best performance and multiple product families for these diverse segments



ISG GROWTH OPPORTUNITIES IN STRATEGIC MARKETS

AUTOMOTIVE

56% of ISG revenue
2022 SAM of \$2.6B
2017-22 SAM CAGR of 26%

Key applications:

ADAS
Autonomous Driving
In-cabin (OMS, DMS)
Viewing
Radar
LiDAR

INDUSTRIAL

29% of ISG revenue
2022 SAM of \$1.8B
2017-22 SAM CAGR of 10%

Key applications:

Robotics
Machine Vision
Intelligent Traffic Systems
Factory Automation
Scanning
Security

EDGE AI

15% of ISG revenue
2022 SAM of \$1.2B
2017-22 SAM CAGR of 22%

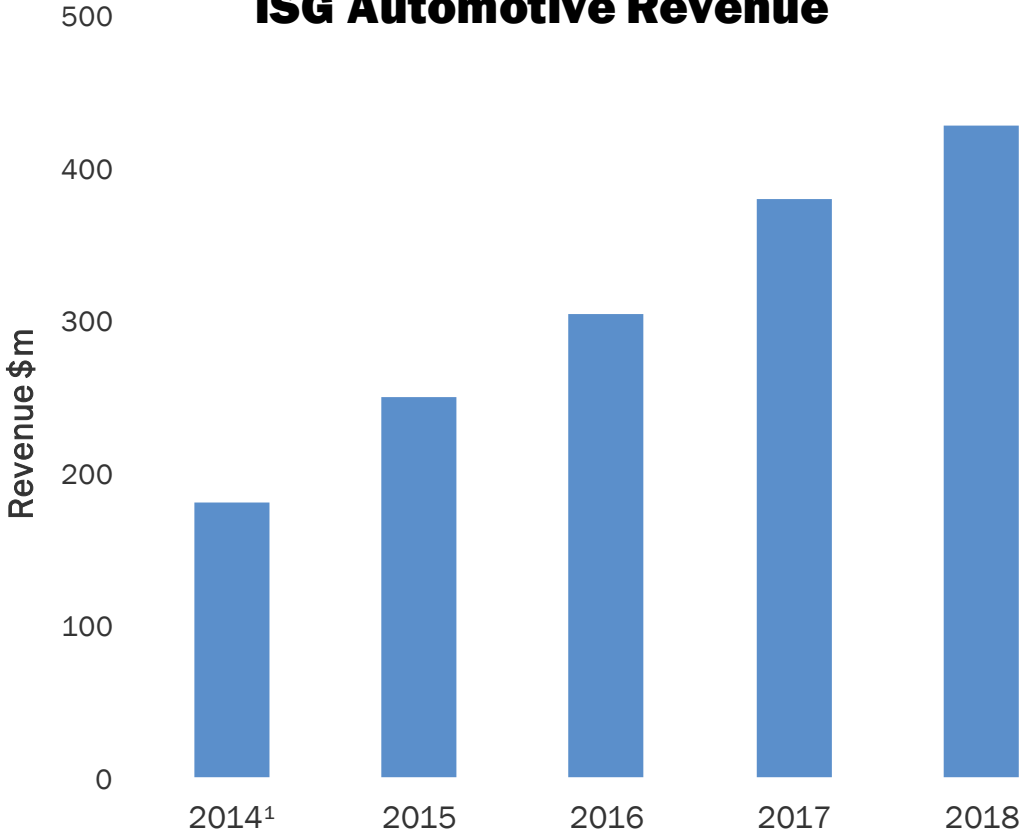
Key applications:

IoT
Retail
Smart Building
Robotics
Drones



STRONG MOMENTUM IN AUTOMOTIVE

ISG Automotive Revenue



STRONG AUTOMOTIVE GROWTH
24% revenue CAGR during 2014-18

LEADER IN AUTO IMAGE SENSORS
62% share in overall market & 81% in ADAS

HIGHLY SUSTAINABLE COMPETITIVE POSITION
Installed base of ADAS software written for ON sensors – high switching costs

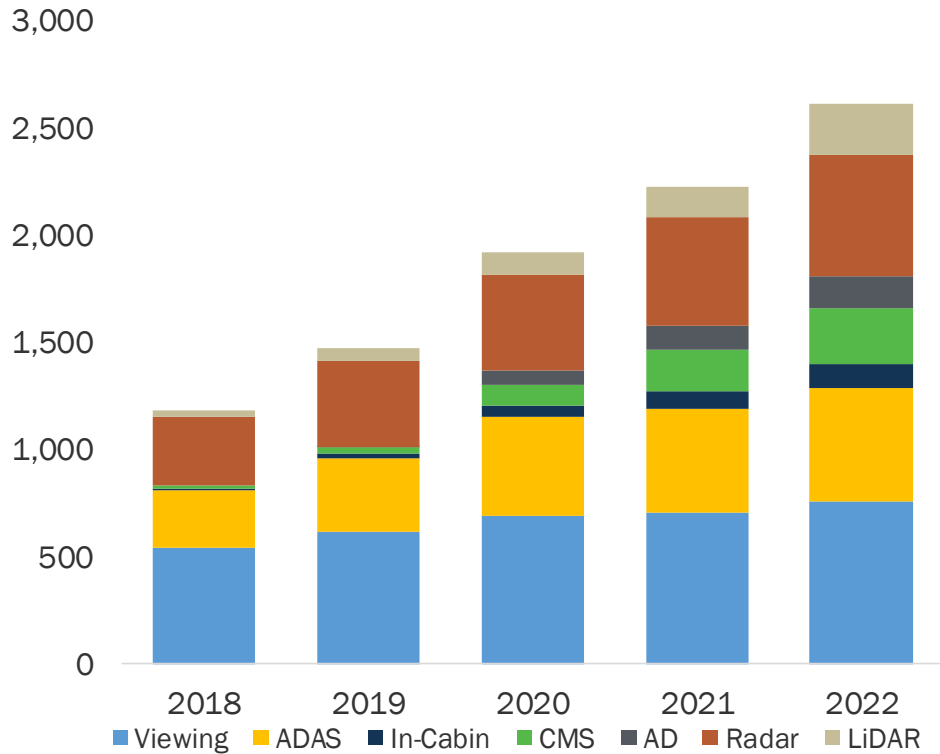
MARQUEE CUSTOMER BASE
Presence with all major global OEMs and Tier-1s



¹: FY2014 revenue includes full year Aptina revenue.

ISG KEY AUTOMOTIVE GROWTH DRIVERS

ISG Auto TAM (\$m)



VIEWING

Surround view 1MP and 2MP, rearview VGA moving to 1MP

ADAS

Driver assist 1MP to 8MP, requires performance, ON is #1

IN-CABIN & CMS

Level 3 and higher needs driver monitoring

Occupancy monitoring growing

Mirror-less systems reduce drag, enable more design flexibility

AUTONOMOUS DRIVING

Requires multiple modalities

Function over size and cost

RADAR

Level 2+/3 systems: 360 short range and forward long range

Level 4/5 for AD with short, mid and long range 360

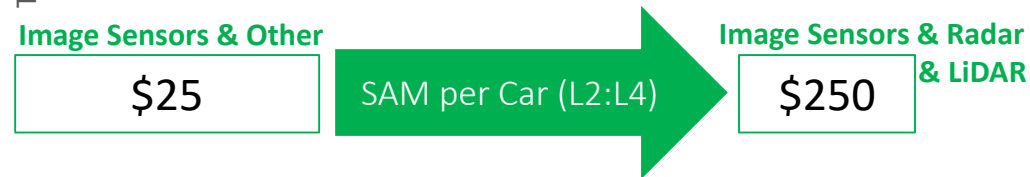
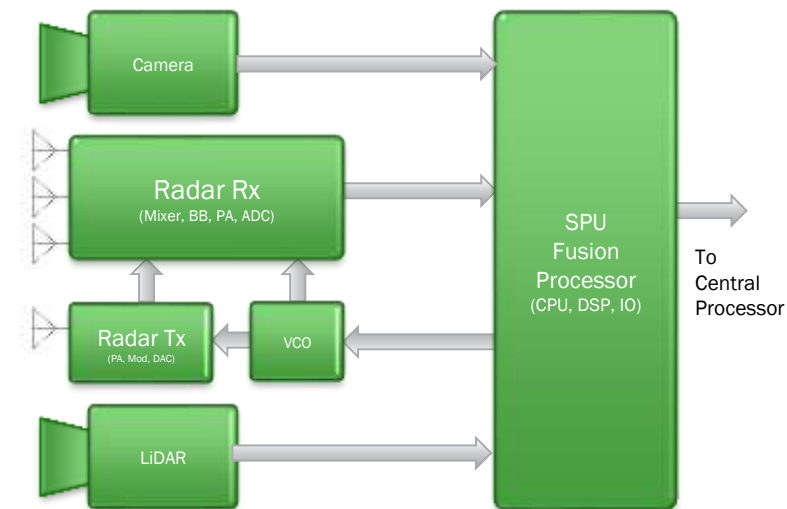
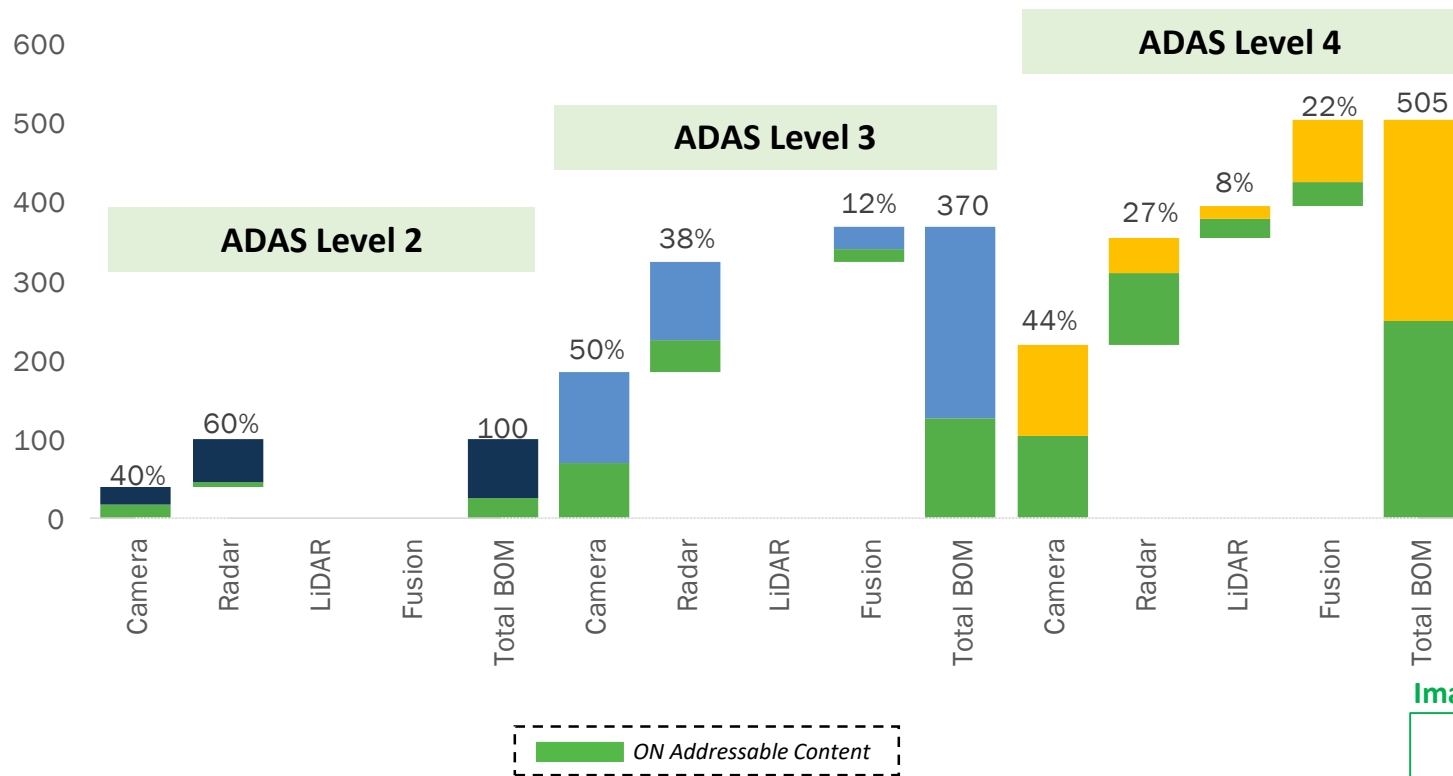
LIDAR

Expanding LiDAR usage for level 3/4/5



AUTONOMOUS DRIVING PORTFOLIO EXPANSION

Radar, LiDAR & Image Sensor Fusion – Potential SAM growth of 10x



Energy Efficiency: 1 sensor pre-processor vs. 2

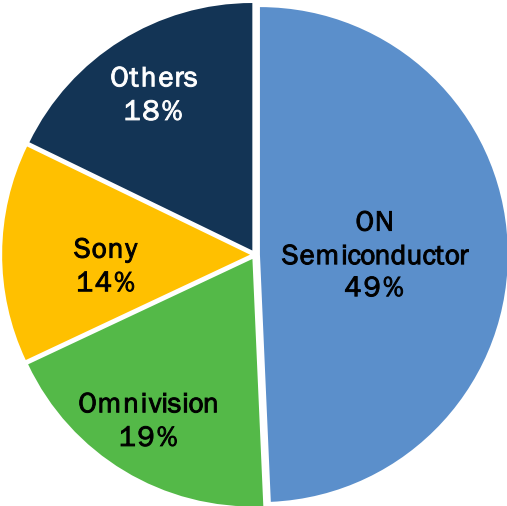
Size & Weight Reduction: 1 cable to central processor

Better Sensing: Robust AD algorithms use multiple modalities – Imaging, LiDAR, Radar

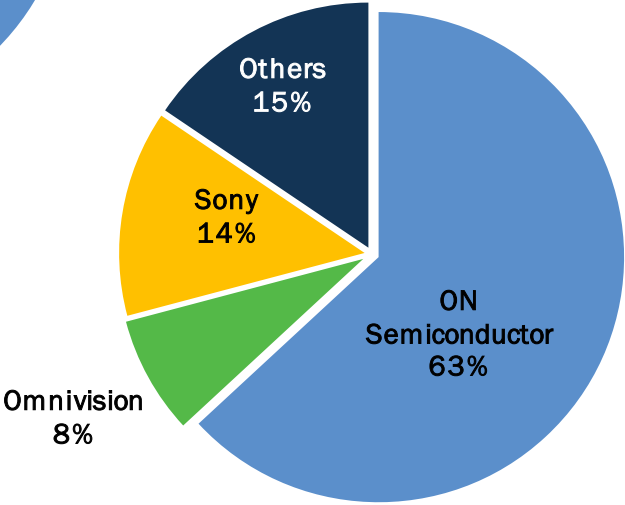


ON SEMICONDUCTOR, THE AUTOMOTIVE IMAGE SENSOR LEADER

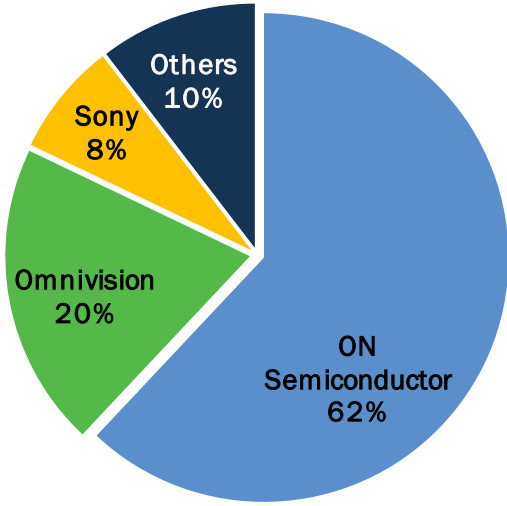
**Automotive Imagers
2016**



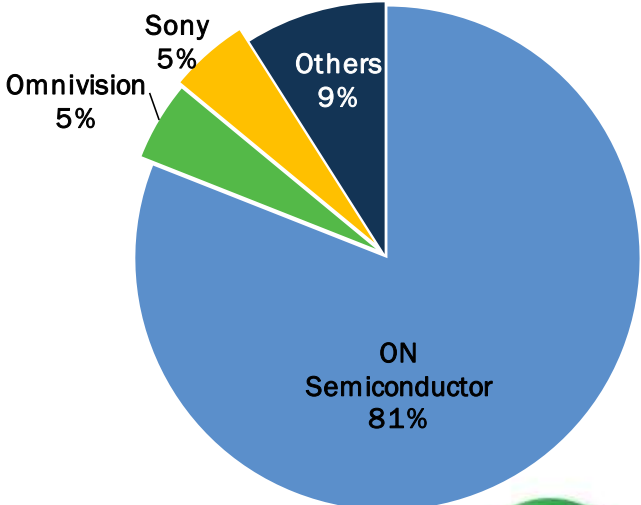
**Sensing Cameras
(ADAS, AD) 2016**



**Automotive Imagers
2018**



**Sensing Cameras
(ADAS, AD) 2018**



STRONG TECHNOLOGY LEAD OVER COMPETITION



LARGEST AUTOMOTIVE PORTFOLIO

Sensors for ADAS, AD, rear view, surround view, CMS, in-cabin

BROAD GLOBAL SHUTTER OFFERING

VGA, to 45MP, 2u to 9u pixel, high speed, low power

SENSORS WITH SYSTEM SOLUTIONS

LFM+HDR for viewing + sensing, depth, cyber

TECHNOLOGY FOR MISSION CRITICAL

Technology hardened for mission critical applications as opposed to commodity mobile market



HIGHEST DYNAMIC RANGE IN AUTOMOTIVE



SONY



ON Semiconductor



MOST COMPREHENSIVE AUTOMOTIVE PORTFOLIO

Viewing + Sensing

ADAS + AD

GS / In Cabin

SPU

Radar, LiDAR

Technology

	ON	SONY		ON	SONY		ON	SONY		ON	SONY
140dB HDR	✓	✗	140dB HDR	✓	✗	Leading IQ	✓	✗	Advanced ISP	✓	✗
Flicker Free	✓	○	Low Light	✓	○	Ecosystem	✓	✗	Clarity+ Support	✓	✗
Clarity +	✓	✗	Scalable Platform	✓	✗	RGB NIR	✓	✗	On Chip Analytics	✓	✗

