Business Area Components Technology

March 2015

Developing the future.
Components Technology within ThyssenKrupp

We stand for...

- Mission critical components for global automotive and industry customers
- Steady stream of innovations to provide solutions for leading OEMs
- Best-in-class processes and global production footprint
- Profitable growth and continuous improvement

€6.2 bn sales – 28,941 employees

Sales share

1. Share of TK sales FY 2013/14

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Leading Market Positions

- **Light vehicles**: 9 out of 10 premium light vehicles are driven by our components.
- **Heavy duty vehicles**: 1 out of 3 heavy duty vehicles is powered by our crankshafts.
- **Construction equipment**: 1 out of 5 track-driven civil vehicles is equipped with our products.
- **Wind power**: 9 out of TOP 10 wind turbine manufacturers rely on Components Technology.
Mission Critical Components in Chassis, Powertrain and for Industrial Applications (Examples)

Our products in light vehicles
- Camshafts
- Crankshafts
- Springs and stabilizers
- Dampers
- Steering
- Axle assembly

Our products in heavy duty vehicles
- Camshafts
- Con rods
- Crankshafts
- Axle assembly
- Undercarriage components

Our products for renewable energy
- Slewing bearings
- Seamless rolled rings

Our products for construction equipment
- Slewing bearings/turntables
- Camshafts
- Crankshafts
Product Portfolio Components Technology
Sales share in %

- **Chassis**: 60%
  - Steering
  - Springs and Stabilizers
  - Axle assembly

- **Powertrain**: 20%
  - Forged crankshafts and drivetrain components
  - Assembled camshafts

- **Industry**: 20%
  - Seamless rolled rings and slewing bearings
  - Undercarriage systems and components
Our Customers: Leading Global Players

- **Sales FY 13/14**: €6.2 bn

**Further automotive customers**
- Daimler
- Volkswagen
- BMW
- Ford
- FCA
- Cummins

**Further industry customers**
- Siemens
- John Deere
- Komatsu
- Vestas
- Enercon
- Liebherr
- Caterpillar
- Senvion

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Our Production Network: Prepared for Growth
Customer proximity is key

- ~25 facilities in Americas
- ~40 facilities in Europe
- ~20 facilities in Asia

Note: Employees as of Sep 30, 2014; external sales FY 2013/14 in €bn; local companies
Our Strength: Integrated Value Chain
Focus on efficient, robust processes and innovative solutions

- **Efficiency & quality**
  - Process competence
  - Automation
  - Standardization

- **Innovative solutions**
  - Prototyping
  - Testing
  - Material competence
  - Forging
  - Standardization

- **Engineering**
  - Material processing
  - Machining & assembly
  - System integration

  - Just-in-time delivery
  - Electronic integration
### Key Figures 2013/14

<table>
<thead>
<tr>
<th></th>
<th>FY 12/13</th>
<th>FY 13/14</th>
<th>Δ</th>
<th>Outlook FY 14/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales</td>
<td>5,712</td>
<td>6,172</td>
<td>+8%</td>
<td>Sales increase</td>
</tr>
<tr>
<td>EBIT adj.</td>
<td>240</td>
<td>269</td>
<td>+12%</td>
<td>EBIT adj. improve</td>
</tr>
<tr>
<td>EBIT adj. %</td>
<td>4.2%</td>
<td>4.4%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCF(^1)</td>
<td>78</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employees</td>
<td>27,737</td>
<td>28,941</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. BCF (Business Cash Flow) = FCF before interest, tax and divestments = EBITDA +/- Δ NWC – Capex +/- Other
Positive Development in Q1 2014/15

<table>
<thead>
<tr>
<th></th>
<th>Sales [in €m]</th>
<th>EBIT adj. [in €m</th>
<th>%-margin]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>1,428</td>
<td>63</td>
<td>4.4%</td>
</tr>
<tr>
<td>2013/14</td>
<td>1,555</td>
<td>75</td>
<td>4.8%</td>
</tr>
<tr>
<td>Q4</td>
<td>1,603</td>
<td>69</td>
<td>4.3%</td>
</tr>
<tr>
<td>2014/15</td>
<td>1,586</td>
<td>61</td>
<td>3.8%</td>
</tr>
<tr>
<td>Q1</td>
<td>1,597</td>
<td>67</td>
<td>4.2%</td>
</tr>
</tbody>
</table>

Current trading conditions:
- Qoq despite adverse seasonal effects slight increase of order intake and sales:
  - **Light vehicles:** strong demand from the US and China; further recovery in Western Europe
  - **Trucks:** ongoing weak environment for trucks (only US with positive momentum)
  - **Industrial components:** further recovery of wind energy China; construction equipment market still challenging
- EBIT adj. margin increased to 4.2% supported by benefits from restructuring and efficiency measures
## Overall Growth in Major Markets Expected

