



From clipboards to Apple Mobile Devices:

Weidmüller adopts Syntax MES Industry 4.0 solution

Weidmüller has transformed itself from a manufacturer of snap fasteners in the textiles industry to become a leading provider of solutions for the Industrial Internet of Things (IIoT). The company produces “industrial connectivity” – electronic and electrical connector systems – for use in mechanical engineering, industrial process systems, device manufacturing, the energy sector and traffic management in particular. In the 2019 financial year, Weidmüller’s 5,000 employees and its production facilities, sales offices and representatives in more than 80 countries around the world earned the business revenue of €830 million. The company has long recognized the opportunities of digitalization and developed its own global digitalization strategy several years ago.

Digitalizing manufacturing plants with an MES

“Our SAP systems had a missing link that we wanted to join up using a Manufacturing Execution System, or MES,” explains Patrick-Benjamin Bök, VP Global Digitalization/Corporate Factory IT & Technologies at Weidmüller.

“Previously, we had just been using shop-floor operations data acquisition systems to capture information. Of course, that was not enough to manage and plan our manufacturing.” Every morning, the printers would be run to exhaustion, producing reams of waybills and forms as part of the MRP

batch. And as soon as the product had been manufactured and packaged up, the paper documentation ended up in the shredder.

This practice was a key driver for the digitalization of the manufacturing processes at the Wutha-Farnroda plant in Thuringia, a project that subsequently served as a blueprint for Weidmüller’s manufacturing sites around the world. The aim was to increase the digital consistency, reducing the use of paper to the bare minimum, making processes transparent, and maximizing the flexibility of the company’s human and mechanical resources.



CUSTOMER STORY WEIDMÜLLER

At a glance

- Industry: Electrical Connectivity and IIoT
- Location: Thuringia, Germany
- Solution: Implementation of SAP Digital Manufacturing Suite
- Result: Process digitization in Germany serves as a global rollout blueprint, boosting transparency, efficiency, and reducing paper use



We did not want an IT solution with bells and whistles and flashing lights just for the sake of it. We wanted something that would be a real improvement for our employees. Making work more fulfilling with digitalization.

- Patrick-Benjamin Bök
VP Global Digitalization/Corporate Factory IT & Technologies
Weidmüller

SAP Digital Manufacturing Suite

Following an in-depth analysis of the market, two providers emerged neck-and-neck. However, one of them had a key advantage as Weidmüller was already in the SAP stable. “Going with the other solution provider would have put us in a whole world of interface pain. So, after a lot of discussion among ourselves, we finally opted for the SAP Digital Manufacturing Suite,” recalls Bök, a digitalization expert in his own right.

When it came to the decisive meeting, SAP just happened to bring along an expert from the IT service provider Syntax – it was an inspired choice. “Often, when you meet a consultant in this type of situation they just talk about their own background and work rather than getting into the nitty-gritty of your situation. But Syntax spoke our language, and in particular understood what the experts on our side of the table were saying,” Bök says.

“They were absolutely fluent when it came to the terminology and workflows of plants like ours. The mutual understanding created instant confidence.” Weidmüller also invited other consultants to the table, but none of them could match Syntax’s depth of industry understanding and expertise.

Agile realization results in success

“It was key for us to keep the project within scope and not overshoot, developing functions that nobody on the shop floor needed,” states Bök. Syntax once again showed their mettle with an agile approach of sprints, reviews and backlogs. This methodology opened up the option of agile app development, switching the focus spontaneously and tailoring the solution precisely to Weidmüller’s needs and requirements. SAP as the solution provider and Syntax as implementation partner were firmly invested in the process, and the project quickly gathered speed.

In terms of hardware, the manufacturing machinery was equipped with load cells and connected using an IoT controller designed for the task by Weidmüller. The MES also talks to the ERP system: whereas previously the data was held in a range of silos, now it is acquired centrally. That means it can be used and analyzed everywhere. Syntax developed the application logic and ensured that the Weidmüller team was able to feed data into the app interfaces.

