



Technology with Vision

# HELLA GmbH & Co. KGaA

## Company Presentation

Q1 FY 2017/2018



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# HELLA Company Presentation Q1 FY 2017/18

## Outline

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- HELLA Financial Highlights Q1 FY 2017/18
- HELLA Financial Results Q1 FY 2017/18
- Outlook

BACKUP

# Positive sales growth and EBIT increase in Q1 FY 2017/18

## Financial Highlights Q1 FY 2017/18

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### Sales

- **HELLA Group** currency adjusted **sales grew by 5.8%** YoY to 1.6 bill. EUR

### Profitability

- **Adj. Gross Profit margin** at **27.7%** (+0.2%-points YoY)
- **Adj. EBIT** +7 mill. EUR (+5.6% YoY) at **125 mill. EUR**
- **Adjusted EBIT margin** +0.1pp to **7.7%**

### Liquidity

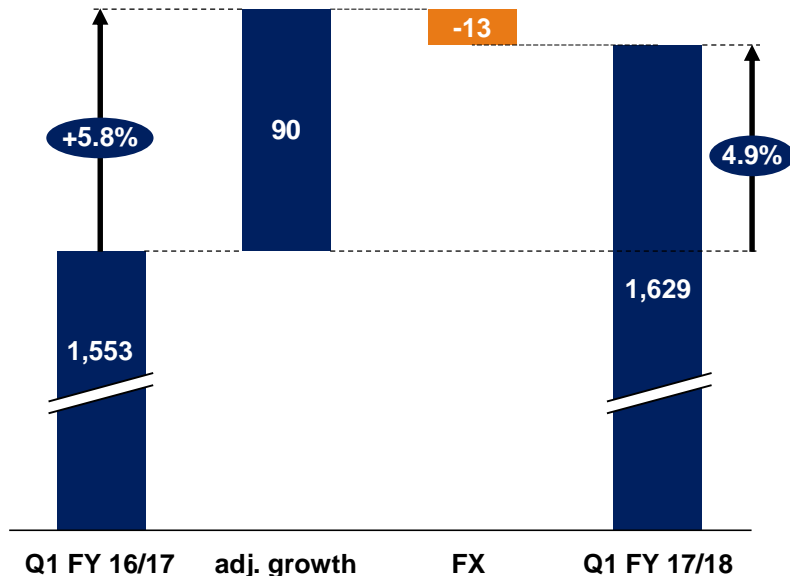
- **Adjusted Free Cash Flow from operating activities** increased by **20 mill. EUR** (+64% YoY) to **50 mill. EUR** mainly due to higher funds from operations

Note: Adjustments including restructuring expenses in Q1 FY 16/17 and Q1 FY 17/18. Please note that where sums and percentages in the presentation have been rounded, differences may arise as a result of commercial rounding.

# HELLA top line growth with expected development in Q1 FY 17/18

## Financial Highlights Q1 FY 2017/18

### HELLA Group sales (EUR millions)



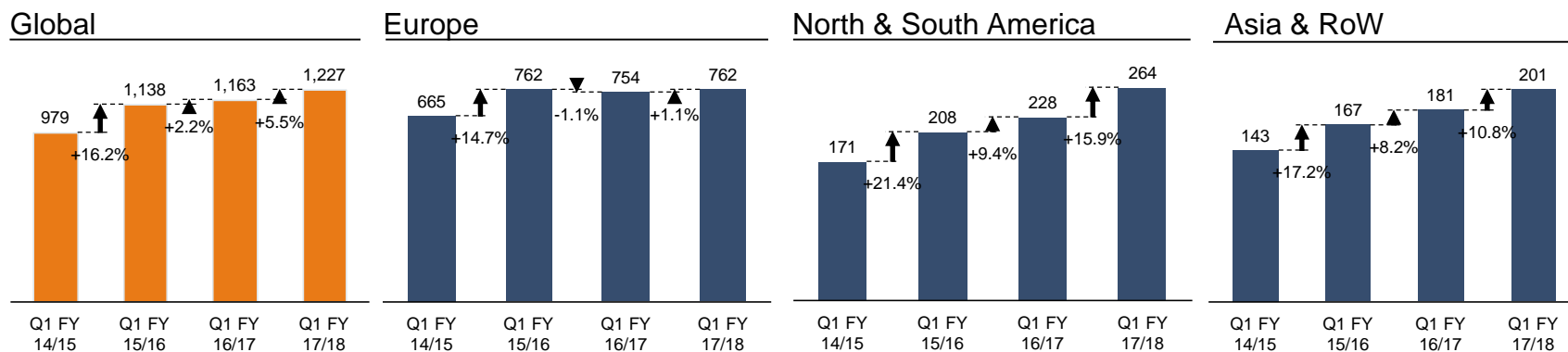
### Comment

- **Currency adjusted growth HELLA Group at 5.8%**
- **Reported sales growth HELLA Group at 4.9% (increased by 77 mill. EUR, + to 1,629 mill. EUR)**
  - **Automotive + 5.9%** to 1,244 mill. EUR. Demand for energy management products, radar solutions and advanced lighting systems drives business. Lighting still with ongoing ramp-ups
  - **Aftermarket external sales +2.0%**, positive demand from Independent Aftermarket and Wholesale
  - **Special Applications +12.3%** to 100 mill. EUR, positive development in agriculture and constructions as well as over-proportional demand in Australia

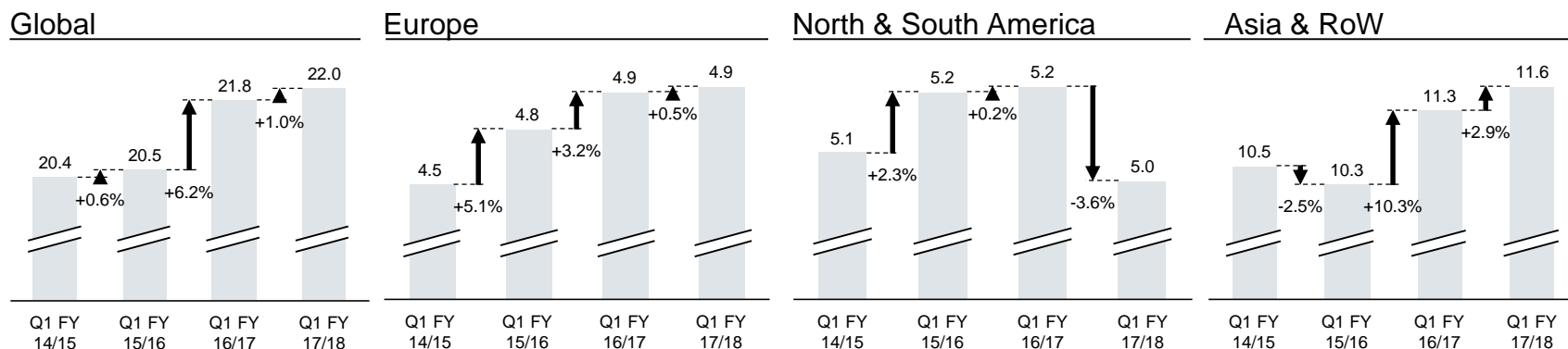
# Automotive outperforming LVP in all regions

## Financial Highlights Q1 FY 2017/18

### HELLA Automotive external sales by region (in EUR millions)



### Light vehicle production (in million units)



### HELLA Automotive growth vs. market (Light vehicle production growth):

+15.9%   -4.0%   4.5%     +9.5%   -4.3%   0.6%     +19.1%   +9.2%   +19.5%     +19.6%   -2.1%   7.9%

Please note that where sums and percentages in the presentation have been rounded, differences may arise as a result of commercial rounding.  
Source: HELLA; IHS (as of September 2017)



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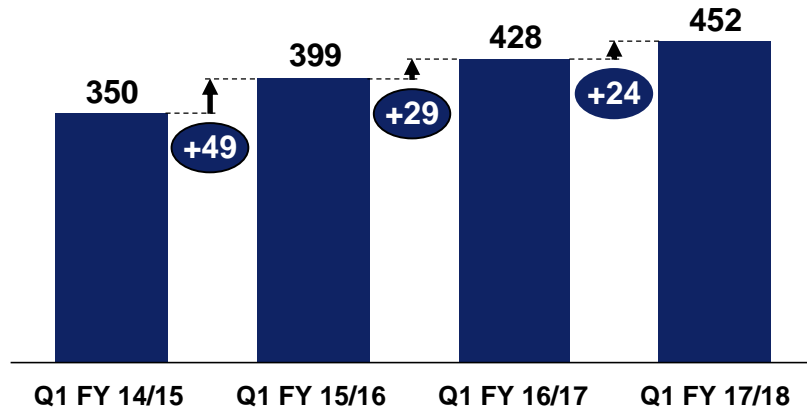
BACKUP