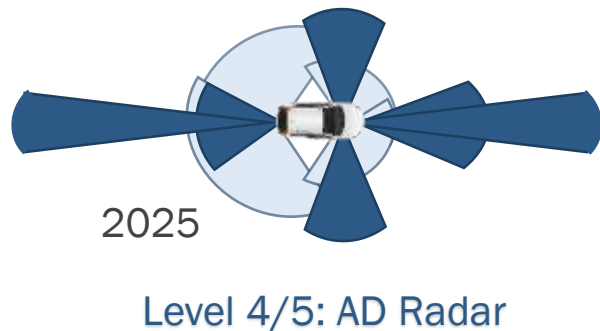
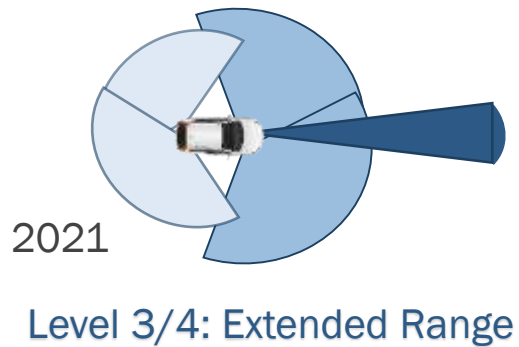
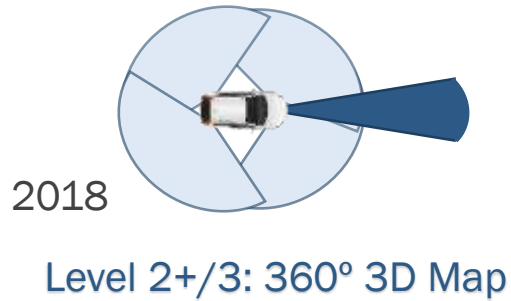
Products

4MP	✓	✗	8MP	✓	✓	2MP	✓	✗	3MP	✓	✗	Radar 77GHz	✓	✗
3MP	✓	✗	8MP Cyber Security	✓	✗	1MP	✓	✗	2MP	✓	✗	LiDAR SiPM	✓	✗
2MP	✓	✓	2MP	✓	✗	VGA	✓	✗	1MP	✓	✗	SiPM Arrays	✓	✗
1MP	✓	✗	2MP Cyber Security	✓	✗	RGB NIR	✓	✗						
SOC	✓	✓	1MP	✓	✗									

✓	Best performance
○	Supported, lower perf
✗	Not supported



STRONG PROGRESS ON AUTOMOTIVE RADAR



1ST PRODUCT, DIFFENTIATED FEATURES

MIMO+ enables higher resolution

1st in market with 4 simultaneous transceivers

Scalable design supports short and long Radar

Cascade for flexible configurations

GROWING MARKET - \$90 CONTENT/CAR

2018 systems 360° short range and forward long range Radar

BOM growing to \$90 for level 4

2021 systems with 360° mid range Radar

By 2025 , advanced systems for Autonomous Driving

ON SEMICONDUCTOR ENTERING MARKET

Design activity with leading OEMs and system providers

1st revenue in 2021



INDUSTRIAL AND EDGE AI

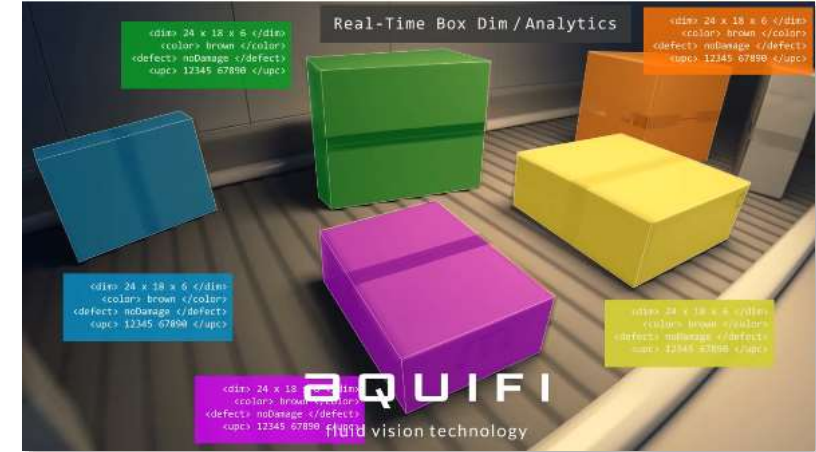
Home Delivery



Object Avoidance



3D mapping



Warehouse Automation



Phone Display Inspection

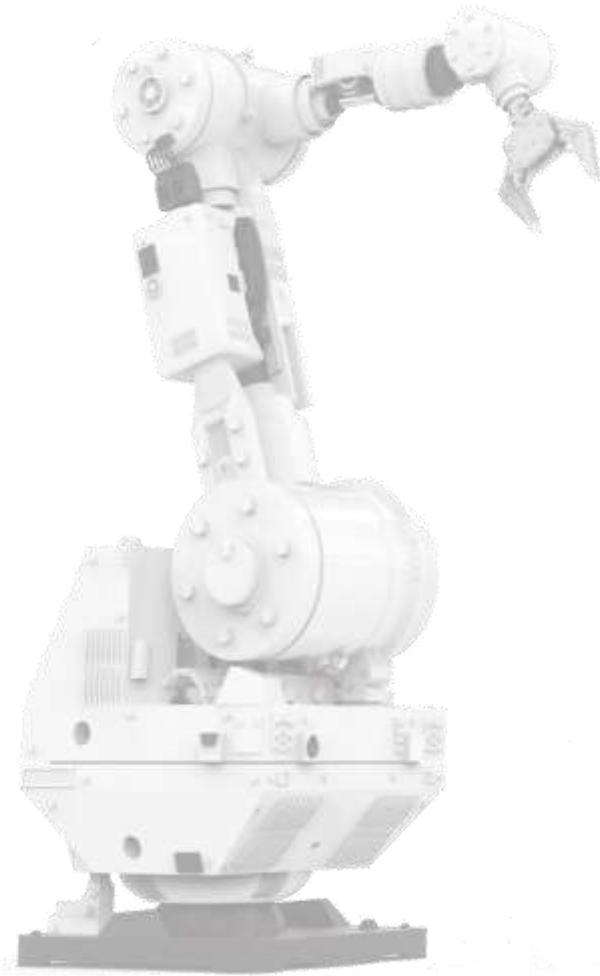
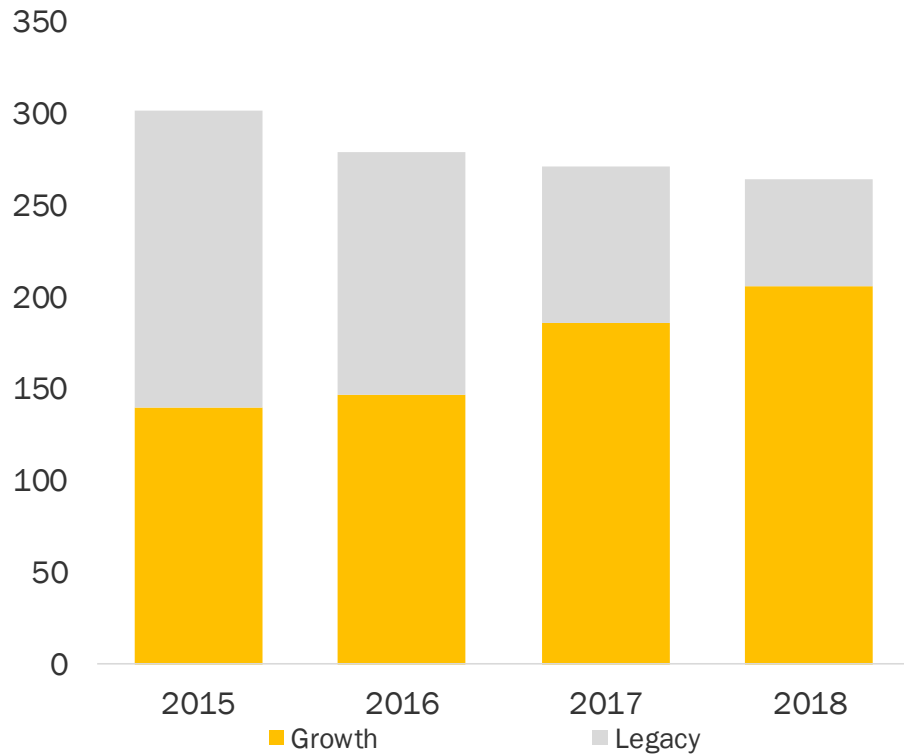


Inventory Tracking



ISG INDUSTRIAL BUSINESS

ISG Industrial Revenue (\$m)



GROWTH

Expanding PYTHON Machine Vision products
Strong showing by XGS products & global shutter product families
Continued flat panel inspection from CCD

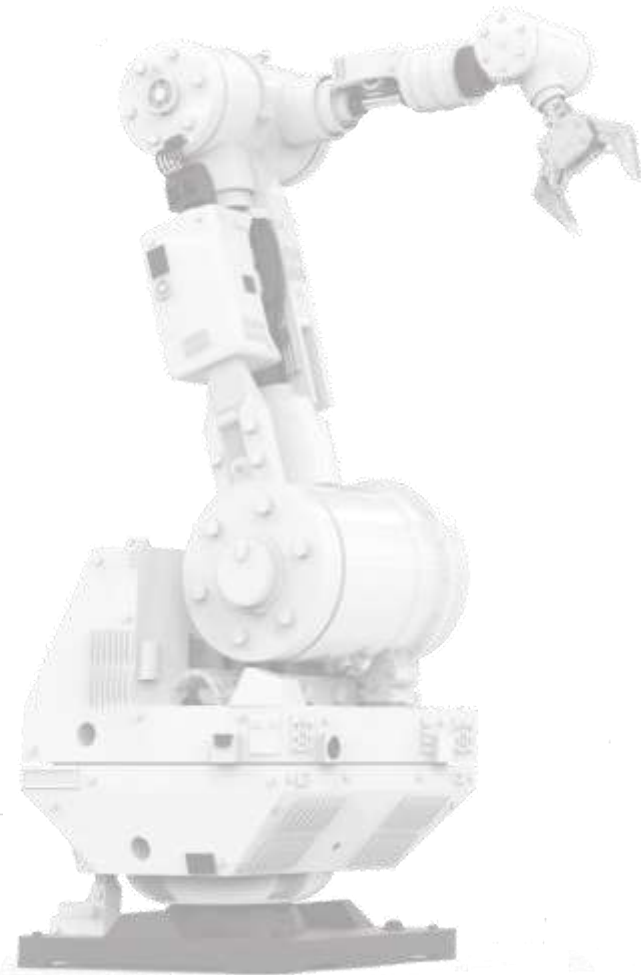
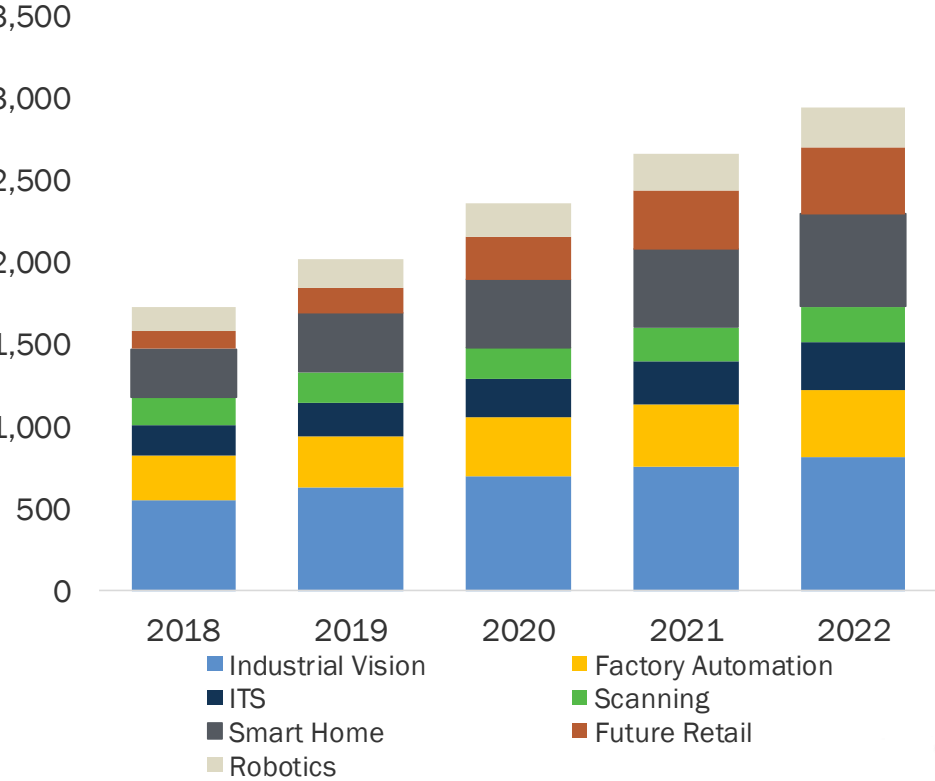
LEGACY

Harvest non-focus markets
Exit low margin product lines



ISG INDUSTRIAL & EDGE AI GROWTH DRIVERS

ISG MV & EDGE AI TAM (\$m)



INDUSTRIAL VISION

Robotics, Inspection

FACTORY AUTOMATION

High speed capture, Cobot, Quality control

INTELLIGENT TRAFFIC SYSTEMS

High resolution imaging, New machine vision features

SCANNING

Portable and Industrial barcode. 1D, 2D and QR

SMART BUILDING

Lighting, Assistants, Appliances, IP Cam

FUTURE RETAIL

Smart vending, Checkout-free

ROBOTICS

Drones, Personal Robotics, Delivery



LEADERSHIP IN MACHINE VISION THROUGH XGS

Price



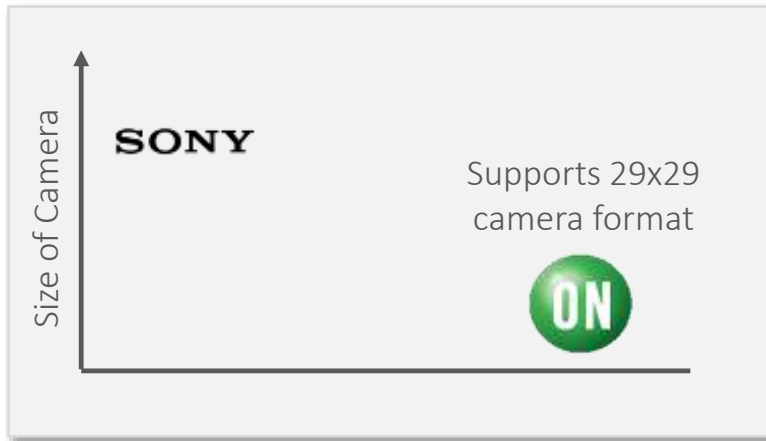
Speed



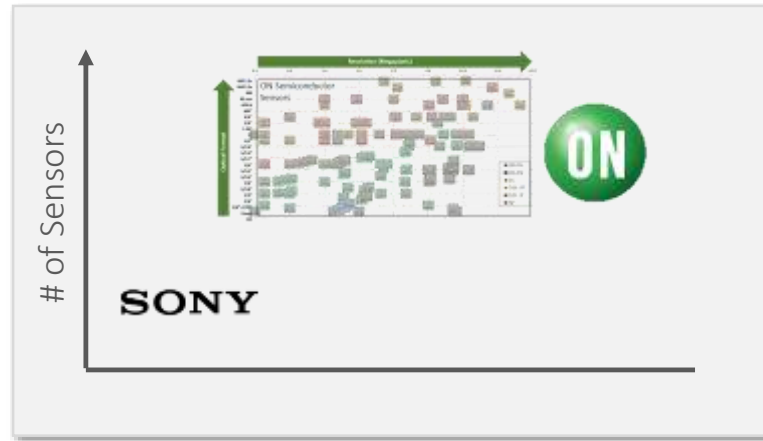
Performance



Footprint



Portfolio



Support / System



ISG MARGIN IMPROVEMENT PLANS

Manufacturing Optimization

- Continue yield and test time improvements
- Packaging cost reductions
- Manufacturing insourcing

Portfolio Evolution

- Focus on higher margin, differentiated products
- ADAS, Autonomous driving, LiDAR, Radar, Machine Vision, Edge AI

Operating Expenses

- Operating expense leverage and rationalization



SUMMARY

1

Accelerating growth in ADAS – Building on leadership position

2

Extending competitive lead through leadership in sensor fusion

3

Leadership in industrial - Increasing momentum in machine vision and robotics

4

Margin expansion through operational improvements and mix



**THINK
ON.**

POWER SOLUTIONS GROUP
SIMON KEETON
EXECUTIVE VICE PRESIDENT



KEY TAKEAWAYS

1

PSG has established leadership in power semiconductor market – power is one of the most compelling growth opportunities in semiconductors

2

Well positioned to benefit from huge opportunity in Silicon & Silicon Carbide for electric vehicles

