



**2019 INVESTOR CONFERENCE**

Boston, Massachusetts | June 4, 2019

• **APTIV** •

# Forward Looking Statements

This presentation, as well as other statements made by Aptiv PLC (the “Company”), contain forward-looking statements that reflect, when made, the Company’s current views with respect to current events, certain investments and acquisitions and financial performance. Such forward-looking statements are subject to many risks, uncertainties and factors relating to the Company’s operations and business environment, which may cause the actual results of the Company to be materially different from any future results. All statements that address future operating, financial or business performance or the Company’s strategies or expectations are forward-looking statements. Factors that could cause actual results to differ materially from these forward-looking statements are discussed under the captions “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in the Company’s filings with the Securities and Exchange Commission. New risks and uncertainties arise from time to time, and it is impossible for us to predict these events or how they may affect the Company. It should be remembered that the price of the ordinary shares and any income from them can go down as well as up. The Company disclaims any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events and/or otherwise, except as may be required by law.

# Aptiv's 2019 Investor Day

TODAY'S DISCUSSION FOCUSED ON KEY AREAS OF INVESTOR FEEDBACK

STRONG POSITIVE RESPONSE TO APTIV INVESTMENT THESIS

## PORTFOLIO PERFECTLY POSITIONED



Aptiv's portfolio is perfectly positioned for continued strong secular growth

... but vehicle costs can't go up forever. How do these trends intersect with overall content per vehicle, competitive position and next generation functionality needs?

## FOCUSED ON EXECUTION



Flexible business model and culture of continuous improvement delivering results

... which has been important in a weaker macro production environment. How do you improve performance through cycle, and improve long-term sustainability?

## PATH TO 2022 TARGETS



Strong progress towards financial framework, while continuing to invest in future platforms

... but help us understand what these investments yield. How will you monetize next generation architectures, automated driving and other future platforms?

SEEKING TO ADDRESS KEY AREAS OF INVESTOR FEEDBACK

# Agenda

9:30  
AM

**WELCOME**  
to Boston

11:15  
AM

**BREAK**  
15 min

12:30  
PM

**CONCLUDE**  
today's event

2:00  
PM

**STRATEGIC OVERVIEW**  
of Aptiv's business model and  
long term vision

**CURRENT PLATFORMS**  
provide technology foundation  
and deliver growth today

**FUTURE PLATFORMS**  
unlocking new value and new  
addressable markets

**EXECUTION**  
of Aptiv's business model  
delivering sustainable performance

**LEADERSHIP Q&A**  
followed by lunch



**Kevin P. Clark**  
President and Chief Executive Officer

# STRATEGIC OVERVIEW

• **APTIV** •

# Robust Business Model

LEADING PORTFOLIO ALIGNED TO ENABLING THE FUTURE OF MOBILITY



**SAFE**

A FUTURE WITH ZERO ACCIDENTS



**GREEN**

A FUTURE WITH ZERO EMISSIONS



**CONNECTED**

A FUTURE WITH SEAMLESS CONNECTIVITY

BUILT ON A FOUNDATION OF **EXECUTION**



**INNOVATION**

- 18,600 scientists and engineers, 15 major technical centers
- Introducing industry leading technologies



**COLLABORATION**

- Leveraging capabilities across the enterprise to best serve customers
- Developing strategic relationships that create long term value



**EXCELLENCE**

- Flawless operating execution; delivering quality at 99.9%
- Committed to increasing shareholder value

WITH A CONSISTENT **MANAGEMENT PHILOSOPHY**



**DISCIPLINED REVENUE GROWTH**

- Focused on Safe, Green and Connected
- Balanced customer, platform and regional growth



**COST STRUCTURE OPTIMIZATION**

- Increase leverage in operating model, footprint optimization
- Continuous improvement culture



**DISCIPLINED CAPITAL ALLOCATION**

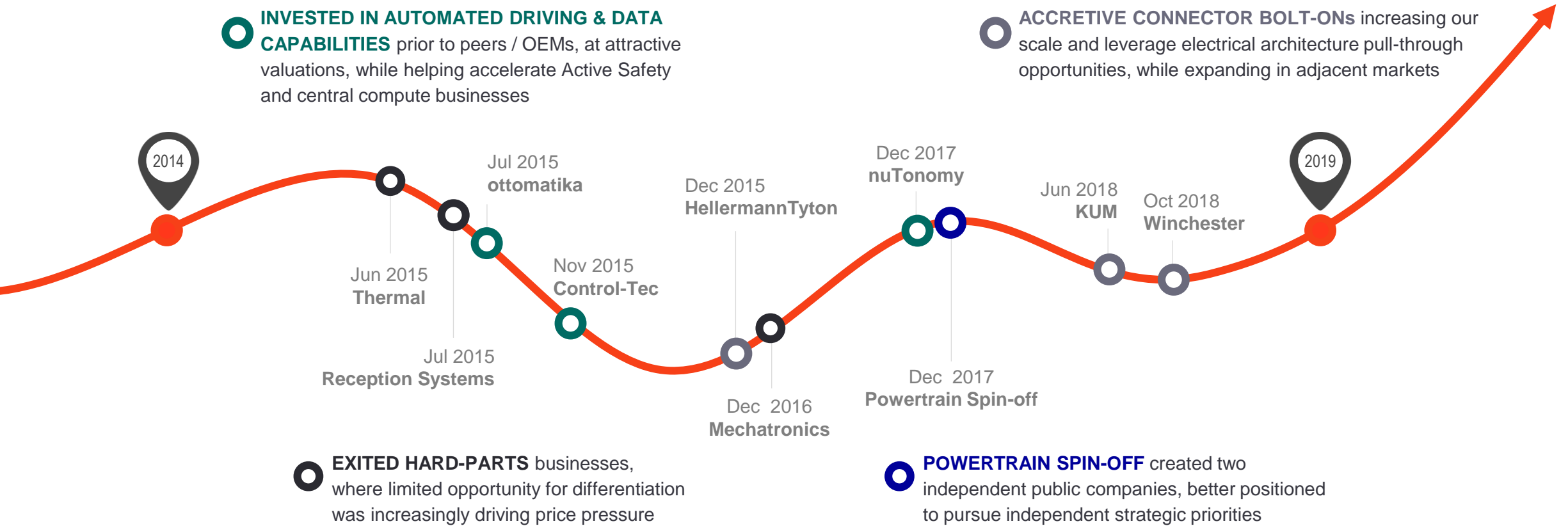
- Maintain investment grade ratings
- Driving organic growth and acquisitions; return excess cash to shareholders

# Proactively Addressing the Changing Environment

SMART EXECUTION OF OUR BUSINESS MODEL AND TIMELY CAPITAL DEPLOYMENT HAS ENABLED APTIV TO ADAPT AND THRIVE IN A DYNAMIC MARKET

**INVESTED IN AUTOMATED DRIVING & DATA CAPABILITIES** prior to peers / OEMs, at attractive valuations, while helping accelerate Active Safety and central compute businesses

**ACCRETIVE CONNECTOR BOLT-ONS** increasing our scale and leverage electrical architecture pull-through opportunities, while expanding in adjacent markets

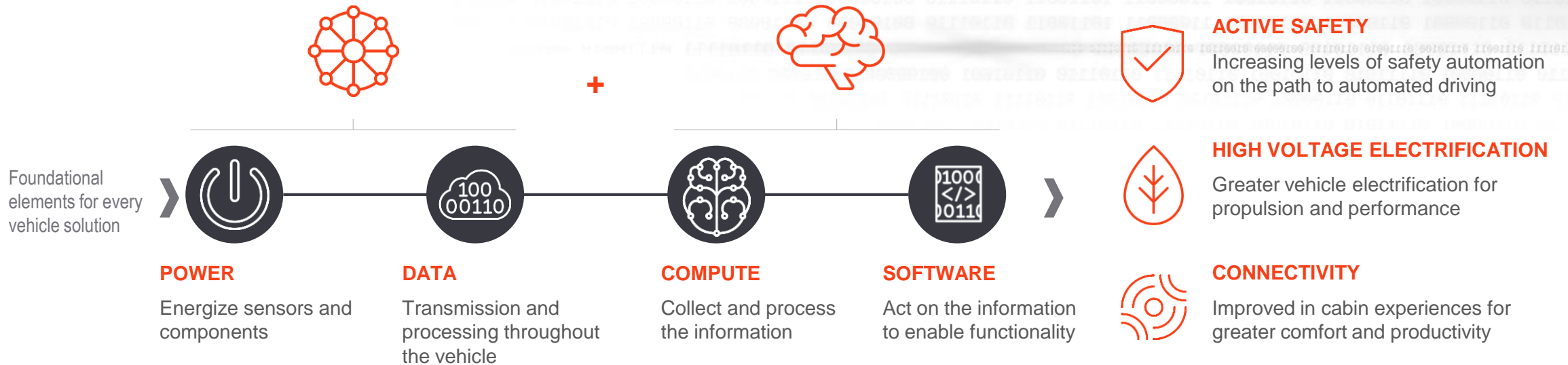


# Aptiv Perfectly Positioned Today

PROVIDING END-TO-END SOLUTIONS THAT ENABLE THE COMMERCIALIZATION OF NEW MOBILITY

Aptiv's **advanced technologies** and **deep systems knowledge** across the brain and nervous system of the vehicle...

...allows us to conceive, specify and deliver solutions for our **customers' toughest challenges**



# Addressing Challenging Problems



**VEHICLE FATALITIES** COMING DOWN GLOBALLY, BUT PASSIVE SAFETY AT ITS LIMIT; ADVANCED SAFETY SOLUTIONS CRITICAL IN REDUCING VEHICLE FATALITIES



**EMISSIONS** REGULATIONS BECOMING INCREASINGLY STRINGENT GLOBALLY TO HELP IMPROVE AIR QUALITY AND REDUCE TRANSPORTATIONS ENVIRONMENTAL IMPACT



**URBANIZATION AND CONSUMER EXPECTATIONS** DRIVING DEMAND FOR MORE INTELLIGENT, INTEGRATED AND PRODUCTIVE SOLUTIONS



**94%** OF ALL ACCIDENTS ARE CAUSED BY HUMAN ERROR



**#1** AIR POLLUTION IS THE NUMBER ONE ENVIRONMENTAL CAUSE OF DEATH IN THE EUROPEAN UNION



**6B** SMARTPHONES GLOBALLY BY 2025, REPLACING THE PC AS CONSUMERS KEY CONNECTED DEVICE



**1.25M** ROAD TRAFFIC DEATHS ANNUALLY



**4.6** METRIC TONS OF CO2 EMITTED FROM A TYPICAL PASSENGER VEHICLE



**25B** IoT CONNECTED DEVICES GLOBALLY

# Right Strategy, Rigorously Executed

DRIVING OUTPERFORMANCE TODAY, AND IN THE FUTURE

## FUTURE PLATFORMS

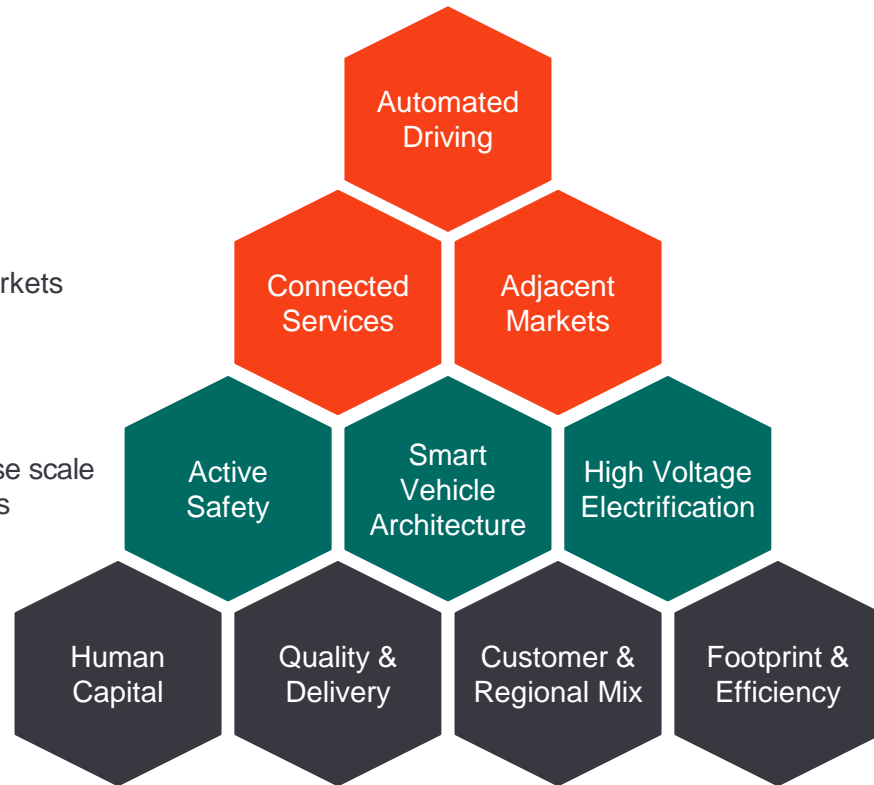
Seeding the next wave of growth, while diversifying business models and end markets

## CURRENT PLATFORMS

Leveraging pan-Aptiv capabilities to increase scale and relevance in fast-growing product areas

## BUSINESS FOUNDATION

Optimizing global execution capabilities, which give Aptiv the right to play across current and future platforms



- Built top-tier automated mobility technology capabilities and commercialization ecosystem
- Established data monetization platform
- Expanded into industrial and CV markets

- \$4.0B High Voltage bookings since 2016
- \$9.6B Active Safety bookings since 2016
- Awarded 11 Central Compute programs
- 2 SVA Advanced Development awards
- Divested businesses that did not fit our strategy

- Drove \$250M in overhead cost savings 2014 - 2019E
- No single customer more than 10% of sales

# Business Foundation



CONTINUOUS IMPROVEMENT IN STRONG GLOBAL EXECUTION CAPABILITIES

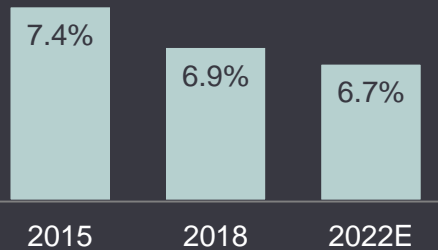
## FLEXIBLE BUSINESS MODEL

Hourly Workforce



Relentless focus on driving efficiencies and reducing risk; improved EBITDA breakeven levels - (45%) below today's volumes

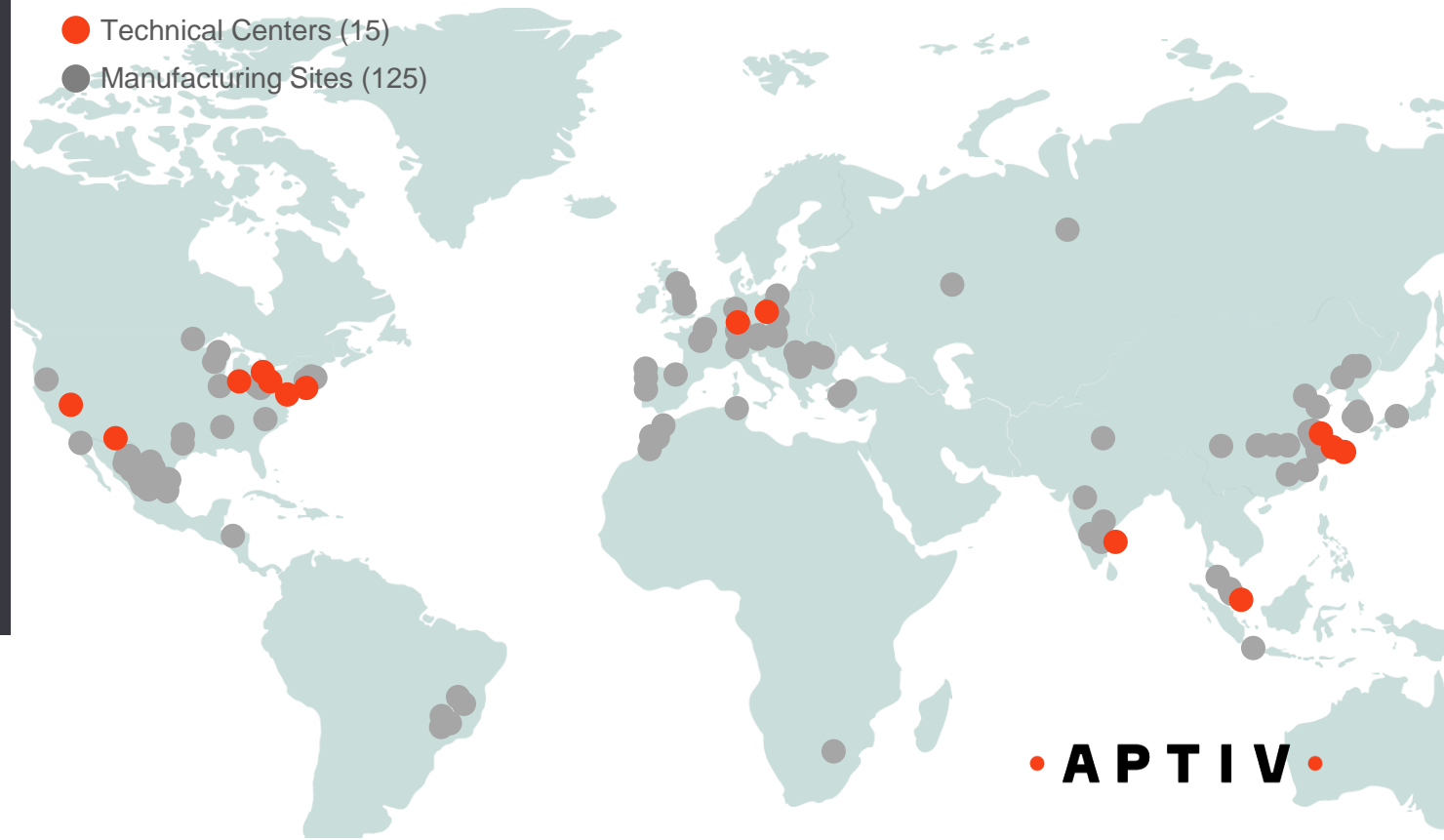
SG&A % of Sales



Continued rollout of standardized processes on a common technology platform reduces inefficiencies while leveraging scale

## STRATEGIC FOOTPRINT WELL POSITIONED TO SUPPORT PROFITABLE GROWTH

- Technical Centers (15)
- Manufacturing Sites (125)



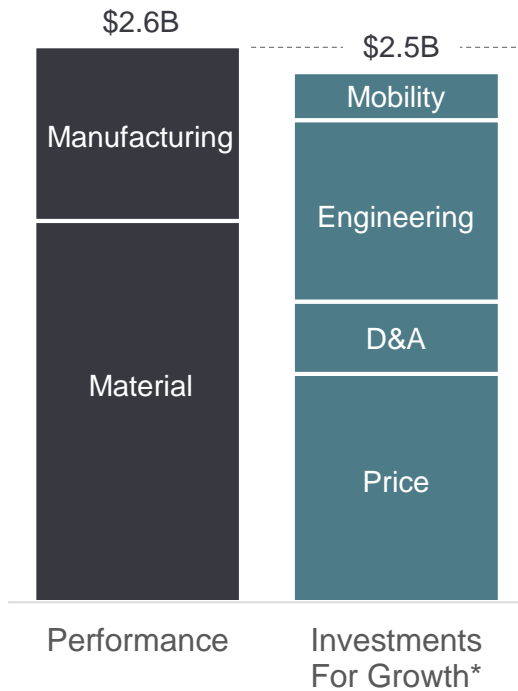
# Funding Investments for Growth



IMPROVEMENTS IN BUSINESS FOUNDATION ALLOWING US TO REINVEST FOR ACCELERATED GROWTH AND MARGIN EXPANSION THROUGH THE CYCLE

## PERFORMANCE AND INVESTMENTS

2014 - 2019E



- **EXPANDING EARNINGS**  
Performance more than offsetting price and incremental investments for growth
- **FUNDING MOBILITY**  
Seeding future platforms through funding of Mobility & Services
- **ACCELERATING GROWTH**  
Supporting record customer awards in products such as Active Safety and Electrification
- **OPTIMIZING COST STRUCTURE**  
Relentless focus on driving operational efficiencies and improving flexibility

\* Incremental Investments: 2019E vs. 2014

## COMPETITIVE MOAT EXPANDING

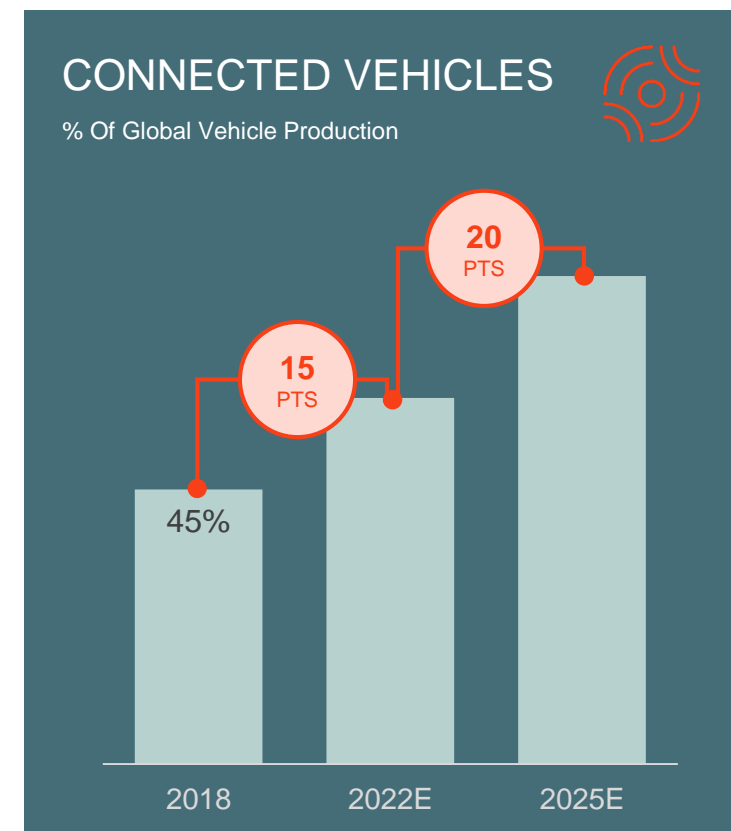
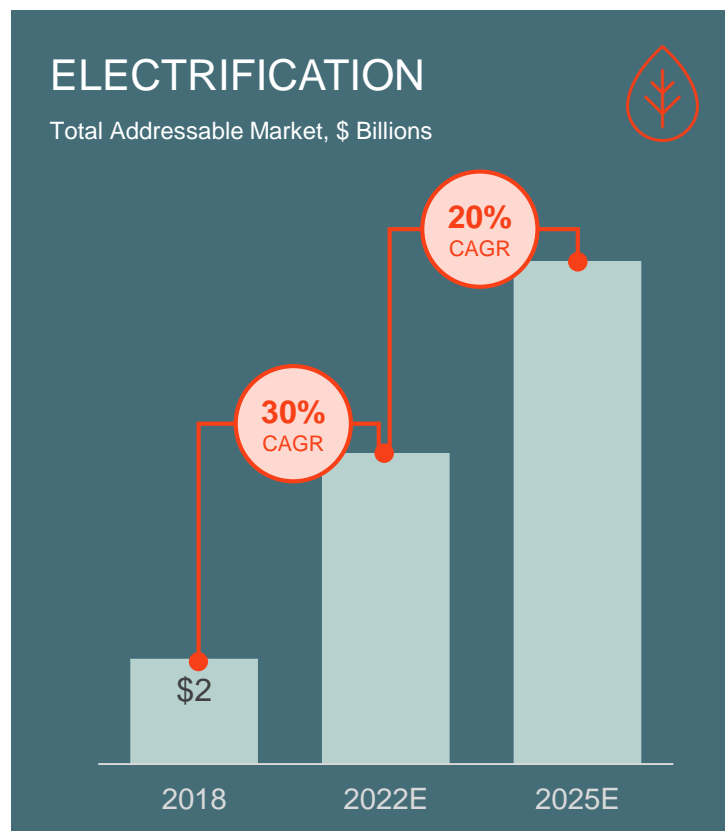
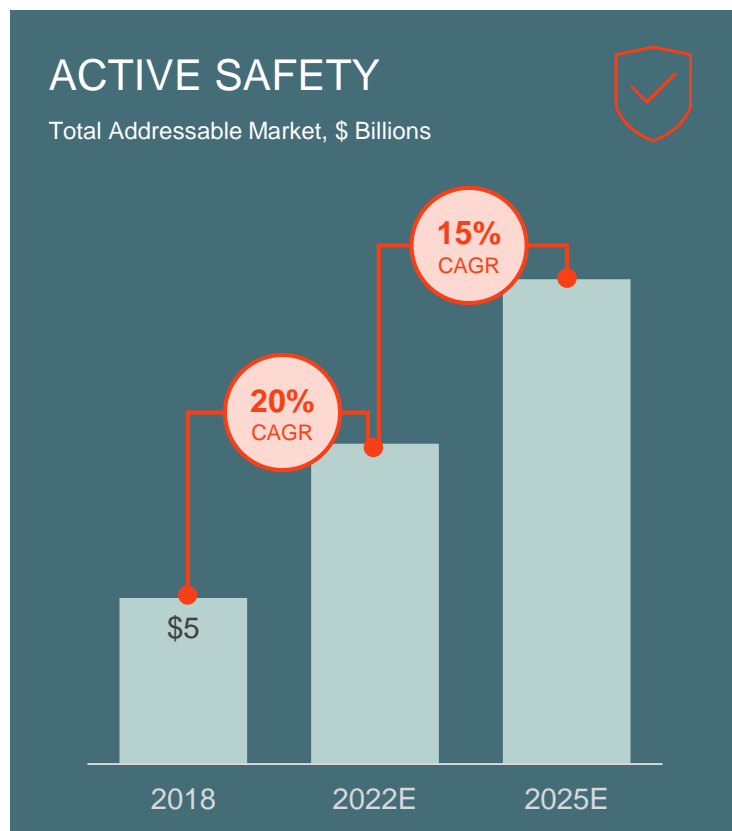
Reinvestment in the business improving competitive positioning on current and future platforms



# Fast Growing Business Gaining Scale



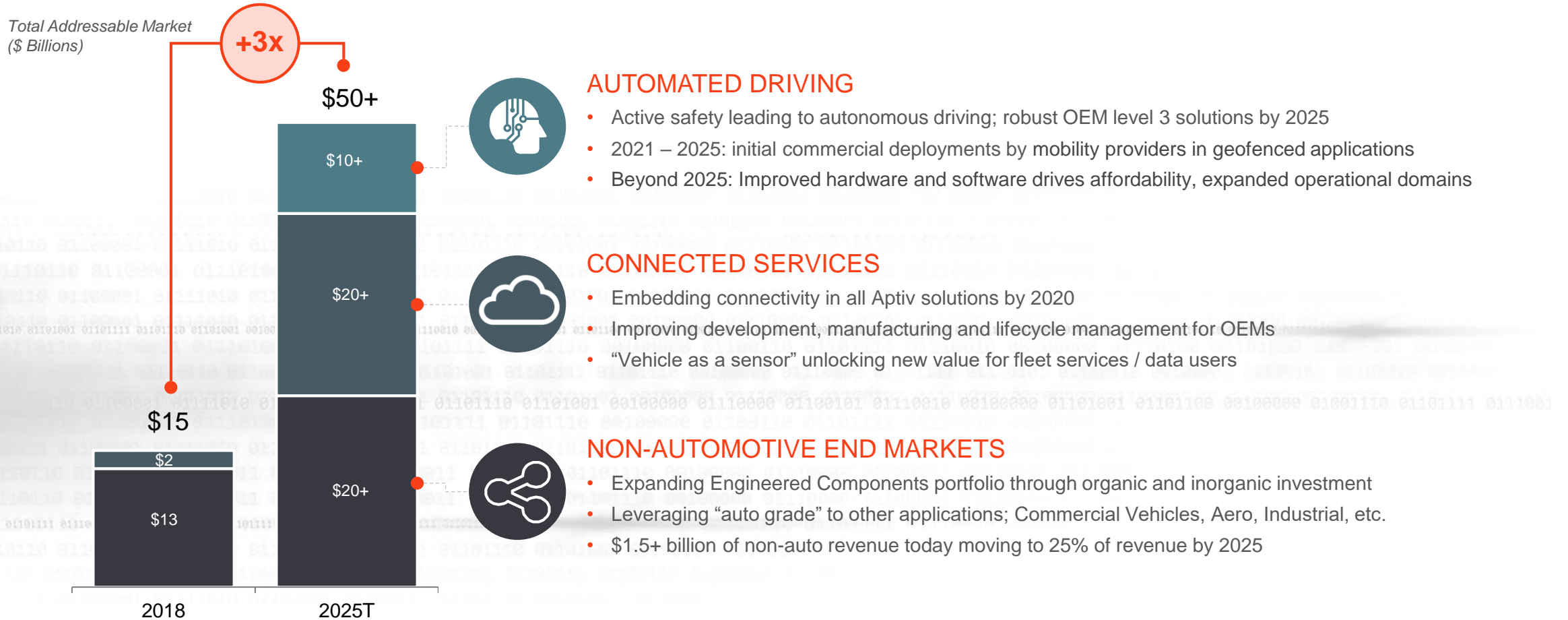
LEVERAGING FULL APTIV CAPABILITIES TO INCREASE SCALE AND RELEVANCE IN FAST-GROWING PRODUCT AREAS



# Future Platforms



SEEDING THE NEXT WAVE OF GROWTH, WHILE  
DIVERSIFYING BUSINESS MODELS AND END MARKETS



# Evolution of Safe and Efficient Solutions

EACH GENERATION DRIVING INCREASED CONTENT THAT APTIV ENABLES



1<sup>ST</sup> Generation

**PASSIVE SAFETY**

**% of Prod<sup>1</sup>**

- Seat belts
- Airbags
- Structural integrity

**MATERIALS**

**% of Prod<sup>1</sup>**

- Lightweight Materials
- Improved Designs (ex: thinner)

2<sup>ND</sup> Generation

**MECHATRONICS**

**% of Prod<sup>1</sup>**

- Whiplash Protection
- Seat Belt Pretensioners
- Antilock Braking Systems
- Electronic Stability Control

**CHEMISTRIES**

**% of Prod<sup>1</sup>**

- Catalysts
- Lead-Free / Higher Octane Fuel
- Exhaust Gas Recirculation

3<sup>RD</sup> Generation

**DRIVER WARN / ASSIST**

**% of Prod<sup>1</sup>**

- Night Vision
- Back-up / Surround View
- Collision Warning
- Adaptive Cruise Control
- Blind Spot / Lane Keep Assist
- Automatic Emergency Braking

**REDUCE / REUSE**

**% of Prod<sup>1</sup>**

- Turbocharged Engines
- Advanced Transmissions
- Cylinder Deactivation
- Stop / Start Systems
- Regenerative Braking

4<sup>TH</sup> Generation

**SAFETY AUTOMATION**

**% of Prod<sup>1</sup>**

- Collision Avoidance
- Traffic Jam Pilot
- Highway Pilot
- Urban Pilot
- Auto Parking

**ELECTRIFICATION**

**% of Prod<sup>1</sup>**

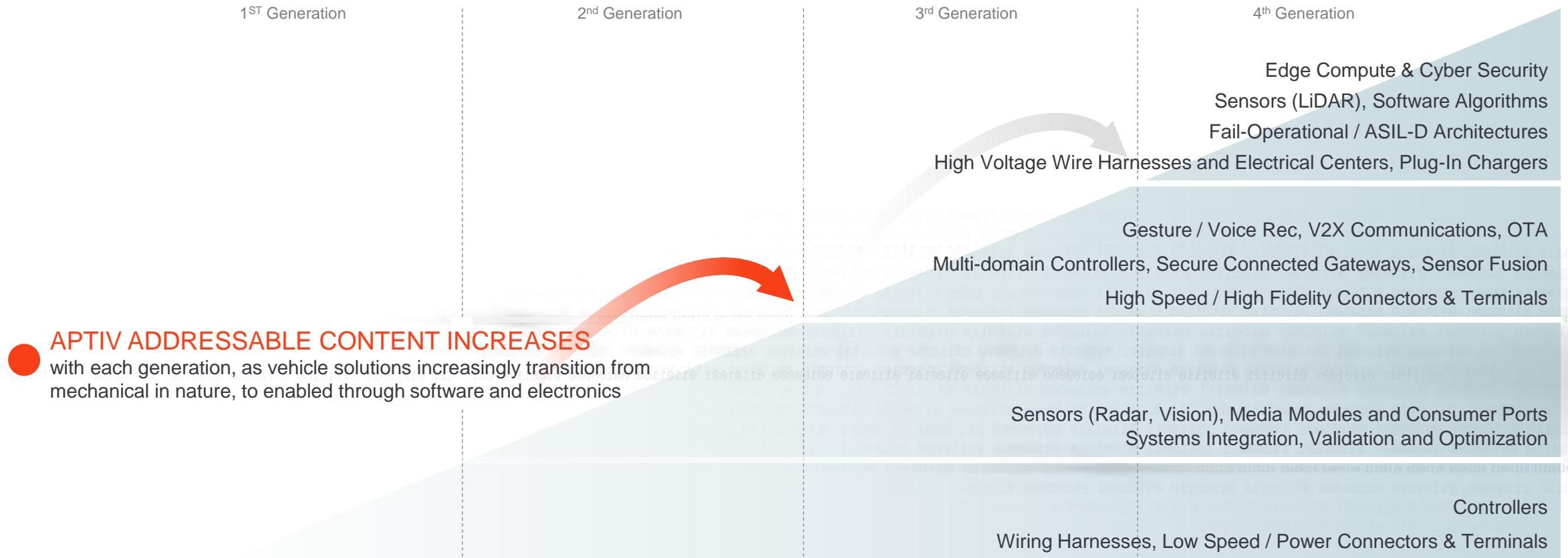
- Sub-System Elec (ex: HVAC)
- V2I (ex: Traffic Light Detect)
- Mild Hybrids
- Plug-In Hybrids
- Battery Electric Vehicles