# GPM increase due to stronger Aftermarket and Special Applications

## Financial results Q1 FY 2017/18

### Gross Profit

EUR millions

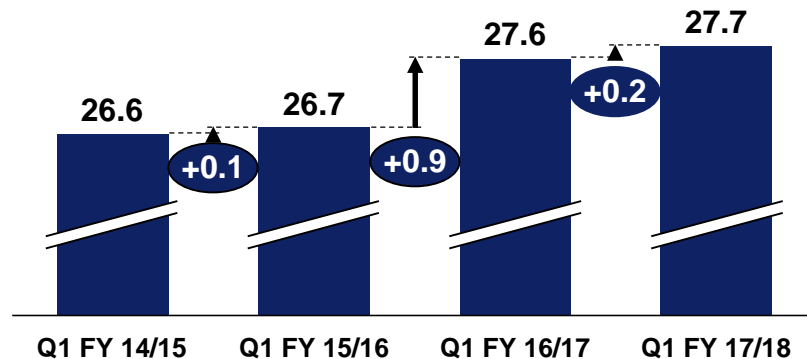


### Highlights

- **Adj. Gross Profit** increased by **24 mill. EUR (+5.6%) to 452 mill. EUR**
  - **Automotive** + 4.2% to 306 mill. EUR
  - **Aftermarket** + 2.2% to 105 mill. EUR
  - **Special Applications** +33.1% to 41 mill. EUR

### Gross Profit margin

% sales



### Highlights

- **Adj. Gross Profit margin** improved by **0.2%-points to 27.7%**
  - increased margins in Aftermarket and Special Applications
  - ongoing capacity increase with initially lower utilization negatively affected GPM in Automotive

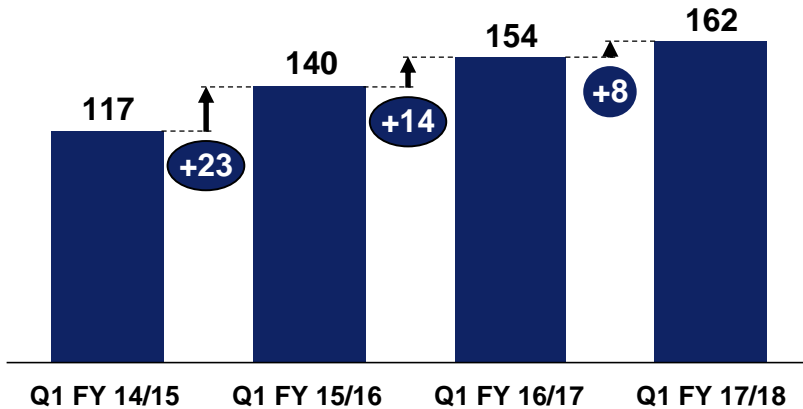


# Continuous high R&D expenses to secure future growth

## Financial results Q1 FY 2017/18

### R&D expenses

EUR millions

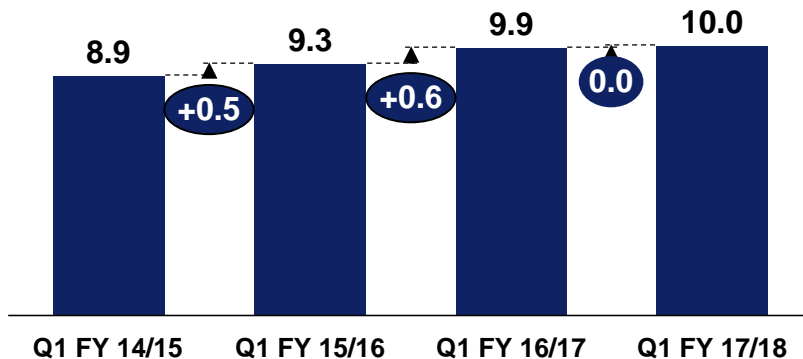


### Highlights

- **Absolute R&D expenses** increased by 8 mill. EUR (+5.5% YoY) to **162 mill. EUR**, mainly:
  - booked business
  - exploring potential of market trends
  - enhancements of product portfolio

### R&D expenses ratio

% sales



### Highlights

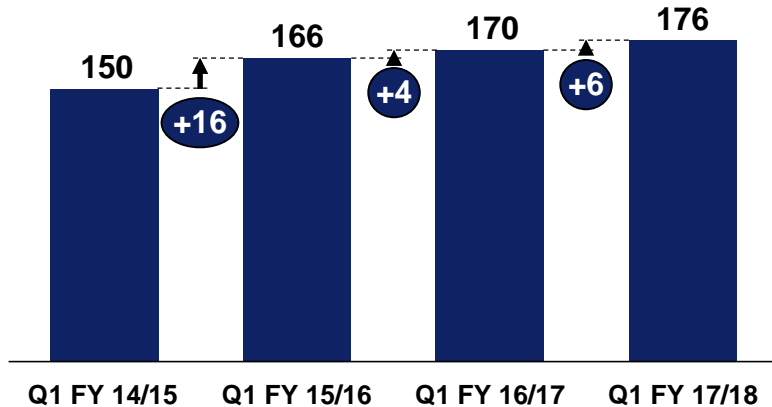
- **Q1 FY 17/18 ratio** nearly constant at **10%** due to high level of absolute R&D expenses

# Relatively stable development of SG&A costs

## Financial results Q1 FY 2017/18

### Adjusted SG&A expenses

EUR millions

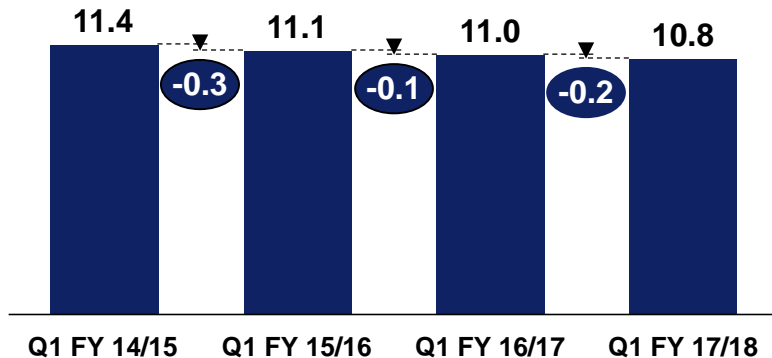


### Highlights

- **Only slight increase (+ 6 mill. EUR, + 3.3%) of SG&A costs** mainly due to increase in distribution expenses:
  - distribution expenses +5 mill. EUR (+4.5%) to 128 mill. EUR driven by Aftermarket business extension and higher logistic costs in Automotive in Eastern Europe

### Adjusted SG&A expenses ratio

% sales



### Highlights

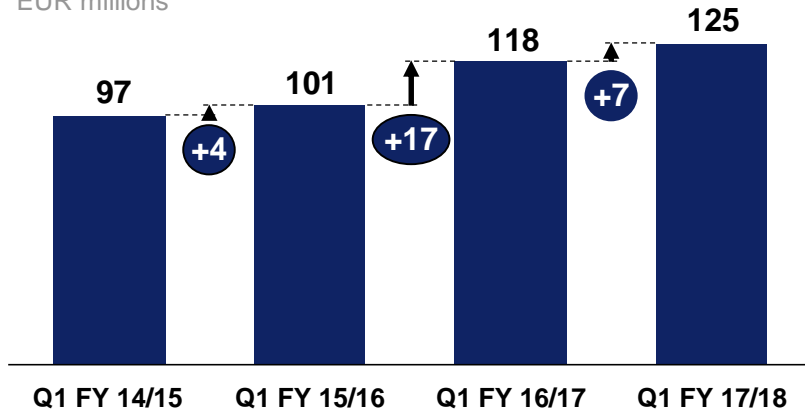
- **SG&A ratio -0.2%-points to 10.8%**, ratio of structural costs shows in **general a stable development**
  - distribution cost ratio constant at 7.9%
  - administrative cost ratio -0.2%-points to 3.3%
  - adjusted other income and expenses -0.1%-points to 0.4%

# Adjusted EBIT and EBIT margin above prior-year's level

## Financial results Q1 FY 2017/18

### Adjusted EBIT

EUR millions

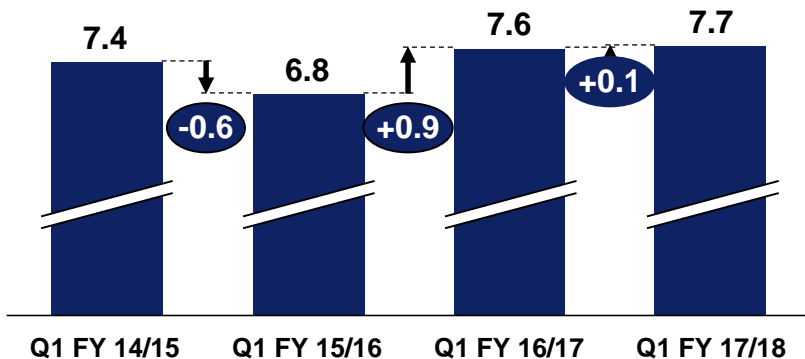


### Highlights

- **Adjusted EBIT** increased by 7 mill. EUR (+5.6%) to **125 mill. EUR**
  - increase in Gross Profit by 24 mill. EUR (+5.6%)
  - higher R&D (+8 mill. EUR, +5.5%)
  - decline in JV income by 3 mill. EUR (-21.8%)

### Adjusted EBIT margin

% sales



### Highlights

- **Adj. EBIT margin** increased by **0.1%-points** to **7.7%**:
  - slight increase of GPM by 0.2%-points
  - higher R&D expenses with increase of ratio by 0.1%-points
  - decreased contribution of JVs affected profitability negatively by 0.2%-points

# P&L including reconciliation

## Financial results Q1 FY 2017/18

### Quarterly comparison

#### HELLA GROUP

in EUR mill.

