## Our Businesses

### Key indicators – fiscal year 2018/19

<table>
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<th>Components Technology¹</th>
<th>Elevator Technology</th>
<th>Industrial Solutions</th>
<th>Marine Systems</th>
<th>Materials Services</th>
<th>Steel Europe</th>
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</thead>
<tbody>
<tr>
<td><img src="components.png" alt="Components Technology" /></td>
<td><img src="elevator.png" alt="Elevator Technology" /></td>
<td><img src="industrial.png" alt="Industrial Solutions" /></td>
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| Sales [€ mn] | 6,871 | 7,960 | 4,002 | 1,800 | 13,880 | 9,065 |
| Adjusted EBIT [€ mn] | 233 | 907 | (170) | 1 | 107 | 31 |
| Employees | 34,964 | 53,081 | 16,062 | 6,013 | 20,340 | 28,278 |

¹ Following a portfolio change effective October 01, 2019, the Components Technology business area will be continued under the name Automotive Technology from January 01, 2020.
Components and services for the automotive industry

Automotive Technology

€5.4 bn sales
25,000 employees

Our competencies: Mission critical chassis and powertrain components & plant engineering services

1. System assembly and just-in-sequence supplier for automotive customers
Our products in Light Vehicles

- Axle Assembly
- Springs & Stabilizers
- Camshafts
- Steering
- Damper
Our Plant Engineering Services for the Automotive Industry
Leading market positions as an automotive supplier

9 out of 10 premium light vehicles are driven by our components.

Every fourth car in the world is equipped with thyssenkrupp steering components!

thyssenkrupp Bilstein: One of the world’s most prominent brand for high performance shock absorbers.

Over 100 million vehicles worldwide rely on our valvetrain solutions.
Our strength: Integrated value chain
Focus on efficient, robust processes and innovative solutions

Efficiency & quality
- Process competence
  - (low-/high-volumes)
- Automation
- Quality management

Innovative solutions
- Research & Development
- Prototyping
- Testing
- Material competence
- Forging
- Standardization
- Process competence
  - (low-/high-volumes)
- Automation
- Quality management
- Plant engineering
- Just-in-time delivery
- Electronic integration
- Model assembly

Engineering
- Material processing
- Machining & assembly
- System integration
Business Segment Automotive Technology: More than 60 production sites worldwide
Business Unit Steering

Products: Steering systems

16 sites worldwide
Business Unit Steering - Products

Cold forging
Wire/rod material is formed into finished parts. Advantages: High-temperature/acid-resistant parts, recyclable, lower weight, high material/energy efficiency.

Steering columns
As well as precision steering, the central element of the steering system provides maximum safety in the event of an accident. We meet all requirements across the spectrum from budget cars to luxury-class vehicles.

Steering gears
Hydraulic or electric steering gears directly or indirectly transmit the movement of the steering wheel to the tie rods. thyssenkrupp offers a wide range of solutions from standard to high axle loads.

Column-EPS (Electric Power Steering)
Column-EPS provides steering assistance with an electro-mechanical power unit mounted on the upper column. This system is specially designed for the high acoustic requirements and existing installation space in the cockpit area.
Business Unit Damper

Products: Dampers & Suspension struts

7 sites worldwide
Business Unit Damper – Products

Conventional dampers
The classic hydraulic gas-pressure shock absorber is used in most automobiles today. For our partners in the auto industry we are constantly developing new solutions to improve road holding and driving enjoyment.

Electronically adjustable dampers
Sensors detect the current driving situation. A control unit records this information and optimizes the damping force for each damper individually. This provides greater safety as well as higher driving comfort.

Modules/Suspension struts
Springs ensure comfort and safety in vehicles. We offer complete suspension strut modules with steel and air springs that can be combined with all damper designs.

Aftermarket
Stock replacement, tuning and motorsports – throughout the world thyssenkrupp products stand for outstanding suspension quality and performance.
Business Unit Springs & Stabilizers

Products: Springs & Stabilizers

9 sites worldwide
Business Unit Springs & Stabilizers – Products

Coil springs
Optimum combination of minimum weight, optimum packaging space, maximum robustness and minimum costs.

ThermoTecSpring®
Springs developed by us that are almost 20% lighter than conventional suspension springs. By saving weight they help lower fuel consumption and reduce emissions.

Stabilizers
Stabilizers prevent the vehicle body from swaying and ensures better positioning. We offer a large portfolio enhanced weight reduction with no compromise on function and long service life.
Business Unit Automotive Systems

Services: System solutions for car chassis

8 sites worldwide
Business Unit Automotive Systems – Services

Module assembly
Module assembly includes the assembly of individual components that are grouped into smaller assembly units and ordered separately by the OEM.

Just-in-sequence/Just-in-time
We deliver chassis systems to OEMs just-in-time and just-in-sequence. Though synchronous with the sequence of the production requires the utmost from systems and processes.

System assembly
Front and rear axle assembly and on request assembly of powertrain. Specially installed assembly lines are used for these complex systems.

Other services
In the business area of axle assembly, we offer a series of additional services. For example, these include supplier management and assembly services as well as logistics and quality management.
Business Unit Camshafts

Products: Valve trains & Camshafts

10 sites worldwide
Business Unit Camshafts – Products

**Integrated camshafts**
High-precision manufacture for optimized grinding processes and reduced manufacturing costs. Weight savings of up to 40% compared with conventional camshafts.

**Camshaft modules**
Processes developed by us help save costs, reduce friction losses and lower CO² emissions.

**Variable valve train**
Development of fully adjustable and multi-step valve train systems for reduced fuel consumption and lower emissions.

**Integrated oil separation system**
System for cleaning of blow-by gases integrated in the engine interior. Reduced space requirements compared with cyclone separators.

**Electric mobility**
Development and production of rotor and gear shafts for electric drive systems and axles.
Business Unit System Engineering

Services: System Engineering

15 sites worldwide
Business Unit System Engineering – Services

Battery Solutions
As a system integrator we plan, design, and implement the production lines for the manufacture of Li-ion cylindrical, pouch, and prismatic can cells, supercapacitors, battery modules and battery packs.

Lightweight Solutions
We accompany the entire process from component advice, planning, development, design and production, to the handover of systems ready for final assembly.

Powertrain Solutions
Our product range is structured modularly, including all the components for manual, semi- and fully automatic assembly of engines, transmissions or axles. We also offer pre-assembly of cylinder heads and gear sets.

Global Service
We deliver highly qualified support for the entire service life of our products.

Car Body Solutions
Our product portfolio covers a broad range of services ranging from joining of individual parts via subassemblies to the assembly of complete car bodies and add-on parts.