3

Power content to continue to grow in industrial and cloud applications

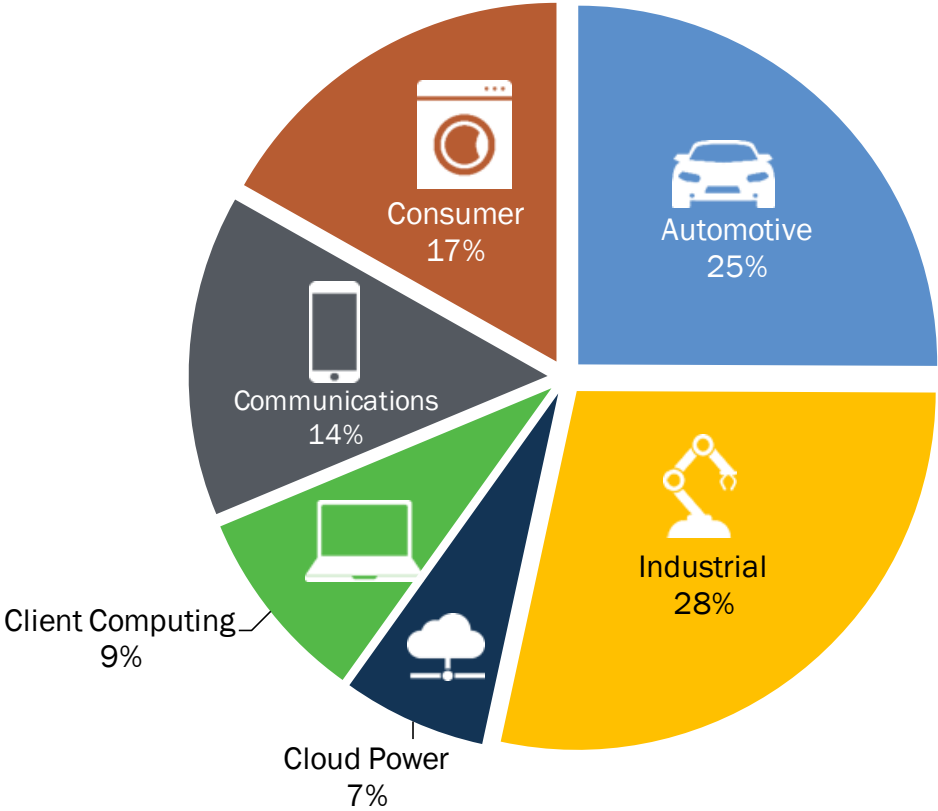
4

Headroom for margin improvement driven by mix and operational improvements



POWER SOLUTIONS GROUP (PSG)

2018 REVENUE BY MARKET



2018 REVENUE \$3.030B | GROSS MARGIN 37%



AUTOMOTIVE

Leadership in most product categories
Well positioned to benefit from Silicon and Silicon Carbide opportunity in EVs



INDUSTRIAL

Leadership in power modules, IGBTs, Power MOSFETs
Benefitting from increased power content for energy efficiency



CLOUD POWER

Leadership in MV and LV MOSFETs
Accelerating growth in 5G infrastructure

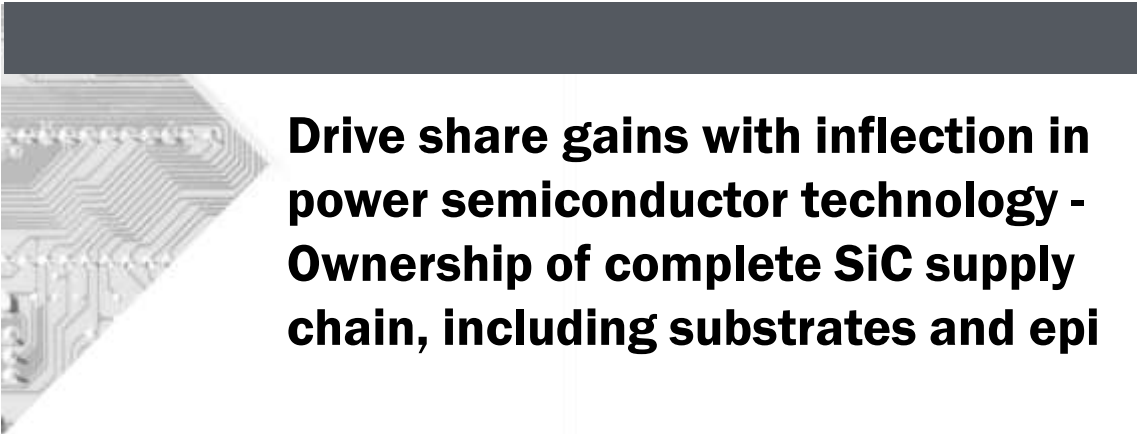


Communications include only smartphone related revenue


PSG STRATEGIC INTENT AND GOALS



Leadership in Power semiconductors and Modules for automotive, industrial, and cloud power end-markets



Drive share gains with inflection in power semiconductor technology - Ownership of complete SiC supply chain, including substrates and epi



Position to benefit from impending growth in EV Market - Provide broad portfolio of auto qualified Silicon and Silicon Carbide power semiconductors and modules



Enable disruption - Drive growth by providing enabling technologies for emerging and disrupting megatrends



PSG STRATEGIC POSITIONING - HOW WE WIN



1

Leading technical capabilities in power semiconductor and modules - HV modules for EV and industrial market, MOSFET & IGBT performance leader, accelerating traction in Silicon Carbide



2

Broad product portfolio encompassing a vast voltage range – LV to HV, and synergy and pull-through from portfolios of ASG and ISG



3

Manufacturing footprint and scale - Industry leading cost structure & vertically integrated supply chain



4

Focus on critical applications in auto, industrial, & cloud power markets - Longevity of design wins, high natural barriers to market entry, and high quality & qualification requirements from customers



MOVE TO HIGHER VALUE PRODUCTS AND MARKETS

AUTOMOTIVE

25% of PSG revenue
TAM (2022) of \$7.8B
2017-22 TAM CAGR of 7%

Key applications:

HEV/EV
Body & Comfort
ADAS/Autonomous
Driving

INDUSTRIAL

28% of PSG revenue
TAM (2022) of \$15.7B
2017-22 TAM CAGR of 8.9%

Key Applications

Alternative Energy
Efficient Motors
EV Charging Stations

CLOUD POWER

7% of PSG revenue
TAM (2022) of \$2.9B
2017-22 TAM CAGR of 7.5%

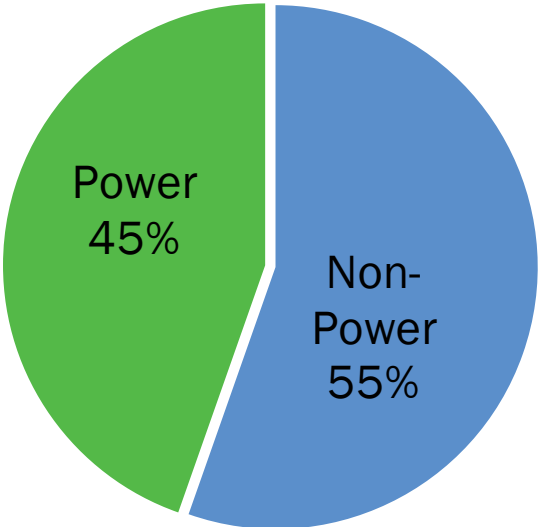
Key Applications

5G Infrastructure
Server
High End Computing

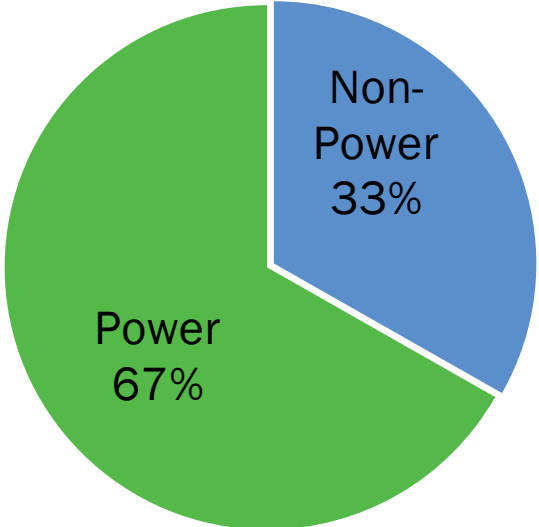


PSG TRANSFORMATION TOWARDS POWER

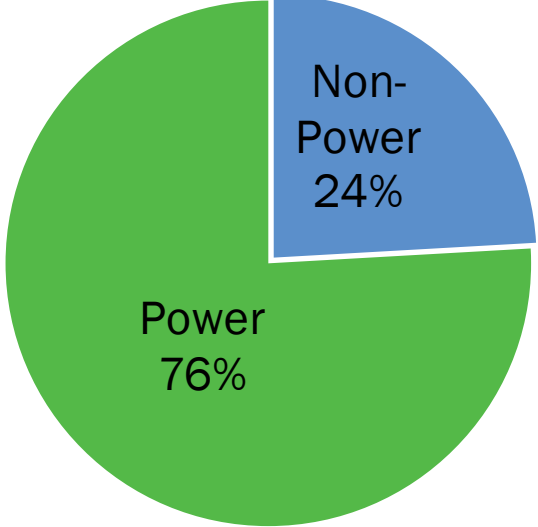
2016



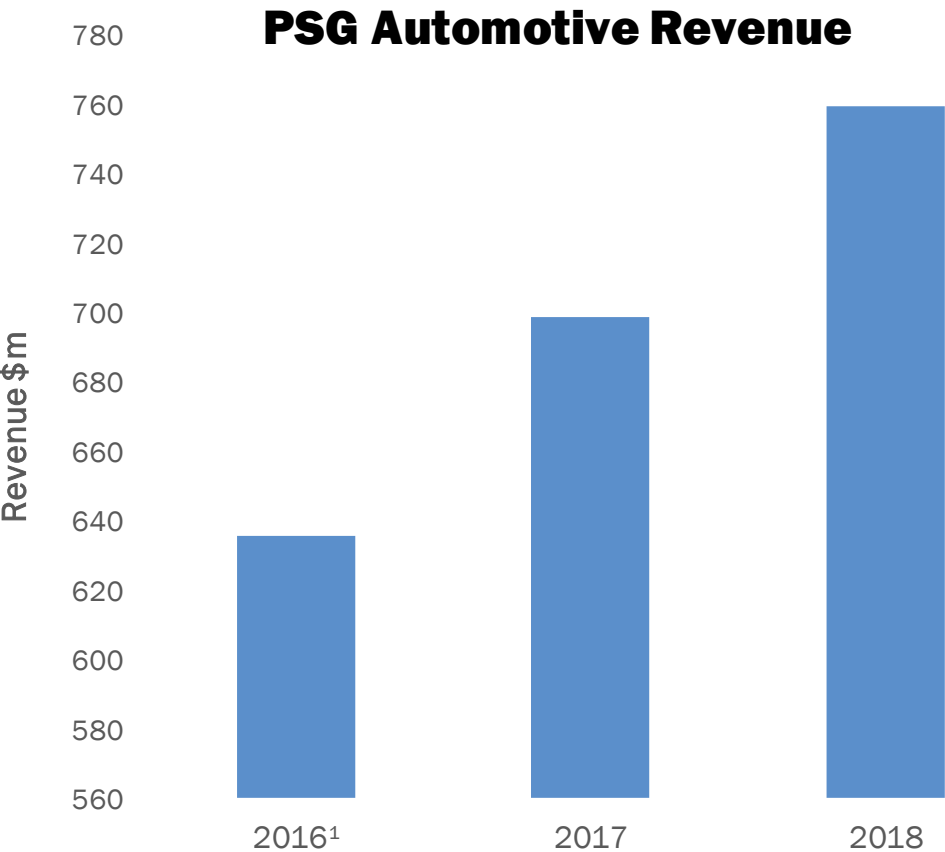
2018



2022



PSG AUTOMOTIVE BUSINESS



HEV/EV

Super Junction FETs in on-board chargers, SiC diodes and MOSFETs in EVs

BODY AND COMFORT

Medium voltage FETs for BLDC motors

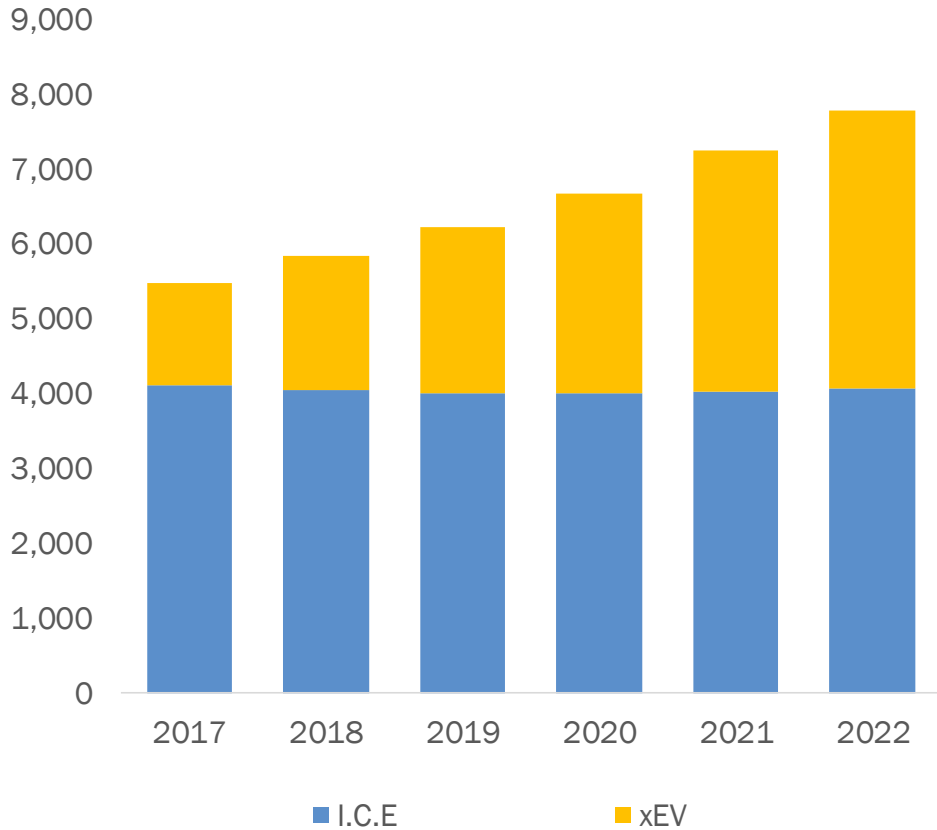
ADAS & AUTONOMOUS DRIVING

Power management for sensors



PSG KEY AUTOMOTIVE GROWTH DRIVERS

PSG Automotive TAM (\$m)



HEV & EV: 22% 2017-22 TAM CAGR

\$400 of addressable in power content in an EV – ON leader in both silicon and SiC

BODY & COMFORT: 14% 2017-22 TAM CAGR

3x Power switches required for redundant systems and increased comfort driven by motors

ADAS & AUTONOMOUS DRIVING: 25% 2017-22 TAM CAGR

\$15 in power management solutions for all sensing functions



EV/HEV AND VEHICLE ELECTRIFICATION

I.C.E.

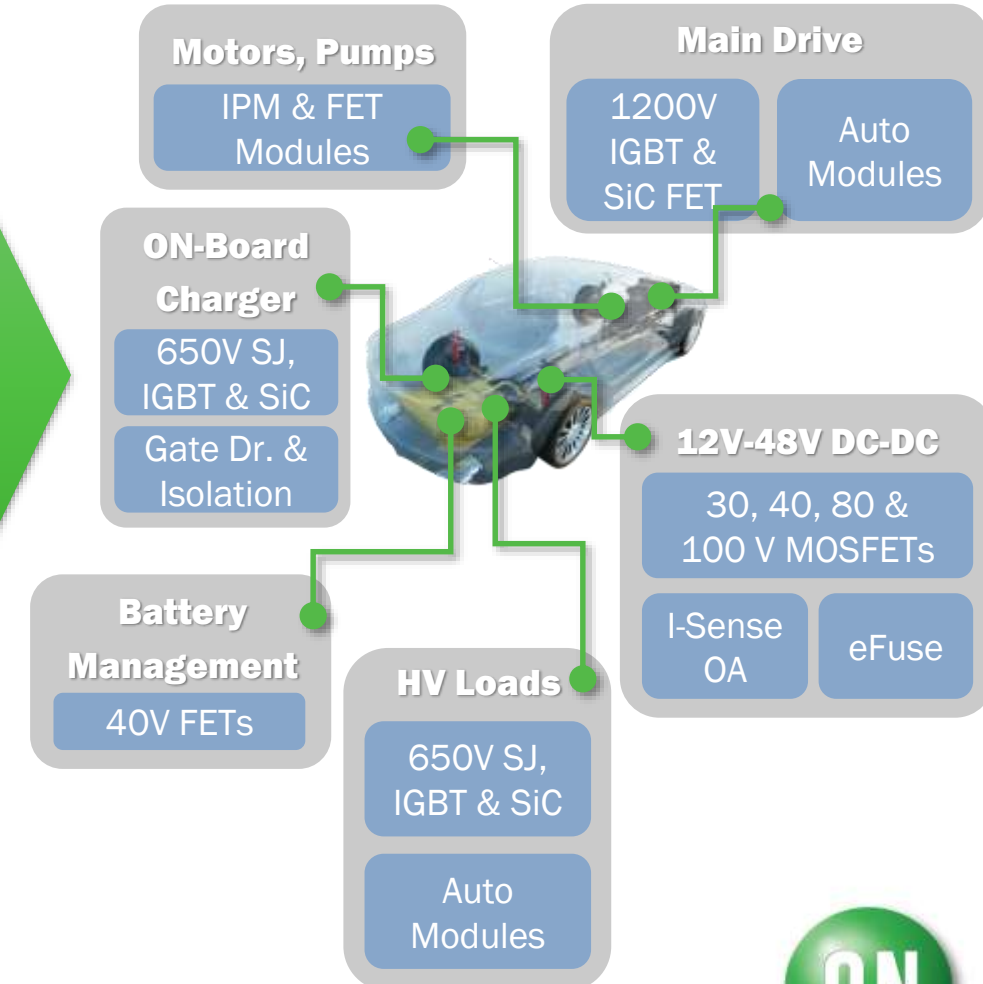


PSG Content
\$40

HEV/EV



PSG Content
\$400

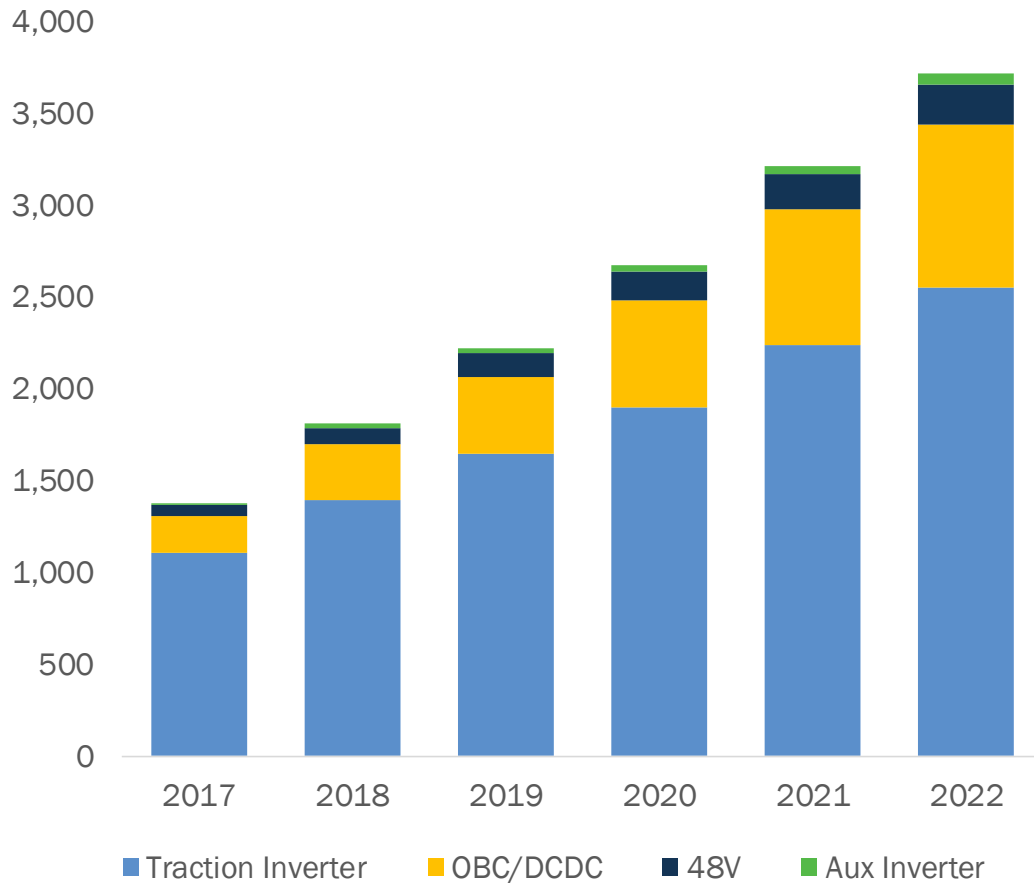


STRONG TRACTION IN BOTH SILICON AND SILICON CARBIDE



POWER SEMIS DOMINANT OPPORTUNITY IN EV

Power Semi Silicon TAM in EV (\$m)



