

Porting from Delphi to C# .Net

A SIPTECH CASE STUDY

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0.1 Background

SIPTECH Solutions Limited (SSL), headquartered in Chennai, India has been providing ODC based IT services for Fortune 500 corporations over the last 10 years. SSL is a CMMi level 4 certified Company.

SSL's primary focus is on technology, with special skills on development, porting and migration involving platforms, technologies and systems and technology. SSL also undertakes business consulting in the areas of project management, applications assessment and application and product testing. SSL has the expertise over a wide range of Microsoft, Java, Database and Web based technologies.

SSL's domain focuses on Banking and Financial Services include payment processing and STP, payment consolidation, SWIFT value added services and Life insurance application maintenance. The Telecom domain focus areas include product life cycle management, handset applications development, TTCN3 based framework and solutions.

SSL follows a distributive shoring mechanism which utilizes off shore, on site and near shore delivery mechanisms in a flexible way, depending on the requirements of the engagement. It not only provides cost benefits but delivers optimum resource utilization, speed of response, closer control and lower risks.

SSL is a right sized organization that is highly responsive and agile. Its senior management is intensely involved and committed ensuring the client the best support 24x7. SSL is governed by a best practices model and has a highly dedicated, flexible and empowered team

SSL involved the process for Porting of Delphi application to C#.NET for Jeeves Enterprise product.

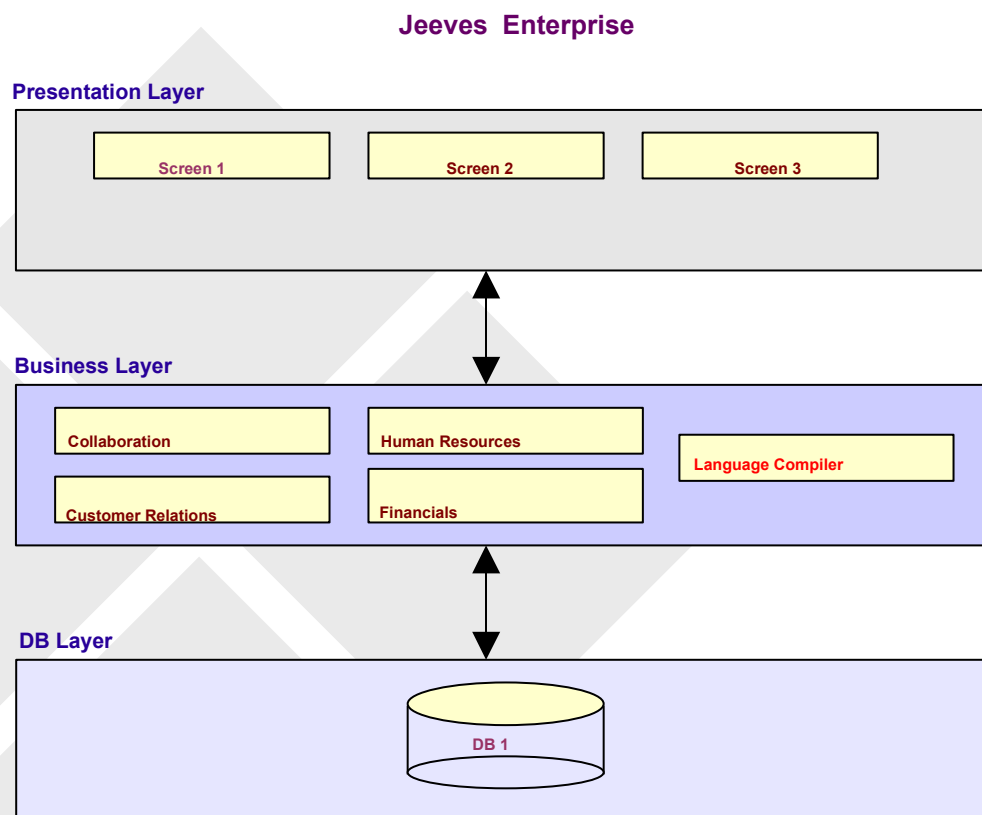
The Jeeves Information Systems AB group of companies develops ERP systems for companies within the manufacturing, trade, maintenance and service sectors. Jeeves concentrates on product development, while sales are channelled through partners and resellers. In total Jeeves has around 60 partners globally. Jeeves main products are Jeeves Enterprise and Garp, all in all installed at over 3000 companies in 35 countries.

Porting to .net Jeeves wants to evaluate the following factors :

- An environment more open to 3rd party products and components
- An environment where it's easier to find skilled staff and consultants for modifications and further development.
- A platform that appears more attractive and up to date.
- A platform that is "future safe".
- A conversion that can be implemented on minimum time
- A conversion that do not risk the quality of the product
- A maintainable product

Jeeves Enterprise product consists of the following layers :

- Client Layer (Presentation Layer)
- Server Layer (Business Layer)
- Database Layer (Data / Persistent Layer)



Project Scope

- Porting of Delphi Code in Business Layer (Kernel) of Jeeves ERP Product.

0.2 Problem / Challenges

- An environment where it's easier to find skilled staff and consultants for modifications and further development.
- A platform that is "future safe".
- An environment more open to 3rd party products and components.

