



- ✓ Minimize time, cost and risk of the migration process
- ✓ Preserve the functionality of the original system
- ✓ Improve usability and look-&-feel
- ✓ Enable smooth transition and easier maintenance of the application

migration made easy

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IN PRACTICE

SANTA CASA DA MISERICÓRDIA DE LISBOA

A challenging migration project

Santa Casa da Misericórdia de Lisboa (SCML) is a prominent Portuguese charity (established in 1498), which also runs state lottery games. It recently appointed ATX Technologies to migrate its COBOL and Oracle Forms legacy systems to a common architecture in Microsoft .NET. Reasons behind this included cost savings, platform standardisation and the need for an increase in development agility.

The source COBOL system consisted of six applications that had been continually developed since the early 1970s, including approximately 90 financial management software screens, 85 online programmes, 130 batch programmes, 185 VMS scripts and a data model based on sequential and 160 indexed files. 30 years of continual development had left a very heterogeneous system, following different coding patterns, styles and structures. The age of the system and its inherent technology also allowed bad coding practices such as using the same copybook to hold different data structures and using different copybooks to hold the same information, report data format errors and spaghetti code.

The project timeline was challenging: SCML required completion within six months in order to avoid emulator licence renewal

fees. The project was also undertaken in parallel with the Oracle Forms to .NET migration and the output was to be a consolidated system based on C# ASP.NET, using a single set of coding conventions, while maintaining the FMS screen layouts in order to avoid substantial retraining for end users.

ATX performed the migration following an internal process reference model, based on the Horseshoe Model from the Software Engineering Institute. The source code was reverse engineered into a language-independent model that focuses on architectural concerns. Customised code generators were then applied, resulting in the .NET solution.

The data model was migrated from sequential and indexed files to Microsoft SQL Server. This was carried out through automatic scanning and analysis of the source code and data persistence structure. After all data elements were captured, each was associated to a SQL table and/or report to build data definition language scripts for the final database schema. Additionally, a data layer library was automatically generated to isolate and handle all database accesses in order to separate them from the application. The resulting architecture was based on the MVC pattern, with ASP.NET pages on top of C# classes for controllers, batch processes, batch

logic and data access classes.

The project was executed by two teams: one for tool adaptation and one for migration. The first team completed their tasks within three weeks (three people working part time) and the second in 13 weeks (four people). A further ten weeks were required for testing. Batch migration took three months and data migration three weeks. SCML were involved primarily in confirming ATX's interpretation of ambiguous issues, such as validating obsolete code highlighted during analysis, and in performing acceptance tests to verify the functionality prior to deployment.

Santa Casa da Misericórdia de Lisboa

Industry: Financial services

Country: Portugal

Solution: Application migration

Partner: ATX Technologies

Technology: Cobol2Net, Forms2Net, Microsoft .NET, SQL Server

Benefits: Fast and safe migration, easier maintenance of new application, improved usability and look-and-feel for end users, lower total cost of ownership.