ABOUT WABCO
ABOUT WABCO: THE INDUSTRY’S TECHNOLOGY INNOVATOR

In 2017:

- **$3.3B** Annual revenues
- ~**15,000** Employees in 40 countries
- **15** Industry technology firsts introduced during the last 5 years
- **No.1** in all BRIC markets
- **10** Years NYSE listing
- **2,900** Service Partners
- **2,600** Engineers worldwide
- **$465m** Performance EBIT (14.1% Margin)
- **383** Patents granted

SALES BY CUSTOMER TYPE

- OE Truck & Bus: 57%
- Aftermarket: 9%
- Trailer: 4%
- Off-Highway: 6%
- Car: 24%

SALES BY REGION

- Europe: 52%
- North America: 26%
- Asia: 18%
- S.America: 3%
- Other: 1%

[Other data points such as sales by region and customer type are also included.]

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A RICH PORTFOLIO OF TECHNOLOGIES

AS PERCENTAGE OF WABCO 2017 SALES

- Wheel End: 12%
- EBS & ESC: 35%
- Air Brake Valves: 35%
- Digital Services: 3%
- Transmission Automation: 12%
- Steering Control: 12%
- Electronic Controls & Monitoring Systems: 6%
- Car Products: 6%
- ABS: 6%
- Car Products: 6%
- Air Management Systems: 19%
- Compressors: 6%
- Air Processing: 19%
- Suspension Control: 6%
- Compressors: 6%
- Compressors: 6%

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OUR VALUE CREATION PROPOSITION

We apply advanced technology and services to support commercial vehicle OEM and fleet needs

GLOBAL CAPABILITIES
- Global platforms
- Connected R&D network
- Frugal engineering
- Localization
- Integrated supply chain

SAFETY
- Braking systems
- Active steering
- Stability control
- Collision mitigation systems
- Accident prevention
- Autonomous driving

CONNECTIVITY
- Advanced systems integration
- Fleet Management Systems
- Remote diagnostics
- V2X communications
  - Big data

EFFICIENCY
- Fuel efficiency
- Aerodynamics
- Emissions reduction
- Weight reduction
- Maintenance costs
- Vehicle and driver performance monitoring

OEMs

Fleets
A BROAD MARKET FOCUS GLOBALLY

TRUCK & BUS
Ashok Leyland, CNHTC, Cummins, Daewoo, DAIMLER, Dongfeng, FAW, Fiat, Foton, GAZ, HINO Motors, Hyundai, Isuzu, KAMAZ, Kinglong, MAN, PACCAR, SCANIA, TATA Motors, Volvo, Yutong, ZF among others.

TRAILER
CIMC, Faccini, Guerra, GREAT DANE, Kögel KRONE, SCHMITZ Cargobull, Tirsan, Tonar WABASH, Wielton among others.

OFF-HIGHWAY
AGCO, BEML, Caterpillar, Claas, CNH, Hitachi, Hyundai CE, John Deere, Komatsu, Liebherr, Liugong, SANY, Tadano, Volvo CE, XCMG, ZOOMLION among others.

CAR
AUDI, BMW, Changan, FCA, General Motors, Mercedes – Benz, Porsche, SAIC, TESLA, Volvo, VW among others.

FLEETS
Supporting distributors, workshops and fleets over vehicle lifetime thanks to:
• Global distribution & service network
• Comprehensive aftermarket portfolio
• Fleet Management Solutions
• Digital Services
• WABCO Academy
WABCO’S SUCCESS IS ROOTED IN OUR CULTURE

Sustaining differentiation throughout a highly diversified, passionately engaged and continuously learning global team

POWERED BY PASSION

- **ANTICIPATION**: Reading economic and industry dynamics ahead of the curve
- **CREATIVITY**: First to market with new technologies
  
  *(Continuously applying innovation across our customers’ value chain and vehicle life cycle)*
- **EXCELLENCE**: Leveraging early globalization and an industry-leading Lean Operating System

CHANNELLED THROUGH WELL ANCHORED CORE STRATEGIES
SUSTAINING DIFFERENTIATION THROUGH TECHNOLOGY LEADERSHIP
THE INDUSTRY’S LEADING INNOVATOR IN OUR SECTOR

- Anti-Lock Braking System (ABS)
- Traction Control System
- Pneumatic Transmission Automation System
- Electronically Controlled Air Suspension (ECAS)