**Aptiv Addressable Content**   ● Minimal / None   ● Some / Expanding   ● Significant / Majority

1. % of Global production today

# Increasing Addressable Content

PROACTIVE INVESTMENTS ENSURE APTIV IS BEST POSITIONED TO CAPITALIZE ON INFLECTIONS BETWEEN GENERATIONS



# Scalable Advanced Safety Solutions

**\$15B+** Market In 2025

ADVANCED SAFETY TECHNOLOGIES CAN ELIMINATE VIRTUALLY ALL DRIVER ERRORS, **SAVING OVER 1 MILLION LIVES** AND 40 MILLION INJURIES ANNUALLY

## ACTIVE SAFETY

Scalable solutions helping OEMs move to higher levels of active safety, and eventually automated driving



## AUTOMATED DRIVING

Monetizing automated driving investments today through application to ADAS

Addressable CPV

- Forward Collision Warn
- Lane Departure Warn
- Blind Spot Detect

\$275 - 325

L0

- Adaptive Cruise
- AEB
  - Vehicles
  - Pedestrians
  - Rear Autobrake

L1

- Lane Keeping
- Auto Park Assist
- AEB
  - Bicycles
  - Oncoming

\$450 - 550

L2

- Highway Assist
- Traffic Jam Assist
- Command Lane Change
- Auto Park

\$750 - 1,200

L2+

- Traffic Jam Pilot
- Highway Chauffeur
- Park Valet

\$4,000 - 5,000

L3

- Highway Pilot
- Traffic Pilot
- Urban Pilot
- Mobility on Demand

L4/5

1. Source: World Health Organization

# Increasing CO<sub>2</sub> Emissions Standards

**\$10B+** Market In 2025

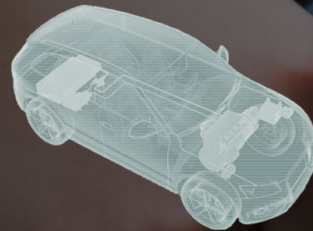
ELECTRIFICATION CAN DRAMATICALLY **REDUCE** TRANSPORTATION **CO<sub>2</sub> EMISSIONS**, WHICH ACCOUNT FOR **15%** OF GLOBAL TOTALS

## HIGH VOLTAGE PORTFOLIO

Full portfolio of High Voltage Electrification solutions is content accretive, with penetration expected to reach almost 20% by 2025

## ARCHITECTURE OPTIMIZATION

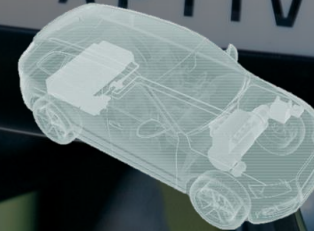
Aptiv design and manufacturing capabilities helps seamlessly deliver optimized architectures to help OEMs meet stringent regulatory requirements



## FULL HYBRID

CPV\*: \$600 - 800

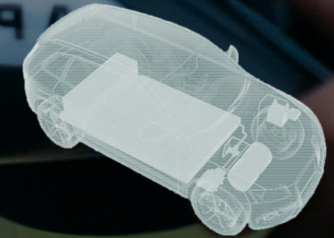
- Internal Battery Connections
- 12V Battery Monitor
- High Voltage Shielded Cable
- High Power/Voltage Connectors



## PLUG-IN HYBRID

CPV\*: \$900 - 1100

- Internal Battery Connections
- 12V Battery Monitor
- High Voltage Shielded Cable
- High Power/Voltage Connectors
- Charging Inlets & Cables
- On-board Charger



## BATTERY ELECTRIC

CPV\*: \$900 - 1100

- Internal Battery Connections
- 12V Battery Monitor
- High Voltage Shielded Cable
- High Power/Voltage Connectors
- Charging Inlets & Cables
- On-board Charger

\* Total addressable content per vehicle (CPV). Comparable low voltage combustion addressable CPV is ~\$500

# Improving the In-Cabin Experience

**\$2B** Market In 2025

DISTRACTED DRIVING RESULTS IN OVER **100 CRASHES PER HOUR** IN THE U.S. ALONE.<sup>1</sup> IMPROVED IN-CABIN SENSING AND INTERFACE SOLUTIONS KEEP THOSE DISTRACTIONS AT BAY.

1. Source: NHTSA Distracted Driving 2016 Summary of Statistical Findings

## GREATER CONVENIENCE

Aptiv sensing and compute solutions the ideal platform to roll out software enabled functionality addressing \$2B Interior Sensing Market by 2025



## GREATER SAFETY

Enabling driver out-of-the-loop safety automation requires transition from driver state to driver readiness sensing, meaning in-cabin sensing and active safety are tightly coupled



## DRIVER AVAILABILITY

- Driver State Sensing
- Driver Engagement / Cognitive Load
- Impairment (Doziness, Intoxication)



## ACTIVITY

- Gesture Recognition
- Distraction Management
- Thermal Comfort



## OBJECT / CABIN

- Child Left Behind / Object Left Behind
- Occupant Position / Airbag Free Space
- Vehicle Condition

# Vehicle Becoming Part of the IoT

## UNLOCKING NEW VALUE

Vehicle becoming a software defined platform, which can improve and evolve over time



## COST AVOIDANCE

Embedding OTA Connectivity as standard on all applicable AS&UX controllers and compute platforms



## DESIGN VALIDATION

Real time data analytics on pre-production vehicles to improve engineering, validation, manufacturing, product development costs for OEMs



## PRODUCTION

Data aggregation and real-time configuration on consumer vehicles to enable rich data for new business models and improve product development, quality, warranty costs for OEMs



## POST-PRODUCTION

Real-time descriptive fleet management and predictive analytics to solve cost, uptime, utilization, health challenges for fleet owners

**\$20B+** Market In 2025

OTA CAN QUICKLY AND EFFICIENTLY UPDATE VEHICLE SOFTWARE, **SAVING THE INDUSTRY \$35 BILLION ANNUALLY BY 2022<sup>1</sup>**

1. Source: Stout Risius Ross 2016 Automotive Warranty & Recall Report

# Competitive Moat is Expanding

VEHICLE IS BECOMING A SOFTWARE DEFINED PLATFORM



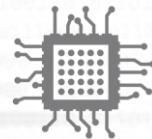
New safe, green and connected features increasingly **enabled through advanced software** which **requires more advanced architectures** to run it

FULL SYSTEM SOLUTION CAPABILITIES MAKE APTIV UNIQUELY QUALIFIED TO CONCEIVE, SPECIFY AND DELIVER NEW MOBILITY APPLICATIONS



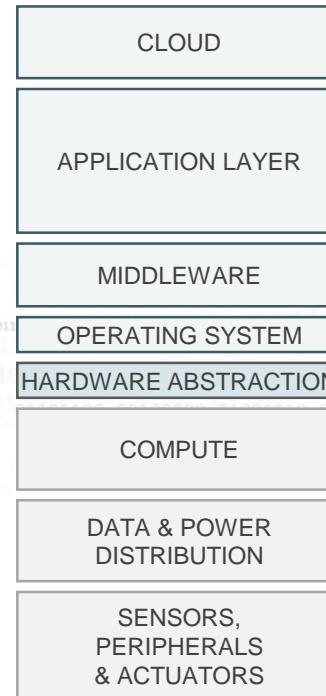
ADVANCED SOFTWARE

Increasing differentiation and value from software drives accretive revenue growth



ADVANCED ARCHITECTURES

More integrated, optimized architectures will drive greater addressable content for Aptiv



CORE STRENGTHS

Complementary, interdependent skill-sets



SOFTWARE



COMPUTE



POWER

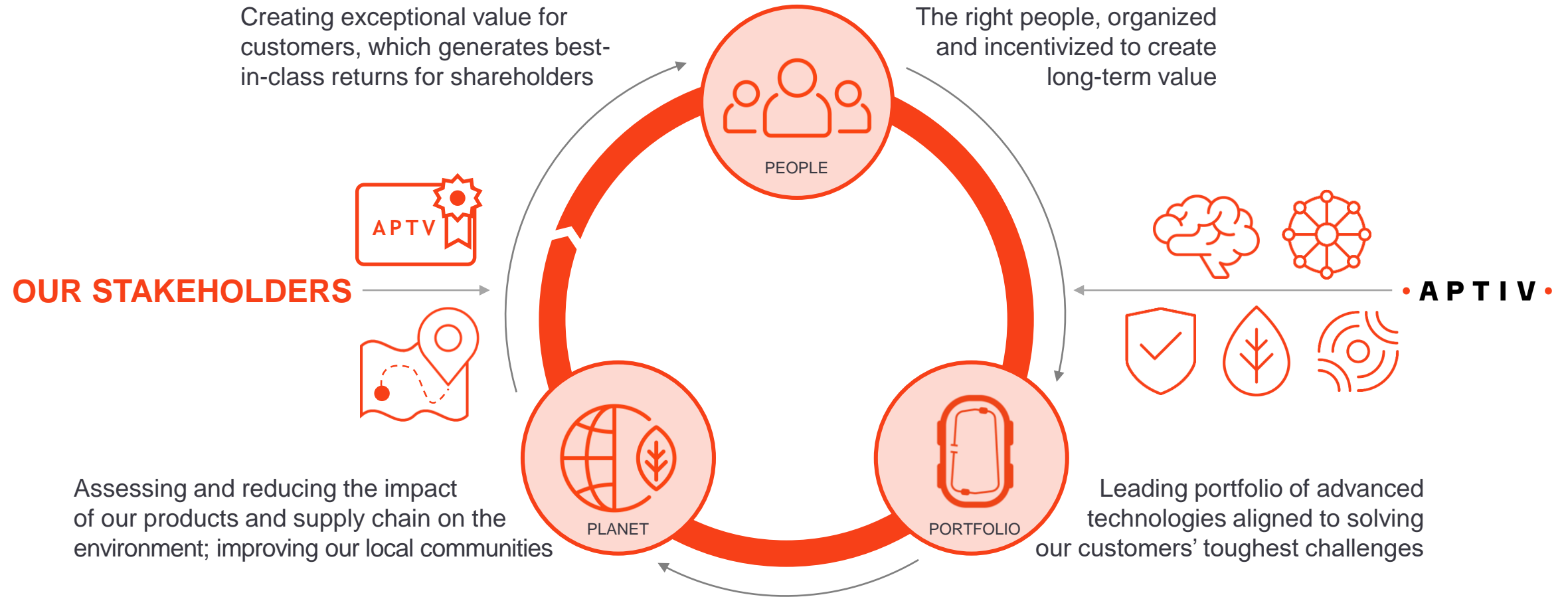


DATA



# Advanced Solutions Delivered Responsibly

SUSTAINABILITY EFFORTS FOCUSED ON PEOPLE, PORTFOLIO AND PLANET

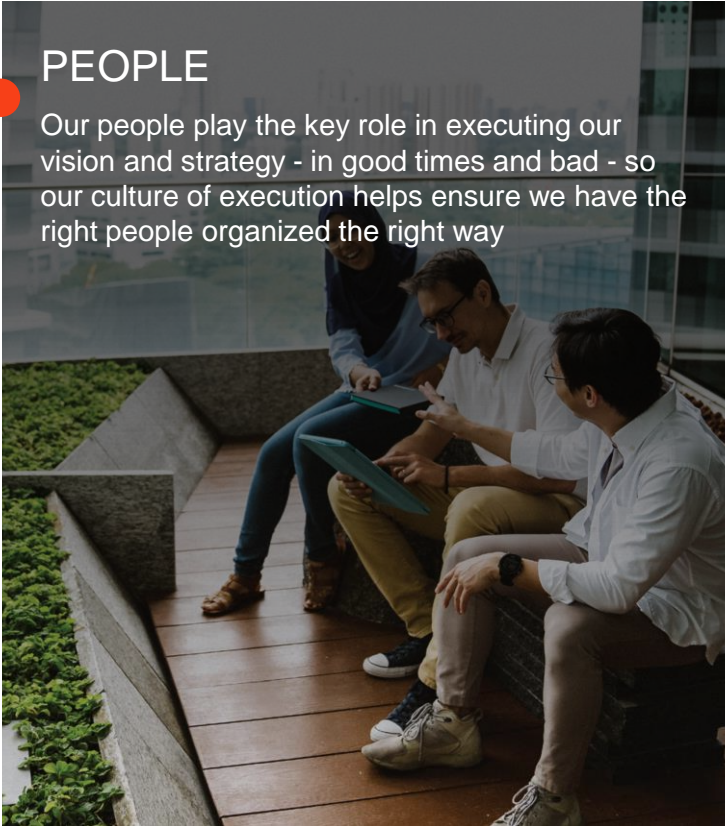


# More Sustainable through “The How”

CULTURE OF CONTINUOUS IMPROVEMENT AROUND OUR PEOPLE, PROCESSES AND PORTFOLIO MAKES APTIV A MORE SUSTAINABLE BUSINESS

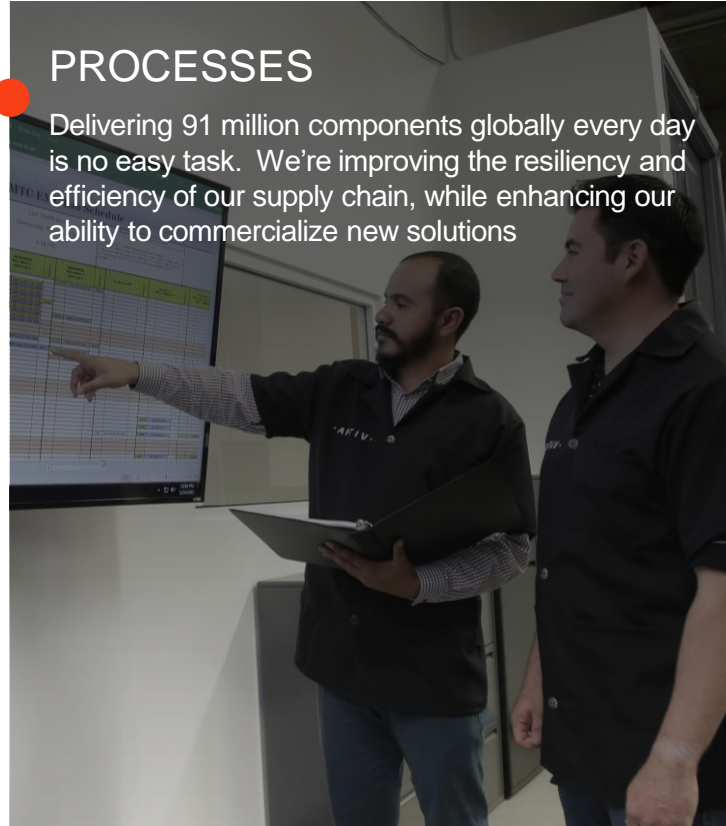
## PEOPLE

Our people play the key role in executing our vision and strategy - in good times and bad - so our culture of execution helps ensure we have the right people organized the right way



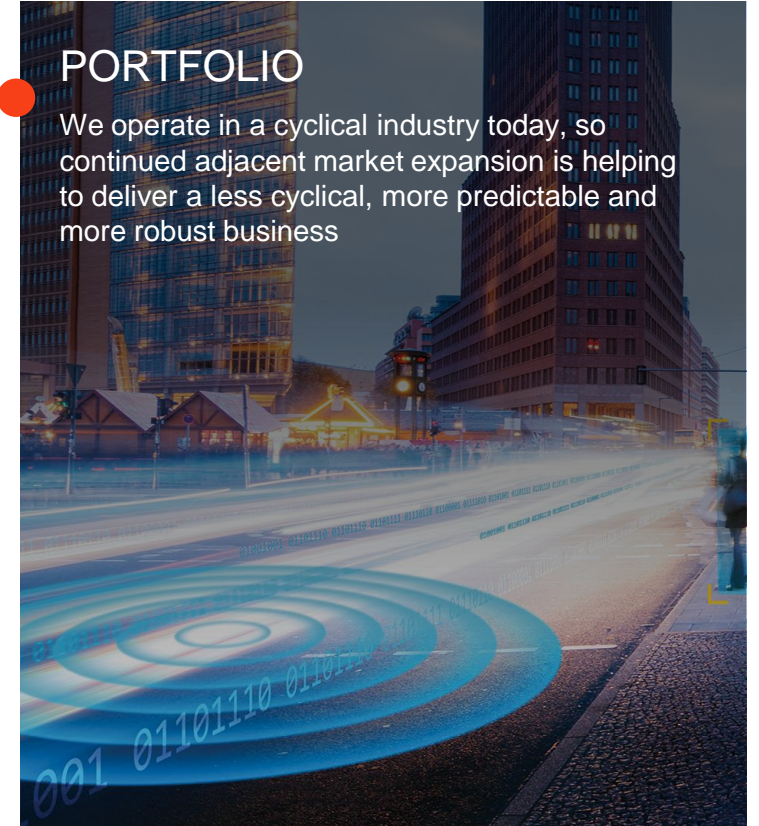
## PROCESSES

Delivering 91 million components globally every day is no easy task. We're improving the resiliency and efficiency of our supply chain, while enhancing our ability to commercialize new solutions



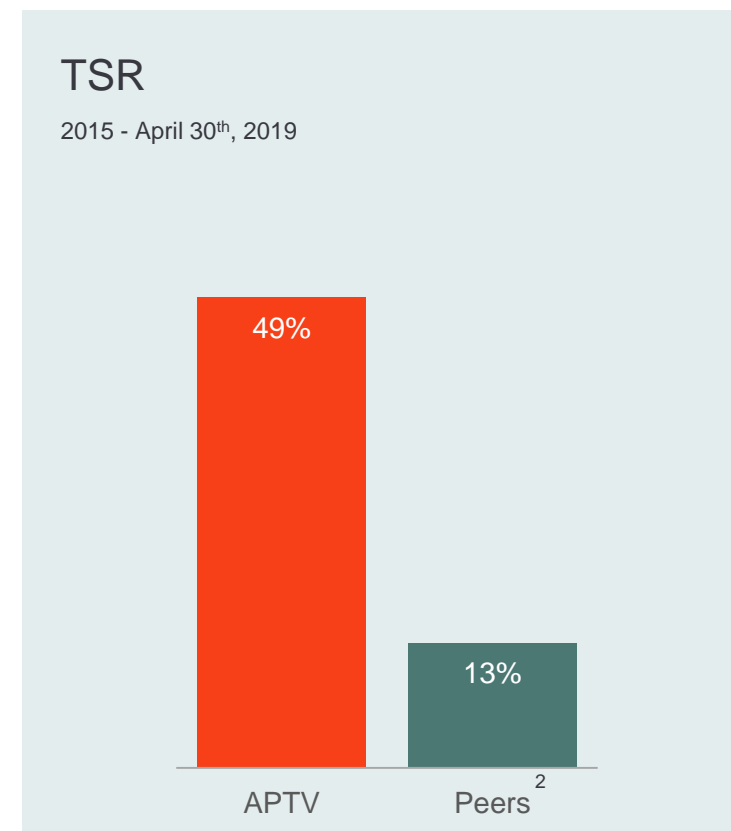
## PORTFOLIO

We operate in a cyclical industry today, so continued adjacent market expansion is helping to deliver a less cyclical, more predictable and more robust business



# Strategy Has Delivered Strong Results

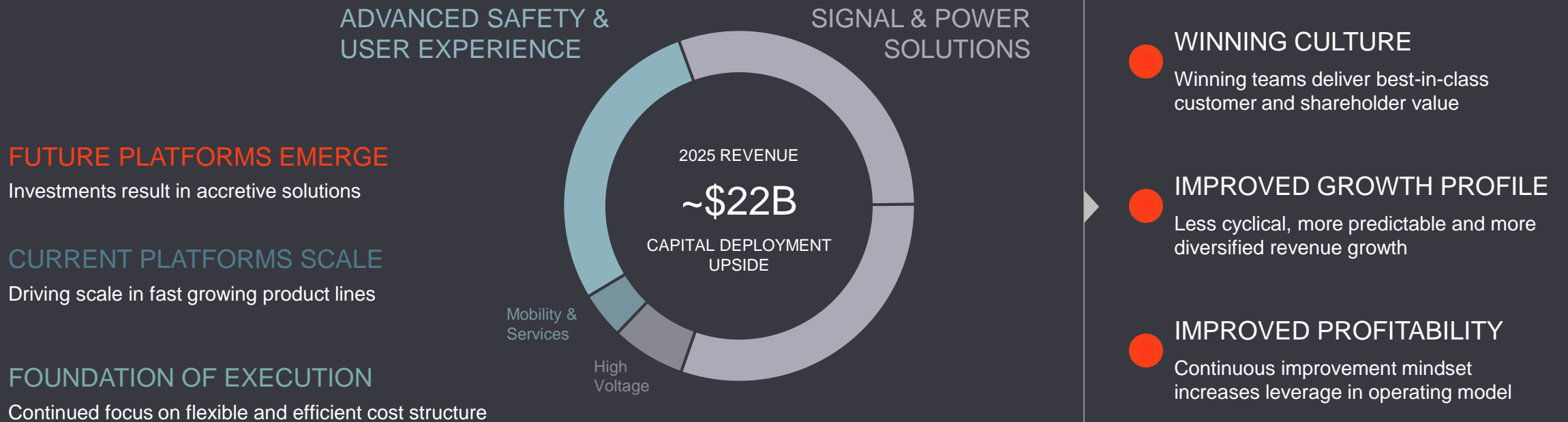
EXECUTION TOWARDS LONG TERM FINANCIAL FRAMEWORK CREATING VALUE FOR SHAREHOLDERS



1. Adjusted for restructuring, stranded and other costs related to accounting treatment for Discontinued Operations (DO) and other special items; see appendix for detail and reconciliation to US GAAP  
2. Peer group includes: CON, DENSO, LEA, MGA, VALEO, VC

# Aptiv 2025 Vision

LOGICAL EXTENSION OF OUR STRATEGY



# Execution Priorities

FOCUSED ON CREATING LONG-TERM VALUE FOR OUR CUSTOMERS, SHAREHOLDERS AND EMPLOYEES



**PORTFOLIO PERFECTLY POSITIONED**  
to solve our customers' toughest challenges and capitalize on the key megatrends driving Automotive 2.0

**FULL STACK SOLUTIONS** required to unlock new features and functions, resulting in increasingly complexity favoring Aptiv

**2025 VISION** in sight - Aptiv a more sustainable business, with more recurring revenue, 25% CV / Industrial market exposure and improved margins and cash flow conversion



Rigorously executing our **STRATEGY** of optimizing operational capabilities, while accelerating growth in current and future platforms



**EXCEEDING 2022 TARGETS** driven by strong sales growth, new business awards and core operating performance... despite softer macro environment



# Who You Will Hear From Today



**Glen De Vos**  
Senior VP, Chief Technology Officer  
President, Mobility & Services Group



**David Paja**  
Senior VP and President,  
Advanced Safety & User Experience



**Lee Bauer**  
VP, Mobility Architecture Group



**Karl Iagnemma**  
President, Aptiv Autonomous Mobility



**Mariya Trickett**  
Senior VP, Chief Human Resources Officer



**Tim Clark**  
Senior VP, Supply Chain Management



**Joe Massaro**  
Senior VP, Chief Financial Officer



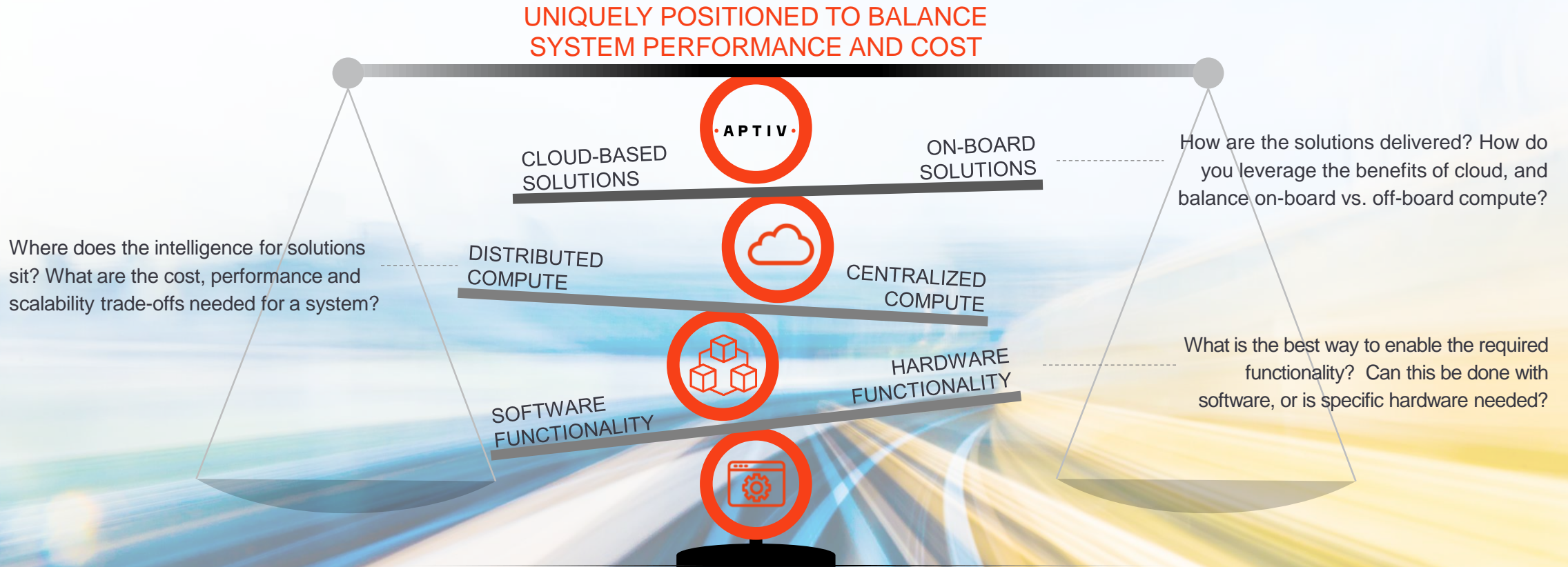
**Glen De Vos**  
Senior VP, Chief Technology Officer  
President Mobility & Services Group

# FULL SYSTEM SOLUTIONS

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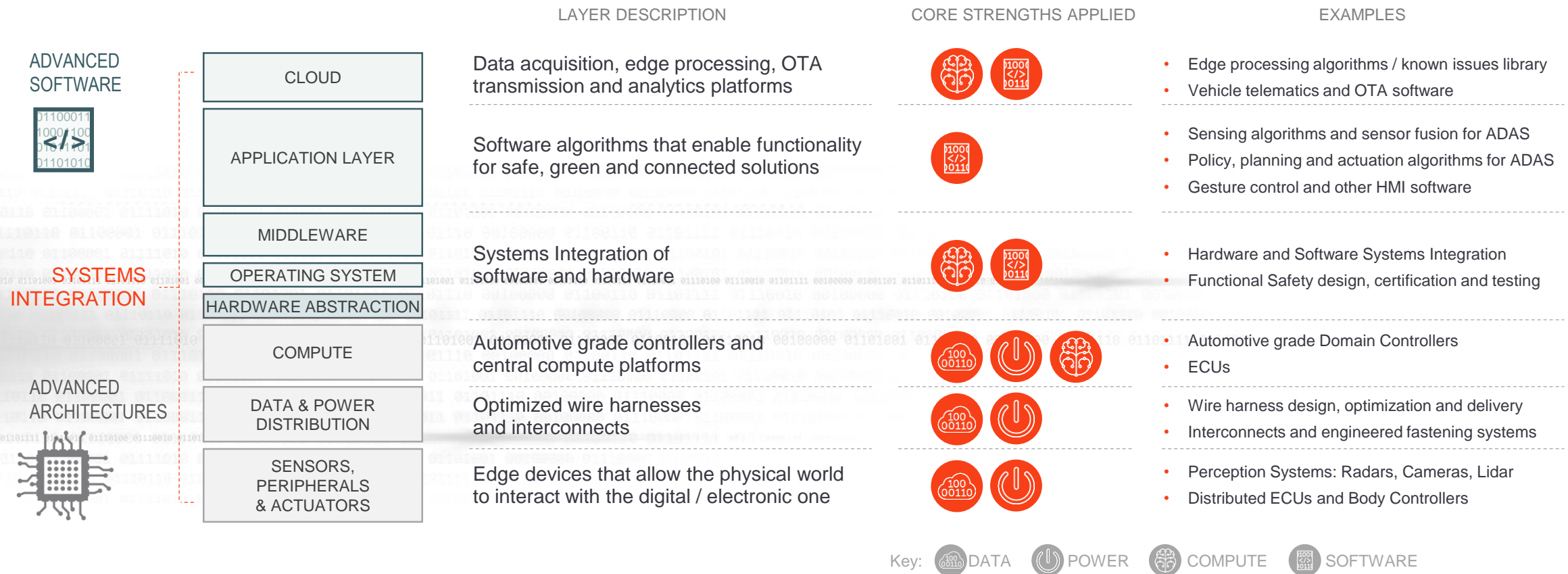
# Aptiv: The Only Full Systems Solution Provider

