
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D. C. 20549**

FORM 8-K

**CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934**

Date of Report (Date of earliest event reported): March 11, 2019

Dana Incorporated
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction
of incorporation)

1-1063
(Commission
File Number)

26-1531856
(IRS Employer
Identification Number)

**3939 Technology Drive,
Maumee, Ohio 43537**
(Address of principal executive offices) (Zip Code)

(419) 887-3000
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

ITEM 7.01 Regulation FD Disclosure.

Dana Incorporated (“Dana”) previously announced it will host an Investor Day in New York on March 11, 2019. The event will feature presentations from Dana’s President and Chief Executive Officer James Kamsickas, Executive Vice President and Chief Financial Officer Jonathan Collins, and Senior Vice President and Chief Technology Officer Christophe Dominiak on the business objectives and strategic direction of Dana from 9 a.m. EDT to noon.

Information on accessing a live webcast will be posted to Dana’s Investor website (www.dana.com/investors) prior to the event. In addition, the audio replay will be available the next business day via the Dana Investor website. A copy of the presentation, which will be discussed at Dana’s Investor Day, is attached hereto as Exhibit 99.1.

The information in this report is being “furnished” and shall not be deemed “filed” for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended, is not subject to the liabilities of that section and is not deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except as shall be expressly set forth by specific reference in such a filing.

Item 9.01. Financial Statements and Exhibits.

(d) Exhibits. The following items are furnished with this report.

<u>Exhibit No.</u>	<u>Description</u>
99.1	Investor Day Presentation Slides

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Date: March 11, 2019

DANA INCORPORATED

By: /s/ Douglas H. Liedberg

Name: Douglas H. Liedberg

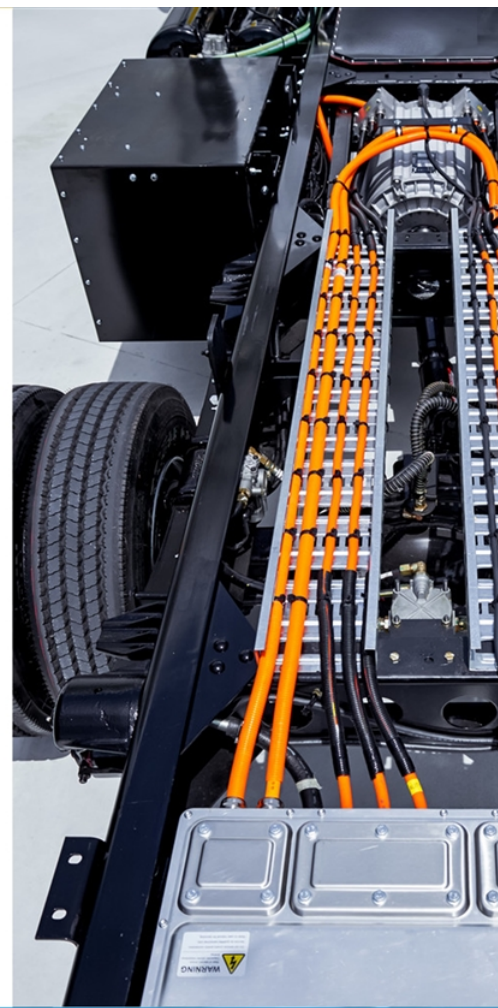
Title: Senior Vice President, General Counsel and Secretary



Investor Day

March 11, 2019

People Finding A Better Way[®]



Safe Harbor Statement

Certain statements and projections contained in this presentation are, by their forward-looking nature, within the meaning of the Private Securities Litigation Reform Act of 1995, forward-looking statements. These forward-looking statements are based on our current expectations, estimates, forecasts and projections about our industry and business, management's beliefs, and certain assumptions made by us, all of which are subject to change. Forward-looking statements can often be identified by words such as "anticipates," "expects," "intends," "plans," "predicts," "believes," "seeks," "estimates," "may," "will," "should," "would," "could," "potential," "continue," "ongoing," similar expressions, and variations or negative variations of these words. These forward-looking statements are not guarantees of future results and are subject to risks, uncertainties and assumptions that could cause our actual results to differ materially and adversely from those expressed in any forward-looking statements contained in our Annual Report on Form 10-K, subsequent Quarterly Reports on Form 10-Q, and our Current Reports on Form 8-K, and other Securities and Exchange Commission filings. We discuss important risk factors that could affect our business, results of operations and financial condition. The forward-looking statements in this presentation speak as of the date of this statement. Dana does not undertake any obligation to revise or update publicly any forward-looking statement for any reason.

Agenda

9:00 – 9:15 Business Overview

9:15 – 11:00 Enterprise Strategy

9:15 – 10:15 | Overview
Leverage The Core
Drive Customer Centricity
Expand Global Markets
Deliver Innovative Solutions

15 Minute Break

10:30 – 11:00 | Electrification: An Expert Perspective
Lead Electric Propulsion

11:00 – 11:30 Financial Summary

11:30 – 12:00 Questions & Answers



Business Overview

People Finding A Better Way®



Dana Snapshot

Founded in **1904**



2018 sales:
\$8.1 billion

13% increase
from prior year



~36,000
people



25
technical
centers



145 major facilities

33 countries

6 continents

~15,000 customers in

141 countries



Global Footprint



Mission, Vision, Values

Our Mission

Our talented people power a customer-centric organization that is continuously improving the performance and efficiency of vehicles and machines around the globe. We will consistently deliver superior products and services to our customers and will generate exceptional value for our shareholders.

Our Vision

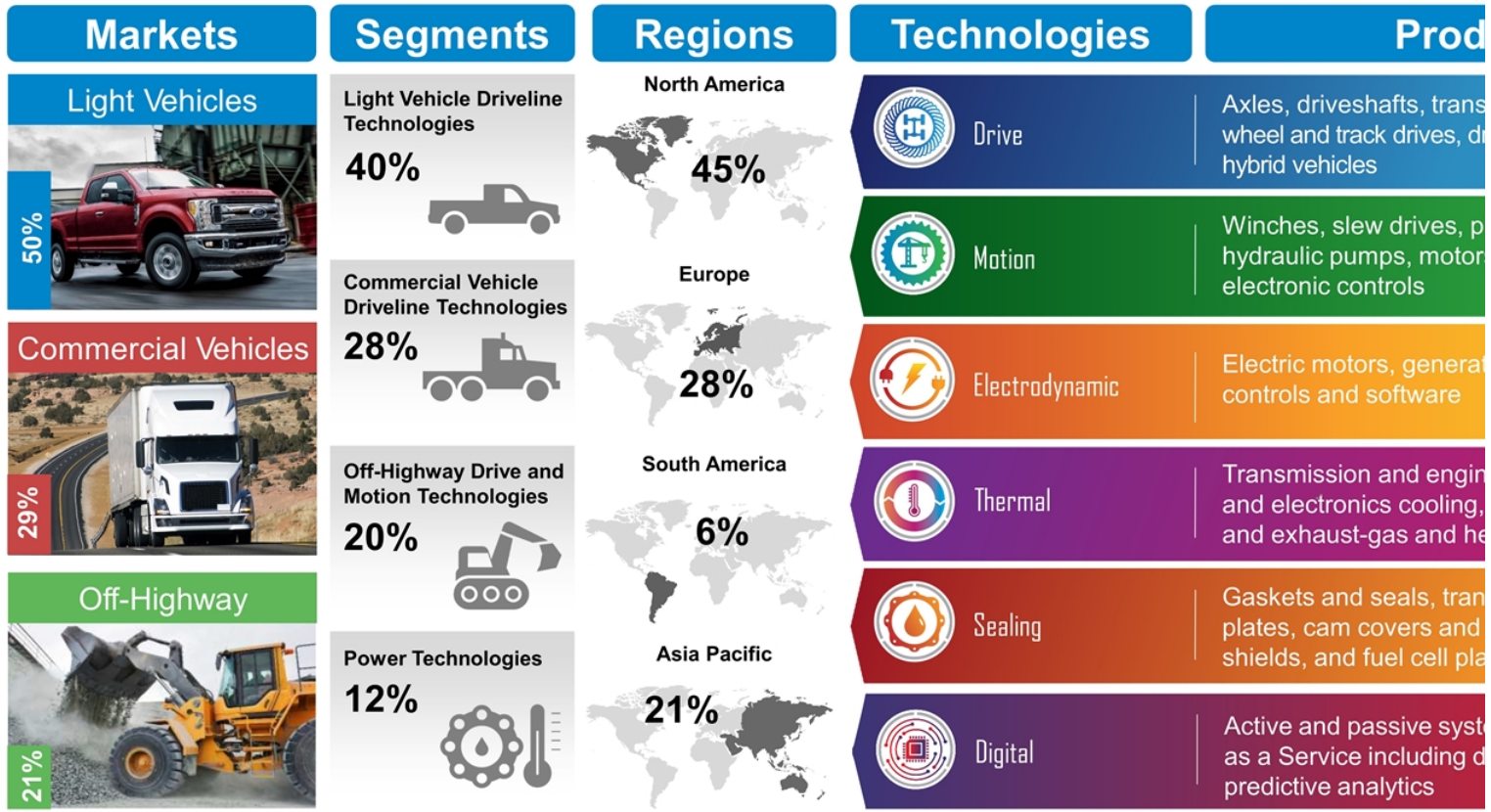
To be the global technology leader in efficient power conveyance and energy-management solutions that enable our customers to achieve their sustainability objectives.

Our Values

- Honesty and Integrity
- Good Corporate Citizenship
- Open Communication
- Continuous Improvement

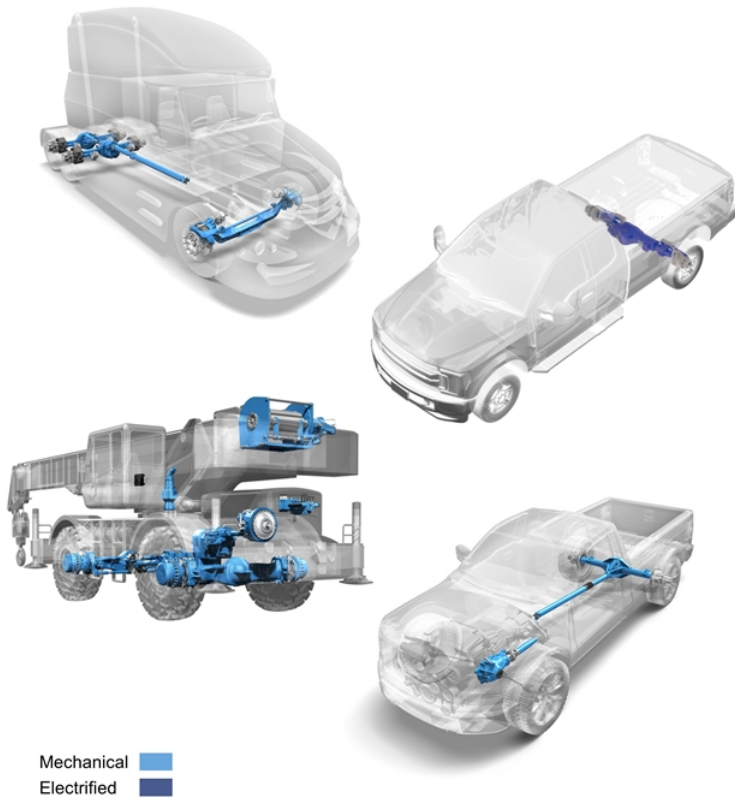


Business Overview



Sales as of Dec. 31, 2018, including 100% of DDAC.

Product Overview



Axles

- Drive Axles
- Steer Axles
- AWD System
- Disconnect System
- Planetary Hub Drives

Driveshaft

- Aluminum Driveshafts
- Steel Driveshafts
- Industrial Driveshafts
- Universal Joints
- Constant Velocity Joints

Motion

- Hydraulics & Controls
- Industrial Gearboxes
- Winches
- Slew Drives

Trans

- Sealing & Co
- Active Warm
- Transmission
 - Hydrostat
 - Hydrodyn
 - Hydromec
 - High Perfo

Electro

- Electric Moto
- Power Electr
- Controls & S
- e-Gearboxes
- Battery Cooli
- Electronics C
- Electric Axles
- Electric Drive

Sustainability Through Electrification

Over **95,000** tonnes of CO₂ saved since 2014 with Dana products

~585

million customer kilometers
driven with TM4 motors



~12,000

vehicles on the
roads today



645,000+

tonnes of CO₂
diverted from cities



THE POWER OF
THE POWER



Dana Electric



Employee Engagement

TOP
WORK
PLACES
2019



Great
Place
To
Work®

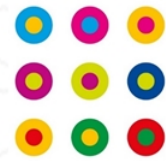
Best W

ASIA



PRÊMIO
MELHORES EMPRESAS
PARA TRABALHADORES
COM DEFICIÊNCIA - 2018

People Finding A Better Way®



DEUTSCHE
DIVERSITY
TAG 2018
charta der vielfa



Oerlikon Drive Systems Acquisition



*Enhances Propulsion
Technology Portfolio*



*Increases Asian
Market Capabilities*

GRAZIANO®

Transmission Systems



*Extends Off-Highway
Market Presence*

FAIRFIELD®

Custom Gears and Drives



*Delivers Significant
Long-Term Value*



Enterprise Strategy

People Finding A Better Way®



Exceeding Original 2019 Targets

sales
+\$2.4
billion

↑ 35%

adj. EBITDA
+\$275
million

↑ 32%

diluted ad
earnings

+\$0

↑

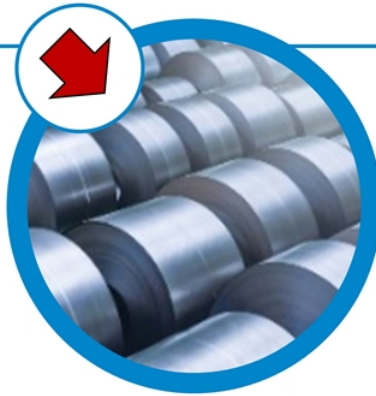
On track to surpass top and bottom line long-term targets by more

See appendix for comments regarding the presentation of non-GAAP measures

Business Dynamics



**Market
Demand**



**Commodities
Global Trade**



**Electrification
Adoption**

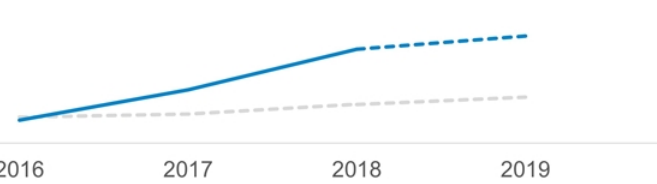
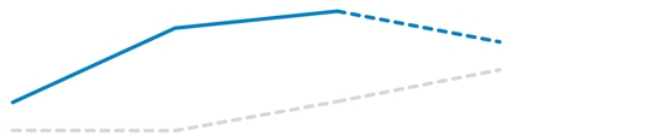
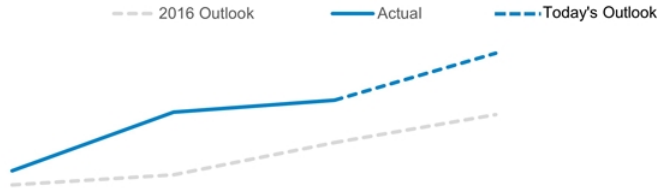


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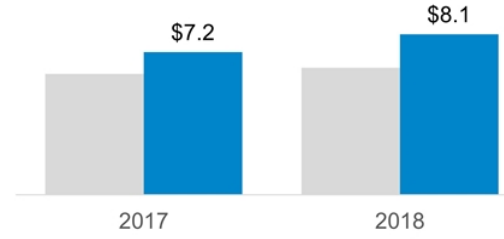
End Market Demand

Market Growth

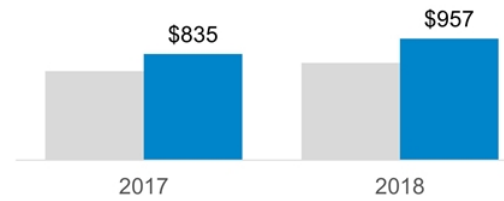


Sales & Adjusted E

Sales \$ in billions 2016 Outlook



Adj. EBITDA \$ in millions



Increased demand and acquisitions key to exceeding long-term financial goals

1. Today's outlook includes Oerlikon Drive Systems sales and adjusted EBITDA

See appendix for comments regarding the presentation of non-GAAP measures



Commodity Costs

Market Prices

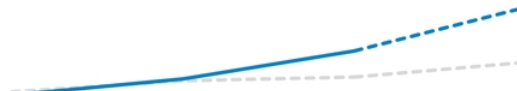
--- 2016 Outlook — Actual - - - Today's Outlook



Steel



Specialty Steel

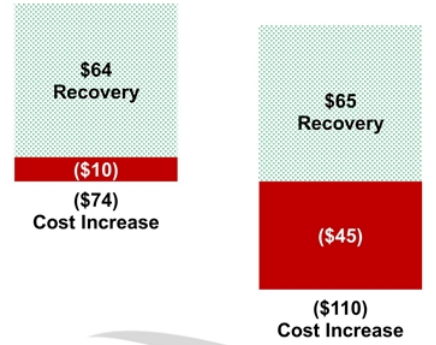


Aluminum



Commodity Cost In

\$ in millions



\$300M+ Cost Headwinds

Delivering 100 bps profit margin expansion in spite of commodity



Electrification and Acquisitions

Core Market xEV Adoption¹

--- 2016 Outlook — Actual - - - Today's Outlook



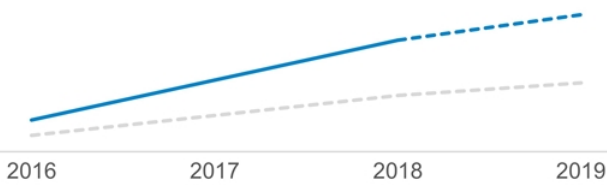
Light Trucks



Commercial Vehicle



Off-Highway



2016 2017 2018 2019

Electrification Accomplishments



SINCE 1980s 1980s 1990s



500+ patents and



4+ decades of elect



300+ electrificati



~12,000 vehi

Positioned for significant growth as electrification adoption accelerates

1. Includes BEV, PHEV, and HEV. Off-Highway excludes forklifts and scissor lifts

POWERING INTO 
 ***e-DRIVE*** 

Strategy Evolution

SHIFTING INTO VERDRIVE

- Established enterprise strategy
- Reversed years of revenue declines
- Initiated focus on electrification
- Established and exceeded financial targets
- Delivered ~\$2B+ of sales growth
- Expanded profit margin by 100bps
- Added \$100M of adj. FCF

POWERING INTO e-DRIVE

- Refine enterprise strategy
- Sustain profitable growth trajectory
- Lead electrification as growth vector
- Establish new financial targets
- Deliver another ~\$2B+ of sales growth
- Expand profit margin by another 100bps
- Add ~\$200M of adj. FCF and ~\$2B of sales

Strategy to drive sales to ~\$10B+ and cumulative adj. FCF of ~\$2B

See appendix for comments regarding the presentation of non-GAAP measures





Leverage The Core

Utilize capabilities in **power conveyance**, **thermal management**, and **mechatronics** across all three mobility markets to deliver a sustainable competitive advantage



Increase synergies

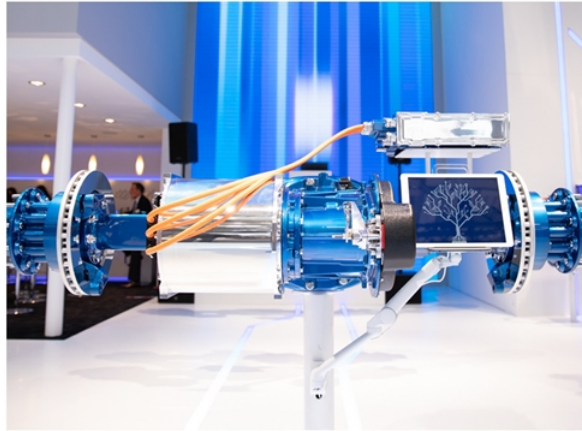
Position portfolio

Amplify innovation

Create Value with Multi-Market Presence



Cost efficiencies delivered through **core technologies**



Technology **investment magnified** by shared R&D

Automotive
PACE
AWARD

EXCLUSIVE LEAD SPONSOR

- 2019 FIN
- 2018 FIN
- 2017 W
- 2017 FIN
- 2016 FIN
- 2015 W
- 2014 FIN
- 2013 W
- 2012 W

Speed of **innovation** accelerated by knowledge

Core Engineering

Common Products

Driveshafts



Axles



Motors



GVW Spectrum



- **Shared expertise** is leveraged across the enterprise
 - Research and development
 - Product design
 - Application engineering
- **Core technologies** span multiple markets: light and commercial, and off-highway equipment
- **Modular designs** are used across all product end markets
- **Supply chain** and manufacturing are optimized to support a wide range of applications

