



## Microsoft Visual Studio .NET Customer Solution Case Study



## Exam Management System converts from SAP to .NET and Aspire technology with huge cost and time savings.

### Overview

**Country or Region:** UK

**Industry:** Vocational Qualifications

#### Customer Profile

EDI is a leading international awarding body, providing vocational qualifications to more than 400,000 candidates in 125 countries worldwide.

#### Business Situation

EDI needed a cost-effective system to plan and track the exam management life cycle according to their specific business needs. The current SAP system was inflexible and had a high cost of ownership.

#### Solution

EDI implemented the "Campus" exam management system as an online web-based tool, successfully leveraging the power of .NET through Aspire technology by Ridgian.

#### Benefits

- Saves £1.4 million in SAP licensing and on-going consultancy
- Reduces .NET development costs by 50% using Aspire technology
- Greater integration with other strategic tools
- Provides flexibility to exactly model EDI's requirements
- Increases employee morale and customer satisfaction



*"We have the integrated scheduling and tracking system that we envisioned, and it is delivering phenomenal savings to us."*

*Stewart Jardine, Director of Operations, EDI*

EDI is constantly looking to improve its processes and gain a competitive edge to enhance its position as a market leader in the field of professional vocational qualifications. EDI was dissatisfied with its SAP-based examination management system on grounds of both flexibility and cost. Research and prototyping convinced EDI that it could rapidly implement the data-driven web-based solution it required via the .NET platform. However, project deadlines were extremely tight and EDI needed to find further efficiencies on its .NET implementation plan. Ridgian demonstrated that Aspire technology could be used to get Visual Basic 6 developers up and running on .NET technologies extremely quickly and provide a pre-built architectural platform for the new application to run on. This cut costs and development time dramatically by allowing the project team to concentrate on building business functionality from day one, and allowed EDI to turn its plans into reality within budget.



“With the old SAP system we found ourselves tailoring our business to suit our computer system, rather than the other way around”,

Alan Sayers, Head of IT, EDI

“We knew an Aspire centric solution would be flexible enough to include additional areas of our business as the project progressed, and to roll out to Education Centres worldwide.”

Alan Sayers, Head of IT, EDI

## Situation

EDI is a leading international awarding body, accredited in the UK by the Qualifications and Curriculum Authority. EDI provide vocational qualifications to more than 400,000 candidates in 125 countries worldwide. EDI's range of business-related qualifications is trusted and valued by employers worldwide and is recognised by universities and professional bodies. EDI is constantly looking to improve its processes and gain a competitive edge to enhance its position as a market leader in the field of professional qualifications.

EDI had anticipated that implementing SAP Enterprise Planning would improve productivity and integration of its business operations. However, EDI was confronted with costs of approximately £1 million for a SAP system, plus £400,000 to customise the software to approximate its own needs. Even after customisation, SAP did not deliver functionality to allow the business to be run in an optimal manner. Ancillary systems were required to plug the gaps left by SAP, and an unacceptable level of manual work persisted. “With the old SAP system we found ourselves tailoring our business to suit our computer system, rather than the other way around”, comments Alan Sayers, Head of IT at EDI.

Recognising this paradox, EDI set about designing a custom alternative to provide for its exact requirements. Research and prototyping confirmed that .NET provided a superb platform for rapid implementation of a strategic alternative to SAP; a data-driven web-based application. “We wanted to go with a solution based on technology that would take us to the next level in integration. We knew an Aspire centric solution would be flexible enough to include additional areas of our business as the project progressed, and to roll out to Education Centres worldwide,” explains Sayers.

EDI progressed with a plan to implement a fully functional system based on the prototype. A team of IT contractors were recruited to architect and deliver the solution from scratch. The phase 1 requirement was to build the system to the extent that it would service just one product (qualification) involving a single examination. The system would manage the process from candidate registration, to setting an examination, and finally issuing certificates.

The limitations of this approach became apparent after 3 months of development with no usable sections of the front-end application produced.

