4.0

Let's Get Into Digital Production!

Despite pressure to digitally transform, many companies are hesitating to take the first step when it comes to Industry 4.0. The ongoing global pandemic could provide new motivation.

By Oliver Spölgen, Mait

To remain competitive, manufacturers have to develop and produce ever more complex and individualized products ever faster. Digital networking and connectivity are therefore some of the dominant topics in the manufacturing industry. The goal is to connect people, machines and products through digital systems. However, the truth is that Industry 4.0 is still mostly wishful thinking for many manufacturing companies. At best, they have taken first, tentative steps towards digitalization; at worst, they haven't even started yet. This is something we have seen over and over again in our many years as software and IT specialists in the manufacturing industry. But why is that? Why aren't these companies already much further ahead in terms of digitalization and Industry 4.0, even though they undoubtedly know that digital transformation would enable them to bring their products to market faster and in better quality and thus help increase revenues? It can't be because of technological prerequisites - they have mostly been established by now.

The problem is simple yet hard to overcome: Day-to-day business prevents quick digital transformation. Only a determined, dedicated management team can provide a solution to this dilemma. It is the only way to create the necessary freedom to test and establish digital technologies in everyday processes and routines. Even unfortunately still widespread silo thinking can only be overcome by management. In many respects, different departments often work only for themselves, and this is equally true when it comes to choosing the right software. Therefore, management should think of implementing comprehensive software systems as a C-level task.

Crisis creates time for insights

The ongoing COVID-19 pandemic of all things could put an end to digital stagnation. Video conferences, for example, have finally caught on in many companies. Of course, using Zoom is not digital transformation. However, the 'new digital normal' could make managers in the manufacturing industry realize that they can (indeed, must) digitally transform. The learning effect is reinforced by the crisis-related drop in orders, however painful that may be. Less orders mean more potential free time to dedicate to more pressing matters, and companies should choose to dedicate it to the most pressing one of all, digital transformation.

Proactive managers were able to use this time productively and assess the current state of their companies. They all almost inevitably had to draw the same conclusion: In the future, it will be imperative to be able to work separated from the real production environment. This, in turn, mandates a complete digital product model. We are convinced that this digital twin is the real core of Industry 4.0, containing all relevant information about the product, the manufacturing process, and its condition along the entire value chain from development, planning and production to maintenance and service. The digital twin perfectly simulates the characteristics and behavior of the product even before physical production. From there, it is only a small step to the automation of complex production processes.

Digital change takes time

Ultimately, it doesn't necessarily take a crisis to drive digital transformation forward. Manufacturing companies need to realize that they cannot survive in the long term without connected and self-learning systems. Industry 4.0 is therefore not really an industrial revolution but rather an evolution. Which is great! Because comprehensive digitalization means nothing less than a painful change of culture in most companies, and it is better to take this journey step by step than just to rip off the bandaid.

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Industry 4.0 is a central term of digital transformation, referring to manufacturing and retail. This column is dedicated to recent developments, trends and strategies concerning the industrial IoT.