🔗 Purchasing and Supply Chain

Common Commodities

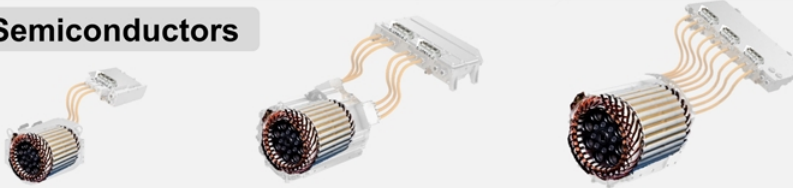
Forgings



Castings



Stators & Semiconductors



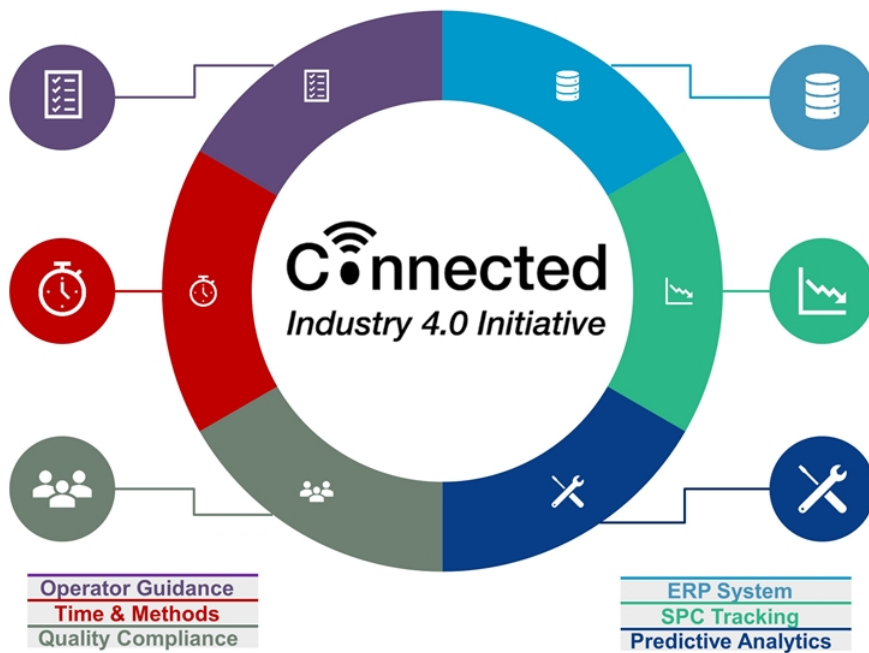
GVW Spectrum



- **Global commodity buy** common purchases across and regions
- **Matched pairs:** engineering purchasing functions for reduce complexity through and use of common parts markets
- **International purchasing** support and enable global the local level
- Cost per weight **analy** competitive value
- Reduce supply base to **economies of scale**

Manufacturing

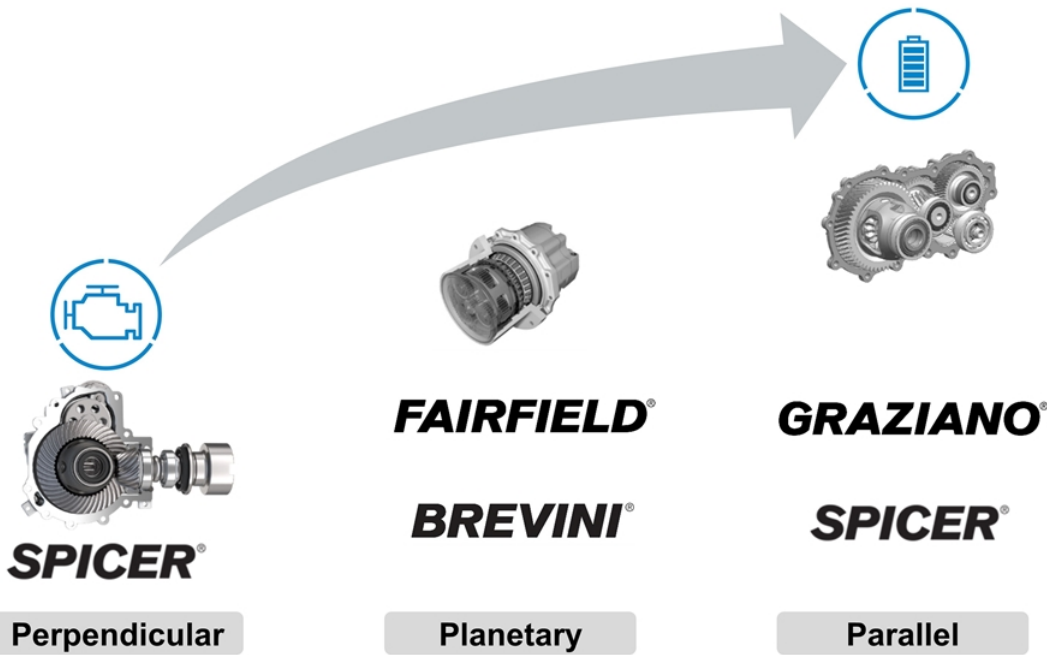
Industry 4.0 Foundation



- **Real-time asset performance management** driving 30% improvements
- **Digital scheduling and management** enabled manufacturing systems
- **Preventative and predictive analytics** delivering 10% reduction
- Multiple variant analytics **learning** reducing energy

Mechanical Technology

Acquired Enhanced Gear Products for Electrification



- Historical competence of **perpendicular** transfer through **hypoid** gears
- Brevini and Fairfield acquired **planetary** gear capabilities for heavy vehicle e-Propulsion
- Graziano acquisition also provides **parallel** torque transfer highly relevant for light duty applications



Electrodynamic Technology

Acquired Electrodynamic Products



Motor



Inverter



Controller



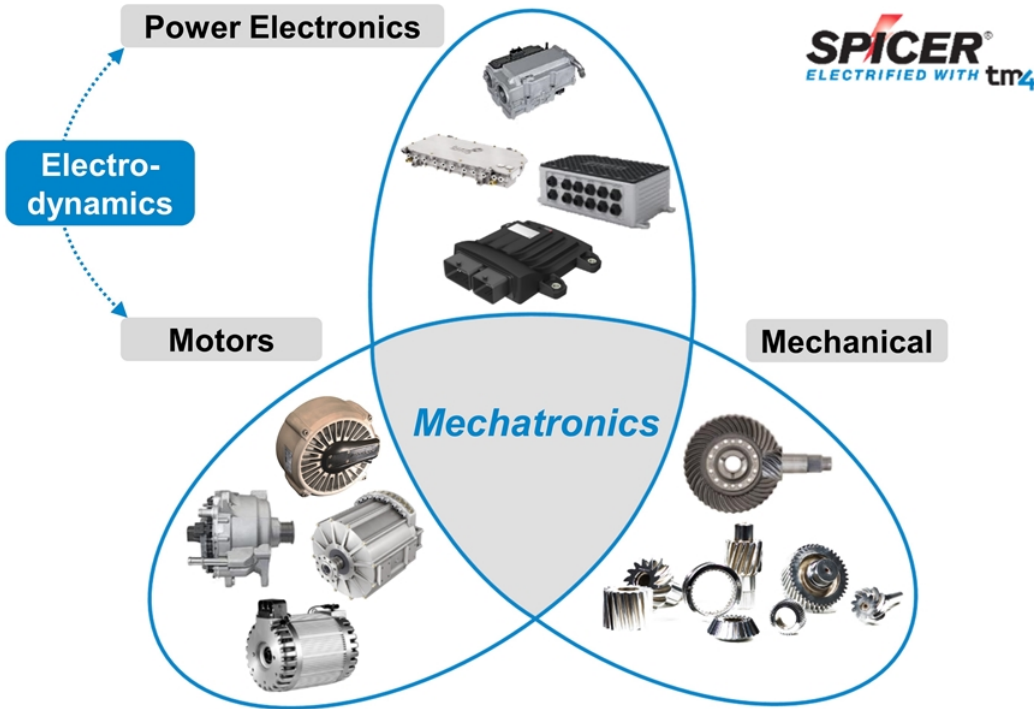
- TM4 delivered **high-voltage magnet** motors and power electronics
- SME brings **low-voltage** technology with power electronics
- ODS **augments motor capabilities** via Ashwoods
- **Creates complete inverter** motors and power electronics
- **Decades of combined** electrifying our core motor **electrically driven**
- Augmented by MMI and **technology** from Brevetti





Mechatronics Competence

e-Propulsion Systems Capabilities

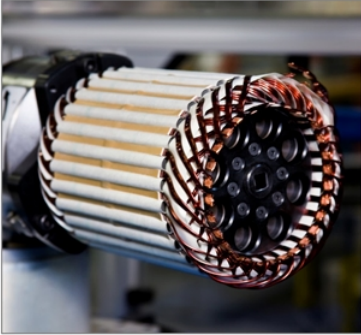


- Full suite of **power ele**
 - Inverters
 - Converters
 - Software
 - Controllers
- Broad range of **motor**
 - Permanent magr
 - Induction
 - Synchronous rel
- Precision **mechanical**
 - Perpendicular, h
 - Parallel, helical
 - Planetary

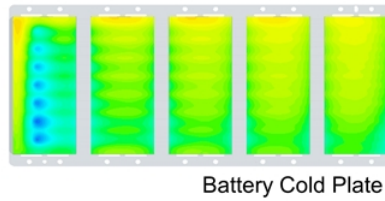
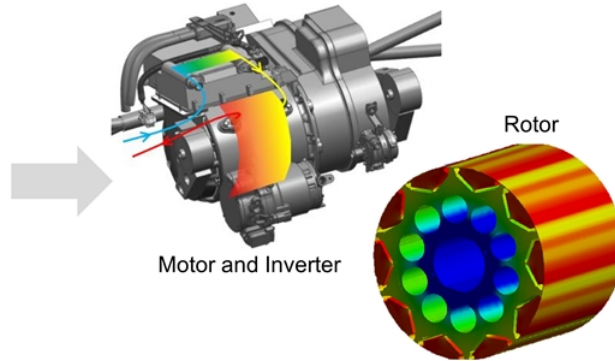
Thermal Technology

Thermal Management for e-Propulsion

Product



Thermal Image

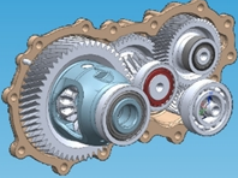


- Developing e-Propulsion strong thermal manager **motor and inverter term** managed for optimum p
- Thermal competency of is **leveraged across bu** enhance their electrified
- Integrated cooling syste **power density**, reduce packaging
- **Efficient thermal dyna** increasingly important w inverter are integrated ir

Integrated e-Propulsion Systems

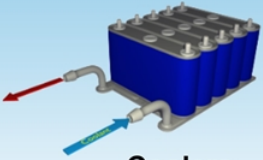


SPICER



Gears

LONG



Coolers



e-Axle



SPICER
ELECTRIFIED WITH tm4



e-Drive Unit



Pow



Digital Technology

Growth Vectors



Digitally Enabled Products

Rhombus.
TireAnalytics



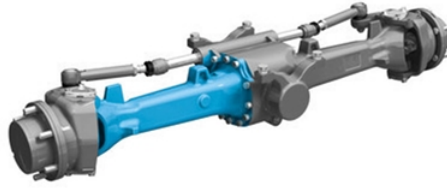
Digital Services

- **Physical products** and digital solutions such as digital controls that enable:
 - Remote fleet management
 - Data- and analytics for decision making
 - Advanced diagnostic and prognostics
- **Digital service offerings** that create customer and product value through:
 - Digitizing existing services
 - Subscription and new revenue models
 - Control of customer experience

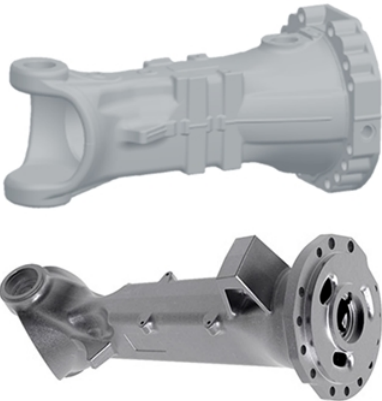


Additive Manufacturing

Axle Arm Application



Traditional



Additive

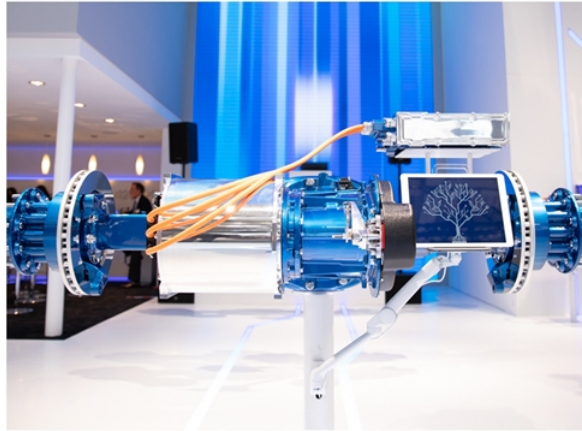


- Additive manufacturing allows for completely new component design, enabling manufacturing comparison with traditional methods
- Applicable for **tooling production and service**. Benefits include:
 - Reduced weight
 - Faster time to market
 - Ability to integrate multiple parts
 - Less scrap / waste
- Axle arm example saw weight reduction and **50% faster** production

Create Value with Multi-Market Presence



Cost efficiencies delivered through **core technologies**



Technology investment magnified by shared R&D

Automotive
PACE
AWARD

EXCLUSIVE LEAD SPONSOR

- 2019 FIN
- 2018 FIN
- 2017 W
- 2017 FIN
- 2016 FIN
- 2015 W
- 2014 FIN
- 2013 W
- 2012 W

Speed of **innovation** accelerated by shared knowledge

Leveraging the core yields \$175M in annual embedded cost synergies



Drive Customer Centricity

Positioned to **win more than fair share** of drive systems bus across all three mobility markets as OEMs **deploy capital to** **megatrends** of mobility, autonomous driving, and digitizat



Leverage global footprint

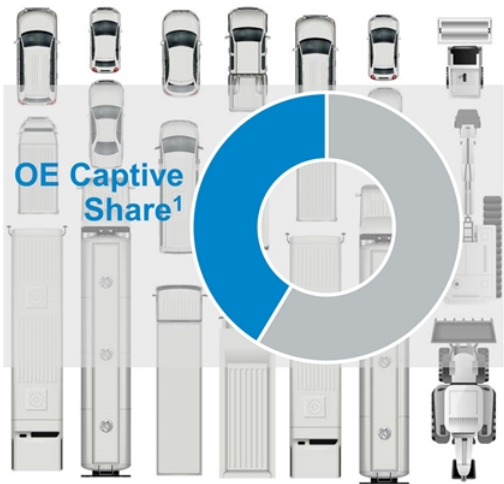


Engineer solutions

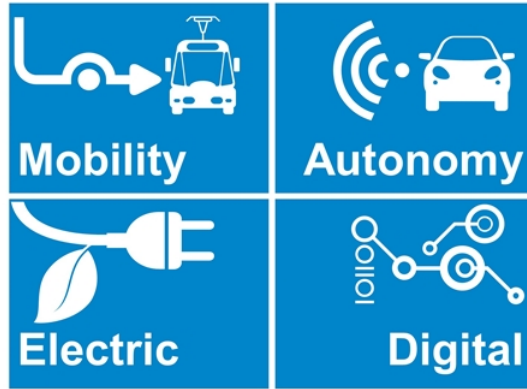


Digitize customer experience

Gain Share Through Customer Centricity



Captive market
represents
significant opportunity



OEMs faced
with **emerging**
megatrends...

September 6, 2017

Why John Deere Just Spent \$100 Million on a Lettuce-Farm

February 22, 2019

Daimler and E.ON Partner in Urban Mobility

August 27, 2018

Toyota Investing \$500 Million in Driverless-Car Pact

October 3, 2018

Honda to Invest in GM's Self-Driving Cars

...and **red**
capital to
compete

1. Europe & North America



Global Platforms

Key Vehicles



Ford Ranger Manufacturing Footprint



- Footprint in all four major **light vehicle** business segments, with the compact truck segment content on 9 of the top 10 markets
- Leveraging global presence and relationships in underserved markets to open new opportunities
- **Off-highway** customer segments looking to source from regions with capabilities that match their volume, global program

Customer Relationships

Improved Customer Breadth Through Acquisition



- Acquisitions bring **new** across all markets via:
 - Existing program
 - New electrification
 - Complementary
- Acquired companies **leverage capabilities** to create
- Brevini and ODS acquire presence in **off-highway**
- SME and TM4 have strong relationships with key EV integrators **commercial vehicle** market
- ODS gear and e-Propulsion **light vehicle** market



Differentiated Performance

Customer Recognition



- Experienced **high level demand** over the last 2 years
 - Light vehicle up 20%
 - Commercial vehicle up 15%
 - Off-highway up 25%

- Delivery** and **quality** performance from our customers has been excellent in multiple customer segments

- Strong performance has put us in a **business wins** and **in position**, particularly in the light vehicle segment

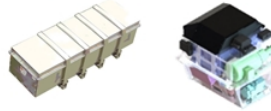


✕ E-Vehicle Level Integration Partner

Full Electrified Powertrain Offering



e-Propulsion System



Battery Management System

- Customers are requiring **electric powertrains** for their architectures
- **e-Propulsion** and **battery** systems must be integrated with vehicle controls to deliver efficient powertrains
- Dana has partnered with leading battery suppliers to provide solutions for customer **adoption** of Spicer® Electric e-Propulsion systems
- Dana's **tier one position** system partnership

✦ Hybrid Electric System Partner

Class 8 Truck Application



 **HYLIION**



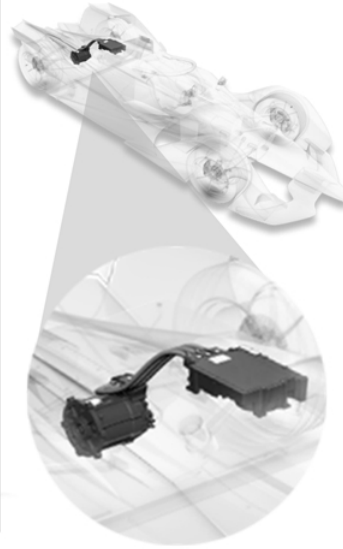
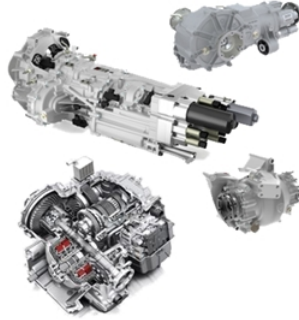
SPICER
ELECTRIFIED WITH tm4



- Entered **strategic partnership** as a **system integrator** with Hyliion
- Hyliion system turns a **truck into a hybrid** by adding a **rear axle, battery, and management system**
- Dana **develops / supplies** an **integrated e-Axle** for the hybrid system
- **High value proposition** including **lower fuel costs, lower emissions, and lower maintenance**

✕ Off Road, High Performance, Formula-e

Pushing the Limits to Improve Product Offerings



- Applications that demand **performance drive in**
- **Direct marketing** to high performance markets highlights brand and stimulates pull-through
- **Formula-e racing** creates demand for TM4 **high-voltage** electronics
- Engineering and supply **performance drivetrain** level of precision automotive edge technology



✦ Aftermarket 'All Makes'