		Q1 FY 16/17	Q1 FY 17/18
Gross Profit	reported	427.8	451.1
	Restructuring	0.0	0.6
	<b>adjusted</b>	<b>427.8</b>	<b>451.7</b>
Other income and expenses	reported	5.3	5.1
	Restructuring	1.7	1.2
	<b>adjusted</b>	<b>7.1</b>	<b>6.2</b>
EBIT	reported	116.5	123.2
	Restructuring	1.7	1.8
	<b>adjusted</b>	<b>118.3</b>	<b>124.9</b>
Net financial result		-10.1	-11.9
Taxes		-23.0	-28.4
Earnings for the period		<b>83.5</b>	<b>82.9</b>
Earnings per share (EUR)		<b>0.75</b>	<b>0.74</b>

### Comments

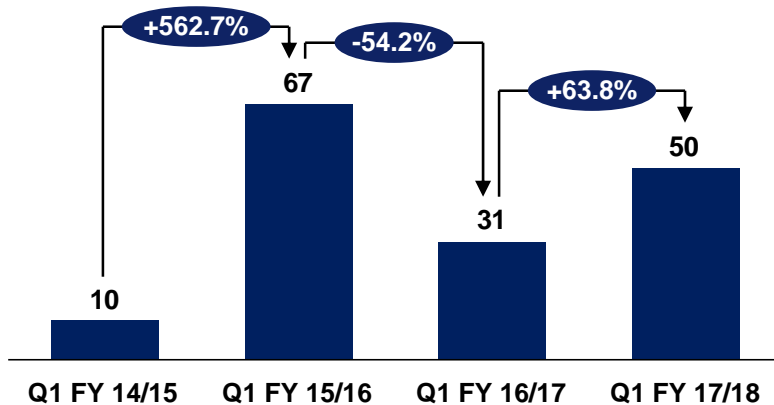
- Reported EBIT Q1 slightly negatively impacted by restructuring expenses in Germany
- Net financial result decreased due to the funding of activities in growth regions at higher local interest rates
- Earnings for the period decreased slightly despite EBIT increase; higher tax payments after low comparable tax rate in Q1 PY
- EPS decreased by 1 Cent to 0.74 EUR

# Adj. Free Cash Flow from operating activities increased due to higher funds from operations

## Financial results Q1 FY 2017/18

### Adj. FCF from operating activities

EUR millions

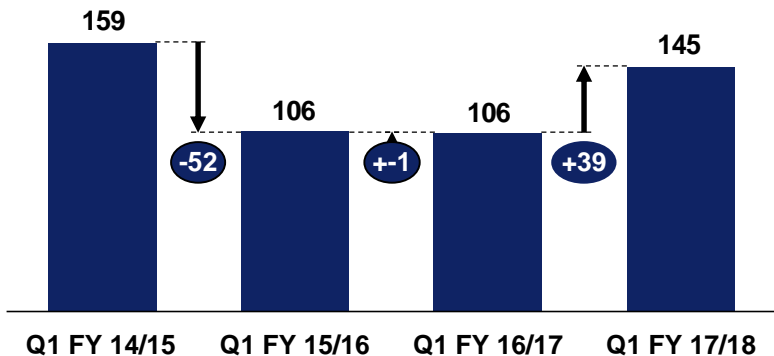


### Highlights

- **Adj. Free Cash Flow from operating activities** increased by 20 mill. EUR to **50 mill. EUR**, mainly:
  - **increased funds** from operations
  - **lower Working Capital** consumption

### Net CAPEX

EUR millions

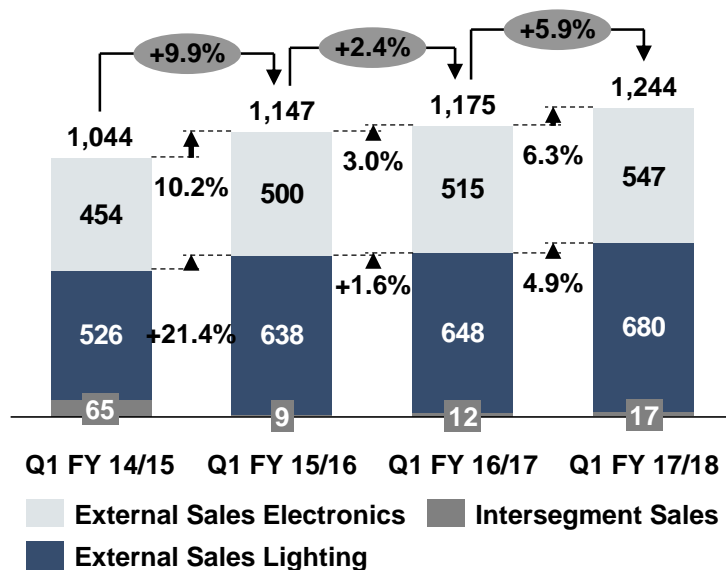


### Highlights

- **Net CAPEX** increased by 39 mill. EUR to **145 mill. EUR**
- **Continuous investments** in customer-specific **equipment**, start of **capacity extension**
- **Reimbursements** decreased by 16 mill. EUR to **11 mill. EUR** depending on project launches

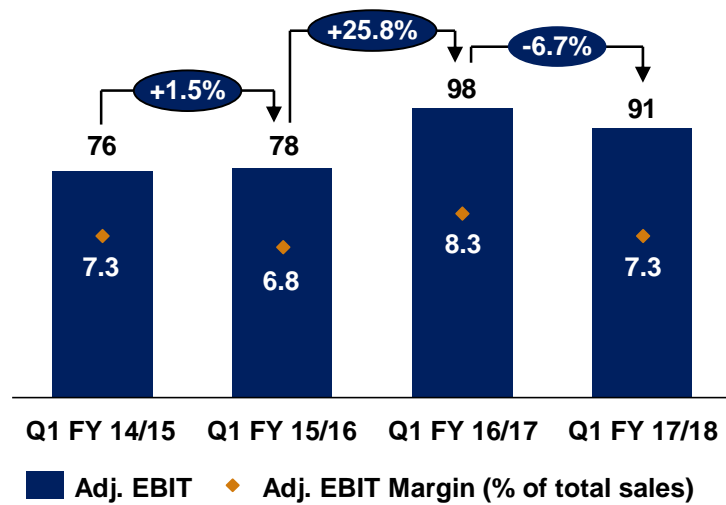
# Automotive segment with increasing growth

## Financial results Q1 FY 2017/18



### Automotive Sales

- **Growth of 5.9%** with ongoing project ramp-ups started in H2 FY 16/17:
  - demand for energy management products and radar drives Electronics
  - demand for LED headlamps in Lighting
  - ongoing growth dynamics expected



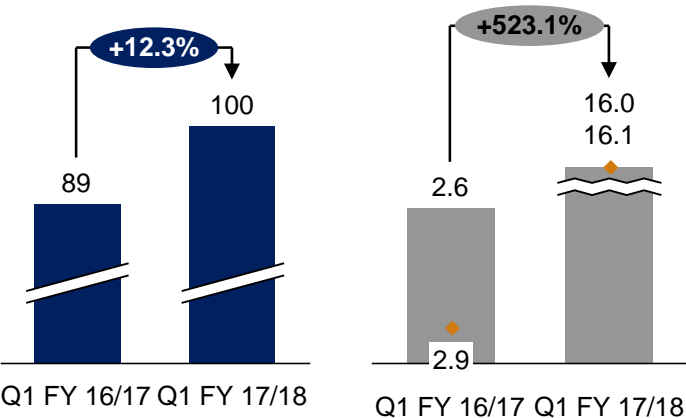
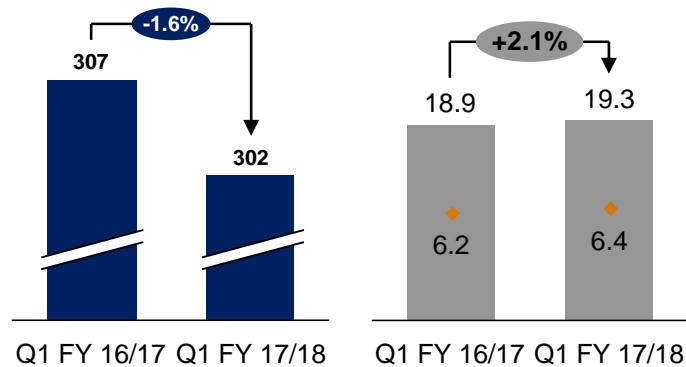
### Automotive Profitability

- **Decline of adj. EBIT by 6.7%** to 91 mill. EUR:
  - capacity increase with initially lower utilization level
  - increase in R&D to prepare new launches
  - lower JV contribution due to weakness in Asian joint ventures
  - negative FX effects



# Non Automotive segments with positive contributions

## Financial results Q1 FY 2017/18



■ Total Sales

■ EBIT

◆ EBIT Margin

### Aftermarket

- **External sales growth (+2.0%)** due to **positive IAM** and **wholesale** business
- Total sales declined by 1.6%, mainly due to new allocation between Aftermarket and Special Applications segments
- **EBIT margin +0.2pp** due to increase in GPM (+1.3%-points) driven by mix effects

### Special Applications

- **Strong top-line growth (+12.3%):**
  - increasing demand in **Agricultural** and **Construction** sector
  - other product groups e.g. **Trailer** also **growing**
  - **over-proportional** growth in **Australia**
- **Massive profitability increase (>500%)**
  - strong top line growth
  - **negative effects** from the sale of **Industries & Airport lighting** activities in **Q1 FY 16/17**