OUR HOLISTIC SYSTEMS APPROACH DELIVERS OPTIMIZED SOLUTIONS ACROSS ALL LAYERS



# How We Differentiate

DELIVERING MEANINGFUL VALUE AT EVERY LAYER OF THE VEHICLE SYSTEM SOLUTION

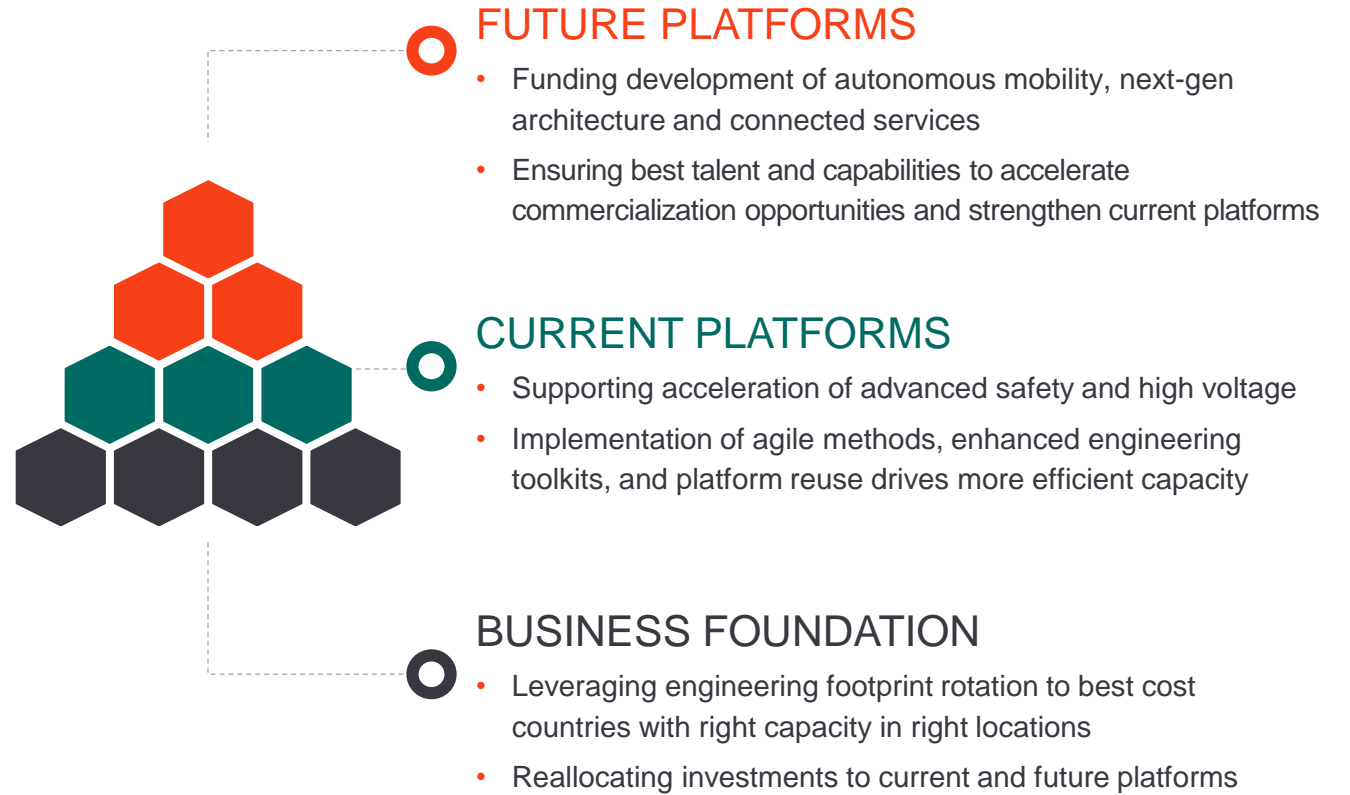
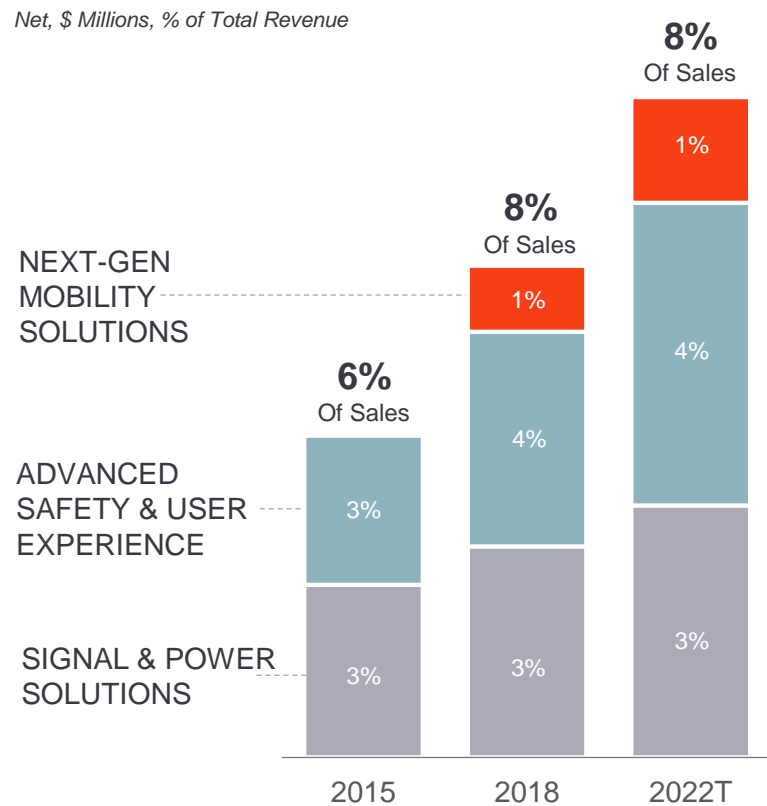


# Prudent Investments for Growth

## ENGINEERING INVESTMENTS SUPPORTING RECORD NEW BUSINESS AWARDS

### ENGINEERING INVESTMENTS

Net, \$ Millions, % of Total Revenue



# Acquisitions & Partnerships Enhance Capabilities...

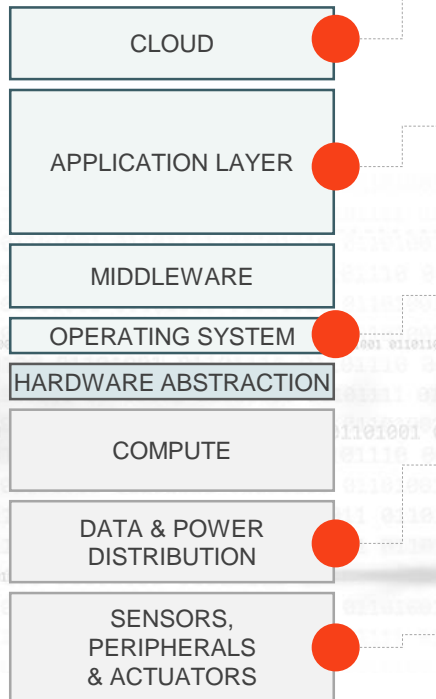
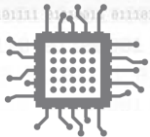
... AND ACCELERATE PATH TO COMMERCIALIZATION

## RELEVANT EXAMPLES

ADVANCED SOFTWARE



ADVANCED ARCHITECTURES

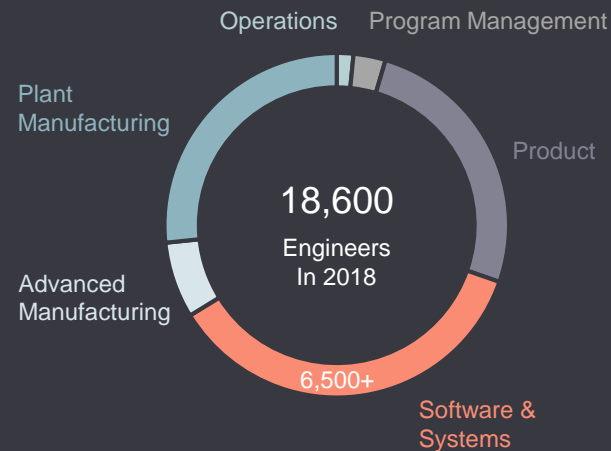


	<p>Control-Tec unlocks unique value through robust data acquisition and edge analytics capabilities, while leveraging the cloud to deliver actionable insights.</p>
	<p>Affectiva is a leader in human perception AI. When run on our in-cabin sensing platform, these algorithms will help deliver innovative safety, comfort and convenience solutions.</p>
	<p>QNX is a leader in safe and secure automotive operating systems. Their certifiably safe operating system is well suited for running Aptiv's automated driving software stack.</p>
	<p>Valens provides HDBaseT technology for ultra high definition audio, video and up to 100W of power over a single cable - ideal for safety and connectivity solutions.</p>
	<p>In partnership with Mobileye to deliver advanced vision systems. Strategic investments LiDAR companies like Innoviz for highly automated vehicles.</p>

# Global Engineering

EXPANDING SYSTEMS & SOFTWARE CAPABILITIES WHILE BALANCING CUSTOMER PROXIMITY AND ACCESS TO TALENT

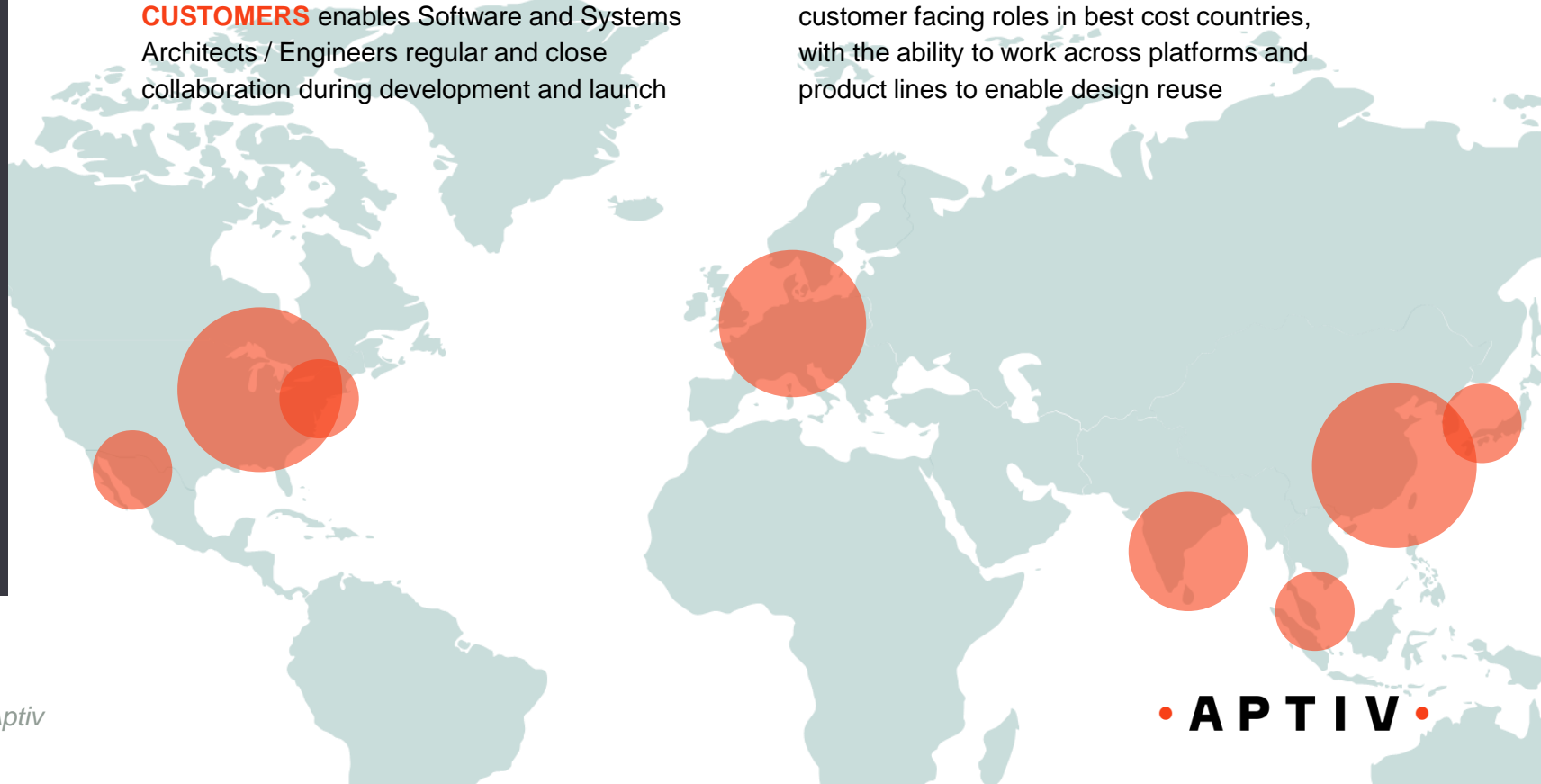
Our ENGINEERING RESOURCES are critical to executing on our pipeline of new business awards



## GLOBAL FOOTPRINT AND CAPABILITIES

**STRATEGIC FOOTPRINT CLOSE TO CUSTOMERS** enables Software and Systems Architects / Engineers regular and close collaboration during development and launch

**SCALE AT COMPETITIVE COSTS** from non-customer facing roles in best cost countries, with the ability to work across platforms and product lines to enable design reuse



# Agile Methods and Tools

RELENTLESS FOCUS ON IMPROVING PRODUCT QUALITY AND ENGINEERING PRODUCTIVITY



## AGILE METHODS

- Scaling customized agile framework based on scrum
- Leveraging industry and Aptiv best practices



## TOOLS AND WORKFLOW

- Investing in an industry-best engineering toolchain
- Integrating agile methods and required standards



## STANDARDS COMPLIANCE

- Strengthening Aptiv's culture of compliance
- Fusing industry standards with Aptiv processes

## DRIVING RESULTS



Reallocating resources to future platforms



20% improvement in time to market



25% increase in product quality

## KEY WINS



Partnered on agility with key OEMs



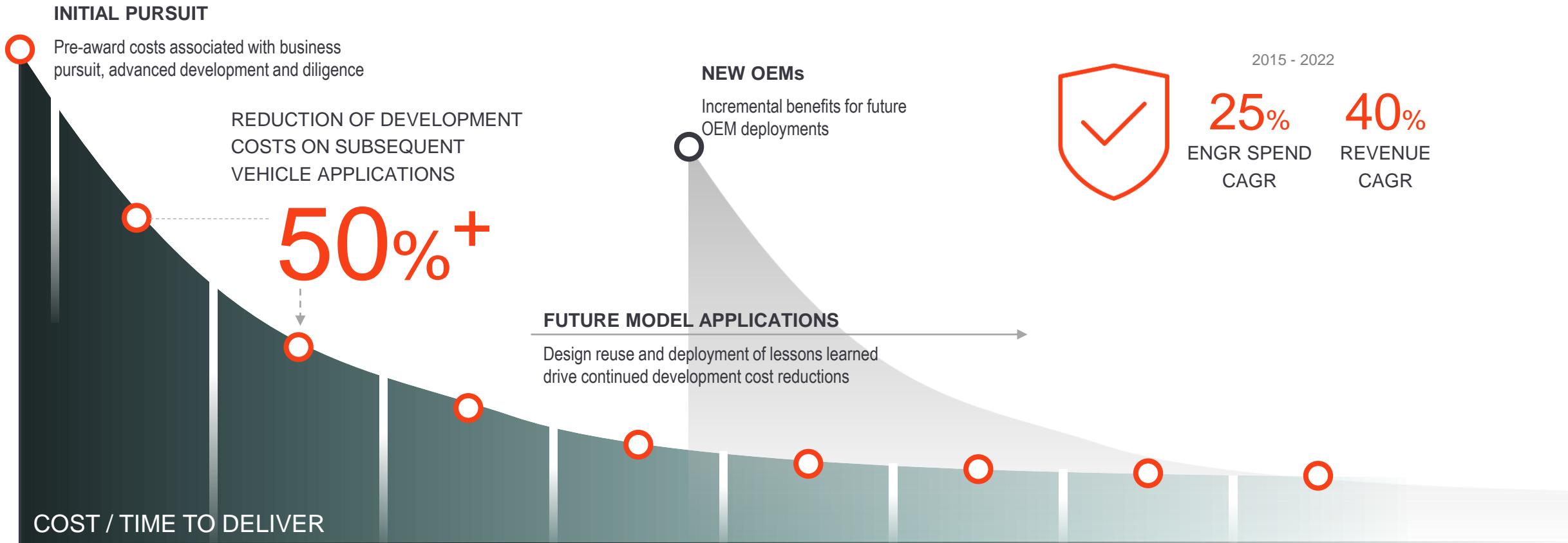
~35% of programs using new toolchain



50% reduction in software defects

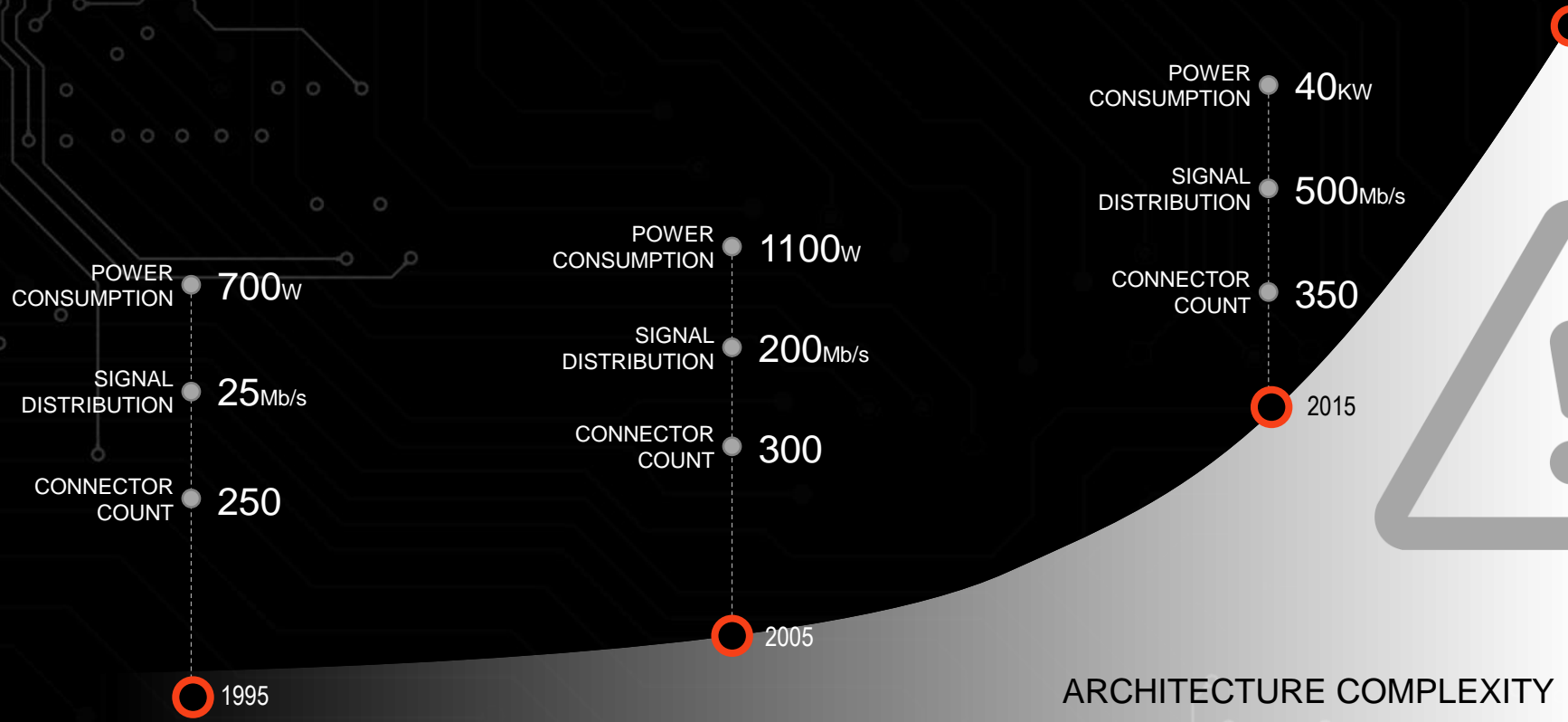
# Platform Strategy

AGILE METHODS COMBINED WITH PLATFORM REUSE DRIVE PROFITABLE GROWTH



# Architecture Requirements Expanding...

CREATING NEW OPPORTUNITIES FOR APTIV



## KEY CHALLENGES

### MINIATURIZATION

Component miniaturization and increased wire density

### QUALITY

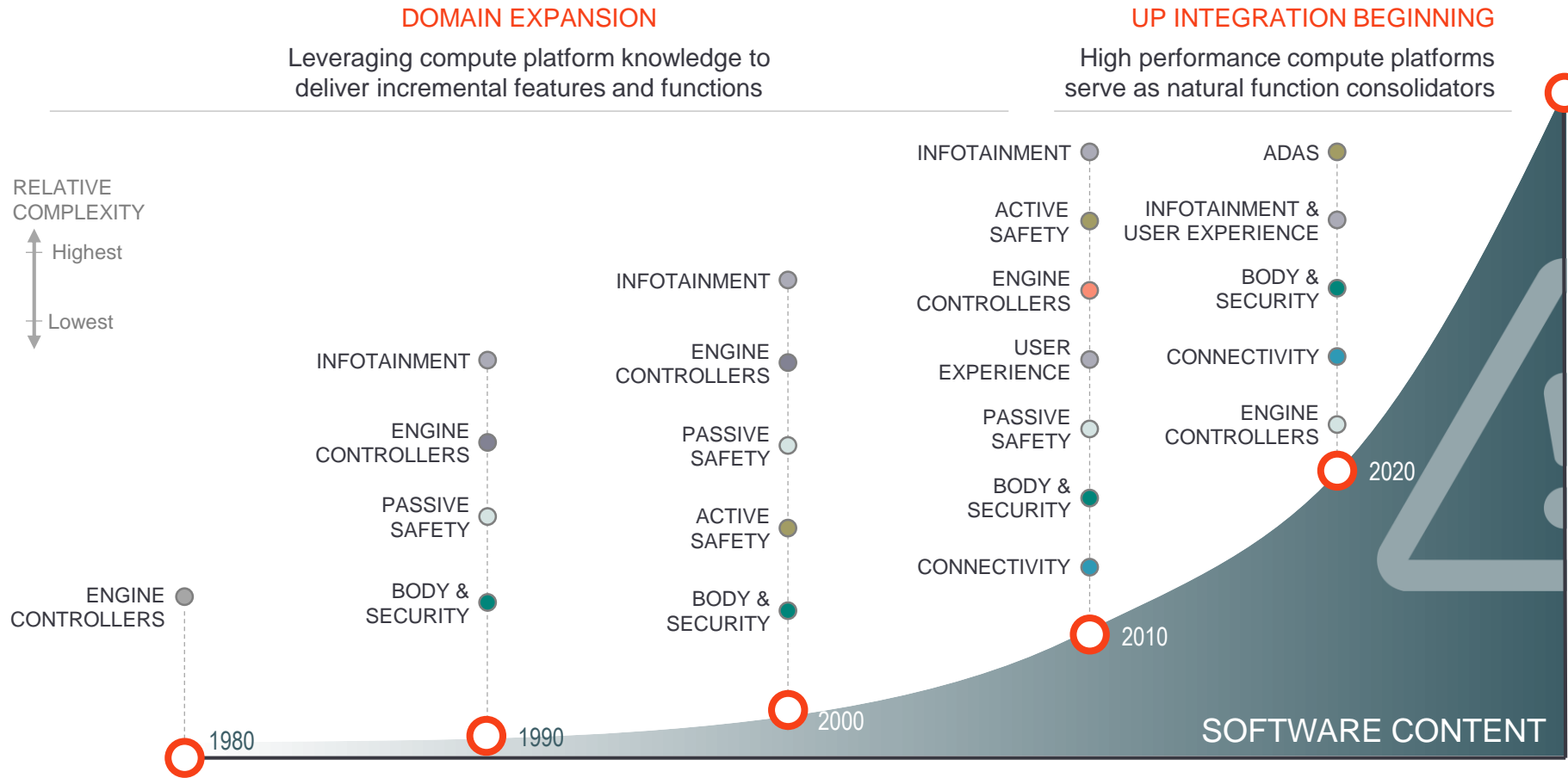
Automation required for AV content specifications

### LABOR

Global labor cost increases and lack of labor availability

# ... Demanding New Compute Solutions

PLATFORM STRATEGY ENABLES APTIV TO EFFICIENTLY DELIVER THESE ADVANCED SOLUTIONS



## KEY CHALLENGES

### DEVELOPMENT

Increasing complexity and interdependencies extending timelines

### MANUFACTURING

Vehicle physically out of space, and difficult to assemble

### POST PRODUCTION

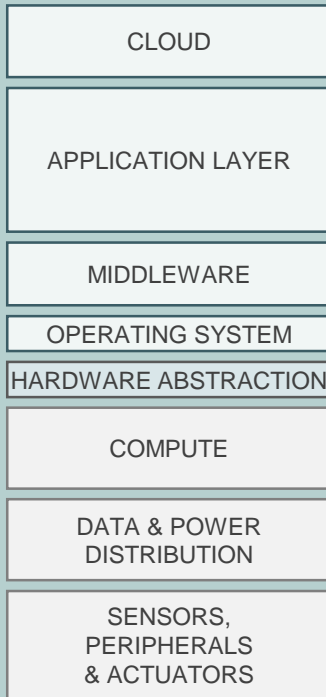
Heavy burden on sustaining engineering, with no ability to enhance functionality

# Perfectly Positioned To Win

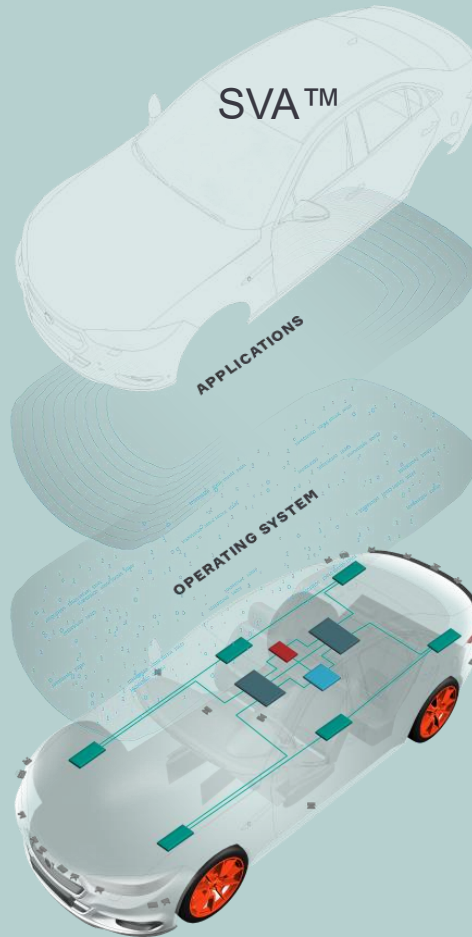
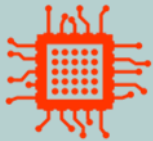
BRAIN AND NERVOUS SYSTEM CAPABILITIES ENABLING FULL SYSTEM SOLUTIONS

## CURRENT PLATFORMS

ADVANCED SOFTWARE



ADVANCED ARCHITECTURES



## FUTURE PLATFORMS





**David Paja**  
Senior VP and President  
Advanced Safety & User Experience

# CURRENT PLATFORMS

• APTIV •

# Consumers Demanding Increased Functionality...

STRONG CONSUMER DEMAND FOR SAFE, GREEN AND CONNECTED FEATURES AND FUNCTIONS

Examples

YESTERDAY



TODAY



TOMORROW



**BACKUP CAMERAS** connected to the infotainment display provide the driver improved visibility, and in some cases warn them of obstacles

**AUTOMATIC EMERGENCY BRAKING** uses a combination of sensors to monitor other vehicles, pedestrians and bicyclists, and brake if needed

**HIGHWAY / TRAFFIC JAM ASSIST** uses 360 degree sensing to accelerate, brake and steer the vehicle, reengaging the driver when needed



**CONSUMPTION REDUCTION** through Stop / Start Systems and regenerative braking helps improve internal combustion fuel economy

**ELECTRIFICATION SYSTEMS** layered on top of traditional internal combustion powertrains, with limited component integration

**HIGH POWER ARCHITECTURES** designed using a clean-sheet approach, results in an optimized, highly integrated electrical systems



**DEVICE CONNECTIVITY** uses USB or Bluetooth to connect a passenger's cell phone / consumer electronics into vehicle infotainment systems

**EMBEDDED CONNECTIVITY** brings a richer media experience with the vehicle capable of running its own apps

**V2X CONNECTIVITY** brings the vehicle fully into the IoT, enabling OTA updates, enhancements, and new data business models

# ... Which is Enabled Through Architecture

CONSUMERS DON'T SEE ARCHITECTURE DIRECTLY, BUT THEY KNOW IT FROM APPLICATIONS IT ENABLES

## CUSTOMERS

CREATING VALUE FOR OEMs AND END USERS

**APPLICATIONS** which **CONSUMERS** value because they experience them directly...

...enabled through **ARCHITECTURES** which **OEMs** value for supporting the solutions at a price the user can afford to pay

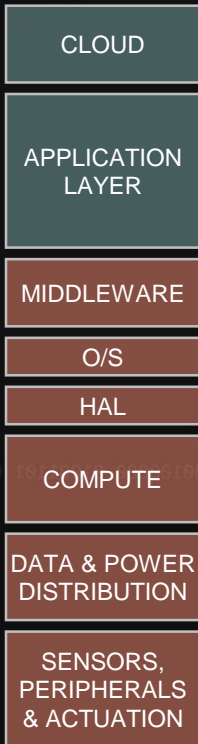


## • APTIV •

BY ENABLING NEW MOBILITY SOLUTIONS

**ADVANCED SOFTWARE** where domain knowledge, and linkage to enabling architecture gives Aptiv a strong right to play

Uniquely positioned to conceive, specify and deliver **ADVANCED ARCHITECTURES** which enable new mobility solutions in an optimized and sustainable way



# Sensing

## LEADING POSITION IN EXTERIOR AND INTERIOR SENSING SOLUTIONS

### APPLICATIONS

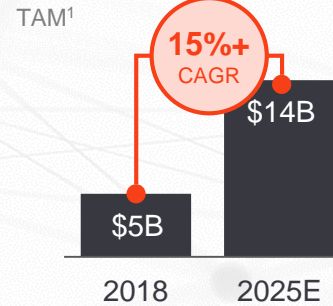
- Forward Collision Warning
- Automatic Emergency Braking
- Blind Spot / Lane Keep Assist
- Driver State Monitoring
- Gesture Control

### ARCHITECTURE

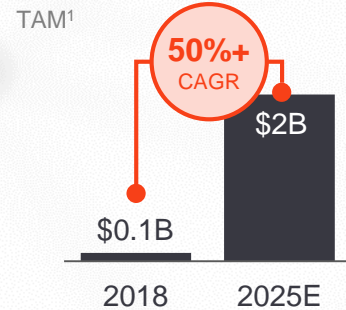
- Leader in **radar** HW and algorithms
- Leading Mobileye integrator for **vision**
- Multiple solid-state **lidar** partnerships
- Clear leader in interior sensing
- Increasing sensor quantity / quality driving demand for more **sensor fusion** and **machine learning** - core Aptiv strengths

SENSORS,  
PERIPHERALS  
& ACTUATION

### EXTERIOR SENSING



### INTERIOR SENSING



1. Total Addressable Market

SELECTED BY BMW FOR ACTIVE SAFETY AND GESTURE CONTROL

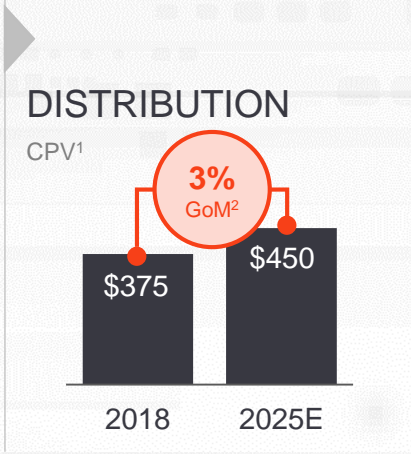
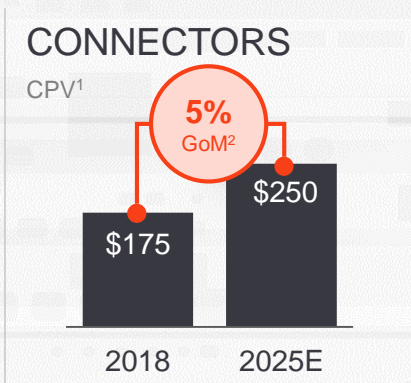


The same **SENSING EXPERTISE** that Aptiv leverages outside the vehicle is also applied to interior solutions, such as gesture control

# Data & Power Distribution

GLOBAL LEADER IN COMPLEX SYSTEMS DEVELOPMENT AND OPTIMIZATION

	<h3>APPLICATIONS</h3> <ul style="list-style-type: none"> <li>• Traditional / Plug-In Hybrids</li> <li>• Battery Electric Vehicles</li> <li>• Ultra high definition audio and video</li> </ul>
	<h3>ARCHITECTURE</h3> <ul style="list-style-type: none"> <li>• Best-In-Class wire harness design and optimization capabilities</li> <li>• Leader in high speed / fidelity <b>data distribution</b></li> <li>• Leader in high and low voltage <b>electrical distribution</b></li> <li>• #2 player in auto grade <b>interconnects</b></li> <li>• Leading provider in <b>engineered fastening solutions</b></li> </ul>
<p>DATA &amp; POWER DISTRIBUTION</p>	



**AWARDED HIGH VOLTAGE ELECTRIFICATION AND ACTIVE SAFETY SATELLITE ARCHITECTURE FOR JEEP GRAND CHEROKEE**

**Jeep**

Wire **HARNES DESIGN** critical for high voltage architectures, but **SOFTWARE** also plays a critical role in compute efficiency, battery management and range extension

1. Addressable Market Content Per Vehicle  
 2. Adjusted Growth over Aptiv weighted Market

# Compute

UNLOCKING GREATER SOFTWARE ENABLED FUNCTIONALITY

## APPLICATIONS

- Scalable Advanced Safety
- Reconfigurable clusters and displays
- Dynamic driving performance (sport, comfort, eco, etc.)
- Simplified OTA