Full Driveline Product Offering

Genuine OE

All Makes



- Extends Spicer aftermarket to include **full range** of driveline products, including those of competitors
 - Axle gear sets
 - Universal joints
 - Driveshaft end yokes
- Products engineered to provide **dependable performance**
- Product lines are purpose-built to **maximize life** of aging drivelines
 - 18-month, 100,000 mile warranty
 - Maximizes aging driveline life
 - Engineered to reduce vibration and noise



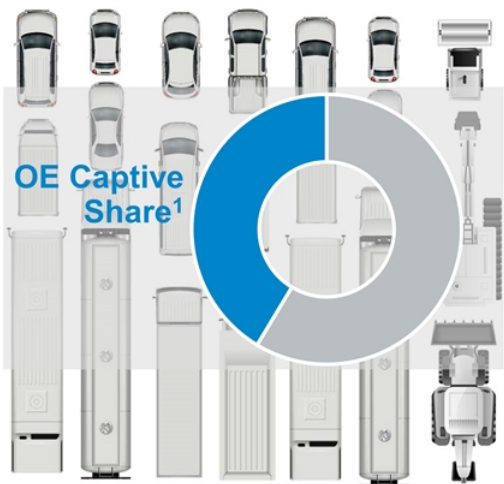
Aftermarket e-Commerce Platform

DanaAftermarket.com

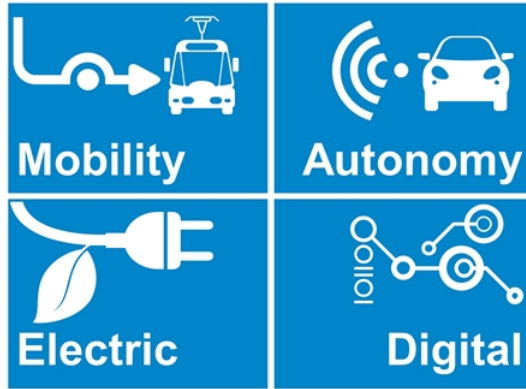


- Web-based, global platform across **all mobility markets** to improve customer satisfaction
- Ease of use helps to **reduce downtime** for operators
- Comprehensive and **customer-centric experience** delivers competitive advantage:
 - Intuitive user interface and search function for customer satisfaction
 - Recommendation engine for increased sales
 - High-resolution images and complete dimensions

Gain Share Through Customer Centricity



Captive market
represents
significant opportunity



OEMs faced
with **emerging**
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Honda to Invest in
GM's Self-Driving

...and **reduced**
capital to
compete

Driving customer centricity yields more OEM outsourcing opportunities

1. Europe & North America



Expand Global Markets

Disproportionately invest in capabilities to drive growth
Asia-Pacific market with **highest growth** rates and early
electrification adoption



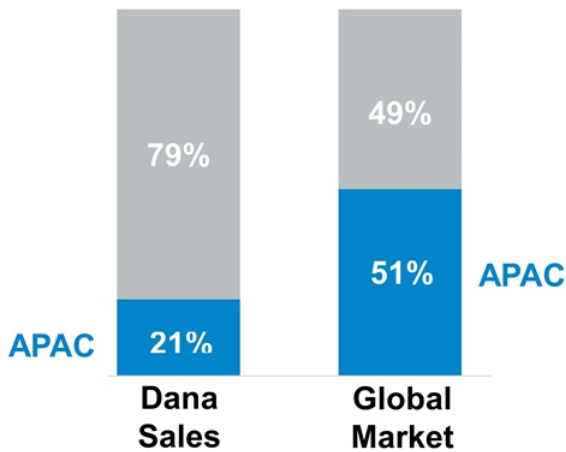
Forge partnerships

Expand inorganically

Grow organically

Deliver Growth by Investing in APAC

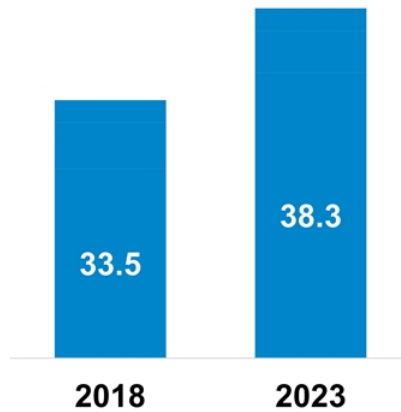
Opportunity in APAC



Gaining fair share represents **opportunity in APAC** markets

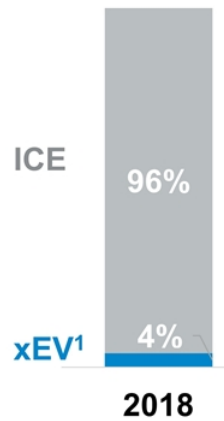
APAC Production Volume

Units in millions



Mobility markets are **growing rapidly** in APAC

APAC xEV



APAC is in the ad **electrifi**

1. Estimate for China LV and CV ma



Joint Venture Partners

Asian Partnerships



DANA Spicer India

ANAND

Axles India

WHEELS INDIA LIMITED

DDAC

DFM

DANA ROC-Spicer

CMC YULON

Prestolite tm4 e-Propulsion

Prestolite electric

- **Spicer India Limited:** J production and sale of u driveshafts, light axles, t components for the **Indi**
- **Axles India Limited:** m housings and beams for duty commercial vehicle
- **DDAC:** JV with Dongfer R&D, production, and sa **Chinese** bus and truck r
- **ROC Spicer:** JV with Yu Motor Co. for production transmissions, axles, pr universal joints for the **C**
- **Prestolite e-Propulsion** JV with Prestolite Electri production and sale of e power electronics for the



Supplier Partners

External Supply Chain



Final Assembly



Components

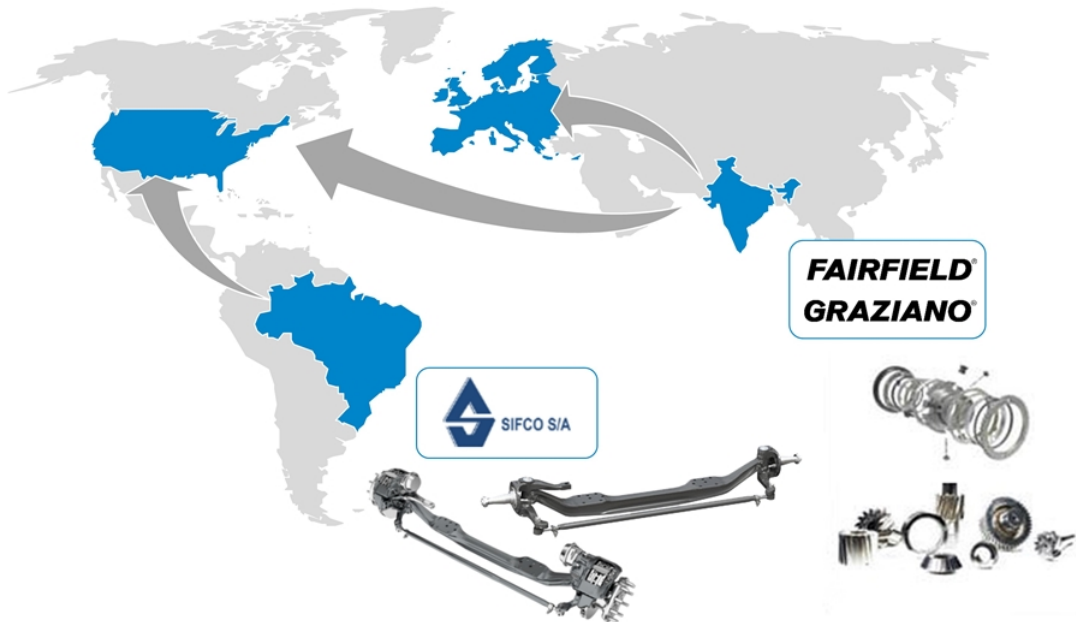


- **High level of market competition** creates a need for improved supply chain efficiency
- **Fostering supplier relationships** and quality locations to support demand for final assembly in emerging markets
- **Cost, capacity, and demand** are key factors while maintaining the high quality key to customer satisfaction
- Flexible, global supply chain across three end markets allows for **response to changing requirements**



Acquired Internal Supply

Internal Supply Chain

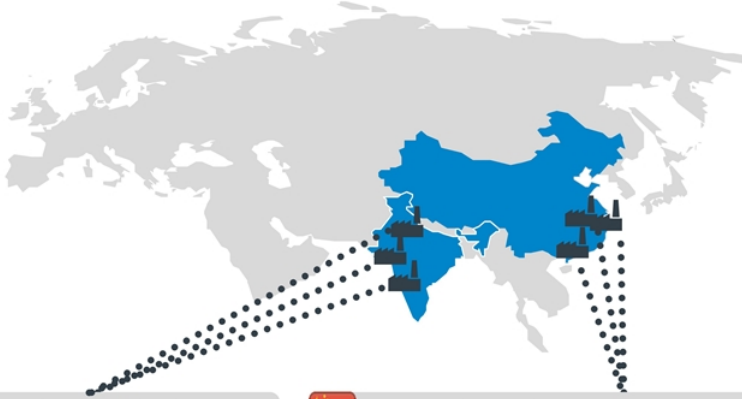


- **Manufacture components** in multiple regions and ship to end customer for assembly for key high-volume applications
- **Specialization** creates a global supply chain, allowing for increased **capacity, and delivery** while maintaining quality
- **Indian** facilities focus on large size **component gears** for heavy-duty applications
- **Brazilian** facilities acquired focus on **forged and machined components** for CV and front steer axles



Acquired Local Market Presence

Key Asian Markets



 Sanand, Noida, Belguam



 Suzhou, Changshu, Shanghai



- ODS acquisition adds r and tech centers in Asi **domestic customers**
- Acquisitions further **dif domestic markets**:
 - Significant Asian capacity
 - Local engineering support
 - Experience hand complexity
- Opportunity for **future** two Chinese facilities u and an Indian facility h significant expansion



Organic Local Market Presence

Expanding Footprint



- Experience serving an **complexity of global** multiple regions
- Expanding, sharing, and **global footprint** to drive growth
- Recent investments in
 - **Chongqing:** New facility, Dana's most advanced manufacturing plant in China
 - **Yancheng:** Expanded drive manufacturing facility for existing facility for heavy-duty trucks
 - **Rayong:** Expanded manufacturing facility for **Asia Pacific** market



Aftermarket Distribution Network

Focus on Underserved Regions



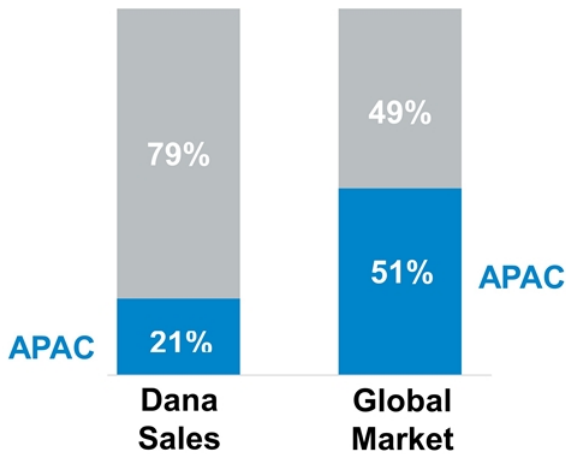
售后分销中心
Aftermarket Distribution Center



- Opportunity for **expansion**
- **Enhancing capabilities** and Assembly Centers
Product Distribution Centers
adding service, sales, and competencies across the region
- **Expanding SAC footprint**
customer access
- **Asia Expansion**
 - Leveraging strong relationships
 - Promoting Dana products

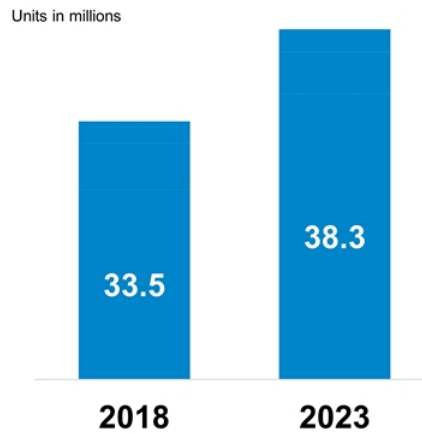
Deliver Growth by Investing in APAC

Opportunity in APAC



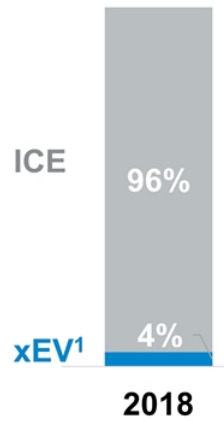
Gaining fair share represents **opportunity in APAC** markets

APAC Production Volume



Mobility markets are **growing rapidly** in APAC

APAC xEV



APAC is in the **ad** **electrifi**

1. Estimate for China LV and CV m

Investment in capabilities yields double-digit organic sales growth



Deliver Innovative Solutions

Capitalize on secular growth trends that expand our addressable market by increasing content per vehicle as physical products evolve toward digital solutions



Evolve	Physical
Enhance	
Create	Digital

Increase Content Through Innovation

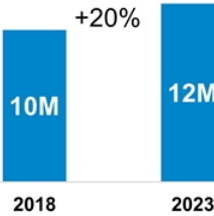
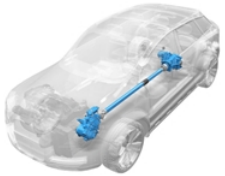
Engine Downsizing: 2018-2023



≤4 Cylinders **↑** 10%

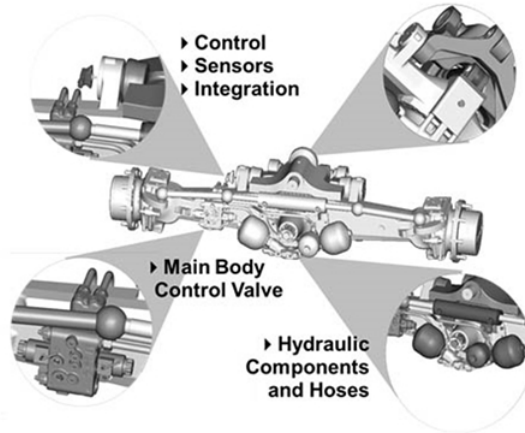
>4 Cylinders **↓** 13%

AWD Adoption



Engine **downsizing**, driveline **enhancement** offer significant opportunity

Component Digitization



Digitally enabling our physical products is driving **higher CPV**

Vehicle Market



Load Moving



Digital solutions provide **growth**



AdvanTEK[®] Ultra[™]

Advanced Gear Design Application



SPICER[®]
Drivetrain Systems



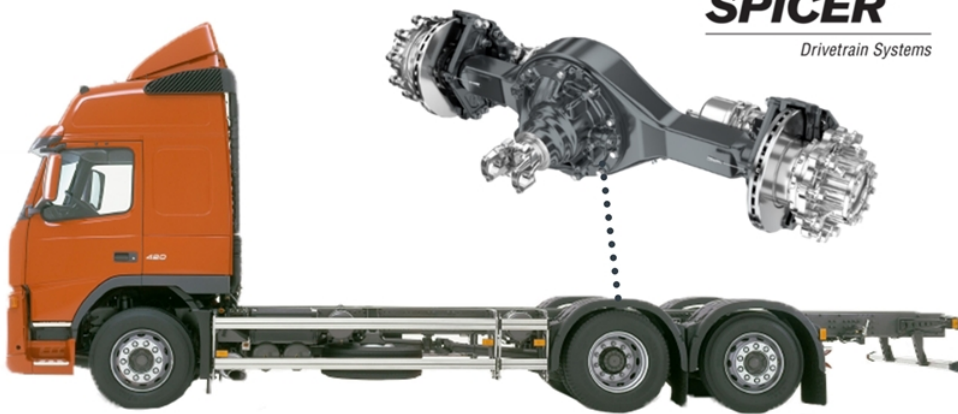
- **Most efficient axle** for application – **30% better best-in-class solution**
- Delivers fuel economy to a **200-lb weight red** by the EPA
- **Cuts noise in half** over
- Launching globally on **AWD vehicle program**





AdvanTEK[®] Heavy Duty Single Axle

Efficient 6x2 Driveline Application



SPICER[®]
Drivetrain Systems

- Commercial vehicle axle with **AdvanTEK[®]** gearing technology
- Opportunity for **growth and with a key customer**
- **Enables hybrid system** to convert a 6x2 into a 6x4 configuration with an electric rear axle
- **Tailored designs** to meet the market in which the vehicle operates
- Axle **weight reduction**
- Lower lubricant requirements
 - Estimated 7 pints per axle
 - Per unit **savings**

4x2

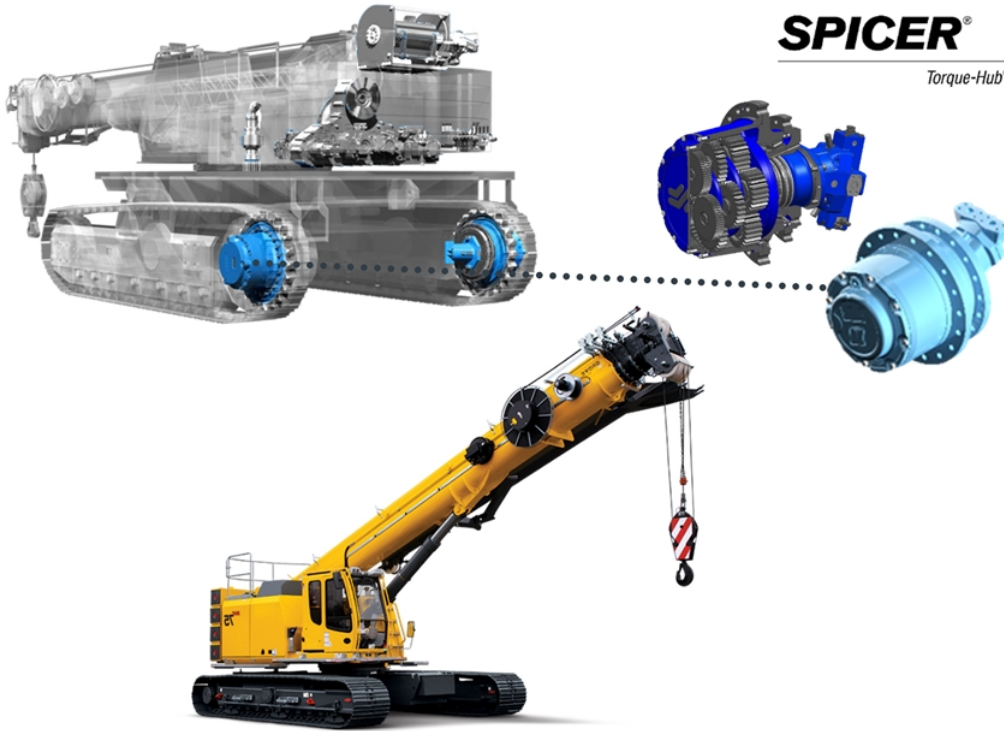
6x2

6x4



Wheel and Track Drives

Planetary Hub Drive Application

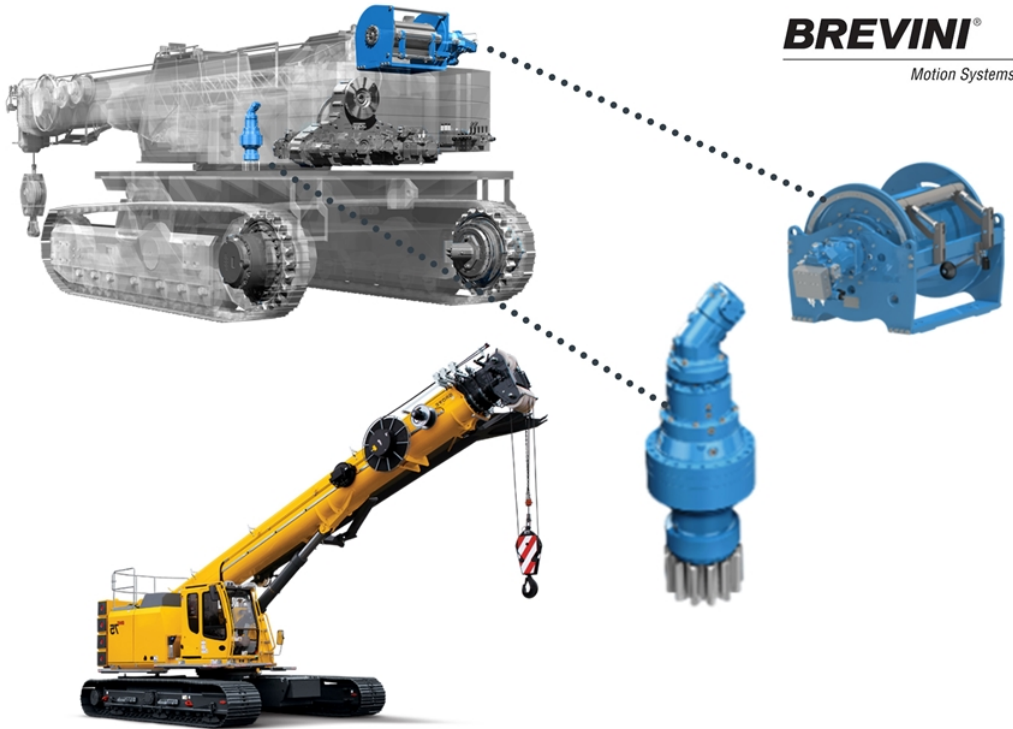


- Expanding **full range of drives** for tracked vehicles
- **Leveraging** Brevini, ODS technology and brand
- **Expands the addressable market** to cover a full range of use cases from small applications to large heavy-duty applications
- Utilize Asian and European manufacturing to **expand market reach**
- **Capitalize on ODS** strategy to address high volume small and compact tracked and wheeled applications
- Small and compact applications **suitable for electrification** in a strong position to capture market share



