



Aumann AG

A global leader in modular machines for E-mobility

HAIB Stockpicker Summit | May 2019

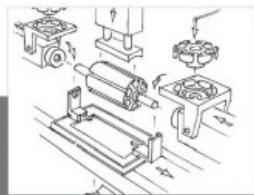
From vision to product



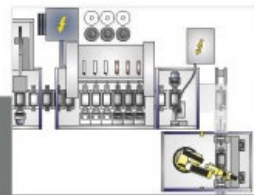
Automated manufacturing equipment for various applications



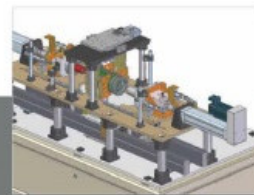
1 | YOUR SPECIFICATION



2 | OUR IDEA



3 | THE CONCEPT



4 | THE DESIGN



5 | THE PRODUCTION SOLUTION



6 | YOUR SERIES PRODUCTION

## Aumann at a glance

### Right business

Fully automated E-mobility production lines ...



...based on modular machines and exclusive motor winding technologies...



...leveraging know-how from special machinery of Aumann's Classic segment



### Right capabilities

**80** years of winding experience

**30** years partner of automotive OEMs

**c. 1,350<sup>1)</sup>** highly skilled professionals

**6** locations in Germany, China and USA

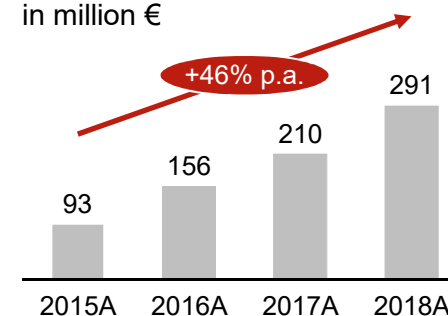
**c. 45,000** sqm of shop floor

### Selected customers

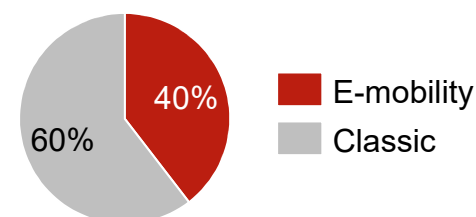


### Strong growth

Revenue<sup>2)</sup>  
in million €



Segment revenues  
as of 31 March 2019



## Selected highlights Q1 2019



Highest first quarter revenues ever despite challenging market environment



Satisfactory double-digit group EBIT margin



E-mobility EBIT share above 50%



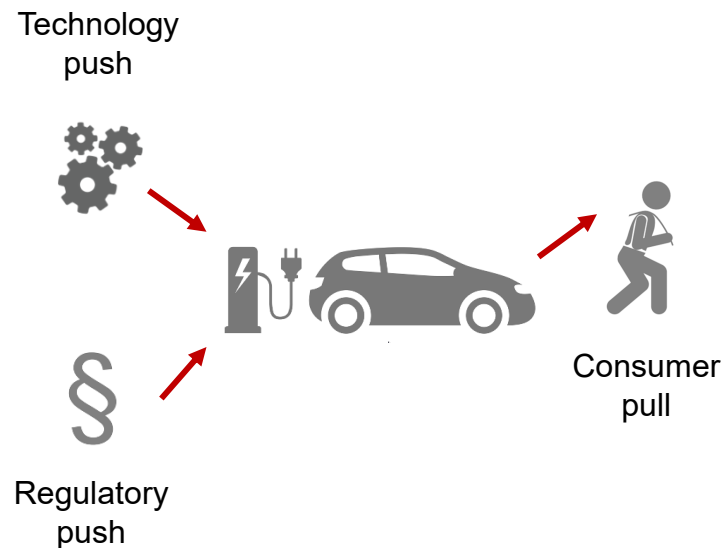
Promising order pipeline contrasted by hesitant Q1 order placement



