

The background of the slide is a composite image. On the left, a large concrete arch bridge spans a body of water, with a Volvo semi-truck driving across it. On the right, a close-up of a Volvo semi-truck is shown driving on a road next to a lake. In the center, a dark blue square contains the Volvo logo and the text 'VOLVO GROUP'.

**VOLVO**  
VOLVO GROUP

# Volvo Group Investor Day

May 17, 2018



# AGENDA

Growing demand for sustainable transports and infrastructure

**Martin Lundstedt**, President and CEO

Well invested with strong assets to build on

**Martin Lundstedt**, President and CEO

Improving financial performance

**Jan Gurander**, Deputy CEO & CFO

Improving operational performance

**Martin Lundstedt**, President and CEO

## 10:00-10:30 COFFEE BREAK

Building a strong North American truck business

**Dennis Slagle**, EVP Volvo Group and President Mack Trucks

Leveraging Financial Services

**Scott Rafkin**, President Volvo Financial Services

Lead in technology

**Lars Stenqvist**, Chief Technology Officer Volvo Group

Summary and Q&A

## 12:30-13:00 LUNCH





# Growing demand for sustainable transports and infrastructure

**Martin Lundstedt**

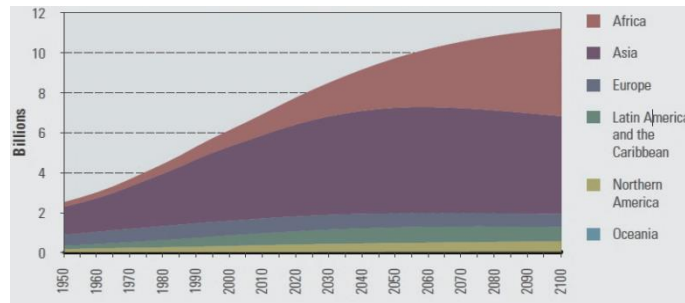
PRESIDENT AND CEO



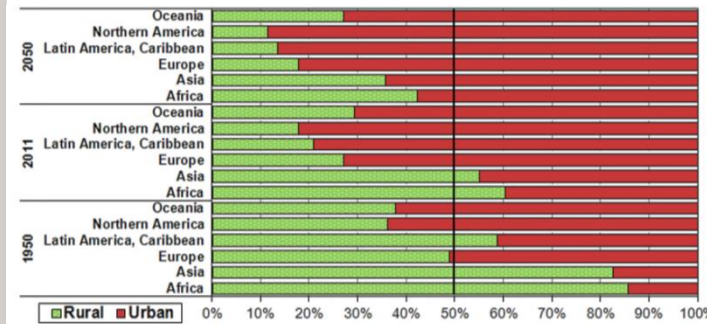


# Growing demand for sustainable transports and infrastructure

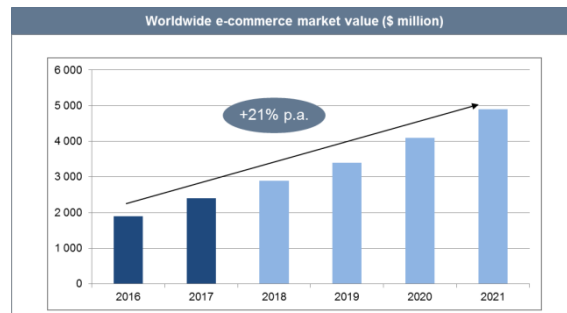
## Rapid global population growth



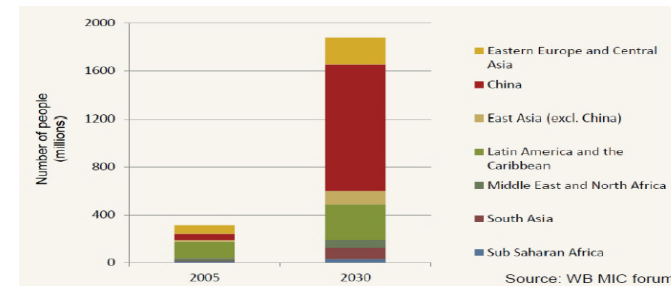
## Rapid urbanization



## Growth in e-commerce



## Middle class growth



Sources:

Rapid global population growth: [http://esa.un.org/unpd/wpp/Publications/Files/World\\_Population\\_2015\\_Wallchart.pdf](http://esa.un.org/unpd/wpp/Publications/Files/World_Population_2015_Wallchart.pdf)

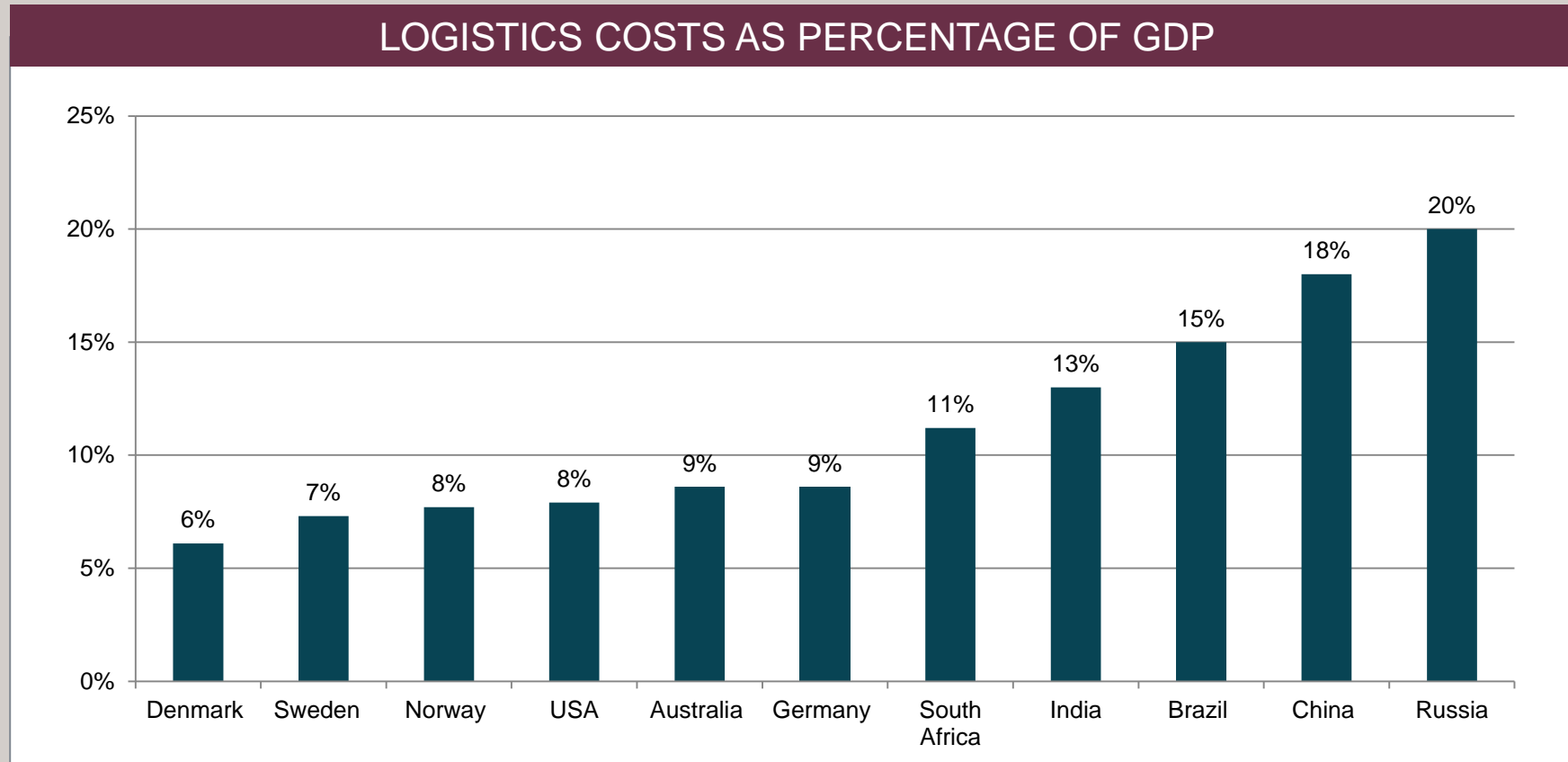
Rapid urbanization: UN Dept Economic & Social Affairs/Population Division, 2012

E-com: e-Marketer, from McKinsey reports "Parcel Industry Perspective" 2017, "International E-commerce Trends", 2017

Middle class growth: WB MIC forum



# Efficiency and sustainability gap in emerging markets



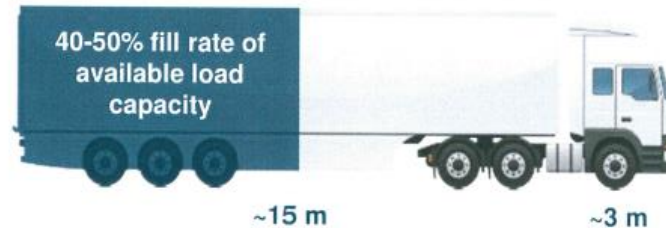
Source: Logistics Barometer 2016 South Africa

# Large improvement potential in the logistics systems

Used ~25% of the time over the life cycle



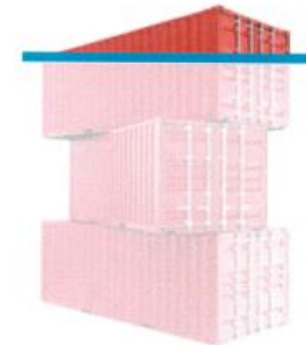
~60% of total length theoretically available for more cargo



5-10% of total fuel consumed is used to move goods



Road reaches peak throughput only 5% of the time...and even then, it is only 10% covered with vehicles



~7% of all accidents in Europe involve trucks: ~17% for fatal accidents

Source: McKinsey





**Volvo Group mission**

# **Driving prosperity through transport solutions**

# Well invested with strong assets to build on

## THE JOURNEY

**1999-2011**

### **Acquisition-driven growth**

Scale, synergies and geographical expansion.



**2012-2015**

### **Transformation to close the gap**

Product renewal, restructuring and cost efficiency.



**2016 >**

### **Improving performance**

Customer focus, simplicity, speed, continuous improvements and organic growth.



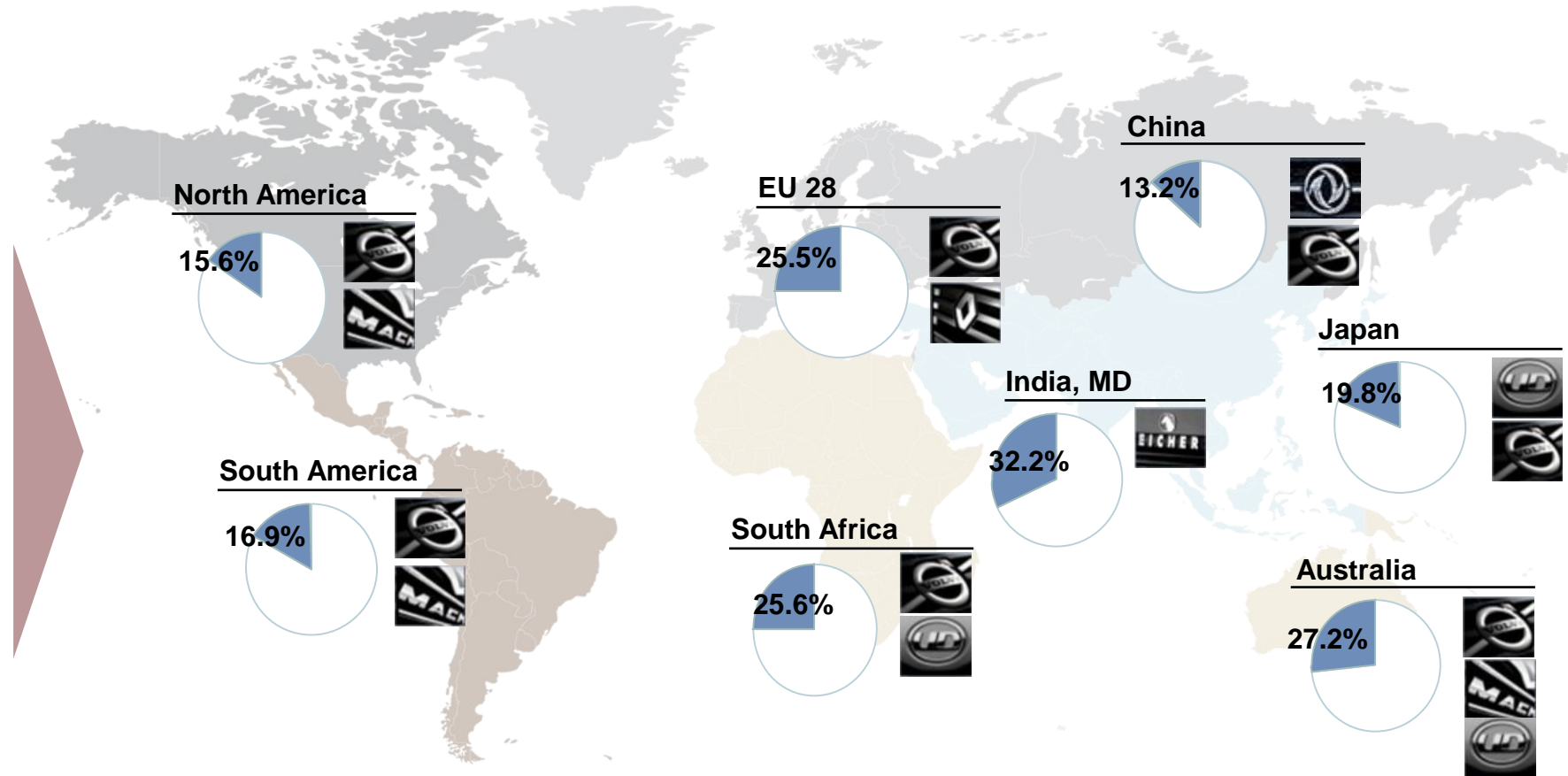


# Well invested with strong assets to build on

## TRUCK SALES NETWORK AND MARKET SHARES 2017

### Sales and service points

North America	615
South America	208
Europe	1452
South Africa	57
India	438
China	964
Japan	210
Australia	85



# Well invested with strong assets to build on

## VOLVO CE SALES NETWORK AND MARKET SHARES 2017

### Sales and service points

North America	230
South America	92
Europe	483
Africa & Oceania	122
Asia	339
China	288