Advanced Motion Systems

Slew Drive and Winch Application



- Motion systems allow [**integrated solutions** to customers
- Systems include control motors, pumps, slew drive
- **Hydraulically** and **electric** technology
- Deliver **greater value** by selling motion systems allowing **performance** between the two



Transmission Separator Plates

High-Efficiency Transmission Application

VICTOR REINZ[®]

Sealing Products



- Allows high-efficiency (clutch) transmissions to handle **higher pressure levels** without leaks
- Applicable for **electric transmissions** that require solutions for high operating temperatures
- Requires fewer bolts to secure the transmission, leading to **lighter weight**
- Tighter seal allows use of smaller pumps, leading to **lower weight**, and **smaller pumps**



Automotive News
PACE
AWARD EY

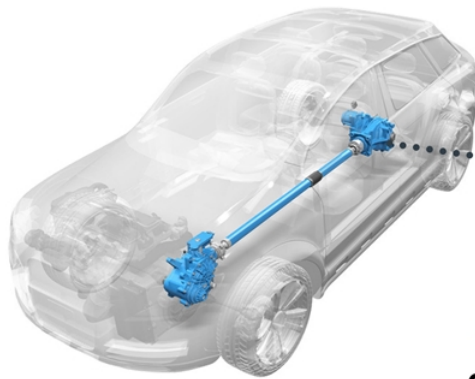


CLEPA
European Association of
Automotive Suppliers

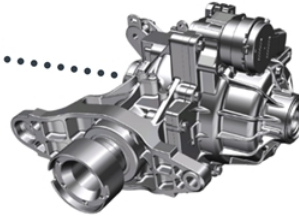


Software-Controlled Driveline

Automatic AWD Disconnecting System Application



SPICER[®]
SmartConnect™



2019 Edge



- Offers **fuel economy** and **control** of AWD through disconnecting driveshafts
- Significant **content percentage increase** for sedan, CUV, and FWD architecture augmented with front and rear axle
- **Full systems solution** for rear disconnect and suspension
- **Designed for fuel efficiency** with low viscosity lubricant
- **In production** with Ford and soon to be launched



Enhanced Off-Highway Drivelines

Modular Independent Suspension Application

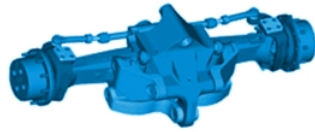
Common Components



SPICER
Drivetrain Systems



Tiered Final Assemblies



Low

Standard

High

Level of Content

- Independent suspension with **hydraulic actuation** through multiple levels of technology by customer
- Allows regional customization to **quality, reliability, and cost** to compete with global competitors
- **Scalable** to meet the needs of different applications
- **Modular** to allow for common components across platform to leverage scale
- **Transferable technology** across off-highway market segments

Advanced Transmissions

Off-Highway Vehicle Applications

SPICER[®]
Drivetrain Systems

Hydrodynamic



Hydrostatic



Hydromechanical



- Transmissions **distrib** functions and motion s
- Offering multiple techn different **performance fuel-efficiency standa**
- **Dana Rexroth**, a JV in Rexroth, produces hyd variable transmissions efficiency and productiv customers
- All off-highway transmi specified with Spicer **el systems** to further enh

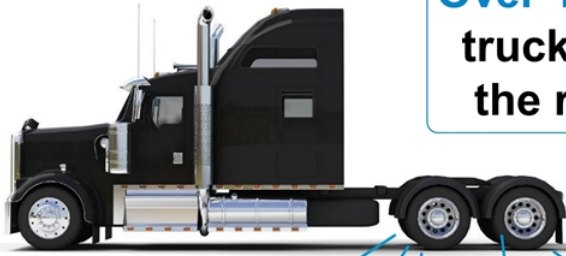


Digital Service Offering

Tire Analytics SaaS Application



Over 10,000 trucks on the road



REPAIR IMMEDIATELY

CHANGE IN 3,500 MILES

SLIGHT TREAD WEAR

GOOD AS NEW

CHANGE IN 10,000 MILES

Select Customers

- Cloud-based **tire main management** software replaces traditional manual processes
- Real-time alerts** enable proactive management and improve fleet ownership
- Utilizes **live dashboard** for fleet management
- Available on **multiple platforms**
- More than 10,000** trucks currently using application
- Descriptive and **predictive** analytics to failure **before** it happens

Increase Content Through Innovation

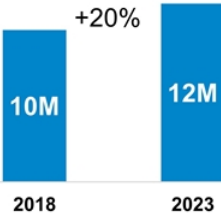
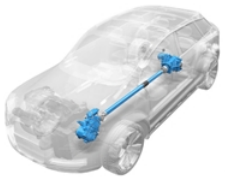
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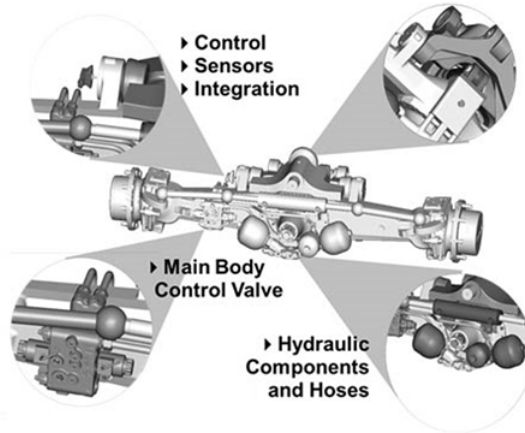
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Engine **downsizing**, driveline **enhancement** offer significant opportunity

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Digitally enabling our physical products is driving **higher CPV**

Vehicle Market



Load Moving



Digital solutions provide **growth**

Delivering innovative solutions yields market expansion and high

Electrification – The future of vehicle propulsion

Dana Investor Day



New York, NY – March 11, 2019



Brandon Boyle

Partner

Automotive Competence Center

Detroit, MI

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Electrification – The future of vehicle propulsion

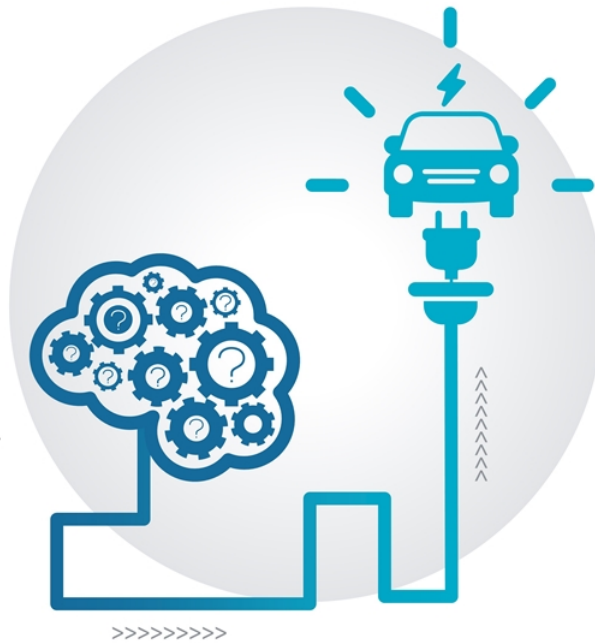
Focus of today's discussion



What are the **drivers** of electrification?



How will the drivers **manifest** regionally and by segments?



What are the **key capabilities** and **components** for e-propulsion systems?

How will the **roles** in the value chain shift over time?

The global adoption of electrified propulsion is being driven by a combination of factors

Global drivers of electrification



Regulation

- > Emission / fuel consumption targets
- > Minimum xEV shares (e.g. CARB ZEV regulation)
- > City access limitations (e.g. London, Paris)
- > Potential fast policy shift in China



Customer pull / Total Cost of Ownership

- > Subsidies & taxation (fuel and vehicle)
- > Vehicle registration advantages for xEVs (e.g. License plate access in Chinese cities)
- > Special rights (e.g. usage of car sharing lanes in US)
- > TCO advantages for fleets (esp. CV)



Technological advancements

- > Ramp-up of battery production induces low battery prices
- > Automated driving enabling new business models (Robocab)



Charging Infrastructure

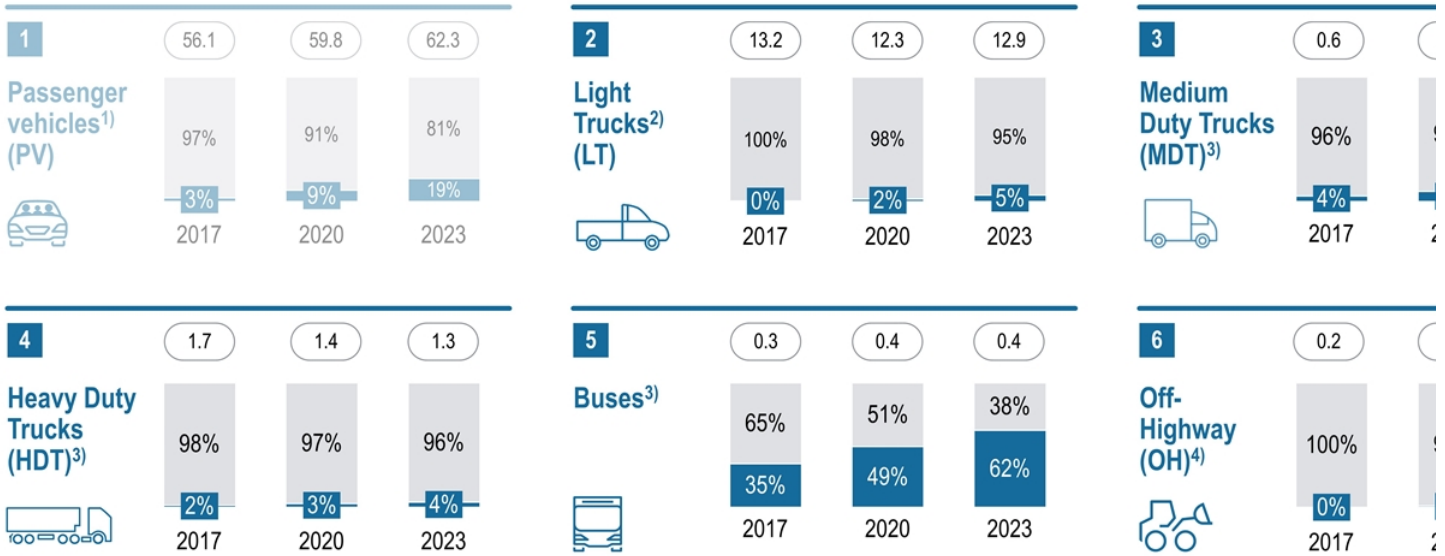
- > Charging infrastructure developments
- > LV is fastest developing with OEM support
- > Promise of faster charging speeds

Source: Roland Berger



The percentage of electrified vehicles is growing in all vehicle segments

Total volumes and electrification by segment [m units, %]



xx Total sales volumes, Units [EU, NA, CN] ■ Electrified vehicles (FH/PHEV/BEV/FCV)

1) Vehicle segments A/B/C/D/E excluding large vans (C/D/E) and large MPVs (D/E); 2) Mini/Compact/Full-Size Full-Frame vehicles and large unibody vehicles – Vans (segments C/D/E) and MPVs (segments A/B/C/D/E) included for North America, EU & China; 3) OH figures are global and include construction equipment and mining vehicles with high-voltage propulsion systems

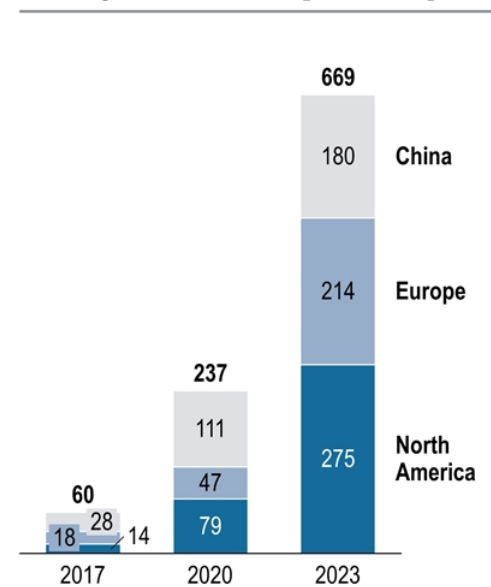
The Light Truck segment is expected to develop slower than the b LV segment – Regulation and customer pull are driving pace of ch

Light trucks

Drivers

	NA	EU	CN
Regulation <ul style="list-style-type: none"> > CAFE standards & min. xEV quotas (CARB) > City access limitations (e.g. London, Paris, Shanghai) > EU CO₂ emission reduction targets for LCV in place (2020 target 147 g/km of all new LCVs) 			
Customer pull / TCO <ul style="list-style-type: none"> > NA demand is highly TCO driven > EU is being driven by high fuel costs > CN market reacts mainly to regulation > Environmental consciousness 			
Technological advancements <ul style="list-style-type: none"> > JP/KR players leading in electrification, specifically battery system and cell development > NA/EU on similar tech. level with e-motors and high voltage power electronics > CN applies simpler system solutions 			
Charging Infrastructure <ul style="list-style-type: none"> > EU building up dense charging network > CN strong governmental support for network dev. > NA high demand to create framework conditions 			

BEV/Hybrid forecast¹⁾ [000 units]



1) Mini/Compact/Full-Size Full-Frame vehicles and large unibody vehicles – Vans (segments C/D/E) and MPVs (segments C/D);

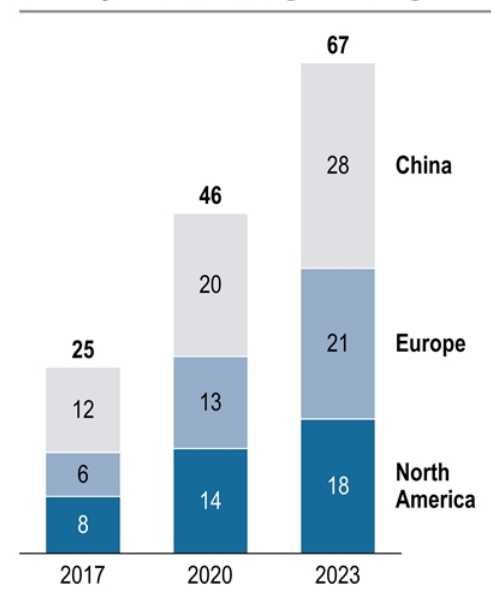
Total Cost of Ownership is the main driver for MDT xEV adoption in all regions, supported by incentives – City regulation as additional driver

Medium Duty Trucks

Drivers

	NA	EU	CN
Regulation <ul style="list-style-type: none"> > Fuel economy targets in NA and China; EU targets under development > City low/zero-emission driving restrictions expected in EU and China > Some fleets in US and EU have adopted xEV to convey green image 			
Customer pull / TCO <ul style="list-style-type: none"> > Incentives stimulate sales in certain states and applications in NA (e.g. vocational and municipal trucks) > Fleet TCO reduction as driver for specific applications in NA and EU 			
Technological advancements <ul style="list-style-type: none"> > CN mainly focused on technology leadership in bus, but expected to aim for drivetrain leadership > NA/EU OEMs and suppliers developing similar concepts (share characteristics with bus concepts) 			
Charging Infrastructure <ul style="list-style-type: none"> > MDT will charge usually at the depot > No need for public charging infrastructure 			

BEV/Hybrid forecast [000 units]







Source: IHS, Roland Berger

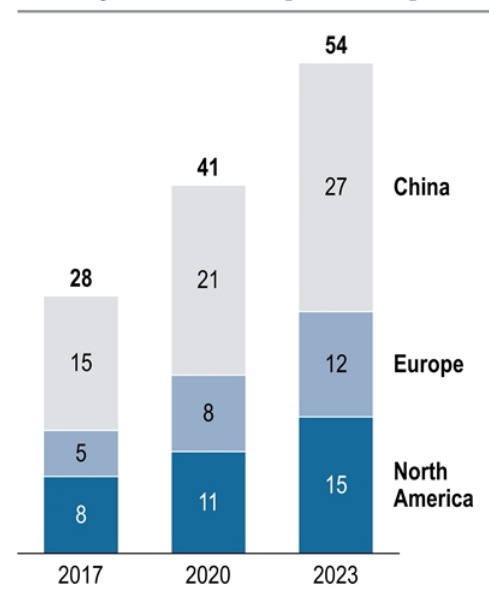
Within the HDT segment, Total Cost of Ownership benefits apply to selected niche applications in North America and Europe

Heavy Duty Trucks

Drivers

		NA	EU	CN
 Regulation	<ul style="list-style-type: none"> > Fuel economy targets in NA and China can be met without xEVs; EU is discussing framework > CO₂ targets are being set in all regions with nuances in timing and targets by region > Targeted regulation for niche application in US 			
 Customer pull / TCO	<ul style="list-style-type: none"> > Incentives stimulate sales in certain states in US > Strong xEV incentives in China > Fleet TCO reduction as driver for selected applications in NA and EU (e.g. mild hybrid trucks) 			
 Technological advancements	<ul style="list-style-type: none"> > CN mainly focused on technology leadership in bus, but expected to aim for drivetrain leadership > NA/EU OEMs and suppliers developing similar concepts (share characteristics with bus concepts) 			
 Charging Infrastructure	<ul style="list-style-type: none"> > Charging infrastructure is limited and is currently managed by fleets or OEMs 			

BEV/Hybrid forecast [000 units]



Source: IHS, Roland Berger Analysis

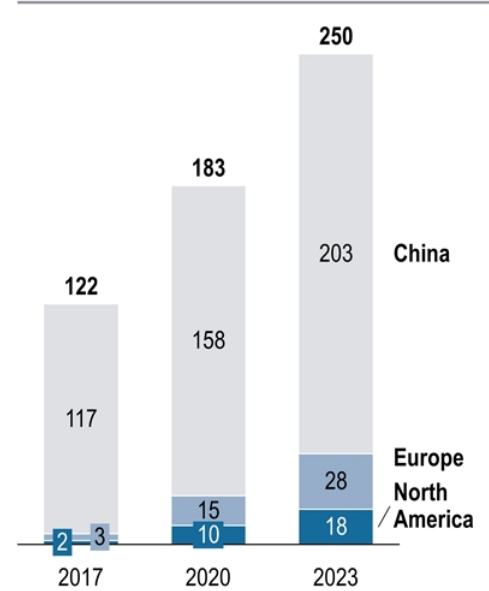
Growth of xEV buses is driven by subsidies in China – Significant potential based on evolving city regulations in EU

