



Royal Bank of Scotland Mortgage Vision

Business/ Issue/ Opportunity

The Royal Bank of Scotland had been in the process of developing a new corporate application to support the sale of mortgage products across its branches throughout the UK. This application consisted of a front end from a third party, a middle layer written in house and a mainframe back-end. During testing of this application, a number of issues were identified which compromised the Bank's ability to deploy the application into a live environment. In order to identify the issues and produce a plan to resolve them an end-to-end architectural review was carried out involving all the parties in the original development and also including Microsoft and, working in an associate capacity, Pygmalion.

Working in this capacity Pygmalion assumed an architectural role, examining the application and identifying the areas where the most serious performance issues arose. A number of issues were resolved during this investigative phase but the recommendation at the end of the study was that the middle tier of the application would have to be re-written to provide the required level of reliability and scalability to allow a roll out to the RBS branches.

Solution

Having played a significant part in identifying the key issues with the application and in recommending the re-write of the middle tier components, Pygmalion were asked by RBS to take responsibility for the re-write project. This was initially composed of two teams – one to stabilise the existing application code to allow the application to be put into limited production and another to redevelop the middle tier components.

The main objectives of the project were:

- To rewrite the RBS COM layer to achieve a stable and scalable solution within Mortgage Vision for RBS group
- The developed software should be supportable and maintainable by Retail Application Development (RAD) staff.
- To rebuild confidence with customers regarding delivery capability

The success criteria of the project were defined as:

- The COM layer should scale for at least RBS plc volumes, with the target being full RBS Group volumes.
- Provide measurable improvement development path during life of Project
- Minimise development changes in other components of the end to end solution; primarily those from the third party providing the front end
- Any design changes must not compromise ability to roll out Mortgage vision to other parts of the RBS Group



Benefits

Overall, the Mortgage Vision application is designed to increase the Bank's effectiveness in the mortgage marketplace. This application allows RBS to be more efficient in providing mortgage quotations.

In working with Pygmalion to redevelop part of the application, RBS gained access to an organisation with a background in developing n-tier applications for an enterprise environment. This expertise was instrumental in ensuring the success of the project. Pygmalion worked with RBS across a number of areas including:

- Reviewing the technical design in line with RBS standards and the outlined success criteria
- Reviewing and recommending changes to the design
- Managing the technical risks
- Managing the project risks
- Helping manage any technology contentions
- Sign off project continuance against agreed incremental project criteria

In addition to this, the Pygmalion team consisted of experienced developers who not only developed a robust and scalable application, but undertook to transfer the skills necessary to support the application on an ongoing basis to Bank staff.

An important achievement within the rewrite was completely eliminating the need for any additional hand coding in order to make changes or enhancements to the middle-tier components. This was achieved through the use of a Code-Generator driven by XML business definitions and fronted by a spreadsheet. It allows the support team to respond very quickly to change requests without needing to understand the code or the internal high performance architecture. This is significantly improving the effectiveness of ongoing maintenance to the solution.

Technology

The solution for the rewrite was built on the NT4 Server platform utilising Microsoft's COM with Middle Tier components development in C++ using the Microsoft Active Template Library (ATL). In order to maximise performance the bulk of the functionality in the rewrite was incorporated into an out-of-process NT Service with a high performance/bespoke COM marshalling mechanism which provided cross process communication between the NT Service and the public Client COM DLLs designed to run in-process and preserve the original interface with the front-end to reduce the re-coding effort. Early completion of the bespoke Code Generator ensured that the code for the new middle tier components was highly consistent and bug free. It also ensured that all components were completed well within the schedules and reduced the length of the Testing and Stabilisation phase dramatically.