Industrial

Dr. Stefan Spindler
CEO Industrial

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Capital Markets Day 2017
Bühl
Dr. Stefan Spindler (56)
CEO Industrial

- 1986: Mechanical Engineer and Doctorate (1992) at the Technical University in Munich
- 1986 – 2002: Various positions at MTU and Liebherr in the industrial engine and power train business
- 2002 – 2010: Member of the Executive Board of MAN Diesel SE
- 2010 – 2014: Member of the Executive Board of Bosch Rexroth AG
- Since 2015: CEO Industrial and Member of the Executive Board of Schaeffler AG

2 years with Schaeffler
**Overview Industrial**

**Industrial division – At a glance**

### Sales development 2013 – H1 2017

<table>
<thead>
<tr>
<th>Year</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>H1 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>3,041</td>
<td>3,138</td>
<td>3,202</td>
<td>3,000</td>
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</tbody>
</table>

**Growth rate (y-o-y)**

1. **2013**
   - 2013: -8.1%
   - 2014: +4.2%
   - 2015: -3.2%
   - 2016: -4.8%
   - H1 2017: +2.3%

**EBIT-margin**

1. **2013**
   - 11.8%
2. **2014**
   - 9.6%
3. **2015**
   - 9.5%
4. **2016**
   - 7.3%
5. **H1 2017**
   - 8.5%

### Industrial sales by region H1 2017

- **Greater China**
- **Asia/Pacific**
- **Americas**
- **Europe**

**Sales H1 2017: EUR 1,591 mn**

### Industrial sales by sector cluster H1 2017

- **Wind**
- **Raw Materials**
- **Aerospace**
- **Rail**
- **Offroad**
- **Two-Wheelers**
- **Power Transmission**
- **Industrial Automation**
- **Industrial Distribution**

**Sales H1 2017: EUR 1,591 mn**

### Sales split by product type H1 2017

- **Customized product business**
- **Standard product OEM and MRO business**

**Sales H1 2017: EUR 1,591 mn**

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1) Before one-off effects; 2) FX-adjusted

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Capital Markets Day 2017 - Industrial Division
2 Overview Industrial
Industrial division – Broad range of standard and customized products

Standard product business

- Ball Bearings
  - Ball bearing (DGBB)
- Cylindrical Roller Bearings
  - Cylindrical roller bearing (CRB)
- Spherical Roller Bearings
  - Spherical roller bearing (SRB)
- Tapered Roller Bearings
  - Tapered roller bearing (TRB)
- Needle Roller Bearings
  - Needle roller bearing (NRB)
- Linear Technology
  - Linear guides
- Plain bearings
  - Plain bearing
- Mechatronics
  - VarioSense and SmartCheck
- Systems
  - Housing

Customized product business

- Cronitect-hybrid bearing – Bicycle
- Heavy duty CRB – Construction Machin.
- Coated SRB – Windpower rotor bearing
- Wheelset bearing – Highspeed trains
- "Slimline" drawn cup NRB – Gearbox
- Six-row linear recirculating ball bearing – Machine Tool
- Spherical plain bearing with special coating - Marine
- Sensorized rotary table bearing & sensorized linear guide RUE 4.0 – Machine Tool
- Linear System – Industrial Automation
Key challenges

Standard and customized bearing market grows by 1 to 2 % in the long-term, after price effects.

Extensive competition with constant high pressure on the price.

Increasing commoditization of the bearing business leads to a higher share of standard products.

Increasing demand for localized products and services.

Growth opportunities beyond the bearing portfolio with systems, mechatronics and digital services.

Conclusions

- Extend scale and scope of the business.

- Cut cost and optimize business portfolio.

- Streamline processes and organization. Differentiate between business models.

- Adapt footprint.

- Build-up and bundle competencies and resources for Industry 4.0.
3 Market Development

**Industrial market – Moderate growth expected until 2022**

### Key aspects
- Market is expected to grow by a moderate average level of 1 to 2% p.a. between 2016 and 2022, including price effects.
- Market growth is mainly driven by Greater China, CEEMEA and India.

### Bearing Market

- **Americas**: 20%
- **Europe**: 38%
- **Greater China**: 21%
- **Asia/Pacific**: 21%

### Global Market Growth (price effects included)

- CAGR 2016-2022: 1-2%
- Share of global market volume 2016 and long-term volume growth trend
4 Long-Term Growth Opportunities

Business Portfolio – From components to Industry 4.0

Portfolio

- Industry 4.0 services
- Mechatronics
- Mechanical Systems
- Components

Region

- Europe
- Americas
- Greater China
- Asia Pacific

Sector split

- Wind
- Raw Materials
- Aerospace
- Railway
- Offroad
- Two Wheelers
- Power Transmission
- Industrial Automation

Channel

- OEM & MRO
- Distribution
Expand market position for the 
standard bearing business and 
reduce COGS and Overhead costs 
(driven by Program CORE).

Grow with customized value-add 
solutions including packages to 
increase content per application.