### NORTH AMERICA

Volvo Articulated Haulers



27%

Volvo GPE Wheel Loaders



11%

Volvo GPE Excavators



7%

### SOUTH AMERICA

Volvo Articulated Haulers



65%

Volvo GPE Wheel Loaders



10%

Volvo GPE Excavators



7%

SDLG Wheel Loaders



7%

### EUROPE

Volvo Articulated Haulers



60%

Volvo GPE Wheel Loaders



28%

Volvo GPE Excavators



16%

### AFRICA & OCEANIA

Volvo Articulated Haulers



33%

Volvo GPE Wheel Loaders



7%

Volvo GPE Excavators



7%

### ASIA

Volvo Articulated Haulers



46%

Volvo GPE Wheel Loaders



6%

Volvo GPE Excavators



6%

### CHINA

Volvo GPE Excavators



5%

SDLG Excavators



4%

SDLG Wheel Loaders



18%



# Well invested with strong assets to build on

ADDRESSING A BROAD SPECTRUM OF CUSTOMER SEGMENTS





# Well invested with strong assets to build on

## SEGMENT AND APPLICATION EXCELLENCE



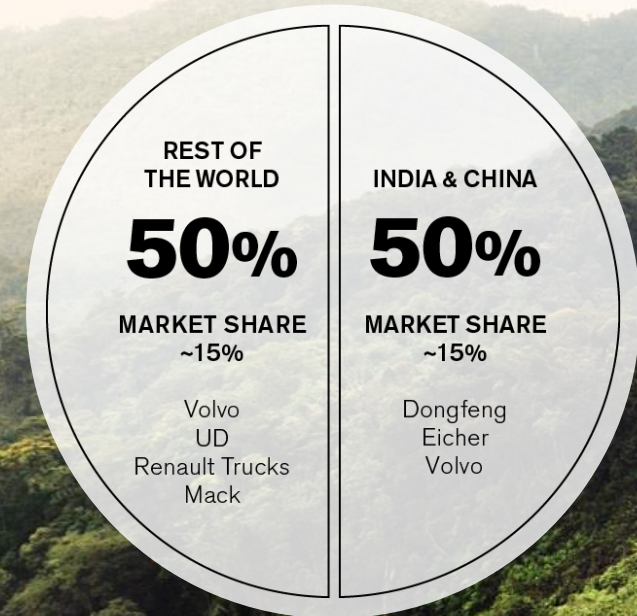


# Well invested with strong assets to build on

POSITIONED TO CAPTURE OPPORTUNITIES  
IN CHINA, INDIA AND BEYOND

- China: Dongfeng Commercial Vehicles
- India: VE Commercial Vehicles
- Growing demand for Volvo Trucks along with e-commerce trend in China
- Volvo CE leveraging the Asia growth both through Volvo and SDLG brands

World truck market 2017 units



# Well invested with strong assets to build on

OUR JV'S ARE GEARED FOR PROFITABLE GROWTH



## 2017 FY

Position (China)	No 4
Volume	172,100 units
Sales	SEK 49.6 bn
Op. margin	3.4%
Holding	45%



## 2017 FY

Position (India)	No 3
Volume	60,100 units
Sales	SEK 12.4 bn
Op. margin	6.0%
Holding	45.6%



## 2017 FY

Position (WL China)	No 2
Volume	26,000 units
Sales	SEK 10.5 bn
Op. margin	>10.0%
Holding	70%

# Well invested with strong assets to build on

LEVERAGING 15 YEARS OF CREATING A COMMON ARCHITECTURE AND SHARED TECHNOLOGY SYSTEM (CAST)

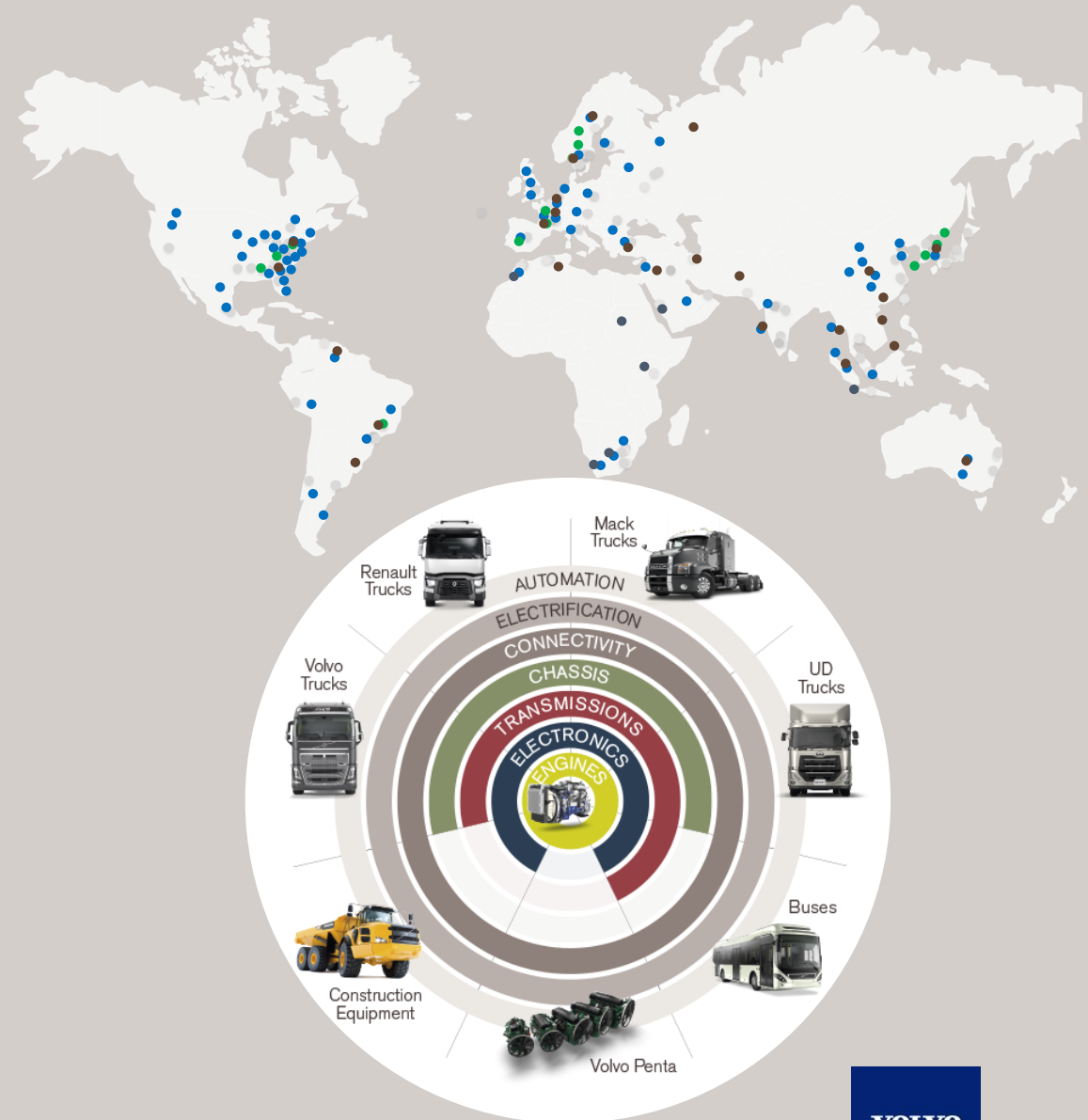




# Well invested with strong assets to build on

## KEY TAKE AWAYS

- Strong customer base and rolling fleet
- Well performing sales and service networks
- Well invested industrial backbone
- Fifteen years of investments into CAST
- Segment and application excellence
- Scale where it matters
- People/talent





