

South African ISV saves more than \$300,000 and three years of development time using the Visual Basic Upgrade Companion

Using ArtinSoft's powerful VB to .NET migration tool, MDA Property Systems was able to convert their complex, business critical application in-house, with a dedicated team of only three developers and without losing client confidence and market share.

Situation

Founded in 1989, MDA Property Systems is a specialist software system service provider to the real estate sector, delivering a premier property management software package for property owners, investors, managing agents and occupiers. Based in South Africa, MDA has become the acknowledged leader across the Southern African sub-continent, and is an emerging force in the Middle East.

MDA's fully integrated solutions improve efficiency, reduce risks and maximize financial performance, all delivered flexibly in an easy-to-use manner. Their flagship application, MDA Property Manager, constitutes the key ERP system to more than 1,800 licensed users across 250 companies. It is a comprehensive software package for rent collection, lease management, facilities management, integrated property accounting and asset management for property/real estate portfolios.

The MDA Property Manager software was originally rewritten in Visual Basic 4 from Microsoft DOS in the mid 1990's. Since then the application has continued to grow to more than 600,000 lines of code, encapsulating decades of property know-how into the appropriate technology.

Looking towards preserving their competitive advantage, MDA considered moving their Property Manager system to Microsoft's .NET framework. Besides taking full advantage of the benefits of a more modern platform, they were also aware of the fact that it was more attractive to offer development positions when working on newer technologies rather than legacy ones.

The existing application was using RDO to connect to a SQL Server database, and it employed third party controls for tabs, buttons, radio buttons and check boxes, as these had a better look

Customer Profile

Based in South Africa, MDA Property Systems provides software solutions to the real estate sector. Its MDA Property Manager application is a comprehensive package for rent collection, lease management, facilities management, integrated property accounting and asset management, employed by more than 1800 users across 250 companies.

Business situation

MDA Property Manager is an application of more than 600,000 LOC that encapsulates decades of business knowledge, using RDO to connect to a SQL Server database. MDA was looking towards modernizing this flagship software to leverage its value and preserve their competitive advantage.

Solution

After discarding a manual rewrite and the Upgrade Wizard, MDA settled for ArtinSoft's Visual Basic Upgrade Companion tool, with which RDO was transformed to ADO.NET, third party controls were converted to native .Net controls, Component One's True DB grid was upgraded to the latest version of that component, and coding standards that were common place when developing in Visual Basic 6.0 were also migrated to equivalents in VB.NET

Benefits

Using the Visual Basic Upgrade Companion allowed MDA to save on valuable resources. Total savings for this project were more than 3 years of development time and US\$300,000, and MDA is now ready to start taking advantage of compelling new features that will extend the technological life of its product.

and feel than their earlier Microsoft counterparts. Another key feature was the use of Component One True DB Grid's throughout the system.

Solution

In 2006 MDA began searching for the best way to move the application to a .NET code base. Much research was put into the different methods and tools that could be used, but because of the complexity of the legacy technologies used, none of the tools seemed like a good match.

The possibility of a manual rewrite was limited due to a team of only three developers at the time, as well as the risk of losing the embedded business knowledge or introducing new errors into a complex system. This strongly reinforced the need for an advanced automated migration solution.

MDA Property Systems found out about ArtinSoft and their Visual Basic Upgrade Companion from an external consultant, and shortly after making contact it became evident that a possible solution was at hand. Following the initial introductory meetings, simple test cases for the code that required changes were developed by MDA. ArtinSoft then ran this code through their Visual Basic Upgrade Companion and the results were passed back to MDA Property Systems for analysis and approval.

"We looked at different options, like a rewrite and the Upgrade Wizard. The UW couldn't cater for our needs, especially since we were going from RDO to ADO.NET; the Upgrade Wizard also couldn't handle RDO, WinControls, WinArrays. These features were offered through the customization and use of the Visual Basic Upgrade Companion. The fact that it went to ADO.NET, opposed to just ADO, was very significant to us. We wanted to use the newest technology instead of just being able to run Visual Basic 6 style code inside the .NET environment," said Rodger Beadle, MDA's Technical Director.

MDA had limited experience in Visual Basic .NET, so ArtinSoft proposed a customized solution to account for the technologies that were in use, providing guidance through all the possibilities of moving away from COM inter-op and developing classes that would have the same behavior. "I think the main thing also was the fact that ArtinSoft was willing to customize the tool, so that the Upgrade Companion could assist us in terms of getting where we needed to be," highlighted Beadle.

As a result, RDO was transformed to ADO .NET, third party controls were converted to native .NET controls, Component One's True DB grid was upgraded to the latest version of that component, and coding standards such as object (i.e. button / radio button / check box) control arrays, that were common-place when developing in Visual Basic 6.0, were also migrated to equivalents in VB .NET. These automated conversions significantly reduced the project risk and allowed the resulting system to take advantage of the new platform's features.

"When we found any difficulties we emailed the [ArtinSoft] team to see how to overcome these, even if it wasn't perfectly related to the Visual Basic Upgrade Companion, and all the questions were answered. The main difficulty that we found was just lack of experience in the Visual Studio environment and VB.NET, but along the way there were always solutions to make things work," added Beadle. "The barrier of distance was overcome with conference telephone calls, downloads and email communication. ArtinSoft is to be praised for their effective support during the whole process, working closely with MDA Property Systems to ensure that different conversion methods were producing the desired results".

Benefits

Using ArtinSoft's VB to .NET migration tool on this project allowed MDA to save on valuable resources. "I think it would have been about a five-year project for us, and possibly in the region of 500,000 US dollars. In the end, the total effort that was put into it was less than 2 years and \$200,000. So there was a big cost saving and a lot less risk involved," noted Rodger Beadle. "Using the Visual Basic Upgrade Companion represented an estimated saving for the project of about 3 years and US\$300,000".

MDA Property Manager was further developed beyond functional equivalence, adding new functionality for their customers. A major milestone was reached in September 2008, when MDA released the enhanced .NET version of the application from beta. This was the culmination of a process that started almost 3 years prior, and the system could once again claim to be state-of-the art from a technological perspective. Even though the result is not as dramatic in appearance as the conversion from DOS to Windows in the mid-1990s, it involved a conversion of every line of code. Much effort has also gone into ensuring compatibility with Microsoft Windows XP, Vista, 2000, 2003 and 2008. Likewise, for SQL Server 2000, 2005 and 2008.

"Beside the technological upgrade that a .NET version represents, several enhancements were also developed, including the ability to export financial reports directly to formatted Excel spreadsheets, a context sensitive text messaging tool for mobile phones, integration with MS Outlook's calendar, tasks and contacts, and bulk email of rent rolls and cash flow statements", stated Deon Keet, MDA's Director and Founder.

All the changes listed above were more easily done using the .NET framework rather than a VB6 work around. The upgrade to Visual Basic .NET enabled MDA Property Systems to start taking advantage of compelling new features and will extend the technological life of the product for another decade or two.

 [Listen to an extract of the interview with Rodger Beadle, MDA's Technical Director](#)