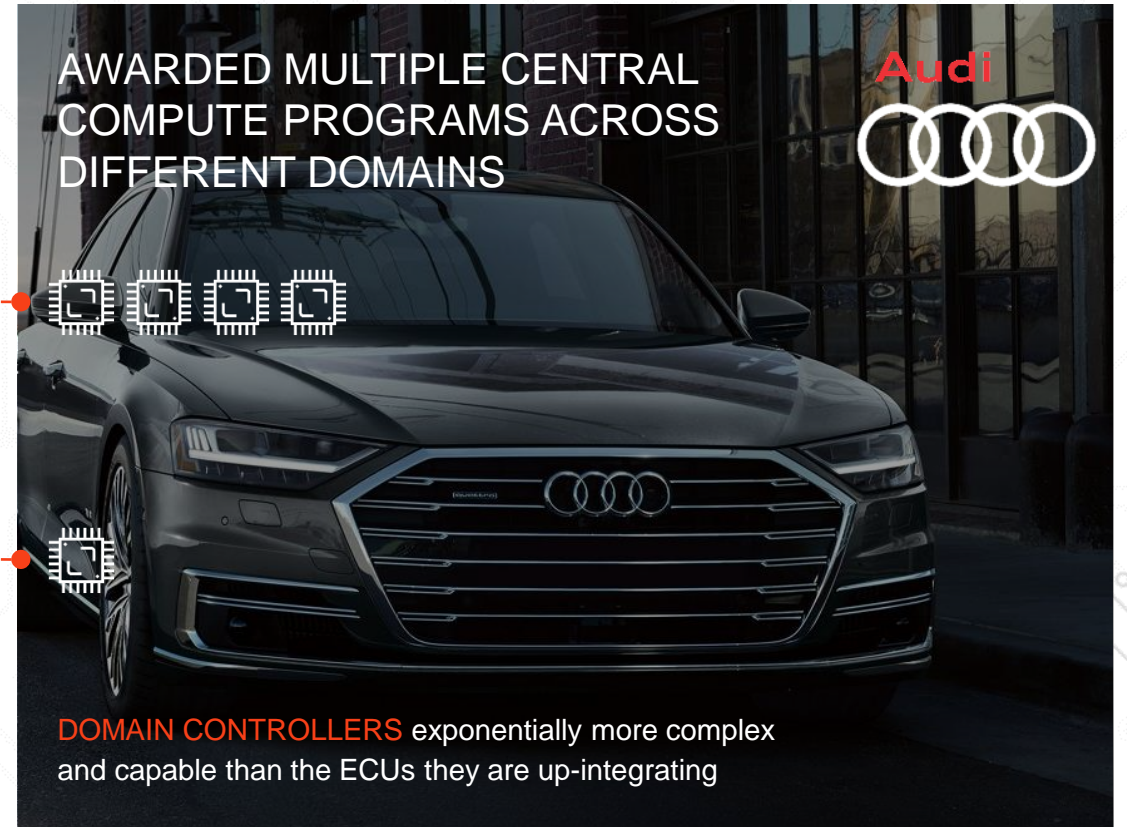
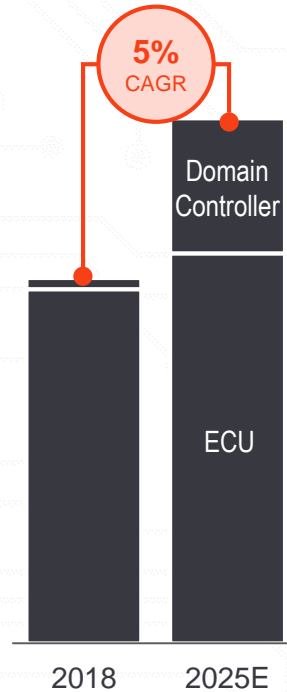
## ARCHITECTURE

- Clear leader in **Central Compute**
  - Advanced Safety: 7 programs
  - Infotainment: 3 programs
  - Body, Chassis, Propulsion: 1 program
- Shipping 40M distributed ECUs / year
- Deep experience in complex **validation**



## SW & COMPUTE

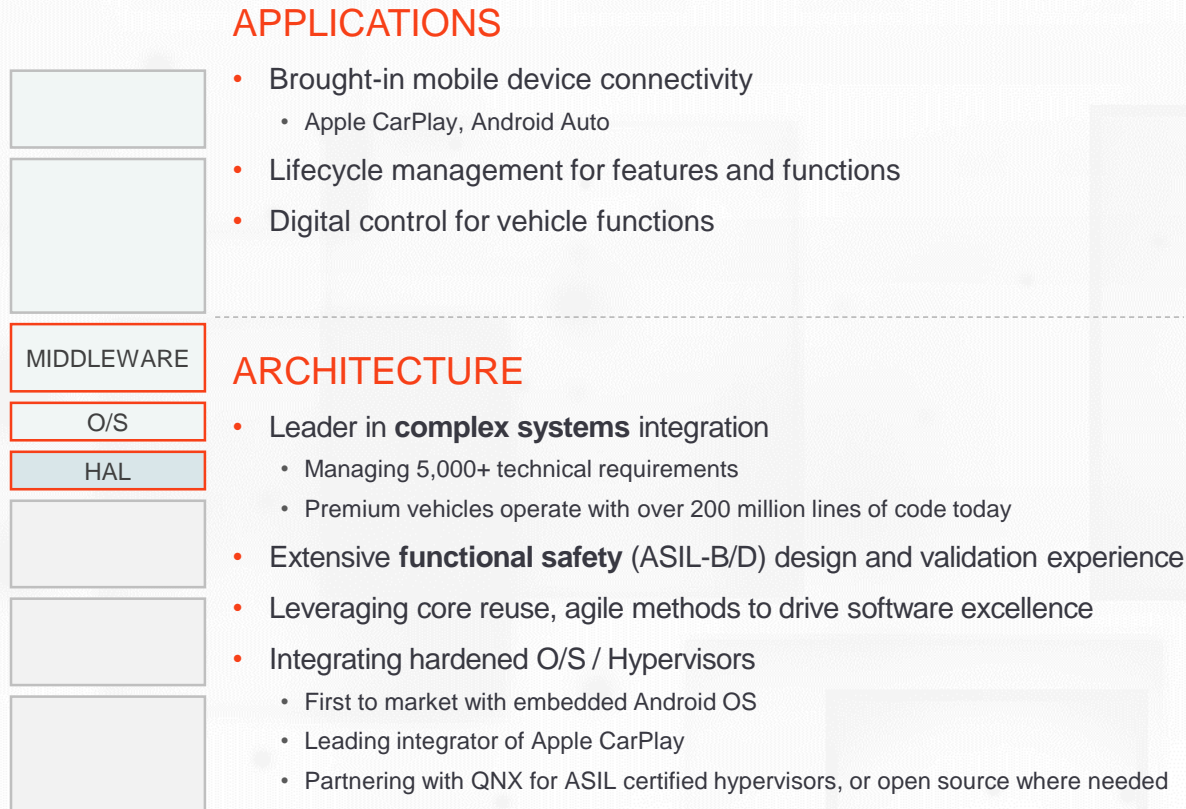
TAM<sup>1</sup>



1. Addressable Market Content Per Vehicle

# Systems Integration

ABSTRACTION OF SOFTWARE FROM HARDWARE DRIVES INCREASING STRATEGIC VALUE FOR INTEGRATION CAPABILITIES



TRANSITION FROM HARDWARE DEFINED TO SOFTWARE DEFINED VEHICLES DRIVING NEED FOR ROBUST, ACTIVELY PARTITIONED MIDDLEWARE SOLUTIONS

Aptiv has several thousand systems engineers focused integration. Our critical **DOMAIN KNOWLEDGE** builds off of our complex Infotainment platform experience.

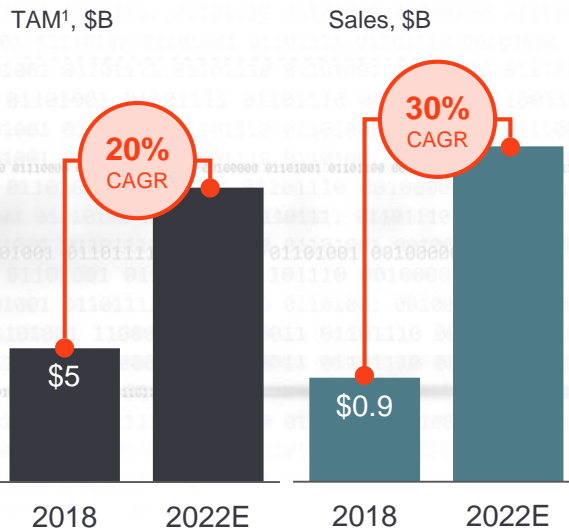
# Software Enabled Applications

FOCUSED ON DOMAINS WHERE TIGHT LINKAGE TO UNDERLYING VEHICLE ARCHITECTURE CREATES VALUE



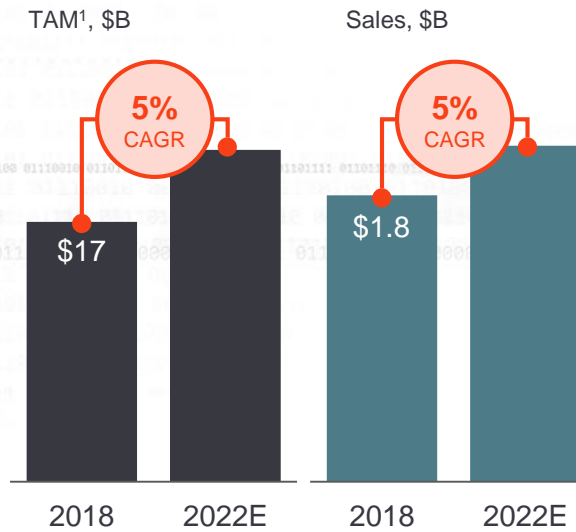
## ACTIVE SAFETY

- Base (ex: Adaptive Cruise, Collision Warn)
- Mid-Range (ex: Lane Keep)
- Premium (ex: Highway / Traffic Jam Assist)



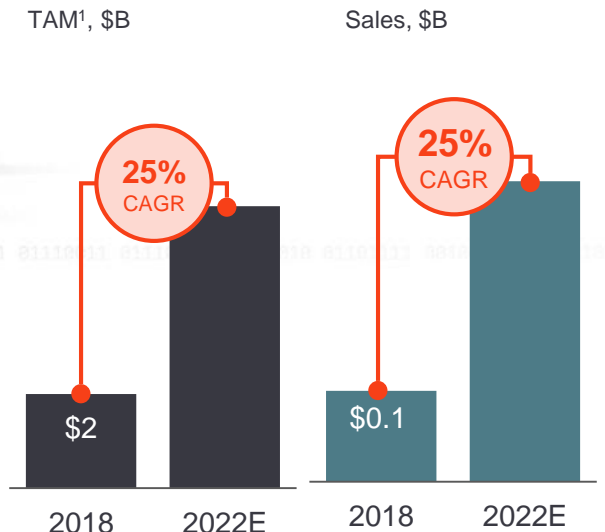
## USER EXPERIENCE<sup>2</sup>

- Personalized user interfaces
- Gesture and In-Cabin Experience
- V2V (Vehicle to Vehicle)



## CONNECTED SERVICES

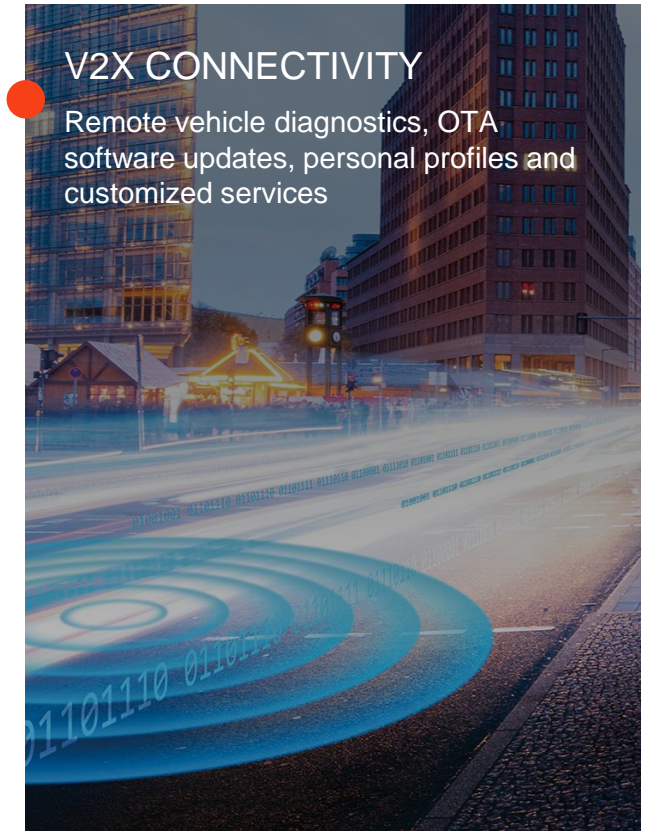
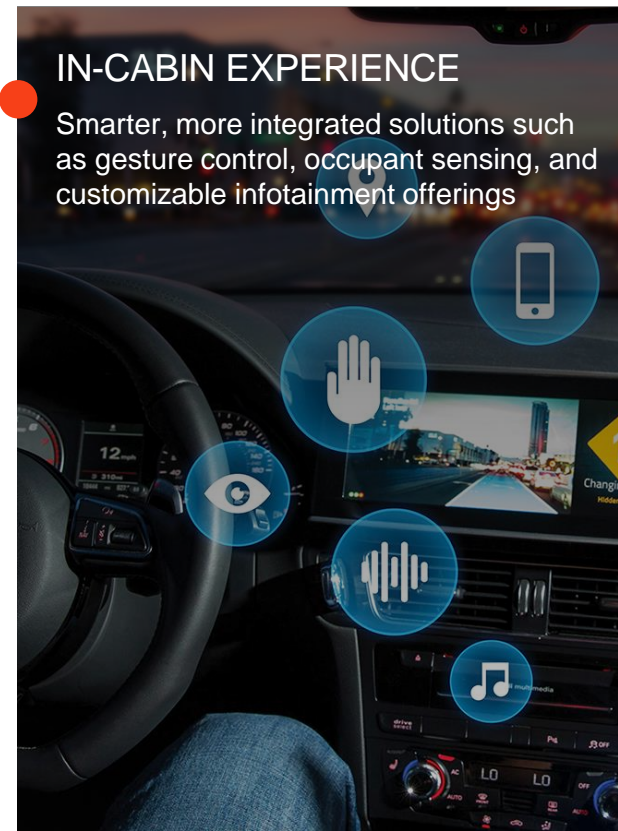
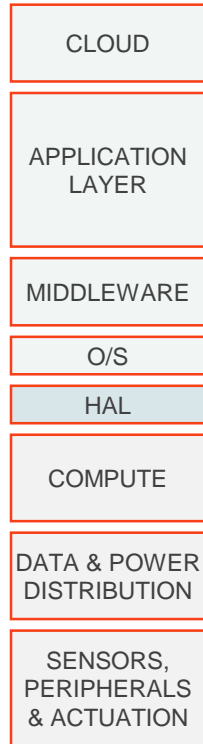
- Data acquisition and edge processing
- Pre-production test and validation
- ECU diagnostics and Fleet monitoring



1. Total Addressable Market  
2. Excludes Displays

# New Mobility Solutions Increasingly Integrated

HIGHER COMPLEXITY OF NEW MOBILITY SOLUTIONS DEMANDING IMPROVED LIFECYCLE MANAGEMENT AND GREATER INTEGRATION OF APPLICATIONS ON THE ARCHITECTURES THAT RUN THEM



# Proof Point: Satellite Architecture

KNOWLEDGE, CAPABILITIES AND TOOLS ENABLE APTIV TO WIN



## LEGACY APPROACH

- Smart sensors process environmental inputs independently
- Data is transmitted to a controller which provides actuation
- Efficiencies from up-integrating controller, sensors into single package



## SATELLITE ARCHITECTURE APPROACH

- Intelligence taken out of the sensor, reducing sensor mass and cost
- Active Safety Domain Controller provides fusion of all environmental inputs
- Efficiencies from scalability across platforms, automation levels

### MOST IMPACTFUL AT L2 AND BEYOND

- More sensors in more places
- Scalability across multiple vehicle makes / models
- Flexibility between vehicle trim levels
- Simplified upgradeability for future functionality



COMPETITIVENESS / CUSTOMER VALUE

LEVEL OF SAFETY AUTOMATION / SCALABILITY REQUIRED

# Alignment to Customer Strategies

FLEXIBLE AND SCALABLE APPROACH ENABLES APTIV TO WORK THE WAY OUR CUSTOMERS WANT US TO

## INNOVATION ACQUIRED FROM SUPPLY CHAIN

Strong willingness to adopt technology from supply base, but brand identity not dependent on best-in-class / premium offerings.

Well suited to adopt largely off-the-shelf Aptiv offerings at competitive pricing

## PARTNERS IN DEVELOPMENT

Fast followers with reasonable scale and varying trim / name-plate variation

Partnership in democratizing new technologies, where flexible and scalable solutions are critical

## INVESTING IN ADVANCED TECHNOLOGY LEADERSHIP

Premium players with strong engineering expertise and expectations of best-in-class, differentiated technology solutions

Ideal launch customers for next-gen solutions; close collaboration to bring new offerings to market

# Aptiv Perfectly Positioned as “Tier 0”

FULL SYSTEM SOLUTIONS DELIVER OPTIMIZED PERFORMANCE FOR CUSTOMERS



## SCALABILITY OF FUNCTIONALITY

- Interoperable systems avoid extensive re-engineering
- Upgrade and enhancements for existing fleet



## LOGICAL AND INFORMED TRADE-OFFs

- Cost vs. Performance
- Centralized vs. Distributed Architectures



## ENABLING FUTURE PLATFORMS

- Affordable fail-operational redundancy
- Automation reducing costs and improving quality



Lee Bauer  
VP, Mobility Architecture Group

# NEXT GEN ARCHITECTURES – SVA™

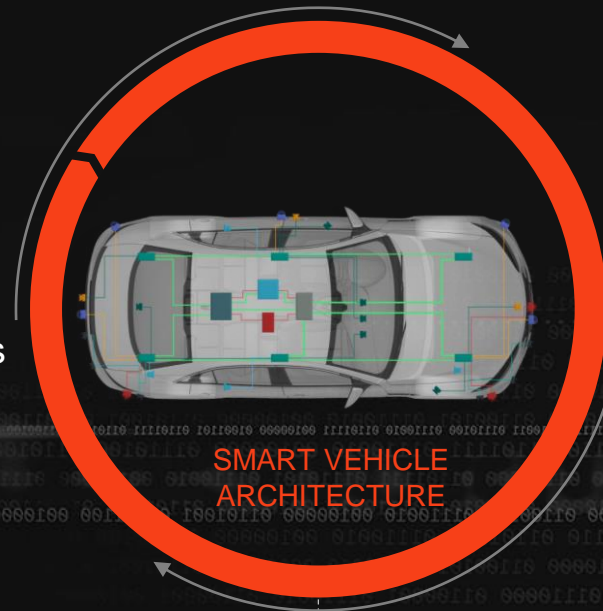
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# SVA™ a Sustainable Architecture

A REFERENCE DESIGN AND IMPLEMENTATION THAT LOWERS THE TOTAL COST OF OWNERSHIP FOR CUSTOMERS, WHILE INCREASING CONTENT FOR APTIV

## VALUE FOR CUSTOMERS

- Lower total cost of ownership
- Faster development and solution lifecycles
- Enabling new functionality and business models



## VALUE FOR APTIV

- Increasing addressable content (value and share)
- Enabling automation and improved reuse
- Unlocking new functionality and business models

2 ADVANCED DEVELOPMENT AWARDS TO DATE, WITH STRONG INTEREST FROM MULTIPLE OEMs

# Business Model Impact

TRANSITION FROM CLOSED PLATFORM TO OPEN PLATFORM ENABLES OEMs TO FOCUS ON WHERE THE REAL DIFFERENTIATION AND VALUE ADD OCCURS

## CUSTOMERS: NEW OPEN PLATFORMS FOR INNOVATION



### UNLOCKS NEW VEHICLE FUNCTIONALITY

Efficient scalability for feature rich vehicles, and affordable redundancy / fail operational design for highly automated vehicles



### ACCELERATED DEVELOPMENT TIME (SW / HW)

Separation of I/O from compute and software from hardware enables independent parallel development cycles and software reuse



### AUTOMATABLE DESIGNS

Modular zonal architecture leveraging automatable design for manufacturing and assembly, while common sub-assembly enables SKU consolidation



### UNLOCKS NEW BUSINESS MODELS

Central Compute facilitates OTA, while modularization provides an open platform / ecosystem for third party development

## APTIV: SOFTWARE, HARDWARE AND LICENSING



### ZONE CONTROL AND COMPUTE PLATFORM HARDWARE

Unit sales of zonal 'docking station', central server cluster and other domain controller hardware



### SOFTWARE AND LICENSE FOR SVA™ PLATFORM

'Middle of the Stack' solutions for PDC and central servers: safety relevant partitioning, middleware, and test suite / libraries to enable app development



### MODULAR WIRE HARNESSSES AND CONNECTORS

High speed and reliability data and power distribution wire harnesses and connectors which can be automated in manufacturing



### ADVANCED APPLICATION SOFTWARE

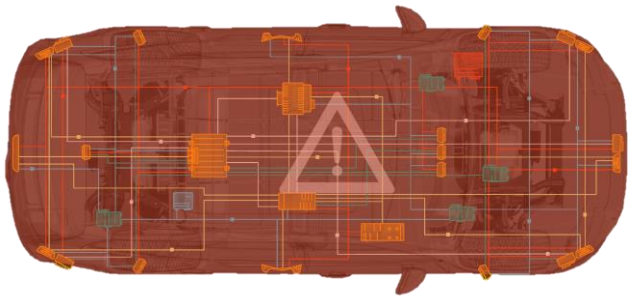
Applications where Aptiv has a strong right to play such as Active Safety, In-Cabin User Experience and Connected Services' offerings

# Architecture Sustainability

SVA™ ADDRESSING CHALLENGES IN DEVELOPMENT, MANUFACTURING AND POST-PRODUCTION

SIGNIFICANT CHALLENGES TODAY

## ARCHITECTURE SUSTAINABILITY CHALLENGES THROUGHOUT VEHICLE LIFECYCLE



### DEVELOPMENT

Complexity from feature and controller interdependence drives long and expensive development cycles



### MANUFACTURING

Large, unwieldy physical components difficult to assemble manually, and can't be automated



### POST-PRODUCTION

Design variants increase complexity, burdening engineering and preclude feature enhancements

KEY SVA™ TECHNICAL ATTRIBUTES



### ABSTRACT HARDWARE FROM SOFTWARE

- Create independent lifecycles: faster software launches, simpler hardware updates
- Well defined interfaces simplify software development and hardware interaction



### SEPARATE I/O FROM COMPUTE

- Remove the I/O from expensive domain controllers; place into zone docking stations
- Ring networks / topologies for optimized power and data distribution



### ENABLE "SERVERIZATION" OF COMPUTE

- Centralize compute functionality into four or five physical compute platforms
- Operate logically as one central compute "cluster", allowing resource sharing

# SVA™ Topology

OPTIMIZED AND SUSTAINABLE ARCHITECTURE THAT ENABLES FEATURE RICH, HIGHLY AUTOMATED VEHICLES

## POWERDATA CENTER

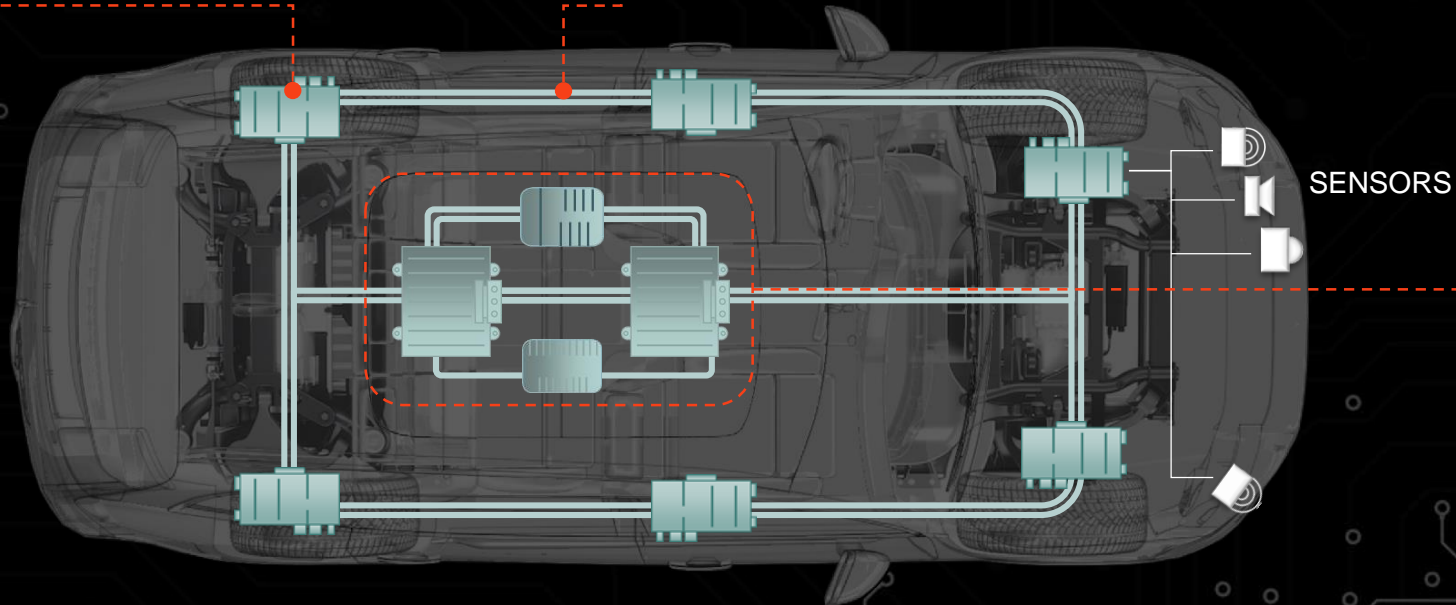
(PDC) A “universal docking station” and zone consolidator

## UNIFIED POWER AND DATA BACKBONE

Simplified, modular, and automatable harness technology / design for redundant networks via dual-ring topology

## CENTRAL COMPUTE CLUSTER

Universal compute platform with standardized interfaces and Connected Secure Gateway



Note: Graphic highly simplified for communication purposes. Sizes not to scale.

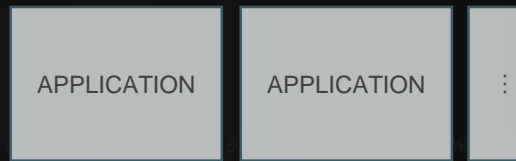
# SVA™ Software and Solutions Platform

TRANSFORMING TO A SOFTWARE DEFINED PLATFORM THAT UNLOCKS VALUE FOR APTIV

## TRADITIONAL SERVERS

Variety of applications run on the same physical hardware

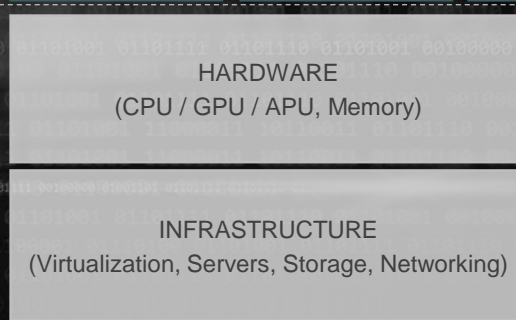
SOFTWARE AS A SERVICE (SaaS)



PLATFORM AS A SERVICE (PaaS)



INFRASTRUCTURE AS A SERVICE (IaaS)

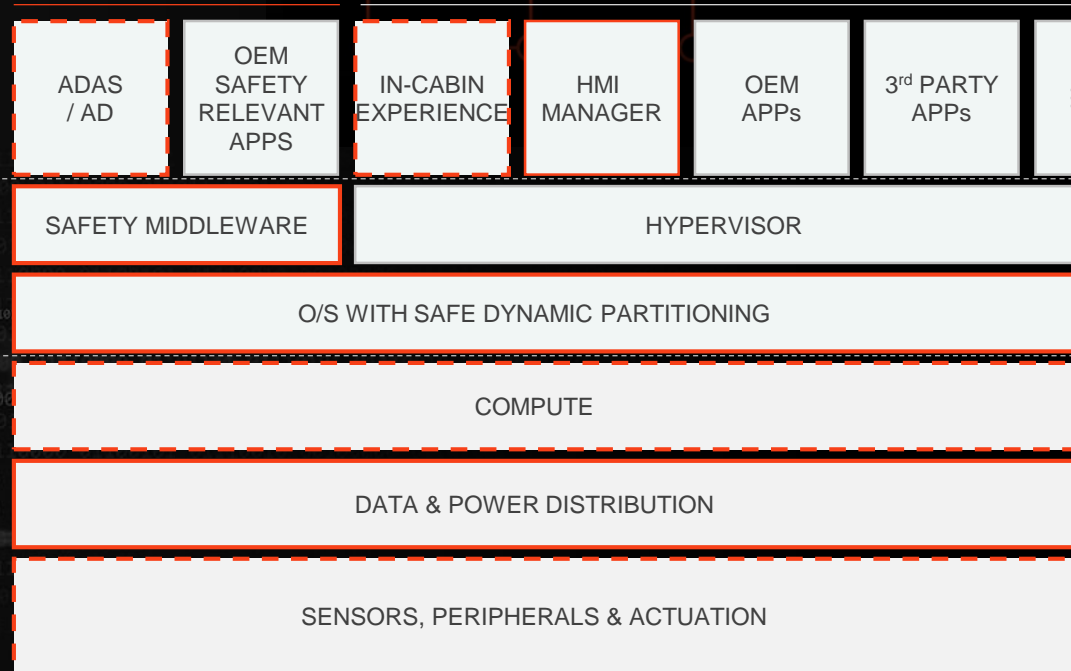


## VEHICLE OPEN SERVER PLATFORM (OSP)

(Simplified)

SAFETY CRITICAL

NON-SAFETY CRITICAL



Cloud-based lifecycle management (OTA, Digital Twin, etc.)

Highly scalable to OEM, Aptiv or other 3rd party applications

Hypervisor & safe partitioning SW manage safe and unsafe domains on the same hardware

Sharing underlying compute resources allows for silicon optimization, reducing cost and energy consumption

“Plug and Play” drivers make adding new edge devices effortless

KEY

APTIV

APTIV + 3<sup>rd</sup> Party


3<sup>RD</sup> Party

# Commercial Validation of Approach

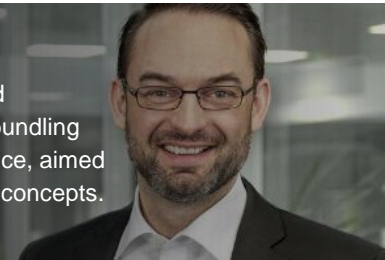
ADVANCED DEVELOPMENT AWARDS, AND RECENT OEM MESSAGING ALIGNED TO SVA™ VALUE PROP REINFORCING APTIV'S APPROACH

**2x** ADVANCED DEVELOPMENT AWARDS  
Enables Aptiv to validate our commercial hypothesis while continuing to advance the technology

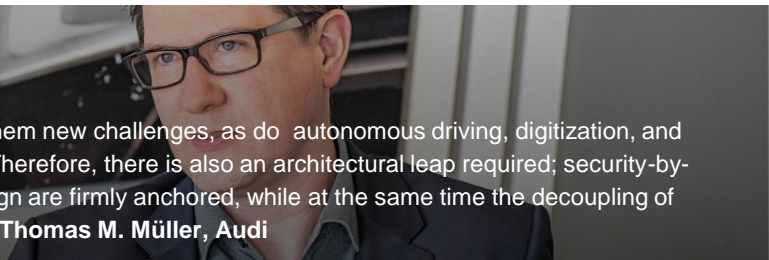
**10+** Strong interest in total solution, and/or specific components that address immediate needs (ex: PDC zone control)  
**OEMs IN ACTIVE DISCUSSIONS**



"What is now the really big challenge to come is that we will separate software from hardware. We will have to deploy software continuously into the car, which was not the case for the last 20 or 30 years. We start with a clean sheet of paper." - **Herbert Diess, Volkswagen Group**



**Christian Senger** named **Head of Digital Car & Services**, and appointed to VW Passenger Cars Board of Mgmt, tasked with bundling software activities and strengthening the digital overall experience, aimed at Group-wide collaboration on software and intelligent mobility concepts.