Buses

Drivers

	NA	EU	CN
Regulation > Fuel economy targets in NA and China can be met without xEVs; No FE targets yet in EU > City low/zero-emission driving restrictions in EU and some US states, and expected in China			
Customer pull / TCO > Incentives boost BEV sales in China; Incentives stimulate sales in certain states in NA > Fleet TCO reduction as long-term driver for BEV in NA and EU (once battery cost comes down)			
Technological advancements > CN desires to lead in drivetrain technology to leapfrog Western OEMs – Currently simpler technological solutions > NA/EU OEMs on similar technology levels			
Charging Infrastructure > Bus will charge usually at the depot overnight or as "opportunity charging" along the route > Charging infrastructure will be built up by bus operator			

BEV/Hybrid forecast [000 units]







Source: IHS, Roland Berger





Adoption of OH xEV is expected in select applications

Off-Highway

Drivers

	NA	EU	CN
 Regulation <ul style="list-style-type: none"> > City regulations on pollution & noise not yet in place but could evolve – Would mainly impact compact CE and selected MH equipment (e.g. AWP) 			
 Customer pull / TCO <ul style="list-style-type: none"> > Key driver in absence of regulation – Savings potential strongest for UM (for costly ventilation) > Some interest developing for AWP & CE (compact equip.) – Limited for AG (auxiliaries, self-propelled) 			
 Technological advancements <ul style="list-style-type: none"> > Solutions available for UM and AWP > Players still figuring out optimal architectures across segments 			
 Charging Infrastructure <ul style="list-style-type: none"> > Limited influence due to fragmented vehicle distribution and lack of ability to leverage on-road infrastructure (charging units need to be localized) 			

Subsegment trends

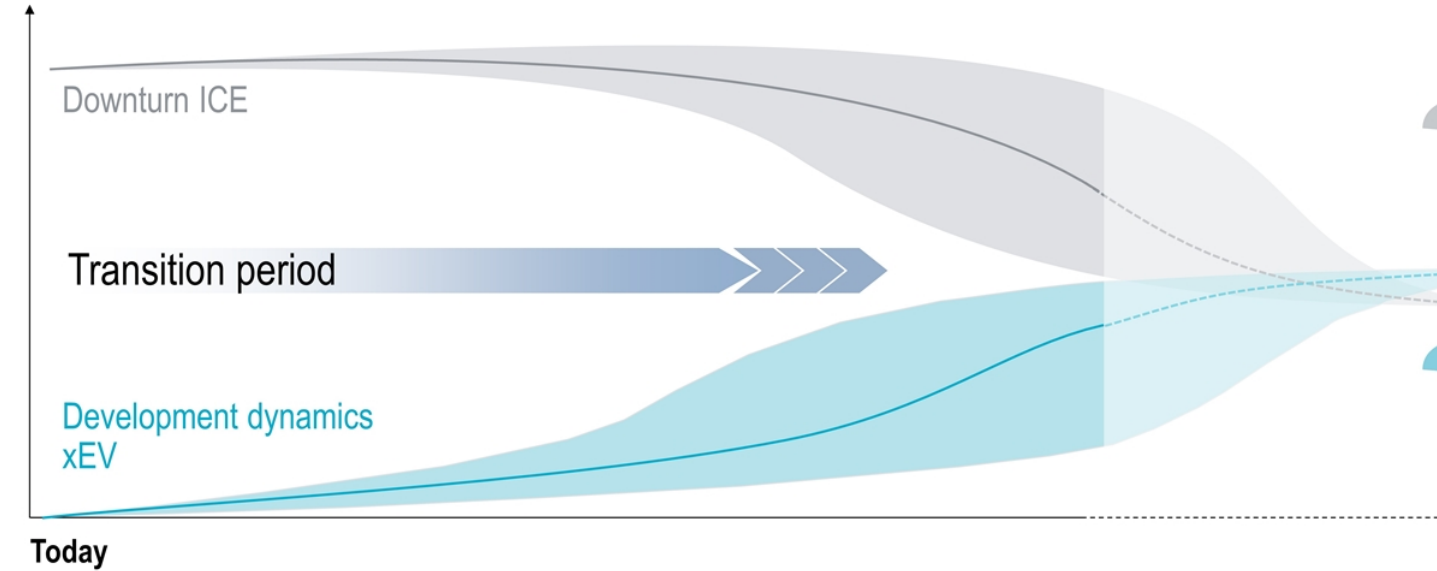
 Construction Equipment <ul style="list-style-type: none"> > Required battery size and cooling need limit application > Hydraulics remain primary power of auxiliary > Potential electrification of compact equipment
 Agriculture <ul style="list-style-type: none"> > First electrification expected on hydrostatic vehicles as well as auxiliaries and power beyond systems > Electric powered front axle a potential next > Full electric vehicles not expected mid-term
 Mining <ul style="list-style-type: none"> > Applications such as underground mining expect to see some level of electrification (eliminates costly ventilation of mines) > Many companies have full electric offerings underground equipment (Atlas Copco, GE, etc.)
 Material Handling <ul style="list-style-type: none"> > High share of indoor forklifts already electric cells are a niche alternative > Hybrid and full electric boom lifts already of customers

Source: Roland Berger

It will be important for OEMs and suppliers to carefully manage the transition period to xEV

Transition development

Production volume

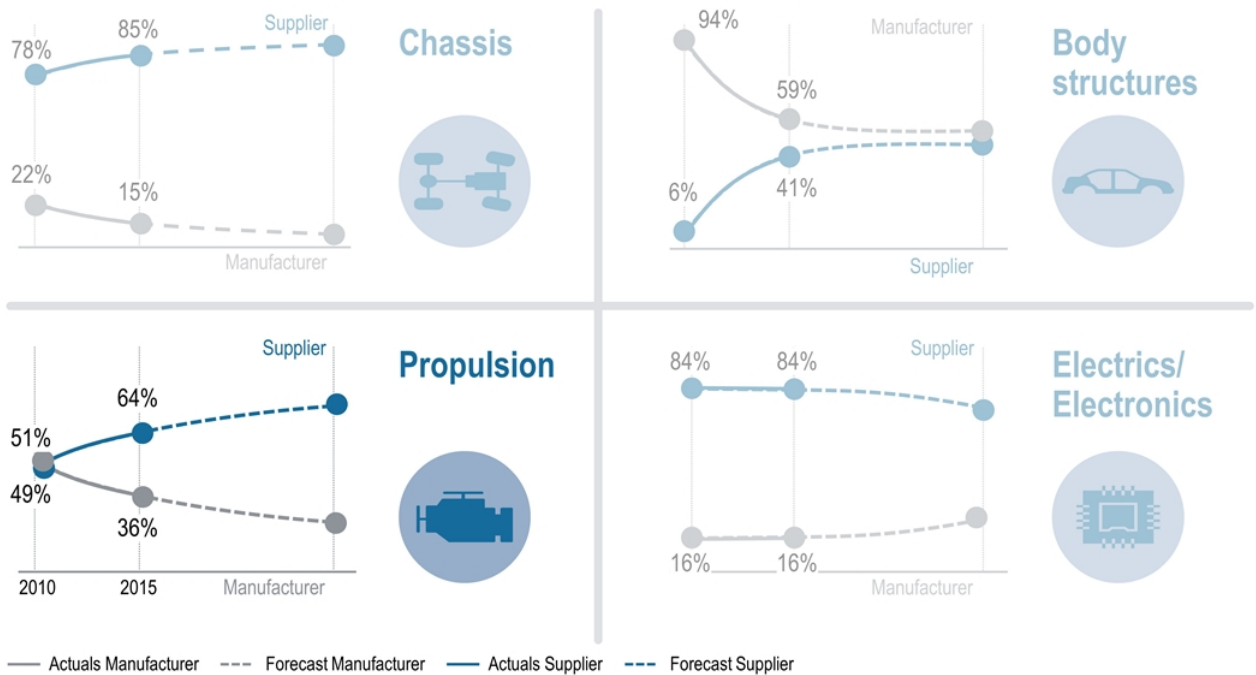


ICE: Internal Combustion Engine EV: Electric vehicle

Source: Roland Berger

OEM and supplier domain focus will shift over time with suppliers getting a significant share of value-add in propulsion systems

Shifts within the value chain [share of value add in %]

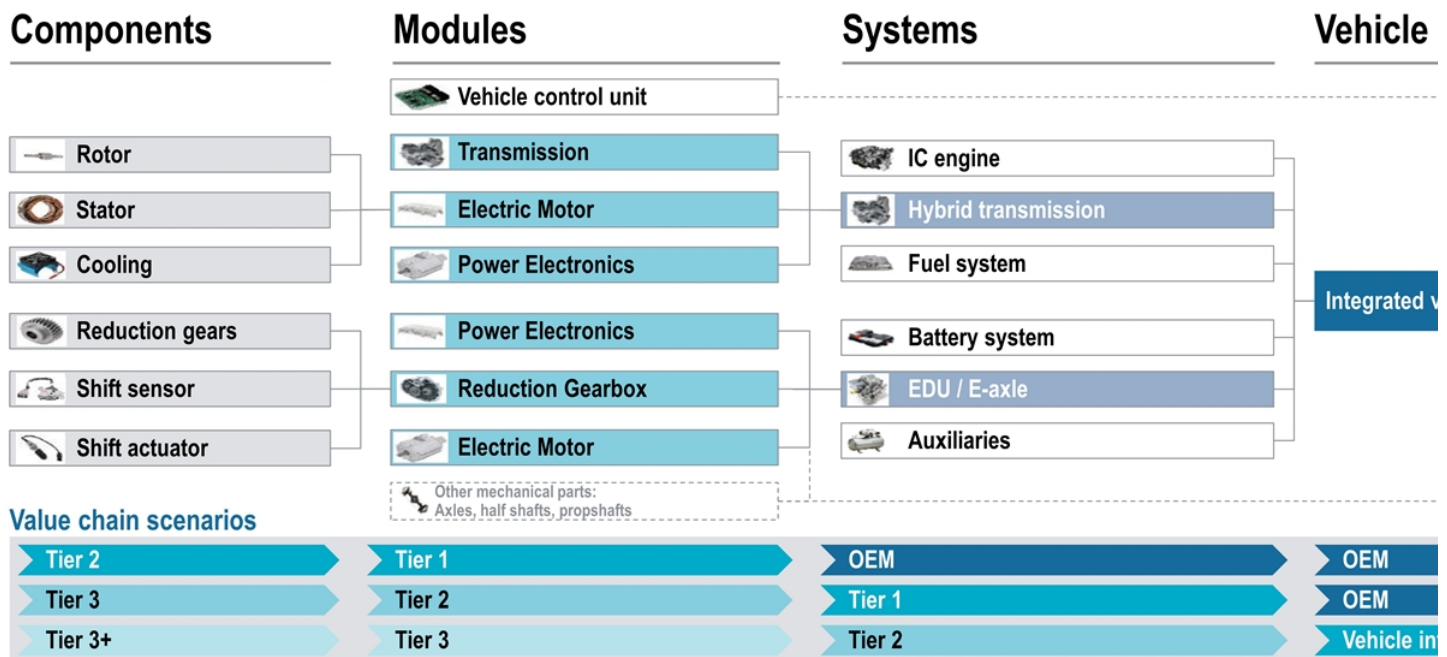


- > Most mechanical parts already manufactured by suppliers
- > Investment in manufacturing continues to shift from OEMs to suppliers
- > The added value convention will continue to shift towards suppliers
- > E-drives do not add value to compensate ICE
- > OEM will increase investment in system integration to expand its electronics competence

Source: Roland Berger

While suppliers will take a more prominent role in the value creation systems, it will largely depend on OEMs' strategies

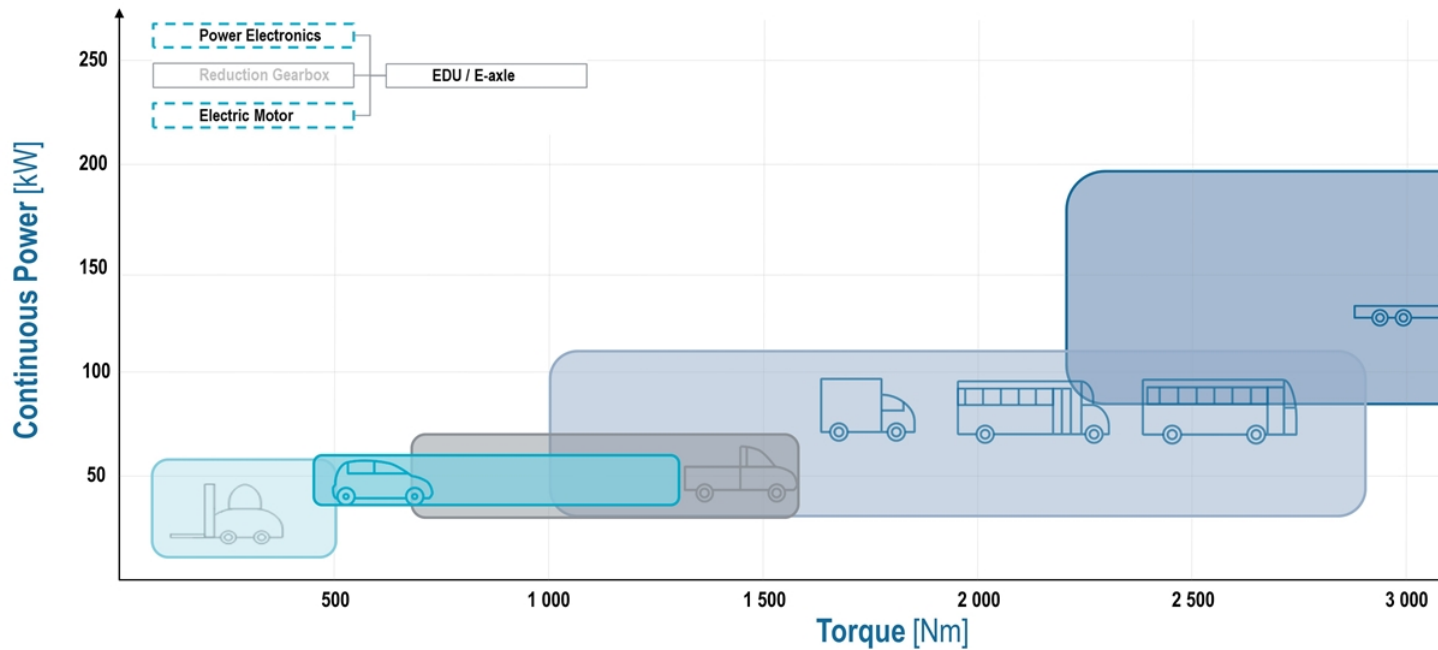
Participation construct in electrified propulsion systems



Source: Roland Berger

A range of motors (low and high voltage) and power electronics will be required to serve the full range of applications and vehicle architectures

E-motor power and torque range by segment – Illustrative



Source: Roland Berger

Implications for suppliers



- The development of electrification is happening across all mobility markets – while passenger car is the large there are applications within commercial vehicle and off-highway with higher levels of adoption
- Regulations and customer pull are driving the development of the xEV market more than technology and infra- nuances exist between vehicle segments and regions
- The increase in xEV and the corresponding downturn in ICE systems is driving a change in OEM sourcing be suppliers projected to play a more prominent role in propulsion systems
- In order for a supplier to provide the propulsion system to OEMs, competencies in gearbox, e-motors, and pc design and integration will be required
- Suppliers that have not yet built or acquired these competencies will find it difficult to build them organically g constraints on resources and the pace of change
- Those with system-level integration capabilities will be able to provide more efficient systems and value to OI

Roland
Berger

THINK:ACT





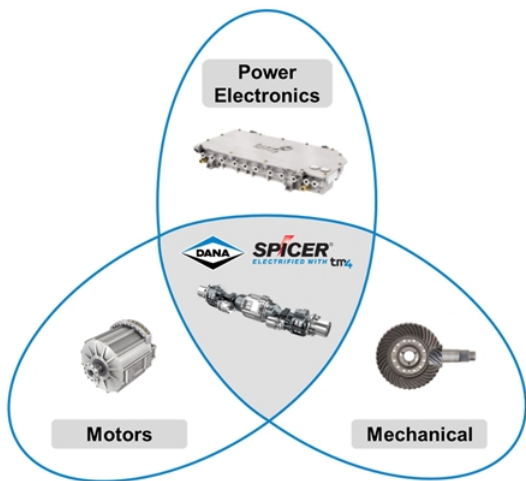
Lead Electric Propulsion

Develop and deliver **fully integrated e-Propulsion system** to capture opportunity to **double CPV** as core markets shift from internal combustion engines to electric propulsion



Boost	Hybrid
Propel	Electric Vehicle
Drive	

Double Content Through Electrification



Electrification creates **significant opportunity** in driveline

~585
million customer km
driven with TM4 motors



~12,000
vehicles on the road today

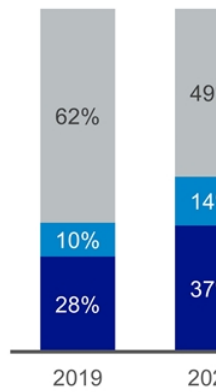
300+

electrification-focused
engineers



Leverage **deep expertise** in electrifying our core markets...

Bus Production



...because E is happening **more** than anti

Wide Range of Vehicle Segments

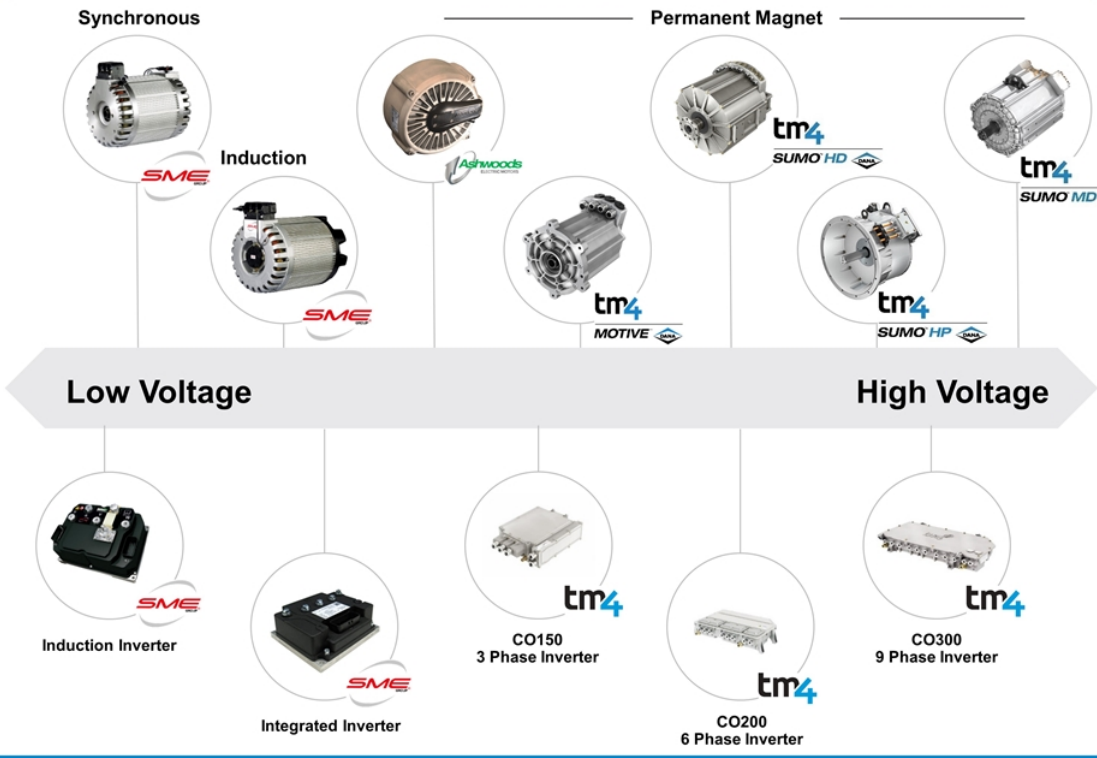
Target Electrification Segments



- **Low-voltage** segments: smaller packaging, low weight, greater maneuverability
- **High-voltage** segment: higher torque, greater range, voltage auxiliary system
- While some of these segments may be electrified later than others, positioning itself to be a leader in **providing e-Propulsion**

Electrodynamic Technology

Motor & Inverter Portfolio



- Dana offers **motors and electronics** for both **low and high-voltage** applications
- Lower-voltage power electronics are **integrated into one unit** for low-voltage inverters and can be separate for high-voltage
- Dana offers a range of products, allowing them to meet **the end-market application** with high performance