# Improving financial performance

**Jan Gurander**

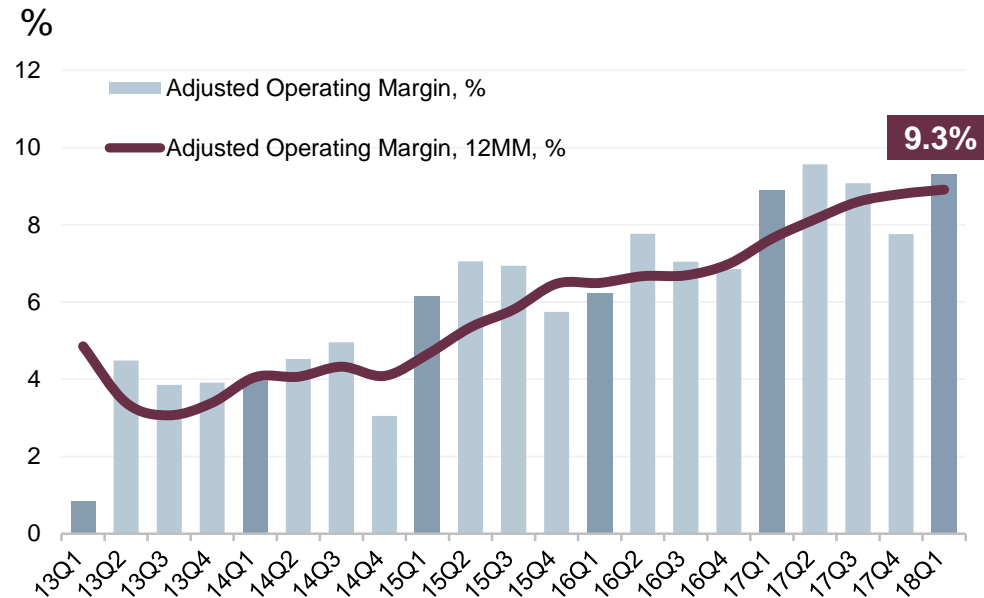
DEPUTY CEO AND CFO



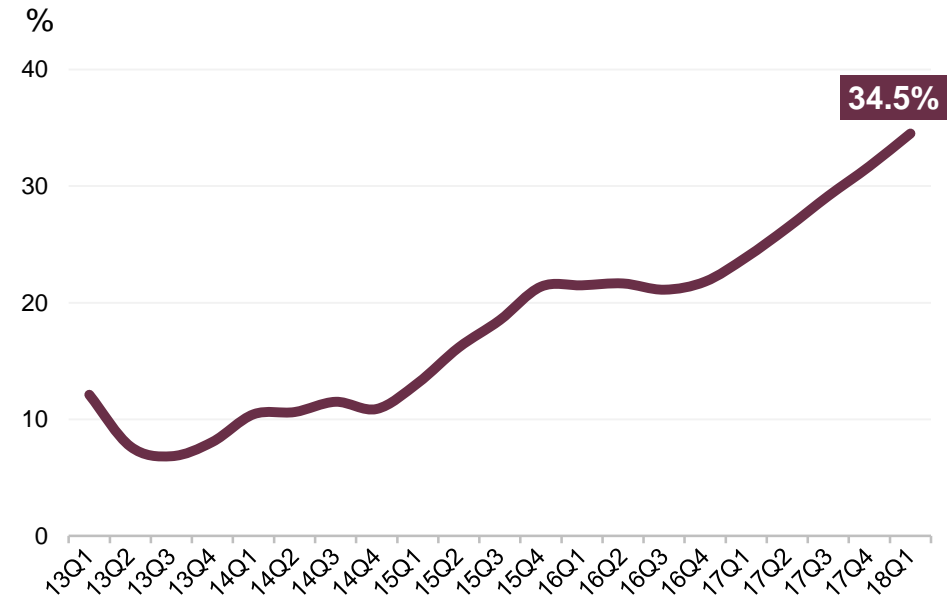
# Improving financial performance

TARGETING >10% OPERATING MARGIN OVER A BUSINESS CYCLE

## Adjusted operating margin, Volvo Group



## Adjusted return on capital, Industrial Operations

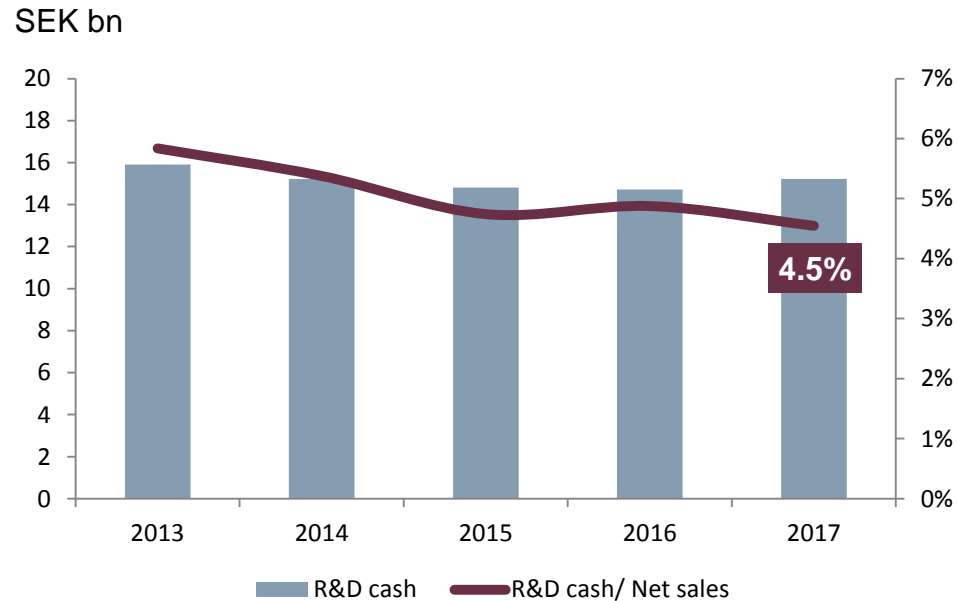




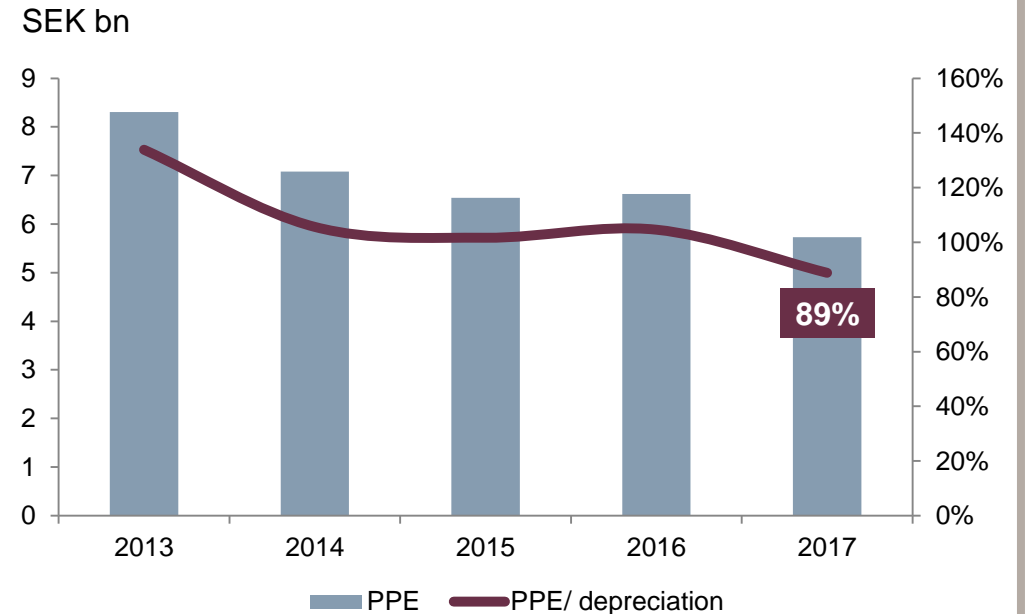
# Improving financial performance

R&D AT ~5% TO SALES AND CAPEX DOWN TO DEPRECIATION

## Group R&D



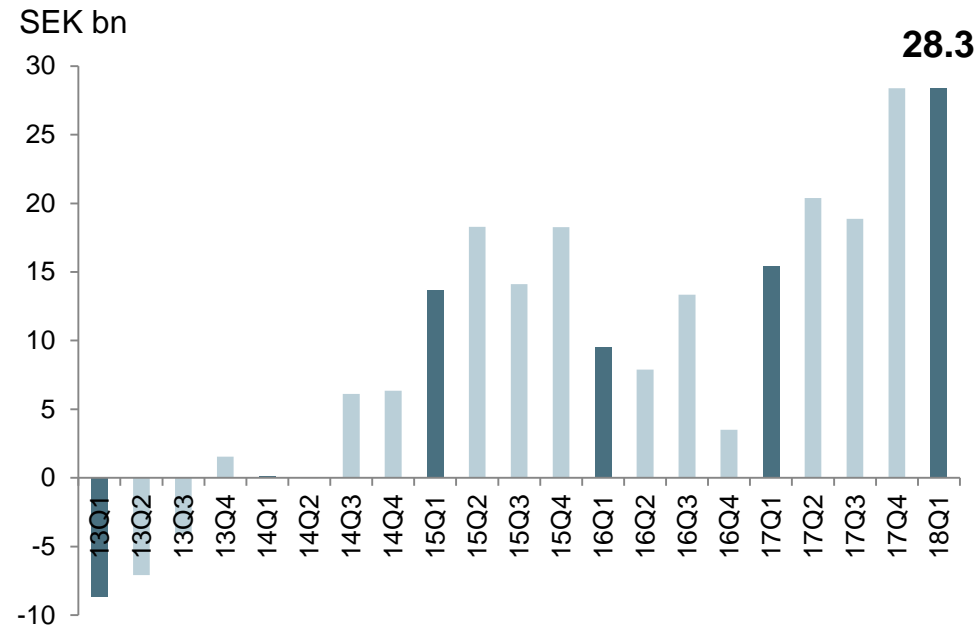
## Group capital expenditures (PPE)



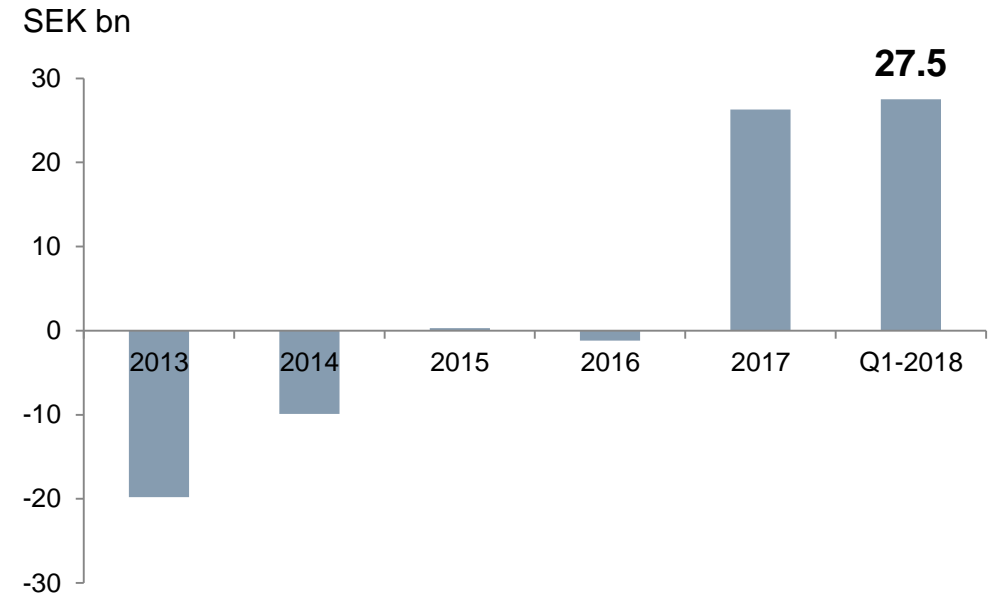
# Improving financial performance

STRENGTHENED FINANCIAL POSITION – NET CASH OF SEK 27.5 BN (excl. pensions)

Operating cash flow (12MM),  
Industrial Operations



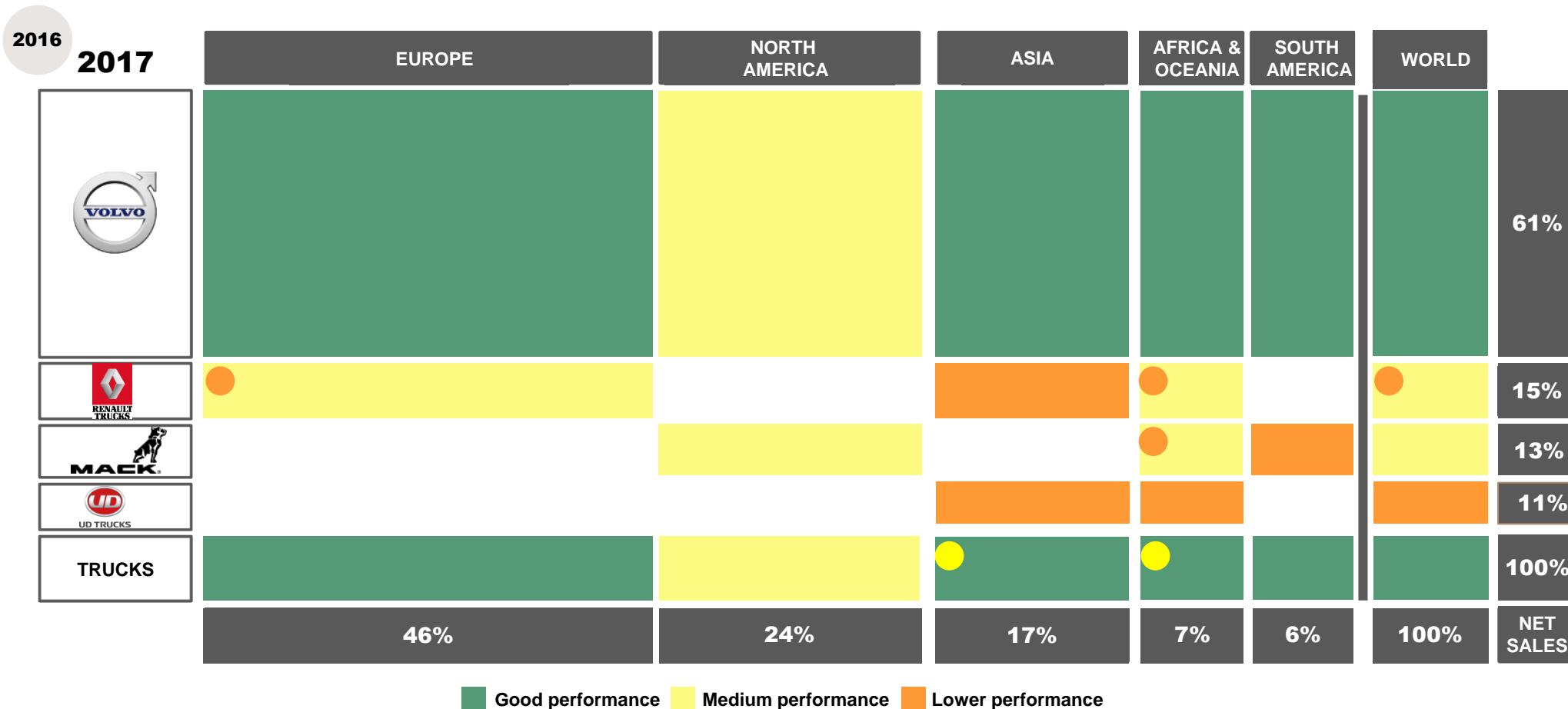
Financial position, excl. pensions  
Industrial Operations





# Improving financial performance

## PROFITABILITY PER TRUCK BRAND AND REGION



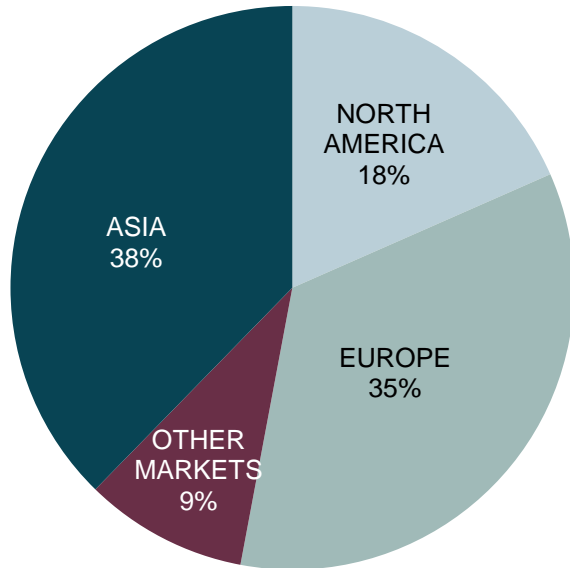


# Improving financial performance

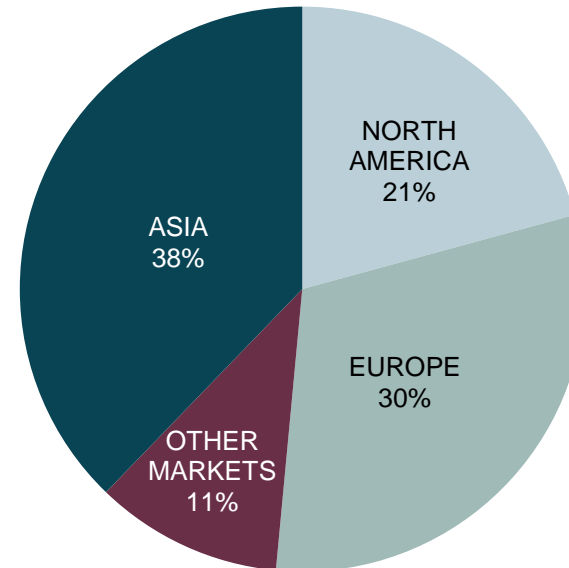
PROFITABILITY IN VOLVO CE WELL BALANCED



Net sales

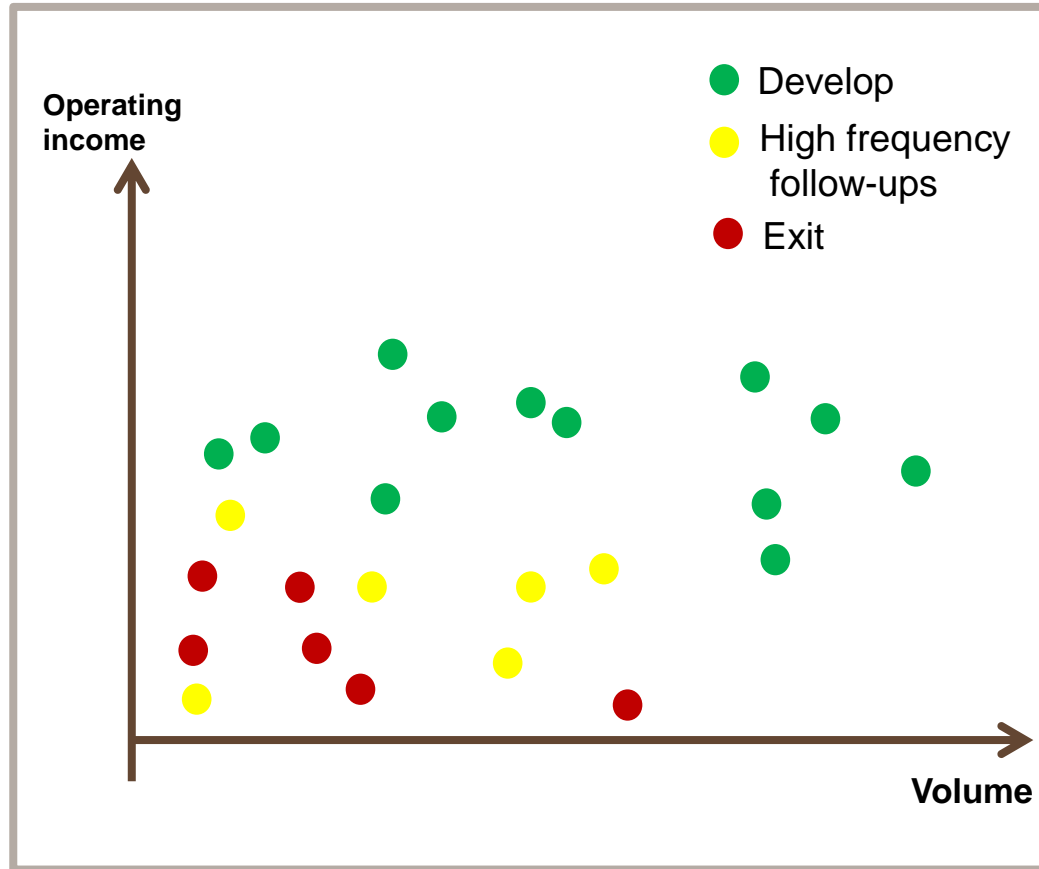


Operating income



# Improving financial performance

WE CONTINUE TO REVIEW PERFORMANCE AND TAKE ACTION



## Review

- Business segments
- Products and variants
- Markets
- In-house/source
- Services

## Examples

- Shares in Deutz divested
- Volvo CE dealer divestment in the UK
- Outsourced Japanese MD truck production
- Moved Eicher Pro 8000 production to VECV
- 16 liter engine discontinued in North America