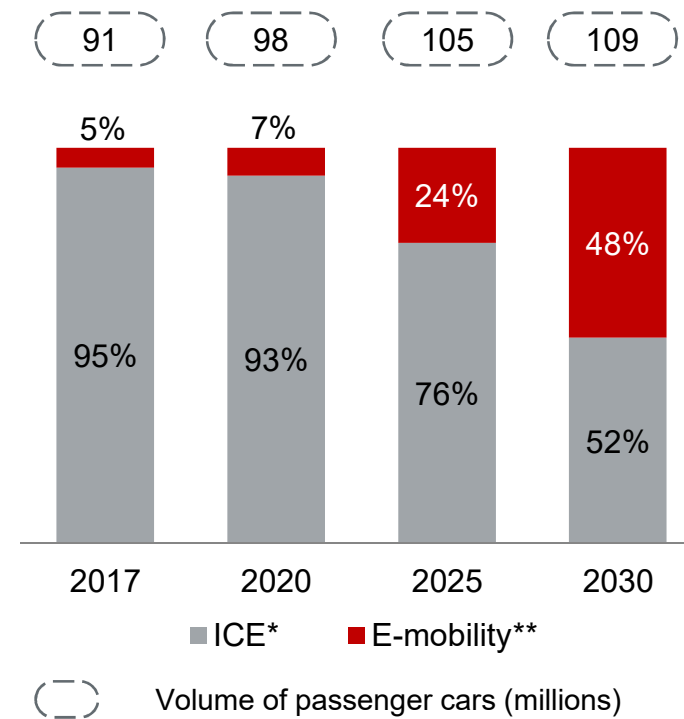
Growing interest in fuel cell technology from automotive OEMs and Tier-1s

## Technological parity expected to be reached by 2030

### Three factors put electric vehicles on the road

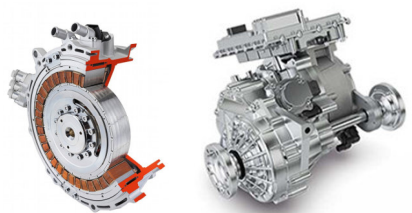


### Expected global car sales by fuel source



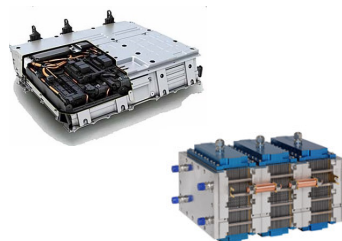
# Aumann automates the manufacturing of E-mobility production

## Electric motor/traction module



*Winding of  
stator and/or rotor*

## Energy storage/conversion



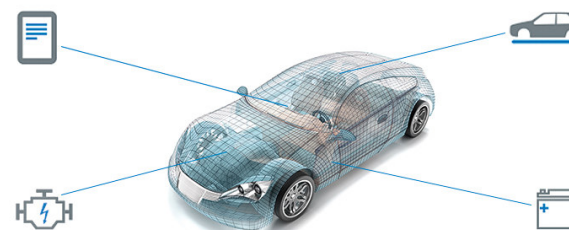
*Assembly of  
modules, packs, fuel cells*

## Electrification



*Winding/assembly of  
E-auxiliary systems*

## E-mobility



Aumann has a unique combination of capabilities, industry experience and corporate setup

### Technological leadership



Exclusive winding technologies

Highest degree of automation

Complete production lines

### E-mobility focus



Decades of automotive focus

Relationships to major OEMs/Tier-1s

Technologies for E-drivetrain

### Corporate setup and size



~ €300 million revenue

6 locations in Europe, China, USA

Experience with large order volumes

Global leadership in highly automated production lines for E-mobility

## USK as integral part of Aumann right from the start

2017



### Engineering & delivering capacities

€70 million turnover

> 370 employees



### Automotive experience

OEMs/Tier-1s

Automator



### Technology

Build-to-print competence

Sensors and fuel cells



2018



### Capacity balancing between sites

First orders shifted to USK in 2017

Partial retargeting of sales engineers

### E-mobility growth at USK

Increase of E-mobility projects

### New technologies

High interest in production of USK  
fuel cell assembly technology

2019



### Finalization of integration

Step-wise integration of processes  
and IT

### “One Aumann” strategy

Full rebranding to “Aumann”

Finalization of integration processes

### Further expansion

Expansion plans for  
assembly hall





## Close partnerships with blue chip customers enable Aumann's E-mobility growth

Longstanding customer relationships...

