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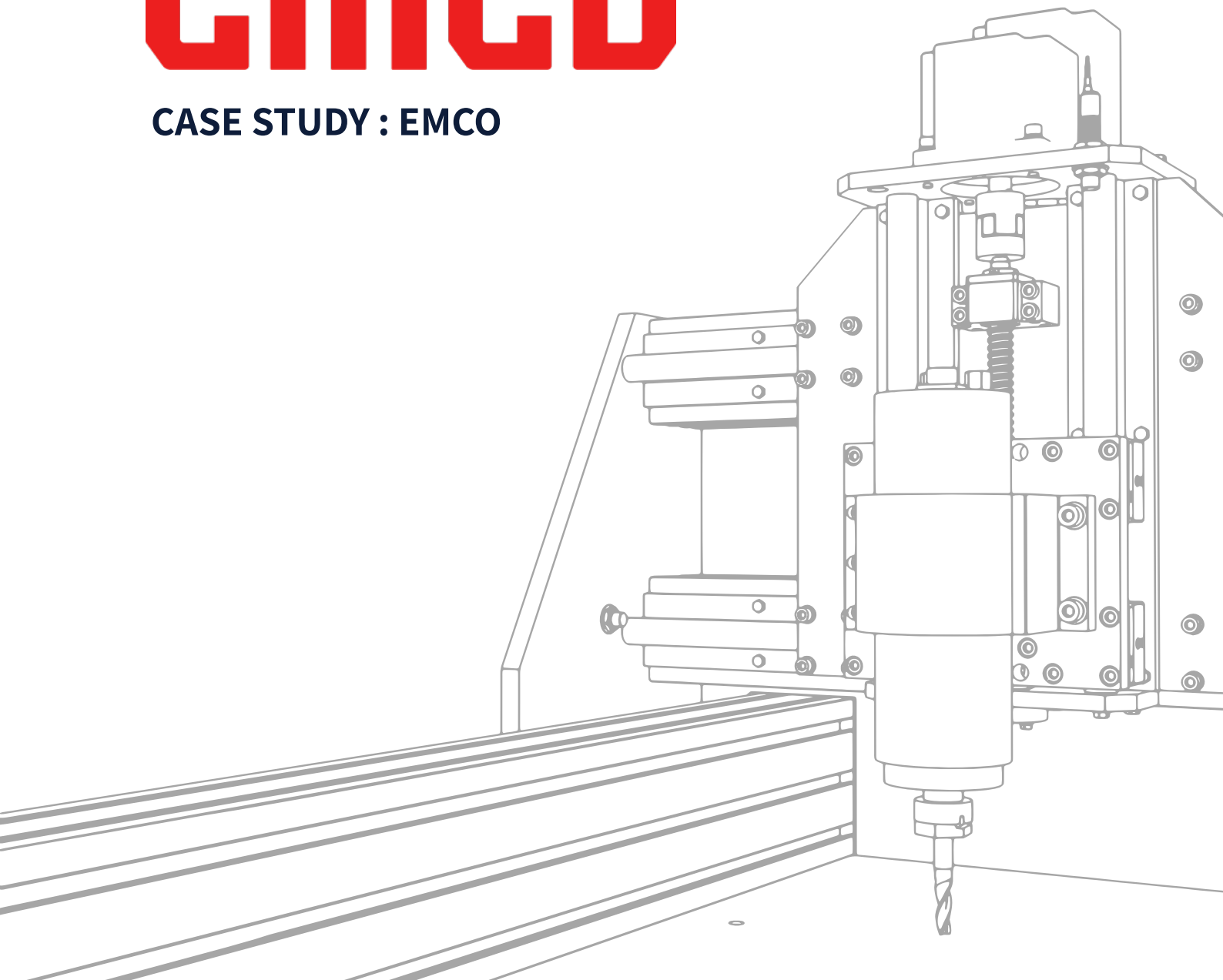
CASE STUDY : EMCO



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Faster troubleshooting, optimised maintenance plans and proactive support for customers: The machine tool manufacturer EMCO is strategically developing its service model with the Industrial Low-Code Data Platform from Paze.

Company

The Salzburg-based machine manufacturer EMCO is one of the leading machine tool manufacturers in Europe. EMCO currently employs around 800 people at a total of six production sites in Austria, Germany, Italy and Russia. The key success factors of the internationally active, family-owned company are the expertise and experience gained from more than 70 years of machine tool manufacturing. EMCO thus stands for the best individual, automated complete solutions for turning and milling.

Today, machines from ECMO are used in a wide variety of industries - from the automotive industry to medical technology. The breadth of the solutions offered is unique in Europe: from conventional turning and milling machines to highly automated turning and milling machining centres, the company covers a wide range of application areas. With EMCONNECT, EMCO also offers a powerful platform for connecting the machines and integrating them into the production environment.