"EV's naturally bring with them new challenges, as do autonomous driving, digitization, and update-capable security. Therefore, there is also an architectural leap required; security-by-design and update-by-design are firmly anchored, while at the same time the decoupling of hardware and software." - **Thomas M. Müller, Audi**

# How Aptiv Makes Money

INCREMENTAL VALUE ON CURRENT PRODUCTS + NEW VALUE FROM HARDWARE AND SOFTWARE

## BUSINESS MODEL

A **REFERENCE DESIGN AND IMPLEMENTATION** THAT SEPARATES TRADITIONAL COMPONENTS AND SW/IP AS DESIRED BY OUR CUSTOMERS

KEY



### LICENSING SALE

One-time, per vehicle software and/or IP licensing sale capturing the unique value prop of SVA™



### TRADITIONAL SOLUTION SALE

Per unit sales of products that comprise SVA™

## NEXT GEN PRODUCTS

CPV growth from higher value content and share gains on solutions we sell today

- Body & Domain Controllers
- High Speed Ring Topology Wire Harness and Connectors
- Exterior and In-Cabin Sensors

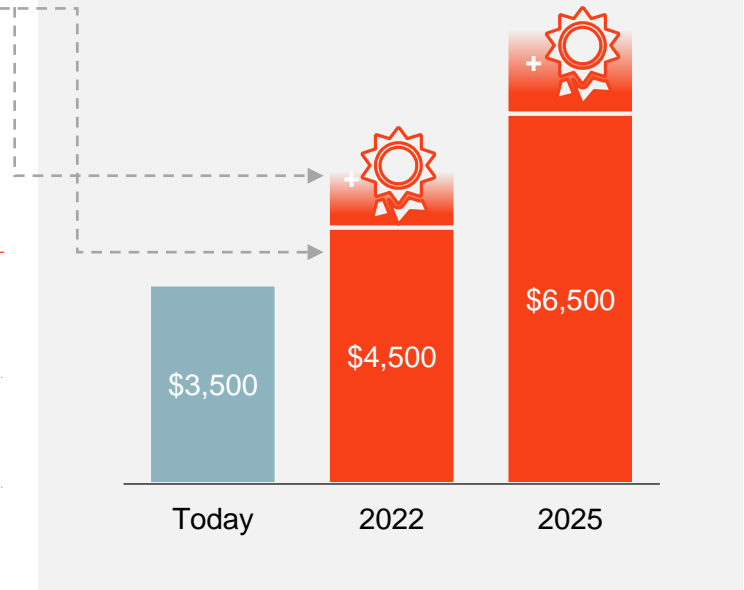
## NEW PRODUCTS

CPV growth from 1) new solutions or 2) previously un-addressable content realized through content up-integration

- Central Compute Cluster and Open Server Platform +
- Power Data Center (PDC) 4 - 6 Zone Controllers +
- Development Platform for OEM / 3rd Party Applications

## ARCHITECTURE CPV

SIGNIFICANT CPV INCREASE FROM CONTENT UP-INTEGRATION AND VALUE ADD FOR OEMs



Note: Includes compute portion only of Active Safety and In-Cabin Experience domains. Sensors, software and other solution components incremental to architecture CPV.



**Karl Iagnemma**  
President, Aptiv Autonomous Mobility

# FUTURE PLATFORMS – AUTONOMOUS MOBILITY

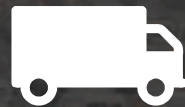
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# Urban Mobility CHALLENGES by 2050



**+70%**

Of Population



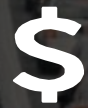
**+40%**

Freight



**5x**

Emissions



**4x**

Cost



**3x**

Travel time

Source: Arthur D. Little, World Economic Forum, Boston Consulting Group and Aptiv Estimates

# BENEFITS of smart mobility automation to cities



**87%**

Fewer Accidents



**28%**

Fewer Vehicles



**66%**

Lower Emissions



**44%**

Fewer Parking Spaces



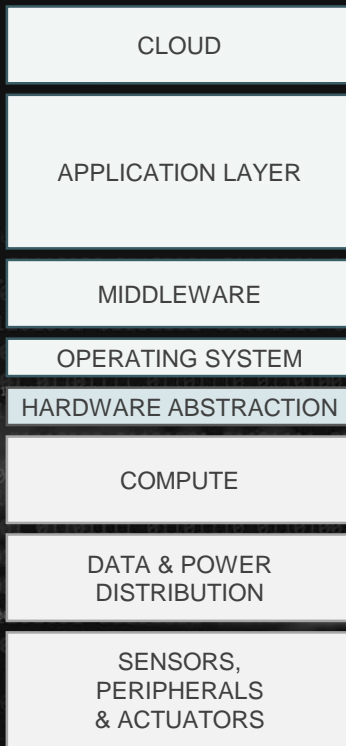
**30%**

Shorter Travel Time

# Leveraging Aptiv's Full Capabilities

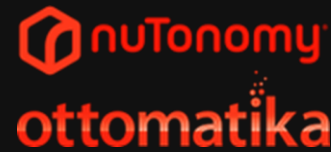
FLEXIBLE AND SCALABLE APPROACH TO SOFTWARE, RUNNING ON OPTIMIZED VEHICLE ARCHITECTURE

ADVANCED SOFTWARE



## MODULAR APPROACH

Flexible software design allows tailored solution



## POLICY & PLANNING

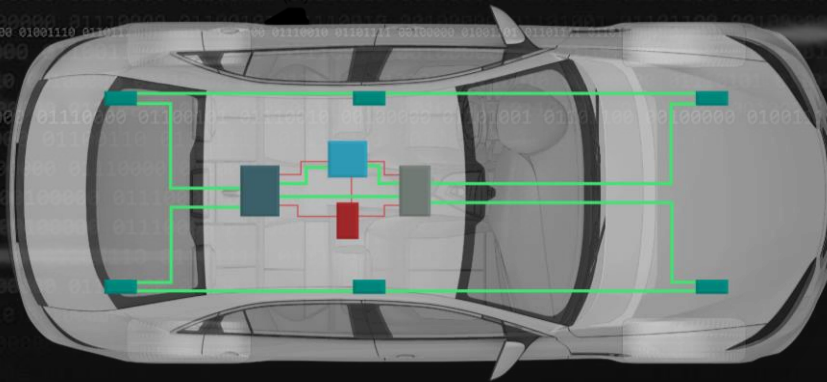
Combined DNA from two full-stack automated driving teams



LEVEL 1  
to  
LEVEL 5

## SCALABLE PLATFORM

Seamless scalability from Active Safety to Automated Driving



## SMART VEHICLE ARCHITECTURE

Optimized vehicle architectures enabling fail-operational performance



ADVANCED ARCHITECTURES

# Structured AI Approach

COMBINING THE BEST OF RULES BASED AND AI APPROACHES TO AUTOMATED DRIVING SOFTWARE DEVELOPMENT

  
**EXPLAINABLE**

  
**AUDITABLE**



LAWS

1. 这只是一个。
2. 测试句子。
3. 我不会说中文

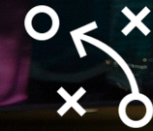
INTERPRETATION



SPECIFICATION



IMPLEMENTATION



BEHAVIOR

## START WITH RULES OF THE ROAD

- Rules organized hierarchically with some rules more important than others
- Potential rule violation quantified / weighted with regard to same priority rule

## AI FILLS IN CORNER CASES

- Unique situations / cultural norms addressed through applied machine learning
- Avoids exhaustive description of rule combinations / region specific rewrites

# Las Vegas Commercial Deployment

DEVELOPING APPROACH THAT ALLOWS APTIV TO QUICKLY AND EFFICIENTLY SCALE FUTURE DEPLOYMENTS



## GAINING REAL-WORLD EXPERIENCE

- Deep understanding of support requirements for ongoing operations
- Act as an ambassador for the technology



## STANDARD OPERATING PROCEDURES

- Clearly defining value chain roles and responsibilities, key touch points
- Validating commercial model / optimum allocation of trips



## SUPPORTING TECH / IP DEVELOPMENT

- Command Center developing teleoperations capabilities
- Demonstrate application / first-use of IP in real-world deployment

50K+

PAID AV RIDES

9 OUT OF 10

WOULD RIDE AGAIN

4.95

STAR USER RATING OUT OF 5



# Path to Commercialization

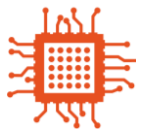
CONTINUED PROGRESS, DEPLOYMENT TIMEFRAME REMAINS UNCHANGED

## NEXT GENERATION VEHICLE PLATFORM

Vehicle capable of driverless operation



- Modular code structure
- Mobility Cloud integration
- Drive-by-wire interface



- Redundant power brakes and steering gears
- Self actuating doors
- Safety architecture with two redundant safety channels

- Long range radar (3x)
- High def lidar (2x)
- Long range lidar (2x)
- Moderate FOV camera (3x)
- Narrow FOV camera (3x)

- Long range radar (2x)
- High def radar (2x)
- Short range radar (2x)
- Short range lidar
- Fisheye camera



- Short range radar (2x)
- Long range radar (2x)
- Short range lidar (2x)
- Moderate FOV camera

- Long range radar
- Short range radar
- Short range lidar
- Fisheye camera

# Smart City Selection

DEPLOYMENTS EXECUTED ON A SELECTIVE CITY BY CITY BASIS TO MAXIMIZE RETURN ON INVESTMENT

## MARKET SELECTION CRITERIA



### DEMOGRAPHIC

- Ride Hailing Penetration And Driver Income
- Population Density
- Climate / Weather



### OPERATIONAL DOMAIN

- Number Of Vehicles Required
- Traffic Speed, Corner Cases Encountered
- Similarities To Other Deployed Cities



### INTANGIBLES

- Market Need / Opportunity To Address Transit Issues
- Alignment To City Strategy / Municipal Buy-In

DEEP UNDERSTANDING OF OPERATIONAL DOMAIN IMPACTS ON CITY DEPLOYABILITY

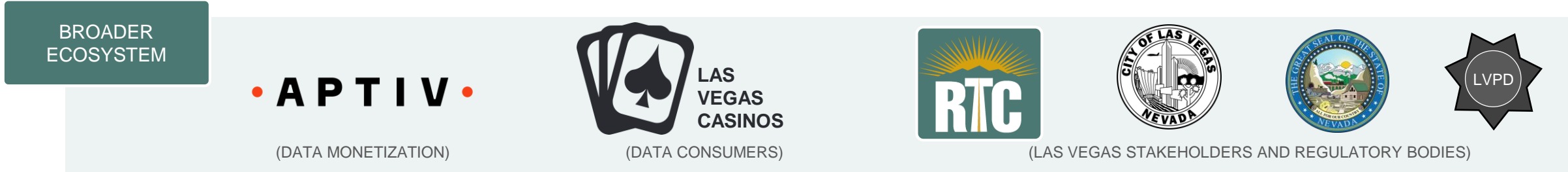
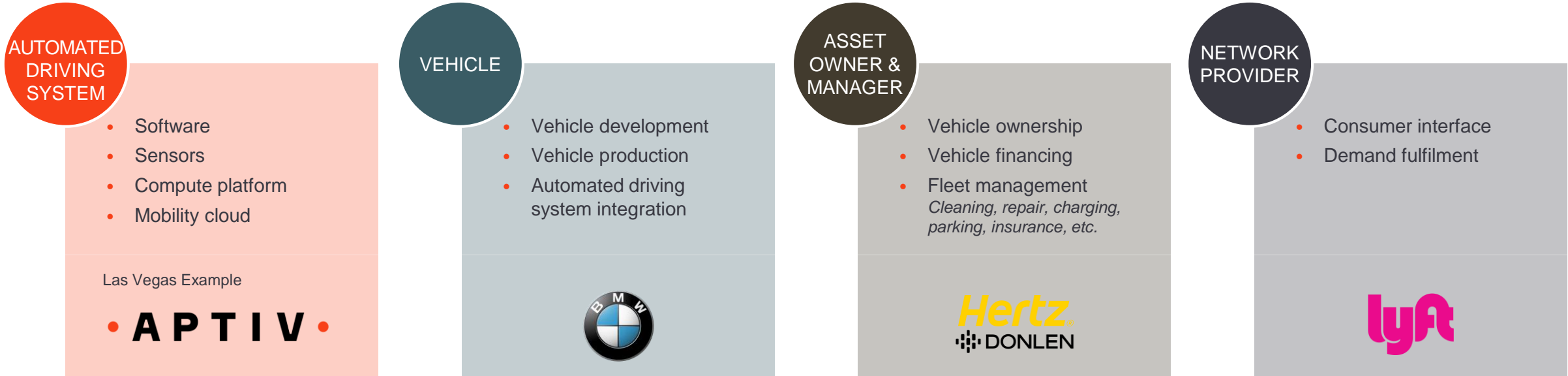
HARDER

ABILITY TO SERVICE

EASIER

# AMoD Requires Four Primary Roles

MOBILITY PROVIDERS NEED APTIV AUTOMATED DRIVING SOLUTIONS

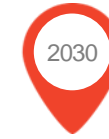
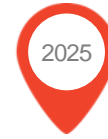
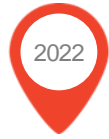


# Automated Mobility Deployment Phases

APTIV UNIQUELY POSITIONED FOR SUCCESS ACROSS EACH PHASE OF AD MATURITY



2020  
DRIVER OUT  
OF THE VEHICLE



PHASE

COMMERCIAL  
DEMONSTRATIONS

GREENFIELD  
LAUNCHES

BROADER  
ADOPTION

OEM  
CONVERGENCE

SOFTWARE  
MATURITY



**LIMITED CAPABILITIES**

Manual interventions required for corner cases, necessitates a safety driver

**SMALL, BUT VIABLE**

Viable without a driver in limited geofenced areas, under strict operating conditions

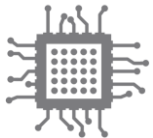
**RAPID ODD EXPANSION**

Significant decrease in limitations increases operational domain.

**ROBUST**

Able to handle enough corner cases to make it viable for personal vehicle applications

HARDWARE  
MATURITY



**NOT FAIL-SAFE**

Safety driver acts as the back-up in the event of a failure; roadmap to removing the driver in 2020

**INDUSTRIAL FAIL-SAFE**

Leveraging industrial PC hardware, but sufficient to start driving launches, and beginning to scale

**AUTO GRADE**

ASIL-D purpose built hardware is ready for deployment at scale

**OEM STANDARD**

OEM vehicles come off the assembly line fully configured for automated driving

COMPETITIVE  
LANDSCAPE



**RESEARCH**

Many players dabble, but limited real world deployments. Compete for talent and capital, but little else.

**INITIAL DEPLOYMENTS**

Greenfield on a city-by-city basis. Compete based on smart deployment SOPs

**MOBILITY SCALE-UP**

Significant ramp-up in scale / speed of deployments. Compete based on robustness of operational domain.

**CONVERGING WITH OEMs**

OEM AD availability pushes point of AD systems competition earlier in the value chain

# How Aptiv Makes Money

BUSINESS MODEL DRIVES HIGHER MARGIN RECURRING REVENUE

4

## DATA MONETIZATION

Enable data acquisition and monetization through edge processing and OTA

3

## FLEET MONITORING

Support network operators through AV fleet performance analytic and teleoperations

2

## SOFTWARE LICENSING

Autonomous driving stack including upgrades to performance and operational design domain

1

## TECHNOLOGY SALE

One-time sale of enabling tech into the vehicle such as sensors, and compute

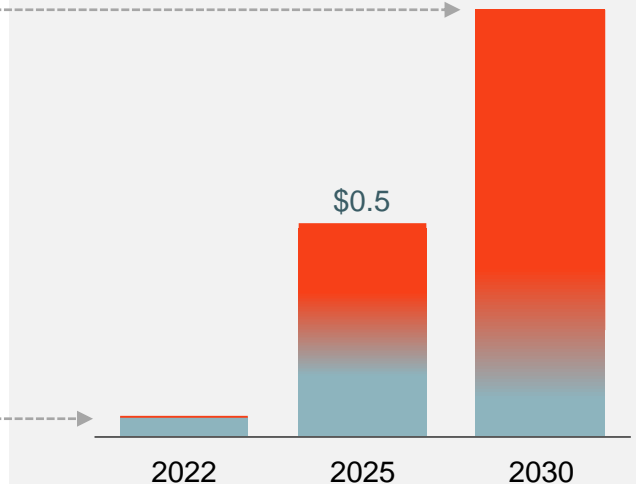


TIME SALE

## AMoD REVENUE

70 - 80% RECURRING REVENUE AT SCALE

\$ Billions





**Mariya Trickett**  
Senior VP, Chief Human Resources Officer

# HUMAN CAPITAL

# Fusing Physical and Human Capital

FUSING OUR INDUSTRIAL FOUNDATION WITH OUR DIGITAL FUTURE EFFECTIVELY CREATING DIFFERENTIATED INTEGRATED HARDWARE AND SOFTWARE SOLUTIONS

INDUSTRIAL TECH

SOFTWARE: HUMAN CAPITAL

- Talent, Diversity, Engagement
- Productivity & Creativity



HARDWARE: PHYSICAL CAPITAL

- Property, Plant & Equipment
- Capital Efficiency & Reinvestment

INTEGRATED SOLUTIONS & SERVICES

Aptiv is perfectly positioned to deliver the hardware, software and services required to make the future of mobility real

# Human Capital Philosophy

BALANCING QUALITY, FLEXIBILITY AND AFFORDABILITY ACROSS THE GLOBAL ENTERPRISE

Meaningful work with smart, talented and passionate people

## QUALITY

- Skills
- Diversity
- Engagement

Develop competence and capability; retain and promote talent

## AFFORDABILITY

- Total cost
- Turn-over
- Competition

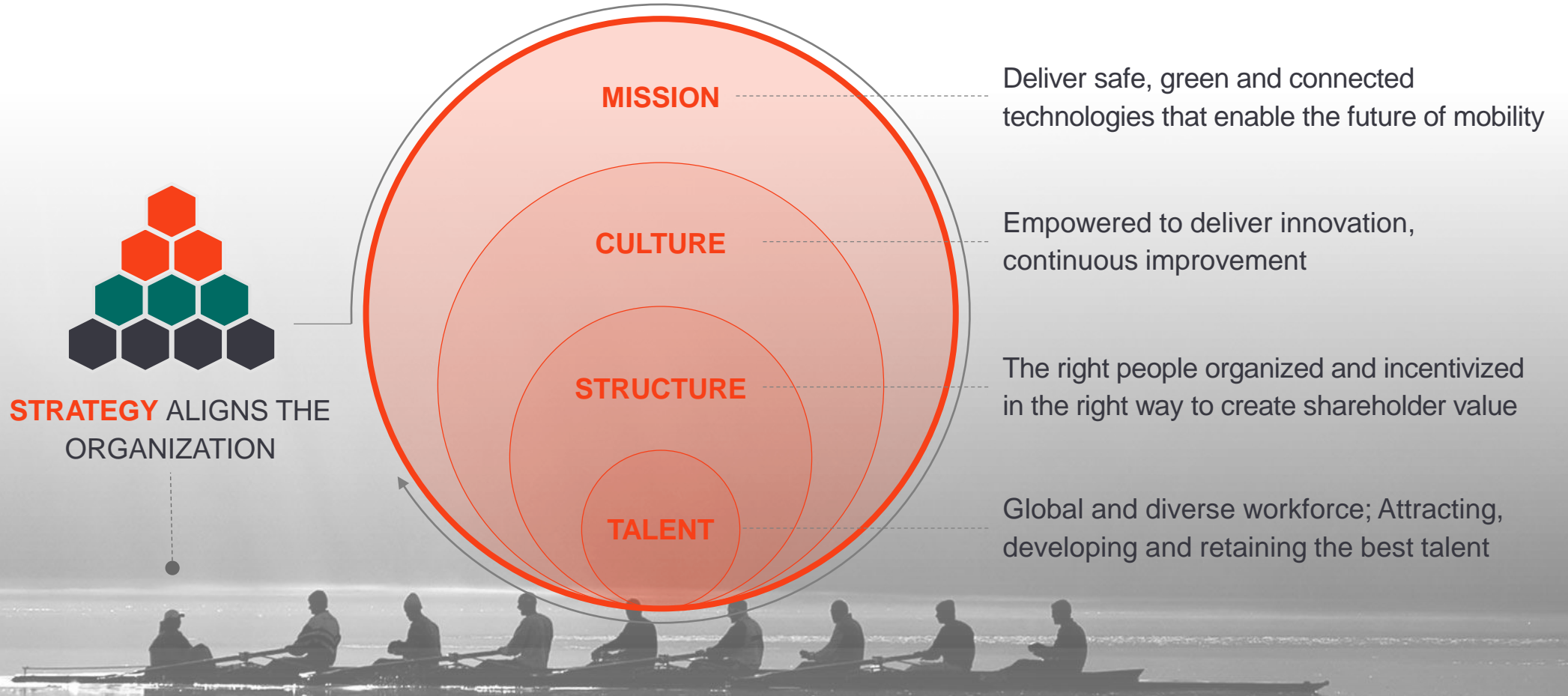
## FLEXIBILITY

- Role
- Location
- Contribution
- Diversity

The right people, with the right experience, in the right places

# Human Capital Tightly Aligned to Strategy

DIVERSE SOLUTIONS REQUIRE AN EQUALLY DIVERSE SET OF PEOPLE TO MAKE THEM REAL;  
CLEAR ALIGNMENT TO A COMMON MISSION AND STRATEGY TO DELIVER IT

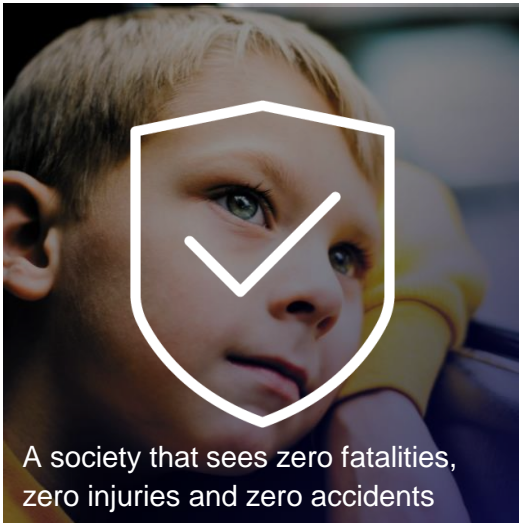


# Compelling Mission

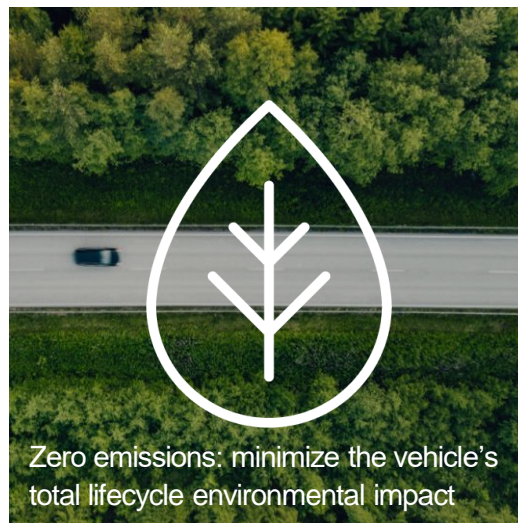
CLEAR AND COMPELLING MISSION AT THE HEART OF EVERYTHING WE DO – FOR INDUSTRIAL AND TECH

## MISSION

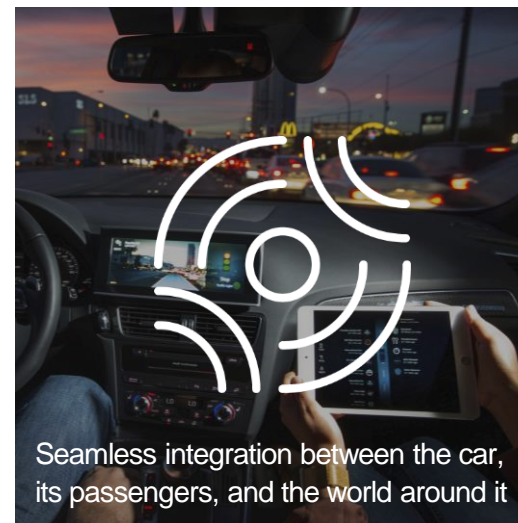
Deliver safe, green and connected technologies that enable the future of mobility



## CULTURE



## STRUCTURE



## TALENT

*"Over one million people die in vehicle related accidents every year. Knowing that the work I'm doing can make a difference is the reason I work at Aptiv."*

- Recent Aptiv New Hire

# Winning Culture

SUSTAINABLE CULTURES DELIVER BEST-IN-CLASS PERFORMANCE FOR ALL STAKEHOLDERS  
RESULTS COMPOUND WELL ABOVE PEERS

MISSION

CULTURE

Empowered to deliver innovation,  
continuous improvement

STRUCTURE

TALENT

## CORE VALUES AT THE HEART OF APTIV

Principles for how we work



PLAY TO  
WIN



ONE  
TEAM



THINK & ACT  
LIKE OWNERS



ACT WITH  
URGENCY



PASSION  
FOR RESULTS



OPERATE WITH  
RESPECT

ALWAYS DO THE RIGHT THING, THE RIGHT WAY

## CULTURE SURVEY VALIDATES POSITIONING

Strongest scores in Aptiv's most recent culture survey



Customer Centricity  
and value creation



Results Oriented,  
and Optimistic about  
future performance



Energized by  
Vision & Purpose



Embrace  
Technology  
Disruption

# Efficient and Agile Structure

PUTTING THE RIGHT STRUCTURE ON TOP OF A STRONG, POSITIVE CULTURE ENABLES HIGH PERFORMANCE

## MISSION

## CULTURE

## STRUCTURE

## TALENT

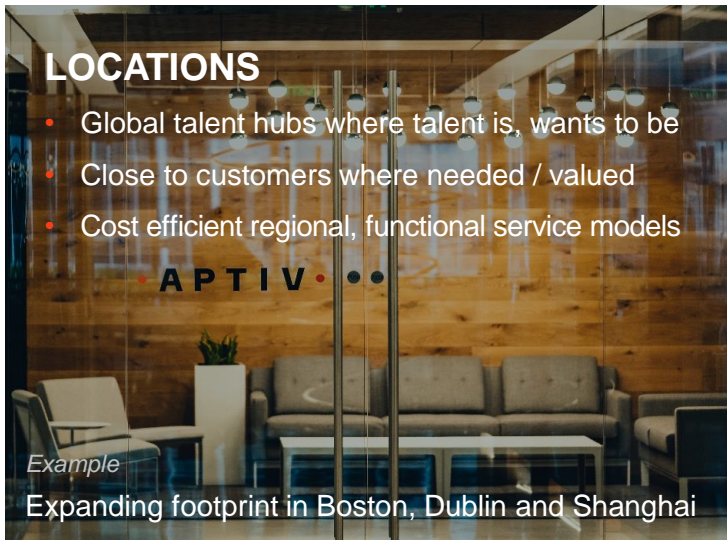
The right people organized and incentivized the right way to create stakeholder value

### LOCATIONS

- Global talent hubs where talent is, wants to be
- Close to customers where needed / valued
- Cost efficient regional, functional service models

**APTIV** • • •

*Example*  
Expanding footprint in Boston, Dublin and Shanghai



### ORGANIZATION

- Flat and well networked
- Enabled & empowered with clear accountability
- Flexible to support local requirements

*Example*  
Significant reductions to corporate overhead costs



### INCENTIVES

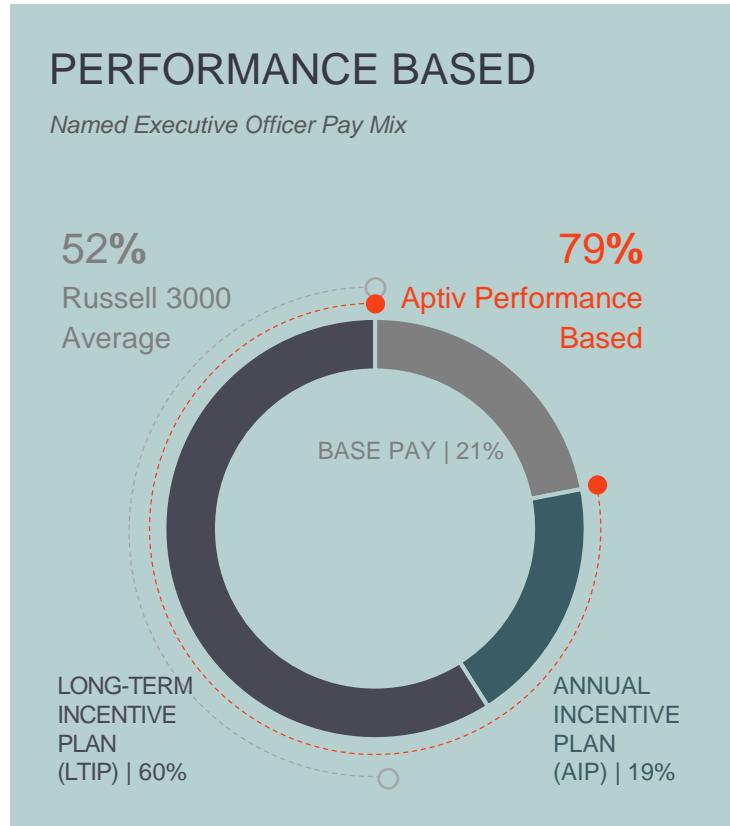
- Compelling opportunities aligned to mission
- Development plans with appropriate stretching
- Competitive total compensation

*Example*  
Meaningful work that can impact millions of lives



# Incentives Aligned to Long-Term Value

PAY-FOR-PERFORMANCE CULTURE WITH METRICS TIGHTLY LINKED TO LONG-TERM VALUE CREATION



## LONG-TERM VALUE FOCUSED

Incentives Aligned To Creating **SHAREHOLDER VALUE**

LTIP	AIP
<ul style="list-style-type: none"> <li>• 25%   NET INC</li> <li>• 25%   TSR<sup>2</sup></li> <li>• 50%   RONA</li> </ul>	<ul style="list-style-type: none"> <li>• 50%   NET INC<sup>1</sup></li> <li>• 10%   BOOKINGS</li> <li>• 40%   CASH (CFBF)<sup>1</sup></li> </ul>

---

75% Performance<sup>3</sup>  
25% Time Based<sup>3</sup>

SRM Goals drive strategic factors

Performance Based LTIP linked to business plan; strongly incentivizing commitment to outperformance

## ACHIEVED THE RIGHT WAY

*Strategic Results Modifier (SRM) Component of AIP*

10% SRM  
STRATEGIC RESULTS MODIFIER

2019 SRM GOALS

- TALENT**  
Attract and retain the best
- CULTURE**  
Reinforce values and behaviors of a winning team
- QUALITY**  
Drive flawless launch and delivery

1. Segment performance metrics based on Operating Income and Simplified Operating Cash Flow  
 2. TSR performance relative to Russel 3000 Auto Index peers  
 3. For Executive Officers

# Talent Foreshadows Future Solutions

PEOPLE AND TALENT HAVE ALWAYS BEEN A LEADING INDICATOR OF SUCCESS;  
APTIV HAS A LEGACY OF EVOLUTIONS WHICH CREATED VALUE

## MISSION

## CULTURE

## STRUCTURE

## TALENT

Global and diverse workforce,  
attracting, retaining and  
developing the best talent

### IN-CABIN EXPERIENCE EXAMPLES

**2010**

Capabilities Emphasized	Launched Solution
<ul style="list-style-type: none"><li>• Middleware</li><li>• Connectivity</li></ul>	<ul style="list-style-type: none"><li>• Media Hubs</li><li>• Consumer Device Integration</li></ul>



**2015**

Capabilities Emphasized	Launched Solution
<ul style="list-style-type: none"><li>• Software</li><li>• Central Compute</li></ul>	<ul style="list-style-type: none"><li>• Integrated Cockpit Controllers</li></ul>



