

Customer Spotlight: WPF Migration by fecher

20 Years of Engineering Expertise Brought to the Browser in Three Months

fecher transforms the KEB-DRIVE WPF application into a Blazor Server web application

For decades, KEB-DRIVE served as the central tool for configuring motors and gearboxes. The custom application originated in Visual Basic for Applications and had evolved over more than 20 years. As part of the KEB Group, KEB Antriebstechnik continuously expanded and modernized the solution, eventually moving it to a WPF front end. Building on this foundation, KEB decided to evolve the application into a web-based solution to further improve access and availability. A migration project with fecher made this critical next step possible. The application modernization specialist moved the desktop application to a Blazor Server architecture, quickly transforming it into a browser-based online configurator for motors and gearboxes. In just three months, a long-established on-premises solution became a future-ready web application that fully preserves the existing functionality, makes access significantly easier, and safeguards the engineering expertise accumulated over decades.

The KEB Group develops and manufactures drive and automation technology for a wide range of industries worldwide. Its products are used in applications ranging from stage technology, intralogistics, and elevators to wind turbines, plastics machinery, and recycling equipment—each with its own specific requirements. At its facility in



Within the KEB Group, KEB Antriebstechnik GmbH is the center of expertise for gearmotors and servo gearmotors. The company has been manufacturing for the global market in Schneeberg, Germany, since 1993.

Schneeberg, Germany, KEB manufactures motors and gearboxes with a wide range of options for different applications, including theater technology and the food industry.

"A drive system used in a theater should, of course, have particularly quiet brakes," explains Torben Kuhnke, the IT project manager responsible for the initiative at KEB. "In other applications, requirements such as protection against water or explosion hazards under ATEX are critical. KEB-DRIVE helps us represent this diversity in a structured and consistent way."

KEB-DRIVE plays a central role in meeting these varied requirements. The software is used by KEB's internal sales team, field sales representatives, and many long-standing customers. Users configure custom motor and gearbox solutions through a system that contains not only product data, but also extensive engineering expertise in the form of rules, dependencies, and project-specific requirements.



*Torben Kuhnke,
IT Project Manager at KEB*

From CD-ROM to Web Configurator

The history of KEB-DRIVE dates back to the turn of the millennium. Initially created as an Excel application and later developed in Visual Basic for Applications (VBA), the software was designed from the outset to make the enormous range of motor and gearbox variants manageable for customers and sales representatives. "It is a long-established application that is central to our Schneeberg location," says Kuhnke.

The application was originally distributed on CDs and later made available as a download, but this desktop-based deployment model increasingly became an obstacle. "We had recognized for some time that evolving the application into a web solution was the logical next step to further improve access and availability," Kuhnke explains. Downloads, installations, and updates were increasingly seen as cumbersome. Stricter cybersecurity policies at both customer organizations and KEB itself also made it more difficult to use locally installed software. "At the same time, the lack of a web solution presented considerable potential to further improve the application for all user groups," Kuhnke adds.

Preserving Decades of Business Logic

The need for modernization was clear, but the greatest challenge was preserving the highly complex business logic that had evolved over decades. "A great deal of engineering expertise is embedded in this software," Kuhnke explains. "The complexity lies less in the volume of source code than in the many possible combinations and the domain expertise and understanding of interdependencies that have developed over the years. Preserving that knowledge was essential to us."

Over more than two decades, extensive engineering expertise had been incorporated into the application logic. This accumulated logic was precisely what made the modernization so demanding: none of it could be lost.

A complete redevelopment was quickly ruled out. "Our priority was to preserve this established domain logic in full while creating a future-ready technological foundation for continued development," says Kuhnke. The risk of losing important functions developed for specific customers,

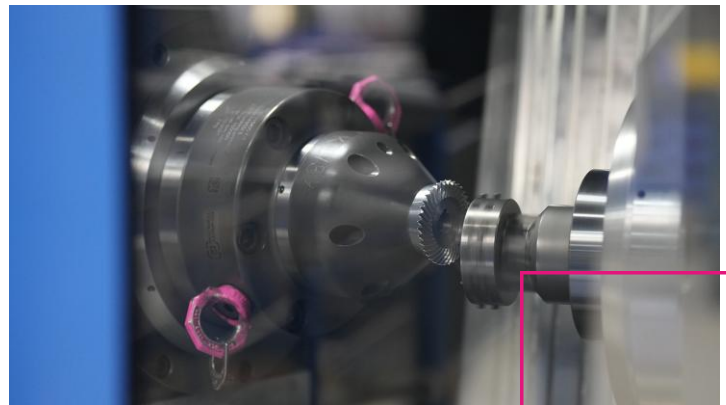
industries, and applications—as well as calculations refined over many years—was simply too high. The objective was therefore clear: to move the entire business logic to a modern platform. “Our goal was to bring the software and the knowledge it contains to the web, stabilize the current state, and continue developing it in a focused way on that basis,” Kuhnke emphasizes.