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# Overall market FY 17/18 expected to grow by 1.3% according to IHS Outlook

Region	Expected LVP (in m units)	Comment
Europe	<div style="text-align: center;"> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">+2.6%</span>  <div style="background-color: #003366; color: white; padding: 5px; width: 60px; margin: 0 auto;">22.4</div> <hr style="width: 80%; margin: 5px auto;"/>           FY 17/18         </div>	<ul style="list-style-type: none"> <li>Continuing growth in 2017/18 expected. Europe excluding Germany expected to grow by 3.9% to 16.5m units, Germany with an expected decline of 1.0% to 5.9m units</li> </ul>
NSA	<div style="text-align: center;"> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">+0.1%</span>  <div style="background-color: #003366; color: white; padding: 5px; width: 60px; margin: 0 auto;">20.8</div> <hr style="width: 80%; margin: 5px auto;"/>           FY 17/18         </div>	<ul style="list-style-type: none"> <li>After weak first half, better growth dynamic in H2 2017/18 expected</li> </ul>
China	<div style="text-align: center;"> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">+0.0%</span>  <div style="background-color: #003366; color: white; padding: 5px; width: 60px; margin: 0 auto;">27.5</div> <hr style="width: 80%; margin: 5px auto;"/>           FY 17/18         </div>	<ul style="list-style-type: none"> <li>After weak first half (-0.6%), China expected to stay flat in 2017/18, Asia/RoW expected to grow by 1.0% to 50.9m units</li> </ul>
Global	<div style="text-align: center;"> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">+1.3%</span>            +95.8            FY 17/18         </div>	<ul style="list-style-type: none"> <li>Overall market expected to grow by 1.3%</li> </ul>

Source: IHS Light Vehicle Production (LVP) (as of September 2017)



# Company specific development for FY 17/18 confirmed Guidance

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Presuming no serious economic turmoil, we assume a positive development of the operative HELLA business for FY 2017/18:

**Sales growth**

- Growth excluding FX between 5-10%

**Adj. EBIT growth**

- Growth between 5-10%

**Adj. EBIT margin**

- Margin around 8%

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## BACKUP

- HELLA at a Glance

# Market and technology leadership as key strategic principles

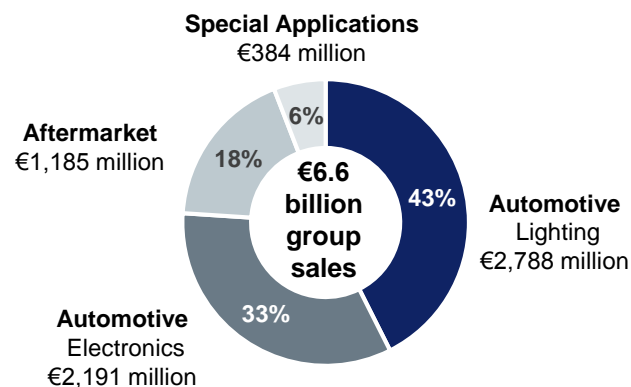
## HELLA at a glance – Overview

### KEY FACTS

- **Founded 1899** in Lippstadt (Germany)
- Global footprint with around **38,000 employees at more than 125 locations in some 35 countries**
  - Thereof: **41 research & 28 production sites**
- Integrated business portfolio in **Automotive, Aftermarket, and Special Applications**
- **Leading market positions in automotive Lighting and Electronics**
- One of the **top 40 automotive suppliers** in the world and **one of the 100 largest German industrial companies**

### SALES BY BUSINESS SEGMENT

external sales, fiscal year 2016/2017



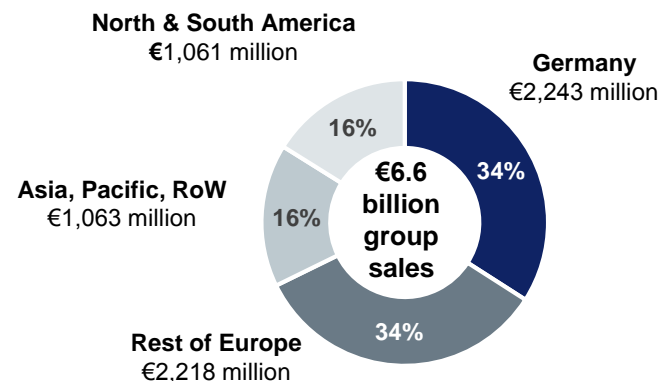
### KEY FINANCIALS

in EUR millions and % of sales

	FY 2015/16	FY 2016/17	Change
<b>Sales</b>	6,352	<b>6,585</b>	+3.7%
<b>Adjusted EBIT</b>	476	<b>534</b>	+12.0%
<b>Adjusted EBIT margin</b>	7.5%	<b>8.1%</b>	+0.6% points
<b>Adjusted Free Cash Flow</b>	155	<b>149</b>	-3.9%

### SALES BY REGION

based on the HQs of HELLA's customers, fiscal year 2016/2017

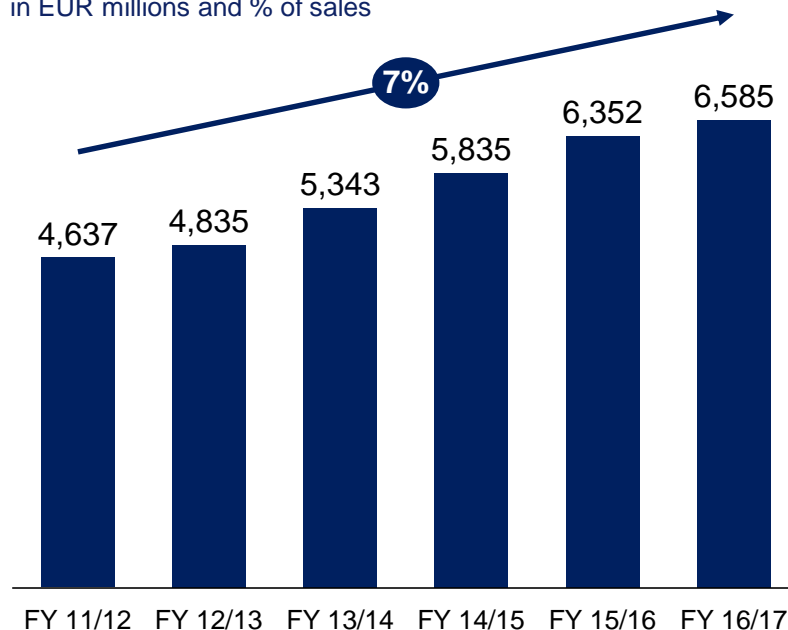


# HELLA has shown sustainable profitable growth since automotive crisis

## HELLA at a glance – Sales and EBIT development

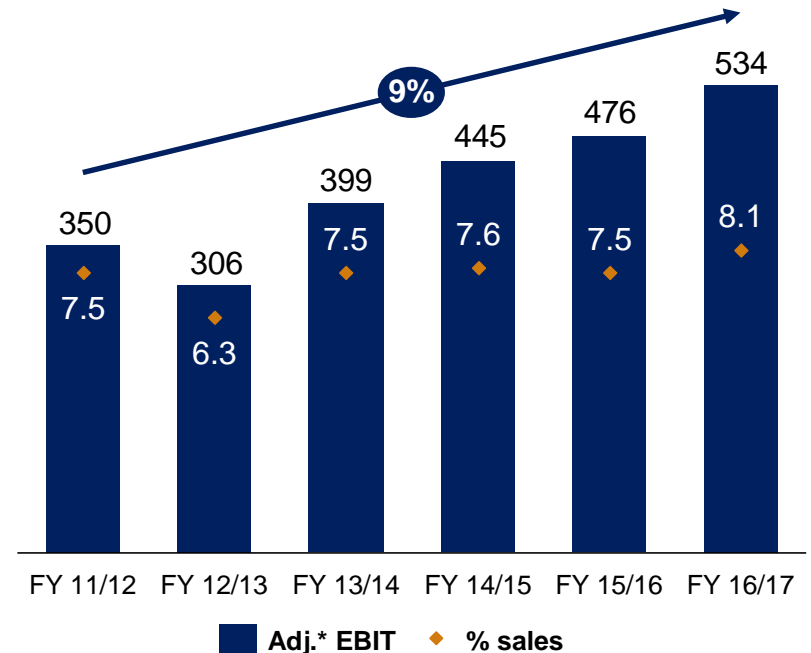
### SALES

in EUR millions and % of sales



### ADJUSTED EBIT

in EUR millions and % of sales



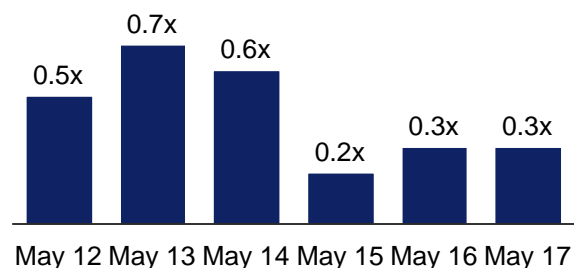
- **Sustainable growth** during the last years mainly driven by **Automotive**
- **Aftermarket** and **Special Applications** also with positive **growth**
- **Continuous EBIT increase** despite large investments in **global structures** and **R&D**
- **Overall stable margin level** through **growth** driven by **technology leadership** and **increased efficiency**