As future users, shop floor workers were closely involved in the development and implementation process. Their feedback made a significant contribution to the massive process improvements achieved by the project, including the improvement of many items of the master data. The first manufacturing machine went live after just three months.

Total machine visibility

Weidmüller’s staff are always responsible for managing multiple machines at the same time while on shift. “Instead of carrying around clipboards stuffed full of paper, our people now have a smart Apple mobile device which can display all of the data they need,” explains the VP of Global Digitalization. The tablet displays the current status for each machine under their responsibility, its current load and any potential issues. This saves the constant to and fro to keep an eye on things at several stations.

Now, they can use their Apple mobile device to document visual inspections, record transaction volumes and scan in materials, wherever they are. “We have hugely reduced the distances in manufacturing,” explains Bök. In addition, all machine operating data can be viewed on the shop floor. This allows any problems to be detected as they occur and defective parts to be replaced.

“The MES shows us what is going on at all times. That is amazing. It does not matter where the machine operator is at any particular time, they can see instantly if it is not working as required,” says Bök. Transparent machine data means the manufacturing process can be optimized too.

Take the example of injection molding tools: They heat up plastic, inject it into a mold, allow the part to cool, eject it and then start all over again. The MES makes the whole process transparent so that parameters such as the pressure or cooling time can be optimized. “We can compare the length of time planned for production of a part against how long we actually need. We have noted that in many instances we can achieve significantly higher throughput and therefore optimize deadlines,” states Bök.

A modern manufacturing workplace

Weidmüller has created a modern workplace, a digital manufacturing workstation, focused on usability. “Employees on the shop floor are happy that they no longer have to rush from one station to the next, significantly reducing stress,” said Weidmüller’s VP for Digitalization. The plant in Wutha-Farnroda on the outskirts of Eisenach is now almost completely digitalized, using practically no paper with tangible benefits for purchasing of supplies.

“This is a lighthouse project; now every part of our group wants to deploy the MES in their own plants. Our only concern right now is how quickly we can bring new sites on line,” beams Bök. The templates and blueprints are all in place.



What we have achieved together with Syntax in this short period is simply amazing.

- Patrick-Benjamin Bök

VP Global Digitalization/Corporate Factory IT & Technologies

Weidmüller



Factors for the success of the Industry 4.0 project

Weidmüller made sure all of its stakeholders were on board early on in the process. “As soon as we encountered a pinch point, we sought a lever together and established whether or not the employees wanted a modification to be made. We broke down numerous processes as a result, and have introduced comprehensive improvements and leaner approaches,” Bök explains.

Employee feedback helps determine whether or not functions go live. It was important for the company not to overload or stretch their workforce too thin. By expanding functionality a step at a time and thanks to an accompanying transformation management process, there were ample opportunities for workers to get used to new practices, while the shop floor’s ability to contribute to decision-making increased user acceptance for the solution.

The Works Council was also on board from the start, actively supporting the introduction of the MES. “Obviously this type of project involving many different participants is not going to be easy, but we achieved our objective. And looking at our original requirements document for the MES, there are barely any features left over, because our collaboration with the users highlighted the functions that were really important,” says Bök with a smile.

“The key factor for our success was our implementation partners and their agile approach. After all, even during the project when we did not have all of the answers, their methods allowed us to change course as required during the journey. We did not have a typical client/supplier relationship. Instead, we worked together in a partnership-based approach focused on finding the solution.”

Weidmüller’s VP for Digitalization has the following piece of advice for companies that are considering a similar project: “Choose your implementation partner carefully. Can they pursue an agile strategy and navigate a moving target? Does the consultant understand your situation and the specifics of your industry? Time and again, throughout our project meetings Syntax asked a justifiable question about whether certain functions actually added value on the shop floor.

I really do not know if we could have completed the project with the same degree of success with any other service provider. For that reason we will definitely be working with Syntax again in the future.”



About Syntax

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With 50+ years of experience and more than 800 customers worldwide, Syntax has deep expertise in implementing and managing multi-ERP installations. Syntax works closely with SAP, AWS and Microsoft to ensure the secure and seamless operation of customer applications.

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