



Benzinger Gets High-Precision Machinery Ready for Industry 4.0

With Retrofitting, Benzinger Enables Convenient Remote Maintenance of Legacy Machines

BENZINGER
PRÄZISIONSMASCHINEN

IBHsoftec

German plant manufacturer Carl Benzinger GmbH was already relying on remote support via TeamViewer as an attractive service tool for remotely accessing its CNC lathes and milling machines, located at customers' sites around the world, to help identify issues and thus to quickly resolve customer inquiries. However, most of the legacy machines were not designed for Internet access when they were delivered. Therefore, when needed, an Internet connection was set up via an external notebook.

Today, using the IBH Link IoT module with integrated TeamViewer software, the company has the possibility to network and directly control 70 percent of its existing plants. This enables the machine builder to offer plant operators fast troubleshooting in the event of a malfunction with the highest possible availability - without the need to replace the equipment. The IBH Link IoT module with integrated TeamViewer software is installed in existing Benzinger machines through retrofitting, bringing machines from the last century safely onto the Internet. This prepares even legacy plants for Industry 4.0.

Initial Situation

Benzinger equipment is synonymous with customized, high-precision turning and milling machines "Made in Germany". While the roots of the traditional company lie in the jewelry and watchmaking industry – more than 100 years ago, company founder Carl Benzinger began building small machines and equipment for the jewelry companies located around the "gold city" of Pforzheim – the systems are now mainly being used in the industrial sector.

The company's high-precision machines are used to create small parts in fields such as medical technology, automotive supply, electrical, and fluid equipment. In addition to the production of customer-specific machine tools, customer service has become a competitive factor as the expectations for fast support are high. Remote maintenance via TeamViewer has enabled secure remote maintenance with a click.

Business Challenge

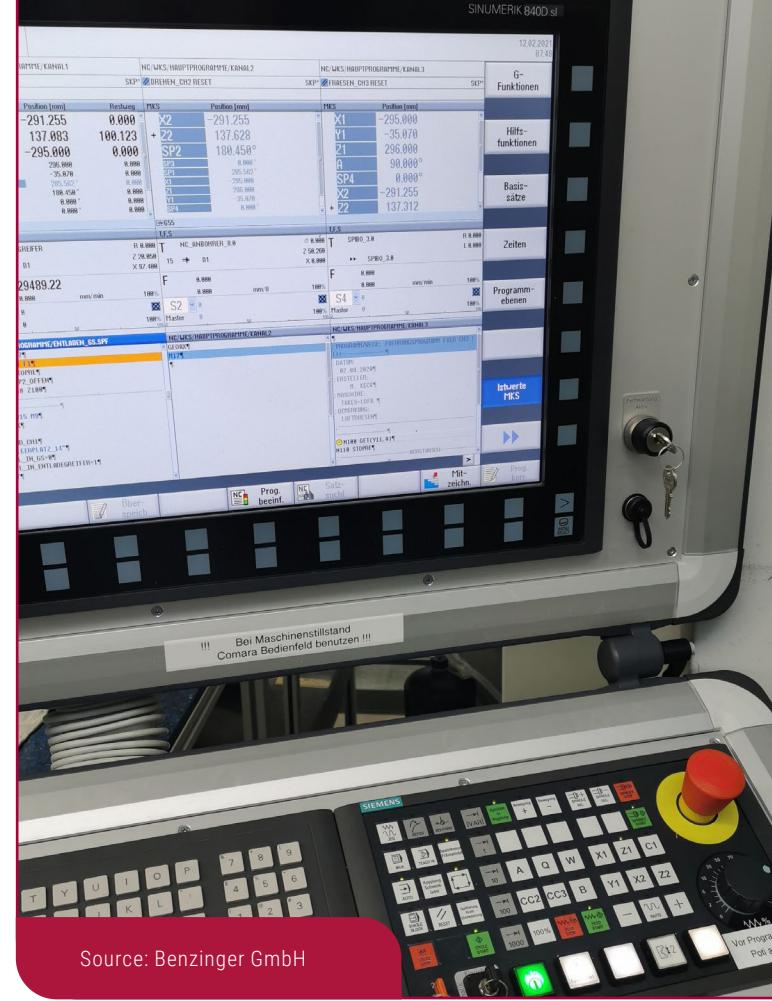
Benzinger's legacy machines, some of which date back to the 1990s, had so far been excluded from IoT capabilities - mostly because they tended to run on unsupported Windows operating systems and were not connected to the Internet for security reasons. "In a remote maintenance case for these machine series, a technician on site had to connect a laptop with the latest operating system to the system in order to start the remote maintenance session via TeamViewer," says Volker Utz, Head of Software Development, Electrical Design and Electrical Assembly at Benzinger. Typically, traveling to the problematic machine on the production floor required the most time, since the technician was not always on site. Since the legacy machines did not have their own Internet connection, any upgrades were made via a notebook PC.

In modern production, the demands are much higher than "just" the manufacturing of qualitatively flawless products. Rather, in the age of Industry 4.0, manufacturing companies are under increased, globalized competitive pressure. The dependable production of quality products at a given speed is thus often the decisive competitive factor. Benzinger was therefore driven to find a way of ensuring better service, higher machine availability, and greater productivity, even for its legacy installations. After all, the business of the medium-sized company is not only based on the development and sale of machines, but also on custom installation at the customer's site and customer support.