<table>
<thead>
<tr>
<th>Light vehicles</th>
<th>Heavy duty vehicles</th>
<th>Construction equipment</th>
<th>Wind power</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Light vehicles" /></td>
<td><img src="image2.png" alt="Heavy duty vehicles" /></td>
<td><img src="image3.png" alt="Construction equipment" /></td>
<td><img src="image4.png" alt="Wind power" /></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Category</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produced units$^1$ [Mio #]</td>
<td>82</td>
<td>85</td>
<td>88</td>
<td>91</td>
<td>94</td>
<td>97</td>
</tr>
<tr>
<td>+3%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sold units$^3$ [k #]</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>+4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wind power$^4$ [GW]</td>
<td>452</td>
<td>460</td>
<td>468</td>
<td>476</td>
<td>484</td>
<td>492</td>
</tr>
<tr>
<td>+2%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Notes:
1. Volume 2014 IHS LV global production (09/2014)
2. Volume 2014 IHS HV global forecast (08/2014)
### Mission Critical Solutions for Sustainable Mobility

#### 2020 CO₂ targets

<table>
<thead>
<tr>
<th>CO₂ target</th>
<th>Otto</th>
<th>Diesel</th>
<th>Plug-in Hybrid</th>
<th>Range Extender</th>
<th>Fuel Cell</th>
<th>BEV¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;95 g/km</td>
<td>![Car Otto]</td>
<td>![Car Diesel]</td>
<td>![Car Plug-in Hybrid]</td>
<td>![Car Range Extender]</td>
<td>![Car Fuel Cell]</td>
<td>![Car BEV]</td>
</tr>
</tbody>
</table>

#### Optimization levers for internal combustion engines

- Variability
- Friction reduction
- Downsizing
- Weight reduction
- Range extension

#### Our products (examples)

1. **Presta² cylinder head module**
2. **High performance crankshaft**
3. **Eccentric shaft**
4. **Rotor shaft**

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¹. Battery electric vehicle

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**March 2015**

*Business Area Components Technology*

**Developing the future.**

*ThyssenKrupp*
Profitable Growth in Emerging Markets – Example China

- **Sales (€m)**
  - 05/06
  - 13/14
  - Midterm
  - >30% CAGR

- **Employees**
  - 05/06
  - 13/14
  - Midterm
  - >15% CAGR

- **Capex (€m)**
  - 05/06
  - 13/14
  - Midterm
  - ~5%
  - ~25%

- **Share1**
  - ~5%
  - ~25%

**Components and Locations**
- Springs & Stabilizers, Chengdu (SOP 2013)
- Forged & Machined Comp., Nanjing (SOP 2013)
- Camshafts, Changzhou (SOP 2014)
- Spring & Damper, Shanghai (SOP 2014)
- Steerings, Changchun
- Camshafts, Dalian
- Bearings, Qingdao
- Undercarriages, Shanghai
- Springs & Stabilizers, Liaoyang
- Springs & Stabilizers, Xuzhou
- Bearings, Xuzhou

1. CAPEX share of total BA CT

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InCar®plus – Solutions for Major Automotive Trends

ThyssenKrupp R&D spend (in million €)

<table>
<thead>
<tr>
<th>Year</th>
<th>Spend (in million €)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010/11</td>
<td>524</td>
</tr>
<tr>
<td>2013/14</td>
<td>708</td>
</tr>
</tbody>
</table>

ThyssenKrupp R&D spend increased by 35% from 2010/11 to 2013/14.

Highlights

- 30 projects with over 40 individual solutions
- Lightweight, cost-competitive, green, high-performing

Body

- Innovative steel solutions for lightweight design

Powertrain

- Optimized internal combustion engines and electric drives

Chassis and Steering

- Comfort and safety – more functionality and lightweight design

R&D and innovation for sustainable technological differentiation

![Hybrid cylinder head module](image)

![Column-EPS](image)

![LITECOR®](image)
Driving Best-in-Class Processes in all our Plants

Regular performance scans

Expert network

EBIT contribution already in FY 2013/14

Plant optimization program

Common KPI-system

Improvement programs in all plants completed within next two years
Pacing to Margin Increase and Topline Growth

EBIT adj. margin (%)

Current 4.4%  Target 6-8%

- Radical improvement of appearance and perception
- Step change in quality and cost position
- Wave of innovations for growth markets
- Streamlining of processes and structures
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(i) market risks: principally economic price and volume developments,
(ii) dependence on performance of major customers and industries,
(iii) our level of debt, management of interest rate risk and hedging against commodity price risks;
(iv) costs associated with, and regulation relating to, our pension liabilities and healthcare measures,
(v) environmental protection and remediation of real estate and associated with rising standards for real estate environmental protection,
(vi) volatility of steel prices and dependence on the automotive industry,
(vii) availability of raw materials;
(viii) inflation, interest rate levels and fluctuations in exchange rates;
(ix) general economic, political and business conditions and existing and future governmental regulation; and
(x) the effects of competition.

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