1980’s to 1995
- Trailer EBS
- Electronic Braking System (EBS)
- Roll Stability Support (RSS) for Trailers
- Integrated Vehicle Tire Monitoring (IVTM™)
- ECAS for automotive
- Electronic Stability Control (ESC)
- Adaptive Cruise Control

1996 to 2003
- OnGuardMAX™ Autonomous Emergency Braking System
- h-comp™ High Output Compressor
- OptiDrive™ Transmission Automation System
- Trailer Telematics

2004 to 2008
- RSSplus™ Roll Mitigation System
- OnGuard™ Collision Mitigation System
- Hydraulic Transmission Automation System
- d-comp™ Dual Stage Compressor
- New Generation Air Disc Brake
- Air System Protector
- Trailer EBS-E

2009 to 2010
- c-comp™ Clutch Compressor
- Trailer OptiLoad™
- ESCsmart™ Simulation System
- Trailer OptiTum™

2011 to 2014
- Air Disc Brake MAXXTM22
- Trailer Remote Control
- TrailerGUARD™ Telematics
- OnGuardPLUS™ Advanced Emergency Braking System
- TailGUARD™ Rear Blind Spot Detection
- e-comp™ Electrically Driven Compressor
- FuelGuard™ Electronic Air Processing Unit
- OnLane™ - Lane Departure Warning System
- MAXXUS™ Air Disc Brake
- OptiFlow™ SideWings
- EBS for Hybrid Drivelines
- New Generation Automated Manual Transmission
- Improved Integrated Vehicle Tire Monitoring (IVTM™)
- Modular EBS

2015 to 2017
- OnCity™
- OnGuardMax™
- OnHand™
- WABCO Communications Unit
- OptiFlow™ AutoTail
- OnLaneASSIST™
- OnSide
- OptiLock
- OptiLink
ANTICIPATING THE EVOLUTION OF OUR INDUSTRY

Mega Trends

- Population Growth, Urbanization & Smart infrastructure
- Regulatory Push for Greener Environment
- Increasingly Complex Customer Needs
- Exponential Growth of New Technologies

Commercial Transportation Requirements

Segmentation of Commercial Vehicles

- Long Haul Transportation
- Urban / Suburban Transportation
- Off-Highway Application

Impact on Commercial Vehicles Requirements

- Autonomous
- Electric
- Connected
WABCO BLUEPRINT FOR AUTONOMOUS DRIVING

Predictive control:
- Predicts traffic situation
- Learns behaviors
- Defines system reaction
- 100ms cycle

Reactive Control:
- Measures vehicle situation
- Safety critical
- 5ms cycle

360° SENSING

Braking system
Active Steering
Stability Control
Dynamic Motion Control
Vehicle Sensors
AMT
Fail Safe Vehicle Architecture
We have a solid roadmap identified towards a vision for zero accidents and automated vehicles.
TECHNOLOGY TO ADVANCE VEHICLE EFFICIENCY

A vehicle equipped with all WABCO efficiency technologies can increase fuel economy up to 20%

**OptiFlow™**
Aerodynamics for Trailers
Fuel Saving: 1,268gal/125,000mi
CO₂ Saving: 28,048lbs

**OptiDrive™**
Automated Manual Transmission
Fuel Saving: 819gal/125,000mi
CO₂ Saving: 16,114lbs

**OptiRide™**
Electronically Controlled Air Suspension
Fuel Saving: 460gal/125,000mi
CO₂ Saving: 10,167lbs

**c-comp™ FuelGuard™**
Clutch Compressor Electronic Air Processing Unit
Fuel Saving: 343gal/125,000mi
CO₂ Saving: 7,590lbs

**OptiPace™**
Predictive Economic Cruise Control
Fuel Saving: 460gal/125,000mi
CO₂ Saving: 10,167lbs
DRIVING VEHICLE EFFICIENCY & SUSTAINABILITY

Fuel Efficiency
- Clutch Compressor
- Electronically Controlled Air Suspension
- Automated Manual Transmission
- Hybrid EBS
- Air Processing Unit

Energy Recuperation
- EBS Brake Control

Electric Vehicles
- Electrically Driven Compressor or compressed air replacement
- Electronic -APU
- Electro Mechanical Brake

Trailer Aerodynamics
- Lightweight Air Disc Brakes
- High Output Compressor with Alu-Crankcase