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Challenge

“Beyond standard” is EMCO’s corporate motto. With this, the machine tool manufacturer underlines its claim to continually go beyond itself and to set itself ever more ambitious goals in terms of efficiency, quality and innovation. This also applies in particular to the company’s customer service.

“We want to detect and rectify faults as quickly as possible - and thus help our customers to achieve the best possible results with our machines,” says Günter Pumberer, Product Manager Digitalisation at EMCO. “The key to better customer service today is the data that our machines provide us with.”

Until now, the data of the control systems could be accessed remotely via VPN connections - but only the current parameters and error messages could be read out. In order to provide the service teams with quick and easy access to all relevant data, EMCO was therefore looking for a powerful and flexible Industrial IoT (IIoT) platform. This should not only provide insights into the real-time and historical data of the machines, but also enable comprehensive analytics and visualisations.

“In the short term, we were mainly interested in solving more customer enquiries remotely,” says Günter Pumberer. “Especially in times of Covid-19, on-site visits were often even more time-consuming and costly than before. However, data-based models and analyses open up many more possibilities for proactive service and predictive maintenance for us and our customers. We wanted to be able to map these long term goals with the new platform.”

Solution

Those responsible at EMCO took time for intensive market research. In total, almost 15 different IIoT products were evaluated. Finally, three solutions were installed in a proof-of-concept environment and tested extensively under real conditions.

“During the tests, we quickly realised that the Paze platform best met our requirements,” says Ronald Hinterbichler, Head of Software Development at EMCO. “The solution was particularly convincing due to the flexible integration possibilities of different control systems and the simple configurability, even without programming knowledge.”

Once the decision was made in favour of Paze, EMCO quickly implemented the solution in the first customer projects. The Paze Edge solution is installed directly on the industrial PCs of EMCO’s machine controls and requires no additional hardware on site. The Paze Edge Client retrieves data in real time from the CNC systems such as Siemens SINUMERIK or FANUC, aggregates it and then transfers it to the Paze Cloud via a highly secure mobile phone connection. In addition, the machine data is temporarily stored locally so that it is not lost even if the connection fails. Particularly important is the aspect that the solution only processes internal machine status and diagnostic data relevant for service purposes and, in particular, no customer data.

Via the web interface of the Paze platform, EMCO has an overview of the data collected from the customer’s machines and can very easily create data apps for a wide range of applications. This is where Paze’s low-code approach comes into its own: “With the Paze platform our machine experts now have tools at their fingertips to build individual data widgets without any programming,” explains Günter Pumberger.

“These can be, for example, status views of the machines, temperature records of the installed drives or lists of the most frequent error messages. Automatic alerts can also be set up with just a few clicks. This makes it possible, for example, to notify the service staff when certain limit values are exceed.

In addition to the low-code tools, a script editor for R & Python is also integrated into the Paze platform. Ronald Hinterbichler’s team uses this for more complex evaluations and calculations based on the collected data. “Using scripts, we analyse, for example, how long our machines are run in the individual performance ranges. We can then also visualise the results in a widget,” says the head of software development.

All widgets created with Paze can be instantly integrated into dashboards and also turned into mobile data apps. This allows EMCO to provide its employees and customers with the information they need in an intuitive format.

Results

Faster fault analysis and fewer on-site visits

The Paze solution greatly facilitates remote support for EMCO. In the event of a fault, the service teams can view the entire alarm history online and relate it to all relevant machine data. This speeds up troubleshooting and minimises downtime for EMCO's customers.

Proactive Customer Service

By analysing the collected machine data, it is also possible to detect anomalies that indicate impending faults. This enables the service technicians to provide support before a failure actually occurs.

Demand-driven maintenance plans

With the Paze solution, EMCO is able to adapt the service intervals to the actual use of the machines. Machines are not checked and maintained according to rigid schedules, but rather according to the respective intensity of use. This also makes it possible to optimise maintenance costs.

Greater transparency for those responsible for production

With the Paze solution, EMCO can provide its customers with a wide range of valuable information and key figures on the condition and productivity of their machinery. Low-code tools simplify the preparations of this data in dashboards and data apps.

New insights for the further development of the machines

The Paze solution helps the machine manufacturer to better understand how their machines are used by customers with different requirements. These insights can then be incorporated into the development of the next generation of machines.

Outlook

EMCO is currently working intensively on the topic of predictive maintenance. The Paze platform provides a solid data basis for this. With the help of machine learning tools, the machine experts can determine the failure probabilities of heavily used components and thus implement predictive maintenance for customers. Paze also opens up new possibilities for further development of EMCO's business model. "We are not talking to customers about Machine-as-a-Service concepts," says Günter Pumberer. "For these usage-based sales models, we are very well positioned with Paze. The platform helps us to provide customised digital services for our customers and also to bill them completely transparently."

"Working with Paze really moves us forward. The development team responds flexibly to our requirements and always helps us to implement new use cases. It's also important for us that the technology is future-proof and works smoothly with new generations of our control software."

Günter Pumberger, Product Manager Digitalisation, EMCO GmbH

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