Indicative cumulative orders last 25 years



**> € 460m**

Relationship since 1990



**> € 400m**

Relationship since 1990



**> € 250m**

Relationship since 1999



**€ 200-250m**

Relationship since 1986



**€ 75-100m**

Relationship since 1985

...leading to an accelerated E-mobility business

E-mobility segment customers

Automotive



E-bike



...based on experience in ICE drivetrain, automation and winding for non-automotive customers

Classic segment customers

Automotive



Consumer electrics

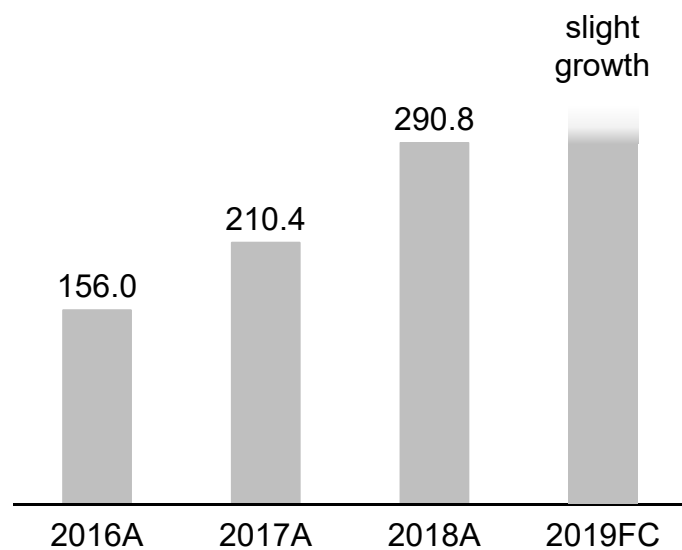


Other industries

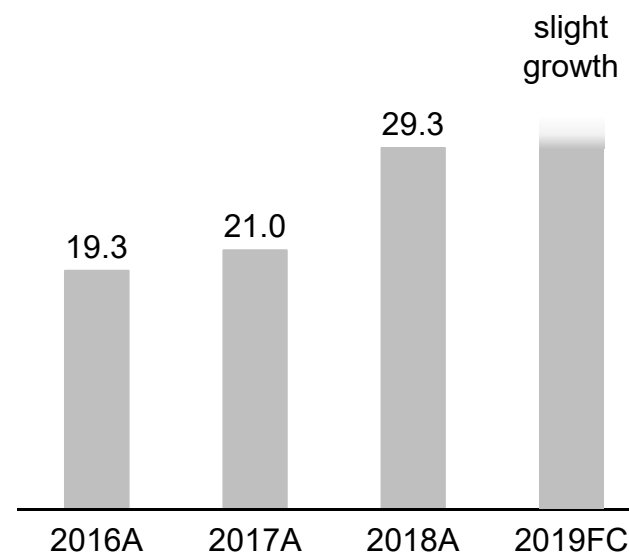


Revenues and EBIT are expected to grow slightly in 2019

Total revenues  
in € million

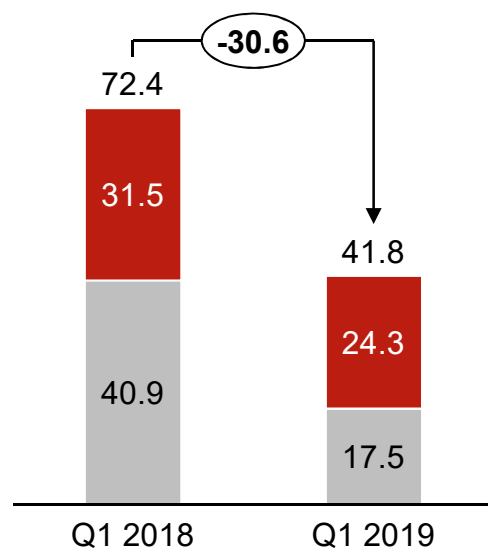


EBIT (adj.)  
in € million

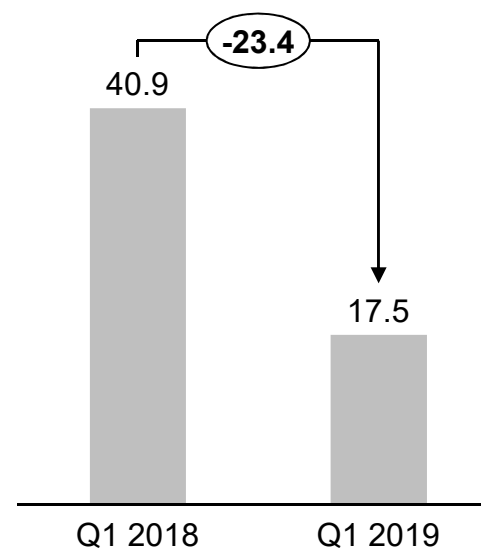


## Hesitant order placement in Classic leading to weak total order intake

Total order intake  
in € million



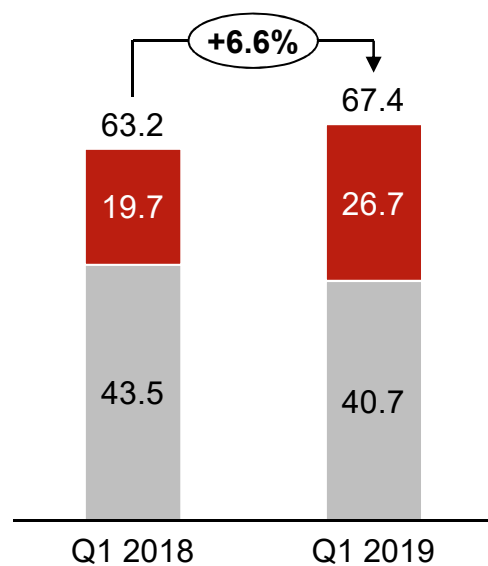
Classic order intake  
in € million