Electric Motor Topology

Induction

Copper Wire



Vehicle auxiliaries and traction for low-speed electric vehicles

- 2 - 40 kW
- Round-wire copper design
- Extremely reliable, low-cost solution

Synchronous Reluctance

Synch. Reluctance



Vehicle auxiliaries

- 15 - 25 kW
- Brushless, magnet-free design
- Improved cost performance and efficiency over induction motors

Synch. Reluctance Internal Permanent Magnet

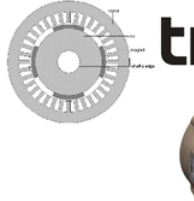


Traction for low-speed vehicles

- 20 - 76 kW
- Brushless, magnet design
- More cost-effective traction solution than permanent magnet motors

Perman

Rare E



Traction for pas off-high

- 4 - 250 kW
- Round and recta
- Highest power d
- Available in both rotor designs

Cost Effectiveness

Pc

Power Electronics Topology

Low Voltage Inverters

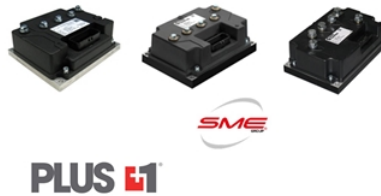
TAUTRONIC Inverters



Small OH traction and pump functions

- 1.5 - 70 kW
- Most advanced control algorithm for high efficiency and high performances Synchronous Reluctance and Permanent Magnets motors
- SME power modules for the best power/volume ratio in the market

SCHWARZMULLER Inverters



Automatic Guided Vehicles and CV auxiliary functions

- 1.5 - 70 kW
- State of the art control algorithm for induction motors control
- Specific hardware and software for application in autonomous vehicles and Electro-Hydraulic Power Steering

High Voltage Inverters

Inverters



LV, CV, and larger OH machines









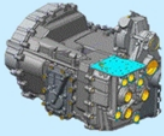

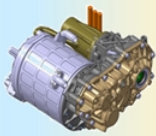


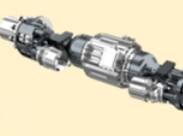
- 150 - 350kW
- TM4 "Reflex" technology optimizes motor control
- Tailored to application based on in-depth market knowledge enabling optimized performance

Low Voltage

PLUS1 is a registered trademark of Danfoss

Electric Propulsion Product Portfolio

Technology Solutions

Mild hybrid	Plug-in Hybrid Electric Vehicle (P/HEV)			Battery Electric Vehicle (BEV)		
Power Electronics	Hybrid Transmission	Hybrid Axle	Independent e-Axle	Direct Drive	e-Drive Unit	Rigid e-Axle
						
						

Vehicle Applications

Recreational	Utility	Passenger Car	Material Handling	City Delivery	Light Truck	Medium Duty	Heavy Duty/Bus
 <p>Club Car</p>	 <p>Taylor Dunn</p>	 <p>Bolloré Blue Car</p>	 <p>BYD 1.6T & 2.5T</p>	 <p>Zenith Electric Van</p>	 <p>Under Development</p>	 <p>Workhorse</p>	 <p>Karsan ATAK minib</p>

Electrification Product Applications

Technology Solutions

 Mild hybrid

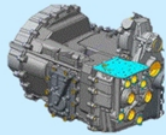
 Plug-in Hybrid Electric Vehicle (P/HEV)

 Battery Electric Vehicle (BEV)

Power Electronics



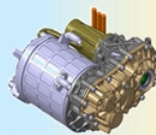
Hybrid Transmission



Hybrid Axle



Independent e-Axle



Direct Drive



e-Drive Unit



Rigid e-Axle



Architecture Types

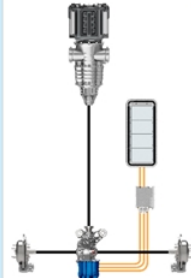
P0 / P1



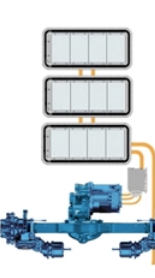
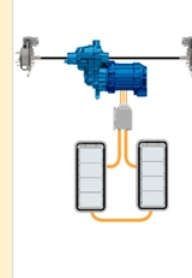
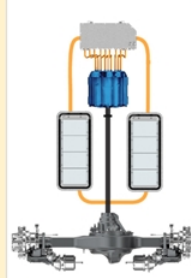
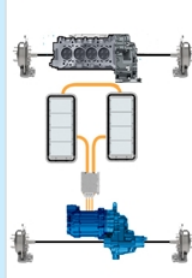
P2 / P3



P3.5



P4





Power Electronics

Heavy-Vehicle Application



Mild Hybrid

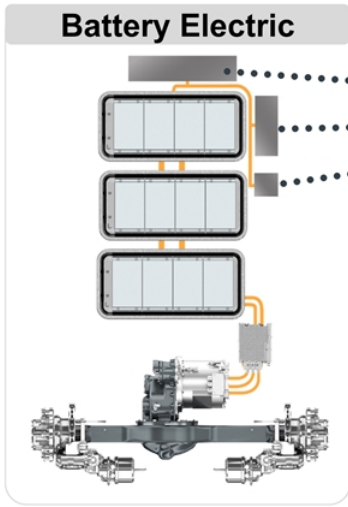


- Inverters and software provide start/stop functionality via a **starter generator** for mild hybrid vehicles
- Targeted toward **commercial** segment, including bus
- Product is compatible with various hybrid architectures, allowing for **easy integration**
- Enables OEMs to **better meet environmental regulations**



Power Electronics

Transportation Application



- SME acquisition position in **low-voltage auxiliary** powertrain, expanding content in key segments
- Includes **motors and hydraulic pumps**, electronic hydraulic pumps, and e-Compressors for air conditioning and climate systems
- Focused on **commercial and smaller off-highway applications**, such as aerial work platforms, refuse trucks, and forklifts
- **Opportunity to target mobility segments**, such as electric buses and electric vehicles
- Allows Dana to sell a **full range of powertrain and auxiliary products** optimized for performance

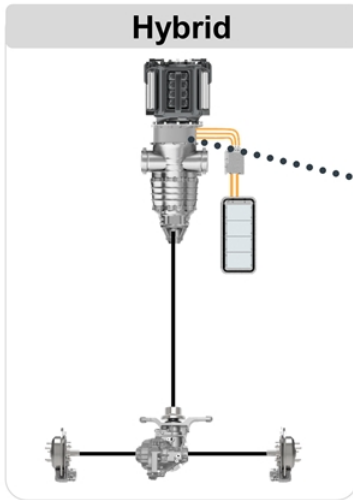


Hybrid Transmission

High-Performance Application

GRAZIANO®

High-Performance Transmissions



- Automated high-efficiency **integrated hybrid motor** in P2 or P2.5 layout
- Targets front or mid-engine **range hybrid passenger** vehicles
- Developed with a **modular** design to reduce one-off designs
- Full hybrid functions including
 - Engine cranking
 - Kinetic engine recovery
 - Electric boost
 - Full electric drive
 - Hybrid drive
 - Charging from start

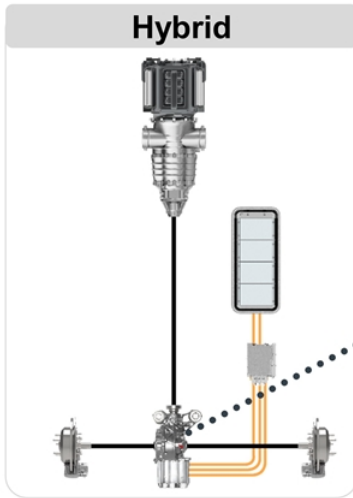


Hybrid Axles

High-Performance Application

GRAZIANO®

High-Performance Transmissions

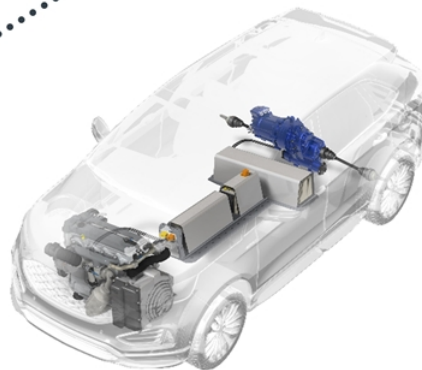
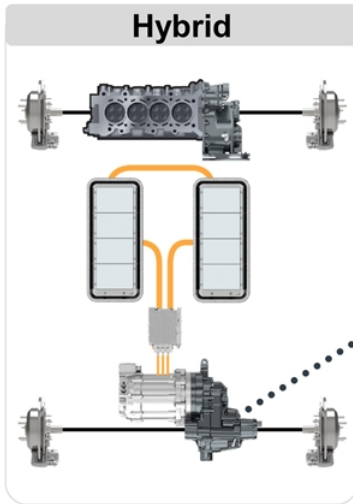


- **Unique solution** for re high-performance vehic
- Efficient torque manag **varying driver require**
- Provides 150kW of **ins reduces fuel consum**
- Functionalities include **energy recovery** mod
- Capitalizes on emergin offering **acquired elec** for existing Dana custo



Independent Electric Axle

CUV and SUV e-AWD Application

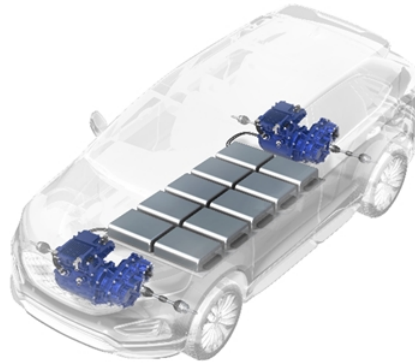
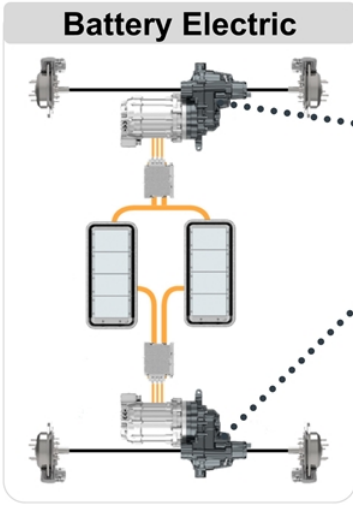


- Adds **secondary elect** wheel-drive hybrid vehi capability without adding connections
- Option for **torque vect** scales from traditional
- Target applications incl market to achieve **on-c drive** functionality with **solution**
- E-Axles allow for impro integration, optimized p **weight reduction**
- Provides OEMs with th **integrate** into **hybrid c** architectures



Independent Electric Axles

CUV and SUV e-AWD Application

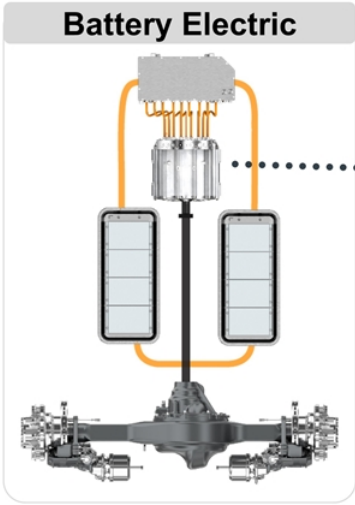


- Dual torque vectoring i
e-Axles provide full ele
- Additional content in **A**
- Offers Dana opportunit
commercial-vehicle ma
expansion into electrif
passenger car market
- Fewer mechanical com
reduced maintenance
- Positions Dana to win c
who are attracted to hig
attributes



Electric Direct Drive

Urban Transport Application

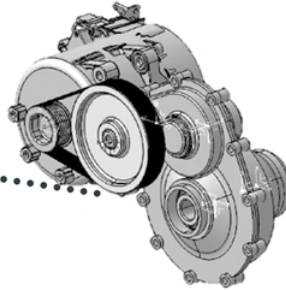
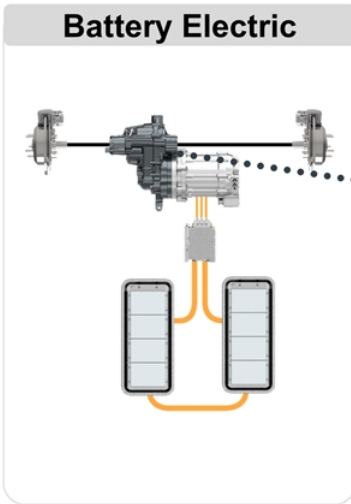


- **Direct drive motors** w motor directly interface axle and driveshaft to p
- Allows OEMs to **imme** existing chassis
- Maximizes Dana conte components to mechar
- Targets commercial-ve such as **medium-duty**
- **Lowers maintenance** internal combustion en



Electric Drive Unit

Low Speed Electric Vehicle Application



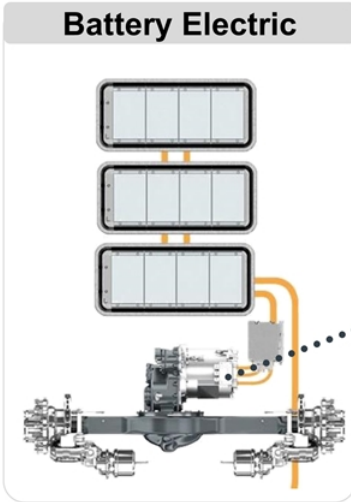
- **Electric-drive system:** speed electric-vehicle r
- Targets fully battery-ele **passenger and utility**
- Enables **access to high** new mobility for city tra utility-vehicle market
- Emerging Indian marke supply **small commerc segment** and **low-spe** through existing joint v
- Offering variety of solut **controlled** torque vect differentials

Rigid Electric Axles

Urban Transportation Application



Battery Electric



- Electric motor is **fully integrated** into the axle; combines all functions of a motor, transmission and axle into one compact unit
- Applications in all mobility segments, currently targeting **commercial** bus, medium-duty truck and end markets
- Compact design **saves space** and enables efficient operation
- Opportunity to take advantage of **new packaging** and gain **flexibility** in other aspects of the design

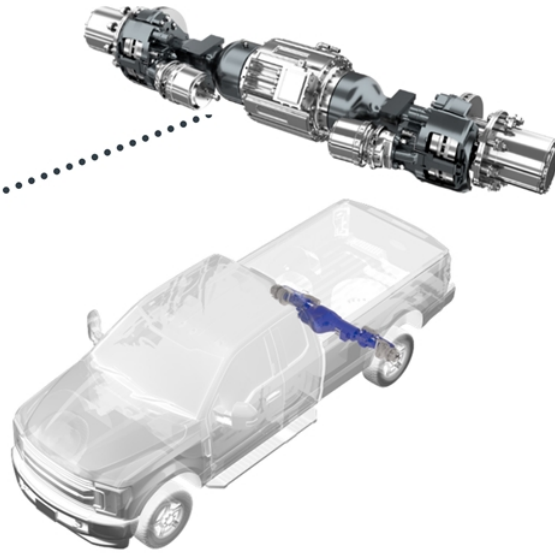
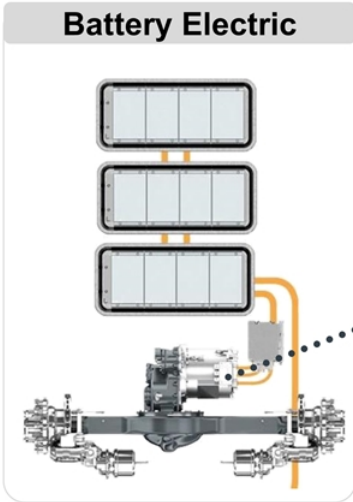


Rigid Electric Axles

Full-Frame Truck Application



Battery Electric

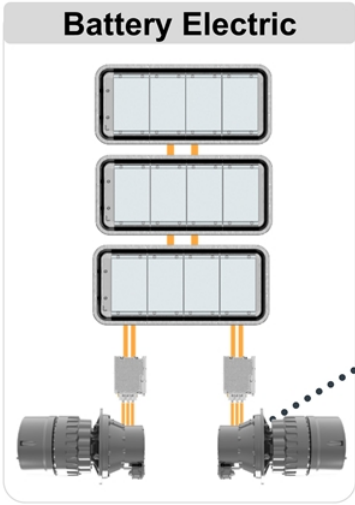


- Electric motor is **fully integrated** into the axle; combines all functions of a motor, transmission, and axle into one compact unit
- Applications in the **full-market**, including pickup trucks and commercial vehicles
- Compact design **saves space** and enables more efficient operation
- Opportunity to take advantage of **new packaging** and gain **flexibility** in other aspects of the vehicle design



Wheel-End Electric Drives

Material-Handling Application

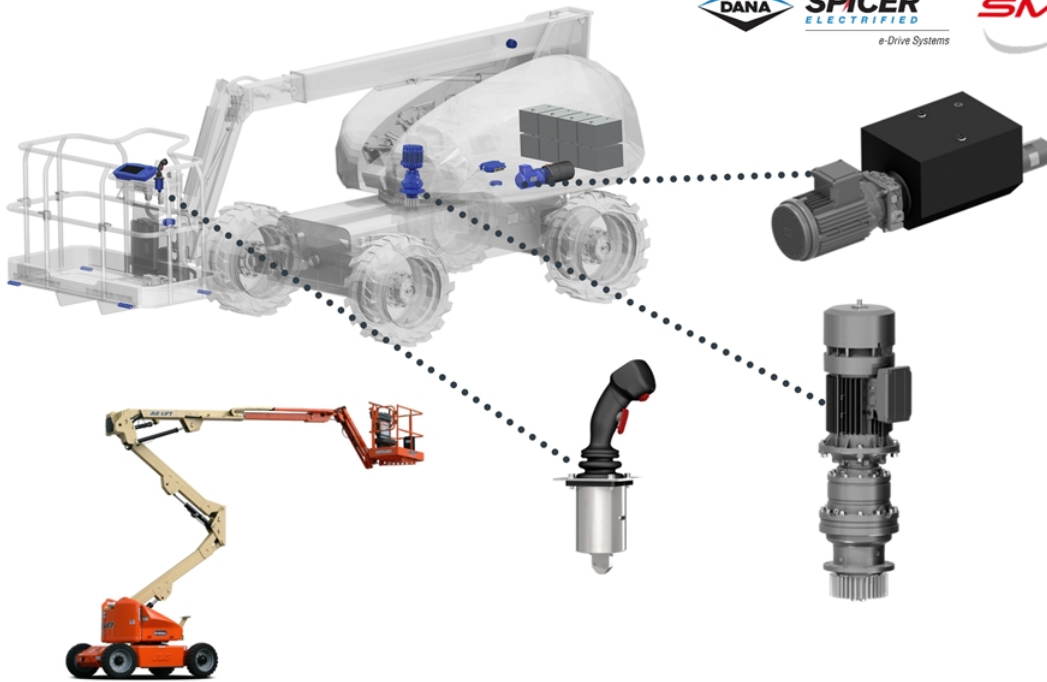


- Electric motor connects **wheel** drives
- Integrate **ODS** and **Bre portfolio** into **Dana's s** to penetrate new markets
 - Allows Dana to capture **rapidly growing segments**: construction material handling
 - Leverage **acquisition technology** for electric small excavators
 - High-efficiency motor drives allow for new **packaging** and layouts
- Can offer both **front drive** and **steer axles** electrified