2017-22 Power Semi CAGR: 22%

POWER SEMIS PRESENT THE BIGGEST OPPORTUNITY IN EV

TAM of \$3.7B in 2022 with 2017-22 CAGR of 22%

TRACTION INVERTERS ARE LARGEST EV OPPORTUNITY

IGBT traction invertors likely to be dominant in mid to low-end EV, SiC initially likely to be limited to high-end EV

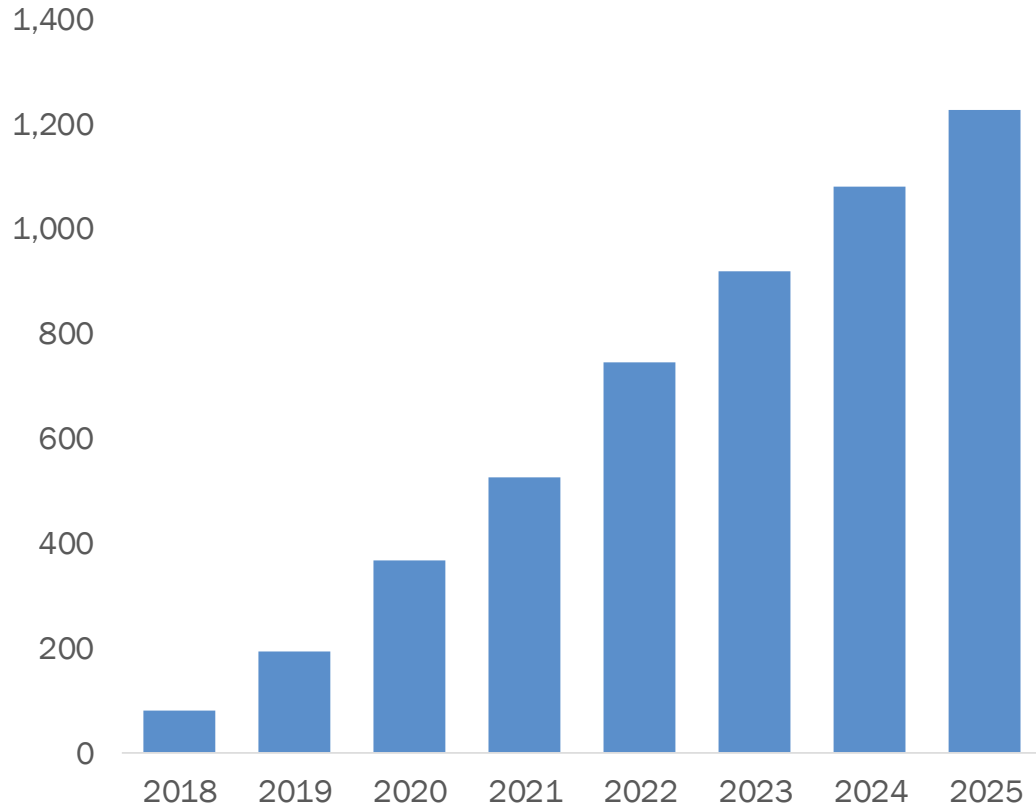
ON LEADER IN IGBT MODULES FOR TRACTION INVERTERS

Strong market presence and customer engagement, with future path to SiC



SILICON CARBIDE IN EV

SiC TAM for EV/HEV (\$m)



ACCELERATED ADOPTION

Adoption of Silicon Carbide in EVs likely to be faster than most expectations

GROWTH IN UNITS AND CONTENT

Content could be more than double of current content of \$300

COMPELLING VALUE PROPOSITION

20% increase in range, space savings, reduced cooling costs, lower weight, faster charging

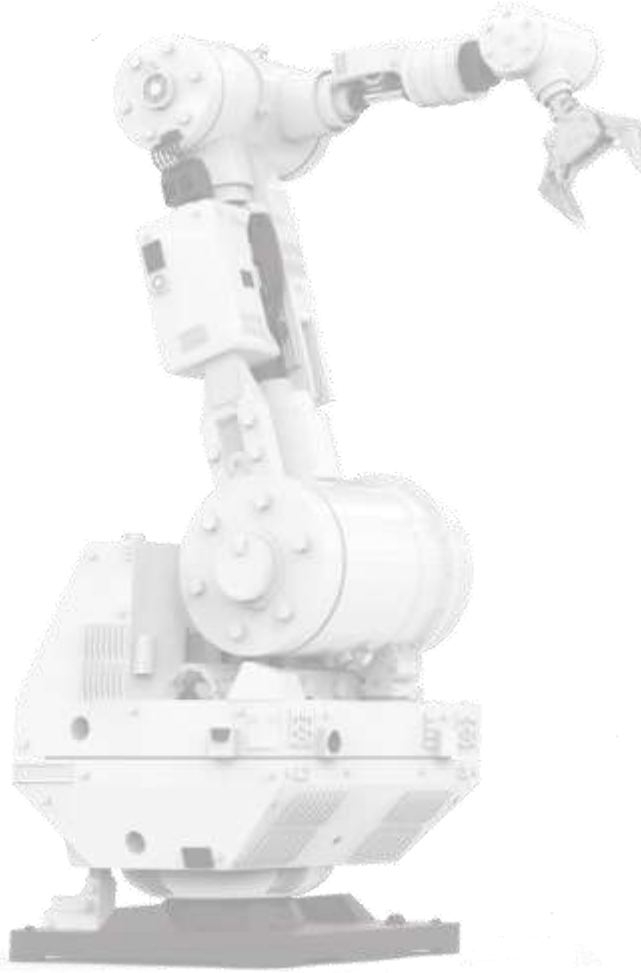
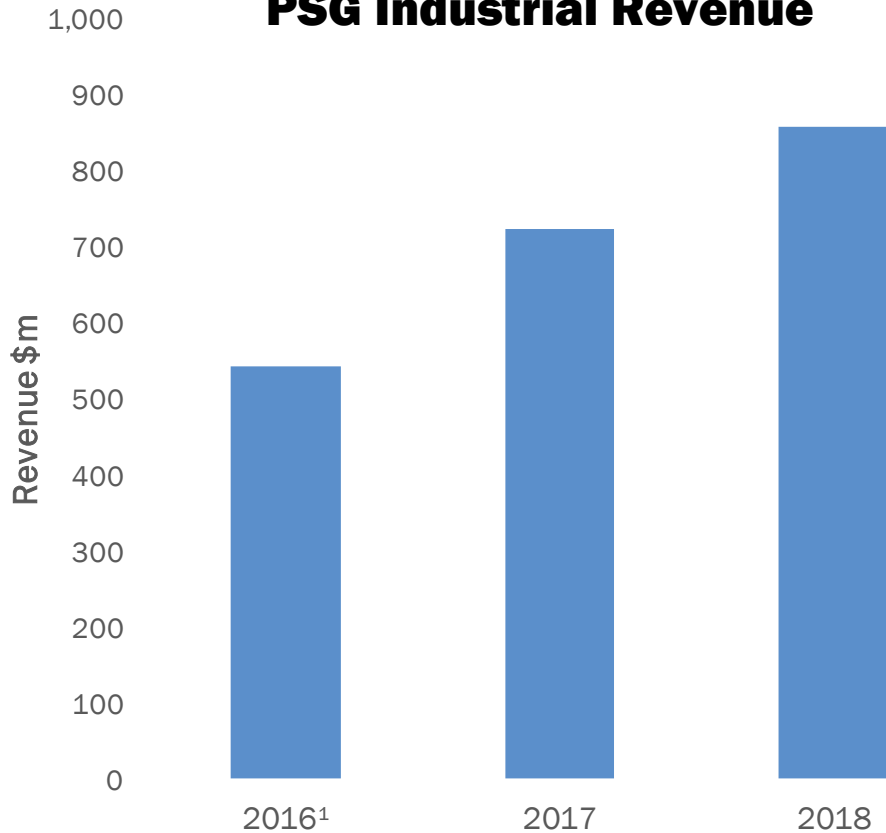
STRONG TRACTION IN MARKET

Engaged with many leading OEMs and Tier-1s - currently shipping 650/1200V diodes & 1200V MOSFETs



PSG INDUSTRIAL BUSINESS

PSG Industrial Revenue



ALTERNATIVE ENERGY

Leadership in power integrated modules (PIM) for Solar Inverters

MOTOR EFFICIENCY

IPMs & FETs in Industrial Motors, C-HVAC, Robotics

EV CHARGING STATIONS

IGBTs & superjunction FETs in Level 3 stations

¹: FY2016 represents 04' 16 Annualized values.

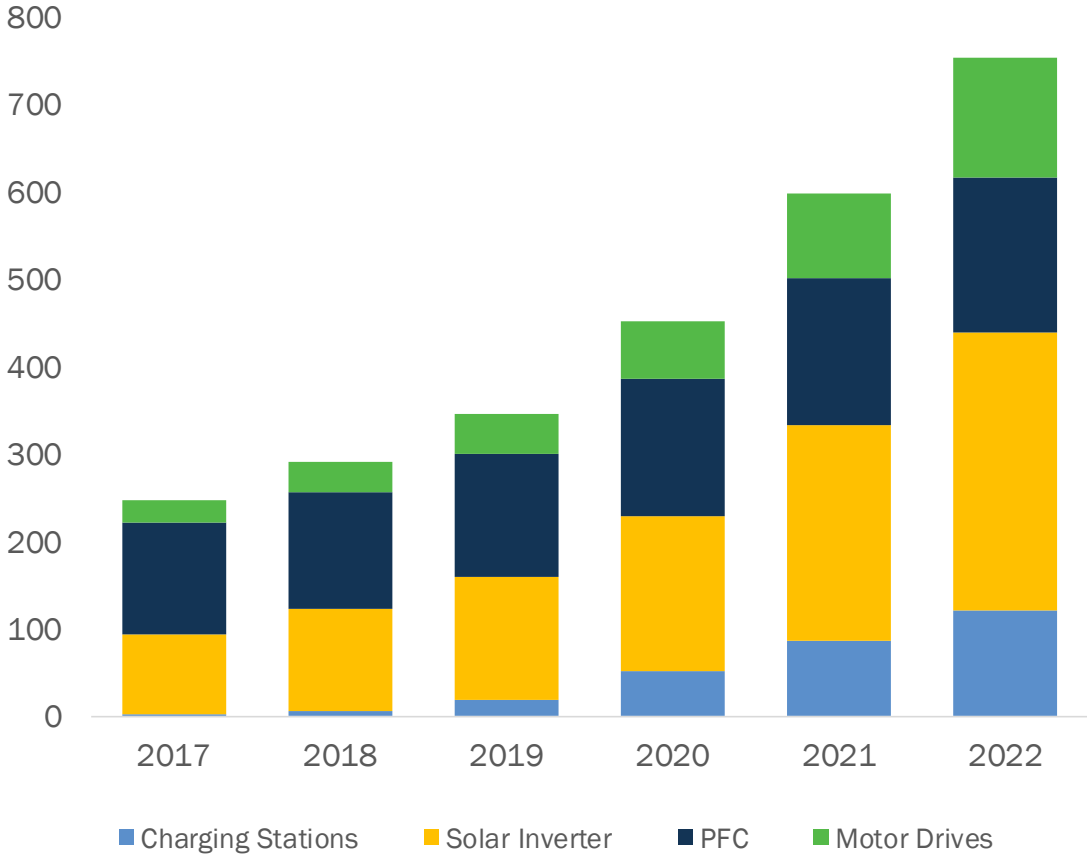


INFRASTRUCTURE REVOLUTION



SILICON CARBIDE IN INDUSTRIAL APPLICATIONS

Silicon Carbide TAM in Industrial (\$m)



EV CHARGING STATIONS – 130% 2017-22 TAM CAGR

SiC enabling higher power charging stations in same size.

SOLAR INVERTER – 28% 2017-22 TAM CAGR

SiC provides smaller and cheaper solution at same power

POWER FACTOR CORRECTION – 7% 2017-22 TAM CAGR

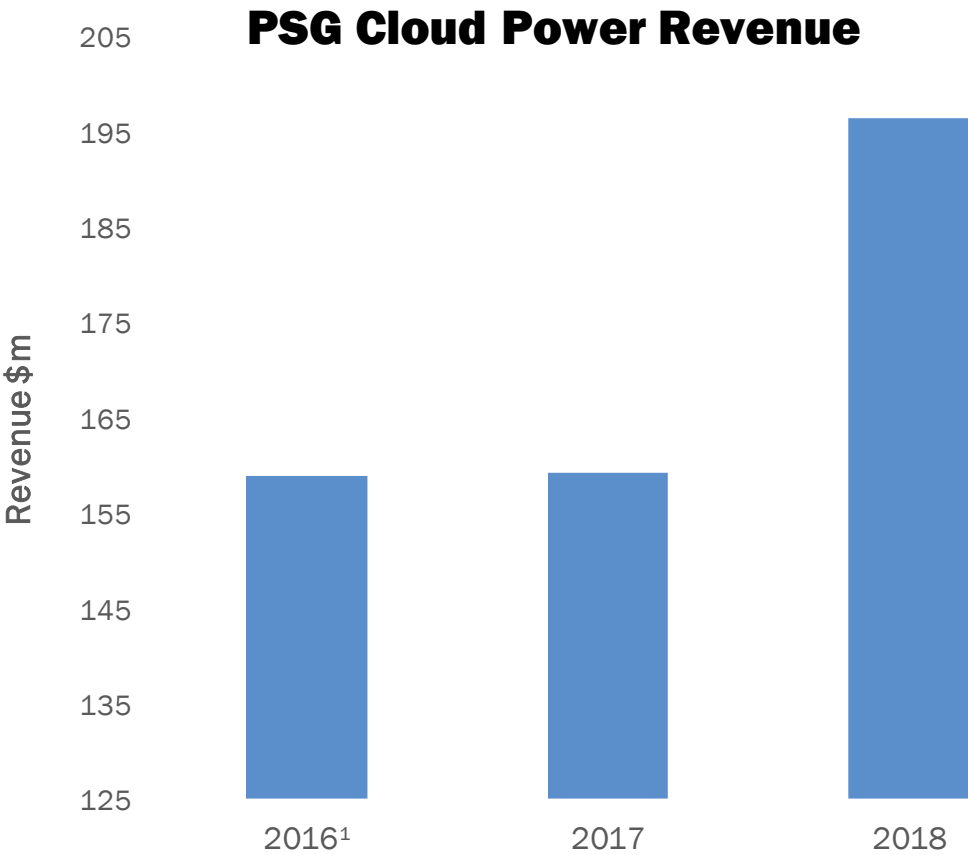
SiC enables power supplies to reach 80 PLUS ‘TITANIUM’ power density & efficiency

