

## Case Study: Vertex ensures compliance and business continuity by upgrading its Omega application from VB to .NET

Vertex partnered with ArtinSoft to move its core Mortgage Application Processing Systems to a properly supported development platform, resulting in a smooth, cost-effective transition that preserved all the embedded business knowledge while replacing VB6 code patterns and practices with C#.

### Situation

Vertex is a leading global BPO and customer management outsourcing business, with head offices near Liverpool and over 9000 employees across the UK, USA, Canada and India. The company provides a range of transformational service solutions, including outsourcing, technology and consulting to stimulate and facilitate business change and flexibility.

For its mortgage division, Vertex has several flagship applications originally developed in Visual Basic 6.0 (with some Visual C++) to support day-to-day operations, and is currently developing new applications and web sites in the .NET environment.

Business continuity and compliance are key drivers to migrate from the VB6 platform. As a result, Vertex engaged in an ambitious plan to move all Mortgage Application Processing Systems developed in Visual Basic 6.0 to a properly supported development platform, in this case, Microsoft's .NET.

"The .NET platform was chosen for the migration because it offers very good backwards compatibility with the COM+ platform, and interfaces seamlessly with the existing GUI (ASP) and database layers", said Sue Craig, Senior Project Manager for Vertex.

One of Vertex's mission-critical applications is Omega, which is structured as a well-defined layered application of 616,000 lines of code, based upon an ASP

#### Customer Profile

Leading global BPO and customer management outsourcing business.

#### Business situation

In order to respond to market requirements and compliance regulations, Vertex engaged in an ambitious plan to move all Mortgage Application Processing systems developed in Visual Basic 6.0 to a properly supported development platform, in this case, Microsoft's .NET.

#### Solution

Vertex partnered with ArtinSoft to migrate the Omega application to C#.NET using a customized version of the Visual Basic Upgrade Companion. This allowed a quick, cost-effective transition to the new platform, automatically converting coding patterns and meeting its preferred standards, while accelerating the time to market of their migrated application.

#### Benefits

ArtinSoft was able to deliver a migration that met the high technical standards required by Vertex, and at the same time satisfy the management expectations in terms of process quality and timely delivery. The resulting code holds no dependency to any proprietary runtime and is fully readable and maintainable. Vertex will now be able to comply with international regulations and continue to evolve Omega in its mortgage operations, while taking full advantage of a more robust and functional development and production environment.

user interface with a database back-end and middle tier COM+ components that contain the business logic. Vertex was faced with the challenge of accelerating the time to market of the next release of Omega while rescuing valuable business logic.

Additionally, the staff works with manual and automatic testing using Compuware TestPartner, and practices a very strong testing procedure that includes different test cases depending on the customer. In fact, Vertex created a Quality Assurance (QA) team dedicated entirely to Omega, which would later play an essential role during the testing stages.

Such considerations led Vertex to perform a comprehensive market analysis to find a sufficiently experienced supplier that would allow them to smoothly upgrade to C# .NET, maintaining the current architecture of the application, but replacing VB6 code patterns and practices with C#.

## **Solution**

Vertex selected C# as the .NET target language (rather than e.g., Visual Basic .NET) mainly because it had already been used to develop new Omega .NET components. “During a proof of concept exercise, a thin slice through an existing Omega VB6 COM+ component was migrated to C#”, Sue Craig explained. “This was invaluable because it demonstrated the need to replace legacy technologies (ADO and MSXML) with their .NET equivalents (ADO. NET and System.Xml) in order to achieve comparable performance to VB6.”

Vertex decided to migrate the Omega application to C# using a customized version of the Visual Basic Upgrade Companion, a tool developed by ArtinSoft based on artificial intelligence technology. ArtinSoft was highly recommended by Microsoft UK, and the customization of this migration tool enabled Vertex to automatically convert coding patterns and meet its preferred standards.

One of the most important changes accomplished during the migration process was the creation of a C# library component that encapsulated all the shared code in the VB6 projects, greatly reducing the amount of duplicate code.

In addition to the traditional set of manual test cases required by ArtinSoft to validate the migrated application and its corresponding functional equivalence to the original system, Vertex also created a large number of automated test cases using Compuware TestPartner, resulting in an unprecedented level of accuracy, coverage and repeatability for the test phase.

Referring to this specific Vertex requirement, Sue Craig commented: “We provided ArtinSoft with an exhaustive and quite prescriptive set of manual and

automated tests from which to prove functional equivalence. The nature of automated tests scripts means that there is no tolerance in the results – they have to be right, or they can't be signed off. “

## **Benefits**

For a period of 9 months, a team of 12 consultants from both Vertex and ArtinSoft (including development and testing personnel) led the project to a successful conclusion. Adrian Stanley, Technical Consultant for Vertex, highlighted the supplier's technical ability: “ArtinSoft has shown very good technical skills in migrating code to the .NET platform, and has been very responsive in answering technical queries and meeting non-functional requirements”.

Through the customization of the Visual Basic Upgrade Companion, ArtinSoft was able to deliver a migration that met the high technical standards required by Vertex, and at the same time satisfied the management expectations in terms of productivity, process quality and timely delivery.

“ArtinSoft has been an excellent company to work with”, said Sue Craig. “They have been responsive to requests from Vertex to change their processes in order to accommodate the way in which we work. They have provided us with daily updates throughout the migration life cycle and have worked in partnership with Vertex to resolve any issues that have arisen in a pragmatic and expedient manner”.

Given that performance is a key point in the application, additional measures were taken to ensure maximum effectiveness during the testing stages. “ArtinSoft worked hard in partnership with us to resolve defects and arrive at a 100% positive result on their system test phase”, said Sue Craig. “Our subsequent user acceptance test phase threw up very few additional defects as a result, and these have been easily resolved. Performance testing is not yet complete but early indications are that the code is at least as performant as the pre-migration equivalent and in many cases, performance has improved”, she added.

Additionally, the resulting code holds no dependency to any proprietary runtime and is fully readable and maintainable. Vertex will now be able to comply with international regulations and continue to evolve Omega in its mortgage operations, while taking full advantage of a more robust and functional development and production environment.