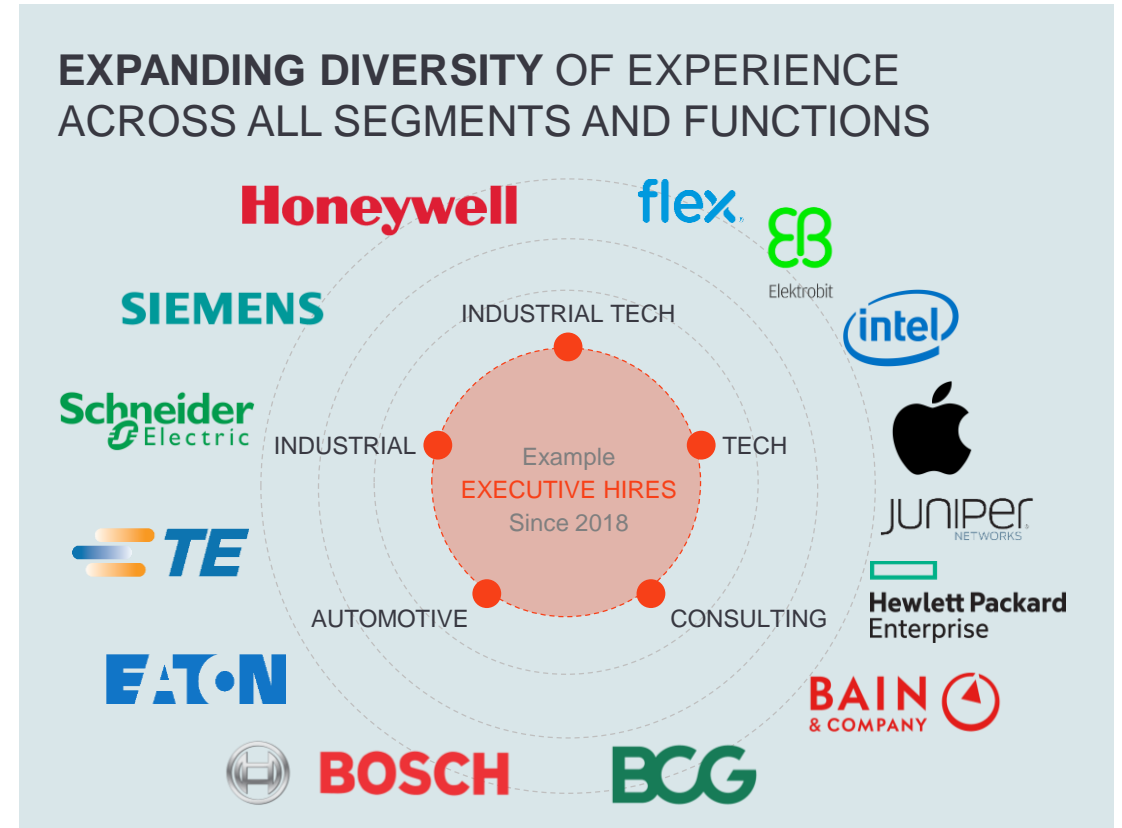
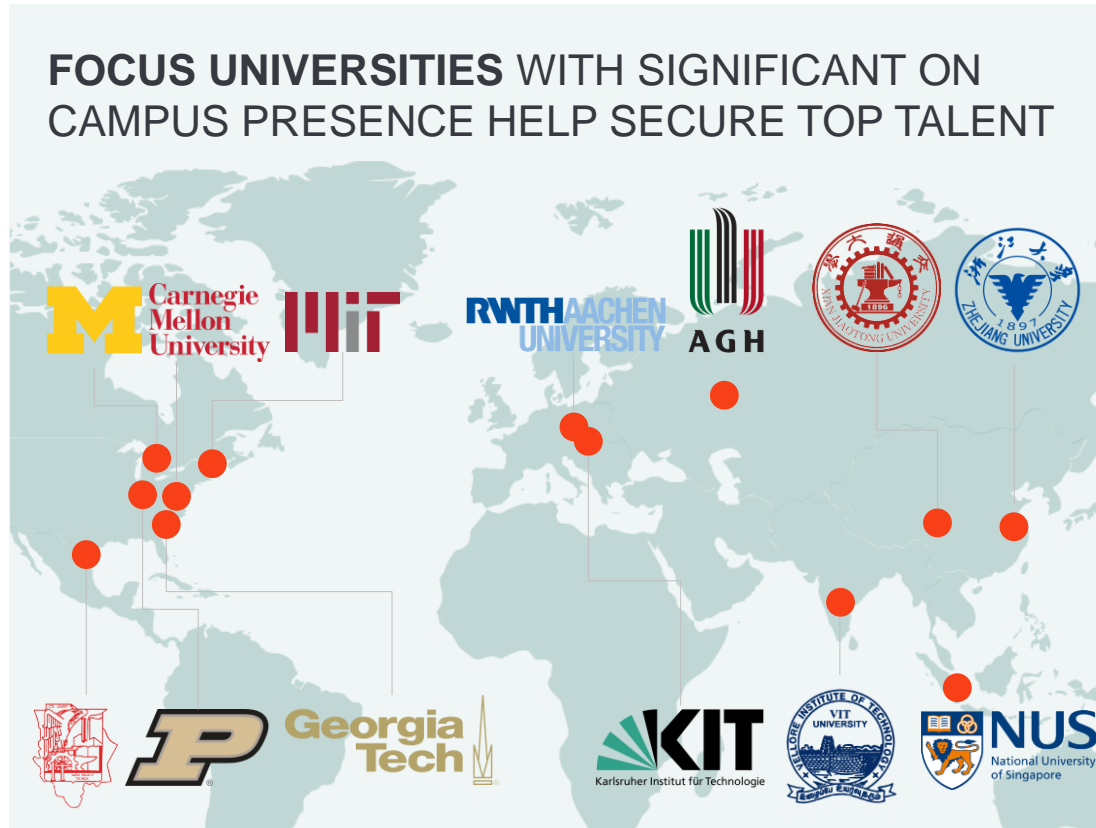
**TODAY**

Capabilities Emphasized	Future Solution
<ul style="list-style-type: none"><li>• Machine Learning</li><li>• Data Scientists</li></ul>	<ul style="list-style-type: none"><li>• Driver Engagement, Comfort and Control</li></ul>



# Strong and Diverse Talent Pipeline

ATTRACTING, DEVELOPING AND RETAINING BEST TALENT TO DELIVER 2025 VISION



# Human Capital Delivering 2025 Vision

STRONG FOUNDATION MAKING THE FUTURE OF MOBILITY REAL

## INDUSTRIAL

**Outsized impact** driven by decades of experience in delivering sustainable value creation and performance through cycle

## INDUSTRIAL TECH

• APTIV •



## TECHNOLOGY

Agility and **creativity to thrive** in dynamic end markets, that are requiring smarter, more integrated solutions

# ONE TEAM



**Tim Clark**  
Senior VP, Supply Chain Management

# INTEGRATED SUPPLY CHAIN

• **APTIV** •

# FLAWLESS EXECUTION REQUIRED TO SUPPORT OUR CUSTOMERS

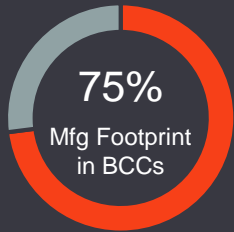
EVERY  
DAY  
AT APTIV

RECEIVE 220 MILLION  
PIECES FROM 3,600  
SUPPLIER LOCATIONS

SHIP 91 MILLION COMPONENTS  
TO 7,300 CUSTOMER LOCATIONS  
WITH 99% ON-TIME DELIVERY

# Global Supply Chain

RELENTLESSLY FOCUSED ON IMPROVING EFFICIENCY, FLEXIBILITY AND AGILITY OF GLOBAL OPERATIONS



**Worldwide design** and **manufacturing footprint** that enables us to efficiently and effectively serve our global customers from **best cost countries** (BCC)



Diverse global footprint, with over half of all manufacturing sites being leased, allows us to **quickly scale** our **operations** to support changes in local customer demand



**Innovation** and **development** of flexible and modular manufacturing processes, additive manufacturing techniques, augmented reality and advanced analytics **driving efficiencies**

APTIV'S GLOBAL SUPPLY CHAIN AND MANUFACTURING CAPABILITIES CORE TO DELIVERING VALUE FOR OUR CUSTOMERS

- Technical Centers (15)
- Manufacturing Sites (125)
- Supplier Locations (3,600)



# Legacy of Delivering Automotive Grade

MEETING AUTOMOTIVE GRADE EXPECTATIONS ON QUALITY AND DELIVERY, WHILE CONTINUING TO REFINE AND IMPROVE PROCESSES

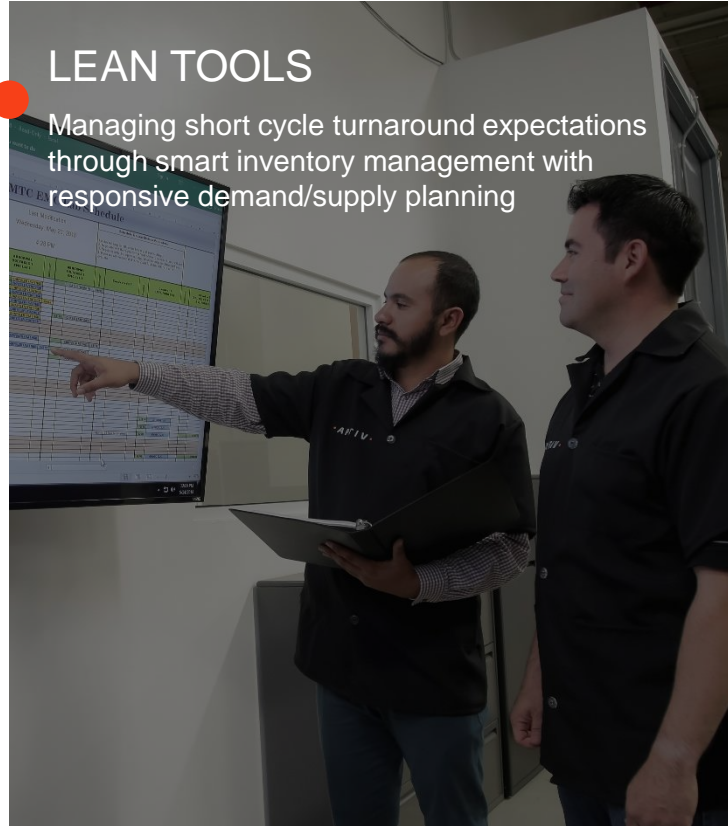
## IN REGION, FOR REGION

Established global footprint supports local manufacturing, while minimizing the potential for cross-border disruptions



## LEAN TOOLS

Managing short cycle turnaround expectations through smart inventory management with responsive demand/supply planning



## DESIGN FOR MANUFACTURING

Component councils, standard component libraries and early engagement in product development process improves manufacturability

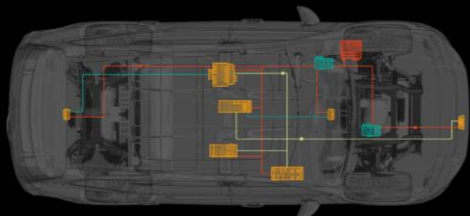


# Integrated Supply Chain of the Future

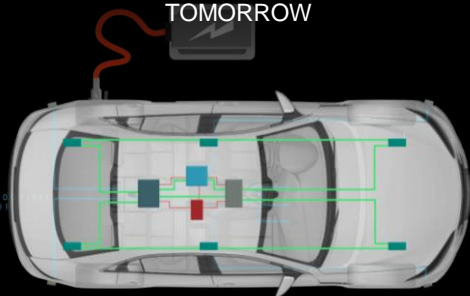
EVOLUTION OF THE VEHICLE DRIVING A TRANSFORMATION OF THE INTEGRATED SUPPLY CHAIN TO SUPPORT IT

## TRANSFORMATION TO A SOFTWARE DEFINED VEHICLE

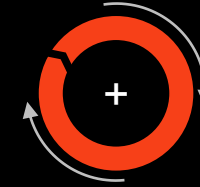
YESTERDAY



TOMORROW



## DELIVERED THROUGH A SMARTER, MORE FLEXIBLE FACTORY...



## ... SUPPORTED BY A MORE DYNAMIC LOGISTICS NETWORK



### AUTOMATION

- Standardization enables greater automation
- Critical to meeting performance expectations



### DATA & CONNECTIVITY

- Global, real time data and analytics
- Rapidly identify performance opportunities



### FLEXIBILITY

- Highly reconfigurable cells
- Equipment performs multiple functions

- Early engagement in concepting and design
- Access to accurate, real-time demand information
- Simplified administrative interfaces with Aptiv

### DEMAND



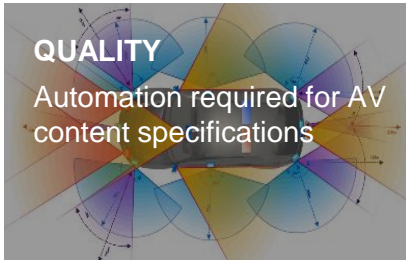
SUPPLY

- Product readiness at SOP date
- Improved on-time delivery / cost
- Automation reduces cost-to-serve

# Manufacturing Automation

INCREASING AUTOMATION AND REDUCING COMPLEXITY WITH EVOLVING VEHICLE ARCHITECTURES, CRITICAL FOR ACCELERATING DEVELOPMENT AND IMPROVING BUILT-IN QUALITY

## KEY CHALLENGES



## WIRE HARNESS EXAMPLE

### Automated Kitting

Producing complete wiring content for kits and subassemblies

### Automated Plugging

Plugging of wiring kits - designed for high density miniaturization

### Automatic Cable Changeover

Quick switching of cables as needed during changeover

### Automatic Cable Wall

Vertical storage and auto feeding of cables to cutters

### Automated Terminal/Die Warehouse

Automatic preparation of terminal and crimping die by cutting order

### Automated Material And Tooling Transportation

Die and Terminal to stations by cutting order

### Automatic Blind Seal Plugging

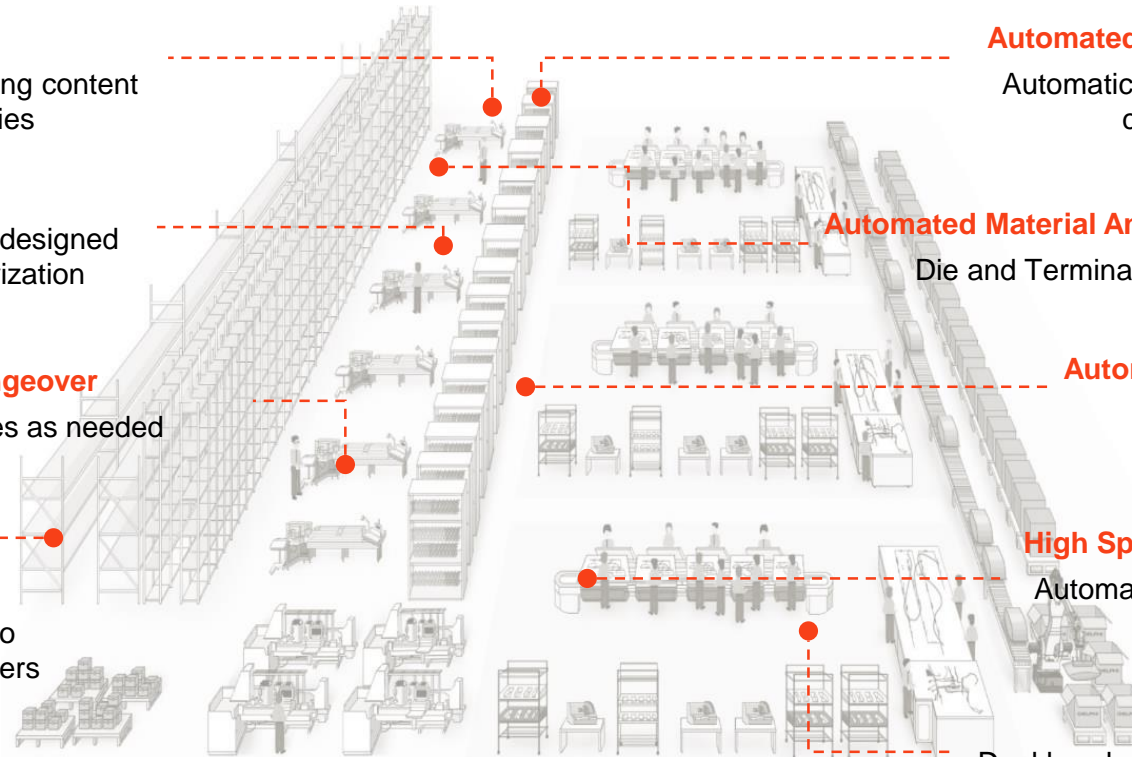
Plugging unused sealed connector cavities

### High Speed Data Cable Assembly

Automation of data cable assembly

### Taping Automation

Dual head and linear taping automation

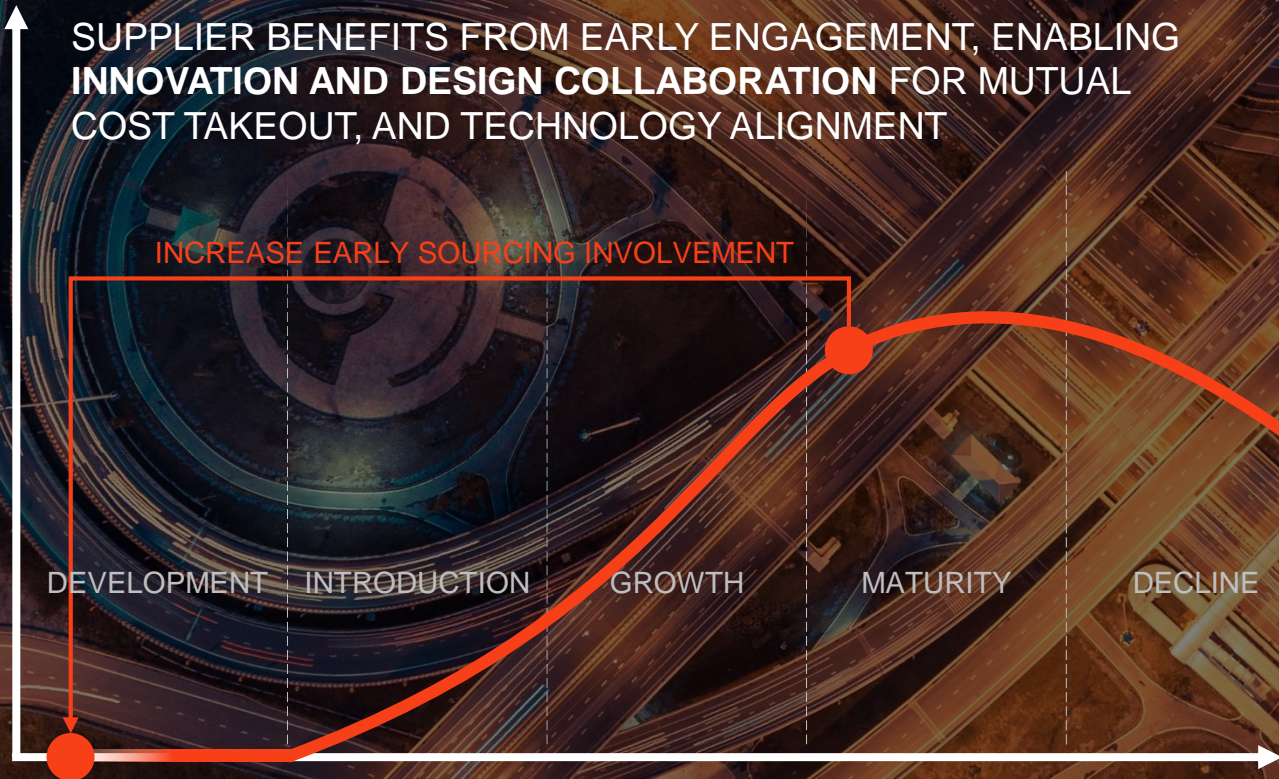


# Platinum Supplier Program

DEVELOPING KEY SUPPLIER PARTNERS FOR TECHNOLOGY, GROWTH & WITH EXECUTIVE ALIGNMENT

SUPPLIER BENEFITS FROM EARLY ENGAGEMENT, ENABLING **INNOVATION AND DESIGN COLLABORATION** FOR MUTUAL COST TAKEOUT, AND TECHNOLOGY ALIGNMENT

INCREASE EARLY SOURCING INVOLVEMENT



**10%**  
IMPROVED  
PRODUCTIVITY

- **HIGHEST COMMERCIAL AND PERFORMANCE EXPECTATIONS**
- **FOCUS ON LOWEST TOTAL COST (NOT ONLY RATES)**
- **WORKING CAPITAL FOCUS**
- **NEW PRODUCT COMMERCIAL & TECHNOLOGY LEVERAGE**

# Silicon and SoC Strategy

PLATFORM STRATEGY HELPS ENSURE THE RIGHT TOTAL RANGE SoC SUPPLIERS FOR FULL COVERAGE, PLATFORM LEVERAGE AND REUSE



- 1 ALIGNING PRODUCT ROADMAPS**
  - Strategic suppliers with best-in-class tech
  - Ensure engagement in concept phases
- 2 BALANCING PERFORMANCE vs COST**
  - KPIs helping define system needs, overlap
  - Demand assurance for long-lead / high capex
- 3 REFRESHING RISK MANAGEMENT**
  - Balancing domain specific consideration
  - Validation, quality and warranty risk mitigation key

Example



STRATEGIC PARTNERSHIP FOR ACTIVE SAFETY **VISION ALGORITHMS**

- Supplying vision algorithms via standard SoC
- Best-In-Class vision solution supporting ADAS
- Investment and Capex avoidance



FASTER TO MARKET



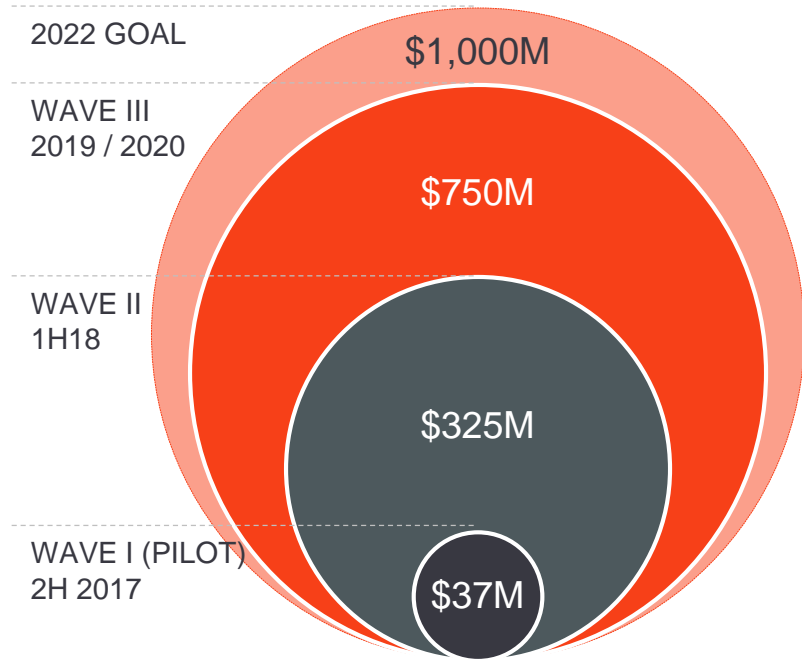
LEADING SOLUTION



HIGHLY SCALABLE

# Contract Manufacturing

CORE / NON-CORE VALUE NETWORK APPROACH DRIVES ASSET-LITE  
FLEXIBLE CAPACITY AND EFFICIENCY



## IMPROVED FLEXIBILITY

- Asset-lite agility
- Flexible capacity for demand swings

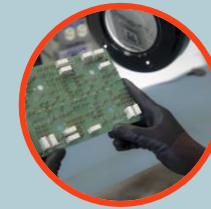
## HIGHER RETURN ON CAPITAL

- Lower investment / capex
- Optimized inventory

## BENCHMARKING OPPORTUNITY

- Vs. internal operations
- Vs. supply base

Example



SELECTIVE OUTSOURCING  
OF **NON-CORE PCB**  
MANUFACTURING

- Focus on **low-complexity** designs
- Keep safety-critical applications in house
- **Quick turn** capability supports business pursuit



FASTER  
TO MARKET



REDUCES  
TOTAL COST



HIGHLY  
SCALABLE

# Leveraging Other Industrial-Tech Best Practices

BENCHMARKING VERSUS BEST-IN-CLASS INDUSTRIAL TECHNOLOGY PEERS TO IDENTIFY AND VALIDATE OPPORTUNITIES FOR FURTHER ENHANCEMENT

MANUFACTURING

## MODULAR CELL DESIGN

High flexibility production cells perform multiple functions

## ADDITIVE MFG

Applications in R&D, tooling, and difficult to mold parts

## ACQUISITION SYNERGY

Strong playbook for onboarding accretive bolt-on's

## SIOP

Continued maturation of responsive demand planning processes

SOURCING

## E-AUCTION

Leveraging new business; under \$100M in 2017 to over \$5B YTD

## SHOULD-COST MODELS

Expanding capabilities with experienced team

## DUAL SOURCING

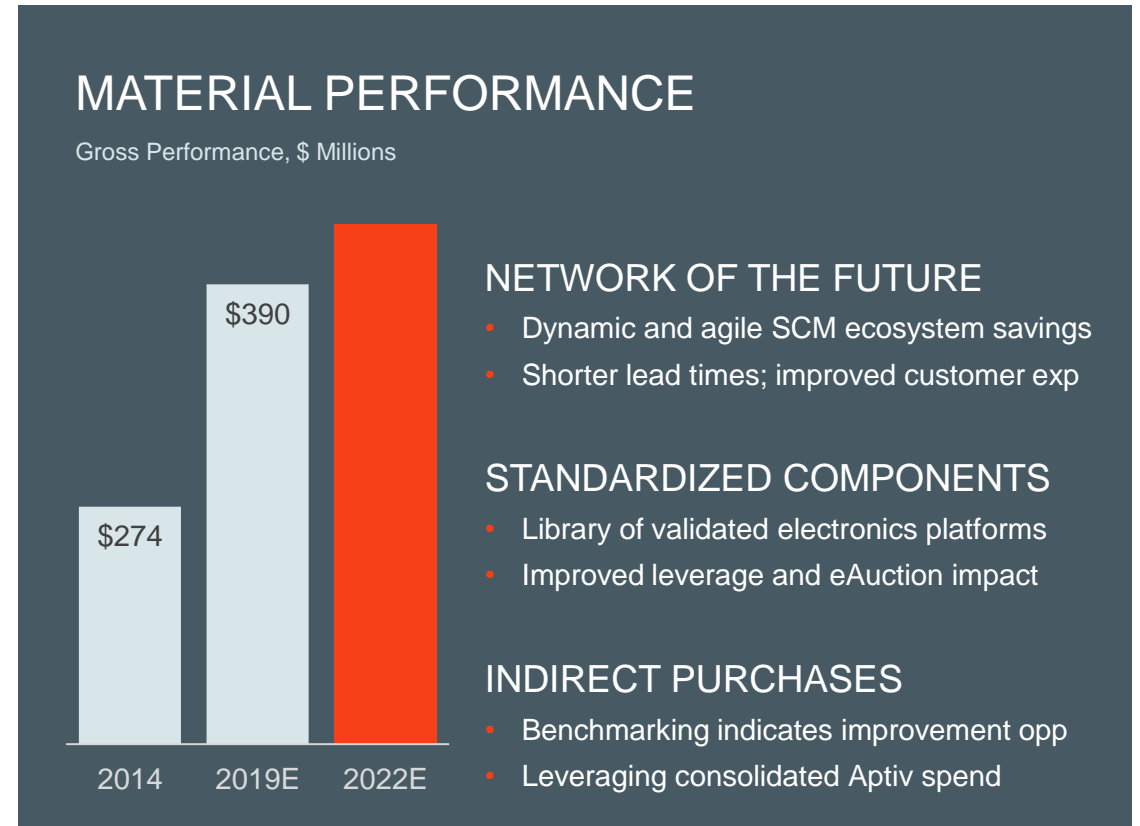
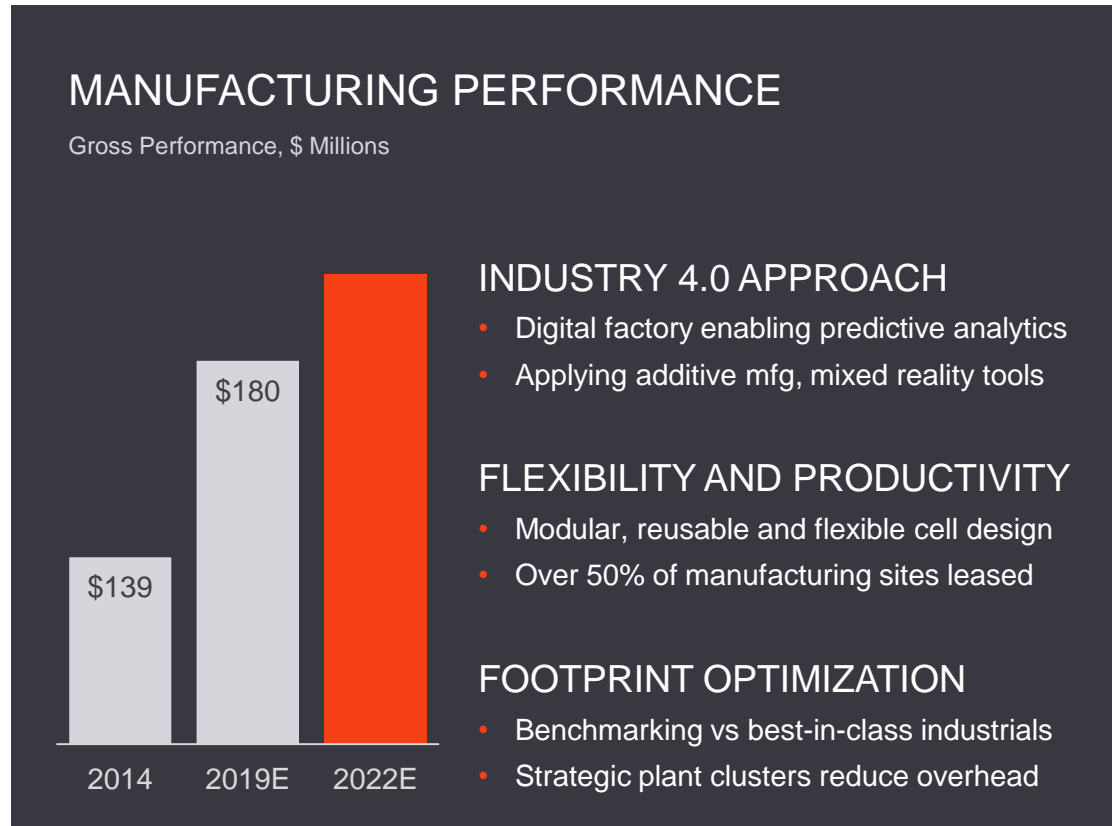
BOM grading to measure & improve competitive leverage

## INDIRECT

Benchmarking suggests opportunities in growing categories

# Delivering Operational Excellence

OPPORTUNITY TO DRIVE INFLECTION IN MANUFACTURING AND MATERIAL PERFORMANCE





Joe Massaro  
Senior VP, Chief Financial Officer

# FINANCIAL OVERVIEW

# Aptiv Commitments: 2017 Investor Conference

STRONG FOUNDATION WITH CLEAR PATH TO FURTHER VALUE CREATION

## GROWTH ABOVE MARKET

**4-6% GoM<sup>1</sup>** 

ASSUMING FLAT TO +1%  
GLOBAL VEHICLE PRODUCTION

**~40% CAGR**  
ACTIVE SAFETY

**~50% CAGR**  
HIGH VOLTAGE

**~15% CAGR**  
USER EXPERIENCE

## EARNINGS GROWTH

**RELENTLESS FOCUS  
ON STRUCTURAL COST,  
EPS LEVERS**

ASSUMING STABLE FX/COMMODITIES

**20-40 BPS/YR**  
MARGIN EXPANSION

**8-10% CAGR**  
EBITDA

**8-10% CAGR**  
OPERATING INCOME

**8-10% CAGR**  
EPS GROWTH

## CASH DEPLOYMENT

**BALANCED AND  
DISCIPLINED APPROACH**

CAPITAL EXPENDITURES  
*Target: 35%-40%*



DIVIDENDS  
*Target: 10%-15%*

M&A AND SHARE  
REPURCHASES  
*Target: 45%-55%*

## POSITIONING FOR THE FUTURE


**IMPROVING THROUGH-CYCLE  
PERFORMANCE**

 **NEW BUSINESS WINS**

BOOKINGS TO EXCEED RECORD

 **INVESTMENTS FOR GROWTH**

INVESTMENTS TO CAPITALIZE ON  
NEW MOBILITY OPPORTUNITIES

 **ACCRETIVE BOLT-ON M&A**  
INCREASING END MARKET  
DIVERSIFICATION

Note: Revenue growth excludes impact of foreign exchange, commodities and divestitures. Operating income and EPS adjusted for restructuring and other special items; see appendix for detail and reconciliation to US GAAP.  
1. Adjusted Growth over Aptiv weighted market

# Aptiv Performance: 2017 - 2019E\*

DELIVERING STRONG GROWTH OVER MARKET AND FINANCIAL RETURNS



## GROWTH ABOVE MARKET

**10% GoM<sup>1</sup>** 

INCLUDES GLOBAL VEHICLE PRODUCTION DOWN (2.5%)

**53% CAGR**  
ACTIVE SAFETY

**58% CAGR**  
HIGH VOLTAGE

**11% CAGR<sup>2</sup>**  
USER EXPERIENCE

## EARNINGS GROWTH

**RELENTLESS FOCUS ON STRUCTURAL COST, EPS LEVERS**

ADJUSTED: EX. FX/COMM & TARIFFS:

(50) | (10) BPS/YR  
MARGIN EXPANSION

+6% | +9% CAGR  
EBITDA GROWTH

+2% | +6% CAGR  
OPERATING INCOME

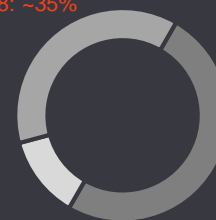
+4% | +8% CAGR  
EPS GROWTH

## CASH DEPLOYMENT

**BALANCED AND DISCIPLINED APPROACH**

CAPITAL EXPENDITURES

Target: 35%-40%  
2017-2018: ~35%



DIVIDENDS  
Target: 10%-15%  
2017-2018: ~10%

M&A AND SHARE REPURCHASES  
Target: 45%-55%  
2017-2018: ~55%

## POSITIONING FOR THE FUTURE

**IMPROVING THROUGH-CYCLE PERFORMANCE**

 **NEW BUSINESS WINS**

STRONG TRACK RECORD WITH \$19B IN 2017 AND \$22B IN 2018

 **INVESTMENTS FOR GROWTH**

 **~\$350M** IN MOBILITY INVESTMENTS

 **ACCRETIVE BOLT-ON M&A**

Note: Revenue growth excludes impact of foreign exchange, commodities and divestures. Operating income and EPS adjusted for restructuring and other special items; see appendix for detail and reconciliation to US GAAP.

