Full functionality in a browser-based app from the very first day

In an Application Modernization project for Asolvi's existing Field Service Management software Evatic, the VB6 based application is migrated to .NET and the cloud

At the time the company was founded in Trondheim, Norway more than three decades ago, it was called Evatic. The first product launched, a field service management (FSM) application for printer maintenance service providers, was named after the company. Over the years, Evatic expanded throughout Europe and made a series of acquisitions. To honor this growth, the company changed its name to Asolvi in 2018. It is now the market leader in the area of FSM software for a wide variety of industries. Managed Print is still the company's core business and the application developed back then - using Visual Basic 6 (VB6) – remains its best-selling product. In the 9-month Application Modernization project, the limitations of the outdated VB6 platform were basically eliminated and all the rich functionality accumulated over the decades were transferred to a C#.NET-based browser solution, with the entire range of functions available from the very first day.

From meter billing, field service task scheduling and handling support requests to inventory and invoicing: Evatic's functions provide printer maintenance service providers with everything they need for their service and consumable supplies business. "With its rich functionality and large customer base across Europe, Evatic is of strategic importance to both Asolvi and our customers", explains Arne Uppheim, Asolvi's Chief Product Officer. "Modernizing this VB6 application was of utmost importance, and we explored multiple approaches to achieve that goal".

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In addition to the mounting technical problems with the now officially discontinued Microsoft development environment, it was becoming increasingly difficult to attract developers to tackle this work. Above all, however, the choice of platform was having a negative impact on new customer business because the solution was clearly recognizable as having its origins in the 1990s. Uppheim sums up his position: "When I can no longer assure clients that my software will also be able to satisfy future requirements, it is time to switch platforms."

A future-proof platform

Planning for the platform change began in 2020. The project was to include a switch to the modern .NET framework using C#, the associated development language, a refresh of the user interface and, most importantly, the software should run using a web browser as this would avoid the need to laboriously install the software on individual workstations. This way, the move to a cloud business model would become possible in the medium term.

"We could have overcome the technical challenges on our own", explains Uppheim. "We have other already web- and cloud-based software products that we could have built on." However, it would have been a huge undertaking to replicate all of Evatic's very rich functionality in a more modern platform, and it would have had negative impact on other product development for a significant period. "The risks, costs and timelines involved were not attractive," states Uppheim.

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Therefore, the decision was made for a different approach: The basis for the modernization was to be the existing VB6 code, which was to be brought to .NET and at the same time to the web with full functionality by an external service provider. Uppheim recollects that "we found several appropriate providers in the market". After having reviewed various procedure models, they selected fecher, a specialist provider for Application Modernization located near Frankfurt, Germany. fecher had enough experience with similar projects and the feedback from contacted reference customers was exceptionally positive. Their technical approach to the conversion was also a plus: as far as possible, it would be carried out using commercially available automated tools, followed by fecher's own proprietary tools and a limited use of manual processing only when absolutely necessary.

More than ample proof is provided!

 "This project approach should result in a relatively short implementation period, and it promised the best return on investment out of all of the available alternatives. It was an additional plus for us that the guaranteed fixed price would also remove the economic risk from the project", explains Uppheim. Any final doubts were removed after fecher conducted a pilot project on a number of selected representative modules, which proved their proposed approach would also work with Asolvi's code. The joint migration project was then officially launched at the start of 2021.

At the mid-January kick-off, the newly founded project teams on both sides finalized last minute

arrangements and set up a mutual SharePoint platform to be jointly used for project communication. fecher then received the VB6 source code for the entire application. In the following weeks, the application modernizers were busy migrating the VB6 code to C#.NET and converting the application to web technology via the Wisej framework. The resulting first compilable version of the new software project then became available in May.

Simultaneously, four developers and support staff at Asolvi worked on re-enacting all of Evatic's key application scenarios, which were recorded as screen videos so they would later be understandable to fecher's testers. "In six weeks, we created about 100 videos, each of which was about five minutes long," explains Raphaël Aydin, Product Manager for Evatic. "We intentionally entrusted this task to employees who have many years of experience with the product and therefore knew which critical processes should be paid very close attention to during testing."

> ### *About Asolvi*
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> *Asolvi (www.asolvi.com) is the leading provider of service management software for small and medium-sized enterprises (SME) in the field service industry in Europe. More than 150 employees work in ten branches across the continent. The company was founded in 1991 and has grown both organically and through recent acquisitions to more than 1,600 clients in more than 35 countries. Asolvi's head office is in Trondheim, Norway. It is a privately held company owned by Volpi Capital, Viking Venture and the management of the company.*

Good cooperation is key

The fecher team did more than simply use the videos uploaded to SharePoint to verify the flawless functionality of the migrated web application. They also used the videos to further optimize the application's user friendliness. "We decided on making improvements to the user experience of new Evatic while maintaining strong familiarity with the old user interface," explains Aydin. "We'd like for the users to be able to continue working with the new software without re-training. The goal however was for a clearly recognizable modern look & feel." To achieve the latter, Asolvi's web designers provided fecher with detailed templates and specifications which fecher carefully implemented. "We actually did re-arrange fields and even rework screen masks for entire functional areas when we saw it would meaningfully improve the ease of operation."

These and other important decisions were made jointly, with SharePoint playing a key role as the collaboration platform: Starting in July, those functions marked by fecher as having completed testing were post-processed by the Asolvi team and either marked as definitively accepted or they were brought up for discussion in the regularly held project meetings. This also made it possible to uncover a problem with the drag and drop function in the planning module with which upcoming service calls were to be assigned to individual customer service employees. For this function, the Wisej framework that was used did not behave in the browser the same way that VB6 had previously behaved in the desktop software. In the end, fecher remedied the situation through the use of an additional framework component.

The paradigm shift from desktop to browser also made it necessary to develop new concepts in another area as well. As part of the migration, the entire document and output management system underwent a complete overhaul. "Following the preview of a generated invoice, which is obtained

       www.fecher.net

using ActiveReports Web Preview, instead of a printout, a PDF file is now transmitted to the client," Aydin reports.

Conclusion and outlook

"Through the use of these creative solutions, fecher was successfully able to map all of the application's functionality in a web browser," summarizes Aydin. Accordingly, the feedback was positive in September when the migration was completed on time and the application was ready for field testing with the first clients. "The users thought they'd be getting a limited-feature web version and were astounded that all of the features they knew from the desktop software were available in the web application from the very first day."

Migration project key data

- *Application solution: Evatic (FSM software for Managed Print service companies)*

- *Project type: VB6 to Wisej framework with C#.NET*

- *16 individual projects*

- *300,000 lines of code*

- *95 windows*

- *5,000 controls*

- *ActiveReports migration and update to the newest version 15*

- *Integration with Excel and Word.*

- *Gantt diagram (from a third-party manufacturer)*

- *Redesign UI with new navigation, theme and layout*

- *Duration: 9 months (mid-January to October 2021).*

"We have succeeded in giving a new spring to a mature, feature rich product."

With a browser application based on .NET and the Wisej framework, Aydin now considers his development team well-equipped to handle the future further development of Evatic. There is also the added benefit, he explains, that any user at a web-enabled workplace can use the new software without having to install anything. "Future customers will then also no longer need their own server and can use the software directly from the cloud."