

Unternehmen

BREMER AG

Standort

Paderborn, Nordrhein-Westfalen

SOFTWARE

Revit, Civil 3D, AutoCAD,**Navisworks, BIM 360**

"Industry 4.0. is the revolution in mechanical engineering. In the construction industry, this revolution is known as BIM."

– Christian Hammerl
IT Department Manager at
BREMER AG

A Three-Step Approach to Digital Transformation



Headquarters in Paderborn. The three phases of the digital transformation of BREMER AG were developed here. © BREMER AG

Summary

The building and construction industry is feeling the effects of change more than most. This strong and rather conventional economic sector is being digitized relatively late, but at an accelerated pace. The Paderborn-based construction company BREMER AG is amid the digital transformation process and has digitized parts of its value chain within just a few months.

From plan to production

The company operates as a general contractor that offers turnkey construction for well-known building owners, handling entire projects from the planning and construction phases through to handover. In addition, it produces most of the precast reinforced concrete elements it uses in its own manufacturing facilities, making it one of the leading German companies in the sector. Office buildings, furniture stores and cold stores are covered by the range of services offered, as are large halls used for production and logistics.

BREMER is aiming to completely digitize itself within a few years' timeframe, relying on innovative technologies and re-evaluating its processes. After all, even processes that have stood the test of time for decades have to meet the increasingly demanding requirements of digitization.

Christian Hammerl explains: "BREMER is very adaptable and is conducting its digital transformation with the same motivation and commitment that we dedicate to our customers."

The three phases of digital transformation

BREMER AG is digitizing its divisions over a period of two to three years in three phases:

1. Implementation of a common data environment (CDE) and communication
2. Data evaluation and site management
3. Model coordination and collaboration

Currently in Phase 1, BREMER is converting its systems to digitized communication "while preventing any hiccups," as Hammerl puts it. For this purpose, a common data environment (CDE) has been created and BIM 360 Docs has been made available to 1,000 employees. This is improving communication between different trades. For example, it is now no longer necessary to write an email with a written reference to a specific error; instead, a process that is guided by the task can be started in the system, in way that is transparent and less prone to errors. This reduces planning errors and, as a result, also reduces costs because potential conflicts are identified early in the process.

Central data management forms the basic framework upon which Phase 2 is built. Data evaluation and site management are digitized and synchronized with each other, so that a CDE can deliver its full potential. This is particularly challenging due to that fact that, even today, construction sites make do with low bandwidth or poor internet connections. The ability to work offline in some areas on the construction site, e.g. using Autodesk apps, is essential in this regard.

Phase 3 focuses on the core issues of Building Information Modeling (BIM), namely the introduction of the single source of truth and the construction of an intelligent 3D model, i.e. the BIM model, as well as the use of the information it contains to cope with required BIM applications—not only for BREMER itself, but also for its customers. This is because the use of BIM increases transparency for all project participants, since 3D model elements provide additional information and therefore reduce the room for interpretation by each individual. As a result, the 3D model and 2D plans will no longer be misunderstood, because the interpretation of the BIM model does not take place in the minds of those looking at it but is instead, are performed by the computer.

Why digitize at all?

"The demands on the IT infrastructure of companies have risen sharply as part of the digitization of the construction



Showing instead of telling: the final result is already visible in the planning phase via VR. © BREMER AG

"BREMER envisions itself moving away from being a construction company to becoming a technology company."

– Michael Dufhues
Board Member at
BREMER AG

industry, which is why isolated solutions, most of which have developed over time, must be superseded and merged into a comprehensive CDE solution using a holistic IT concept. This is the only way we can meet the company's digitization goals and the customers' expectations," describes Christian Hammerl. The use of Autodesk Construction Cloud (incl. BIM 360) is part of the BREMER CDE solution and is helping to break down the data silos that exist in many trades. In this way, all data—from the exchange of plans and recording of defects through to site diaries—are stored and processed centrally.

Today, everyone works in a collaborative environment and innovative technologies are helping to reduce the workload of employees—by automating everyday administrative tasks, for instance. According to Hammerl, project participants will also benefit from version comparison in BIM 360, which allows changes in planning to be understood better and more quickly. This is already making communication across almost ten locations in Germany and Poland more transparent and understandable. Integrated browser-enabled viewers within the CDE, such as the BIM 360 viewer, allow for easy exchange between planning departments and the respective construction sites—and even on mobile devices using apps.

3D models on smartphone and construction site

For Hammerl, one thing is clear: digitization is not the decisive driver of growth, at least not yet. "If we want to maintain our quality and flexibility and keep our growth at the same high level, we have to be ahead of the game," he explains.

In the near future, building owners will be able to walk through their hall virtually as early as the planning phase, and difficult issues will be discussed on the model directly, thereby avoiding mistakes early on.

Project participants are assigned different access rights to the 3D models depending on the task. For Christian Hammerl, who taught himself programming for his job, this is particularly practical since the platform can also be integrated into other systems and work steps can be automated, thanks to the open application programming interface (API), i.e. the interface to the web service.

Finding solutions together

Regular meetings with Autodesk are helping with the continuous development of the program, while also providing key insights needed to adapt Autodesk's software for the German construction market. Hammerl advises tackling digital transformation on an equal footing with a technology partner. With Autodesk, BREMER has the support of a team that is dedicated to finding solutions together—even complex requests are motivating those involved to find out what can be achieved.

BREMER's digital transformation

In addition to the three phases of digital transformation, Hammerl cites factors that help digitization to go quickly and smoothly: the backing of management, training for employees, and equipping workstations with appropriate software and hardware. Here, too, Christian Hammerl has meticulously prepared templates, videos, and training sessions that correspond to the three phases of digital transformation. BREMER's own academy held training sessions on the

basic functionalities and taught new workflows. At the same time, all workstations were equipped with the Architecture, Engineering & Construction (AEC) Collection. "The sooner our employees start working with the new methods and celebrating successes, the better," Hammerl says. With this approach, BREMER has brought together several hundred project participants—internal and external—on a CDE within a short period of time and has since recorded steady growth in the number of users.

The new standard

One of the most important things in the process is that everyone understands why they are using new digital processes. Instead of just talking about the benefits, Hammerl advises using the new methods together. This allows questions to be answered directly and benefits to be pointed out. Employees see that their processes now work more easily and department heads are pleased with the economic benefits—so there is an automatic increase in motivation. Today, digital processes are the standard that is demanded not just by younger employees. BREMER is also noticing this in job applications, Hammerl is pleased to say: "The best students certainly have us on their radar."

The company

BREMER AG is a German construction company and general planner. The company, which was founded in 1947, builds turnkey projects with prefabricated reinforced concrete elements that it produces itself. BREMER has plants at its headquarters in Paderborn and in Leipzig, with additional company locations in Germany and Poland.