- ④ Legacy machines are not permanently connected to the Internet due to out-of-date legacy systems
- ④ Remote maintenance of these machines is only possible in a cumbersome and time-consuming way
- ④ In the event of a service call, global customers expect immediate support

"Combining TeamViewer IoT with the IBH Link IoT module enables us to provide secure remote support also for legacy machines simply by retrofitting. Rapid service and thus higher machine availability increase the satisfaction of our customers."

**Volker Utz, Head of Software Development,
Electrical Design and Electrical Assembly**



Solution

Today, Benzinger relies on the newly-developed gateway IBH Link IoT with pre-installed TeamViewer software to remotely maintain legacy machines. It is a compact gateway hooked up directly to a machine. In the context of retrofitting, this offers the possibility of accessing almost all Benzinger plants at any time and from anywhere. Complex modem solutions or the use of a PC on site are a thing of the past.

The gateway does not require a permanent connection to the Internet; instead, the connection is only activated for the duration of the remote maintenance session. Secure remote access is ensured by two mechanisms. First, the high security standards of the TeamViewer software, with fully encrypted data channels using an RSA Public/Private Key Exchange and 256-bit AES encryption. Every remote maintenance access is also logged in an audit-ready manner.

Second, there is control on the hardware side: to activate a remote maintenance session, a key switch is turned on. It is only then that the remote session can be started. This means that the connection for a remote maintenance session is only established from the inside out; no ports are permanently open. Online access is only possible when the system operator's employees actively initiate the remote maintenance session from the inside.

"Around 70 percent of the machines we have delivered so far have the potential to be retrofitted with the IBH module," says Volker Utz. Since technicians no longer have to use their notebooks to access the system in the event of a support call, Benzinger can significantly shorten the throughput times in the service department and thus increase customer satisfaction.

TeamViewer, integrated as a native app in the Smart Panel of the current machine series, is used several times a day for Benzinger's support requests at plants all over the world. It is used not only by service technicians, but also by the numerous specialists for the various machine types. They assist customers with problems when general support reaches its limits or when it comes to reconfiguring machines. Volker Utz: "We have also tried other solutions in the past. In the end, we always used TeamViewer because for us it is the best solution on the market. Today, TeamViewer is a standard."

It is not only Benzinger who benefits from cost and time savings in connection with detailed diagnosis and analysis.

For customers, virtual support goes hand in hand with higher machine availability and reduced communication effort, in addition to high usability and acceptance. "The application is very simple. An employee starts the app at the machine and gives the ID on the phone to our service technician." And that pays off in revenue for Benzinger: "Great service, which includes remote maintenance, sets us apart from the competition. This is an important sales argument for us," says Volker Utz.

And if remote maintenance via software is not sufficient, TeamViewer Assist AR comes into play. TeamViewer's augmented reality technology enables technicians to guide customers through repairs remotely via a video session, using smart glasses or a smartphone camera. It often eliminates the need for travel. "We use TeamViewer Assist AR when a telephone call is not sufficient for an assignment at the machine," says Steffen Krämer, project engineer at Benzinger. "The topic of remote maintenance is now more or less self-explanatory for our customers."

Results

- ⌚ Convenient and secure remote access to the controller and programming in legacy machines
- ⌚ Significantly reduced on-site visits; faster troubleshooting from anywhere at any time, without needing an on-site PC
- ⌚ Double access protection for industrial legacy systems: key switch on the machine complements the market-leading security functions of TeamViewer, including full data encryption. The connection is established only from the inside to the outside. Result: sensitive production and plant data is always safeguarded



Source: IBHsoftec GmbH

The IBH Link IoT module - which is installed by default in newly-delivered Benzinger machines together with the pre-installed TeamViewer software - enables easy access to controls and their configuration without needing an on-site PC. Direct remote access to the equipment creates the basis for sustainably improving overall equipment effectiveness, even for legacy machines.



About Carl Benzinger GmbH

Benzinger lathes and milling machines have been built in the Pforzheim area since 1916. As an owner-operated company, Carl Benzinger GmbH can react flexibly and quickly to the increasing demands of the markets and presents itself as a globally operating mechanical engineering company. The company offers turning and milling machines for the optics, precision engineering, medical, dental, electrical and control engineering, fluid and bearing technology, automotive supply, aerospace, and watch and jewelry industries, among others. It offers everything from a single source: from engineering, building and setting up machine tools for customer-specific workpieces, to after-sales service. Benzinger deliberately relies on Germany as a production location; all quality-determining components are developed and manufactured locally. Further information: www.benzinger.de/en

About IBHsoftec GmbH

IBHsoftec GmbH is engaged in the development, production and distribution of automation solutions for industry. The primary technology field of IBHsoftec GmbH is PLC technology, whereby the company has focused on PLC programming systems and SoftPLC solutions in recent years. Further information: www.ibhsoftec.com

About TeamViewer

As a leading global technology company, TeamViewer offers a secure remote connectivity platform to access, control, manage, monitor, and support any device – across platforms – from anywhere.

With more than 600,000 customers, TeamViewer is free for private, non-commercial use and has been installed on more than 2.5 billion devices. TeamViewer continuously innovates in the fields of Remote Connectivity, Augmented Reality, Internet of Things, and Digital Customer Engagement, enabling companies from all industries to digitally transform their business-critical processes through seamless connectivity.

Founded in 2005, and headquartered in Göppingen, Germany, TeamViewer is a publicly held company with approximately 1,400 global employees. TeamViewer AG (TMV) is listed at Frankfurt Stock Exchange and belongs to the MDAX.

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