Industrie 4.0

Market by Industry Sector

Germany is the world’s leading Industrie 4.0 nation. Industrie 4.0 has become an international by-word for intelligent, networked production – with Germany consolidating its reputation as the world’s factory outfitter and a country capable of meeting the challenges of the digital age.

Germany has established itself as the world’s Industrie 4.0 hotspot, with "Industrie 4.0" likewise being firmly positioned as a strong international brand. Find out how, why and how you can profit out of Industrie 4.0 made in Germany!

There are four major sectors with endless Industrie 4.0 opportunities. Find out more about each and every major Industrie 4.0 sector below.

Automotive and Lightweight Technologies Sector

Industrie 4.0 is transforming Germany’s automotive sector. The domestic market for Industrie 4.0 solutions grew by more than 20 percent to over EUR 1.2 billion in 2016/17. According to the Staufen German Industrie 4.0 Index 2017, almost all auto sector companies already make use of "smart" concepts or intend to in the immediate future (compared to 85 percent of respondents in the broader production sector). Internal efficiency increases were the motivating factor for 97 percent of auto sector companies’ decision to implement Industrie 4.0 and digital measures, followed by cost reductions (89 percent) and transparent processes (86 percent). Predictive maintenance, in particular, is expected to play a significant role in automotive production in the next two to five years.

According to McKinsey, vehicle manufacturers will need to increase lightweight component levels from 30 percent to 70 percent by 2030 in order to compensate for electric drive weight increases and more efficient engine technology.

Annual value added potential of 1.5 percent – or EUR 15 billion – through to 2025 is forecast by Bitkom as a result of the integration of real-time data at the designproduction interface and the use of more versatile production systems (real-time data, man-machine interfaces and flexible automation).

ICT and Software Sector

Industrie 4.0 provides significant market potential for ICT providers whose products support new business and service models on the basis of intelligent networking of objects and actors in a value chain. Around 90 percent of all industrial production processes are supported by ICT, with ICT share set to rise in the future as production processes and underlying ICT hardware merge with each other in the Internet of Things.

Industrie 4.0 solutions growth

1. is strongest in the software sector (in overall market second place behind IT services),
2. followed by IT services (biggest market) and
3. hardware (smallest market) in that order.

According to an IDC study conducted for the European Commission, European Union (EU) data economy value is forecast to grow to EUR 430 billion in 2020 – with Germany accounting for more than one quarter of market volume. Real opportunities exist for business models that tap into the data protection, security and compliance concerns of companies active in the data economy.
INDUSTRIE 4.0

Machinery and Equipment Sector

Industrie 4.0 represents a major growth opportunity for Germany’s M&E sector. Gross value added in the sector amounted to around EUR 77 billion in 2013 according to the Bitkom digital association and the Fraunhofer Institute for Industrial Engineering IAO. This is expected to rise to around EUR 100 billion by 2025 – a direct effect of the Internet of Things (IoT) and cyber-physical systems entering the factory space.

The robotics and automation (R&A) industry is one of the most innovative in the M&E sector, with R&A technology providing the core elements for Industrie 4.0 development. Advanced robotics and human-robot collaboration (HRC) technologies are a perfect example of increased automation and connectivity levels, with automation and electrification linked to intelligent control systems directing new product development in many M&E segments – creating enormous market potential for the future.

Microelectronics Sector

Microelectronics and microsystems are central to the implementation of the broad array of Industrie 4.0 scenarios. Modern electronic and microelectronic components and systems provide an essential toolkit for making Industrie 4.0 objectives of flexibility, increased productivity and reduced costs possible. As key enablers in industrial automation, electronics and sensors help transform production systems and products into cyber-physical systems (CPS). New microelectromechanical systems (including sensors and actuators) building blocks (particularly for 3D motion tracking and technical monitoring systems) need to be developed for deployment in future cyber-physical production systems (CPPS).

Twenty percent of companies in the domestic automotive sector already use self-controlling production facilities. Increased vehicle automation levels are creating extra demand for advanced electronics and sensor technologies from the microelectronics sector. According to the ZVEI electrical industry trade association, the automotive semiconductor segment recorded a rise in growth from 7.7 percent to 11.6 percent during the period 2011 to 2016. Internationally, demand for semiconductors and vehicle electronics rose to almost USD 35 billion by 2014, and is forecast to grow by around 4.5 percent annually through to 2021.

Contact Us

Claudia Grüne
+49 30 200 099 430
Submit your question

Asha-Maria Sharma
+49 30 200 099 312
Submit your question

All rights reserved. Any reproduction in whole or part only with express written permission. All efforts are made to ensure integrity of the content, however we are not liable for any mistakes that may occur.

© 2020 Germany Trade & Invest

Promoted by Federal Ministry for Economic Affairs and Energy in accordance with a German Parliament resolution.