MOTOR DRIVE – 40% 2017-22 TAM CAGR

SiC reduces component count & cost by 40%



PSG CLOUD POWER BUSINESS



5G INFRASTRUCTURE

80-150V MOSFETs in BBU & RRU power supplies

SERVER

25V to 650V MOSFETs in high power density power supplies

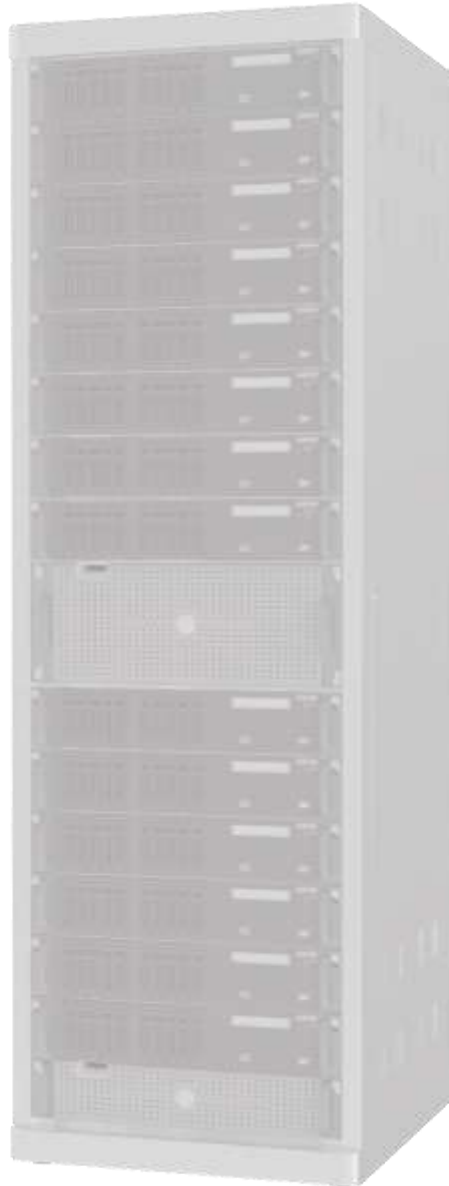
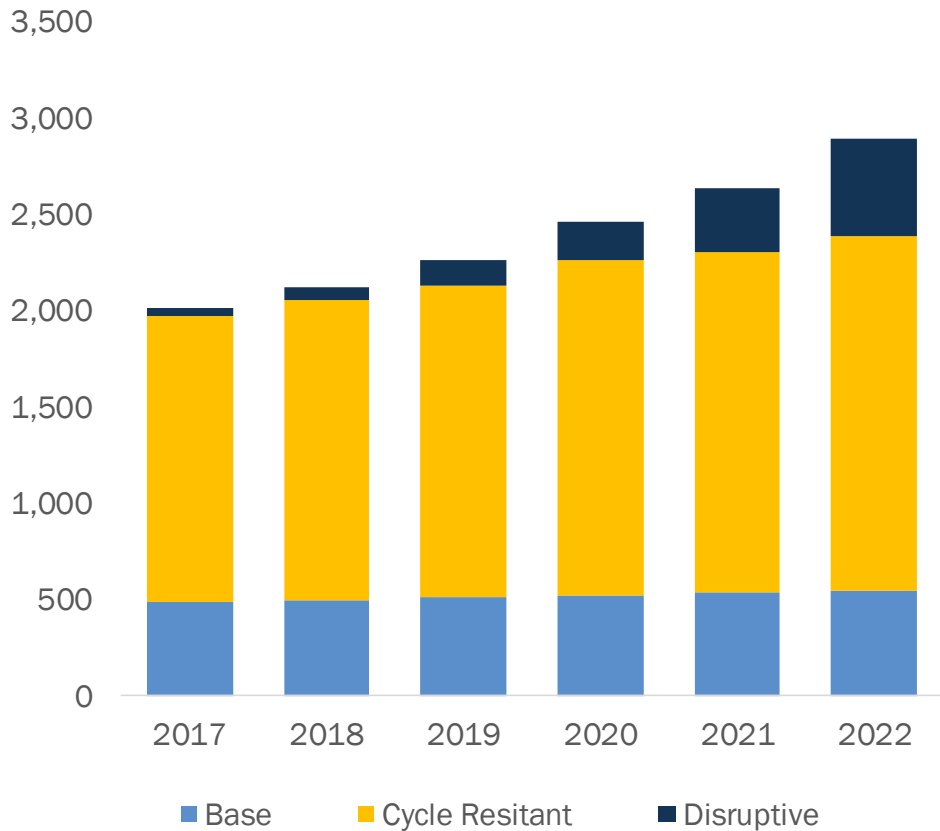
HIGH END COMPUTING

25-30V MOSFETs in high end graphic cards



PSG KEY CLOUD POWER GROWTH DRIVERS

PSG Cloud Power TAM (\$m)



5G INFRASTRUCTURE – 247% CAGR 17-22

5x the MV MOSFET usage in a 5G radio

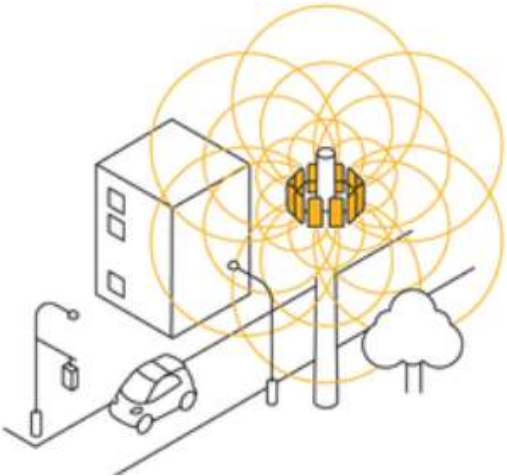
SERVER POWER SUPPLY – 5% CAGR 17-22

Requiring high performance superjunction FETs to meet efficiency targets



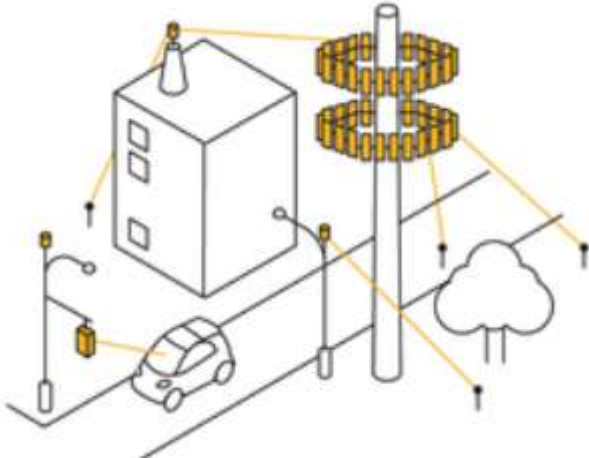
CLOUD-POWER CONTENT INCREASE

4G: 2x2 TxRx

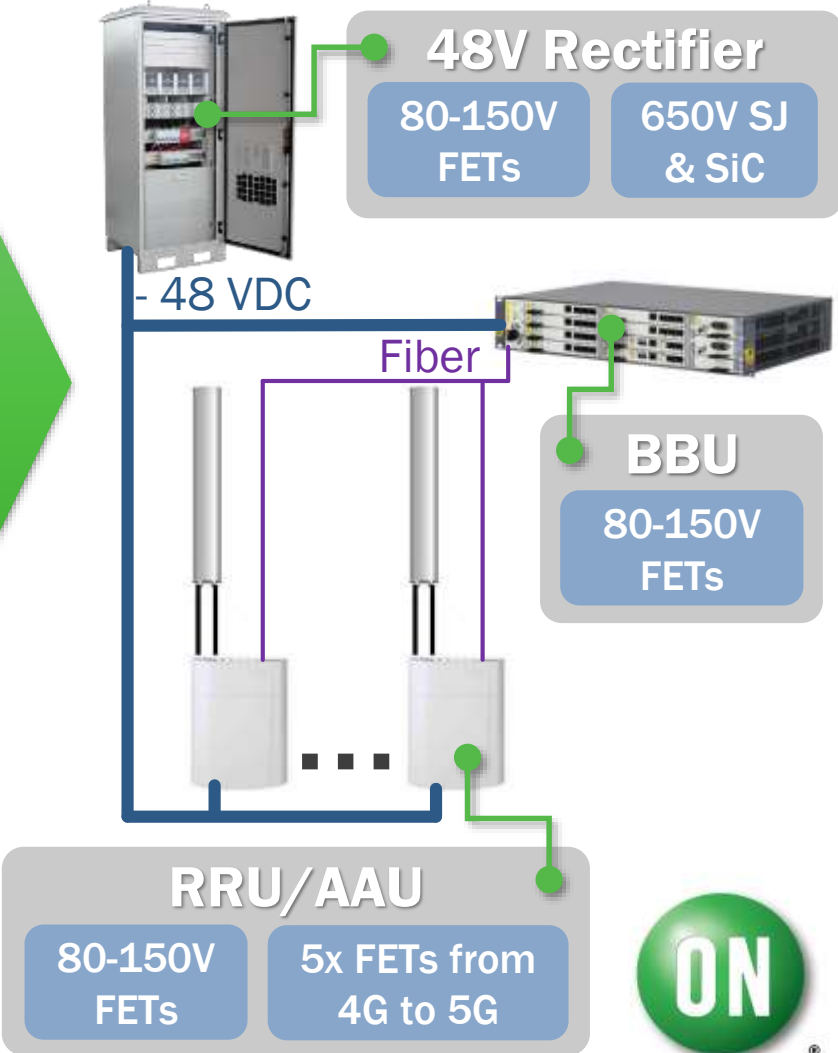


PSG Content
\$9

5G: mMIMO & Beamforming

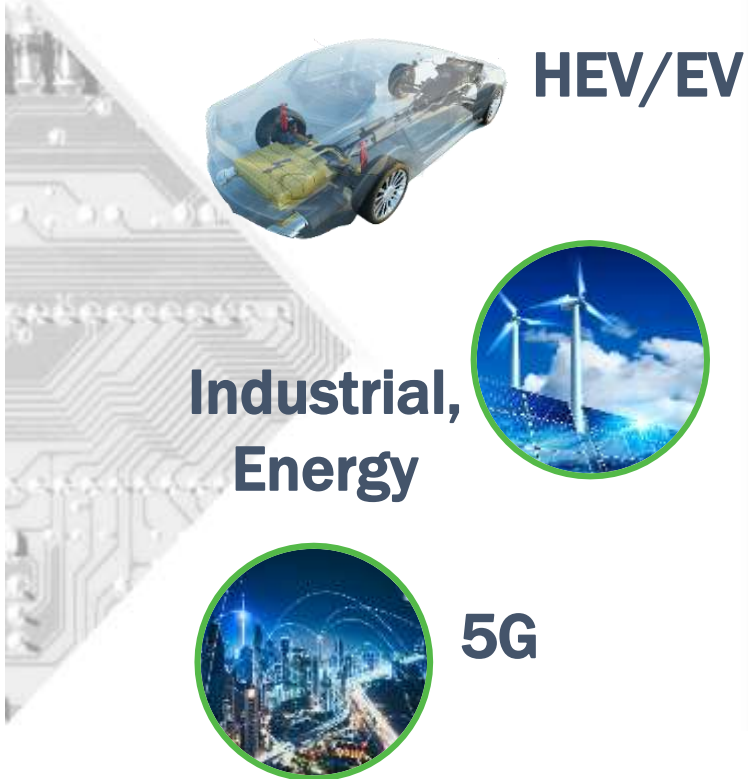


PSG Content
\$144

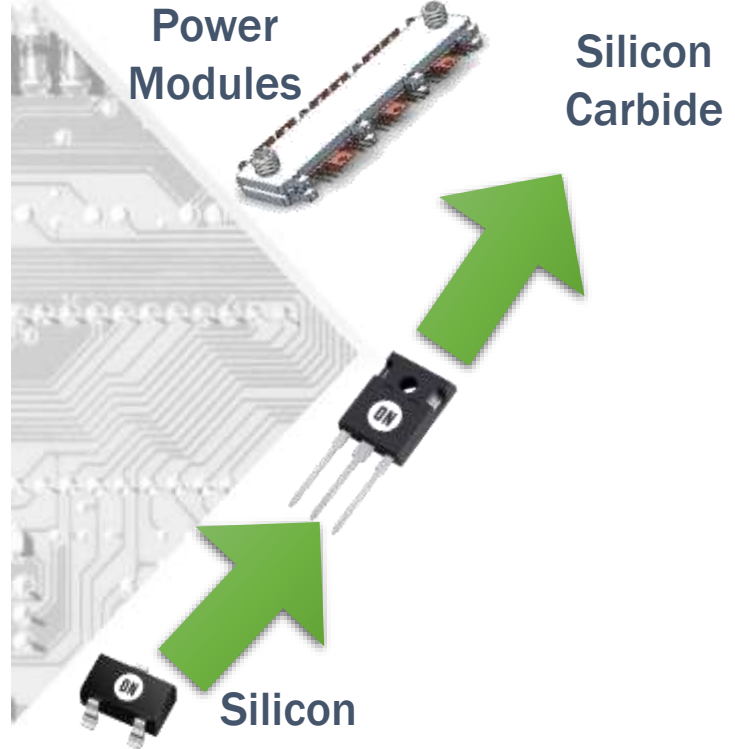


PSG MARGIN IMPROVEMENT PLANS

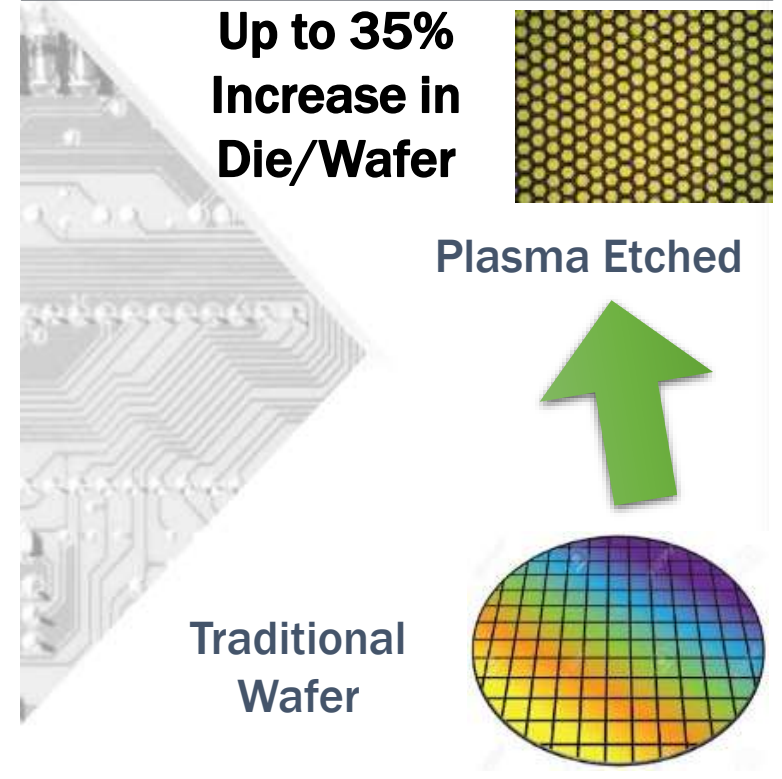
Aligned with high-growth strategic markets



Providing higher value proposition product



Manufacturing innovation in standard products



KEY TAKEAWAYS

1

PSG has established leadership in power semiconductor market

2

Huge opportunity in SiC for automotive applications

3

Power content to continue to grow in automotive, industrial and cloud applications

4

Headroom for margin improvement driven by higher value products and operational improvements



**Questions
&
Answers**



**THINK
ON.**

BILL SCHROMM
CHIEF OPERATING OFFICER



KEY TAKEAWAYS

1 ON manufacturing prowess presents one of the most formidable barriers for competitors

2 Scale matters – ON's vast network drives its industry leading cost structure

3 ON's investment in 300mm will be driven by economics

4 Investing to extend ON's competitive advantage - Be best in class quality, cost, delivery



MANUFACTURING AS COMPETITIVE ADVANTAGE

One of the most formidable barriers for competitors

- **Scale matters – One of most cost effective manufacturing networks in the Industry**
- **Network of 12 wafer fabs and 9 Assembly & Test sites**
- **Flexibility – Able to add capacity and source from multiple sites**

Better control on quality and delivery

- **Quality and delivery are key differentiators in automotive and industrial markets**
- **Customers in certain markets prefer IDMs**

Enables development of new technologies & products

- **Accelerates time to market for new technologies and materials**
- **Ability to fine tune processes for maximizing performance**



FORMIDABLE MANUFACTURING CAPABILITIES

- Scale provides industry leading cost structure -76 billion units shipped in 2018
- Front-end capabilities key source of competitive advantage in power and analog
- Internal capacity to manufacture 150mm and 200mm silicon substrates
- One of world's largest and most efficient back-end operations (~1.4 billion units every week)

Front-end & Substrate Facilities



Aizu, Japan



Gresham, OR, USA



Czech Republic Fab



Czech Republic Substrates



Bucheon, Korea



Portland, ME, USA



Oudernaarde, Belgium



Seremban, Malaysia



Pocatello, ID, USA



Mountain Top, PA, USA



Niigata, Japan



Rochester, NY, USA

Back-end Facilities



Leshan, China



Suzhou, China



Shenzhen, China



Carmona, Philippines



Tarlac, Philippines



Cebu, Philippines



Seremban, Malaysia



Vietnam OSBD



Vietnam OPP/IPM



INDUSTRY LEADING BACK-END COST STRUCTURE

PARALELLISM

Driving parallelism in probe as high as x256 in EEPROM technology

SCALE

Scale drives assembly cost savings up to 70% as compared to outsourced OSAT companies

PATENTS

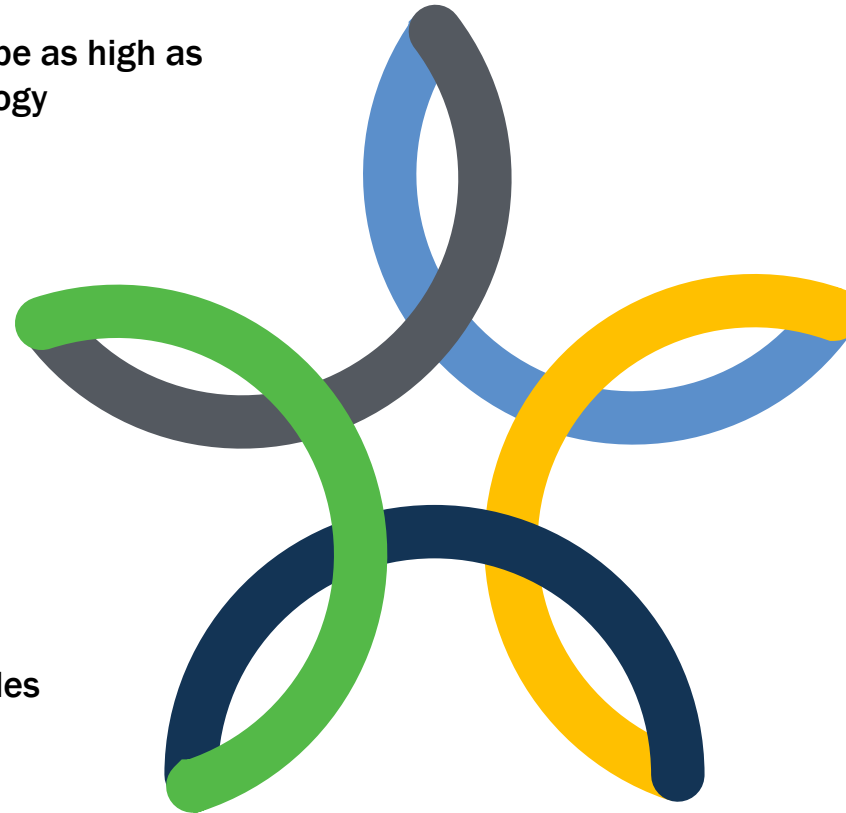
Patented lowest cost thinning methodology in the industry

