

# Executive Summary

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## Business Process Digitization of SME in the Manufacturing Sector

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## **Executive Summary**

This study empirically examines the relationship between different firm-specific factors and the degree to which small and medium-sized enterprises digitized their business processes in the manufacturing sector in the three German federal states North Rhine-Westphalia, Bavaria, and Baden-Wuerttemberg. The degree of digitization refers to the number and structure of the firm's data-based connections between its own departments and the departments of other companies. The investigation is based on a survey that has been conducted by the Institut für Mittelstandsforschung (IfM) Bonn in 2016.

### **There is further potential to establish data-based connections to other firms**

More than three in four companies digitized their business processes between departments within the firm. However, only five percent of the firms digitized all their departments, whereas the degree to which firms digitized their business processes increases with firm size. Almost half of all firms exchange data with other companies. Among these, two in three firms established data-based connections with one or two external partners. In most of the cases, the firms exchange data with suppliers and service companies, whereas sales, purchasing, and controlling departments are usually involved.

### **Digitization is rarely used for the development of new business models**

Almost two thirds of the firms intend to optimize their production and business processes through digitization. Market expansions or the development of new data-based business models are perceived as less important. However, such business models will become more important in the future: One fifth of the companies already produce smart and connected products today.

### **Technical obstacles do not represent major challenges**

Firms report that they face organizational challenges when it comes to digitizing their internal business processes. Hence, to fully exploit the potential of digitization, it is necessary to develop organizational innovations. Virtually all firms perceive the qualification level of their employees as most important to successfully digitize the company. Moreover, firms tend to share the view that new technologies do not substitute jobs, but support employee's work.

### **Especially small businesses overestimate their degree of digitization**

Almost one third of the respondents feel (very) good positioned in the digitization process. This opinion is especially shared by respondents of small businesses. As a result, they see less potential to further digitize their business processes as compared to their larger counterparts. In fact, this evaluation might be misleading: small businesses are comparatively less involved in exchanging data between their own departments and the departments of other companies. This becomes evident when

considering firms that have not taken any steps to digitize their production department and, hence, can be seen as digital laggards: small businesses belong to this group of companies four times more often than medium- and large-sized companies do. Similarly, digital pioneers, which realized a (very) high degree of internal and external digitization, can be found more often in the group of medium- and large-sized firms.

### **Digital strategies pay off**

Digital pioneers are relatively more often engaged in the development of innovations and have an IT-Department. Furthermore, they are relatively more active in doing business abroad which underlines the importance of digitization in the context of international competitiveness. Therefore, it is important for companies to implement a digital strategy. Firms with such a strategy are comparatively more efficient and more engaged in the production of smart products. Hence, these companies seem to be better prepared to cope with the challenges of the future.

### **Sensitizing digital laggards**

The firms' degree of digitization do not relate to their business location. That is why economic policy should sensitize digital laggards for the chances of digitization in all three German federal states. In doing so, economic policy should actively address small businesses which relatively more often belong to the group of digital laggards. Policy can support small businesses by making them aware of their low degree of digitization and to nudge them to recognize the possibilities of new technologies.