

acatech STUDY

Industrie 4.0 Maturity Index

Managing the Digital Transformation
of Companies

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Executive Summary

The term Industrie 4.0 has been used since 2011 to describe the widespread integration of information and communication technology in industrial manufacturing. However, it is not enough to address the developments associated with the fourth industrial revolution from just a technological perspective – companies also need to transform their organisation and culture. While advanced technologies do make it possible to access a much wider range of data, the ability to leverage the underlying potential of this data is just as dependent on a company's organisational structure and culture. The ultimate goal is to become a learning, agile company capable of continuous, agile adaptation to a changing environment. The acatech Industrie 4.0 Maturity Index provides companies with guidance for carrying out this transformation. It comprises a six-stage maturity model in which the attainment of each development stage delivers additional benefits.

The acatech Industrie 4.0 Maturity Index focuses on four key areas, each of which has two fundamental principles attached to it. The main challenge for companies wishing to implement

Industrie 4.0 is to put these principles into practice by developing the various capabilities described in this study. The goal is to generate knowledge from data in order to transform the company into a learning, agile organisation and enable rapid decision-making and adaptation processes throughout every part of the business and across all business process areas. The acquisition of this agility provides companies with a significant competitive advantage in a disruptive environment.

The capabilities outlined in the model were aligned with the challenges and current activities of manufacturing companies and the applicability of the model was validated in practical application scenarios. This served to confirm the model's principles and to highlight the fact that companies are currently not focusing enough on the full implications in their strategic thinking. Many organisations still lack a basic understanding of the key aspects of Industrie 4.0. For instance, companies often wrongly limit Industrie 4.0 to digitalisation or full automation. Moreover, rather than pursuing a common goal, many actions that have been implemented are isolated and standalone measures. The acatech Industrie 4.0 Maturity Index can be used to develop a digital roadmap precisely tailored to the needs of each individual company in order to help them make the most of Industrie 4.0 and transform themselves into learning, agile organisations.