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Bookbinding 4.0 - from a future dream to a future project

It is being billed the fourth industrial revolution. That is how the website of the German Federal Ministry of Education and Research explains the concept of „Industry 4.0“. „Driven by the internet, the real and virtual worlds are growing together into an Internet of Things,“ it continues. The Industry 4.0 project is intended to support this process.

The concept first made the headlines as a project for the future in 2011. In 2013, the German Academy of Science and Engineering presented a research agenda and implementation recommendations, and the Federal Ministry provided the appropriate funding. In 2019, the German Wirtschaftswoche weekly has written in a blog post that almost a third of companies are still uncertain what Industry 4.0 actually is. Food for thought.

If you take a closer look, it is mainly smaller companies where the matter is still hardly relevant. According to Wirtschaftswoche, around one third of companies with sales of 100 million euros or more are fully or partially digitally interconnected, compared with only 20 percent of smaller companies. As a rule, these smaller companies also include businesses in the printing industry, which is dominated by medium-sized enterprises.

Single-stage companies, in particular, are finding it hard to implement the corresponding process controls - digital networking is only happening in fully integrated companies with the corresponding requirement profile. Bookbinding 4.0, on the other hand, seems to be a future dream.



„...what the printer puts in their yard“

Why is that? If you ask the experts, there are many reasons for this: Single-stage bookbinderies are only one part – the last part – of a complex process chain and, as Ronald Reddmann, Product Manager Perfect Binding Systems at Muller Martini puts it vividly, „they have to process what the printer puts in their yard.“

Early integration or even networking within the production chain? Not happening.

In addition, the companies themselves often lack the necessary comprehensive knowledge across the entire process chain. After all, if you want to set up an integrated workflow, you also need to know the upstream and downstream process steps. Andreas Aplien, Muller Martini Product Manager Workflow, notes that in day-to-day practice, there are often minor problems that have not been taken into account so that users perceive integration to be more of an obstacle than an opportunity.

Lack of interfaces for machines

A further point is that for data exchange to function, a uniform language or uniform data formats are required, along with systems that are able to work with data. Here, too, bookbinderies are confronted with particular challenges: The number of different, sometimes highly specialized systems from different manufacturers and different generations is difficult to reconcile in terms of IT technology. There is a lack of interfaces and the corresponding standards. The high degree of manual work required in bookbinding cannot be pressed into a digitized structure either.



How much 4.0 is needed?

On the other hand, the question arises as to how much Industry 4.0 is really necessary in bookbinderies. How much integration makes sense? What does a processing plant need to remain successful in the market? And what is possible?

Certainly, the trend in print production is also moving away from mass production, i.e. long runs, toward several diversified product batches in smaller quantities. This inevitably results in a higher number of smaller jobs to be processed – and mapped – at companies. Such order structures almost inevitably require workflows with a high degree of automation and process integration.

To this end, Muller Martini offers, for example, a touchless workflow that with the workflow



solution Connex has the appropriate interfaces that can interconnect the whole range of products of Muller Martini with higher-level systems. For example, in flexible book production with runs of one, a book ordered online can be produced highly automatically on demand using standardized processes. The complete book production process is thereby monitored from printing to block formation, perfect binding and individual trimming. In such companies - with digital printing, fully integrated further processing and interfaces to logistics - Industry 4.0 is already a reality.

Find niches

On the other hand, for pure bookbinderies without a direct connection to pre-press and printing, things are getting more difficult. One of the tasks for the future here is certainly to focus on what is actually produced (or is to be produced in the future) and what can be improved in the organizational and production structure. It will be a matter of finding your own niche in the market, having an offer that sets you apart from the competition, and being able to produce this profitably.

And it will also be a question of investing with foresight: In flexible systems that can map fluctuating run lengths well; in easy-to-operate systems that allow more flexible deployment of operating personnel; in systems that are 4.0-capable to prepare for the rapidly progressing development, also at the customer end.

Even if fully integrated processes cannot be implemented in a pure bookbindery, the topic of Industry 4.0 or digital networking should not remain a future dream. It is important to consider where the journey will go and prepare for it step by step. Now!

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