1. Adjusted Growth over Aptiv weighted market

2. Excludes Displays; User Experience including displays is 6% CAGR

\* 2019E reflects guidance communicated on May 2, 2019

# Through-Cycle Resiliency

SUSTAINING GROWTH DESPITE WEAKER MACRO ENVIRONMENT



## ACTIVE SAFETY

Outperformance driven by new launch volume and increased take rates and penetration



## HIGH VOLTAGE ELECTRIFICATION

Accelerated growth in China – up ~150% in 2019\*



## CV & INDUSTRIAL END MARKETS

Growth in end market diversification through accretive bolt-ons, leveraging harsh environment expertise



## GLOBAL VEHICLE PRODUCTION

Lower vehicle production and operational inefficiencies related to variability in customer schedules



## FOREIGN EXCHANGE / COMMODITIES

Dilutive FX impact from unfavorable Euro and RMB  
Commodity escalations



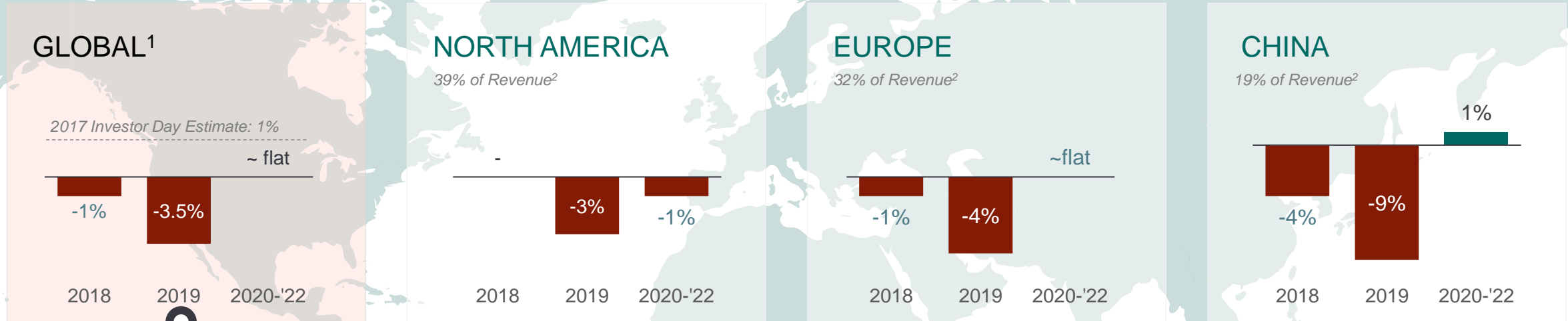
## CHINA TARIFFS

Reduced \$75M of unmitigated 2019\* exposure to \$50M\*

\* 2019E reflects guidance communicated on May 2, 2019

# Macro Overview

OUTLOOK ASSUMES MACRO ENVIRONMENT STABILIZES IN 2020 AND BEYOND



**2022 ASSUMPTIONS**  
*Current vs. Prior Estimates*

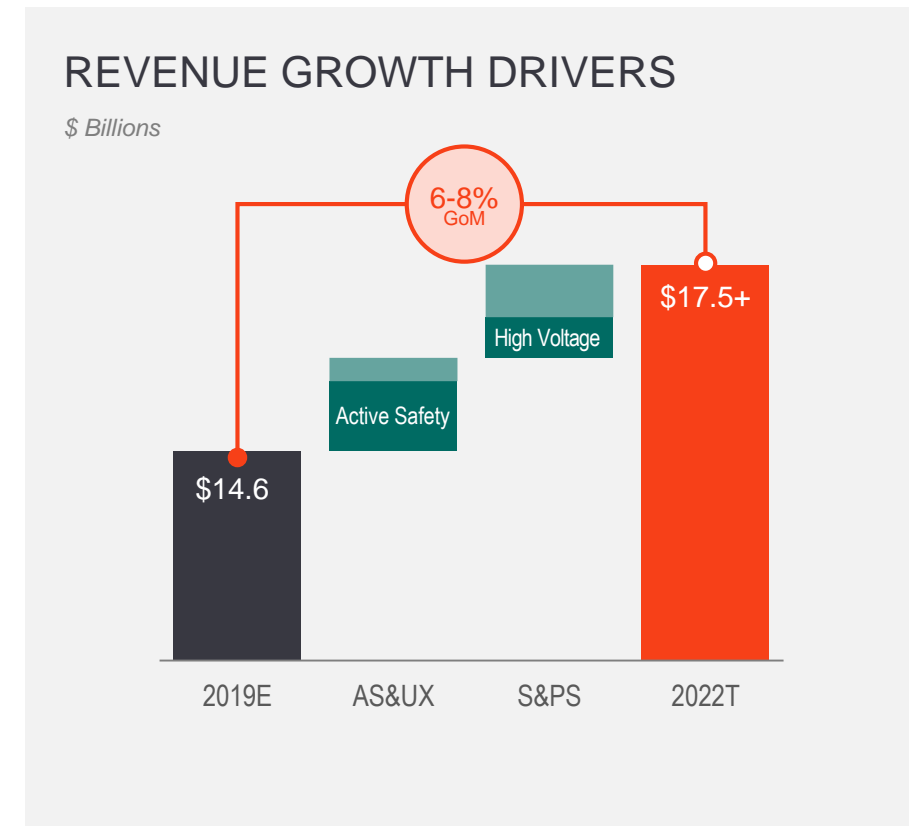
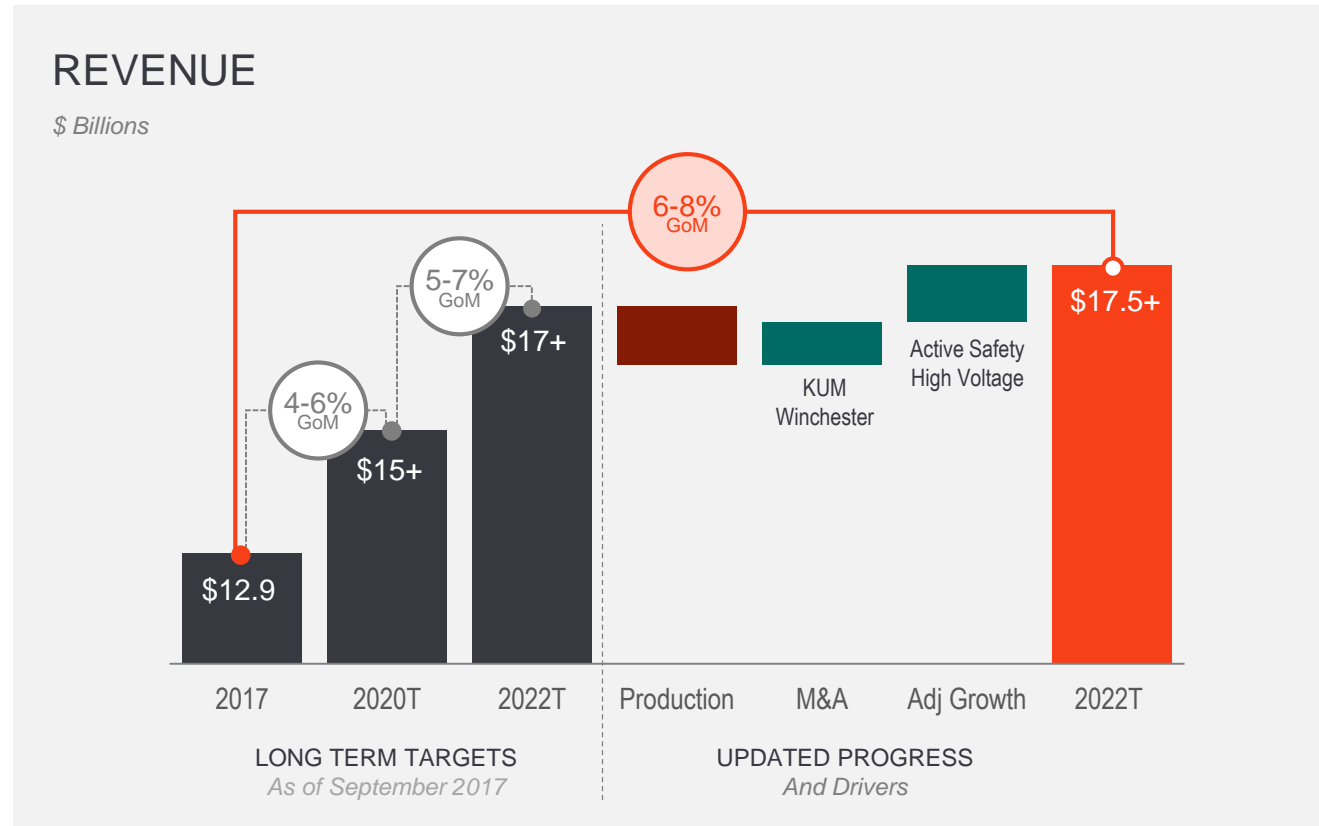
- Production **Down (7%)**
- Adj Revenue **Up ~2%**

1. Aptiv weighted global market growth %  
 2. % of 2018 Revenue; Total Asia Pac 27% of Revenue and South America 2% of Revenue

\* 2019E reflects guidance communicated on May 2, 2019

# 2022 Revenue Update

REVENUE TRACKING ABOVE TARGET DUE TO STRONG SECULAR GROWTH DRIVERS



Note: Revenue growth excludes impact of foreign exchange, commodities and divestures;

GoM - Adjusted Growth over Aptiv weighted market

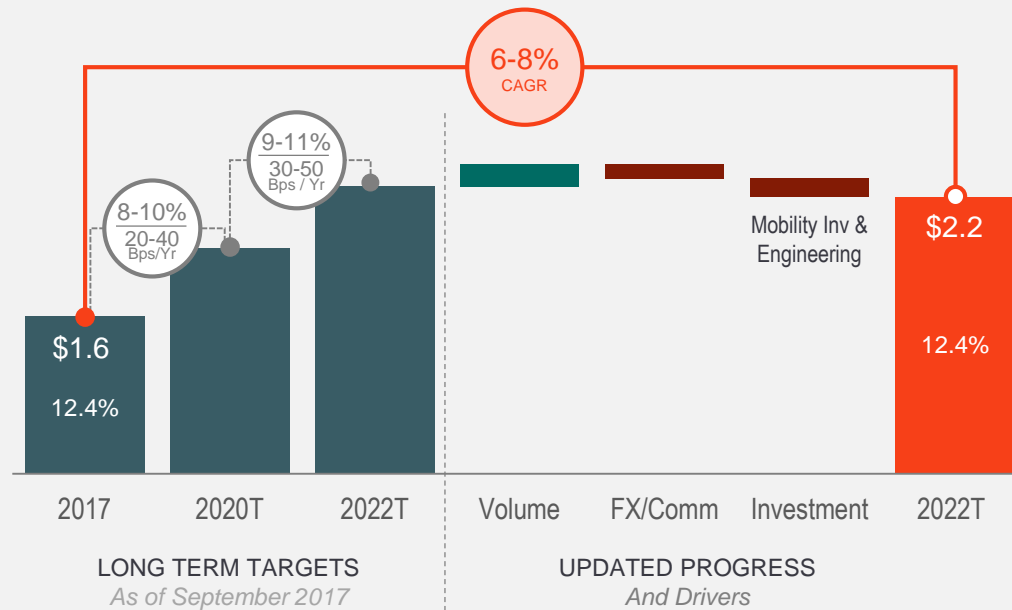
\* 2019E reflects guidance communicated on May 2, 2019

# 2022 Operating Income Update

STRONGER REVENUE GROWTH PARTIALLY OFFSETTING FX/COMM AND INVESTMENT FOR GROWTH

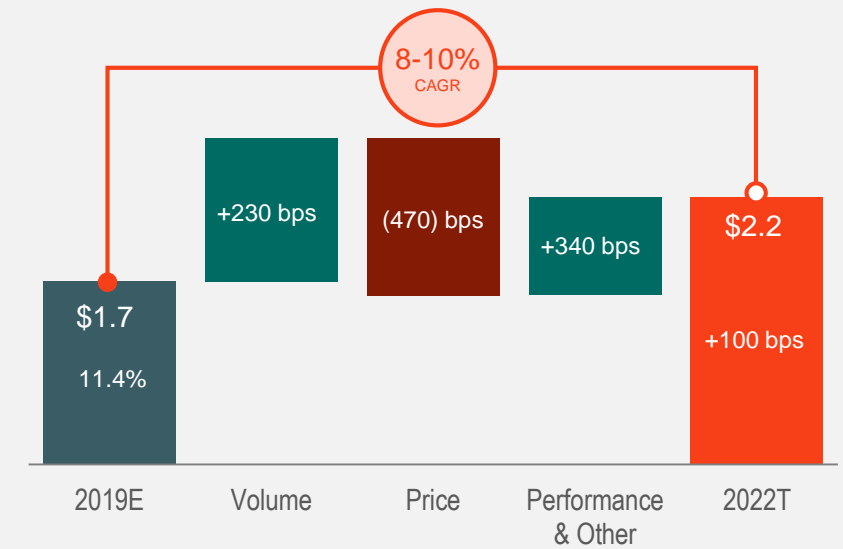
## OPERATING INCOME

Adjusted Operating Income (\$B), Margin %



## OPERATING INCOME DRIVERS

Adjusted Operating Income (\$B), Margin %



Note: Operating income adjusted for restructuring and other special items; see appendix for detail and reconciliation to US GAAP.

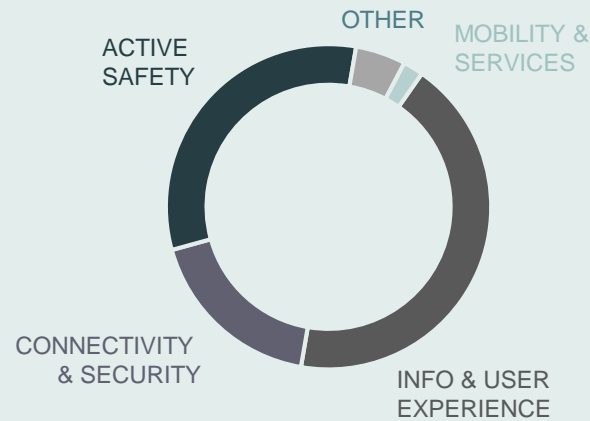
\* 2019E reflects guidance communicated on May 2, 2019

# Advanced Safety & User Experience | Brain

DEEP EXPERTISE IN SOFTWARE AND CENTRALIZED COMPUTING PLATFORMS  
UNLOCKING NEXT GENERATION FUNCTIONALITY

## ADVANCED SAFETY & USER EXPERIENCE

2019E Revenue



## CENTRAL COMPUTE AND SOFTWARE CAPABILITIES ENABLING ADVANCED FUNCTIONALITY



Software & systems integration enabling leadership position in active safety



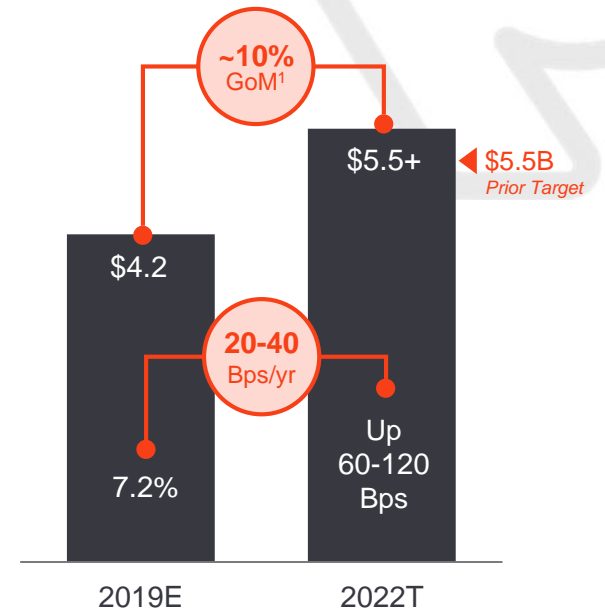
Leader in systems optimization



Deep understanding of functionality safety

## LONG TERM TARGETS

Sales (\$ billions), Op Margin<sup>2</sup>



1. Adjusted Growth over Aptiv weighted market  
2. Adjusted for restructuring and other special items  
\* 2019E reflects guidance communicated on May 2, 2019

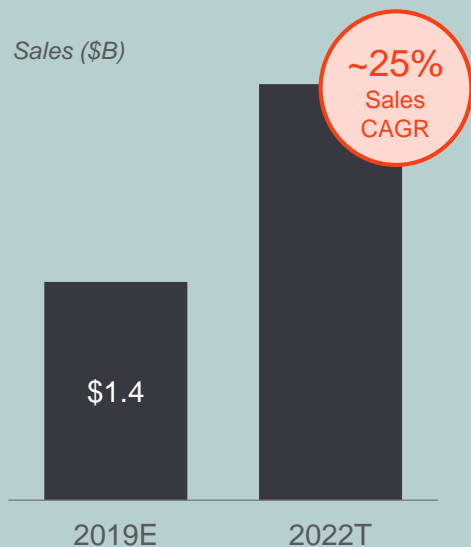
# AS&UX Product Lines

DRIVING PROFITABLE GROWTH THROUGH INDUSTRY-LEADING INNOVATION

## ACTIVE SAFETY

- Software and compute platforms
- Sensing and perception systems

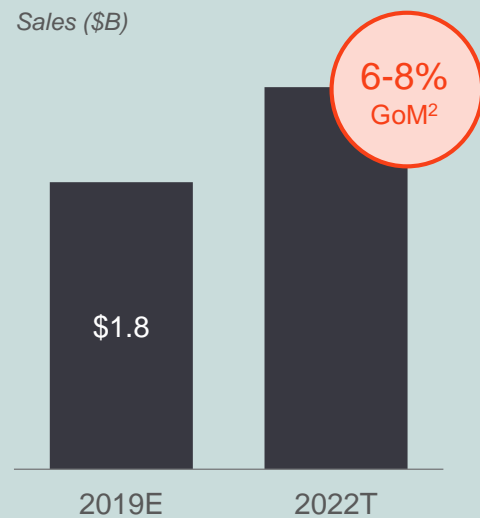
Sales (\$B)



## USER EXPERIENCE

- Cockpit compute platforms
- User interface & in-cabin sensing

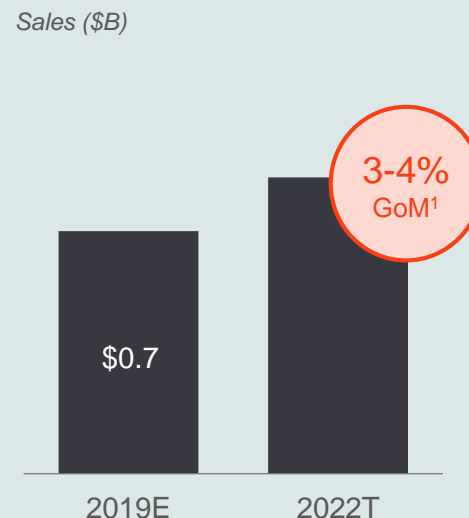
Sales (\$B)



## CONNECTIVITY & SECURITY

- Access, security, comfort and lighting controls
- V2X, vehicle gateways

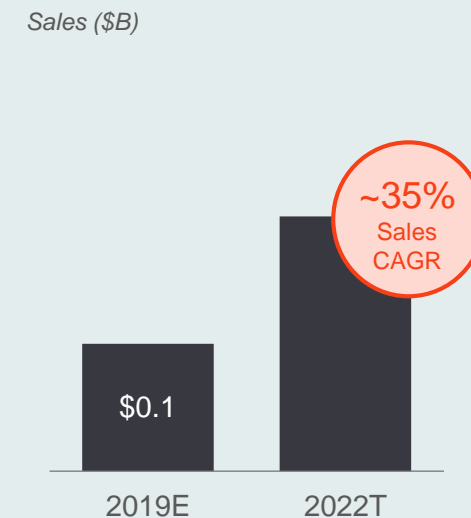
Sales (\$B)



## MOBILITY & SERVICES

- Data acquisition, edge processing
- Data market place and analytics
- OTA updates and cybersecurity

Sales (\$B)



Note: Revenue growth excludes impact of foreign exchange, commodities and divestitures.

1. Adjusted Growth over Aptiv weighted market

2. User Experience adjusted growth over Aptiv weighted market excluding Displays; Including wind down of displays 3-5% GoM

\* 2019E reflects guidance communicated on May 2, 2019

# Signal & Power Solutions | Nervous System

GLOBAL LEADER IN NEXT GENERATION ARCHITECTURES; LEVERAGING EXPERTISE IN HARSH ENVIRONMENT ELECTRONICS TO EXPAND IN ADJACENT MARKETS

## SIGNAL & POWER SOLUTIONS

2019E Revenue

ELECTRICAL DISTRIBUTION SYSTEMS (EDS)

~55%



ADJACENT MARKET EXPOSURE

ENGINEERED COMPONENTS GROUP (ECG)

~45%

## EXPANDING LEADERSHIP POSITION IN AUTOMOTIVE GRADE ARCHITECTURE APPLICATIONS



Leader in increasingly complex systems optimization



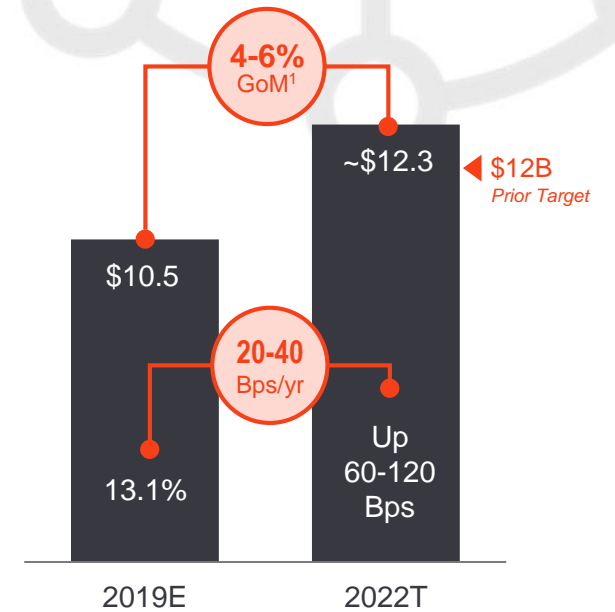
Global scale with industry leading cost structure



Broadest and most relevant portfolio of technologies

## LONG TERM TARGETS

Sales (\$ billions), Op Margin<sup>2</sup>



1. Adjusted Growth over Aptiv weighted market

2. Adjusted for restructuring and other special items

\* 2019E reflects guidance communicated on May 2, 2019

# S&PS Product Lines

GLOBAL LEADER IN COMPLEX SYSTEMS AND ADVANCED TECHNOLOGY SOLUTIONS

## ELEC DISTRIBUTION SYSTEMS

- Power wiring and data cables
- High voltage distribution

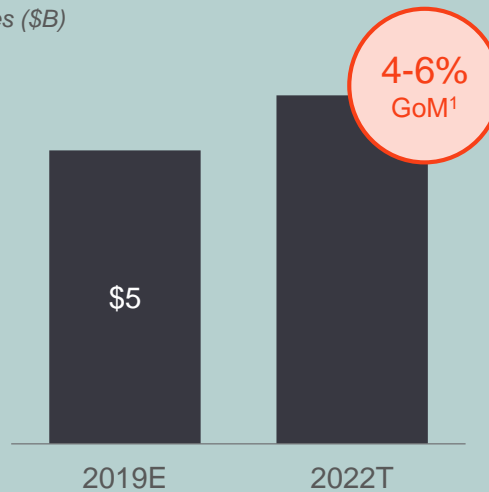
Sales (\$B)



## ENGINEERED COMPONENTS

- Connectors and terminals
- Cable management
- Housing and electrical centers

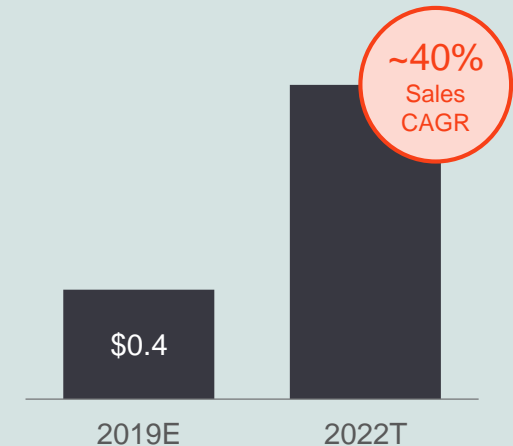
Sales (\$B)



## HIGH VOLTAGE ELECTRIFICATION<sup>2</sup>

- High power/voltage connectors
- High voltage shielded cables

Sales (\$B)



Note: Revenue growth excludes impact of foreign exchange, commodities and divestures.

1. Adjusted Growth over Aptiv weighted market

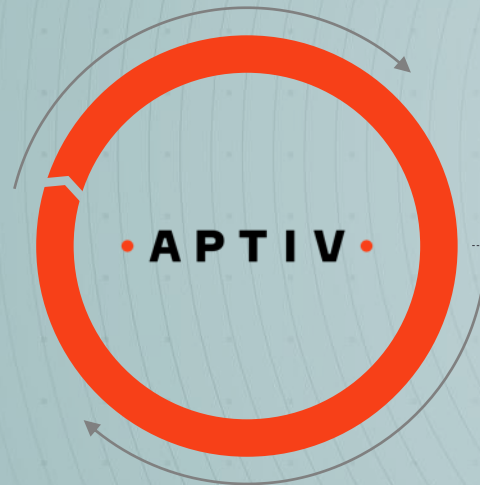
2. Comprised of both electrical distribution systems and engineered components products for electrified vehicles

\* 2019E reflects guidance communicated on May 2, 2019

# Sustainable by Design

FINANCIAL FRAMEWORK ALIGNED WITH STRATEGY AND VISION

MORE SUSTAINABLE BUSINESS

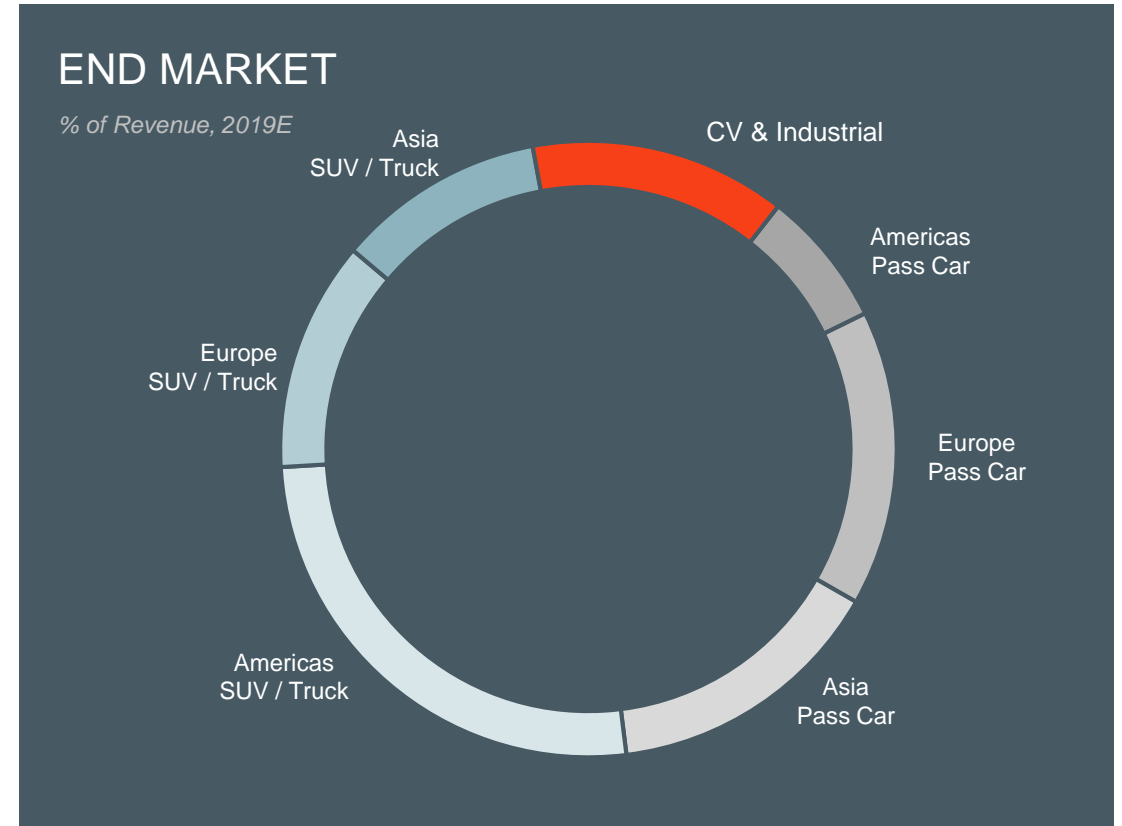
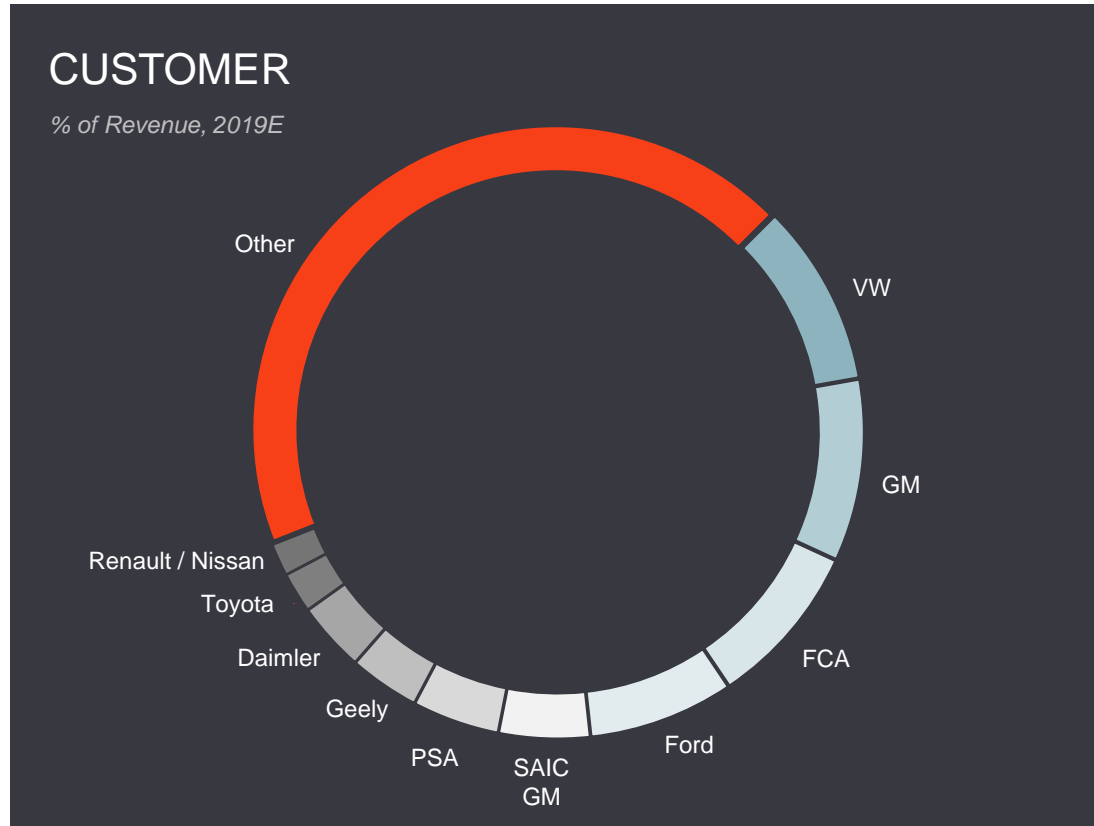


ABILITY TO OUTPERFORM  
IN ANY ENVIRONMENT

- **REVENUE DIVERSIFICATION**  
Disciplined revenue growth with balanced customer, region and end market mix
- **INDUSTRY LEADING GROWTH PORTFOLIO**  
Robust new business wins validating our relevant portfolio of advanced technologies
- **IMPROVED COST STRUCTURE**  
Relentless focus on reducing cost and improving our flexible business model
- **INVESTMENTS FOR GROWTH**  
Reinvestment in the business improving competitive positioning
- **BALANCED CAPITAL DEPLOYMENT**  
Increased cash flow and balanced capital deployment drives upside

# Revenue Diversification

DISCIPLINED REVENUE GROWTH CREATING CUSTOMER, END MARKET AND REGION DIVERSIFICATION

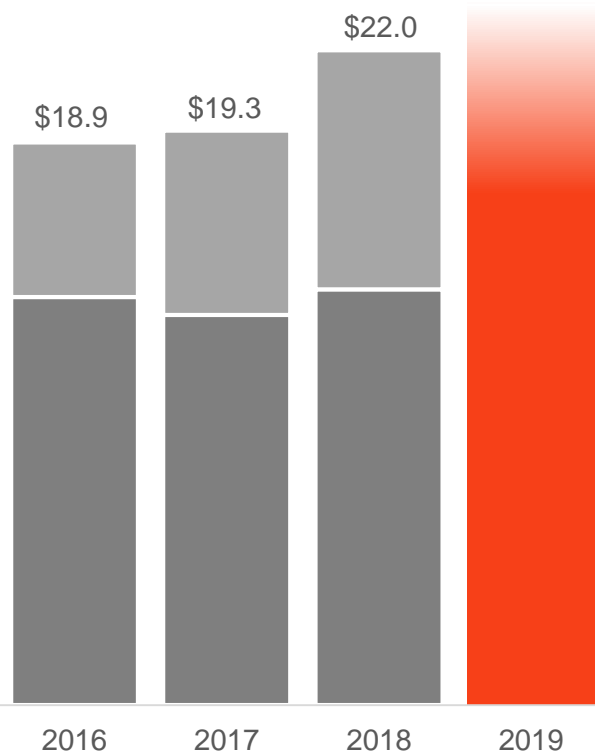


# Industry Leading Growth Portfolio

NEW BUSINESS AWARDS IN ACTIVE SAFETY AND ELECTRIFICATION EXCEED PRIOR EXPECTATIONS

## BOOKINGS

Lifetime gross program revenues, \$ billions



ADVANCED SAFETY & USER EXPERIENCE

**\$21.0<sub>B</sub>**  
SINCE 2016<sup>1</sup>

ACTIVE SAFETY

**\$9.6<sub>B</sub>**  
SINCE 2016<sup>1</sup>

USER EXPERIENCE

**\$7.5<sub>B</sub>**  
SINCE 2016<sup>1</sup>

SIGNAL & POWER SOLUTIONS

**\$43.5<sub>B</sub>**  
SINCE 2016<sup>1</sup>

ENGINEERED COMPONENTS

**\$17.1<sub>B</sub>**  
SINCE 2016<sup>1</sup>

HIGH VOLTAGE ELECTRIFICATION

**\$4.0<sub>B</sub>**  
SINCE 2016<sup>1</sup>

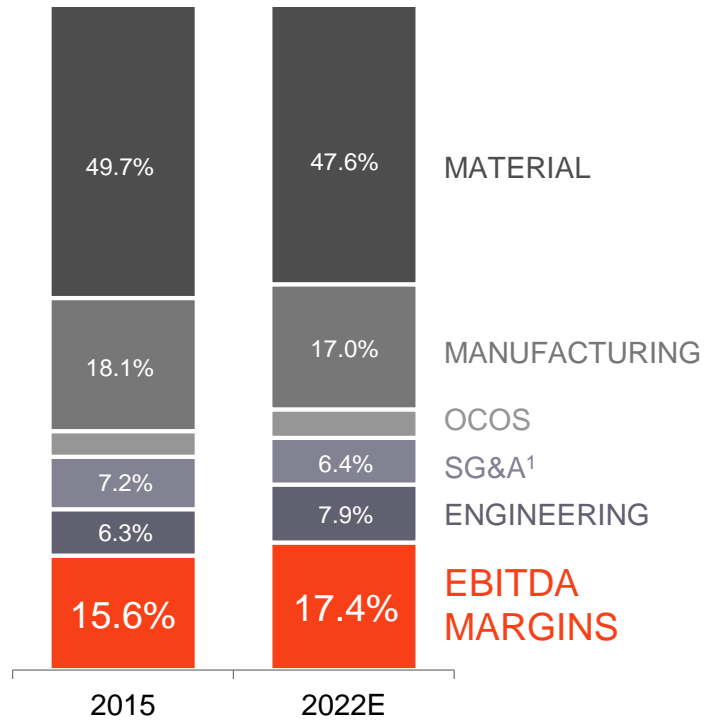
1. Cumulative value of bookings

# Improving Cost Structure

SUSTAINING A FLEXIBLE BUSINESS MODEL AND GROWING MARGIN WHILE FUNDING INVESTMENTS FOR FUTURE GROWTH

## INCOME DRIVERS

% of Sales



- COST STRUCTURE SUSTAINABILITY  
Flexible and scalable cost structure
- OVERHEAD REDUCTION  
Back office consolidation and incremental cost reductions
- MANUFACTURING & SUPPLY CHAIN OPTIMIZATION  
Footprint rationalization and mitigation actions
- INVESTMENTS TO SUPPORT GROWTH  
Operations funding investments for growth which drive continued outperformance

FLEXIBLE AND SUSTAINABLE BUSINESS MODEL...