# Financial targets

**>10%**

Operating margin over a business cycle

**12-15%**

RoE in Financial Services

**Net  
cash**

Industrial Operations, excluding pensions





# What we want to achieve

IMPROVING PERFORMANCE AND INVESTING FOR THE FUTURE

Gradual and  
**consistent**  
earnings  
**improvement**

**Reduced**  
**volatility**  
in earnings and  
cash flow

**Discipline**  
in capital  
allocation/  
investments

**Continuous**  
**investments**  
in innovation and  
new technologies



# Improving operational performance

**Martin Lundstedt**

PRESIDENT AND CEO



# Improving operational performance

## STRATEGIC PRIORITIES

- 1** Reinforce **Volvo** as a global premium HD truck brand and **regain position and market shares of Renault Trucks, Mack and UD** as regional high-end truck brands
- 2** **Capture Asia growth** through JV's and Group Trucks Asia in a separate value chain – and leverage in other emerging markets
- 3** Create the most desirable **HD product and service portfolio** tailored to selected premium, high-end and value segments
- 4** Secure robust profitability through leading R&D, quality, purchasing and manufacturing operations using **Volvo Production System**
- 5** Establish brand specific sales operations with focus on **retail excellence** and a **growing service business**
- 6** **Leverage Group assets in our non-truck Business Areas**, creating additional profits, synergies and technology leadership
- 7** **Revitalize the Volvo Group culture** with focus on Customer Success, Trust, Passion, Change and Performance





1

**Reinforce Volvo** as a global premium HD truck brand and **regain position and market shares of Renault Trucks, Mack and UD** as regional high-end truck brands

## NORTH AMERICA

- New product line-up for Volvo and Mack
- Uptime excellence through connectivity
- Good Financial Service operation
- Network expansion and investments



Volvo VNL



Mack Anthem

1

**Reinforce Volvo** as a global premium HD truck brand and **regain position and market shares of Renault Trucks, Mack and UD** as regional high-end truck brands

## RENAULT TRUCKS

- New range with higher used truck values
- Improving network performance
- Critical mass in targeted markets
- Engagement for the brand
- Backbone with the Group
- Improving financial performance



1

**Reinforce Volvo** as a global premium HD truck brand and **regain position and market shares of Renault Trucks, Mack and UD** as regional high-end truck brands

## UD TRUCKS

- New and broader UD Quon range
- Driving retail excellence
- Critical mass in targeted markets
- Engagement for the brand
- Backbone with the Group
- Improving financial performance





# 2

**Capture Asia growth** through JV's and Group Trucks Asia in a separate value chain – and leverage in other emerging markets

## **DFCV (Dongfeng)**

- Strengthening the product portfolio
- Engine range preparation for CN6
- Industrial footprint streamlining

## **VECV (Eicher)**

- Growing HD market shares in India and export volumes
- Engine range preparation for BS6

## **Group Trucks Asia (UD)**

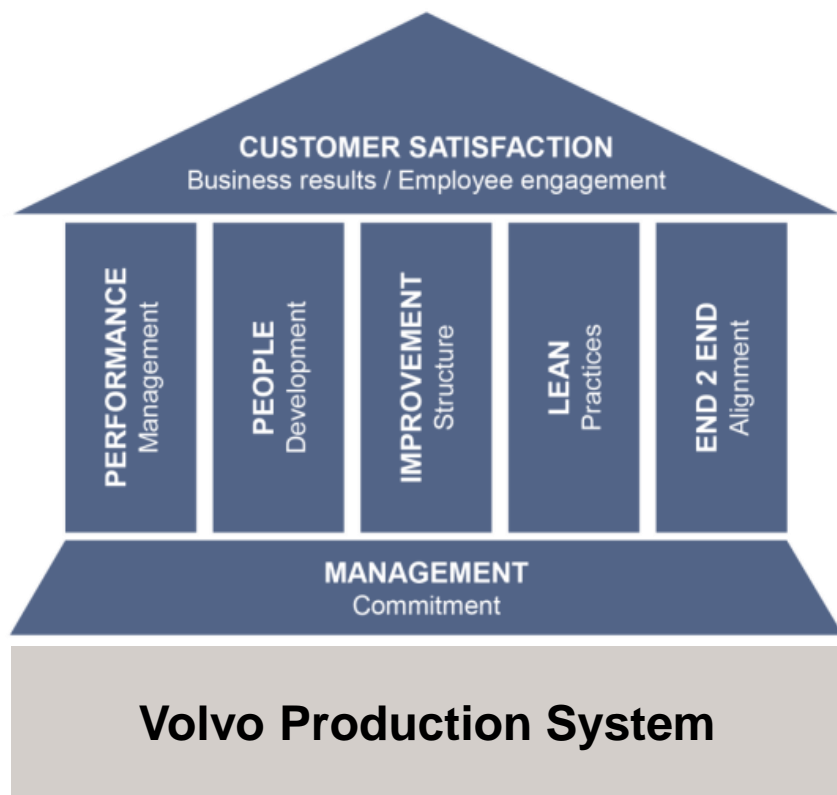
- Completed UD range of HD, MD and LD trucks
- Building vehicle population and service capability
- Reducing vehicle product cost



New Dongfeng KingRun model D560

# 4

Secure robust profitability through leading R&D, quality, purchasing and manufacturing operations using **Volvo Production System**



Agility and flexibility in production volumes



Common Architecture and Shared Technology



Continuous introductions



Quality

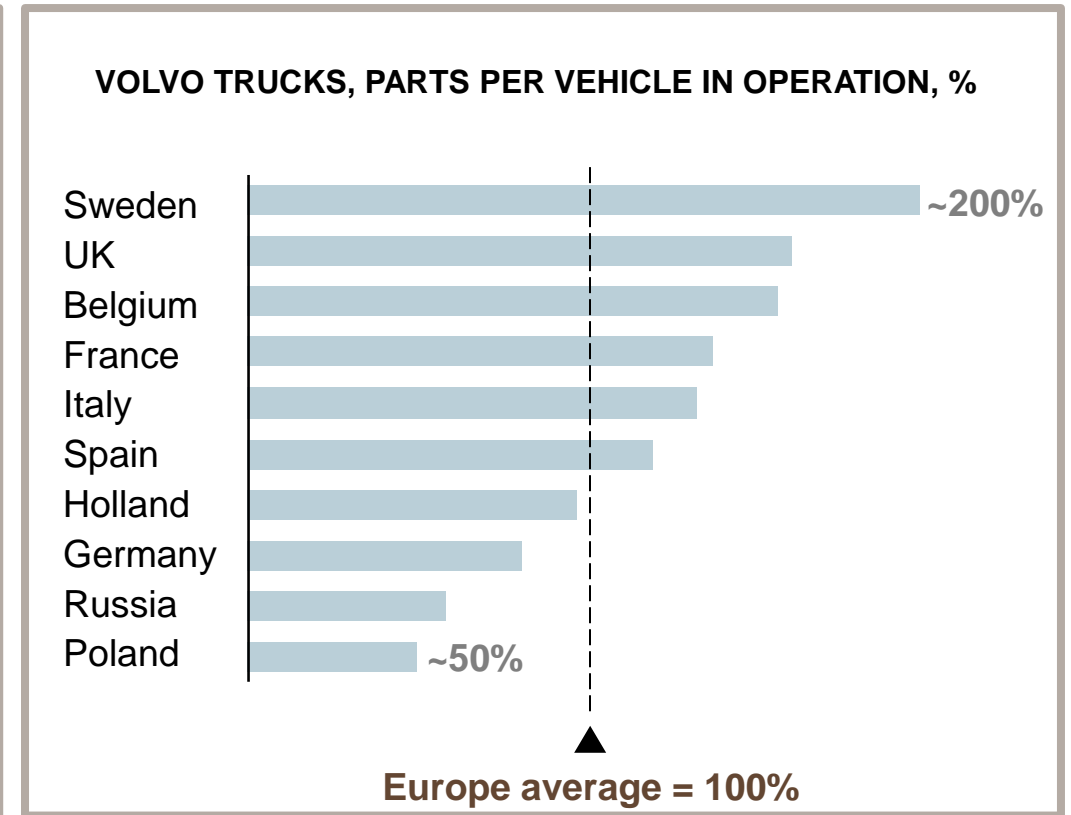
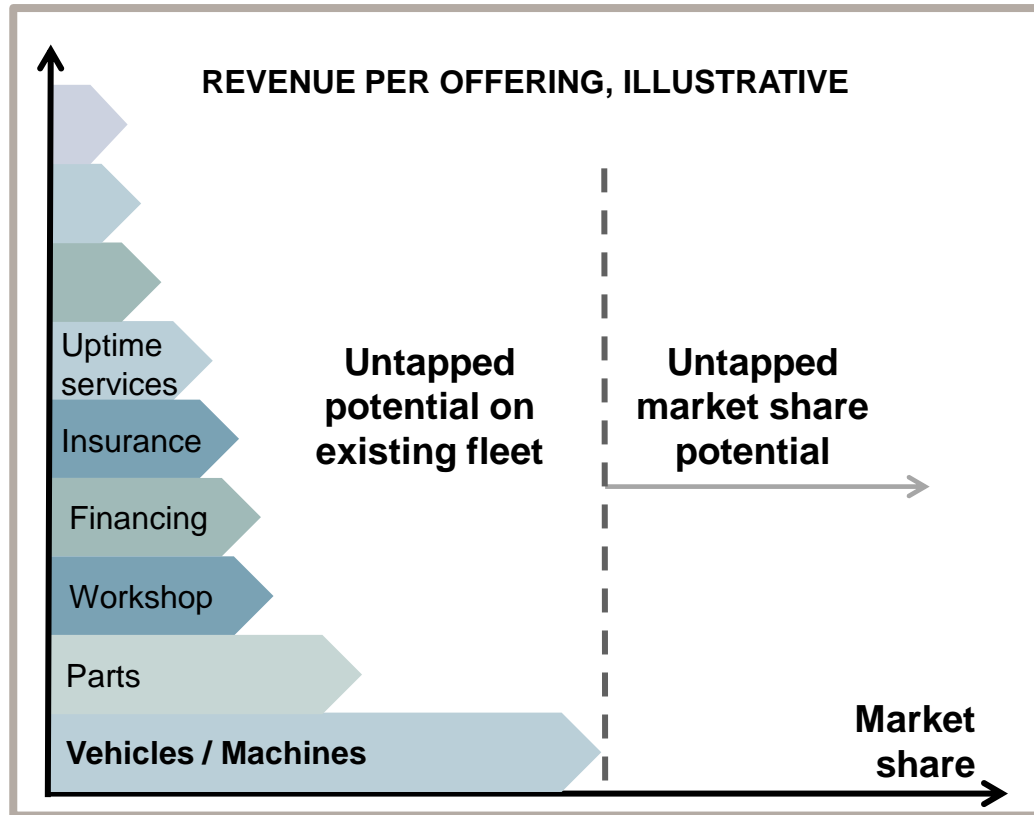


Brand and regionalized value chains

# 5

## Establish brand specific sales operations with focus on retail excellence and a growing service business

UNTAPPED POTENTIAL IN EXISTING POPULATION OF 2.8 MILLION TRUCKS, BUSES AND MACHINES



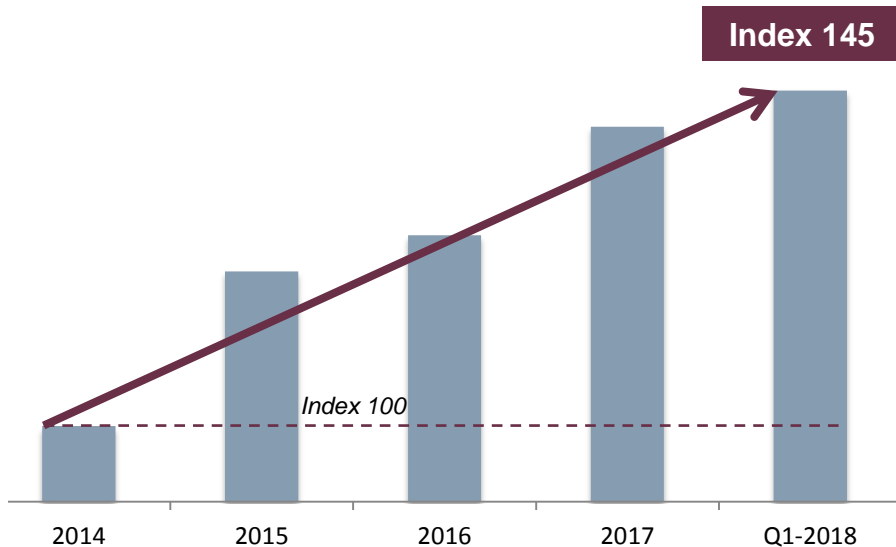


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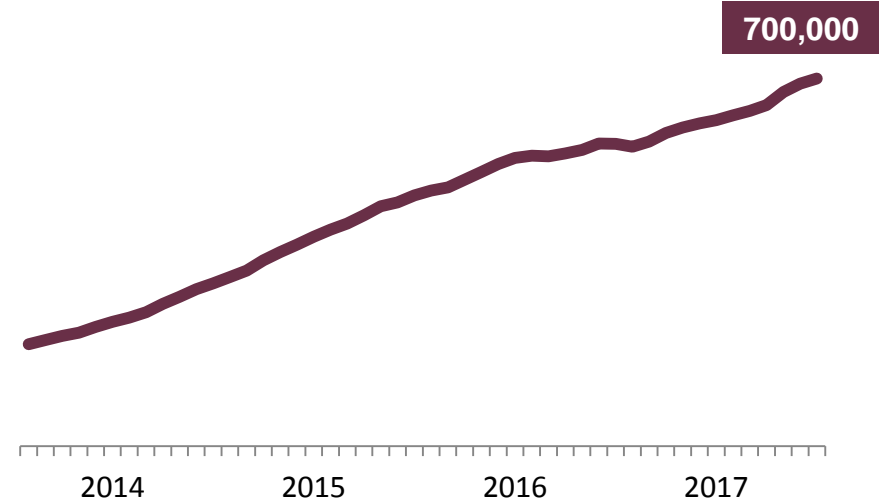
## Establish brand specific sales operations with **focus on retail excellence** and a **growing service business**

UNTAPPED POTENTIAL IN EXISTING POPULATION OF 2.8 MILLION TRUCKS, BUSES AND MACHINES

SERVICE CONTRACT PORTFOLIO,  
VOLVO TRUCKS EUROPE



NUMBER OF CONNECTED  
TRUCKS, BUSES AND MACHINES



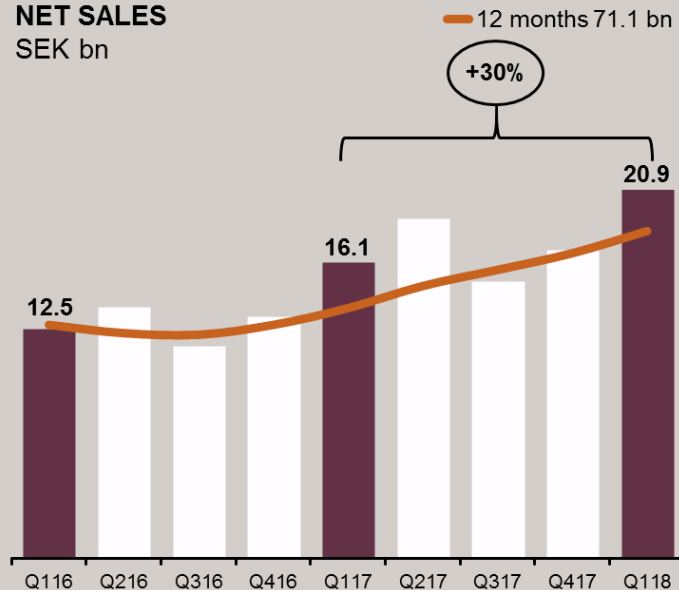
6

**Leverage Group assets in our non-truck Business Areas, creating additional profits, synergies and technology leadership**