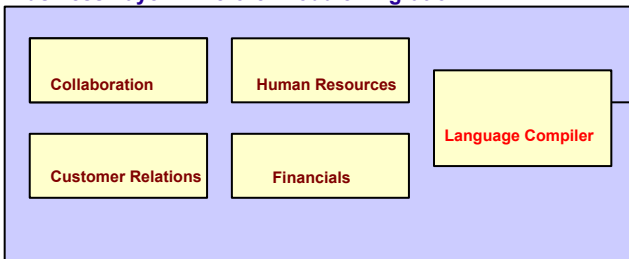
0.3 Method / Intervention / Solution

Porting Method

The following steps has performed in the porting.

- Break the application into independent modules.
- Creating a project file (DPR) for each module.
- Each module will go through the Porting Process.
- Integrate the converted module with existing Delphi base (through DLL option).
- Deploy the Delphi product with converted module in development environment.
- Functional and Integration Testing.

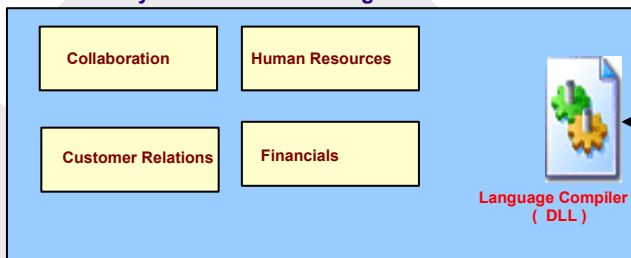
Business Layer - Before Module Migration



Porting Process will happen Module by Module



Business Layer - After Module Migrated to C# . Net



Porting Method

Porting Process

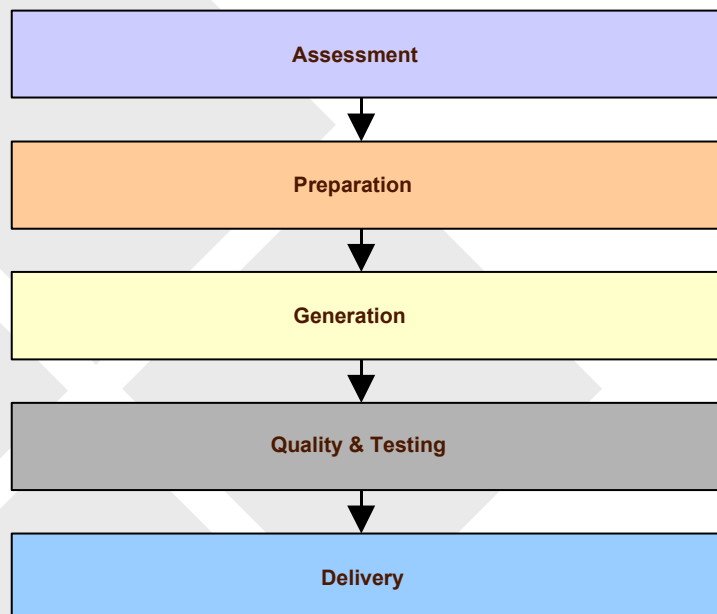
SIPTECH Solutions Limited (SSL) has selected the "Language Compiler" module in the business layer of the Jeeves ERP product for porting to .Net for the pilot project.

Overview

The Jeeves ERP has been developed in Delphi and supports various languages. In order to support multiple languages, Jeeves ERP uses a "Language Compiler" module in business layer for generating resource files for the main application, enabling it to support various languages. In the present form the 'Language Compiler' does not support Unicode encoding. This project is for development of 'Language Compiler' in C# with support for Unicode.

Technology

Programming languages	C#
Tools & IDE	Visual Studio 2000
Database	SQL 2000
Operating system	Windows XP
Hardware	X86 / Compatible



Porting Process

Assessment

In these phase, we create the project file (DPR) for the selected module in the business layer of the Delphi ERP system. we analyze the module functionality and record the existing potential issues found in the original source code. We look at each issues carefully and evaluate if it can be safely handled while porting the project. We analyze and finding out the supporting libraries, dependencies, resources during this phase for estimate the work and complete the project as per the schedule.

Preparation

In these phase we install and configure the project environment with the project space and supporting libraries, dependencies, resources for porting the entire module to .Net.

Generation

In these phase our development team will migarte the entire module with C# code based on the inputs collected in the assesment phase of the project. The outcome of this phase is a complete .Net solution of the module. Finally we create the Library file (DLL) from the entire converted .Net module and integrate it with the original Delphi Product for our testing phase.

Quality & Testing

In these phase, our testing team develop the testcases based on the client requirement document. Once the testcases are reviewed and approved by our senior test engineer, our testing team will execute the testcases and test all the features of the module based on the priority of the module. During the execution of testcases, the bugs are filed in our internal bugzilla with the detailed bug information with open state still it will be fixed by our development team.

Once the filed bugs are fixed by our development team, our testing team will execute the testcases again and retest all the features of the module based on the priority of the module, if there is no bugs then those filed bugs will be closed in bugzilla. Finally the testcase document, testcase execution summary report and bug reports will sent to the client for our quality assurance.

Delivery

In these phase, we deliver the original delphi product with the integartion of "DLL" of the migarted module in .Net to client, the testcase document, testcase execution summary report and bug reports will deliver to the client for our quality assurance.

0.4 Results Achieved

SSL has successfully achieved the porting of the selected Delphi module to .Net with the actual functionality of that module in the original Delphi ERP System. The Delphi ERP Product has worked fine with the migrated .Net module without any issues. The client has performed the UAT and accepted the product.

0.5 Lessons Learned / Conclusion

The project was well planned and executed with in planned time & effort with required quality.