

With guidance, empowered to self-help: Gupta applications migrated to .NET

Thanks to a cooperative in-house porting project by fecher, Lang Finanzsoftware's 25 year old Gupta application solutions have been made fit for decades to come.

Based in Freistadt, Upper Austria, Lang Software's core competencies have, for more than a quarter century, been in financial management and controlling, cash management, liquidity planning as well as securities and trading software. Its clients, primarily housing cooperatives, real estate companies and banks as well as private-sector companies throughout the entire German-speaking area, rely on CASH MANAGER and KREDIT MANAGER, two of the successful applications into which this expertise has been poured. Even though the software had been continuously improved over the last 25 years, it was based on Gupta Team Developer, an aging technology platform. CEO Michael Riesner and Software Developer Simon Voggeneder explain how they migrated their application to .NET using a cooperative in-house porting project by fecher, thus ensuring their software would be fit for decades to come.

What problems did you have with the old Gupta platform?

Riesner: I don't want to speak badly of our former platform; after all, it served us quite well for many years. It's like this: just imagine that I'm at a conference with a thousand software developers and I ask for a show of hands to indicate how many can program using Gupta Team Developer. Five or maybe six

would raise their hands. Were I, however, to ask how many can develop using C#, half of them, maybe more, would raise their hands. That was the determining factor for us: We want to be a more attractive employer for our developer team and to more easily attract and recruit new developers.



Lang Finanzsoftware's flagship product is KREDIT MANAGER

What porting options did you consider and how did you make the final decision?

Voggeneder: We've got a very solid foundation and have always been able to achieve a lot with our small team. We wanted to preserve that and bring it along to the new environment but without having to do a total rewrite. After our experience with implementing parts of the application via C# Bridge and their subsequent integration with the Gupta application, C# became our clear favorite compared to Java. And like nearly all of our clients, we are and have always been comfortable in a Microsoft-based universe.

Riesner: Bottom line, it was clear to us that we would want to bring in external support for this project. The one recommended name for this task that kept cropping up in the Gupta scene was fecher. When we spoke with developer colleagues and associates, everyone told us that fecher had the most expertise and the best tools.

We didn't, however, want to relinquish all control over the project. Although a turnkey Gupta porting project might be ideal for other clients, we quite deliberately selected fecher's "in-house" cooperative model. This meant that fecher would carry out only the underlying porting up to the compilable code and then guide us so we'd be able to implement the remaining steps ourselves. As our applications are quite complex, we wanted to be sure from the start that we really understood the ported code and we'd be able to build up the necessary expertise in-house.



*Michael Riesner,
CEO of Lang Finanzsoftware GmbH*

When and how did the project begin?

Riesner: After the initial contacts in October 2018, everything happened at a fast pace. We gave fecher the source code for our three commercial products: CASH MANAGER, KREDIT MANAGER and ASSET MANAGER. The first version of the ported code was delivered directly to us in January 2019.



*Simon Voggeneder, Software Developer
at Lang Finanzsoftware GmbH*

Voggeneder: This was when our work began. We started with KREDIT MANAGER, the application most important to us, spending the next six months testing everything and making the necessary adjustments. We wanted to finish as quickly as possible so we wouldn't have to use the old Gupta version in parallel any longer than absolutely necessary. If needed, we certainly would have but of course that wasn't what we intended.

In the end, how much actually had to be reworked?

Voggeneder: As agreed, fecher ported the software using its tools and worked on it until the resulting C# code was compilable without any errors. At that point, we could basically start the applications. It was now up to us to refine the user interface in areas where it wasn't able to transfer pixel perfect. It was mostly small things: adapting fonts, moving input fields, adjusting the size of buttons. Looked at individually, it wasn't that much work. However, as the software had more than a million lines of code, it took awhile until everything again looked the way it was supposed to look.

In fact, the only bigger problems we had were with a dialog in KREDIT MANAGER, which has a very complex structure. With overlapping fields that are displayed and hidden dynamically, integrated navbars and similar such elements, the application post-porting didn't look anything like it was supposed to. We were very happy then that fecher was actively supporting us with the finalization and that they had adapted the layout logic for us so that, for the most part, everything fit again.