Note: Excludes restructuring and other special items  
1. SG&A excludes D&A

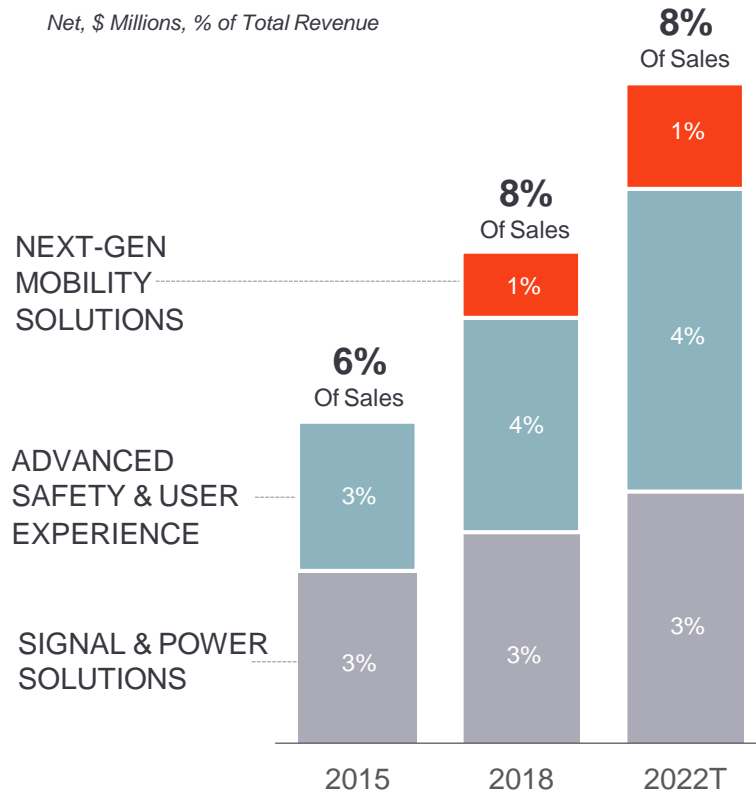
# Investments for Growth

INVESTING IN THE FUTURE TO DELIVER NEXT GENERATION TECHNOLOGY



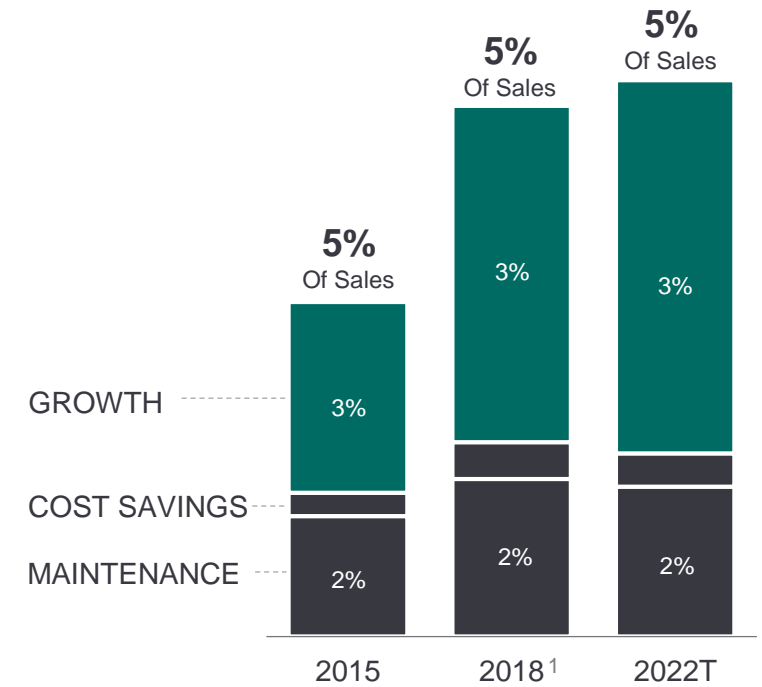
## ENGINEERING INVESTMENTS

Net, \$ Millions, % of Total Revenue



## CAPITAL EXPENDITURES

\$ Millions, % of Total Revenue



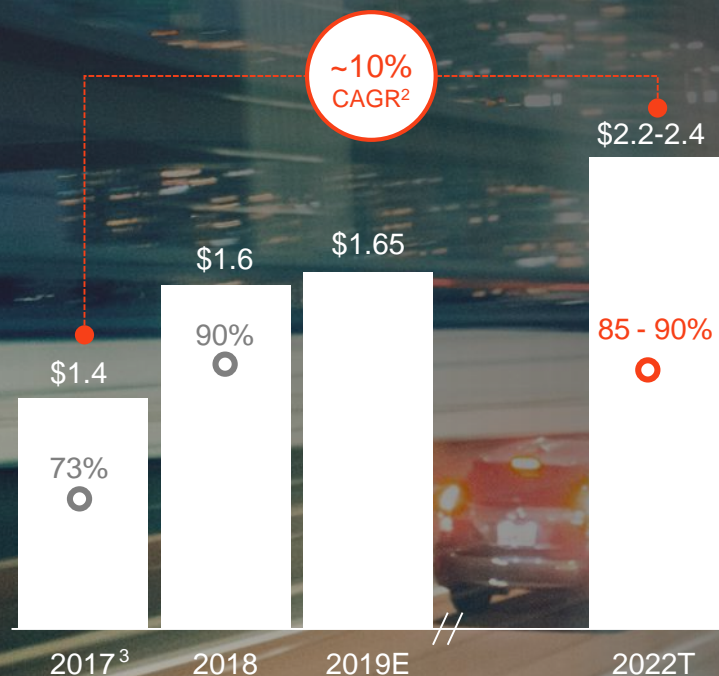
1. Excludes spin-off related capital expenditures of \$57M

# Balanced Capital Deployment

FOCUSED ON VALUE ENHANCING ORGANIC AND INORGANIC INVESTMENT OPPORTUNITIES

## OPERATING CASH FLOW

\$ Billions, Free Cash Flow Conversion<sup>1</sup>



Long Term Capital Allocation Priorities<sup>4</sup>

M&A AND SHARE REPURCHASES  
45%-55%

CAPITAL EXPENDITURES  
35%-40%

DIVIDENDS  
10%-15%

### DRIVING GROWTH

- Organic reinvestment to support active safety, infotainment and engineered components growth
- Adding accretive bolt-on's and technology enablers; M&A pipeline remains full

### RETURNING CASH TO SHAREHOLDERS

- Opportunistic share buybacks take advantage of market dislocations
- Maintaining a competitive dividend

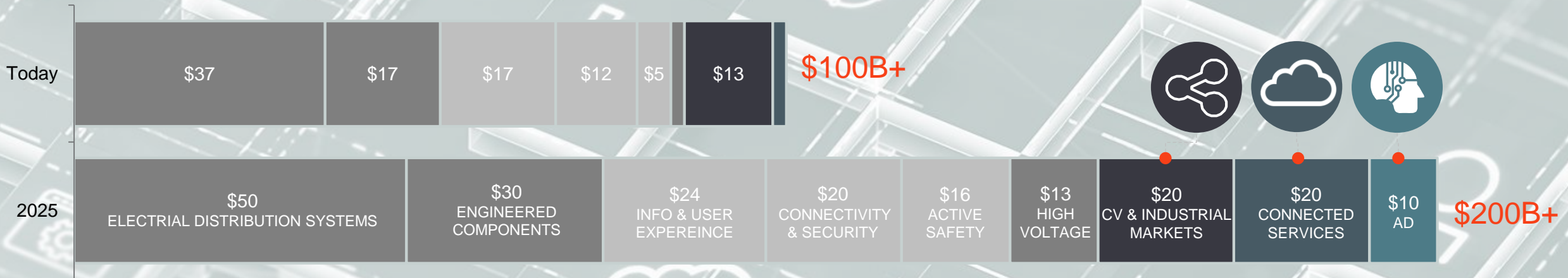
### MAINTAINING INVESTMENT GRADE RATING

1. FCF Conversion: (Operating Cash Flow – CAPEX + Spin Related Cash Payments) / Net Income; Spin Related Cash Payments of \$38M in 2017 and \$167M in 2018  
 2. CAGR represents growth of operational cash flow only  
 3. 2017 excludes the \$310M payment for unsecured creditors settlement in 2017  
 4. Net of cash required to support business operations  
 \* 2019E reflects guidance communicated on May 2, 2019

# Expanding Addressable Markets

LEVERAGING OUR STRENGTHS TO UNLOCK INCREMENTAL ADDRESSABLE MARKET OPPORTUNITIES BY 2025

Total Addressable Market (\$ Billions)



GAINING SHARE  
IN EXISTING MARKETS

EXPANDING INTO NEW  
ADDRESSABLE MARKETS

# Diversification Strategy

EXPANSION IN END MARKETS NOT TIED TO LIGHT VEHICLE PRODUCTION

## PATH TO 25% BY 2025

### ACCRETIVE BOLT-ONS

Winchester provides a platform for further non-auto expansion, leveraging a strong management team and channel access

### NEAR-FIELD END MARKETS

Organically expand existing technologies to logical end markets, such as Commercial Vehicles, Mil/Aero, Manufacturing, etc.

### MOBILITY & SERVICES

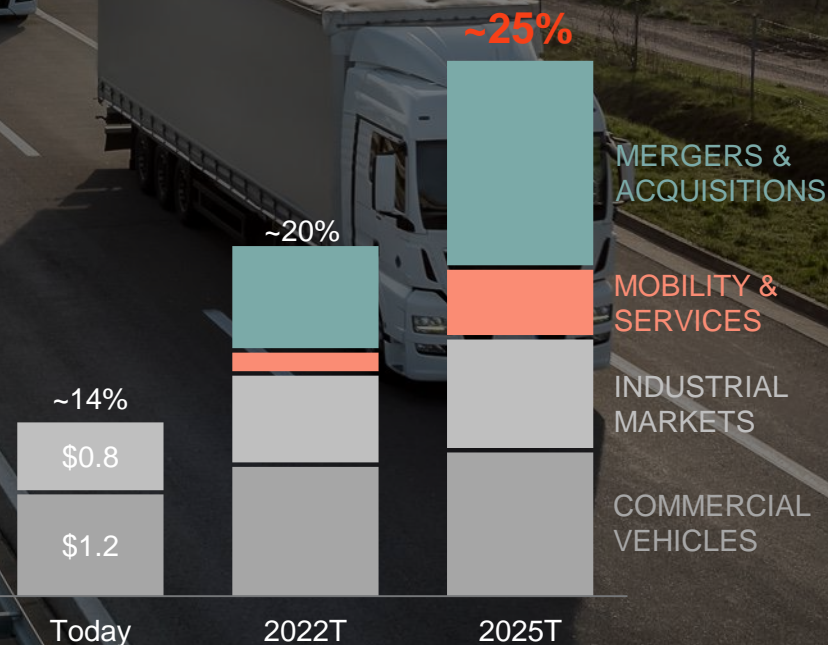
Recurring software revenue for AMoD providers; \$500M by 2025

Grow post sale monetization opportunities from Connected Services and Automated Driving

\* 2019E reflects guidance communicated on May 2, 2019

## END MARKET REVENUE

Revenue (\$ Billions), % of Total Sales



# Expanding Industrial Markets

LEVERAGING OUR AUTOMOTIVE GRADE CORE CAPABILITIES IN INDUSTRIAL AND CV END MARKETS

## SAME MEGA TRENDS



### SAFETY

Increasing demand for safety



### ELECTRIFICATION

Higher levels of electrical content



### CONNECTIVITY

Increasingly interconnected systems

## SAME DESIGN COMPETENCIES



### MISSION CRITICAL

Required solutions with high cost of failure



### HARSH ENVIRONMENTS

"Automotive grade" performance competencies

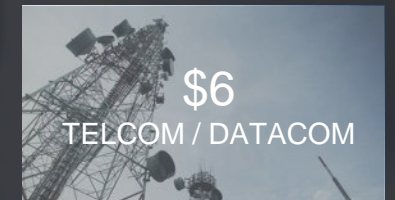


### AUTOMATION

Demand for productivity and data analytics

## DIFFERENT PATHS TO MARKET

Total Addressable Connectors Market (\$Billions)



Source: Aptiv Internal Estimates; Bishop and Associates, RBC Capital Markets estimates

# Aptiv 2025 Vision

2025 VISION THE LOGICAL EXTENSION OF OUR STRATEGY, COMPETITIVE POSITION AND END MARKET TRENDS; MAKING IT REAL THROUGH THE EXECUTION OF OUR TEAMS

## FUTURE PLATFORMS EMERGE

Investments result in accretive solutions

## CURRENT PLATFORMS SCALE

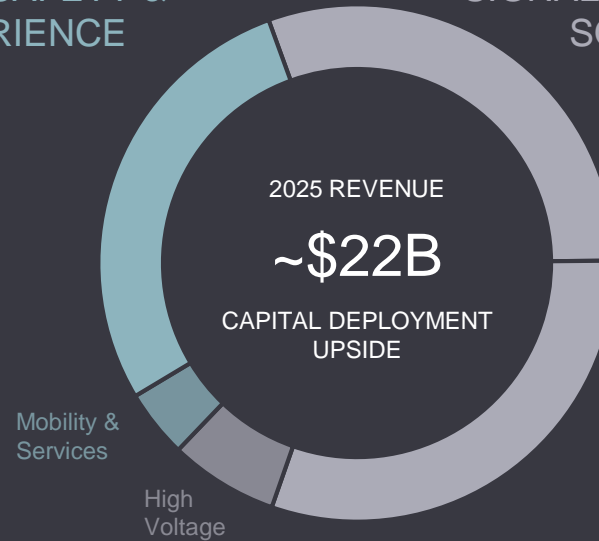
Driving scale in fast growing product lines

## FOUNDATION OF EXECUTION

Continued focus on flexible and efficient cost structure

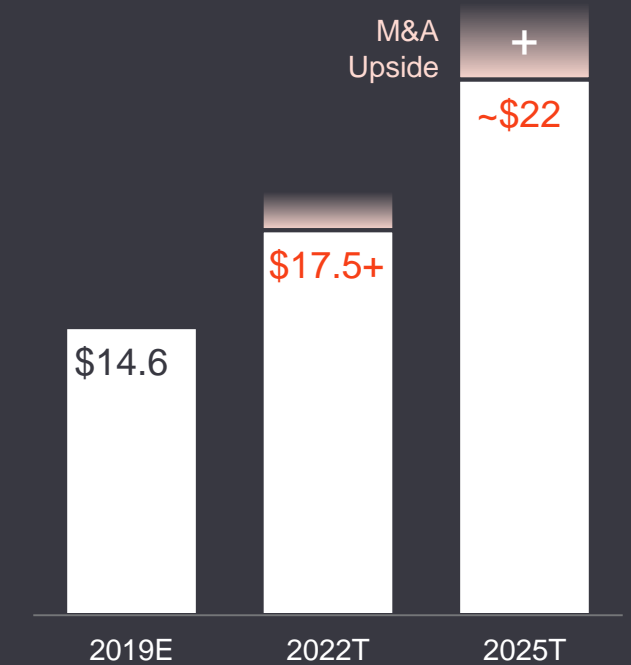
ADVANCED SAFETY &  
USER EXPERIENCE

SIGNAL & POWER  
SOLUTIONS



## APTIV TARGETS

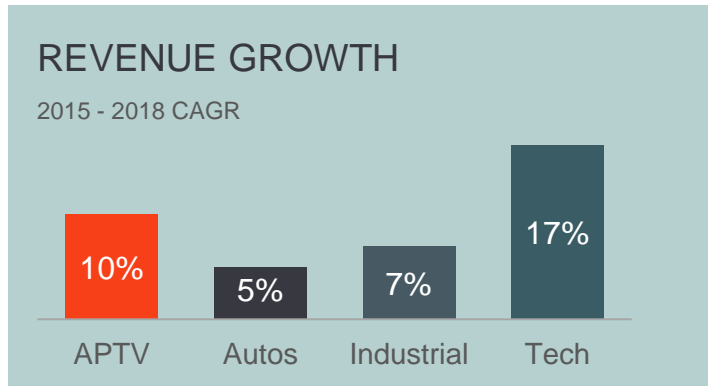
Sales (\$ billions)



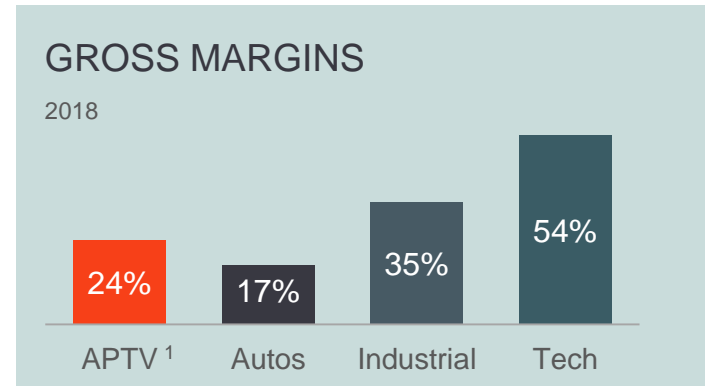
\* 2019E reflects guidance communicated on May 2, 2019

# Aptiv Investment Thesis

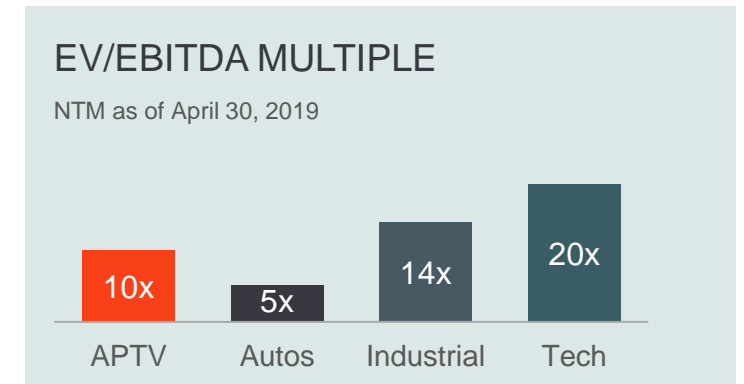
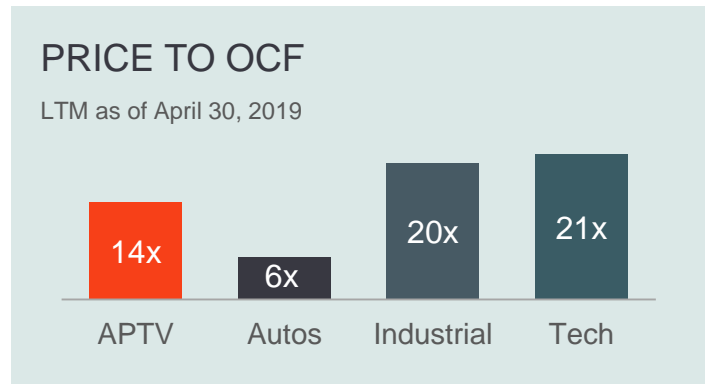
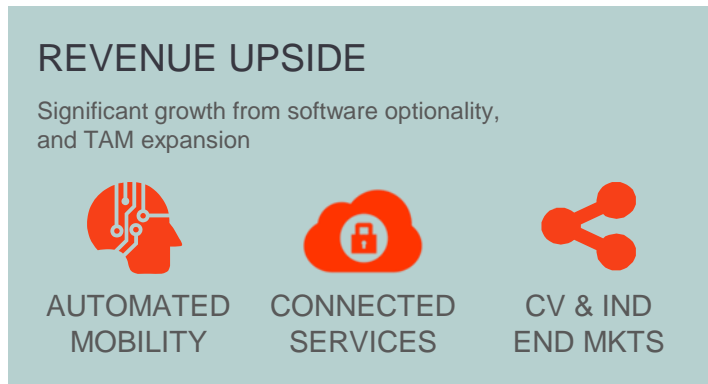
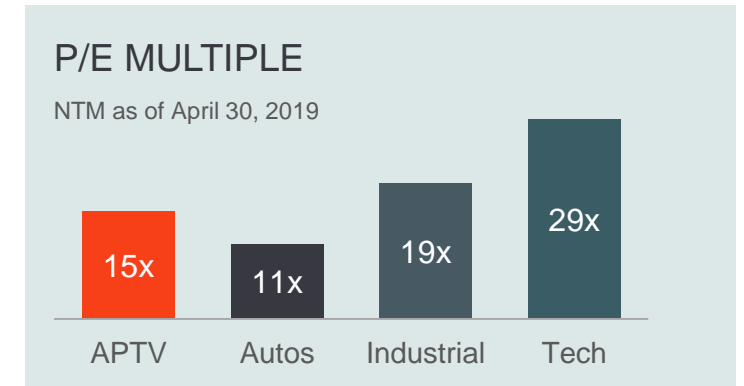
## GROWING FASTER, WITH SIGNIFICANT UPSIDE



## EQUIVALENT MARGINS AND CASH FLOW



## BUT A LOWER MULTIPLE BASED ON LEGACY PERCEPTIONS



1. Excludes copper pass-through, mobility investments and advanced engineering

- Autos: CON, DENSO, LEA, MGA, VALEO, VC
- Industrial: TEL, APH, ST, HON, GE, DHR
- Tech: NVDA, AMD, TXN, MSFT, LFUS

# Summary

APTIV AT THE INTERSECTION OF KEY SECULAR TRENDS,  
WHILE STRUCTURALLY IMPROVING THROUGH CYCLE RESILIENCY

## PORTFOLIO PERFECTLY POSITIONED

- Well positioned to Auto 2.0 mega-trends, Safe, Green, and Connected, increasing addressable content
- Increasing scale and diversification outside traditional auto, increasing addressable market

## RELENTLESS FOCUS ON EXECUTION

- Robust business model delivering improved through-cycle performance
- Culture of continuous improvement enhancing flexibility and cost optimization

## BUILDING A MORE SUSTAINABLE BUSINESS

- Strengthening business foundation while seeding next wave of growth
- Disciplined and accretive capital deployment provides upside



**Kevin P. Clark**  
President and Chief Executive Officer

# SUMMARY

• **APTIV** •

# Ownership Mindset

STRATEGY, PORTFOLIO AND RIGOROUS FOCUS ON EXECUTION MAKE APTIV A MORE SUSTAINABLE BUSINESS, AND CREATES EXCEPTIONAL VALUE FOR INVESTORS



SUSTAINABLE  
BY DESIGN

- **STRATEGY** of accelerating growth in current and future platforms, while optimizing global execution capabilities drives increasing value for stakeholders
- **PORTFOLIO** of full system solutions aligned to the safe, green and connected megatrends, provide a tailwind for content growth
- **CULTURE** of execution and continuous improvement around our people, processes and products delivers performance throughout the cycle



• **A P T I V** •

# Non-US GAAP Financial Metrics

(\$ millions)	2018	2017	2016	2015
Net income attributable to Aptiv	1,067	1,355	1,257	1,450
Interest expense	141	140	155	124
Other (income) expense, net	(2)	21	384	114
Income tax expense	250	223	167	161
Equity income, net of tax	(23)	(31)	(35)	(16)
Income from discontinued operations, net of tax	-	(365)	(458)	(683)
Net income attributable to noncontrolling interest	40	73	69	85
<b>Operating income</b>	<b>1,473</b>	<b>1,416</b>	<b>1,539</b>	<b>1,235</b>
Restructuring	109	129	167	65
Other acquisition and portfolio project costs	78	28	57	45
Asset impairments	34	9	1	7
(Gain) loss on business divestitures, net	-	-	(141)	8
Deferred compensation related to nuTonomy acquisition	57	12	-	-
<b>Adjusted operating income</b>	<b>1,751</b>	<b>1,594</b>	<b>1,623</b>	<b>1,360</b>

# Non-US GAAP Financial Metrics

(\$ millions)	2018	2017	2016	2015
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Interest expense	141	140	155	124
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<b>Operating income</b>	<b>1,473</b>	<b>1,416</b>	<b>1,539</b>	<b>1,235</b>
Depreciation and amortization	676	546	489	344
<b>EBITDA</b>	<b>2,149</b>	<b>1,962</b>	<b>2,028</b>	<b>1,579</b>
Restructuring	109	129	167	65
Other acquisition and portfolio project costs	78	28	57	45
(Gain) loss on business divestitures, net	-	-	(141)	8
Deferred compensation related to nuTonomy acquisition	57	12	-	-
<b>Adjusted EBITDA</b>	<b>2,393</b>	<b>2,131</b>	<b>2,111</b>	<b>1,697</b>

# Non-US GAAP Financial Metrics

(\$ millions, except per share amounts)	2018	2017	2016	2015
Net income attributable to Aptiv	1,067	1,355	1,257	1,450
Income from discontinued operations attributable to Aptiv, net of tax	-	(334)	(423)	(637)
<b>Income from continuing operations attributable to Aptiv</b>	<b>1,067</b>	<b>1,021</b>	<b>834</b>	<b>813</b>
Adjusting items:				
Restructuring	109	129	167	65
Other acquisition and portfolio project costs	78	28	57	45
Asset impairments	34	9	1	7
(Gain) loss on business divestitures, net	-	-	(141)	8
Deferred compensation related to nuTonomy acquisition	57	12	-	-
Debt extinguishment costs	-	-	73	58
Reserve for Unsecured Creditors litigation	-	10	300	-
Transaction and related costs associated with acquisitions	14	8	-	42
Contingent consideration liability fair value adjustments	23	(14)	3	(7)
Tax impact of U.S. tax reform enactment	29	55	-	-
Tax impact of adjusting items (a)	(15)	(15)	(70)	(21)
<b>Adjusted net income attributable to Aptiv</b>	<b>1,396</b>	<b>1,243</b>	<b>1,224</b>	<b>1,010</b>
Weighted average number of diluted shares outstanding	265.22	268.03	273.70	286.64
Diluted net income per share from continuing operations attributable to Aptiv	4.02	3.81	3.05	2.84
<b>Adjusted net income per share</b>	<b>5.26</b>	<b>4.64</b>	<b>4.47</b>	<b>3.52</b>

(a) Represents the income tax impacts of the adjustments made for restructuring and other special items by calculating the income tax impact of these items using the appropriate tax rate for the jurisdiction where the charges were incurred, and the impact of the intra-entity transfer of intellectual property of approximately \$33 million during the year ended December 31, 2018.

# Financial Guidance Metrics

(\$ millions)	2019 <sup>1</sup>
Net income attributable to Aptiv	1,128
Interest expense	156
Other income, net	(32)
Income tax expense	195
Equity income, net of tax	(21)
Net income attributable to noncontrolling interest	40
<b>Operating income</b>	<b>1,466</b>
Restructuring	126
Other acquisition and portfolio project costs	35
Deferred compensation related to nuTonomy acquisition	43
<b>Adjusted operating income</b>	<b>1,670</b>
<i>Less: Impact of tariffs</i>	<i>50</i>
<i>Pro forma - Adjusted operating income</i>	<i>1,720</i>

<sup>1</sup> Prepared at the estimated mid-point of the Company's financial guidance range.

# Financial Guidance Metrics

(\$ millions)	2019 <sup>1</sup>
Net income attributable to Aptiv	1,128
Interest expense	156
Other income, net	(32)
Income tax expense	195
Equity income, net of tax	(21)
Net income attributable to noncontrolling interest	40
<b>Operating income</b>	<b>1,466</b>
Depreciation and amortization	725
<b>EBITDA</b>	<b>2,191</b>
Restructuring	126
Other acquisition and portfolio project costs	35
Deferred compensation related to nuTonomy acquisition	43
<b>Adjusted EBITDA</b>	<b>2,395</b>
<i>Less: Impact of tariffs</i>	<i>50</i>
<i>Pro forma - Adjusted EBITDA</i>	<i>2,445</i>

<sup>1</sup> Prepared at the estimated mid-point of the Company's financial guidance range.

# Financial Guidance Metrics

(\$ millions, except per share amounts)	2019 <sup>1</sup>
Net income attributable to Aptiv	1,128
Restructuring	126
Other acquisition and portfolio project costs	35
Deferred compensation related to nuTonomy acquisition	43
Debt extinguishment costs	6
Gain on changes in fair value of equity investments	(19)
Tax impact of adjusting items (a)	(29)
<b>Adjusted net income attributable to Aptiv</b>	<b>1,290</b>
Weighted average number of diluted shares outstanding	258.06
Diluted net income per share attributable to Aptiv	4.37
<b>Adjusted net income per share</b>	<b>5.00</b>
<i>Less: Impact of tariffs</i>	<i>0.17</i>
<i>Pro forma - Adjusted net income per share</i>	<i>5.17</i>

<sup>1</sup> Prepared at the estimated mid-point of the Company's financial guidance range.

(a) Represents the income tax impacts of the adjustments made for restructuring and other special items by calculating the income tax impact of these items using the appropriate tax rate for the jurisdiction where charges were incurred.

• **A P T I V** •