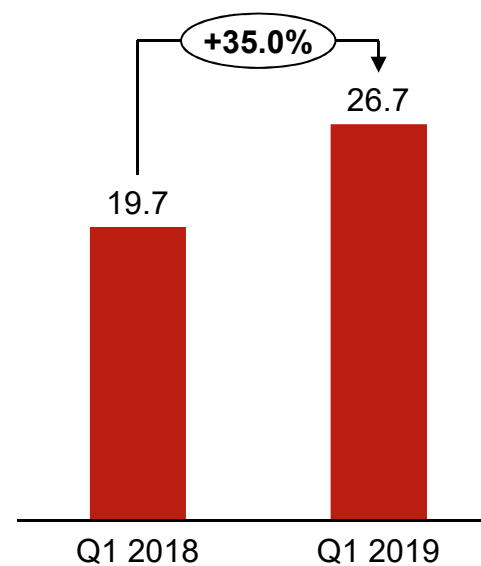
■ E-mobility ■ Classic

## Solid group revenue growth with E-mobility as main driver

Total revenues  
in € million



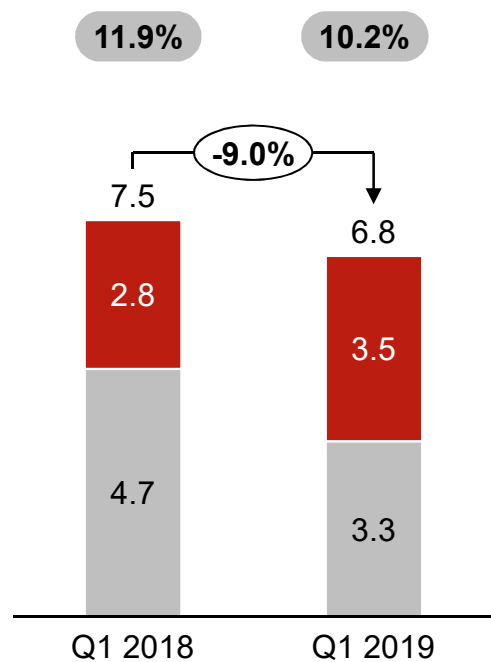
E-mobility revenues  
in € million



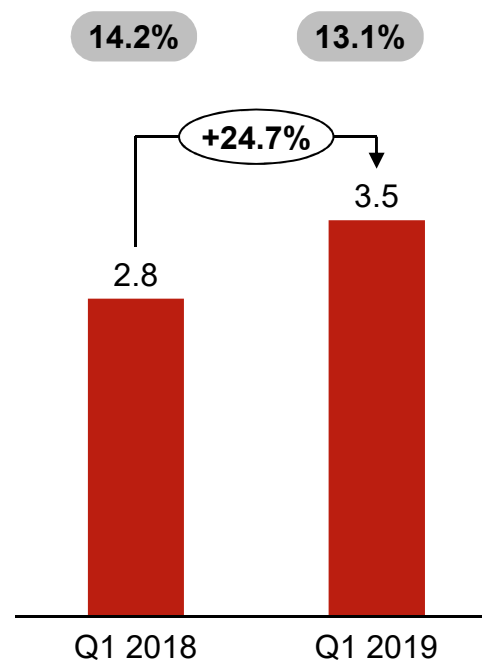
■ E-mobility ■ Classic

## Double-digit operating margins

Total EBIT (adj.)  
in € million and in % of revenues



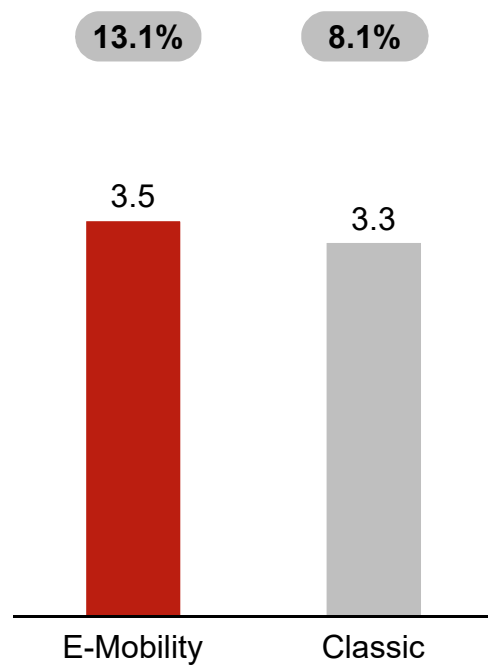
E-mobility EBIT (adj.)  
in € million and in % of revenues