VERTICAL INTEGRATION

Vertical integration of Power Modules with in house DBC

HIGH-DENSITY LEAD FRAMES

Extremely high density lead-frames drive cost efficiency in material and productivity



TRANSFORMATION TIMELINE – GLOBAL MANUFACTURING

Tools Selected

- Proactive Safety
- Camstar
- RTD
- Exensio Yield
- CDEP/yBORG
- FabGuard FDC
- SPACE SPC
- APC
- eOCAP
- Barcode
- FabTime
- MaiMa
- AOI/ILM Systems
- Fab TV
- Optimal +

Systems and Data Integration

- Camstar, FDC
- Phased implementation
- Operational integration teams
- Optimal+ analytics
- Data Lake as foundational enabler

Vision



Transformation Plan

- Benchmarking
- Gap Analysis
- Manufacturing survey

Roadmap Development

- Survey tools
- Evaluate tools for gap closure
- Confirm choices

Implementation

- Project methodology
- Cross functional/Cross factory teams
- Lean/Six Sigma
- Implement analytics
- Maintenance efficiency
- Bring in xFCS factories onto corporate tools

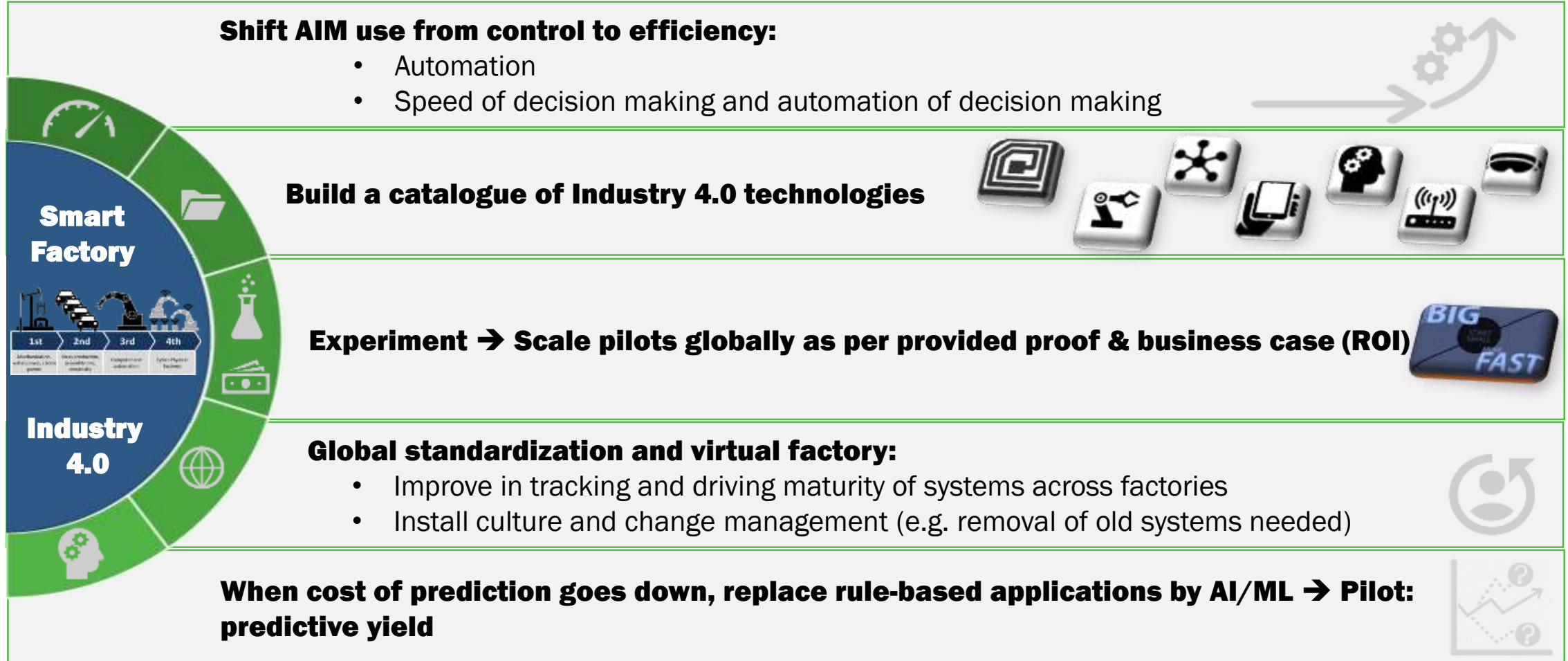
Learning / Improvement

- Continuous improvement
- Refine Heuristics/Analytics
- Reactive-Preventative Culture
- Big Data correlation
- AI/Predictive Yield

BEST IN CLASS IN SEMICONDUCTOR MANUFACTURING



KEY TENETS ON INDUSTRY 4.0 AT ON SEMICONDUCTOR OPERATIONS



Shift AIM use from control to efficiency:

- Automation
- Speed of decision making and automation of decision making

Build a catalogue of Industry 4.0 technologies

Experiment → Scale pilots globally as per provided proof & business case (ROI)

Global standardization and virtual factory:

- Improve in tracking and driving maturity of systems across factories
- Install culture and change management (e.g. removal of old systems needed)

When cost of prediction goes down, replace rule-based applications by AI/ML → Pilot: predictive yield

THOUGHTS ON 300MM



1

300mm fabs can make sense at right price

- Open to acquiring used 300mm fab if economics are right
- Greenfield 300mm fab is not an option – return on \$1.5B investment challenging



2

Very competitive cost structure with current network

- Back-end scale key source of competitive cost structure
- Very competitive cost structure with 200mm and 150mm fabs



3

Don't see any meaningful competitive threats

- 300mm fabs are competitively helpful only if economics are favorable
- Focusing on efficiency and scale



MANUFACTURING GROSS MARGIN DRIVERS

Scale

- Absorption of fixed cost over larger revenue base
- Leverage with external suppliers
- Target internal cost reductions above ASP declines

Improving efficiency

- Productivity and yield improvement
- Advanced test methods to reduce cost
- Equipment efficiency

Materials

- Increase in-house production of substrates

Expansion at low cost sites

- Demand environment key driver of expansion



KEY AREAS OF INVESTMENT

Front-End

- Cost effective capacity to support growth in power semiconductors
- Analog cloud power is another area of investment
- Implementation of new tools and systems to improve productivity
- Expansion of low-cost sites to improve costs

Back-end

- Back-end has been an area of high investment to sustain ON's leadership in packaging technologies
- Investments to support strong growth in power modules and packages
- Analog test has been an area of increased investment

Substrates

- Expansion of internal substrate capacity to offset increasing prices from external suppliers



OUTSOURCING STRATEGY



1

Target model – 80/20

- Target of 80 percent production in house



2

Outsource where it makes sense

- Deep sub-micron
- Image sensors
- Packages/nodes in small volume



3

Flex capacity

- **Maintain flex capacity to sustain utilization during slowdown**
- **Relationships with all front-end and back-end providers**



4

Dual-sourcing and risk mitigation

- Qualify external suppliers to mitigate the risk of supply disruptions
- Many OEMs demand dual source of supply



SUMMARY

1 ON manufacturing prowess presents one of the most formidable barriers for competitors

2 Scale matters – ON's vast network drives its industry leading cost structure

3 **300mm fab not critical for success, but beneficial at right price**

4 Investing to extend ON's competitive advantage - Be best in class quality, cost, delivery



**THINK
ON.**

BERNARD GUTMANN
CHIEF FINANCIAL OFFICER



KEY TAKEAWAYS

1

Raising financial targets significantly to align with our market and profitability outlook

2

Solid and consistent financial results – strong progress towards prior target model

3

Efficient deployment of shareholders' capital to maximize returns & shareholder value

4

ON is going through transformational changes – 2022 target a milestone, not the destination



PROGRESS REPORT – 2018 VS. PRIOR TARGET MODEL¹

	2016	2018	2020 MODEL ¹
REVENUE	\$3.9 BILLION	\$5.9 BILLION	\$5.6 BILLION
GROSS MARGIN²	35.0%	38.1%	40.0%
OPERATING EXPENSES²	22.7%	21.4%	21.0%
OPERATING MARGIN²	12.3%	16.7%	19.0%
PROFIT BEFORE TAX²	\$412 MILLION	\$893 MILLION	\$950 MILLION
CASH TAX RATE	6.7%	6.0%	12%
NON-GAAP EPS²	\$0.91	\$1.96	\$2.00
FREE CASH FLOW²	\$370 MILLION	\$759 MILLION	\$900 MILLION

VERY CLOSE TO 2020 EPS TARGET 2 YEARS AHEAD OF SCHEDULE



KEY DRIVERS OF VARIANCE FROM 2020 MODEL

Positive Variance

REVENUE	Revenue growth exceeded expected CAGR of 3% ¹ - 2018 revenue was \$5.9B, as compared to 2020 target of \$5.6B	Broad based strong demand for semiconductors
PRICING	Pricing has been benign as compared to historic trend	Strong demand and industry discipline led to better pricing environment

Negative Variance

FACTORY CONSOLIDATION CONSTRAINTS	Goal was to consolidate network to improve costs	Strong demand made it difficult to build bridge inventory to enable transfers
MIX	Computing(client) & consumer were expected to decline by 6% to 4% ¹ , and by 5% to 7% ¹ , per year, respectively	Computing(client) & consumer grew by 2% ¹ & 4% ¹ per year, respectively
INCREASED RAW MATERIAL COSTS	Up to 20-30% increase in costs of certain raw materials including substrates	Higher input costs impacted margins and capital expenditure
INCREASED CAPEX	Capex guidance was for 6-8% of revenue	Higher demand, especially in power semis, and rising substrate costs led to higher capex

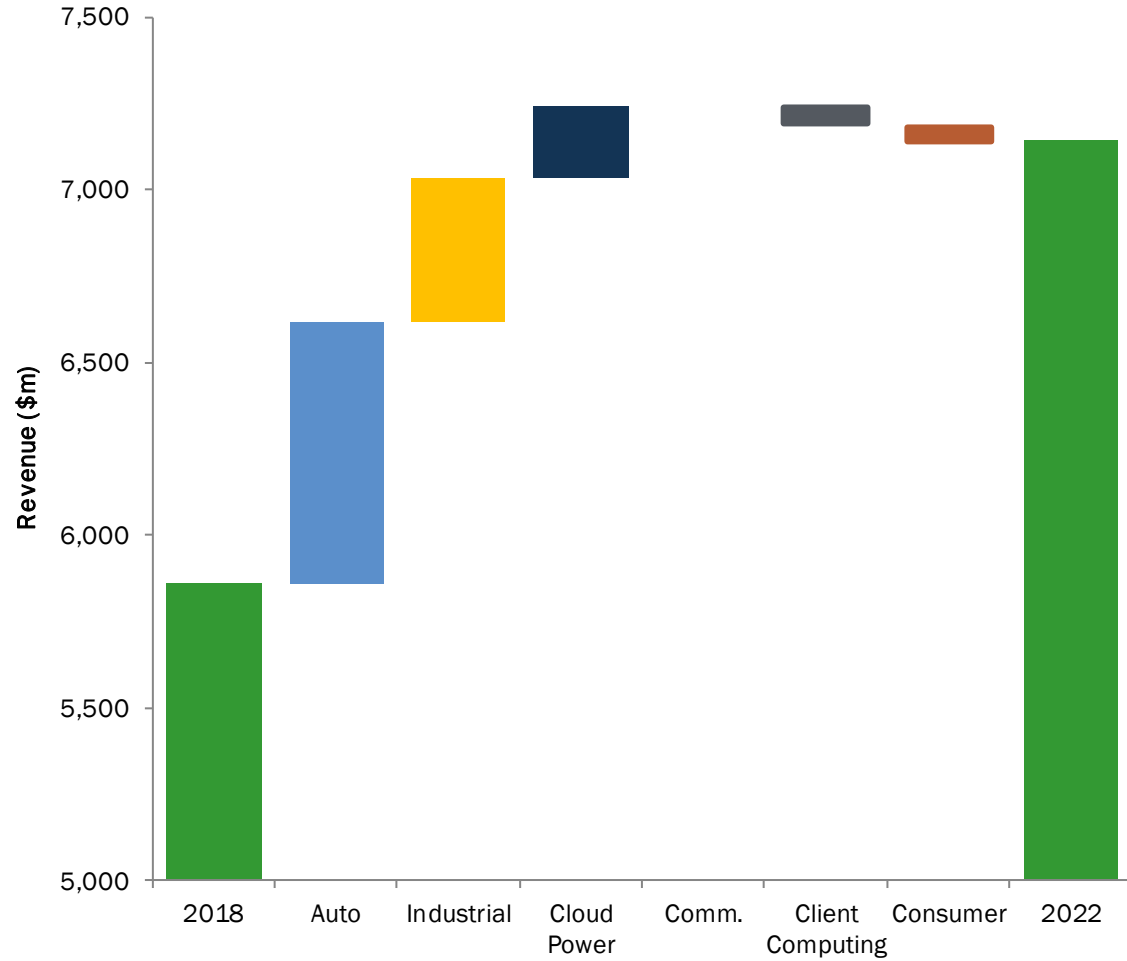








TARGET MODEL 2022

	2016	2018	2022 MODEL
REVENUE	\$3.9 BILLION	\$5.9 BILLION	\$7.1 BILLION
GROSS MARGIN¹	35.0%	38.1%	43.0%
OPERATING EXPENSES¹	22.7%	21.4%	21.0%
OPERATING MARGIN¹	12.3%	16.7%	22.0%
PROFIT BEFORE TAX¹	\$412 MILLION	\$893 MILLION	\$1,500 MILLION
CASH TAX RATE	6.7%	6.0%	17.5%
NON-GAAP EPS¹	\$0.91	\$1.96	\$3.00
FREE CASH FLOW¹	\$370 MILLION	\$759 MILLION	\$1,200 MILLION



PATH TO 2022 TARGET MODEL - REVENUE

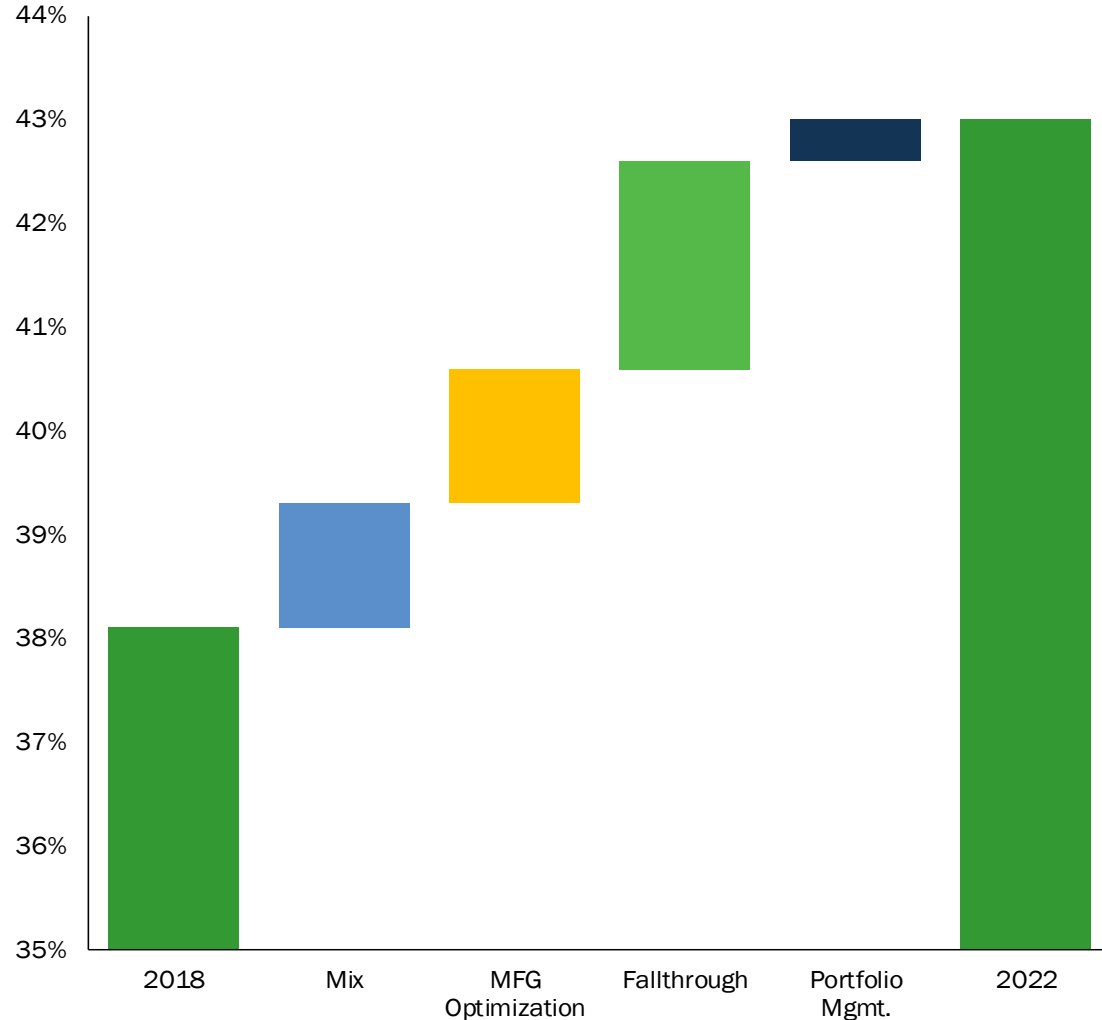


-  **AUTOMOTIVE CAGR 9%**
-  **INDUSTRIAL CAGR 6%**
-  **CLOUD POWER CAGR 13%**
-  **COMMUNICATIONS CAGR 0%**
-  **CLIENT COMPUTING CAGR -2%**
-  **CONSUMER CAGR -2%**

