people knowing software.

Case Study

CA-Telon Dismissal makes IBM Mainframe sustainable

> The cooperation with PKS was professional and constructive throughout the entire project. The project has worked well in many ways, a deal-breaker for us was PKS flexible tool and their way of meeting our needs, which in this case saved us both time and money.

Renée Ekström
Head of IT-Development - Mortages & Loans

The initial situation

Our client is one of the largest banks in Northern Europe with a nationwide network of branches in Sweden, Finland, Norway, Denmark and Great Britain as well as 38 branches and 4 representative offices in another 17 countries. For their lending and mortages core-banking business, CA-Telon, a Cobol code generator, has been used for many decades to develop applications on the IBM mainframe. CA-Telon was the first commercial program generator for commercial applications. The programs are designed with Telon and the development tool generates a source code in a conventional mainframe programming language from the design.

Since CA-Telon is no longer further developed by the current manufacturer Broadcom Inc. and our customer wanted to eliminate the dependency on CA-Telon from a commercial and knowledge point of view, they were looking for an alternative solution to expel CA-Telon in 2018. The goal was to transfer the core applications back to standard native mainframe Cobol so that a modern and current development environment such as IBM Developer for Z (IDz) could be used.

Complication and challenges

The Cobol code generated by CA-Telon is a machine-generated code, offering a certain comfort to the developer allowing very efficient software development. However, the generated Cobol code is not suitable for further development, it is not easy to maintain and interspersed with copybooks and standard routines. A solution had to be found that would enable the customer to reverse engineer the generated code into a maintainable scenario.

The pain points were obvious:

- Which procedure would enable the code to be transposed to a maintainable Cobol syntax?
- How to replace the convenient CA-Telon Screen Designer by IDz?
- How to minimize the test efforts by the end users and at the same time ensure that the resulting source code is 100% functionally identical to the generated code?

> Throughout the entire project it was a very constructive, respectful cooperation on a technically very high level. This ultimately contributed to the success of the project despite the distance and language barrier.

Peter Schmidt
Project Lead
PKS Software GmbH

The solution

The customer found an optimal partner for the development and implementation of the CA-Telon replacement strategy in PKS Software GmbH:

PKS has a fully automated process that makes it possible to convert the generated Cobol code into the desired maintainable target Cobol code based on customer-specific requirements. In a proof of concept with a reduced subset of the application the technical feasibility was proven. The results of this preliminary study and PKS's approach gave the customer the necessary trust and confidence to start the project with PKS. The project was divided in phases, starting with batch programs and ending with online programs. Subsets were converted step by step, tested by the customer and finally transferred to the production system. In total, 1.371 batch routines and 520 online programs were migrated.

The advantages for the customer

- With the PKS converter technology YYOP, a 100% automated transformation and re-engineering of the Cobol sources is achieved with very good maintainability of the target code.
- New employees understand the code very quickly and are now enabled to complete any maintenance and modification work quickly and without errors.
- The architecture of the system will be improved, thus minimizing the costs for future maintenance and further development of the applications. This is achieved by separating the application layer from the technology layer and encapsulating them in macros.
- The scope of the source code after all optimization measures is very manageable and could be reduced by 19% compared to the original CA-Telon generator. This reduction was possible based on code externalization, elimination of dead code and other optimizations.
- By provisioning of a Screen Designer, an Eclipse plugin, that completely replaces the CA-Telon Screen Design Tools, the maintainability of the online programs is near as comfortable as before.
- Thanks to code coverage tools, the cost- and time-intensive specialist testing required during application transformation was minimized.
- The maintenance costs for the CA-Telon tools are completely eliminated.

> At the beginning, none of us (PKS nor the customer) knew down to the last detail what was coming. But it was interesting and exciting to dive into the depths of Telon and find good solutions together with the customer. Through regular open communication and uncomplicated cooperation, all hurdles and challenges were successfully overcome.

Udo Heyn
Technical Lead
PKS Software GmbH