Riesner: This dialog in our application is a veritable “jack of all trades”, the insides of which are incredibly complex. We have to admit that after we, together with fecher, were able to solve this, the application now functions better than before with regard to the ergonomics.

“fecher actively supported us with the finalization.”

The more than 200 evaluations, which we originally created using Gupta Report Builder, also needed some reworking. fecher proposed a number of reporting tools for .NET into which automated porting was possible. In the end, we selected Crystal Reports. The process was about the same as with the dialogs: In principle, the porting worked quite well and in places where for example the formatting didn't look the way it used to, we took care of the fine tuning ourselves during the finalization stage. This was naturally a lot of work but we deliberately selected the “in house” project type so we could finalize the applications ourselves the way we envisioned.

These various post-porting adjustments, in which there always was something somewhere that needed to be implemented or code that needed to be changed, were naturally the responsibility of our developer team. As to the enormous task of testing the software, both before and after, we allocated this work throughout the company. And so, everyone did their part and contributed: we tested the accuracy of results, verified the appearance of the dialogs and whether the text was legible.

How long did it take until the software was delivered to your clients and how did they respond?

Voggeneder: We finished all three applications in a little under six months. Once we were certain that the GUI worked perfectly, all reports worked and Quality Assurance also couldn't find any more errors, we began delivering to the first clients. That was in October 2019, only about ten months after the project began. What we immediately noticed was the improved database access performance; data loading is now often significantly faster. When, for example, we newly configure a client in the software, the entire database schema is created along with the installation. Now it only takes one tenth as long as it used to. That's impressive!

Riesner: All clients that have a maintenance agreement with us have received the application in its ported state at no charge. It's simply become the next software generation and users immediately noticed various advantages that the old Gupta version did not have. For example, thanks to the native .NET integration, the operation of Office products is much more user friendly, without the need for indirect routes with Excel spreadsheets.

Also significant is the improved design, which is now better looking and more modern. As our applications are heavily list and table oriented, they can't simply be depicted using a tile design. C#

and Visual Studio offer a variety of options and extensive configuration functions for a visually appealing presentation. And as there is a large selection of commercially available libraries, there is no need to start from scratch.

Does your Developer Team also benefit from the new C# version?

Voggeneder: Absolutely. Our development work is now much more developer-friendly and we have significantly better options, for example with debugging. As a result of the porting, the entire .NET world is now accessible to us with all of its program components, which were not really available before. We are now finally *state of the art* with our development environment: starting with what the code looks like to the question of in which forums we can discuss development and where to find developers. The .NET universe also has such things as NuGet packages, which contain all kinds of useful code fragments. This helps us greatly, as it makes it much simpler for us to implement projects in which we communicate with Web services. We now also have new options with regard to cryptographic topics.

And last, but not least, there is considerable added value as the applications are no longer the gigantic monoliths they once were. Our flagship application, KREDIT MANAGER, for example, was basically one huge file. In the course of the porting project, we divided everything into functional components, resulting in multiple individual classes and individual, relocated dialogs. There's a reduced risk of conflicts cropping up and we are able to more precisely trace the location of actual code changes.

As great as your enthusiasm is: In retrospect, what would you have done differently?

Riesner: In fact, we've already corrected one thing. After the client applications were successfully ported, we decided to also port Client Manager, our internal, internally-developed CRM system, naturally also with support from fecher. This wasn't our original intention. As the productivity gains, however, generate significant savings for us in its further development, we saw this project through completion at the turn of the year 2020/2021.

“Had we known what we know today, we would have done this much sooner.”

The cooperation with fecher has definitively proven its worth. From the very start, it was a close collaboration among equals. If we still had another Gupta application, we'd have fecher port it, as well.

Voggeneder: The only thing we'd certainly do differently: We would have started much sooner with porting our applications.

Riesner: I wholeheartedly agree.

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