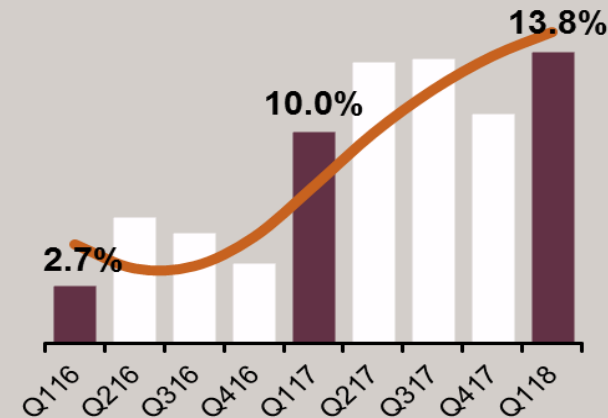
**Volvo CE**

**NET SALES**  
SEK bn



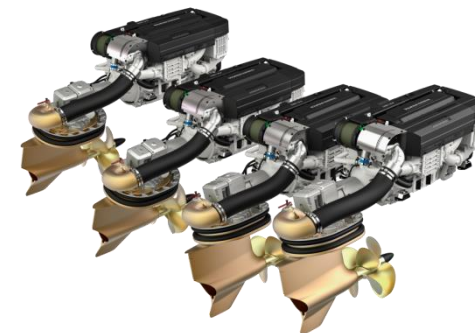
**ADJUSTED OPERATING MARGIN\***  
%

— 12 months 12.9%



# 6

**Leverage Group assets in our non-truck Business Areas, creating additional profits, synergies and technology leadership**

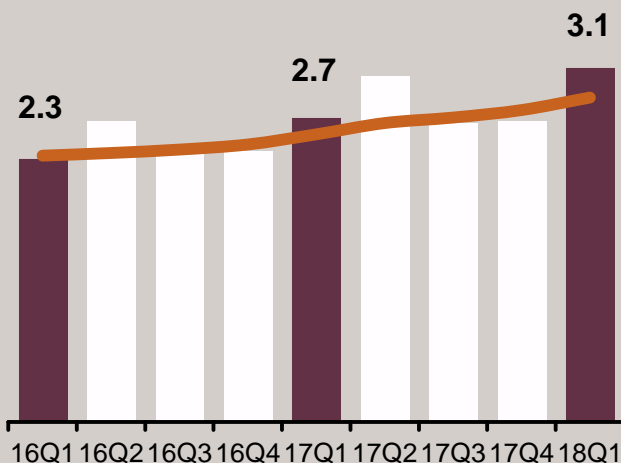


**Volvo Penta**

## NET SALES

SEK bn

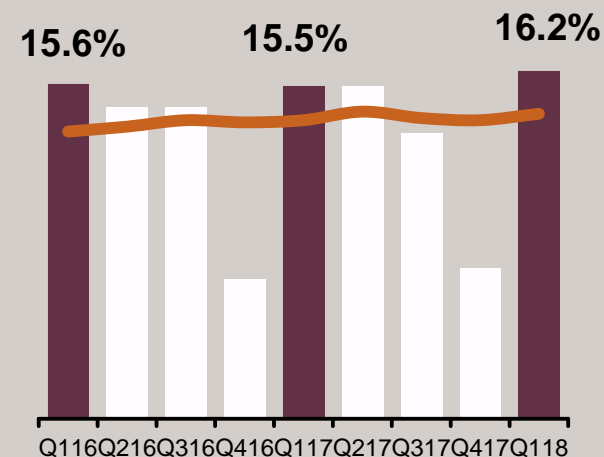
12 months 11.6 bn



## ADJUSTED OPERATING MARGIN\*

%

12 months 13.2%



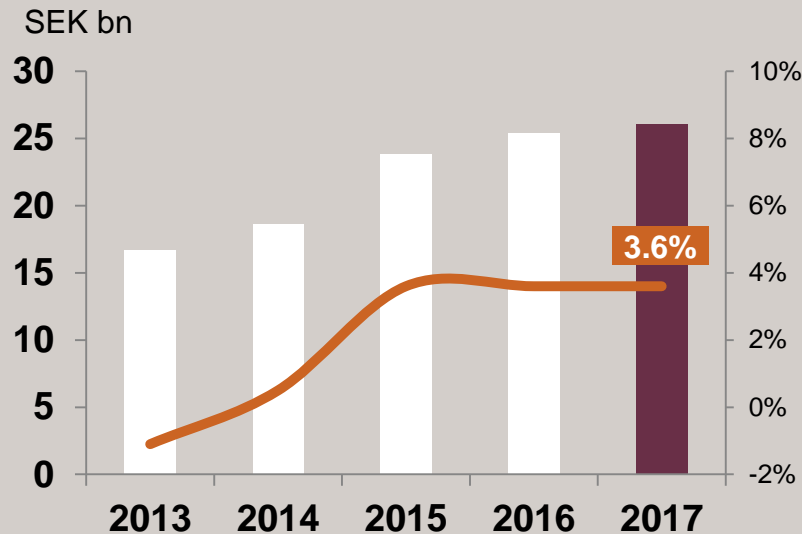
# 6

**Leverage Group assets in our non-truck Business Areas**, creating additional profits, synergies and technology leadership



**Volvo Buses**

## NET SALES & OPERATING MARGIN



- Profitability focus
- Improved commonality with Group modular system (CAST)
- European leader in electric buses
- Our installed electric bus population has accumulated ~600 million km on public roads



# 7

## Revitalize the Volvo Group culture

WITH FOCUS ON CUSTOMER SUCCESS, TRUST,  
PASSION, CHANGE AND PERFORMANCE

- Clear leadership, entrepreneurship and profit & loss responsibility for each brand
- Those closest to the customer are empowered to make the right decisions
- More regionalized value-chain approach
- Simplicity, improved speed
- A mindset for continuous improvement



# Improving operational performance

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**Opportunities to improve performance in existing business**

**Profit and cash generation funding:**

- Leading technology position
- Good shareholder returns



# Building a strong North American truck business

**Dennis Slagle**

EVP VOLVO GROUP AND  
PRESIDENT MACK TRUCKS



# The foundation is in place



Proprietary driveline  
penetration

Strengthened dealer  
networks

Used trucks/  
remarketing

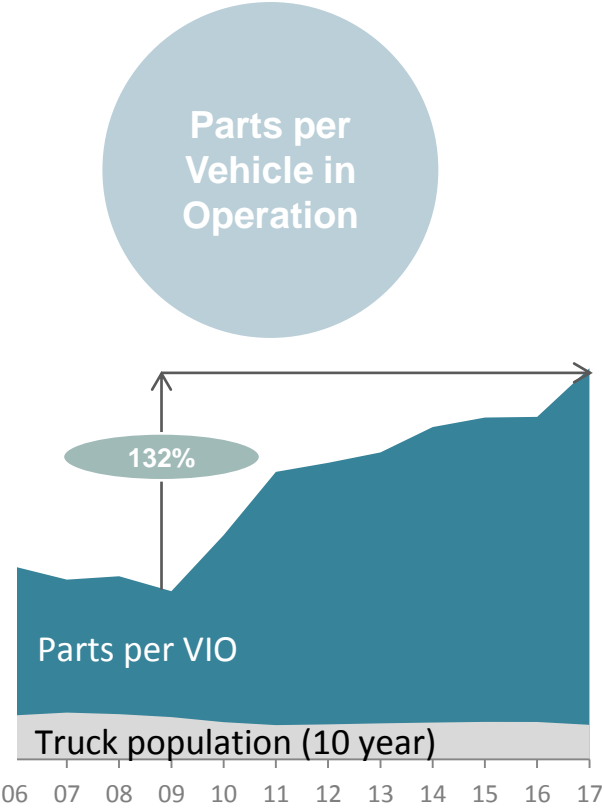
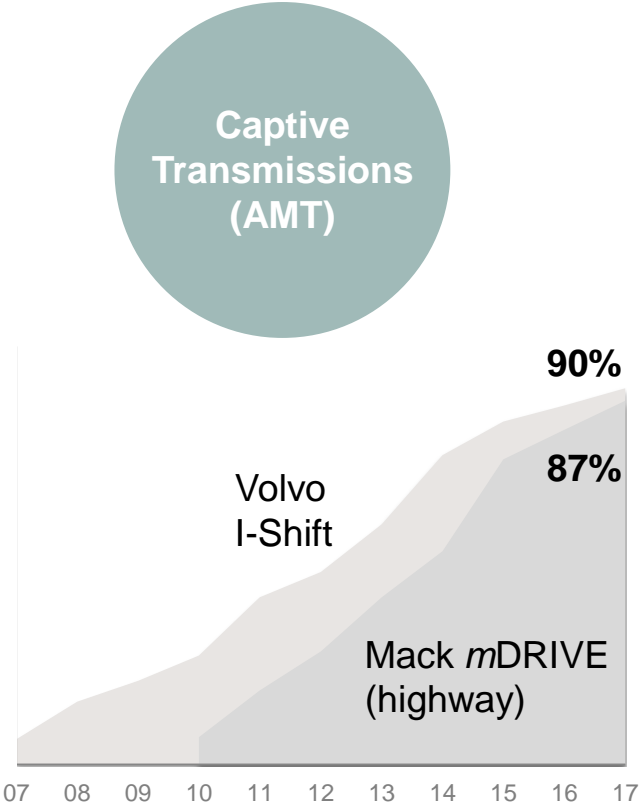
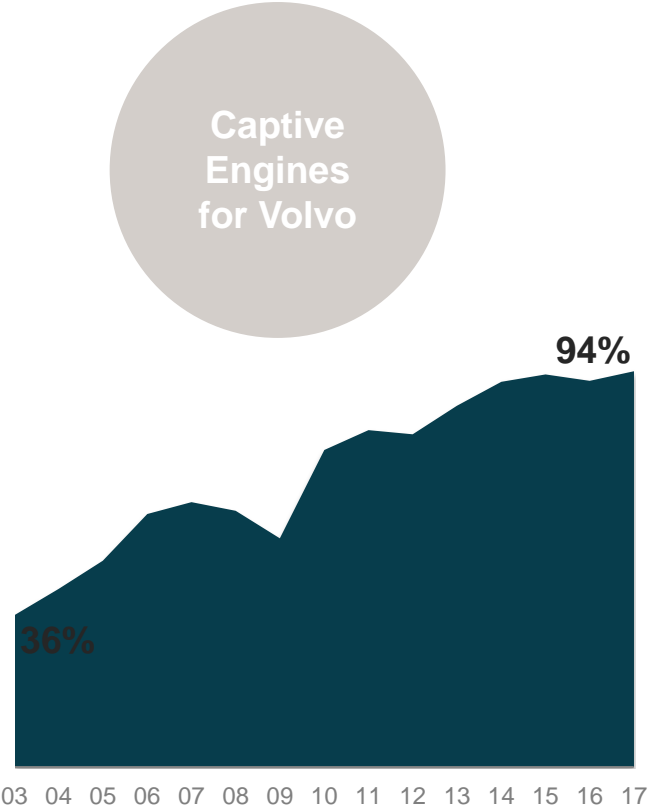
Uptime/connectivity  
leadership

New products



# Proprietary driveline penetration

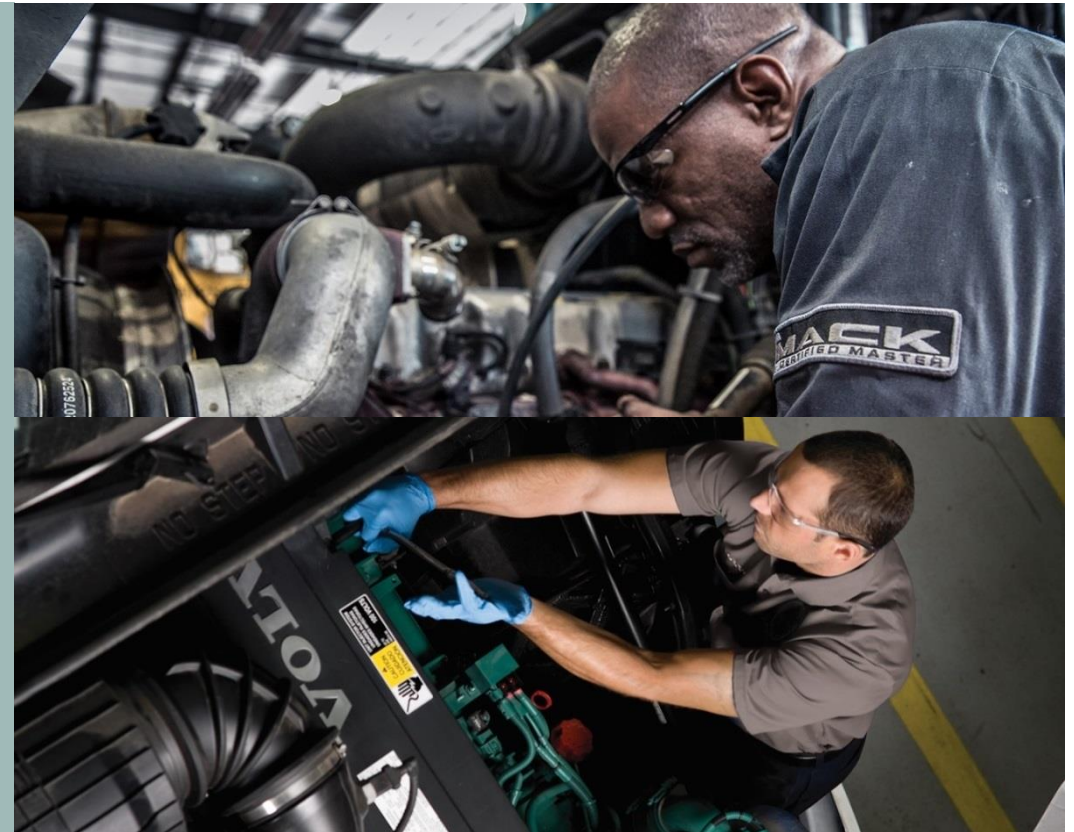
SERVICE BUSINESS FULLY ABSORBING SALES AND MARKETING COSTS



# Strengthened dealer networks

## CONTINUED INVESTMENT AND EXPANSION

- 74 additional outlets since 2010
- USD 680 M+ in private investment
- 55% increase in bay capacity
- 124% more technicians
- 65% increase in service capacity
- 248% increase in master technicians
- 60% more sales people



# Strengthened dealer networks

## NEW TEC DEALERSHIP IN FONTANA, CA

- 199,000 square feet on 14 acres
- USD 25 M investment
- 77 service bays
- Parking for more than 400 trucks





# Used trucks and remarketing

ARROW IS LARGEST USED TRUCK OPERATION IN THE U.S.