Be an innovation leader for Industry 
4.0 solutions in combination with 
extended service offerings.
Components – High volume deep groove ball bearings

Application
- Broad industry scope
- Various applications throughout all sectors

Product
- Deep groove ball bearing

Customer benefit
- Low noise, special sealings available, high reliability
- Best-in-class price-performance ratio

Market\(^1\)
- Ball bearing market growth: 5.9% (2016 – 2020)

Business model GenC (illustrative)

1\(^{1}\)Source: Research and Markets, incl. Automotive (2017)
Industry 4.0 services

Mechatronics

Mechanical Systems

Components

4 Long-Term Growth Opportunities

**2 Mechanical Systems – Planetary Roller Screw (PWG)**

**Application**
- Powertools industry, domestic sanitary installation
- Electro-mechanical press fitting machine (radial press)

**Product**
- Part of electro-mechanical system to replace hydraulics
- Precise control of the crimping cycle with autom. adaptation

**Customer benefit**
- Eliminate hydraulic fluid, no leakage of oil, green & clean
- Increased maintenance intervals, lower weight, ergonomic use

**Market**
- Electric powertools market growth: 5.6% (2016 – 2018)

1) Source: Statista (2017)

**Scope of delivery**

**Bearing**

**Planetary Roller Screw**
4 Long-Term Growth Opportunities

2 Mechanical Systems & Mechatronics combined – Sliding gantry

Industry 4.0 services
- Mechatronics
- Mechanical Systems
- Components

Innovative Solution Partner
Efficient Bearing Expert

Application
- Medical industry
- Computer Tomographics (CT)

Product
- Complete kinematic as mechatronical system
- Broad portfolio of Schaeffler components and subsystems

Customer benefit
- Plug-and-play system solution, multi-room usability
- Recessed in the floor to increase flexibility

Market¹
- Medical industry growth: 3.4 % (2016 – 2020)

Scope of delivery
- Ceiling module
- Cable columns
- Floor guides
- Drive/Rolling unit
- Floor module

¹ Source: IHS (2017)
4 Long-Term Growth Opportunities

2 Mechanical Systems & Mechatronics combined – Rotary table kit

Industry 4.0 services

Mechatronics

Mechanical Systems

Components

Innovative Solution Partner

Efficient Bearing Expert

Application

- Food and packaging
- Bottling machinery

Product

- Complete rotary table kit for direct printing of containers

Customer benefit

- Plug-and-play system solution, easy installation
- Quick implementation of new prints, small batches cost efficient

Market

- Food, beverage & tobacco industry growth: 5.6 % (2016 – 2020)

1) Source: IHS (2017)

Scope of delivery

- Slewing ring
- Connecting plate
- Rotary angle encoder
- Basis plate of stator
- Direct drive

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4 Long-Term Growth Opportunities

2 3 Mechatronics & Industry 4.0 Services – Smart linear guidance

Use case: Automotive Assembly line

Application
- Industrial Automation
- Handling equipment

Product
- Guidance with integrated sensor
- Integrated evaluation algorithm defines the lube intervals

Customer benefit
- Total Cost of Ownership reduction through failure avoidance and increased availability of the framer unit

Market¹
- Industrial Automation equipment market growth: 3.7 % (2016 – 2020)

¹ Source: IHS (2017)
4 Long-Term Growth Opportunities

3 Industry 4.0 Services – Condition Monitoring

**Application**
- Broad industry scope
- Machinery & equipment in operation

**Product**
- Remote Condition Monitoring incl. automatic diagnosis
- Cloud-based Condition Monitoring Services

**Customer benefit**
- Total-Cost of Ownership reduction due to increase of availability and reduction of repair cost

**Market**
- Condition Monitoring equipment market growth: 5.0% (2016 – 2020)

**Annual relative savings by Condition Monitoring (e.g. steel production)**

**Investment in Condition Monitoring and annual fees leads to ...**
- Lower repair cost
- Avoidance of unplanned downtimes

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**Remote Service Center**
- Certified service engineers (according to ISO18436)
- Over 400 installations monitored worldwide

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Source: Frost & Sullivan (2017)
Schaeffler’s Smart EcoSystem offers an integrated hardware, software, and IT infrastructure:

- Offering of smart bearings as combination of standard bearings with sensor clusters (e.g. FAG VarioSense)
- Integration of sensorized components into overall systems and specific business models
- Digital infrastructure in collaboration with IBM
- Examples for digital solution application – Drivetrain 4.0:
  - Automatic bearing failure diagnosis
  - Calculation of service life
Order book 3M – Positive order book indicating further y-o-y growth in 2017

Key aspects

- Positive order book 3M development in H1 2017, after declines in several quarters before
- Major drivers of the order book 3M growth are Industrial Distribution and several sectors, including Offroad, Power Transmission, Raw Materials, Industrial Automation and Railway
- Order book 3M indicated positive sales outlook in 2017

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Order book 3M

y-o-y growth¹)

Business expectation based upon order book 3M²)

1) FX-adjusted product sales

2) The order book 3M measures the amount of customer orders which are due in the next three months. It is presented as a relative, fx-adjusted year-over-year growth indicator which reflects the short-term business expectations. Developments in the distribution business have typically a shorter reach and are therefore only partially reflected by this indicator.
1. **Industrial sales are picking up.** This is backed by good order intake in H1 2017.

2. Solid component business is supported by **Program CORE**.

3. **Systems and Industry 4.0** projects provide **attractive growth** opportunities.

4. We target to **achieve 10% of our sales in 2022 from Industry 4.0-related products and solutions.**

On track to achieve EBIT margin target of 10-11% in 2018