# High financial stability ensuring long-term growth perspective

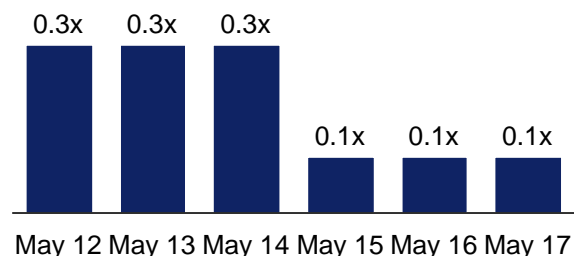
## HELLA at a glance – Financial stability

### Solid capital structure

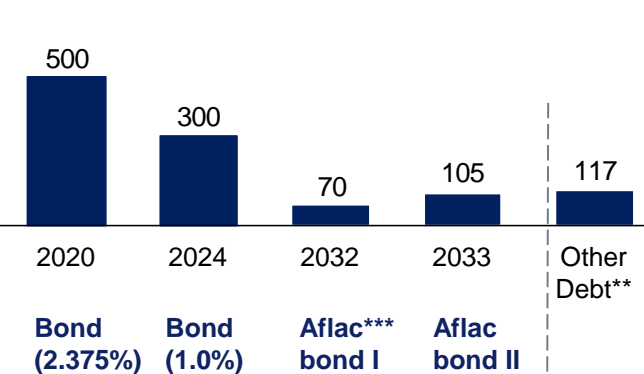
#### Leverage (Net debt / EBITDA)



#### Gearing (Net debt / Equity)



#### Debt and maturity profile\*, in millions EUR



**Additional Revolving Credit (2022) of EUR 450m with 10 core banks as back-up facility**

### Strategic flexibility

**HELLA has a stable and solid financial fundament which forms the basis for its future strategic plans**

- Prudent financial policy throughout the cycle with leverage < 1.0x
- Financing of long-term growth strategy secured
- Well balanced debt portfolio
- New issuing (senior, unsecured / bearer debt) for attractive conditions
- Mid term target: Leverage < 1.0x

- Capital-market-oriented capital structure with investment grade rating
- **Good liquidity profile** and consistent liquidity management
- **EUR 102m dividends** (0.92EUR/share) paid October 2017
- **Equity ratio at 39.5% and cash & assets at 1,098 mill. EUR**

\* As of August, 2017; Euro Bond I: 1,15%, Euro Bond II: 2,375%, Euro Bond III: 1.00% ; Aflac bonds hedged values \*\* Mostly short term loans and evaluation impact

\*\*\* Abbreviation for "American Family Life Insurance Company"

# Broad automotive portfolio in strong growing areas

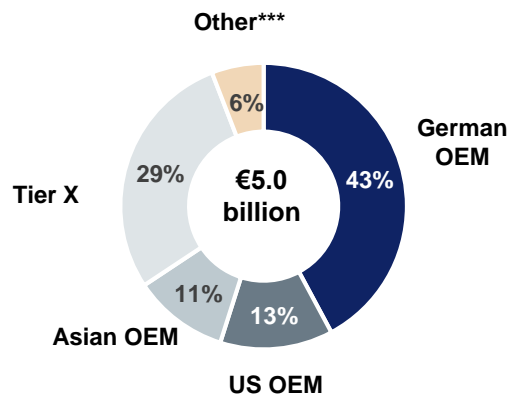
## HELLA at a glance – Business Segment Automotive

### BUSINESS OVERVIEW\*

<b>Lighting</b> <ul style="list-style-type: none"> <li>▪ Headlamps</li> <li>▪ Rear Combination Lamps</li> <li>▪ Small Lamps</li> <li>▪ Interior Lighting</li> <li>▪ Lighting Electronics</li> </ul>	<ul style="list-style-type: none"> <li>▶ <b>#1 market position in LED headlamps Europe</b></li> <li>▶ <b>#3-4 global and #1-2 European market position in OE passenger car lighting</b></li> </ul>
<b>Electronics</b> <ul style="list-style-type: none"> <li>▪ Components</li> <li>▪ Energy Management</li> <li>▪ Driver Assistance Systems</li> <li>▪ Body Electronics</li> <li>▪ Steering</li> </ul>	<ul style="list-style-type: none"> <li>▶ <b>#2-3 global and #1-2 European market position in defined automotive electronic segments</b></li> </ul>

### AUTOMOTIVE SALES BY CUSTOMERS

fiscal year 2016/2017



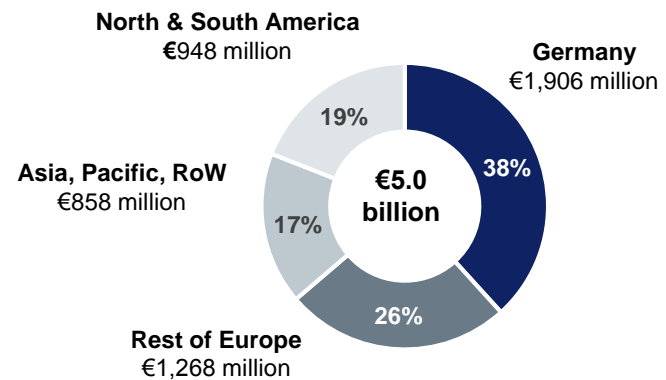
### KEY FINANCIALS

in EUR millions and % of sales

	FY 2015/16	FY 2016/17	Change
External Sales	4,804	<b>4,980</b>	+3.7%
Adjusted EBIT**	390	<b>444</b>	+13.8%
Adjusted EBIT margin**	8.1%	<b>8.8%</b>	+0.7% points
Ext. Sales Lighting	2,720	<b>2,788</b>	2.5%
Ext. Sales Electronics	2,084	<b>2,191</b>	5.2%

### AUTOMOTIVE SALES BY REGIONS

fiscal year 2016/2017



\*) All figures related to the selected markets and product categories based on HELLA's portfolio, as covered in an external market study commissioned by HELLA (2014)

\*\*\*) Adjustments including restructuring expenses and supplier default in FY 15/16

\*\*\*) Including European OEM (ex Germany) and trucks.

# Over the last years HELLA was 1<sup>st</sup> to market with several technologies which support strong market positions

## Innovation Leadership – Automotive

### SELECTED INNOVATION HIGHLIGHTS



Advanced LED Headlamps

#### Global Market Position

**#1-2**

#### Milestones

- 2006** Cadillac Escalade Platinum: Full-LED headlamp (1<sup>st</sup> to segment)
- 2010** Audi A8: Full-LED headlamp with AFS functions (1<sup>st</sup> to market)
- 2013** Audi A8: LED Matrix headlamp with glare-free high beam (1<sup>st</sup> to market)
- 2016** Mercedes E-Class: LED Matrix with glare-free high beam (1<sup>st</sup> to market)



24 Ghz (NB) Radar Sensors

#### Global Market Position

**#1**

#### Milestones

- 2009** Audi Q7: Introduction of Lane Change Assistant (1<sup>st</sup> Generation)
- 2012** Audi A8: Lane Change Assistant + Pre-Crash Rear (2<sup>nd</sup> Generation)
- 2014** VW Golf: Blind-Spot Detect + Rear Cross Traffic Alert (3<sup>rd</sup> Generation)
- 2017** Opel Mokka: Lane Change Assist + Blind Spot Detect (4<sup>th</sup> Generation)



Intelligent Battery Sensors

#### Global Market Position

**#2**

#### Milestones

- 2005** BMW 5-series: Introduction of first IBS product (1<sup>st</sup> Generation)
- 2008** Hyundai Sonata: Rollout of IBS product in Korea (2<sup>nd</sup> Generation)
- 2012** VW Passat: Global VW platform for IBS product (3<sup>rd</sup> Generation)
- 2015** Honda Accord: Global platform for IBS product (4<sup>th</sup> Generation)