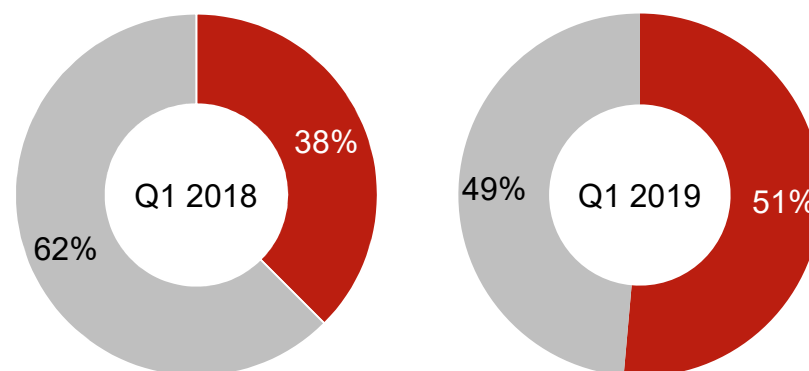
■ E-mobility ■ Classic

## E-mobility share above 50% for the first time in Q1 2019

Segment EBIT (adj.)  
in € million and in % of revenues



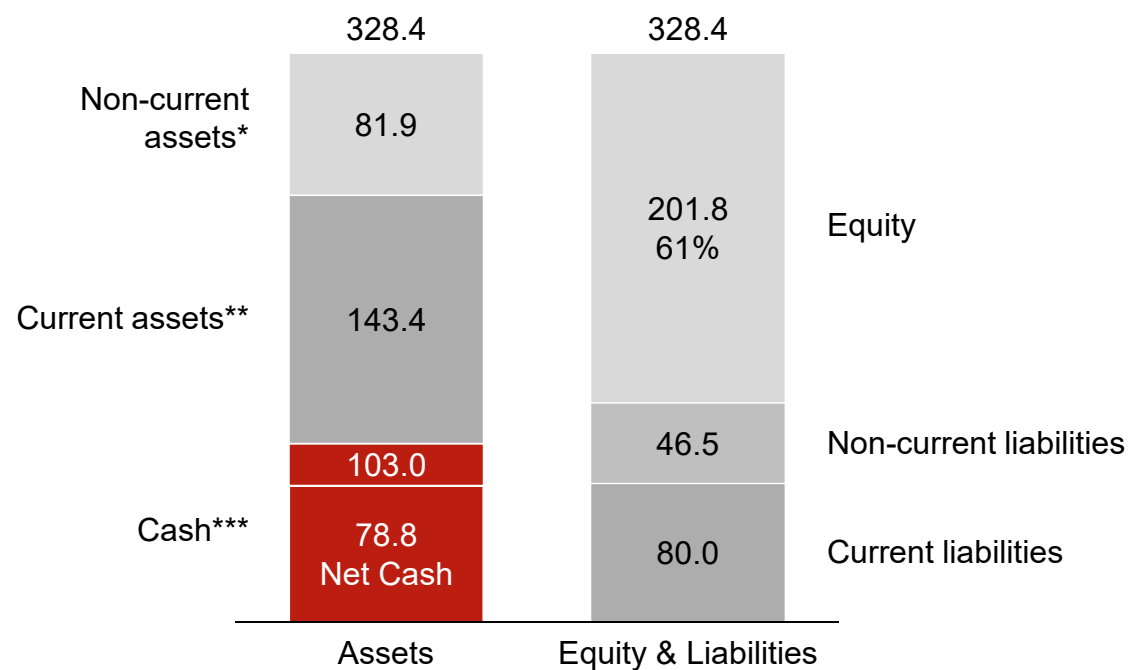
EBIT (adj.) share development  
in %



 E-mobility  Classic

## A strong balance sheet allows further investments into Aumann's growth

Balance sheet 31 March 2019  
in € million



We have made significant progress on strategic roadmap to market leadership



### **Ramp-up capacity**

- Stabilising for further strong growth
- Grow and integrate skilled work force
- Expand shop floor, IT hardware, licenses and projects



### **Expand globally**

- Managing political, economic and automotive specific uncertainty
- Build up of NAFTA activities
- New Asian customers



### **Increase service share**

- Implementation of group service concept
- Expansion of service levels and offerings
- Increase of worldwide service partnerships



### **Maintain technological leadership**

- Scaling production concepts
- Develop new winding technologies
- Additional E-mobility technologies



### **Strategic M&A**





No matter who will prevail in the E-mobility  
revolution, they will need Aumann's  
machines for **electric mobility**  
**manufacturing**

[www.aumann.com](http://www.aumann.com)

## Financial calendar

Interim Report Q1 2019	15.05.2019
Annual General Meeting	06.06.2019
Half-year Report 2019	15.08.2019
Interim Report Q3 2019	14.11.2019

## Conferences

HAIB Stockpicker Summit (Madrid, Spain)	16 May 2019
Berenberg US Conference (Tarrytown, USA)	21 May 2019
Commerzbank Sector Conference (Frankfurt, Germany)	28 August 2019
Berenberg/Goldman Sachs Conference (Munich, Germany)	23 September 2019
German Equity Forum (Frankfurt, Germany)	25 November 2019
Berenberg European Conference (Pennyhill, UK)	02 December 2019

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## Appendix

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Aumann offers highly automated production technologies for traction motors

