

## Digitalisation as a game changer

Digitalisation enables companies to act successfully, economically and ecologically. It optimises quality, safety, conservation of resources, energy savings and the reduction of CO<sub>2</sub> emissions. Companies in the valve industry are using digital transformation to increase their competitiveness. It is turning out to be a real game changer.

The trend is growing year by year. According to the Worldwide Digital Transformation Spending Guide of the International Data Corporation (IDC), spending on digital transformation will therefore have an average annual growth rate (CAGR) of 16.4 percent in the forecast period from 2021 to 2025. The reason for this is that companies are increasingly pursuing an end-to-end digital strategy for people, processes, technology, data and governance. Global spending on the digital transformation for business practices, products and organisations is projected to reach \$2.8 trillion by 2025, more than twice as much as in 2020.

## Connected production

The German plant and mechanical engineering industry has made high investments in digital transformation as well, so that it is already well positioned in production-related digitalisation. "For example, implementing interconnectivity within production as well as the integration of sensor technology to optimise production," explains Prof. Claus Oetter, Managing Director of the Software and Digitalization Association of the Association of German Mechanical and Plant Engineering (VDMA). The valve manufacturers have long since embarked on the path of digitalisation. "In the past years, there has been a significant increase in decentralised automation of process valves, precisely in step with digital communication", confirms Sebastian Kundel, Product Manager Automation Process Valves at Bürkert. "Particularly important is digitalization of highly

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automated processes. Products with high quality standards demand validation of process operations".

The companies are aware that information technology already plays a decisive role today, but above all in the production of the future. AUMA therefore already offers its own cloud. The aim is to "make the asset management and condition-oriented maintenance of AUMA actuators efficient and cost-oriented and to ensure the long-term availability of the system".

### **Interactive platform**

The AUMA Cloud is an interactive platform with which detailed device data can be collected and evaluated by all actuators in one system – made possible by intelligent algorithms. "Our drives automatically collect and store process data such as valve position, ambient temperature and vibrations as well as device data such as switching frequency, motor running time and warning messages," explains Marc Schmidt, Head of International Sales at AUMA. Plant operators can detect high loads or possible servicing and maintenance requirements at an early stage and thereby initiate the appropriate measures in order to prevent unexpected failures. Data is therefore used in a better way, and processes are optimised.



Digitalisation is important for all industries: It is not only increasingly shaping production processes as well as the onshore sector and offshore industry, but also, for example, the water industry. In addition to Industry 4.0, Water 4.0 also introduces a veritable revolution for purest water. A resource-efficient, flexible water management process can ensure an optimised water supply and disposal at all times – in a combination of measuring systems and control technology as well as actuators and valves.

### **Recording and evaluating data**

Rotork also develops digital systems in order to prevent equipment faults, aging or inefficiencies which lead to production losses,

reputational damage and financial losses. The intelligent electric Rotork actuators are equipped with a data logger which records and evaluates data. For example, the number of valve movements, alarms, torque profiles and unauthorised operating attempts. Torque profiles "provide valuable information about the condition of the valve, while sudden alterations in the average and peak temperature or vibration indicate a plant problem," explains Andreas Fuchs, Rotork Country Manager Germany. Data is analysed in asset management systems. These systems provide information at an early stage in order to ensure safe and reliable plant operation through measures and to prevent unforeseen costly and dangerous system failures.

### **Significant reduction of emissions**

In addition to efficient processes, the digitisation of industry also offers great potential for reducing CO<sub>2</sub> emissions. According to the Bitkom study "Climate Effects of Digitalisation", accelerating the use of digital technologies, in Germany alone could be saved up to 64 million tons of CO<sub>2</sub> in 2030 – that is 17 percent of the total planned CO<sub>2</sub> savings as part of the 2030 climate target.



Furthermore, the use of digital twins, i.e. the simulation and optimisation of physical products or processes, could save 33 million tons of CO<sub>2</sub>. According to the Bitkom study, an additional 31 million tons could be avoided by increased automation in production, using digital technologies to reduce manual intervention and the use of materials as well as optimising processes.

### **Networks with added value**

The concrete implementation of digitalisation on the ground has not yet been decided. For example, in pneumatic actuators. "So far, it has been outsourced to add-on parts," explains Mark Schmidt, Managing Director of Air Torque. The advantage of this solution is the simple interchangeability. However, there are now also all-in-one products. "It remains to be seen what the market decides on."

The digital possibilities appear complex for the market. Therefore, coordination – also in the form of corporate networks – offers added value. The open integration network has developed from this idea. Cooperation partners test and document the interaction of their products and the ways to fully utilise digitalisation in typical automated process environments. "Users benefit from this in two ways: They can combine the best products of the respective product segment in their operating environments and also commission them quickly and easily," explains Endress+Hauser. The company's partner programmes include Auma Riester, Bürkert, Flowserve, Pepperl+Fuchs and Rotork, among others.

### **AI as another pulse generator**

The goal of implementing digital transformation has long been a priority for many companies. And that is why networks such as "open integration", but also cooperations with universities, are up-to-date. Also against the background that Artificial Intelligence (AI) provides additional strong impetus to digitalisation not only by collecting and interpreting data: AI intervenes in the process without human decision – machines react to each other. A development which companies can use for themselves – but also for the climate. However, it will take years to implement this trend consistently. But the way to this objective will be worthwhile.

From 29 November to 1 December 2022, the key players of the industrial valves sector will present themselves at VALVE WORLD EXPO with an accompanying conference in Düsseldorf. Experts from all over the world will use the Düsseldorf Fairgrounds as an international fittings summit to present their innovations and discuss current research and production processes.

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