Motion Electric Systems

Slew Drive, Power Pack, and Controls Application



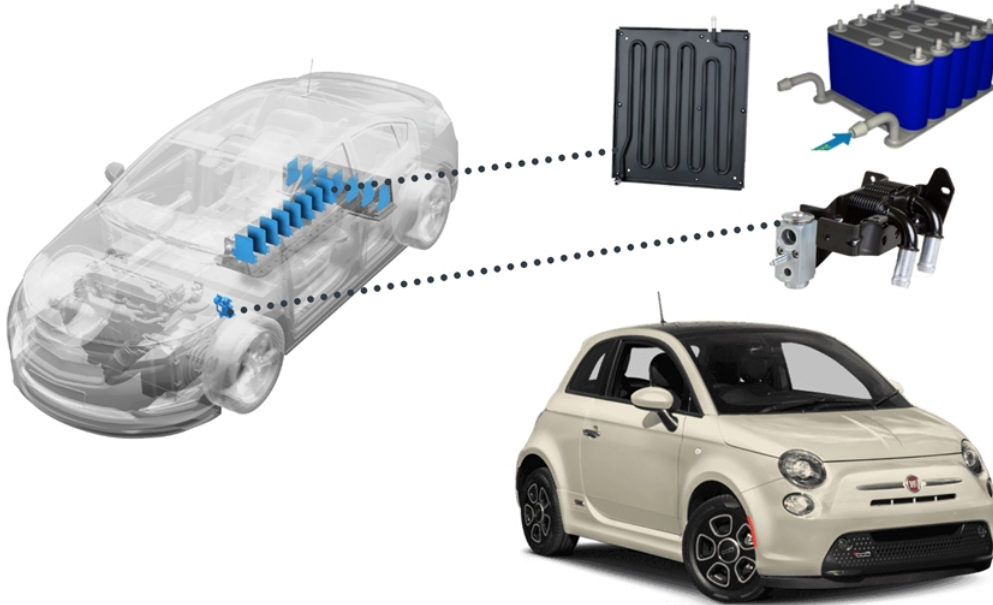
- Deliver **greater value** by selling electrified motion systems, as **performance optimized** between systems
- Integrate **ODS' products** into **Dana's system approach** for new markets
 - Leverage acquisition for electric mini applications
- Motion systems can also be integrated **with Brevini power packs** to convert electric power into hydraulic



Battery Cooling

Long® ThermaTEK™

LONG®
Thermal Products

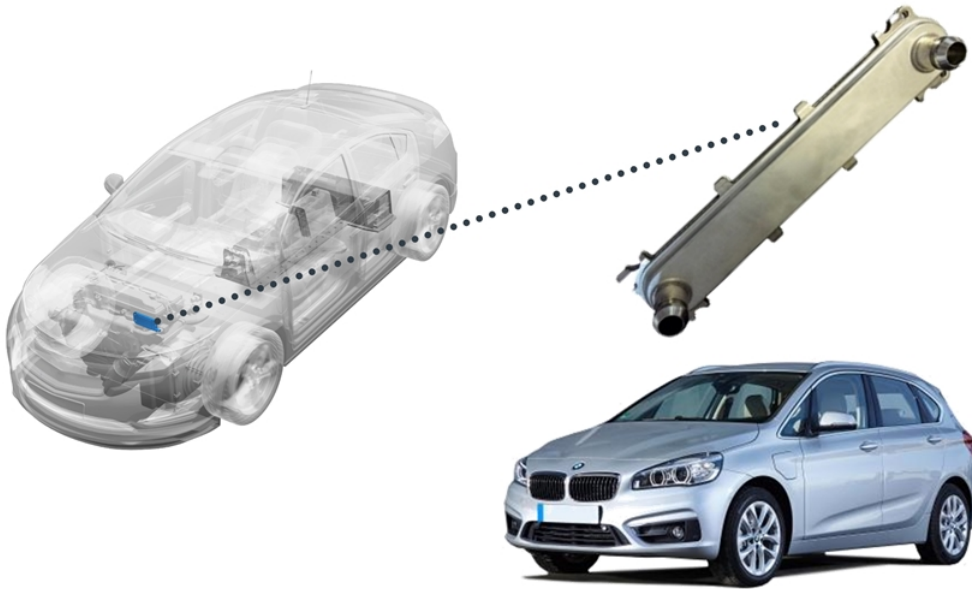


- Thermal management **function** in all hybrid and electric vehicles
- Battery solution provides **cooling and heating functions**
- Numerous **patented designs** to optimize the temperature across the cold plate
- Utilizes a proprietary **aluminum brazing technology**

🔋 Electronics Cooling

Long® ThermaTEK™

LONG®
Thermal Products

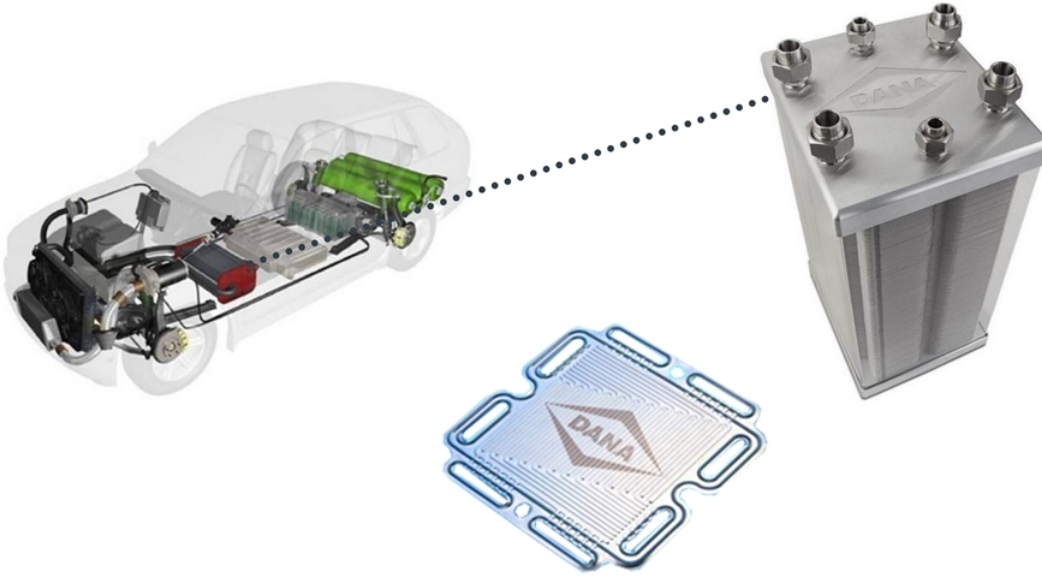


- Electronics thermal management is **increasingly critical** as performance requirements multiply due to **electrification** and **autonomous driving**
- Dana developed a unique solution that provides **two-sided charging** and optimizes heat transfer
- Unique production process achieves **weight and cost reduction**
- Solution is an **industry leader** and a **PACE Award** finalist

Hydrogen Fuel Cells

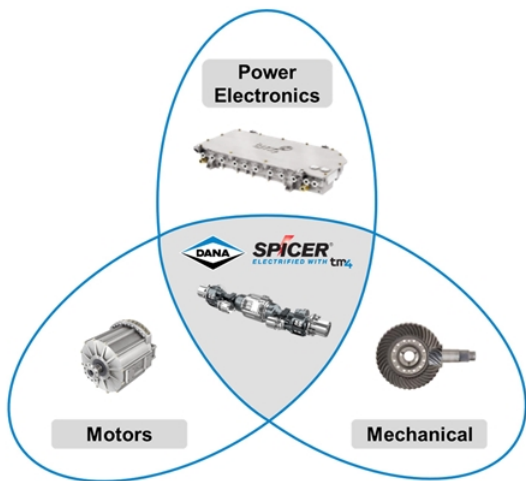
Victor Reinz® Hydroseal™

VICTOR REINZ®
Sealing Products



- Fuel cells expected to be highly relevant as **adoption increases** in 15+ years, specifically in the automotive segment
- Fuel-cell capabilities provide a path **to address core market** of energy source
- **Co-developing** future **OEMs**
- Currently a **market leader in plates**, having supplied composite plates
- Experience in both metal and plastic solutions gives Dana **flexibility in both solutions** as OEM offering

Double Content Through Electrification



Electrification creates **significant opportunity** in driveline

~585
million customer km
driven with TM4 motors



~12,000
vehicles on the road today

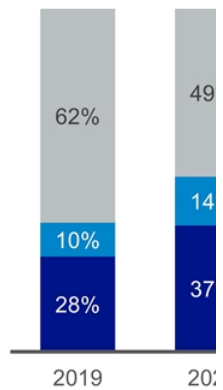


300+
electrification-focused
engineers



Leverage **deep expertise** in electrifying our core markets...

Bus Production



...because E is happening **more** than anti

Electrification yields more than \$100 million of sales today





Financial Summary

People Finding A Better Way[®]



Enterprise Strategy Financial Impact



1

Embedded Multi-Market Co

\$175M
2018

2



3



\$700M backlog 2019

5



\$500M sales in 20

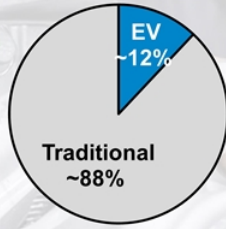
Electrification Leadership Evolution

2018¹

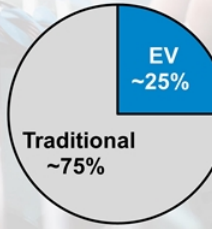
2023

Engineering Spend

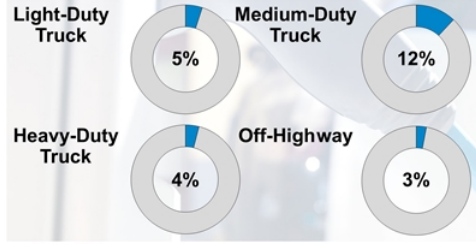
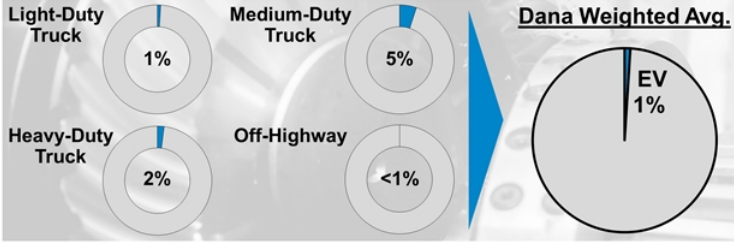
Engineering Spend:
~3% of Total Sales



Engineering Spend:
~3% of Total Sales



Addressable Electrification Market²



Electrification Sales



1. Dana metrics pro forma for acquisitions. 2. Light-duty truck based on mini/compact/full-size full-frame vehicles and unibody vehicles; CV volumes based on North America, EU, and China; OH volumes global and include construction equipment and mining vehicles.

2019 Guidance vs. 2016 Original Targets

- Delivering dramatically improved financial results compared to targets provided at 2016 Investor Day
- Augmented by strategic M&A investments
- Expecting to meet 2019 adjusted free cash flow target from 2016 Investor Day before impact of ODS integration
- Improved EPS outlook largely driven by profitability expansion

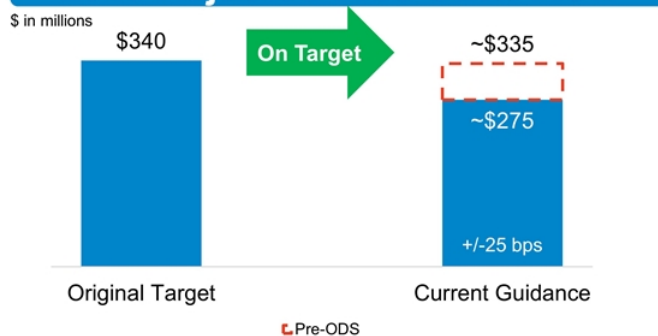
2019 Sales



2019 Adjusted Earnings



2019 Adjusted Free Cash Flow

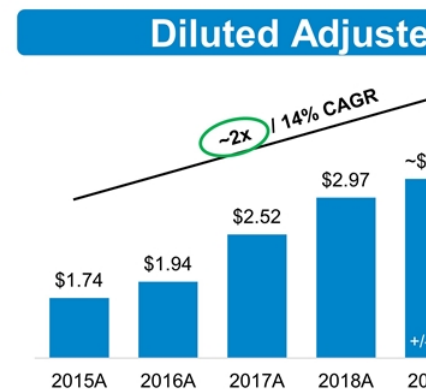
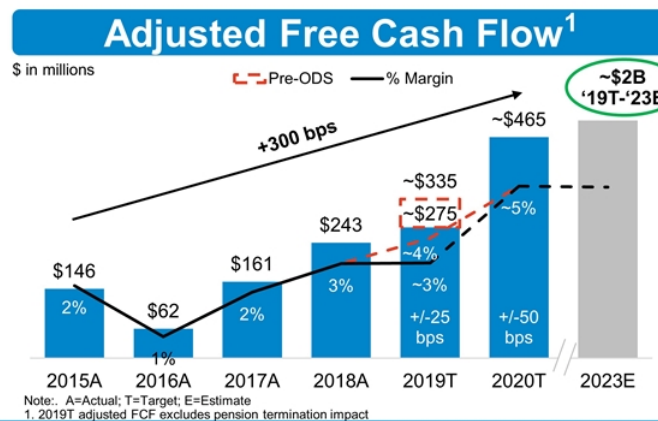
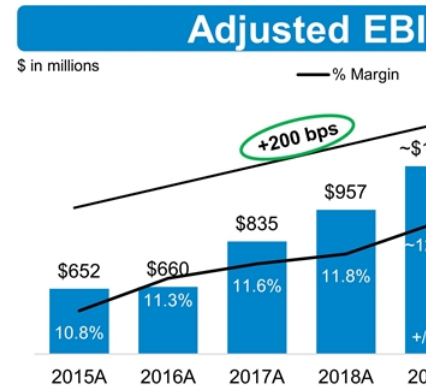
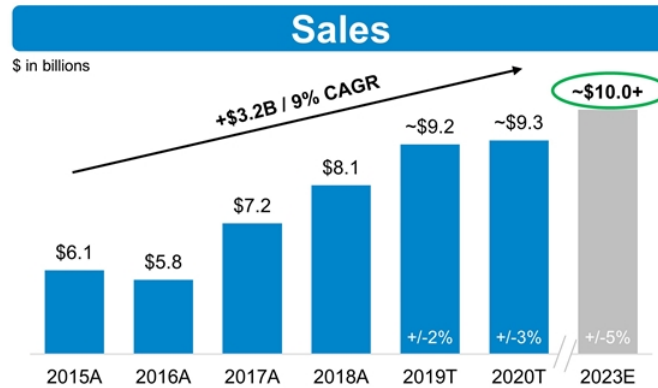


2019 Diluted Adjusted Earnings



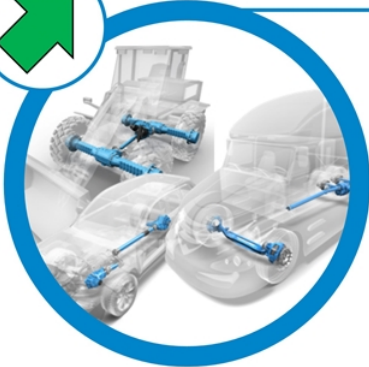
Key Financial Metrics Trends

- 2019 includes 10 months of ODS, with synergies actions completed through 2020
- Forecasted market growth and new business attainment expected to drive sales exceeding \$10B by 2023
- 200 bps of EBITDA margin expansion from 2015 to 2020T
- 2019T adj. free cash flow projected at ~4% of sales prior to ODS impact of (\$60M)
- Expecting to reach 5% adj. free cash flow goal by 2020 and drive ~\$2B of FCF generation through 2023
- EPS growth continues to outpace profit growth due to prudent balance sheet management



Note: A=Actual; T=Target; E=Estimate
 1. 2019T adjusted FCF excludes pension termination impact

2020 Growth Drivers



**Backlog
Conversion**



**Market
Demand**



**Cost
Synergies**

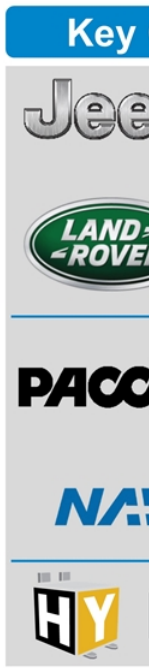
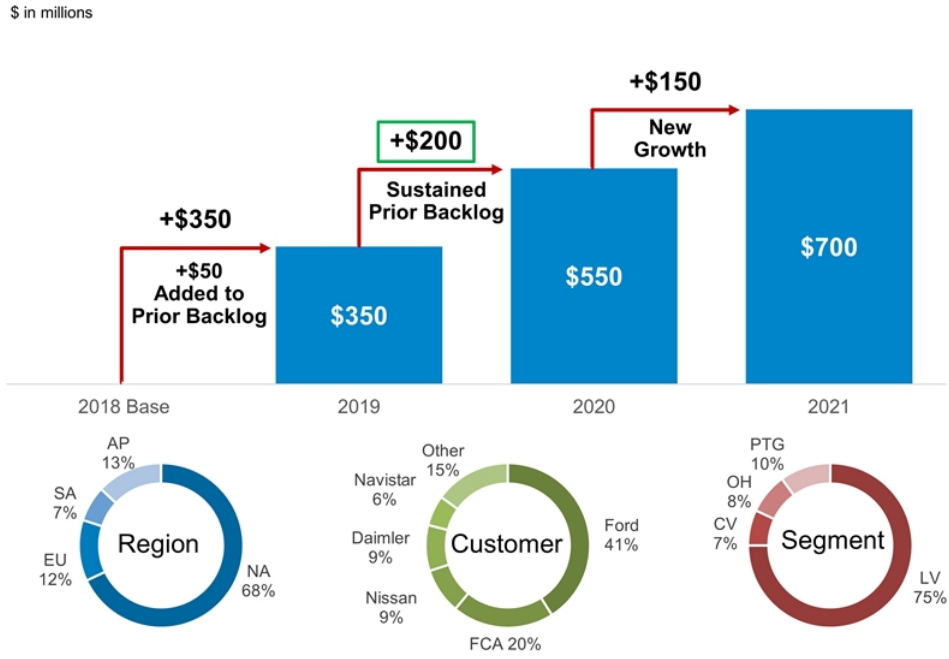


Co



2019-2021 Sales Backlog: \$700 Million

- Backlog includes booked incremental new business net of any lost replacement business
- Backlog is incremental to 2018 sales, holding both foreign currency exchange rates and vehicle production volumes constant
- Delivering positive backlog in all business units across all major customers and regions



Backlog positions us to outperform market through

2020 Mobility Market Demand Outlook

Light Vehicle



Full Frame Truck



Commercial Vehicle



Medium Duty



Heavy Duty



Off-Highway



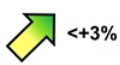
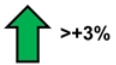
Agriculture



Construction



YoY Δ
Legend



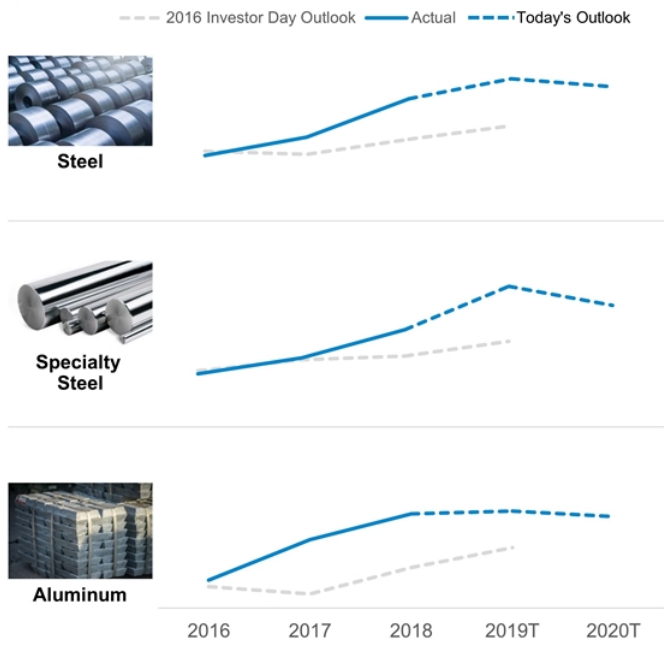
Primary
Third-Party
Sources



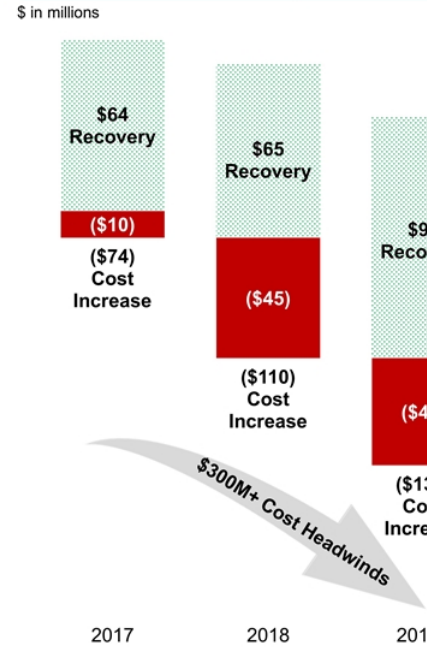
Commodity Costs Outlook

- Prices in all key commodities have increased faster than projected at previous Investor Day
- Driving \$300M+ cost headwinds expected through 2019, with nearly \$100M impacting profitability
- Forecasting modest cost reductions in 2020 – price give-backs provide ~25 bps of Adjusted EBITDA margin improvement