Thin wire

Thick/flat wire

### Conventional Insertion



Indirect winding

Lower automation

High stress on wire

Random wire positions

### Distributed Needle Winding



Direct winding

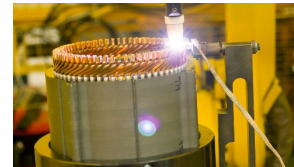
High automation

Low stress on wire

Defined wire positions

 **aumann**  
exclusive

### Conventional Hairpin



Assembly

High automation

Many welding points

Larger copper heads

 **aumann**

### Continuous Hairpin



Winding / Assembly

High automation

No welding points

Smaller copper heads

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exclusive

Aumann – serving the automobile trends of tomorrow

### Autonomous driving



E-steering system



Parking/wheel sensor



Radar sensor



### E-on-demand



E-water pump



E-immobilizer



E-turbo



### Safety



E-brake assistant



E-AB system



E-seat belt



### Comfort



E-seat adjustment



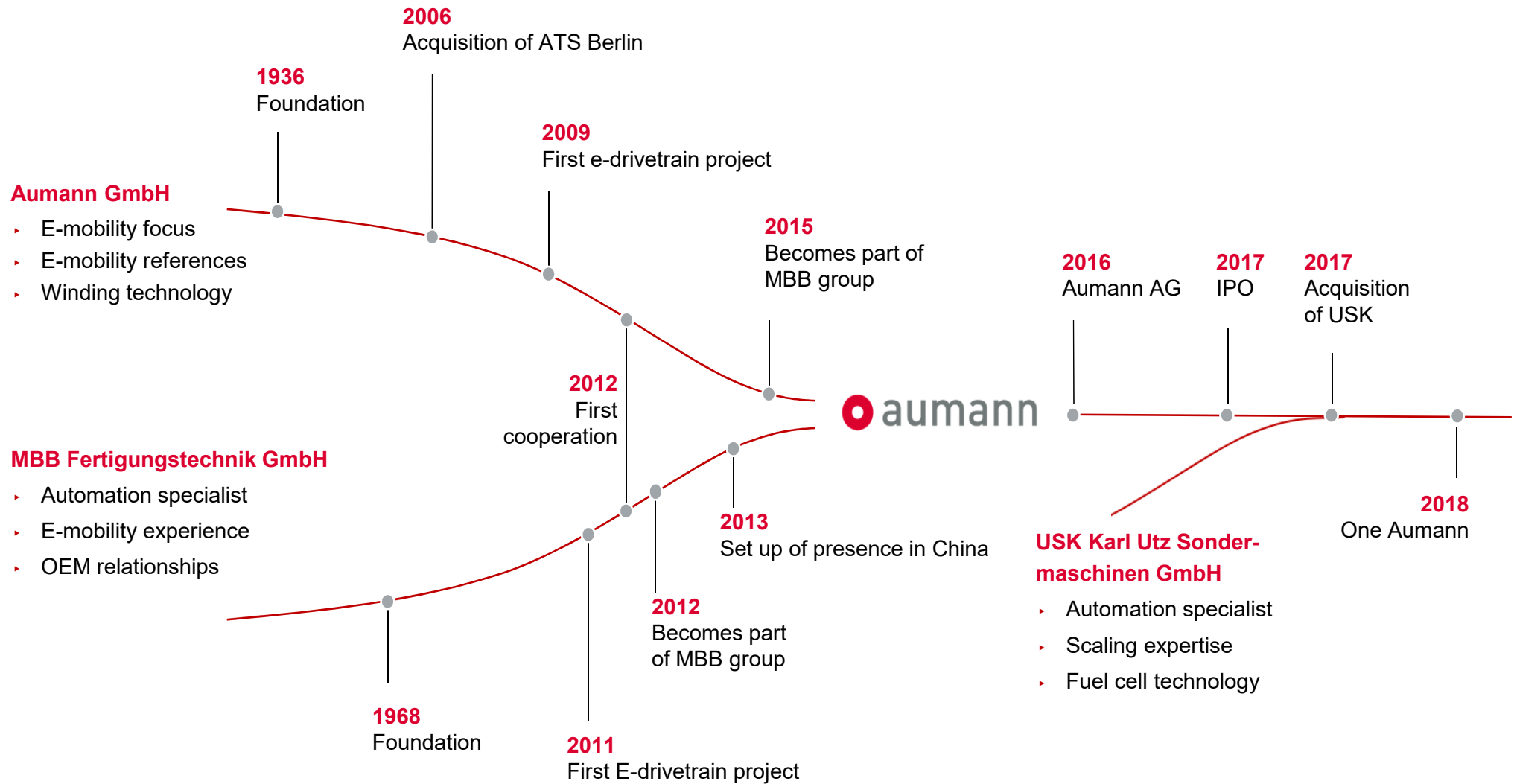
E-aircondition



E-suspension

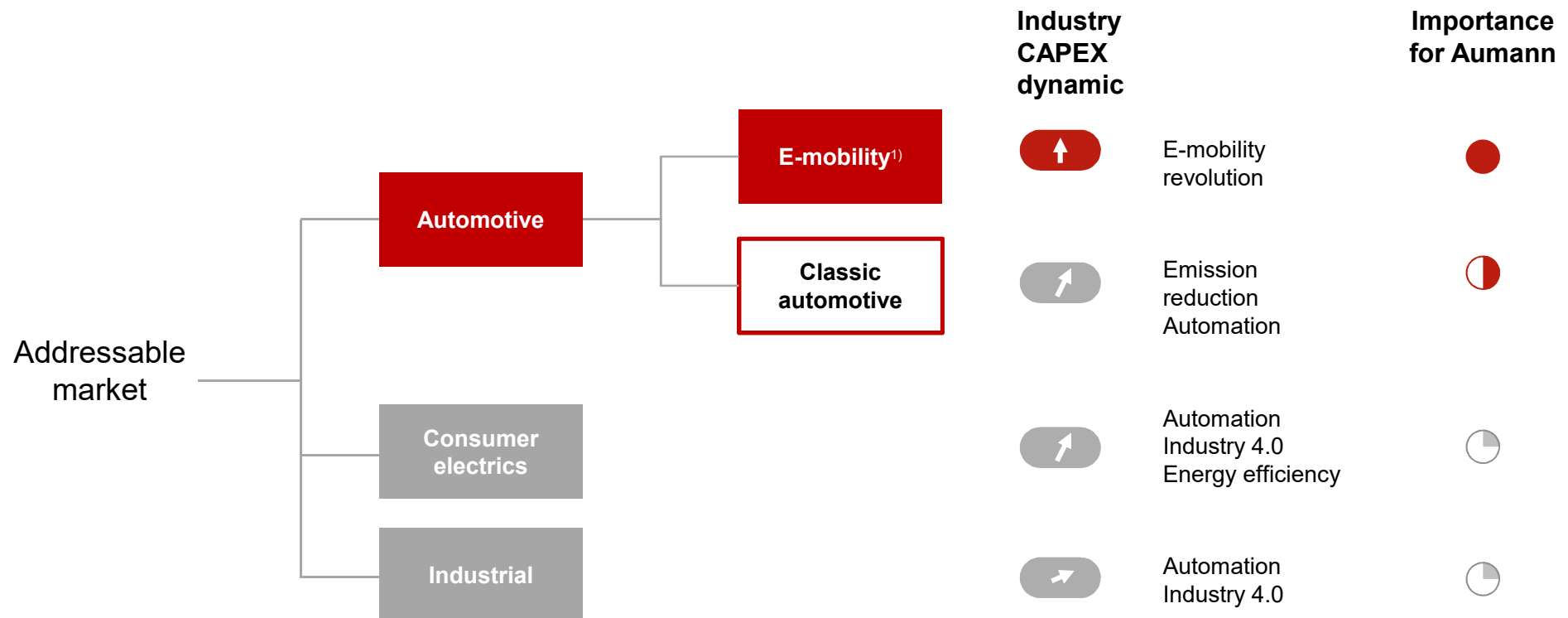


## The historical roots of Aumann





## Key markets and growth dynamics



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