# HELLA will benefit in its core business thanks to favorable positioning along major automotive market trends

## Business devisions – Electronic and Lighting

MAJOR  
AUTOMOTIVE  
MARKET  
TRENDS

**AUTONOMOUS  
DRIVING**



**EFFICIENCY &  
ELECTRIFICATION**



**CONNECTIVITY &  
DIGITALIZATION**



**INDIVIDUALI-  
ZATION**



Selected  
Examples

Electronic  
portfolio



Camera  
Software



77 GHz  
Radar Sensor



48V DC/DC-  
Converter



Battery  
Management  
System

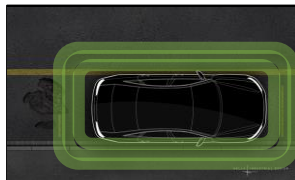


Particulate  
Matter Sensor



Passive  
Entry System

Lighting  
portfolio



Driving Status  
Projections



LED Technology



High Definition  
headlamp

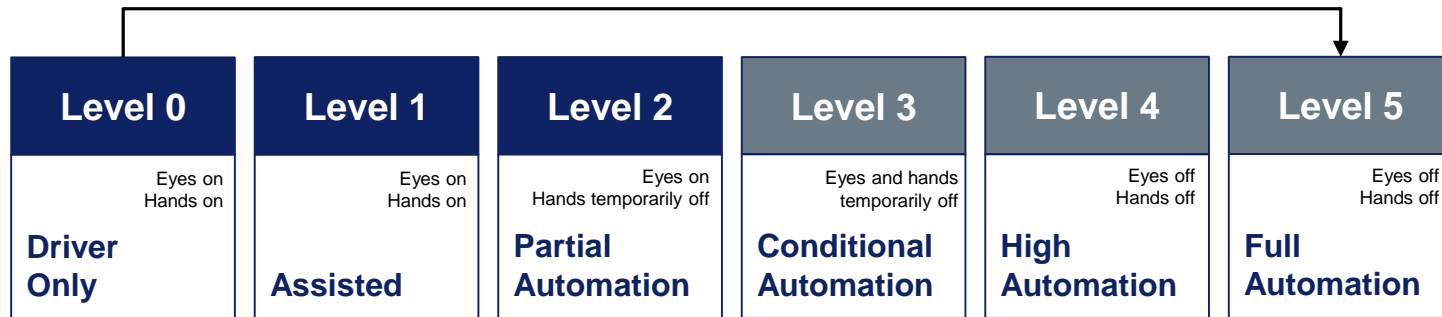


Ambient & Relaxing  
Interior lighting



# Focus on advanced vision IP and development approaches to enable roadmap towards autonomous driving

## Autonomous Driving – Technology Highlights



### Current Assistance Functions (NCAP 2018):



**Traffic Sign  
Detection**



**Lane  
Detection**




**Light Source  
Detection**




**Pedestrian  
Detection**

Conventional computer vision approach

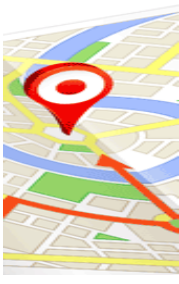
Based on Deep Learning



**Semantic  
Freespace**



**Semantic Path  
Planning**



**Visual  
Localization**

# New business model for camera software: Flexible, scalable approach for realization of autonomous driving functionality

## Autonomous Driving – Technology Highlights



TECHNOLOGY

Camera Software: „Software as Product“

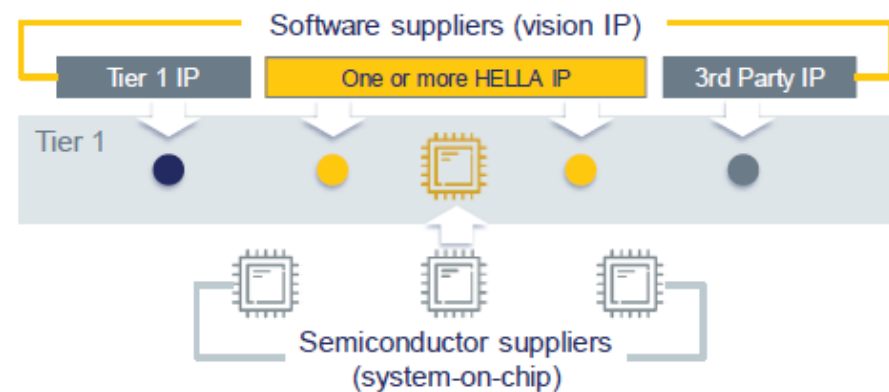
### Current Market Model

#### CLOSED SYSTEM

- Proprietary microprocessor with fixed software package
- System-on-chip and vision IP fixed („blackbox“ approach)
- Limited options for integration and extension of system for customers
- No support for USP creation at customer side

### HELLA Approach

OPEN SYSTEM as flexible, scalable package



### KEY BENEFITS

- Open systems supports **various scalable hardware platforms** and **vision IP from different sources** (own IP, 3rd-party IP)
- **Freedom of choice at customer side** which vision IP and system-in-chip to integrate → creation of USPs possible
- Flexible, scalable approach enables **cost-efficient solutions for volume markets**



# HELLA's 77 GHz radar sensor solution enables efficient 360° environment recognition for the entire vehicle

## Autonomous Driving – Technology Highlights



### TECHNOLOGY 77 GHz Radar Sensor



#### KEY FACTS

- Highly integrated RF-CMOS Radar System Chip
- Higher functional object detection performance
- Dimensions: 65 x 61 x 15 mm

#### KEY BENEFITS

- **Reduced size & weight** (significant package reduction compared to previous sensors)
- **Identifies & reacts to approaching vehicles from front-side** when entering a junction or pulling out forward from parking space
- **Identifies & warns of objects in blind spot**

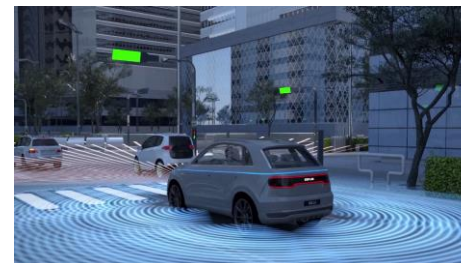
#### MAIN FUNCTIONALITIES



**Intersection Assistant**



**Automated Parking**



**Automated Driving**



# Consequent roll-out of 48V DC/DC converter in order to participate in growing 48V market, especially in China

## Efficiency & Electrification – Technology Highlights



### TECHNOLOGY 48V DC/DC-Converter



#### KEY FACTS

- Conversion efficiency > 95%
- Power rating according to alternator up to 3kW
- Scalability thanks to multi-phase approach

#### KEY BENEFITS

- Enables **new applications such as stop/start and idle cruising**, whilst ensuring the supply of fuel-efficient power loads such as electrical power-steering actuators
- **Innovative vehicle applications**, which support fuel efficient drive concepts such as high power regenerative braking or engine-off coasting applications

Awarded by  
3 Customers

#### MAIN FUNCTIONALITIES



Enhanced Start-Stop



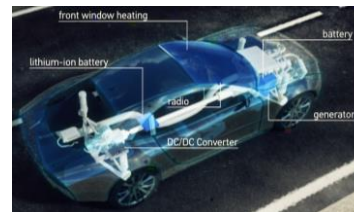
Engine-Off-Coasting



Boosting



High Power Braking



Backup Energy



Fuel Economy

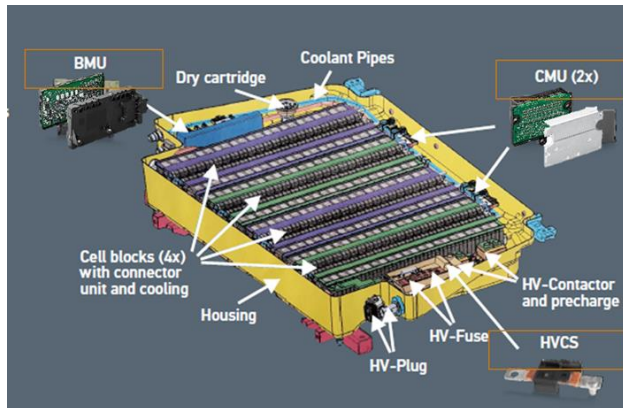


# HELLA offers the full electronics solution for lithium-ion battery management system

## Efficiency & Electrification – Technology Highlights

### HELLA TECHNOLOGY BATTERY MANAGEMENT SYSTEM

#### KEY FACTS



**BMS ECU:** Battery state calculation and control of safety functions

**Cell Controller:** Voltage and temperature measurements as well as cell balancing

**High Voltage Current Sensor:** Measurement of battery current

**Insulation Monitoring Device:** Measurement of insulation resistance between HV and LV

**(Integrated) Relay Box:** Charge, pre-charge and main relays packaged including control electronics

#### KEY BENEFITS

- **Modular and scalable platform** for 12V, 48V and high voltage lithium-ion batteries
- **Best-in-class insulation monitoring device** in exclusive cooperation with BENDER

#### MAIN FUNCTIONALITIES

##### CALCULATE BATTERY STATE

- State of Charge
- State of Health
- Power capability
- Resistance

##### PROTECT BATTERY AND VEHICLE DRIVER

- against
- Battery overheating
  - Over voltage and current
  - Contactor State of Health (SoH)



##### MEASURE

- Current
- Cell voltages
- Cell temperatures
- Battery voltages

##### CONTROL

- Contactor
- Communication
- Limp home
- Pre-charge

# The electrification of the drivetrain leads to a variety of vehicle architectures with different costs and CO2 savings

## Segment Electronics – Trend overview Efficiency & Electrification

### EFFICIENCY & ELECTRIFICATION



	Internal Combustion Engine (ICE)	48V Mild Hybrid (MHV)	Full-hybrid (FHEV) & Plug-in Hybrid (PHEV)	Battery Electric Vehicle (BEV)
	Conventional combustion engine (gasoline or diesel)	Combustion engine + electric motor which helps share the load	Electric motor charged by combustion engine or via plug-in from grid	Only one battery charged from grid or by fuel cell
<b>CO<sup>2</sup> Reduction*</b>		-10% to -20%	-30%	-100%
<b>Additional Costs**</b>		5% to 10%	50% to 60%	30% to 50%
<b>Voltage</b>		12V & 48V	12V &> 120V	
<b>MARKET PENETRATION***</b> share of light vehicle production worldwide		With start/stop		
today	69%	28%	0%	2%
2020	34%	53%	5%	2%
2025	24%	47%	18%	3%

\* CO<sup>2</sup> reduction related to local emissions only

\*\* Assumptions on technical concept for high volume car

\*\*\* Source: IHS Engine Forecast, December 2016

# Innovative approach to optimize air quality in the vehicle based on particulate sensor and cloud-based solutions

## Connectivity & Digitalization – Technology Highlight



### TECHNOLOGY Cloud-Based Air Quality Management



#### KEY FACTS

- Particulate Matter Sensor (PM2.5)
- For vehicles with automatic climate control
- Measurement of air properties, in the range of  $25 \mu\text{g} / \text{m}^3$  -  $500 \mu\text{g} / \text{m}^3$
- Particle size distribution detection by scattered light detection // amplitude of diffractive light depends on PM concentration