Market Prices



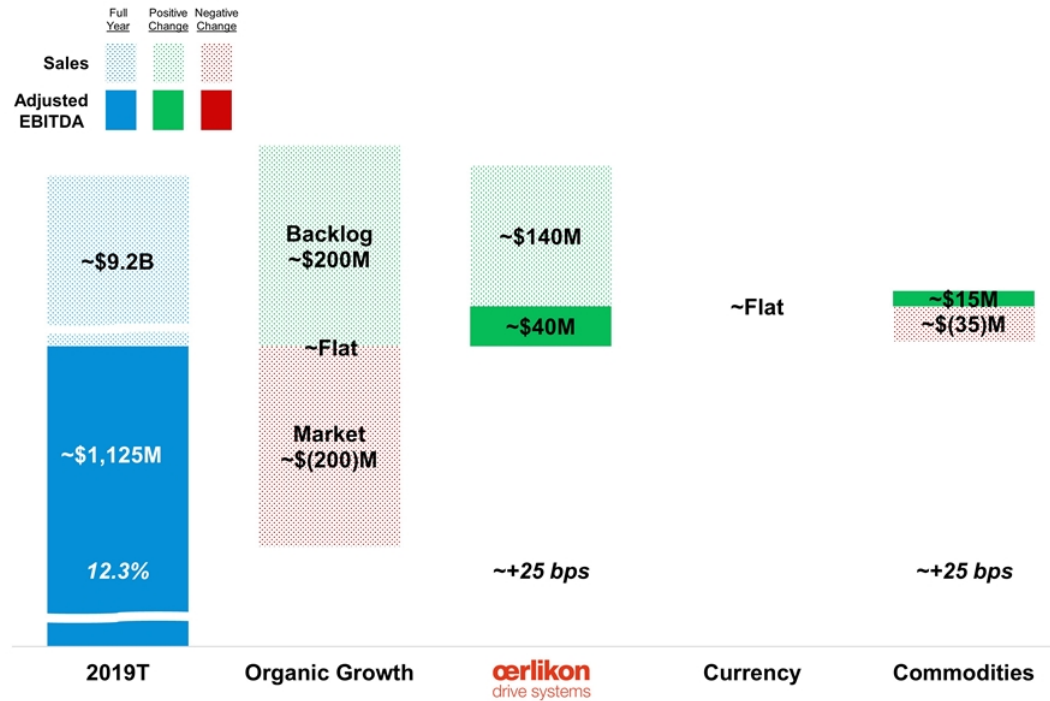
Commodity Cost



Delivered 100 bps profit margin expansion in spite of commodity cost increases

2020 Sales and Profit Changes

- Organic sales likely to remain flat as softening of market demand will be offset by conversion of sales backlog
- ODS is expected to accrete ~\$140M of sales and ~\$40M of profit, mainly due to a full year of results plus cost synergies, and will deliver half of the margin expansion required to achieve the long-term profit margin target
- Commodity costs need to only decline by \$50M in order to provide the other half of the margin expansion



ODS cost synergies and commodity cost reduction =

2020 Adjusted FCF Growth Drivers

- Expecting 200 bps of adjusted FCF margin expansion at midpoint of range, from profit growth, reduction in one-time costs, and working capital investment versus 2019T
- 2020T includes full year of ODS versus 10 months in 2019, as well as realization of the majority of synergies actions
- ODS capex expected to normalize in 2020

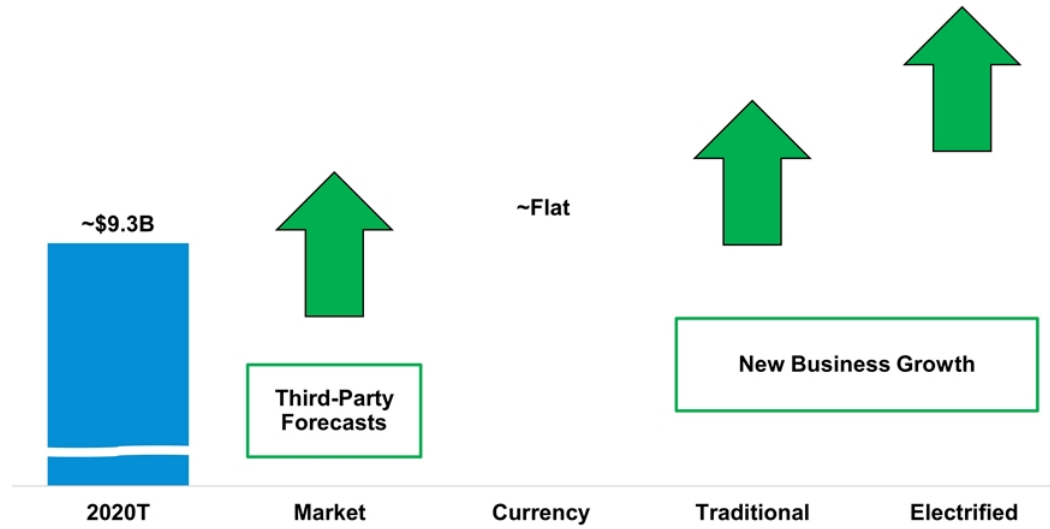
Changes Versus 2019T

\$ in millions			2
	2019T	2020T	
Adjusted EBITDA	~\$1,125	~\$1,180	
One-Time Costs	~(95)	~(40)	
Interest, net	~(105)	~(110)	
Taxes	~(185)	~(185)	
Working Capital / Other	~(50)	~0	
Capital Spending	~(415)	~(380)	
Adjusted Free Cash Flow	~\$275	~\$465	
% Margin	~3.0%	~5.0%	

Adj. FCF margin up significantly with normalized ODS & wo

2023 Sales Potential

- Third-party sources forecasting overall growth in addressable markets
- Current secured backlog balance scheduled online in 2021 – assumes future 2022-2023 backlog will be in line with 2021
- Anticipating electrification sales growth to ~\$500M by 2023 through legacy Dana, as well as acquired solutions: ODS, TM4, SME



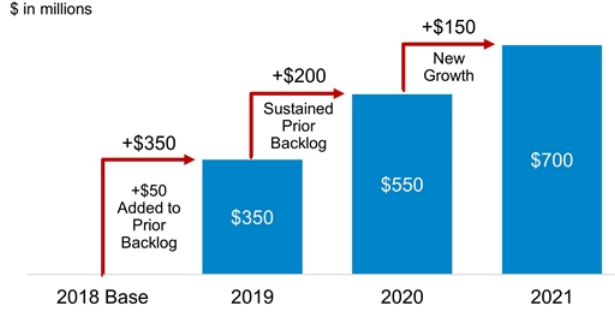
Market and new business growth to propel sales to

Managing Through the Cycle

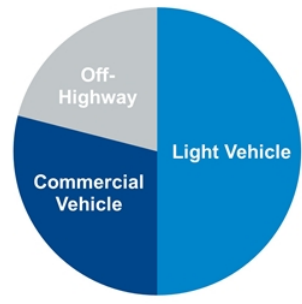
- Proven and consistent track record of generating new backlog growth
- Strong backlog already established three years forward
- Diversification across end markets and regions lessens impact of softness in any one sector
- Embedded cost synergies and flexibility to abate capital spending provide additional cash flow management
- Long-term adj. free cash flow goal still largely achievable even if a downcycle is endured

Cycle Mitigating Factors

Robust Backlog

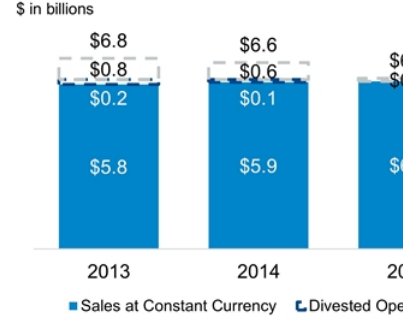


Well-Diversified Business Mix



Recent Case – 2

Sales

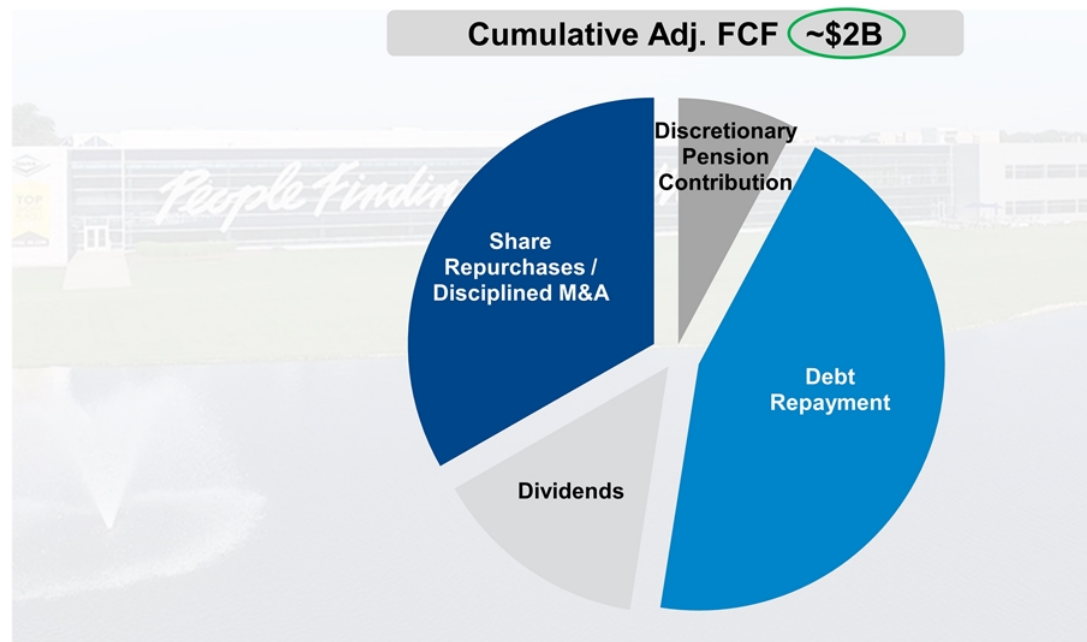


- Class 8 markets declined ~10% in 2021
- OH markets declined mid-single-digits in 2021
- Significant growth in LV markets in 2021
- LV backlog growth offset majority of market volume declines in 2021
- Power Technologies market volume achieved strong growth in 2021
- Maintained overall organic sales constant currency basis

Capital Allocation

- Anticipating cumulative adj. FCF of ~\$2B for 2019T-23E
- Includes capex at normalized levels of ~4% of sales, as largest programs have refreshed
- Pragmatically reducing debt and pension liabilities
- Shareholder return will be combination of dividend payments, and share repurchases or more attractive M&A opportunities
- Well-positioned to deliver long-term growth from recent EV acquisitions
- Attractive adj. FCF profile and consistent de-levering will generate investment grade credit metrics

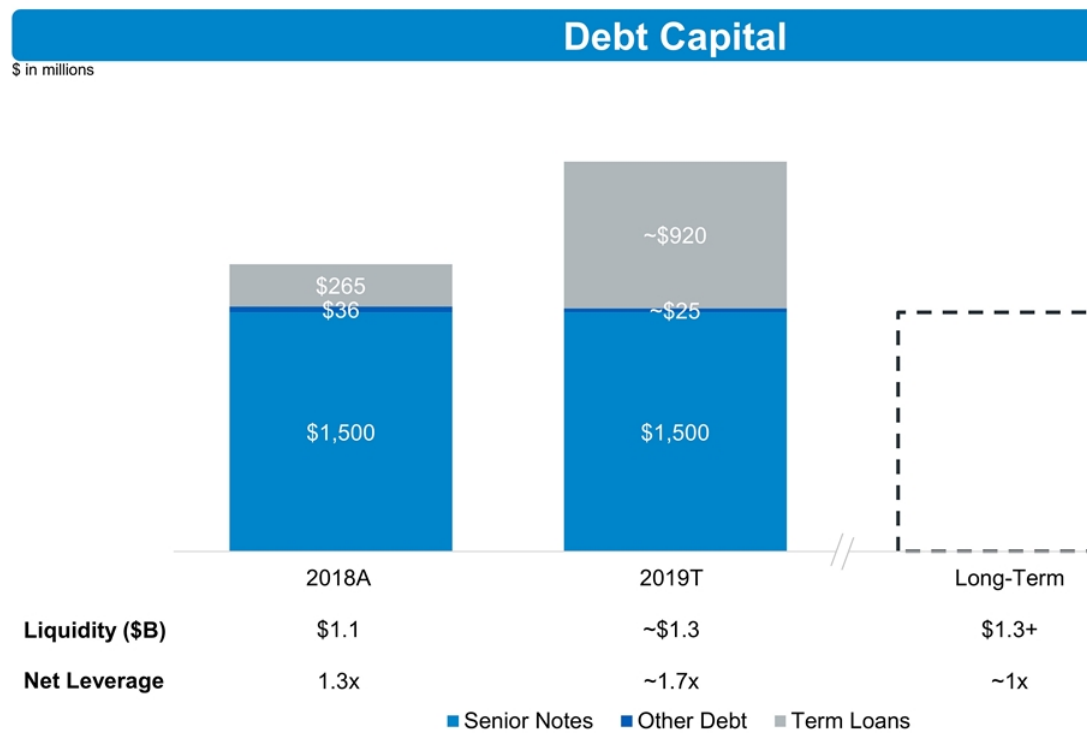
5-Year Illustrative Capital Allocation



Further strengthening balance sheet and enhancing share

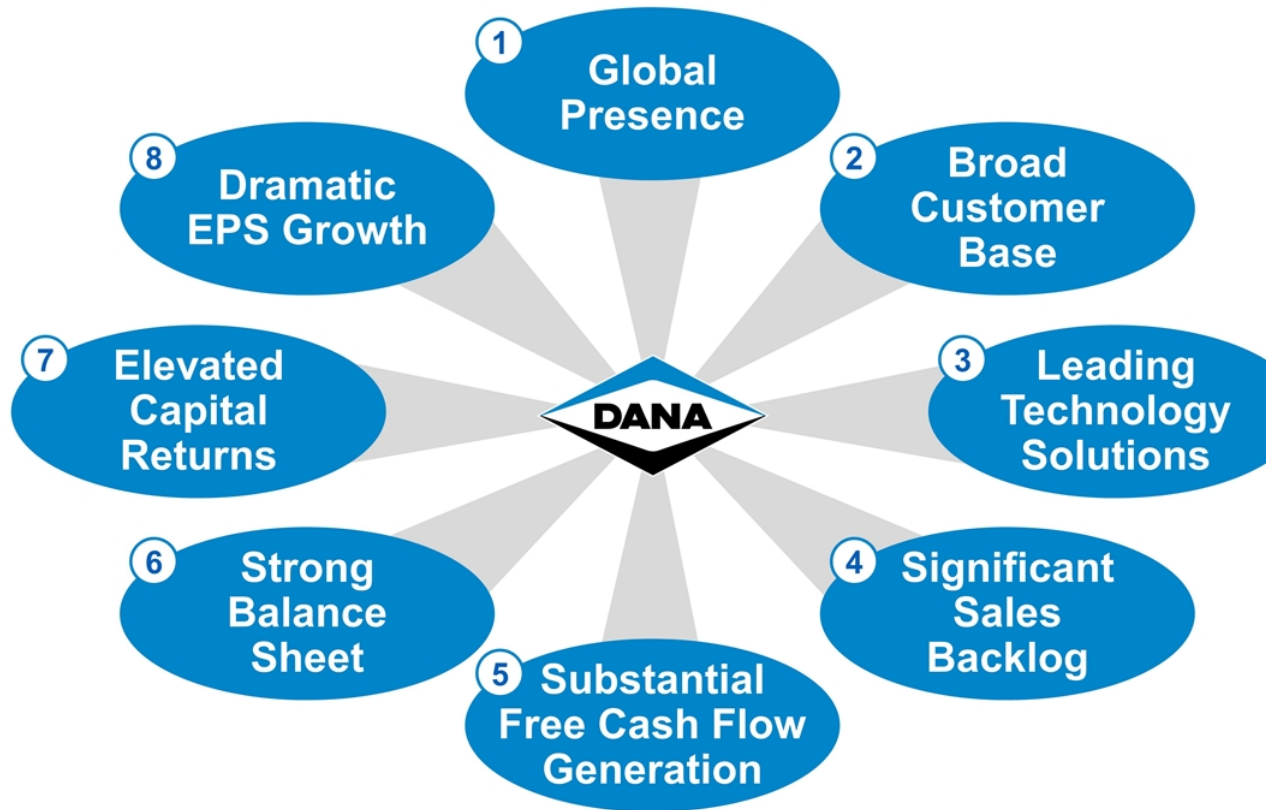
Capital Structure

- 2019T debt includes acquisition financing for ODS
- Planning to designate majority of 2019 free cash flow for discretionary pension termination
- Forecasting substantial paydown of term debt related to ODS in 2020
- Expect robust long-term free cash flow profile to allow for further paydown of debt



Projecting de-levering to achieve investment grade credit

Investment Highlights





People Finding A Better Way[®]

Non-GAAP Financial Information

The preceding slides refer to adjusted EBITDA, a non-GAAP financial measure which we have defined as net income before interest, tax, amortization, equity grant expense, restructuring expense and, non-service cost components of pension and other postretirement benefit and other adjustments not related to our core operations (gain/loss on debt extinguishment, pension settlements, divestitures, impairment, etc.). Adjusted EBITDA is a measure of our ability to maintain and continue to invest in our operations and provide shareholder returns. We use adjusted EBITDA in assessing the effectiveness of our business strategies, evaluating and pricing potential acquisitions and as a factor in making incentive compensation decisions. In addition to its use by management, we also believe adjusted EBITDA is a measure widely used by securities analysts, investors and other interested parties to evaluate financial performance of our company relative to other Tier 1 automotive suppliers. Adjusted EBITDA should not be considered comparable to net income before income taxes, net income or other results reported in accordance with GAAP. Adjusted EBITDA may not be comparable to similar measures reported by other companies.

Diluted adjusted EPS is a non-GAAP financial measure which we have defined as adjusted net income divided by adjusted diluted shares. Adjusted net income as net income attributable to the parent company, excluding any nonrecurring income tax items, restructuring charge, pension contributions and other adjustments not related to our core operations (as used in adjusted EBITDA), net of any associated income tax effect. Adjusted diluted shares as diluted shares as determined in accordance with GAAP based on adjusted net income. This measure is consistent with the purposes of providing investors, analysts and other interested parties with an indicator of ongoing financial performance that provides enhanced comparability to EPS reported by other companies. Diluted adjusted EPS is neither intended to represent nor be an alternative measure of earnings reported under GAAP.

Adjusted free cash flow is a non-GAAP financial measure which we have defined as net cash provided by (used in) operating activities excluding pension contributions, less purchases of property, plant and equipment. We believe this measure is useful to investors in evaluating the operating performance of the company inclusive of the spending required to maintain the operations. Adjusted free cash flow is neither intended to represent nor be an alternative to the measure of net cash provided by (used in) operating activities reported under GAAP. Adjusted Free cash flow may not be comparable to similarly titled measures reported by other companies.

Please reference the "Non-GAAP Financial Information" accompanying our quarterly earnings conference call presentations on our website at www.dana.com/investors for reconciliations of adjusted EBITDA, diluted adjusted EPS and free cash flow to the most directly comparable GAAP measures calculated and presented in accordance with GAAP. We have not provided a reconciliation of our adjusted EBITDA and diluted adjusted EPS to the most comparable GAAP measures of net income and diluted EPS. Providing net income and diluted EPS guidance is potentially misleading and not practical given the difficulty of projecting event driven transactional and other non-core operating items that are included in net income and diluted EPS including restructuring actions, asset impairments and income tax valuation adjustments. The reconciliations of these non-GAAP measures to comparable GAAP measures for the historical periods presented on our website are indicative of the reconciliations that will be prepared for the periods covered by the non-GAAP guidance.