REVENUE CAGR OF 5%, ASSUMING INDUSTRY CAGR OF 3-3.5%



PATH TO 2022 TARGET MODEL – GROSS MARGIN



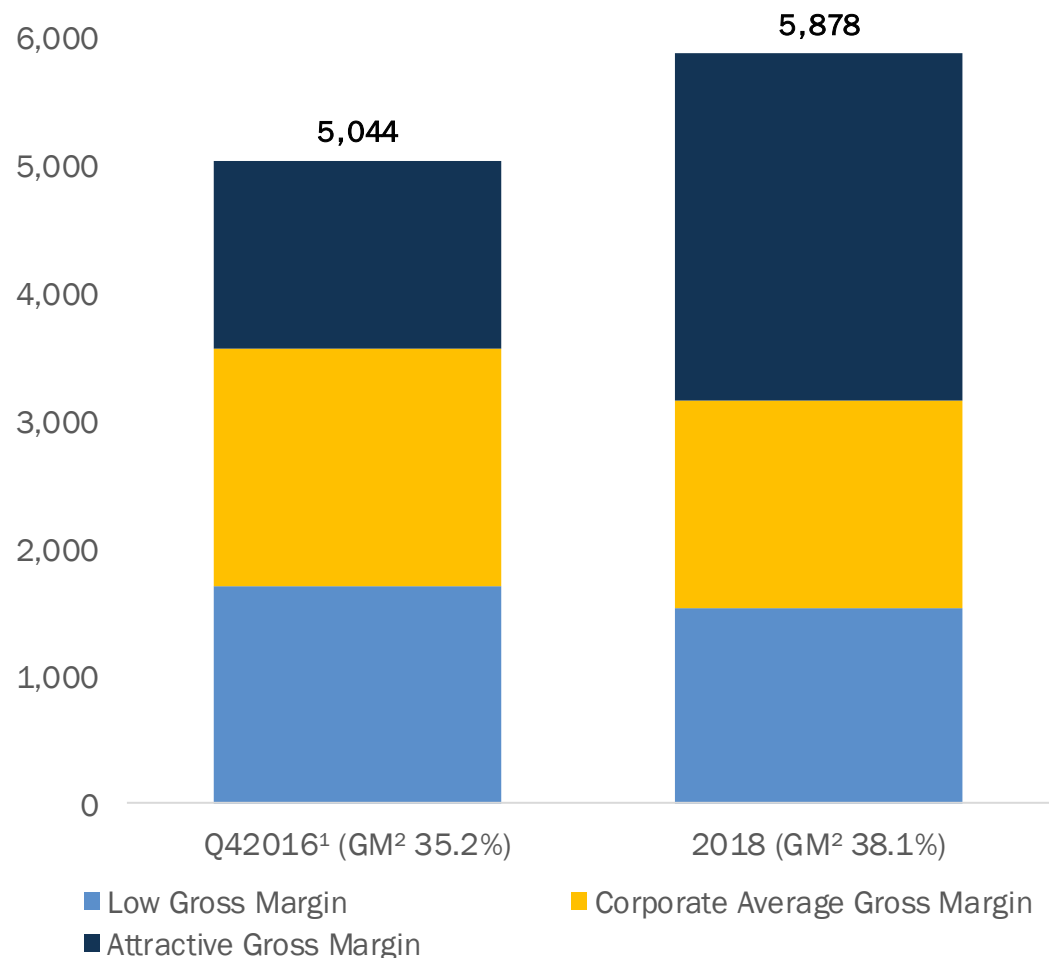
- MIX – 120 BPS**
Improving mix of automotive, industrial, and cloud-power
- MANUFACTURING OPTIMIZATION – 130 BPS**
Production transition to more efficient facilities
- FALLTHROUGH – 200 BPS**
50% fallthrough on incremental revenue
- PORTFOLIO MANAGEMENT – 40 BPS**
Divestiture and/or end-of-life of low margin businesses

STRONG TRACK RECORD OF MARGIN EXPANSION
MAJORITY OF MARGIN EXPANSION INDEPENDENT OF REVENUE



MIX AND PORTFOLIO OPTIMIZATION HAVING IMPACT

Revenue (\$m)



GROWTH DRIVEN BY HIGH QUALITY REVENUE

Providing highly differentiated products for automotive, industrial, and cloud power markets

DIVESTITURE/CLOSURE OF NON-CORE BUSINESSES

Divested and end of life of low margin and non-core businesses

END-MARKET MIX SHIFT

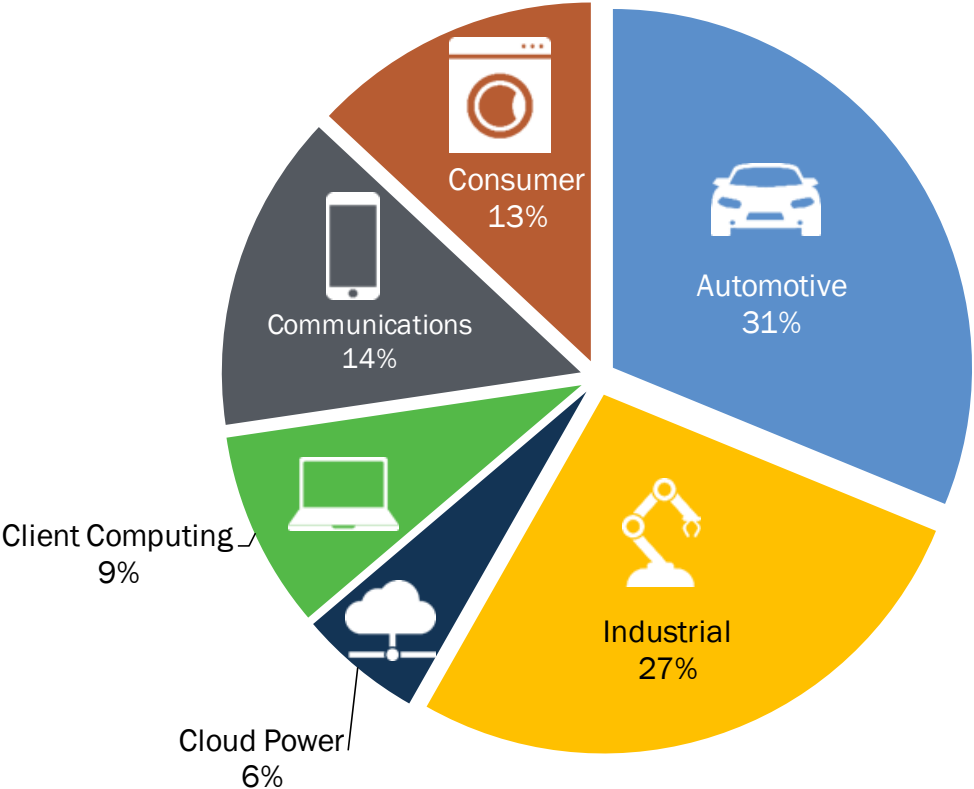
Mix largely trended along expected lines, but impact was partially offset by growth in consumer & client computing



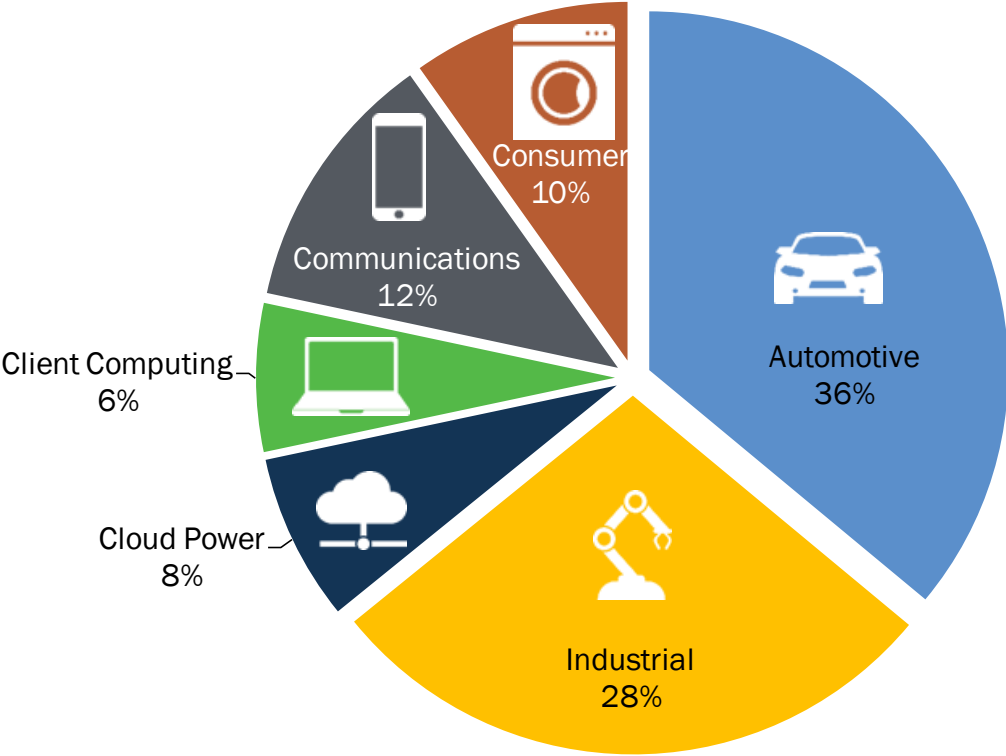
1: 2016 represents Q4' 16 Annualized values
 2: Non-GAAP financial measure. See the Appendix for a reconciliation to the most directly comparable GAAP measure

CHANGE IN MIX 2018 TO 2022

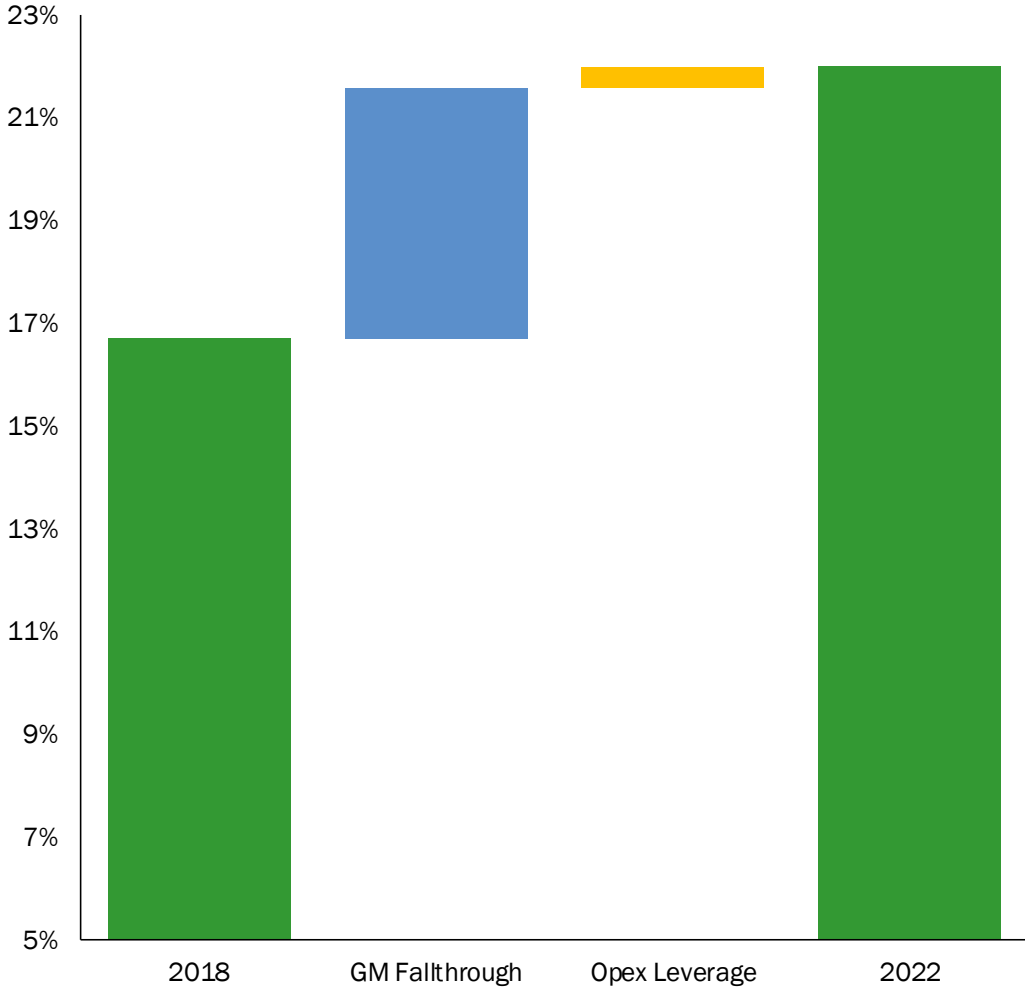
2018 REVENUE BY MARKET



2022 REVENUE BY MARKET



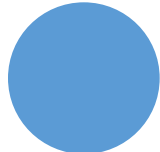
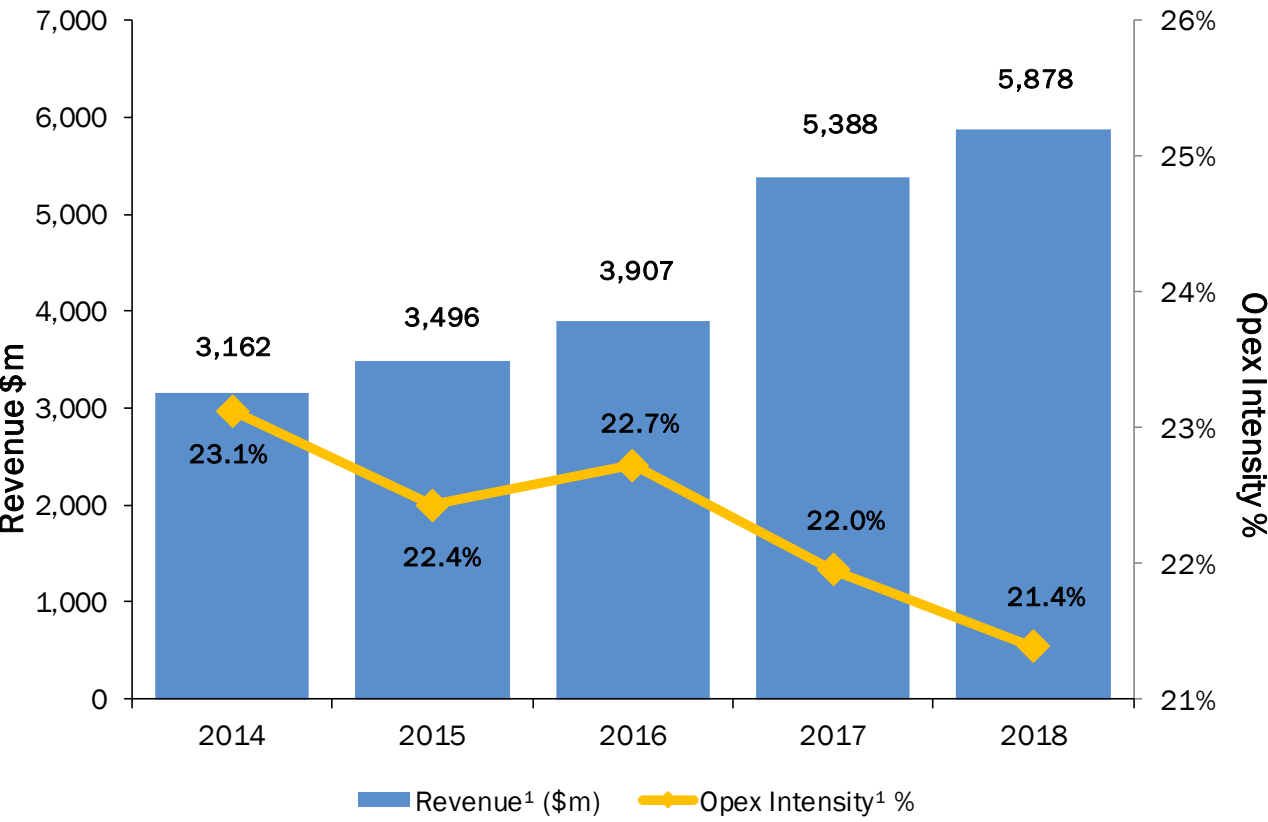
PATH TO 2022 TARGET MODEL – OPERATING MARGIN



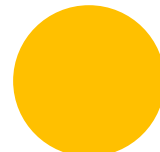
- GM FALLTHROUGH – 490 BPS**
Gross margin improvement
- OPEX LEVERAGE – 40 BPS**
Leverage from revenue growth



OPERATING EXPENSES¹



OPEX INTENSITY TARGET OF 21%
 21% opex. intensity needed to leverage new opportunities



NEW MARKETS REQUIRE HIGHER R&D INVESTMENTS
 EV/HEV, SiC, Sensors (Image, Radar, & LiDAR) for ADAS, Cloud-power



STRONG TRACK RECORD OF GENERATING OPEX LEVERAGE
 Approaching 2020 target of 21% opex intensity



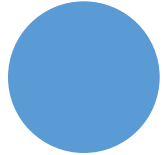
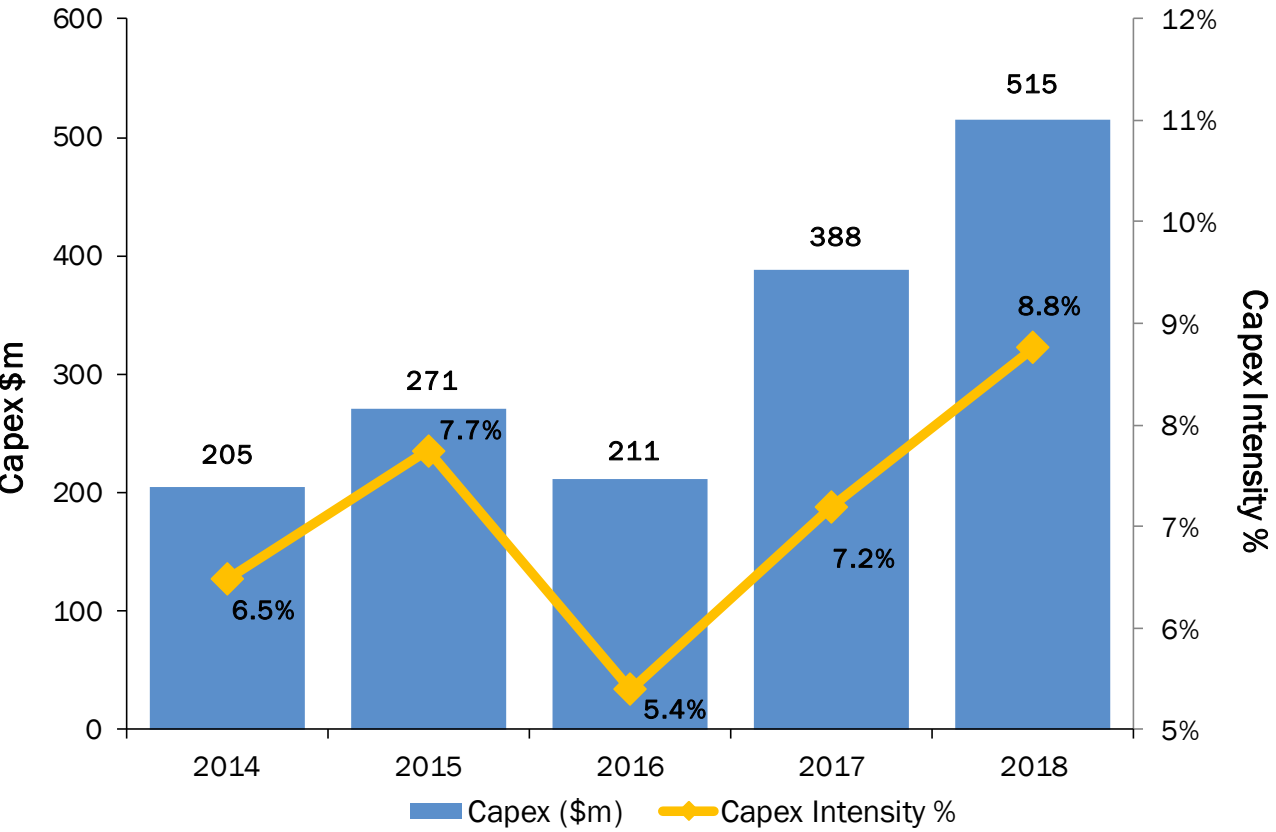
¹:Non-GAAP financial measure. See the Appendix for a reconciliation to the most directly comparable GAAP measure