First to market

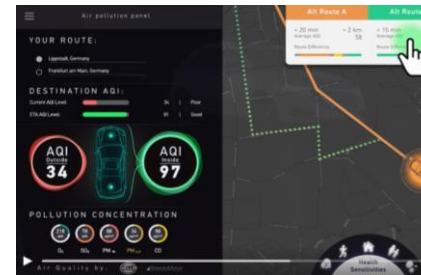
#### KEY BENEFITS

- **Detection of particulate matter**  $< 2.5 \mu\text{m}$  (fine dust) in the inner cabin & ambient air
- **Greater driving comfort** due to continual optimization of the air quality in the vehicle
- High particle concentration leads e.g. to: sensor function for ventilation flap controlling (lowers in-cabin pollution level) or fine dust pollution level display as warning feature

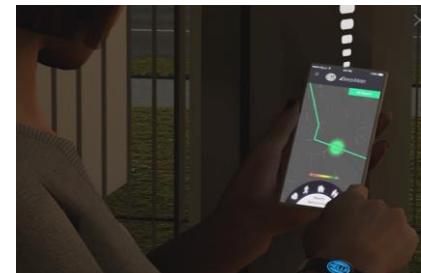
#### MAIN FUNCTIONALITIES



Pollution Notifications



Cloud-Based Clean Routing Option



Cloud-Based Health Recommendations





# HELLA's multi lens array improves comfort and safety by supportive road projects for different driving situations

## Autonomous Driving – Technology Highlights



### TECHNOLOGY Multi Lens Array



#### KEY FACTS

- Generation of sharp, contrasting and homogeneous images
- No loss of the graphic even by partially dirty lens, 170 micro projection lenses per Multi-Lens-Array generating 1 image
- Integration of projections with car sensors

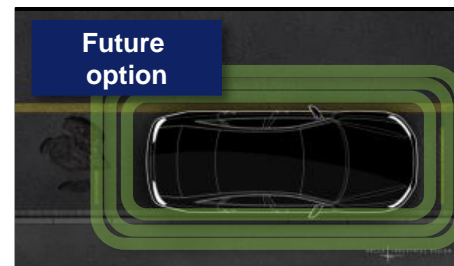
#### KEY BENEFITS

- **Enhances safety** through communication with pedestrians and other vehicles
- **Evokes emotions** by dynamic / changing lighting
- **Enables information** about autonomous driving status

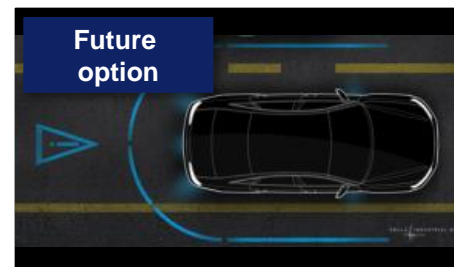
### MAIN FUNCTIONALITIES



**Welcome Light**



**Driving Status Projections**



**Safety Projections**



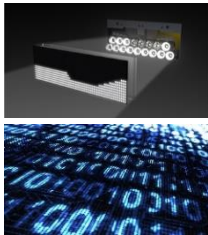
# High definition headlamp accelerates functionalities and customer benefits

## Connectivity & Digitalization – Technology Highlights



TECHNOLOGY

High definition headlamp



### KEY FACTS

- High definition lighting system
- Liquid Crystal with >50.000 Pixel

### KEY BENEFITS

- **State of the art functions**, e.g. bend light, glare-free high beam, etc. with optimized end-user impact
- **New functionalities**, e.g. C2P (Car To Pedestrian) and C2D (Car To Driver)
- **High end resolution**

### NEW FUNCTIONALITIES



**Pedestrian marking**



**Projection of cross-walk**



**Highlight the walk way**



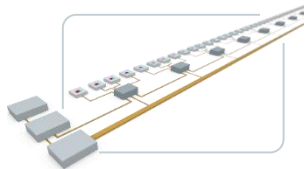
# Enhancing user experience and safety with HELLA's dynamic ambient lighting system

## Individualization – Technology Highlights



### TECHNOLOGY Dynamic Ambient Lighting System

#### KEY FACTS



- Competence in light & electronics
- Light as a complementary information source for driving tasks
- Infinite number of high speed light scenarios

#### KEY BENEFITS

- **Integration** in customer E/E architecture
- **Supports** partially and high automated driving
- **Enhances safety** in complex traffic situations through warning function
- **Improves driving comfort** by personalization of light

#### MAIN FUNCTIONALITIES



**Advanced  
Welcome  
Scenario**



**Collision  
Warning**



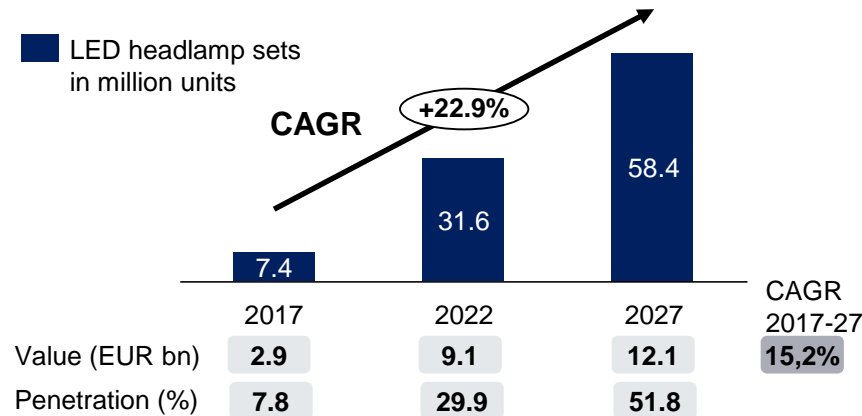
**Ambient &  
Relaxing**



# LED competence as driver for HELLA Lighting

## HELLA at a glance – Business Segment Automotive

### LED to change the automotive market...

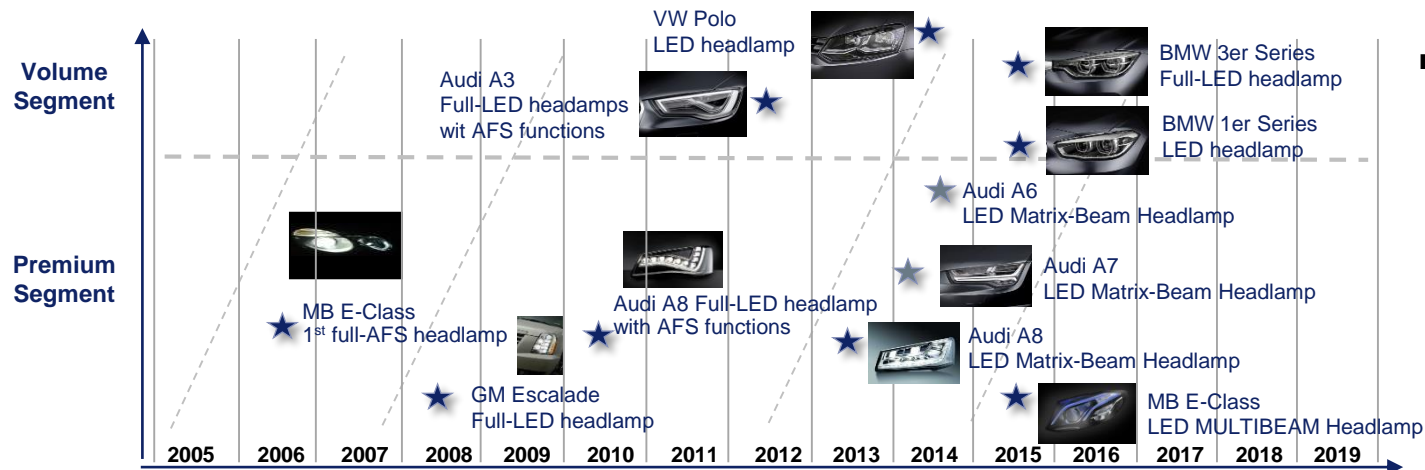


Source: Strategy Analytics Aug. 2017

### ...with penetration rates of LED to explode

- **Half of produced light vehicles equipped with LED headlamps in 2027**
- **Driver:**
  - Need for advanced lighting based assistance systems
  - Need for energy efficient lighting system
  - Need for designed parts and distinguishable lighting elements

### HELLA first-to-market applications & penetration into mass models



- **HELLA offers scalable solutions for premium and volume segments**

# Competitive advantage through complete aftermarket solutions

## HELLA at a glance – Business Segment Aftermarket

### BUSINESS OVERVIEW



#### Independent Aftermarket (IAM)

- Sale of **own and third-party spare parts** to IAM wholesalers
- **Own sales presence in >25 countries**
- **Strong position** of sales network and brand presence in **European market (#1-3)**



#### Wholesale Distribution

- Building **holistic product portfolio** from part suppliers and **offering to IAM garages**
- **Market position: #1** **#2** **#3**
- **Synergies through** HELLA wholesale organization “**Nordic Forum**”