Weight Reduction
WABCO uniquely offers insights on truck, trailer and driver performance

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CONNECTIVITY: MOBILIZING VEHICLE INTELLIGENCE

Provide a Broad Spectrum of Vehicle Systems Data

Platooning (V2V)
DELIVERING FLEET CRITICAL DATA AND ACTIONABLE INFORMATION TO ONE SINGLE PLATFORM

Cost management & efficiency
Compliance
ECO
Satisfaction
Supply chain visibility

Safety & security
Maintenance & repair
WABCO Service network
WABCO Academy

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SUSTAINING DIFFERENTIATION THROUGH GLOBALIZATION
DIFFERENTIATION THROUGH GLOBALIZATION

Global network of development, manufacturing and distribution operations

- **INDIA**
  - Chennai
  - Mahindra World City
  - Jamshedpur
  - Lucknow
  - Pantnagar
  - Pune

- **THAILAND**
  - Rayong

- **SOUTH KOREA**
  - Pyungtaek

- **CHINA**
  - Jinan
  - Qingdao
  - Taishan
  - Shanghai

- **RUSSIA**
  - Moscow

- **POLAND**
  - Wroclaw
  - Stanowice

- **GERMANY**
  - Gronau
  - Hannover
  - Mannheim

- **UNITED KINGDOM**
  - Leeds

- **BELGIUM**
  - Brussels

- **UNITED STATES OF AMERICA**
  - Rochester Hills, MI
  - Troy, MI
  - North Charleston, SC
  - Hebron, KY
  - North Mankato, MN
  - Hanover, PA
  - Wytheville, VA

- **MEXICO**
  - Empalme, Sonora
  - San Luis Potosi

- **BRAZIL**
  - Campinas S.P.

- **CANADA**
  - Oakville, ON

- **POLAND**
  - Wroclaw
  - Stanowice
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THE DNA OF OUR INNOVATION LEADERSHIP

Advanced Development Organization
seeds innovation, leads technology screening and concept validation for rapid prototyping

A Globally Integrated Product Development Team

During the last decade:

100% Increase in number of engineers
>30% Increase in R&D investment

On an annual basis:

>380 Patents granted*
>900 Products released*

* As of December 2017

Skilled Application Engineers
in all key regions provide excellent customer connectivity and support

Frugal Engineering Expertise
- able to create pull for new technologies and mature products in increasingly price sensitive markets

- Delivers Advanced Technologies at Best Cost

Frugal Engineering
Rich Software Expertise

Best Solution

Advanced Development

Regional Application

Broad System & Vehicle Expertise

Strength in Technology & Innovation

Advanced Development

Best Solution

Frugal Engineering
SUSTAINING DIFFERENTIATION THROUGH EXCELLENCE IN EXECUTION
EXCELLENCE IN EXECUTION

WABCO Operating System (WOS)

The WOS defines WABCO’s unique culture and powers us to sustain differentiation in quality, performance and service to customers

- Built on a backbone of Six Sigma Lean
  - Rigorous management environment across global operations
  - Standardized processes embedded within advanced quality management systems
- Efficient and agile organization of resources in every region
- Drives continuous productivity within the design – build – deliver value chain
- Learning culture and individual empowerment to continuously advance quality
- Passion to drive excellence in execution as a differentiator for customers
ABOUT WABCO AFTERMARKET
WABCO AFTERMARKET: CREATING THE HIGHEST BRAND LOYALTY

TRUST WABCO

>170,000 Trained mechanics
Largest trained community

14 Distribution centers worldwide
Best Customer Proximity

GET WABCO

>27,000 Diagnostics subscribers
Leading penetration

4,500 Distributors
Worldwide availability

REACH WABCO

2,900 Service partners
Industry benchmark

KNOW WABCO
THE INDUSTRY’S MOST COMPREHENSIVE AFTERMARKET PORTFOLIO

Anchored to the fleet eco-system

Delivering differentiated products for every vehicle in every market

Continuously expanding our segment

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<th>ORIGINAL</th>
<th>REMAN</th>
<th>PROVIA</th>
<th>REPAIR KITS</th>
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<td>Competitive at OE quality</td>
<td>Trusted original budget parts</td>
<td>Enabling quality repairs</td>
<td>Improving fleet safety &amp; efficiency</td>
<td>Delivering smart productivity tools</td>
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THANK YOU