PATH TO 2022 TARGET MODEL – FREE CASH FLOW

	2016	2018	2022 MODEL
OPERATING CASH FLOW	\$581 MILLION	\$1,274 MILLION	\$1,800 MILLION
NET CASH INTEREST	\$67 MILLION	\$86 MILLION	\$50 MILLION
CASH TAXES (% OF PRETAX INCOME)	6.7%	6.0%	17.5%
DEPRECIATION & AMORTIZATION	\$364 MILLION	\$509 MILLION	\$564 MILLION
CAPITAL EXPENDITURE	\$211 MILLION	\$515 MILLION	\$575 MILLION
FREE CASH FLOW¹	\$370 MILLION	\$759 MILLION	\$1,200 MILLION



CAPITAL EXPENDITURE



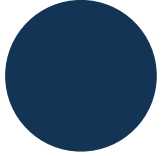
CAPEX INTENSITY TARGET OF 8%

Investment need to strengthen leadership in strategic markets – automotive, industrial, & cloud power



GROWTH NECESSITATES HIGHER INVESTMENTS

EV, cloud-power, & sensors expected to drive strong growth



INVESTMENTS NEEDED FOR NEW MATERIALS AND TECHNOLOGIES

Silicon Carbide, etc.



CAPITAL ALLOCATION STRATEGY



ACCELERATE VIRTUOUS INVESTMENT CYCLE

Invest to strengthen ON's business, improve competitive position, increase free cash flow, repeat



ABSOLUTE COMMITMENT TO CAPITAL EFFICIENCY

Capital will be deployed in a manner to maximize returns for shareholders



BALANCE RISKS AND REWARDS IN CAPITAL ALLOCATION

Exercise strong discipline in capital allocation and have ability to react quickly to changing macroeconomic conditions



CAPITAL DEPLOYMENT PLAN



Organic growth of business – R&D, Sales & Marketing, Capex

- Significant opportunities for generating value through organic investments
- Investments geared towards differentiated products in auto, industrial, and cloud power markets
- Capex investments to improve profitability and grow capacity for fast growing products



Inorganic growth initiatives – M&A

- M&A will continue to be a critical component of ON's strategy
- Industry consolidation presents attractive opportunities for value creation through synergies
- High hurdle rate – M&A investments have to generate returns significantly above cost of capital and have to make strong strategic sense
- Strong track record of value creation through M&A



Share repurchase

- Strong commitment to returning capital to shareholders
- Share repurchase will be primary vehicle for cash return to shareholders
- Strong track record of share repurchases – Under last (2014) authorization, repurchased 51.2m shares at average price of \$13.90



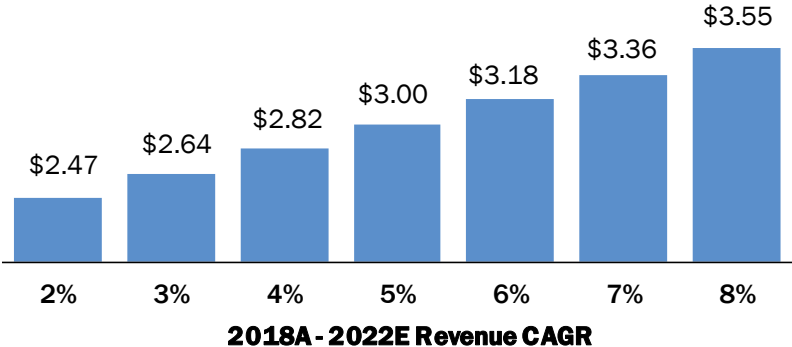
Debt reduction

- Will continue to pay down debt, but intend to have net debt on balance sheet
- No idle net cash sitting on balance sheet for a long period

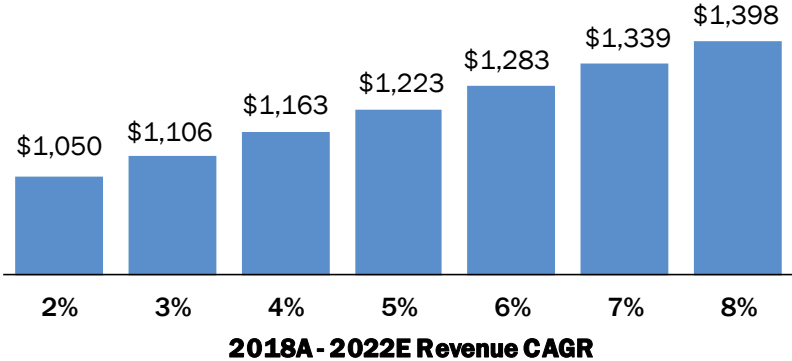


REVENUE SENSITIVITY TO 2022 TARGET MODEL

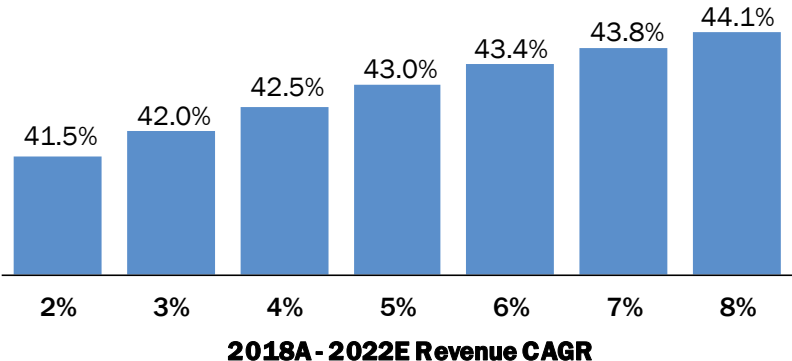
Non-GAAP Earnings / Share¹



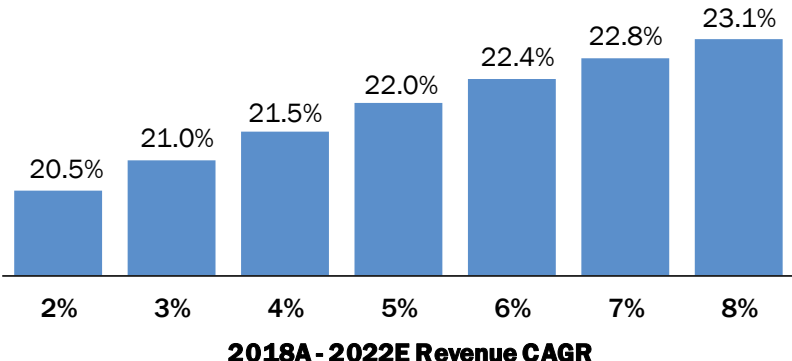
Free Cash Flow¹



Gross Margin¹



Operating Margin¹



¹:Non-GAAP financial measure. See Slide 3 for a discussion of forward-looking non-GAAP financial measures

SUMMARY

1

Strong business outlook – strong revenue growth coupled with solid margin expansion and accelerating FCF

2

Sharp focus on capital deployment – goal is to maximize returns and shareholder value

3

Company specific margin drivers in place – majority of margin expansion independent of revenue


4

ON is going through transformational changes – 2022 target a milestone, not the destination



**Questions
&
Answers**



THINK  ON.

ENERGY EFFICIENT INNOVATIONS



APPENDIX: NON-GAAP DEFINITIONS AND RECONCILIATIONS

Some data in this presentation includes non-GAAP financial measures. Following is the reconciliations of non-GAAP financial measures used in this presentation to the most directly comparable measures under GAAP.

(in \$millions, except per share data)	FY2018	FY2017	FY2016 ⁽¹⁾	FY2015 ⁽²⁾	FY2014 ⁽²⁾
GAAP Revenue	\$5,878.3	\$5,543.1	\$3,906.9	\$3,495.8	\$3,161.8
a) Amortization of acquisition related intangible assets	0.0	-155.1	0.0	0.0	0.0
Non-GAAP Revenue	\$5,878.3	\$5,388.0	\$3,906.9	\$3,495.8	\$3,161.8
GAAP Gross Profit	\$2,238.7	\$2,035.6	\$1,300.5	\$1,193.2	\$1,084.9
GAAP Gross Margin	38.1%	36.7%	33.3%	34.1%	34.3%
a) Sell-through to sell-in adjustment	0.0	-59.0	0.0	0.0	0.0
b) Expensing of appraised inventory at fair market value step up	1.0	13.6	67.5	0.0	27.0
c) Actuarial losses on pension plans and other pension benefits	0.0	0.0	0.0	-0.8	3.9
Non-GAAP Gross Profit	\$2,239.7	\$1,990.2	\$1,368.0	\$1,192.4	\$1,115.8
Non-GAAP Gross Margin	38.1%	36.9%	35.0%	34.1%	35.3%

(1) Amounts have been adjusted for the retrospective adoption of ASU 2017-07 - "Improving the presentation of Net Periodic Pension Cost and Net Periodic Pension Benefit Cost" ("ASU 2017-07"). Under ASU 2017-07, service cost is included in operation income while the other components are reported outside of operating income. The adoption of the standard in 2018 did not have a material impact on current or prior period financial statements.

(2) Amounts are presented as previously reported and have not been adjusted for the retrospective adoption of ASU 2017-07.

(in \$millions, except per share data)	FY2018	FY2017	FY2016	FY2015	FY2014
GAAP income before income taxes	\$755.0	\$547.5	\$180.6	\$219.8	\$191.9
a) Sell-through to sell-in adjustment	0.0	(59.0)	0.0	0.0	0.0
b) Expensing of appraised inventory at fair market value step up	1.0	13.6	67.5	0.0	27.0
c) Amortization of acquisition-related intangible assets	111.7	123.8	104.8	135.7	68.4
d) Restructuring, asset impairments and other, net	4.3	20.8	33.2	9.3	30.5
e) Goodwill and intangible asset impairment	6.8	13.1	2.2	3.8	9.6
f) Third party acquisition and divestiture related costs	4.4	3.2	25.8	3.5	8.1
g) R&D costs related to licensing income	7.0	10.0	0.0	0.0	0.0
h) Actuarial (gains) losses on pension plans and other pension benefits	5.8	1.9	10.0	(5.0)	12.3
i) Loss on debt refinancing and prepayment	4.6	47.2	6.3	0.4	0.0
j) Gain on sale of available-for-sale securities	0.0	0.0	0.0	(5.4)	0.0
k) Non-cash interest on convertible notes	36.1	30.8	26.1	17.5	7.0
l) Pre acquisition interest expense, net	0.0	0.0	48.3	0.0	0.0
m) Adjustment to contingent consideration	(2.1)	1.8	(0.5)	0.0	0.0
n) Licensing Income	(36.6)	(47.6)	0.0	0.0	0.0
o) Gain on divestiture of business	(5.0)	(12.5)	(92.2)	0.0	0.0
Non-GAAP income before income taxes	\$893.0	\$694.6	\$412.1	\$379.6	\$354.8

(in \$millions, except per share data)	FY2018	FY2017	FY2016 ⁽¹⁾	FY2015 ⁽²⁾	FY2014 ⁽²⁾
GAAP operating expenses	\$1,391.5	\$1,354.0	\$1,053.7	\$932.1	\$850.5
GAAP operating expenses % of revenue	23.7%	24.4%	27.0%	26.7%	26.9%
a) Amortization of acquisition related intangible assets	(111.7)	(123.8)	(104.8)	(135.7)	(68.4)
b) Actuarial gains (losses) on pension plans and other pension benefits	0.0	0.0	0.0	4.2	(8.4)
c) Restructuring, asset impairments and other, net	(4.3)	(20.8)	(33.2)	(9.3)	(30.0)
d) Goodwill and intangible asset impairments	(6.8)	(13.1)	(2.2)	(3.8)	(4.6)
e) Third party acquisition related costs	(4.4)	(3.2)	(25.8)	(3.5)	(8.1)
f) R&D costs related to licensing income	(7.0)	(10.0)	0.0	0.0	0.0
Non-GAAP operating expenses	\$1,257.3	\$1,183.1	\$887.7	\$784.0	\$731.0
Non-GAAP operating expenses % of non-GAAP revenue	21.4%	22.0%	22.7%	22.4%	23.1%
GAAP operating income	\$847.2	\$681.6	\$246.8	\$261.1	\$228.9
GAAP operating income % of revenue	14.4%	12.3%	6.3%	7.5%	7.2%
a) Actuarial gains (losses) on pension plans and other pension benefits (cost of revenues)	0.0	0.0	0.0	(0.8)	3.9
b) Expensing of appraised inventory at fair market value step up	1.0	13.6	67.5	0.0	27.0
c) Amortization of acquisition related intangible assets	111.7	123.8	104.8	135.7	68.4
d) Actuarial gains (losses) on pension plans and other pension benefits (operating expenses)	0.0	0.0	0.0	(4.2)	8.4
e) Restructuring, asset impairments and other, net	4.3	20.8	33.2	9.3	30.5
f) Goodwill and intangible asset impairments	6.8	13.1	2.2	3.8	9.6
g) Sell-through to sell-in adjustment	0.0	(59.0)	0.0	0.0	0.0
h) Third party acquisition and divestiture related costs	4.4	3.2	0.0	0.0	8.1
i) R&D costs related to licensing income	7.0	10.0	25.8	3.5	0.0
Non-GAAP operating income	\$982.4	\$807.1	\$480.3	\$408.4	\$384.8
Non-GAAP operating income % of non-GAAP revenue	16.7%	15.0%	12.3%	11.7%	12.2%

(1) Amounts have been adjusted for the retrospective adoption of ASU 2017-07 - "Improving the presentation of Net Periodic Pension Cost and Net Periodic Pension Benefit Cost" ("ASU 2017-07"). Under ASU 2017-07, service cost is included in operation income while the other components are reported outside of operating income. The adoption of the standard in 2018 did not have a material impact on current or prior period financial statements.

(2) Amounts are presented as previously reported and have not been adjusted for the retrospective adoption of ASU 2017-07.



APPENDIX CONTINUED: NON-GAAP DEFINITIONS AND RECONCILIATIONS

Some data in this presentation includes non-GAAP financial measures. Following is the reconciliations of non-GAAP financial measures used in this presentation to the most directly comparable measures under GAAP.

(in \$millions, except per share data)	FY2018	FY2017	FY2016	FY2015	FY2014
GAAP net income attributable to ON Semiconductor Corporation	\$627.4	\$810.7	\$182.1	\$209.0	\$189.7
a) Sell-through to sell-in adjustment	0.0	(59.0)	0.0	0.0	0.0
b) Expensing of appraised inventory at fair market value step up	1.0	13.6	67.5	0.0	27.0
c) Amortization of acquisition-related intangible assets	111.7	123.8	104.8	135.7	68.4
d) Restructuring, asset impairments and other, net	4.3	20.8	33.2	9.3	30.5
e) Goodwill and intangible asset impairment	6.8	13.1	2.2	3.8	9.6
f) Third party acquisition and divestiture related costs	4.4	3.2	25.8	3.5	8.1
g) R&D costs related to licensing income	7.0	10.0	0.0	0.0	0.0
h) Actuarial (gains) losses on pension plans and other pension benefits	5.8	1.9	10.0	(5.0)	12.3
i) Loss on debt refinancing and prepayment	4.6	47.2	6.3	0.4	0.0
j) Gain on sale of available-for-sale securities	0.0	0.0	0.0	(5.4)	0.0
k) Non-cash interest on convertible notes	36.1	30.8	26.1	17.5	7.0
l) Pre acquisition interest expense, net	0.0	0.0	48.3	0.0	0.0
m) Adjustment to contingent consideration	(2.1)	1.8	(0.5)	0.0	0.0
n) Licensing Income	(36.6)	(47.6)	0.0	0.0	0.0
o) Gain on divestiture of business	(5.0)	(12.5)	(92.2)	0.0	0.0
p) Adjustment of income taxes	71.9	(333.3)	(31.2)	(16.5)	(18.3)
Non-GAAP net income attributable to ON Semiconductor Corporation	\$837.3	\$624.5	\$382.4	\$352.3	\$334.3
GAAP diluted share count	435.9	428.3	420.0	427.8	443.5
Special items:					
a) Dilutive share count attributable to convertible notes	(7.8)	(0.9)	(0.9)	(0.9)	0.0
Non-GAAP diluted share count	428.1	427.4	419.1	426.9	443.5
Non-GAAP diluted earnings per share	\$1.96	\$1.46	\$0.91	\$0.83	\$0.75

(in \$millions, except per share data)	FY2018	FY2017	FY2016	FY2015	FY2014
Cash flows from operating activities	\$1,274.2	\$1,094.2	\$581.1	\$470.6	\$481.3
Less: Purchase of property, plant and equipment	514.8	387.5	210.7	270.8	204.3
Free Cash Flow	\$759.4	\$706.7	\$370.4	\$199.8	\$277.0



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