- 18 locations, all makes
- Profitable through downturn
- Capacity to handle large trades
- Builds dealer competence
- In-house financing optimizes retail values
- Concept expanding to Europe





# Uptime/Connectivity Leadership

## CERTIFIED UPTIME CENTERS – A SUCCESS STORY

### 143 Certified Uptime Centers

- Reduced diagnostic times by an average of 70 %
- Reduced repair times by an average of 21%
- Increased shop efficiency by 24%
- Reduced 'check-in' time by over 40 minutes



# Uptime/Connectivity Leadership

## VOLVO REMOTE PROGRAMMING AND MACK OVER THE AIR

### Updates performed through telematics:

- Updated software for powertrain components
- Revised vehicle parameters for duty cycle optimization

### Customers update based on their schedules

### Available on all 2018 model year Volvo and Mack trucks



# Uptime/Connectivity Leadership

## VOLVO REMOTE PROGRAMMING AND MACK OVER THE AIR

### Since October 2017:

- More than 6,000 vehicles
- Performed nearly 600 updates
- Average 23 minutes
- More than 500+ days of downtime saved
- Very positive customer feedback





# The final pieces...







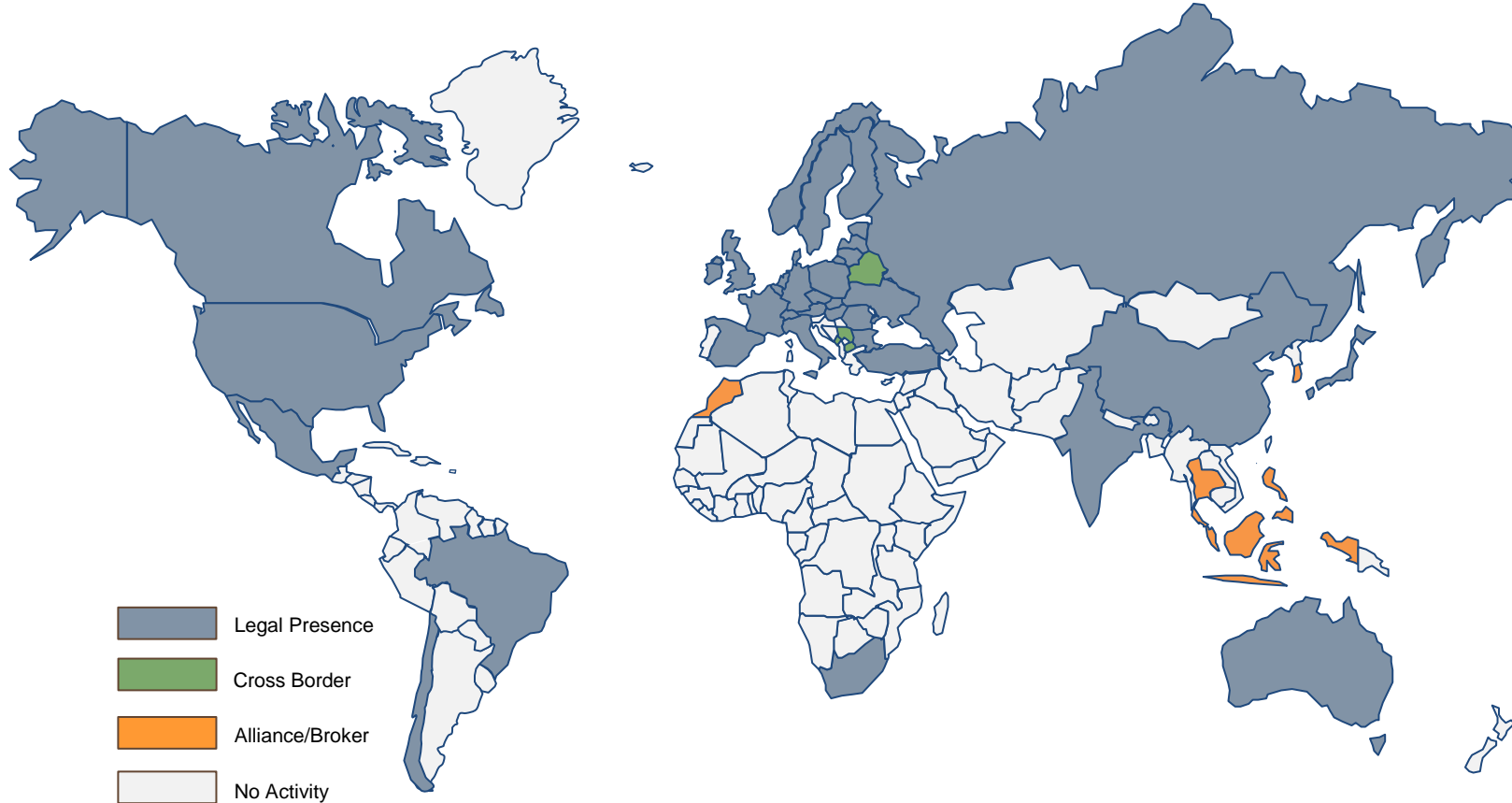
# Leveraging Financial Services

**Scott Rafkin**

PRESIDENT  
VOLVO FINANCIAL SERVICES



# Strong position to support >90% of Group sales



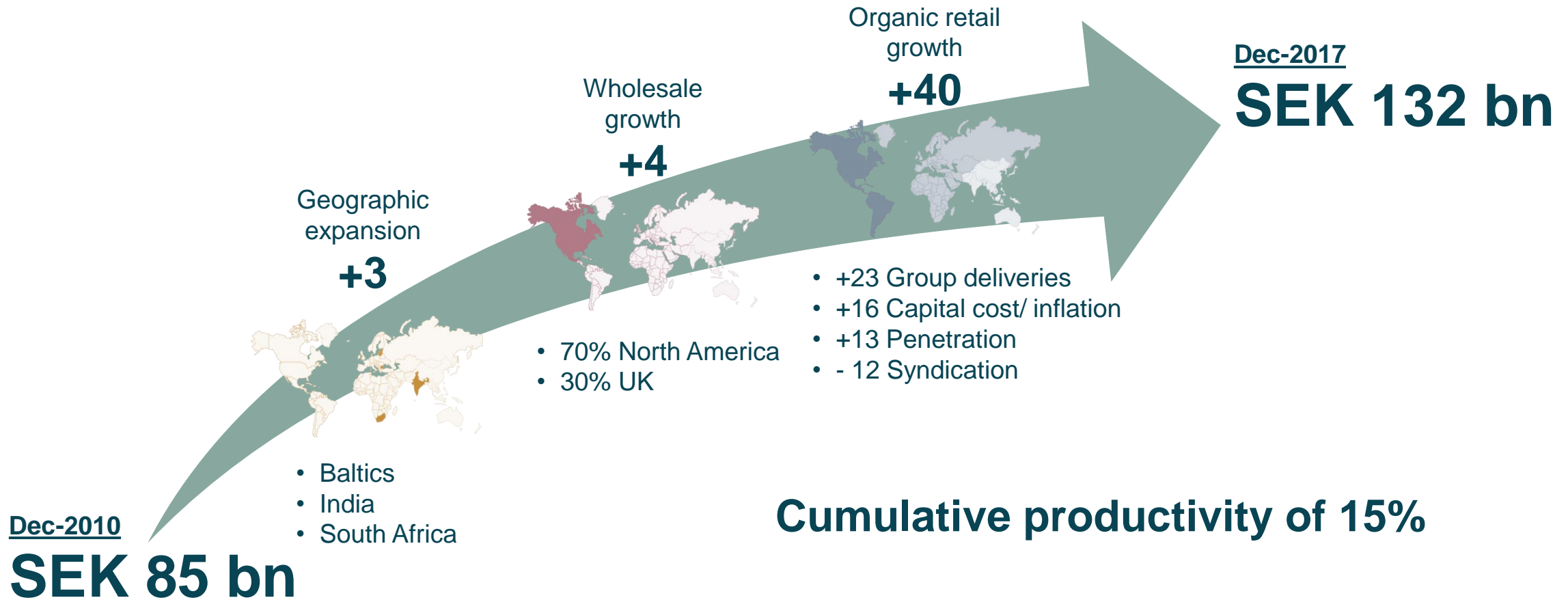
## VFS

- Over 1,400 employees
- Offering financial solutions in 46 countries around the world
- Serving all Volvo Group brands
- Financing approximately 25% of Volvo Group products in markets served

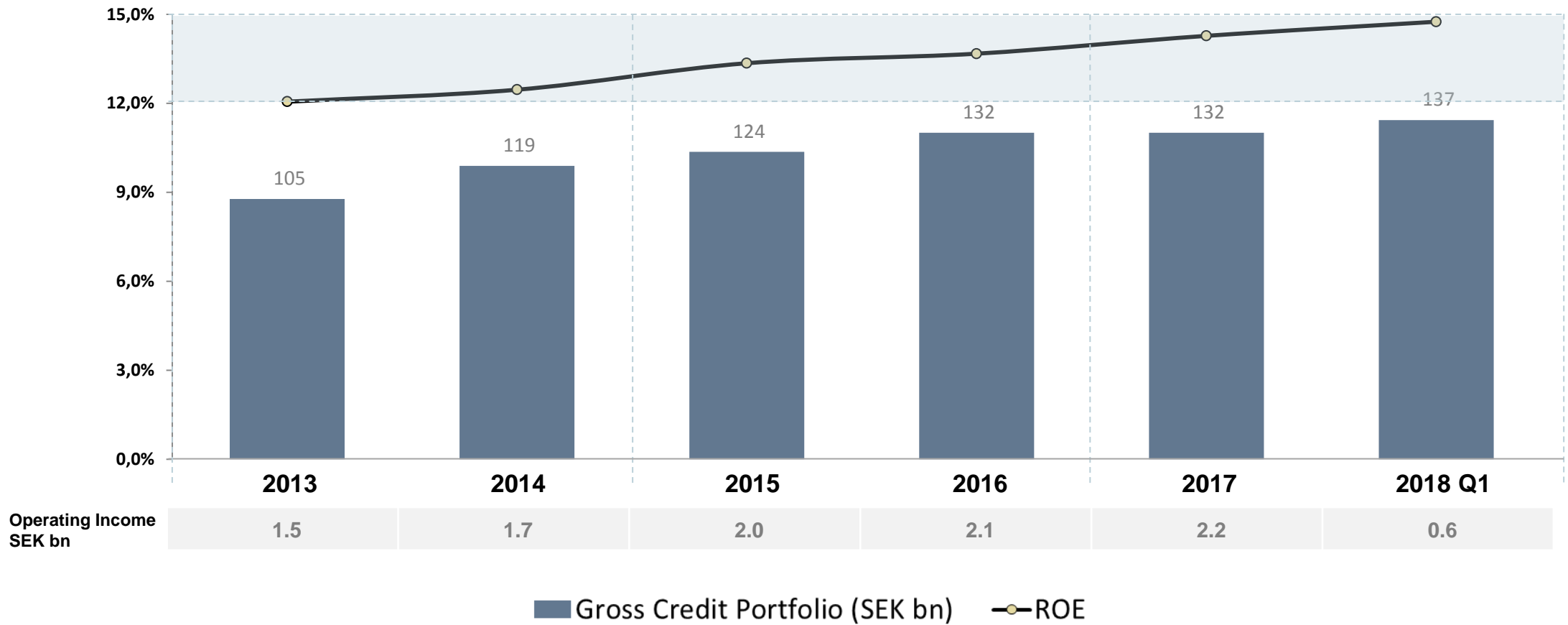
## Market expansion (past 3 years)

- India (owned)
- South Africa (owned)
- Bulgaria (owned)
- Indonesia (broker)
- Morocco (alliance)
- Philippines (broker)
- South Korea (broker)

# Good portfolio growth



# Supporting sales with profitable growth

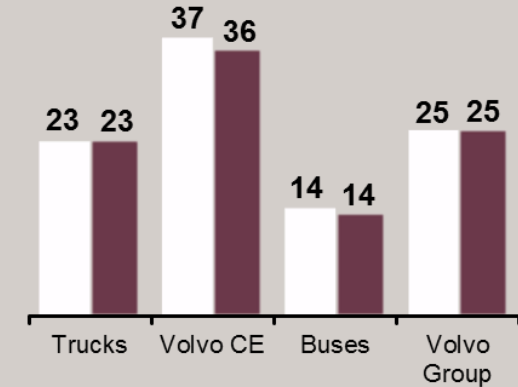




# Opportunities for improvement

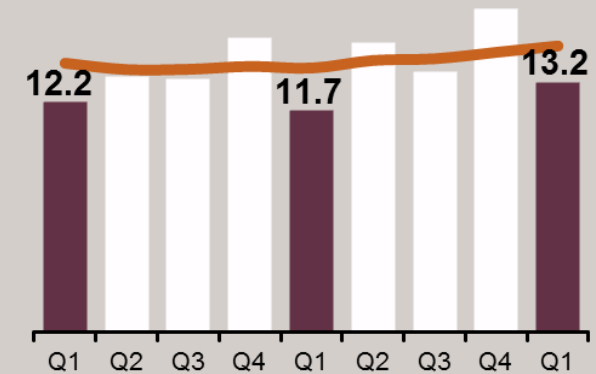
- Underperforming markets
- Commercial effectiveness
- New markets
- Operational leverage