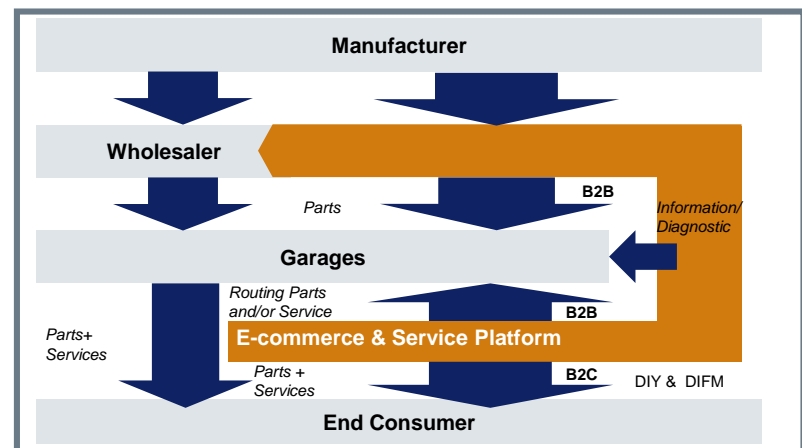
#### Workshop Equipment

- Premium provider of **workshop solutions, diagnostic tools** and advanced **equipment** to garages
- Offering of **professional services**, e.g. technical data/hotline, trainings & financial services
- **market position: #1** **#3**

### KEY FINANCIALS

in EUR millions and % of sales

	FY 2015/16	FY 2016/17	Change
<b>Sales</b>	1,179	<b>1,222</b>	+3.7%
<b>EBIT</b>	76.9	<b>73.0</b>	-5.0%
<b>EBIT margin</b>	6.5%	<b>6.0%</b>	-0.5% points
Sales <b>IAM</b>	530	<b>553</b>	+4.4%
Sales <b>Wholesale</b>	523	<b>550</b>	+5.2%
Sales <b>Garage Equipment</b>	58	<b>66</b>	+12.7%



# IAM keeps strengthening its core product portfolio and seeks further cooperation for third party OE competence

## HELLA at a glance – Segment Aftermarket: Independent Aftermarket

Focus on

**1** Strengthening of HELLA's OE core products

**2** Partnership with strong 3<sup>rd</sup> party OE suppliers for IAM

Products



Vehicle-specific lighting



Electronics



Strategic directions

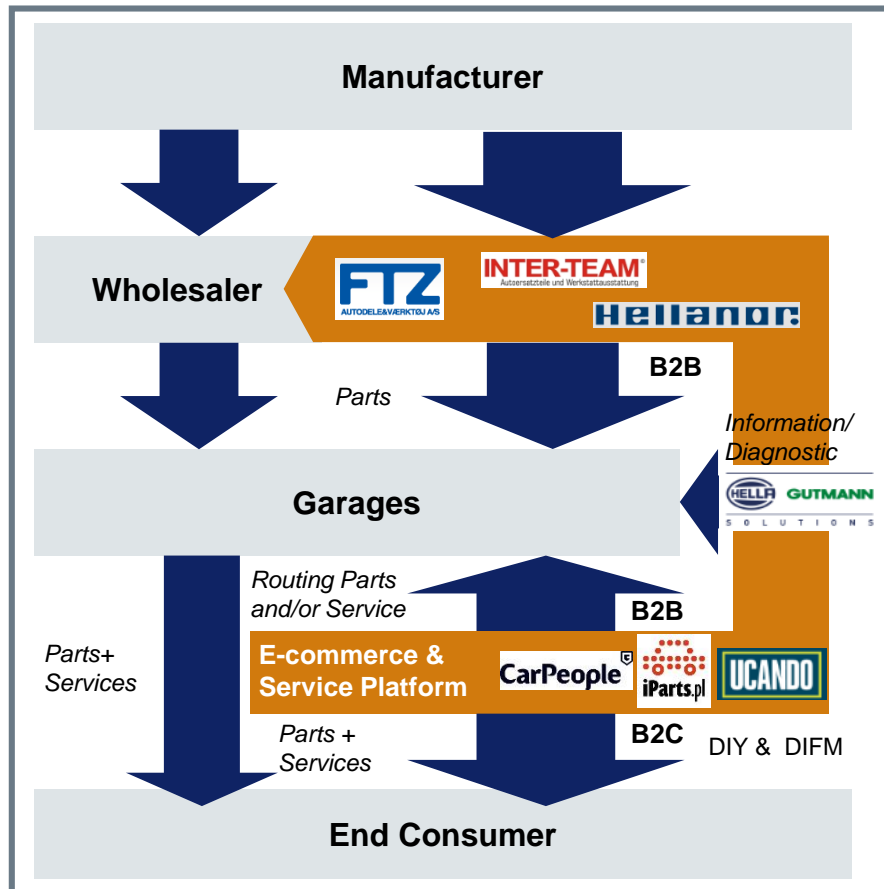
- **Expand portfolio** and **leverage own OE know-how** with special focus on E/E and more complex products, e.g. radar sensors
- **Shift from crash to wear parts**
- **Roll-out of global portfolio** into regions and **leverage of local portfolio** additions

- **Enhancement** of HELLA portfolio **by 3<sup>rd</sup> party OE products** and leverage of distribution network and proximity to customers

# HELLA's integrated wholesale concept ensures broad and deep customer reach in order to generate further growth

## HELLA at a glance – Segment Aftermarket: Wholesale

### POSITIONING ALONG VALUE CHAIN



### STRATEGIC DIRECTION

#### Capture chances from digitalization

- Intensification of **E-commerce business** in Denmark and Poland
- Further development of **service platform** in first market Denmark and roll-out to further wholesale markets
- Increase in customer loyalty with **digital solutions**, e.g. connected cars and telematics
- Strengthen **B2C business** and further **end-user services**

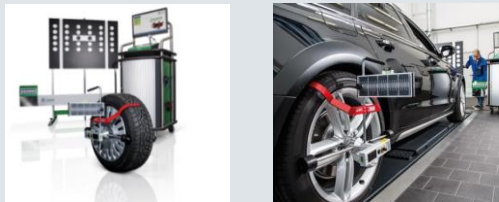
# HELLA enables workshops to conduct complex repair and maintenance activities with innovative and cost efficient solutions

## HELLA at a glance – Segment Aftermarket: Workshop Products

### State of the art workshop equipment to address more complex car

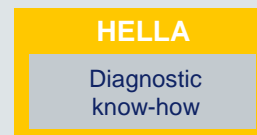
Provide **professional workshop equipment** e.g. multi-brand diagnostics, air-conditioning service as well as testing and adjusting tools e.g. for **camera and sensor calibration**

Example: Camera and sensor calibration



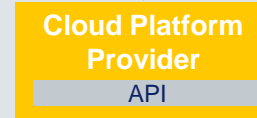
- Growing importance of cameras and sensors due to **automotive megatrends** (e.g. autonomous driving)
- **Easy application** for all brands, smart and cost-efficient solution
- Tool offers **independent workshops** possibility to **extend business activities** beyond traditional scope

### New cloud-based workshop solutions to solve diagnostic problems



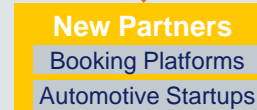
#### Existing diagnostics business model

- Localized **offline data base**, not accessible for external parties
- Technical support offered by **hotline**, e.g. for interpretation of complex failure codes into easy-to-understand failure analysis



#### Cloud platform

- HELLA know-how is transferred to a **cloud platform**
- Third parties can **access data base through web services** like API
- **Predictive services** become possible



#### New applications

- **New partners** access the data base to offer **innovative** services and applications for car diagnostics (“micro services”)
- Examples: driver logbooks, pay-per-diagnosis



# Diversification of business portfolio based on existing strengths

## HELLA at a glance – Business Segment Special Applications

### BUSINESS OVERVIEW

- Development, production and sale of **lighting and electronics products for special vehicle manufacturers**
- **“Fast follower” of technological innovations in automotive segment** along megatrends LED, energy efficiency and safety
- Application of know-how through **own research and development resources** and **dedicated production footprint**
- **Strong market position in lighting product** areas based on long-standing experience, in particular in Europe
- Focusing on **a variety of attractive target groups**

### TARGET GROUPS



### KEY FINANCIALS

in EUR millions and % of sales

	FY 2015/16	FY 2016/17	Change
<b>Sales</b>	384	<b>385</b>	+0.3%
<b>EBIT</b>	8.2	<b>19.7</b>	+140.3%
<b>EBIT margin</b>	2.1%	<b>5.1%</b>	+3.0% points

### STRATEGIC FOCUS

#### 1. Drive LEDfication in all customer segments

- ▶ Further **focus on offering of LED solutions** and participate in LEDfication trend e.g. in recreational vehicles and trailers
- ▶ Invest into **innovative product roadmap**, e.g. Shapeline and multi-function lamp platform
- ▶ **Revitalize products** e.g. modular work lamps and rear lamps
- ▶ **Drive advanced engineering** e.g. light tunnel and matrix beam

#### 2. Push further application of Electrics / Electronics

- ▶ Transfer and **adaptation of electronic automotive know-how** to further participate in Electrification trend for special vehicles
- ▶ Focus on **application of existing Automotive products** e.g. pedal sensors
- ▶ **Extension of Electronics scope** e.g. radar solutions for smart farming to avoid collision and to measure seeds and speed



Technology with Vision

# Thanks for your attention

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