

¹ Source: Universität Stuttgart IFF/
Fraunhofer IPA, Photo: Rainer Bez,
Heike Quosdorf.

ANALYZING THE POTENTIAL TO DIGITALIZE ASSEMBLY PROCESSES

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

Nobelstrasse 12
70569 Stuttgart | Germany

Contact partner
M. Sc. Susann Kärcher
Phone +49 711 970-3838
susann.kaercher@ipa.fraunhofer.de

M. Sc. Michael Trierweiler
Phone +49 711 970-1930
michael.trierweiler@ipa.fraunhofer.de

www.ipa.fraunhofer.de/en/assembly_planning

Digitalization – tailored to your needs

Industrie 4.0 and digitalized production processes are no longer a vision of the future: the fourth industrial revolution has begun. However, many companies are wondering how digitalization will benefit them. It is also often not clear which processes should be digitalized first: Which systems are the right ones for my company? Which investments make the most economical sense? Which partners are suitable? What does this mean for my production facility?

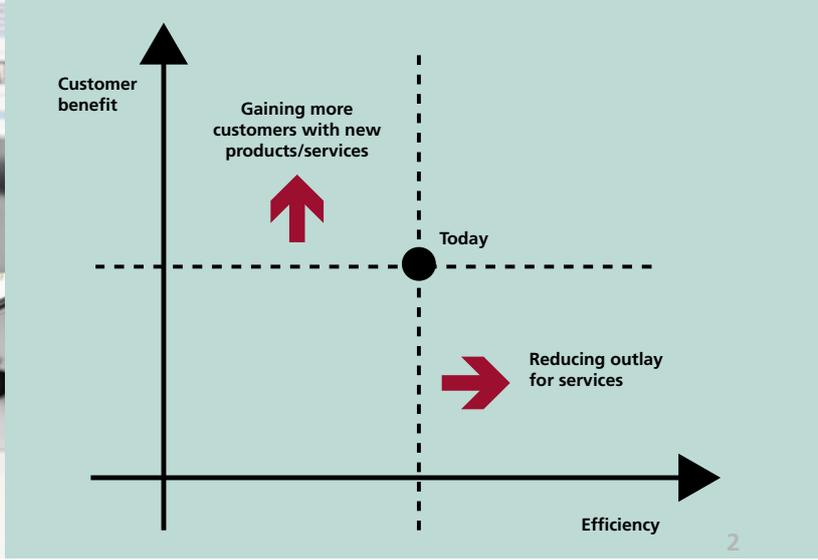
Repeatedly, decisions in the field of digitalization are driven by technology rather than by benefit, with a focus on preferred technologies. However, it is much more important to keep long-term goals in mind and then to decide which system should be digitalized. Industrie 4.0 should not be implemented as an end in itself.

The silver bullet: putting the focus on benefit – but how do I find that out?

In general, Industrie 4.0 projects can be approached from two perspectives:

On the one hand, an internal company perspective can be adopted with the aim of increasing productivity. The emphasis is on improving performance (process optimization, waste reduction, productivity potential, etc.).

The other perspective is an external focus on customer benefit. This considers what is being offered to the customer and aims at new products and (often data-driven) services. This approach also questions a company's business model.



Challenge: data collection and data analysis

The basis for digitalization projects is reliable and good data.

However, preparing data is a complex task with the result that production data is often not up-to-date or incorrect. To use data in a target-oriented data way, specific IT or data analytics skills are required in order to -know which data needs to be collected and how it can be used to advantage. An appropriate IT infrastructure for data analysis should also be available and the interface between the different IT systems should be compatible and open.

Another hurdle to be overcome is choosing the right Internet of Things (IoT) infrastructure. Since digitalization pilots are the only way of finding out the infrastructure and systems required for data collection and analysis, a high investment risk is involved.

In the volatile environment in which companies find themselves today, rigid solutions soon reach their limits. The need for flexible connections and agile data collection capabilities is great.

Last but not least, it is also a challenge to collect data on the many manual production processes that are carried out.

Give digitalization a try: modular system for continuous data acquisition and analysis

At Fraunhofer IPA, we have developed a modular sensor system for collecting and analyzing data from any production process - including manual ones.

The system makes it possible to find out without much effort where data acquisition makes sense, and to identify the greatest potential for optimization through digitization

Sensors can be attached to components, tools, devices and machines and can also be connected to existing data sources. The data collected in this way can be analyzed directly and the results made accessible. The advantage of this is that the system can be implemented independently of the existing IT infrastructure and can be used without specific IT skills.

Our services: together we work out your benefit

We offer to assess your digitalization potential by acquiring and analyzing data with the aid of modular sensor technology. At the beginning of the project, we first discuss your company's goals, general constraints and current challenges with you.

We then select structured processes that are suitable for initial data acquisition and analysis. After that, we get started with acquiring data immediately.

Together, we achieve the necessary transparency and optimize your production process.

The focus is on the individual benefits of digitalization for your company with regard to assembly and production processes.

The results of the project not only enable us to identify potential for improvement but also to recommend areas where digitalization makes sense. The analysis of digitalization potential forms the basis for developing a benefit-oriented digitalization strategy for your production areas.

Where do we go from here?

Get in touch with us and we will find the right project format for your company. Numerous examples prove that it's worth the effort.

1 Source: Fraunhofer IPA, Rainer Bez.

2 Approaches of digitalisation for profit optimization.