

Executive Summary

Digitisation processes of SMEs in the manufacturing sector – follow-up survey

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In 2016, the IfM Bonn conducted a company survey in the manufacturing sector to investigate the importance of digitalisation and the degree to which companies digitised their business processes. Based on a follow-up survey conducted in 2021, this study examines the level of change in digitalisation among manufacturing companies since 2016.

The importance of digitalisation is increasing

Digitalisation now plays a much more critical role in manufacturing companies than five years ago. This growing importance is especially true for large companies: In 2016, half of them attributed high importance to digitalisation; in 2021, nine in ten large companies share this opinion. The results also show that the Covid-19 pandemic – across all company sizes – significantly influenced the importance of digitalisation. Nevertheless, SMEs still have not succeeded in closing the digitalisation gap toward large companies.

More inter-departmental and cross-company networking

While companies are now realised a higher degree of digitisation within departments than in 2016, cross-departmental digitisation is stagnating – it is even declining in some departments. In comparison, networking with other companies – for example, with value creation partners and the public sector – is gaining importance: the proportion of companies that have networked across companies and the average number of external networking partners have risen over time.

Industry 4.0: No explicit goal for SMEs

SMEs are not aiming for a fully digitised factory. Instead, they are predominantly conservative in their investments in digital networking: Digitisation steps are just taken when their benefit for the companies is evident. This means that the returns must exceed the investment costs in the foreseeable future. This means that investments are made primarily in proven or mature networking technologies. Newer future technologies are only used to a limited extent.

Firms reported similar opinions regarding opportunities and challenges

Companies use digital networking to optimise their production processes, products, and services. On the other hand, the high organisational effort, such as adapting employees' areas of responsibility, keeps companies from taking

further steps towards digitisation. This was also the case five years ago. The assessment that the costs could exceed the expected benefits also inhibits the digital networking of companies. On the other hand, neither financing difficulties nor low broadband speed are seen as significant obstacles.

Digital pioneers use artificial intelligence

After five years, the share of companies with highly digitised production processes is almost unchanged. These digital pioneers are mainly larger companies that use AI, have a digitalisation strategy and their own IT department, or work with external IT service providers. On the other hand, small companies are often digital laggards that have not digitised their production processes. Nevertheless, the proportion of digital laggards has fallen by around five percentage points compared to 2016.

Further training measures in SMEs are an essential competitive factor

Given the increasing shortage of skilled workers and changing demands on employees, further training measures in SMEs are becoming increasingly important. With its SME-specific offers rising the awareness of firms, additional training, networking and the implementation of digitalisation projects, economic policy moves already in the right direction. These offers should continue, and the infrastructure should consistently be advanced for this purpose. In particular, training programmes that address the management of SME change processes should be an essential building block for successful digitisation.