Transformation Rather Than Redevelopment

While searching for a suitable partner, KEB identified IT service provider fecher and chose a migration approach rather than a complete redevelopment. “For us, continuing to develop the application as a web solution was the best option, particularly because most of the legacy source code could be retained,” Kuhnke explains.

Together, the teams defined a modern .NET architecture with C# and Blazor Server as the target. “Close collaboration between our departments and the external service provider was essential, as was a shared understanding of the application’s requirements,” Kuhnke adds. SQLite was retained as the database for the time being. “The fact that fecher could handle the migration of the WPF application to the web as a turnkey service, using proven automation tools and established methodologies, was a strong argument for working together on the project.”

Following the detailed assessment, fecher estimated a surprisingly short project duration of just two to three months. “The short project timeline proved realistic over the course of the project and confirmed the efficiency of the chosen approach,” says Kuhnke. After a confidentiality agreement had been signed to protect the company’s trade secrets, the project began in late November 2025 with a code freeze.



KEB maintains a high degree of vertical integration in the production of motors and gearboxes.

Agile, Transparent, and Fast Implementation

Weekly meetings allowed the project team to review progress and coordinate the next steps on an ongoing basis. “The existing codebase was enhanced very efficiently and quickly transferred to the new target technology,” Kuhnke reports. In the next step, the modernization specialists turned it into a Blazor Server web application. This technology was strategically important to KEB because it offers long-term support from Microsoft and provides a reliable foundation for continued development. The teams also implemented several adjustments together, including the integration of KEB’s corporate design and, following a recommendation from the migration team, an optimized vertical menu structure to improve usability.

From a technical perspective, fecher implemented this fundamental shift using its own migration tools and targeted AI support to transform the established architecture of the WPF desktop application for Blazor Server. The project involved more than simply transferring the existing application. Its architecture was fundamentally rebuilt. In the original

application, the UI and business logic were tightly coupled and interacted directly. As part of the migration, the application was systematically restructured according to the Model-View-ViewModel pattern, creating a clear separation between the presentation layer and the underlying logic. The team also developed an entirely new authentication system that meets current web security standards.

Another technical challenge was integrating the application with KEB's SAP system, which is essential for internal sales employees. "The requirement to integrate the software into our existing SAP environment, particularly our manufacturing and sales processes, was addressed in a structured and focused manner. The application was integrated seamlessly into the existing system landscape," says Kuhnke. Even changes that became necessary in the legacy application after the code freeze could be incorporated without difficulty thanks to modern version control with Git.

Lessons Learned and Feedback

After approximately three months, KEB was able to begin internal testing. Despite the smooth implementation, Kuhnke identified an important lesson for future projects: "The project demonstrated the importance of defining a comprehensive testing strategy at an early stage and aligning it closely with resource planning."

Although the web application is still undergoing internal testing, the initial feedback from the sales team has been consistently positive. Users particularly appreciate that the application provides its full range of functionality from the outset. "The web version is immediately a complete replacement for the old desktop software, allowing us to avoid a lengthy transition period," Kuhnke emphasizes.

The next step will be the full rollout. KEB expects the transition to be self-explanatory for customers. Planned enhancements, including an integrated 3D model view, are intended to provide additional value and further increase user acceptance.

Future Outlook

"Above all, the new architecture creates the foundation for the application's continued development," Kuhnke summarizes. KEB is therefore not only technologically up to date again, but also well positioned to respond more flexibly to future market requirements and expand the application with additional features and digital services in a targeted way.

KEB has secured the resources required for this work well beyond the project itself. Following the ongoing knowledge-transfer workshops, fecher will continue to support the application's further development with its experience, methodological rigor, and technical expertise—helping ensure that the modernized application is not only maintained, but continues to evolve.

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