**PENETRATION RATE, %**  
12 months moving

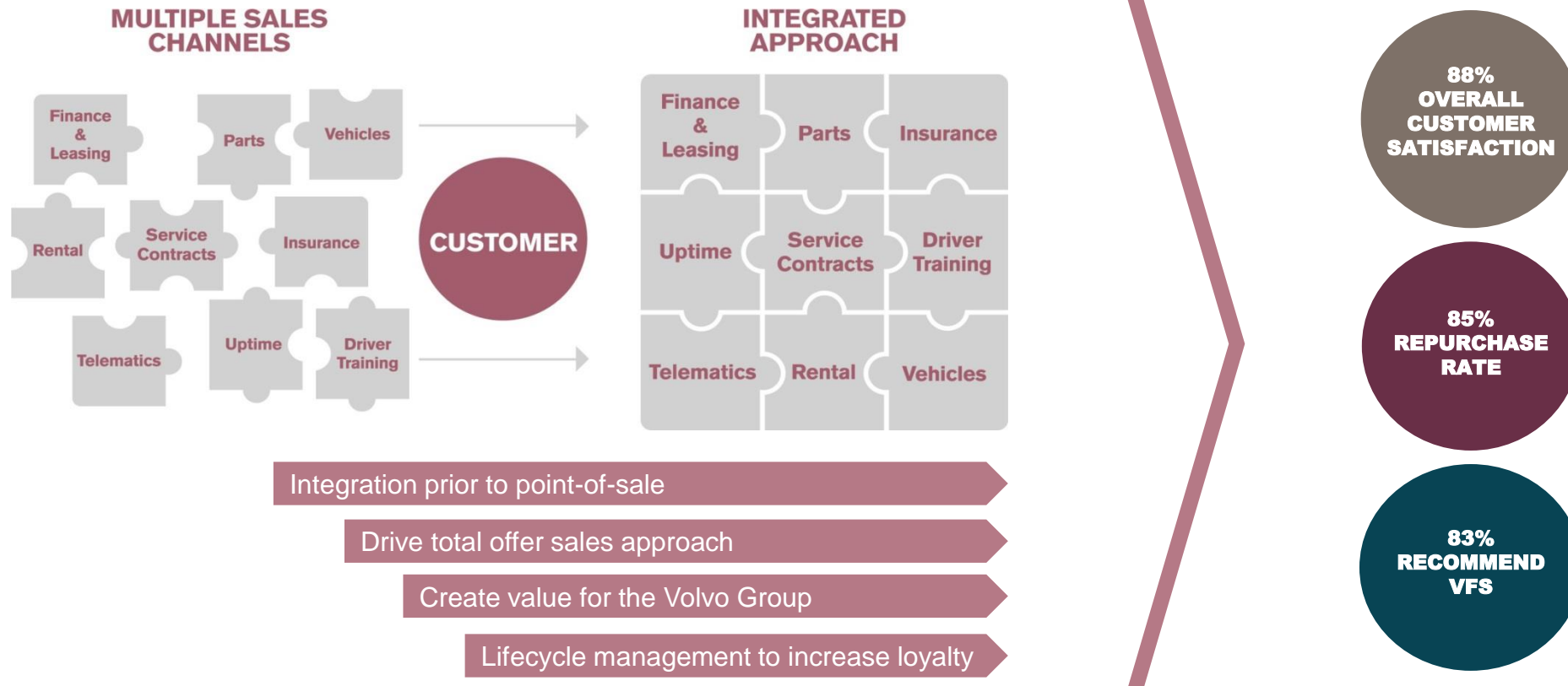


**NEW RETAIL FINANCING**

SEK bn      — 12 months 59.4 bn



# Focus on growing services/solutions



# Digital innovation to meet new demands and business models

## Blockchain

- Identity management
- Payments
- Property/vehicle history
- Back-office finance & operations

## Telematics

- Connected insurance
- Wholesale audits with geo fencing
- Usage-based offers
- Uptime integration

## Artificial Intelligence

- Predictive analytics
- Customer service (chatbots)

## Emerging Payments

- WeChat (China)
- Digital marketplace / E-wallet

## Mobility

- zApps Fintech partnership

**DIGITAL  
EDGE50  
AWARDS**  
<2018>

# Leveraging Financial Services

- Center of expertise for solution sales
- Vital to the customer's experience and loyalty towards the Group
- Instrumental in providing solutions for changing customer demands and business models
- Continued focus on profitable growth and commercial performance







# Lead in technology

**Lars Stenqvist**

CHIEF TECHNOLOGY OFFICER  
VOLVO GROUP



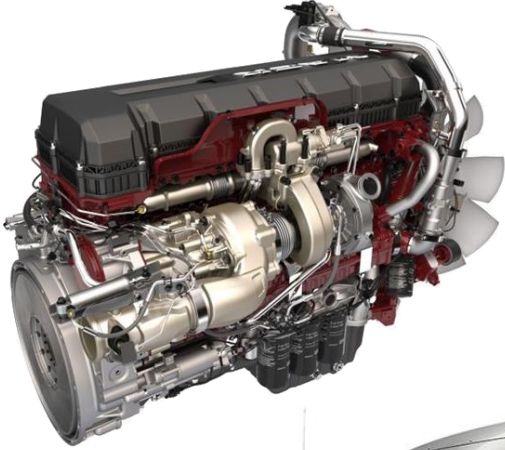
# New technologies transforming the transport system





# Balancing well-known and new technologies

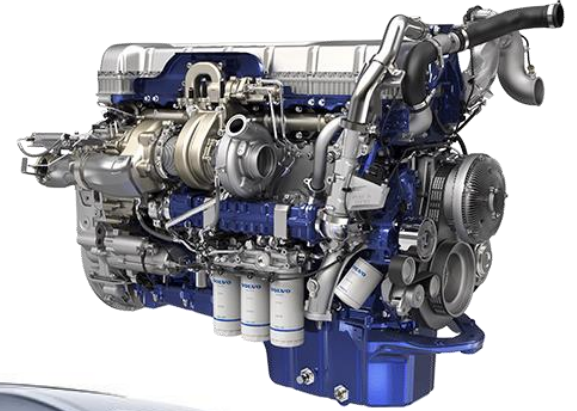
**Mack MP8 Turbo  
Compound engine**



**Mack Anthem**



**Volvo 13L Turbo  
Compound engine**



**Volvo VNL**

# New technologies transforming the transport system



ELECTRIFICATION

AUTOMATION

CONNECTIVITY



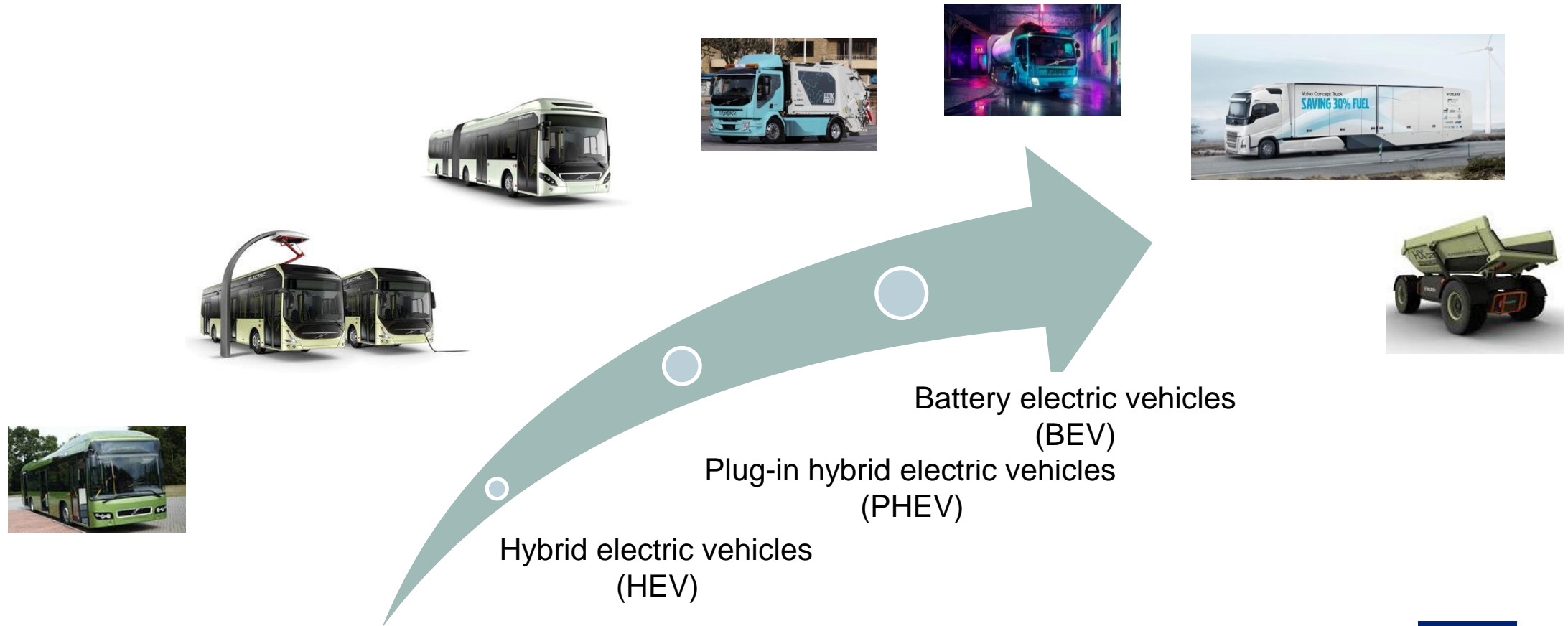
# Common Architecture and Shared Technology

SOFTWARE, ELECTRICS/ ELECTRONICS ARE KEY FOR NEW TECHNOLOGIES



# We have built competence and capabilities over time

CONTINUOUS COMMERCIALIZATION OF FULLY ELECTRIC VEHICLES ONGOING



# Meeting customers' demands in various regions and segments



**Volvo FL - Electric**



**Renault Trucks - Electric**



**UD Quon Vision - Electric**



**Volvo EX2 - Electric**



**Volvo FE - Electric**



**Mack LR Waste - Electric**



**Articulated Volvo Bus - Electric**



**Volvo LX1 - Electric**



# Modular system serving many segments and applications



## CITY AND DISTRIBUTION



## CONFINED AREAS



## REGIONAL AND LONG-HAUL



## ELECTRIC MODULAR PLATFORM – HARDWARE AND SOFTWARE

### HEV, PHEV, BEV



Electrified powertrains



Batteries



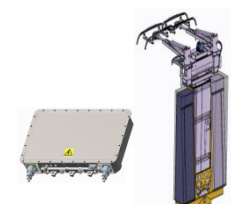
Power electronics



Charging components



Electrified auxiliaries



Future interfaces

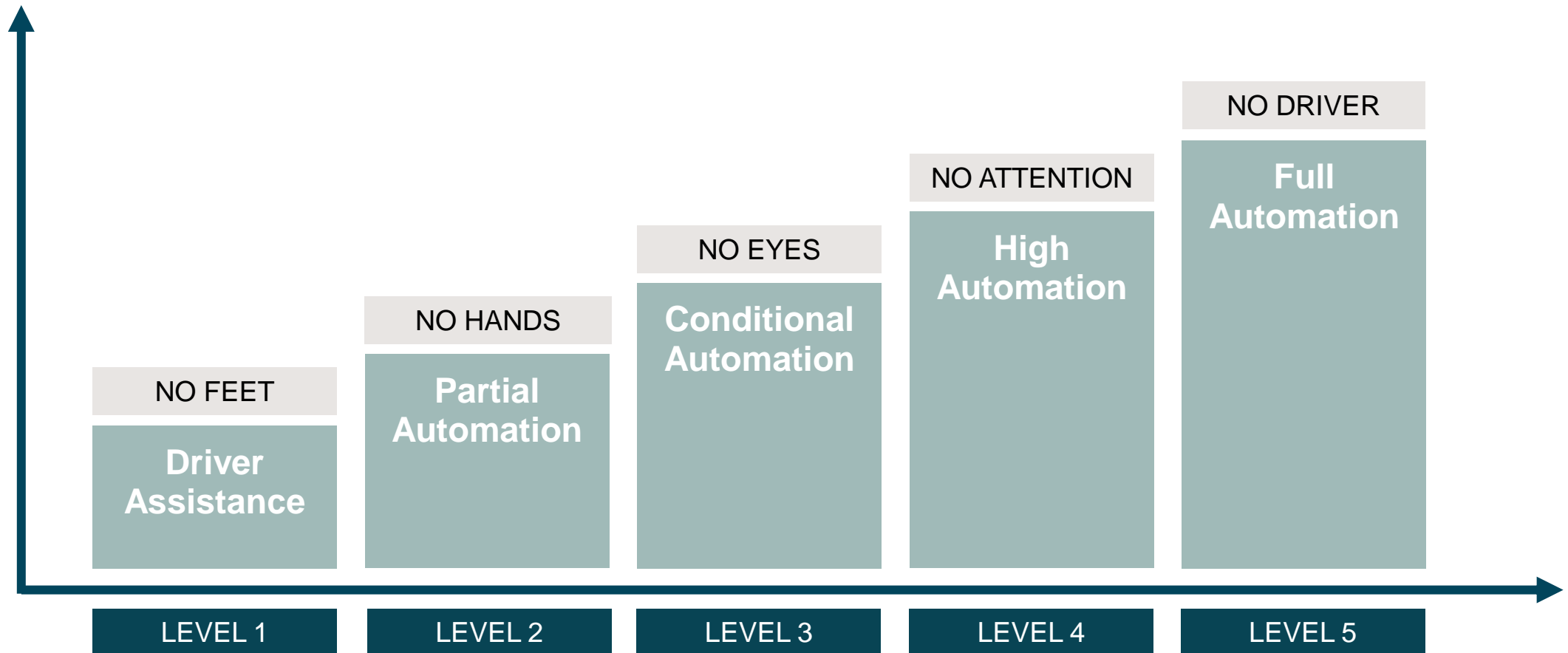


Partners



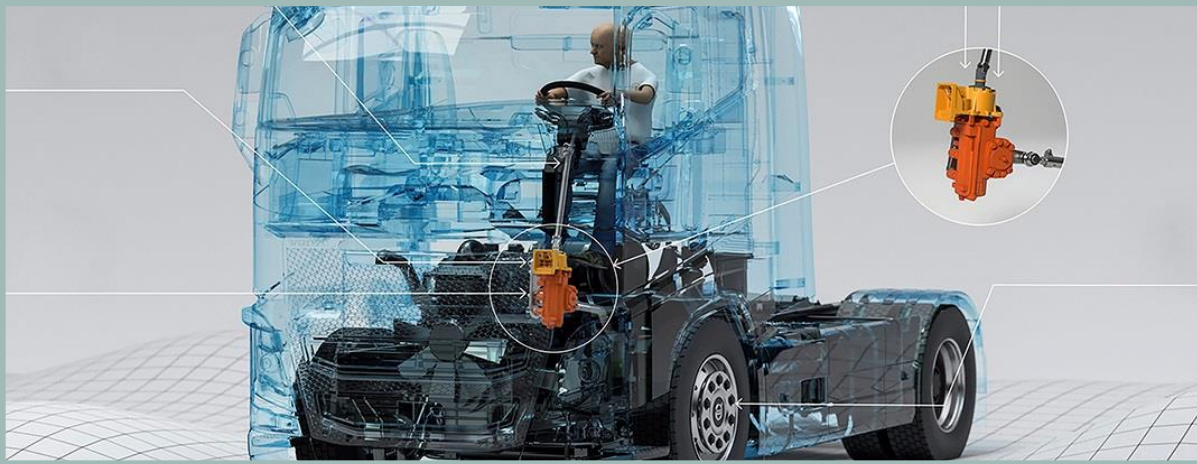
# Five levels of automation

LEVELS 4-5 ARE THE TRUE GAME CHANGERS IN THE TRANSPORT INDUSTRY

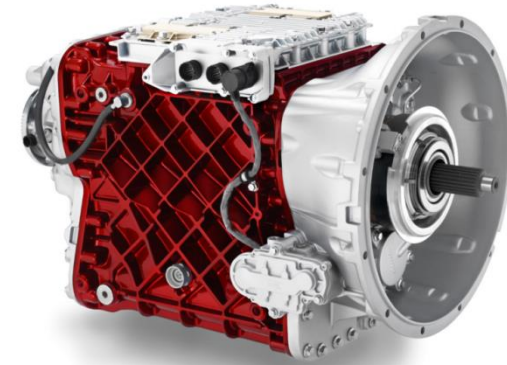


# We have built competence and capabilities over time

CORNER-STONES FOR AUTOMATION IN PLACE AS COMMERCIALIZED SOLUTIONS



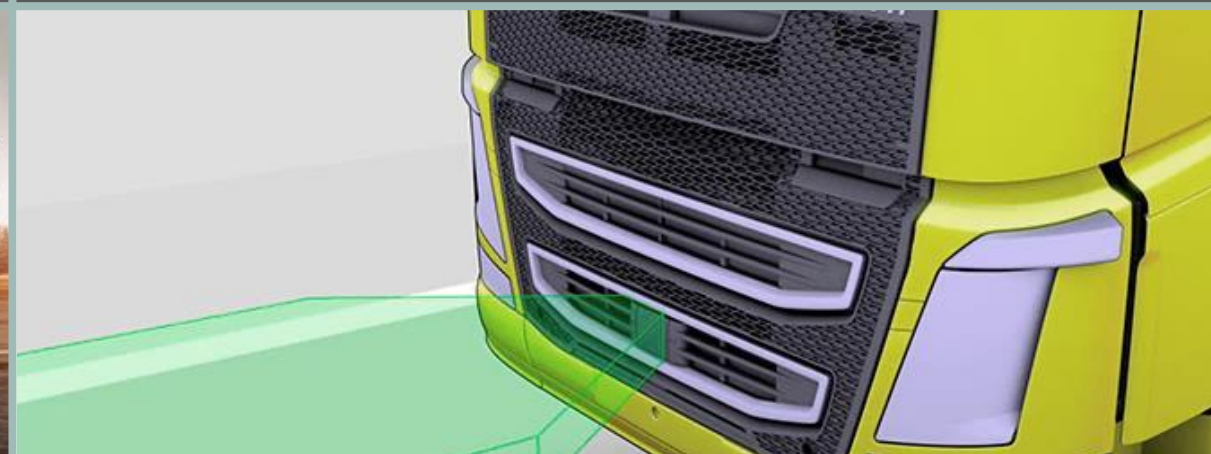
DYNAMIC STEERING



AUTOMATED MANUAL TRANSMISSION



AUTOMATED EMERGENCY BRAKE SYSTEM



ADAPTIVE CRUISE CONTROL



# We have built competence and capabilities over time

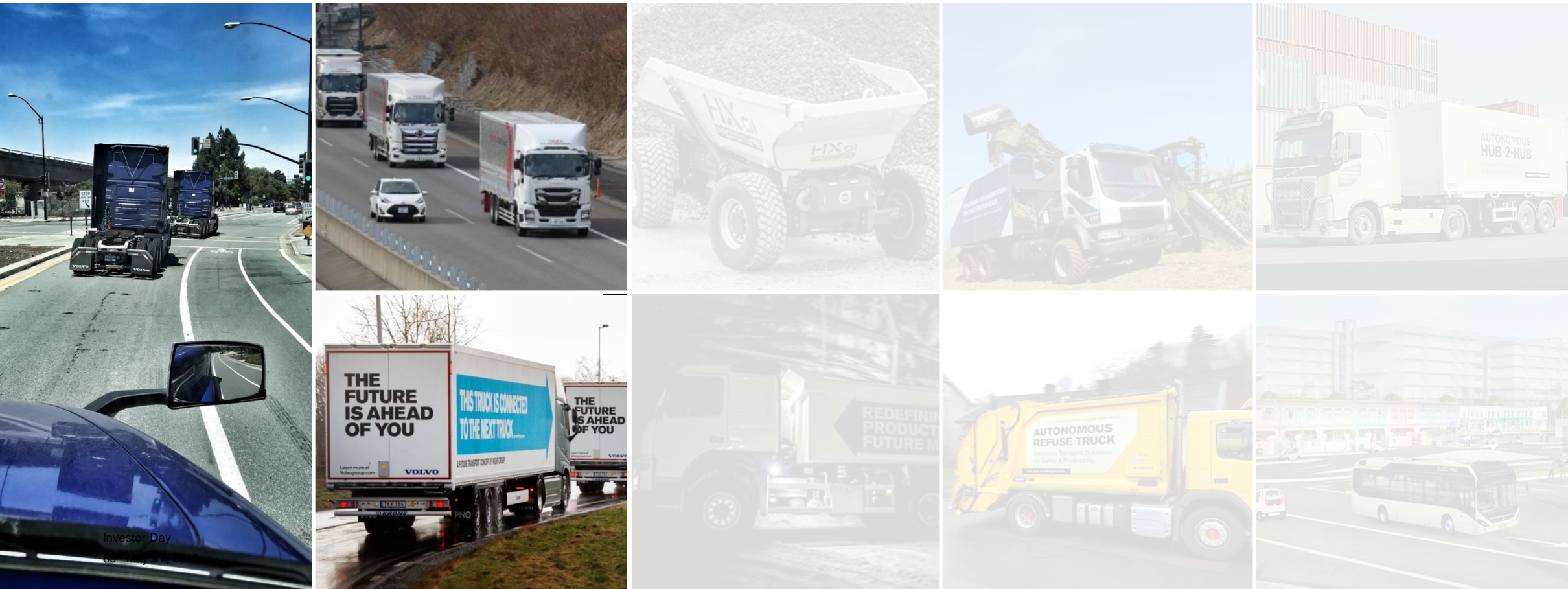
DEMONSTRATING OUR RESEARCH AND TECHNOLOGY DEVELOPMENT





# We have built competence and capabilities over time

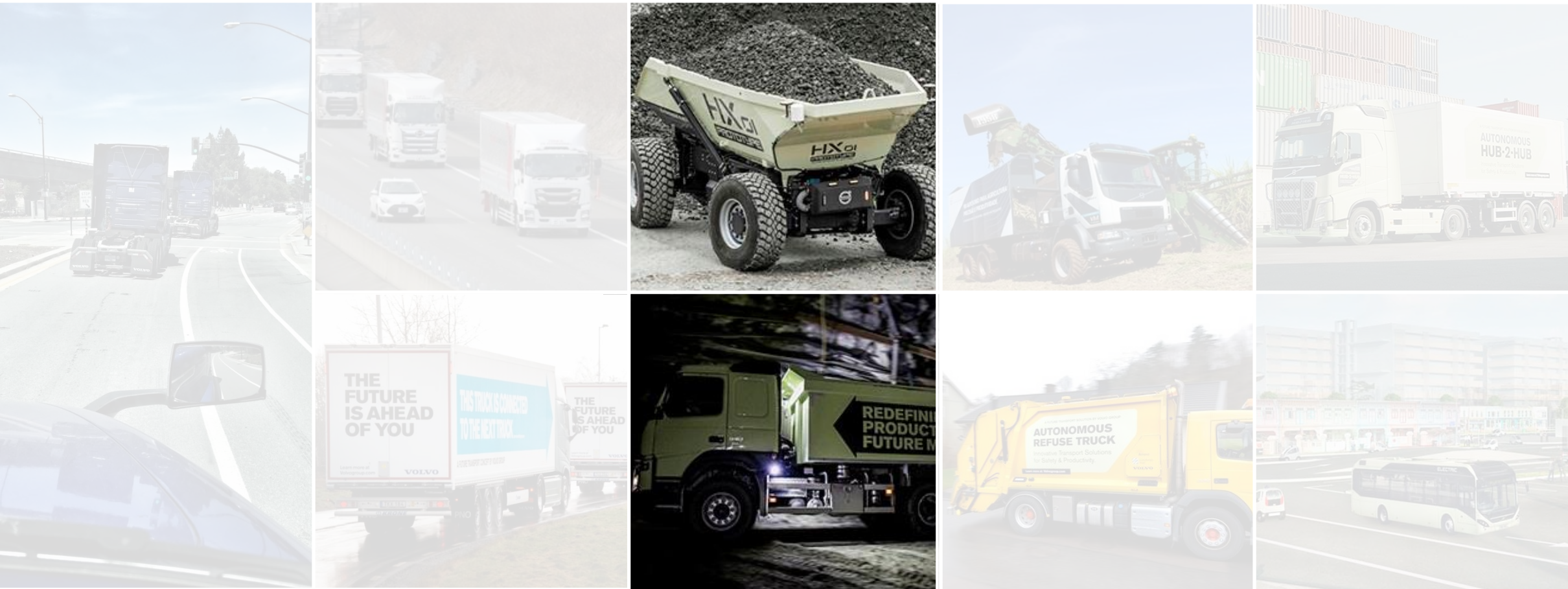
DEMONSTRATING OUR RESEARCH AND TECHNOLOGY DEVELOPMENT





# We have built competence and capabilities over time

DEMONSTRATING OUR RESEARCH AND TECHNOLOGY DEVELOPMENT



# We have built competence and capabilities over time

DEMONSTRATING OUR RESEARCH AND TECHNOLOGY DEVELOPMENT





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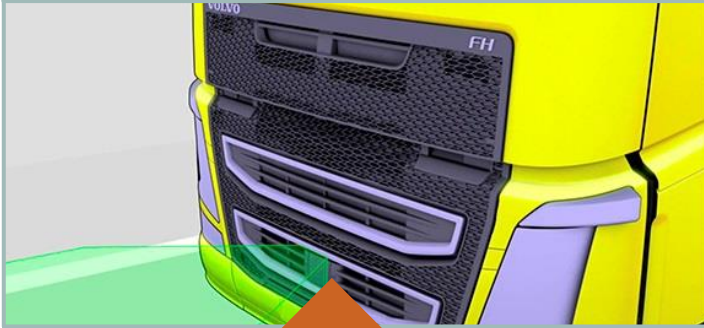
DEMONSTRATING OUR RESEARCH AND TECHNOLOGY DEVELOPMENT





## Modular system serving many segments and applications

### DRIVER SUPPORT SYSTEMS



### CONFINED AND SEMI-CONFINED



### PUBLIC / ON-ROAD



### VOLVO GROUP AUTOMATION PLATFORM – HARDWARE AND SOFTWARE



Sensors



Perception



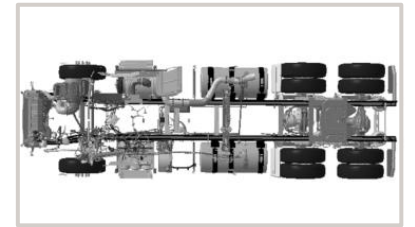
V2X  
communication



Cyber  
security



Fleet & Mission  
management



Redundant vehicle with  
automation interface



# Connected ecosystem is enabling business opportunities here and now

## Example of enabled capabilities:

- Uptime services
- Vehicle automation
- Vehicle-to-infrastructure communication
- Vehicle-to-vehicle communication

## CONNECTED SAFETY



# Highly efficient and integrated transport system

SAFE, SUSTAINABLE AND EFFICIENT

ELECTRIFICATION  
AUTOMATION  
CONNECTIVITY



**Volvo HX2** - Autonomous electric hauler



**Volvo FMX** - Autonomous



**Volvo EX1** - Electric excavator



**Volvo LX1** - Hybrid wheel loader





# Summary and Q&A

**Martin Lundstedt**

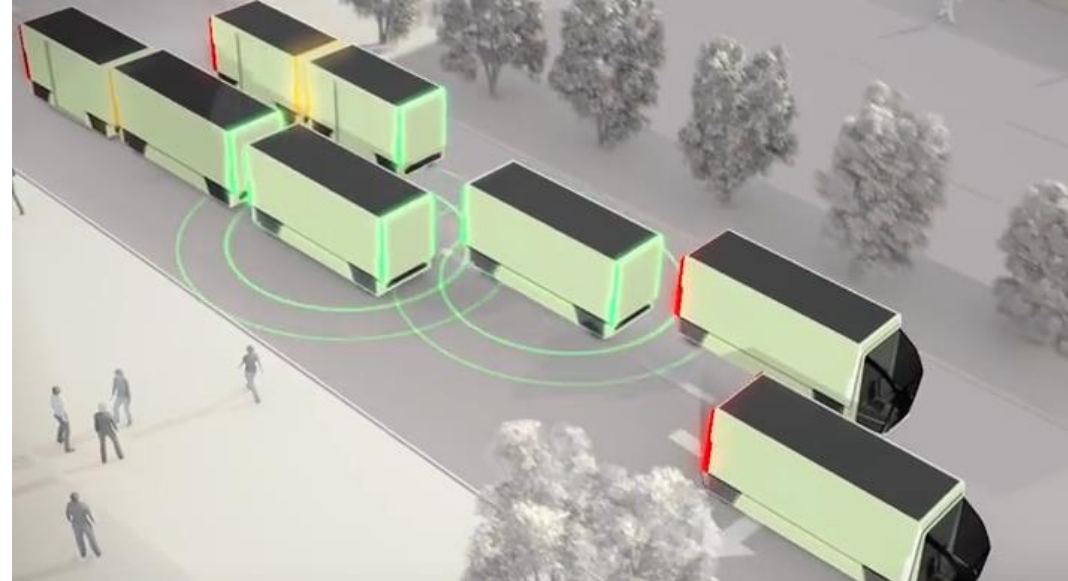
PRESIDENT AND CEO





# Exciting times ahead

- Growing demand for sustainable transports and infrastructure
- Our strategy serves our customers and other stakeholders well
- Well positioned:
  - Strong assets
  - Well invested
- Still potential with continuous improvements
- Lead in technology and innovation
- Growing solution-based business





## QUESTIONS AND ANSWERS

Growing demand for sustainable transports and infrastructure

Well invested with strong assets to build on

Improving financial performance

Improving operational performance

Building a strong North American truck business

Leveraging Financial Services

Lead in technology





A large white arch bridge spans a body of water. A Volvo truck is driving on the bridge. The background shows a lake and mountains under a clear sky.

**VOLVO**  
VOLVO GROUP