The reason for the lack of progress was that the developers quite rightly recognised the value of designing a solid architecture for the application. Areas such as error handling approach, data access layer design and user authentication mechanisms needed to be defined adequately before implementation of actual business functionality could proceed.

In common with many Microsoft consultants, the bulk of their experience was with Visual Basic 6, and they were still travelling on the learning curve of .NET. Therefore the architectural design and strategy suffered some false starts as the developers felt their way using the new technologies. They also opted for C# rather than Visual Basic .NET, despite their familiarity with Visual Basic. As is often the case, this decision was taken more for career enhancement than project necessity. C# tends to attract higher remuneration rates, although there is no difference between VB and C# code once it is compiled. Further, the development lacked co-ordination, as different consultants with different ideas pulled in different directions.

At the end of the 3 month period, the developers estimated a further 50 days effort before they could begin developing the actual

**“We were convinced that Ridgian’s Aspire technology offered the productivity gains we needed to bring the project in on time and within budget.”**

Alan Sayers, Head of IT, EDI

business functionality. The business functionality would then require an additional 200 days. This estimate did not square with EDI’s budget and desired timescales.

### **Solution**

EDI were still convinced that the decision to go with .NET had been the right one, and Ridgian were brought in to turn the situation around. “We were convinced that Ridgian’s Aspire technology offered the productivity gains we needed to bring the project in on time and within budget,” explains Sayers.

The Campus Examination Management system was indeed delivered on time. State-of-the-art Microsoft .Net technology was used to implement a web application which exactly modelled the client’s needs. The solution is scalable and extensible for roll out to further areas of the business with minimal incremental cost.

Delivery of the project was aided by a set of tools from Ridgian that allow the rapid development of browser-based database-driven solutions. Utilising established Microsoft .NET technologies, Ridgian have a mechanism for producing highly scalable and stable solutions in record time. This is largely achieved by an exercise of software configuration rather than the architecting of a new software development for each new project. “It is only necessary for us to use our high level .NET consultants to build the specific functionality required by EDI that falls outside of Aspire. This allows us to utilise our more readily available developers with experience of SQL and XSLT,” says Simon Betteridge, Ridgian Technical Director.

### **Aspire Productivity Library**

All Ridgian development is built on the Aspire Productivity Library (APL). This provides a

common infrastructure written using .NET and is suitable for any application. It includes functionality for data access, error handling, file system access and other commonly required utilities. Its purpose is to avoid “re-inventing the wheel” for every development, allowing developers to concentrate on functionality specific to the current business situation. It also guides good practice for developers new to .NET, minimising the risks when taking on a new development strategy and engineers the production of flexible, maintainable and scalable software.

### **Aspire Executive**

Efficient development of web-based applications is further enhanced by Ridgian’s Aspire Executive. Fundamentally, most Web applications do a similar job. They authenticate a user, allow that user to navigate the site, present information to that user, allow the user to enter information, validate what the user has entered and then save it to a database. Around 70% of any web development from scratch involves programming the infrastructure to allow this to happen. Only 30% of the work is specific to the particular application. In addition, that 70% involves the intensive .NET skills that are in high demand and come at a higher price, whilst the 30% involves more SQL and XSLT competencies that are second nature to most web developers.

Aspire Executive provides a configurable infrastructure for web site presentation, navigation, data entry and validation, authentication and security. It also allows easy integration of other Microsoft tools such as SQL Server Reporting Services and Aspire Reporting technology. Its purpose is to free developers from the grind of developing a web site, and allow them to focus on implementing the business requirements. Developers can design the interface, connect pages together, and link to databases simply by writing XSLT and SQL. More complex areas

“It is only necessary for us to use our high level .NET consultants to build the specific functionality required by EDI that falls outside of Aspire. This allows us to utilise our more readily available developers with experience of SQL and XSLT,”

Simon Betteridge, Technical Director, Ridgian

of business functionality can still be implemented using .NET, via custom plug-ins to Aspire Executive. Here developers can bring their business knowledge to bear and also further develop their .NET skills, but not at the expense of budgets and timescales.

### Benefits

The Campus examination management solution is helping EDI reduce costs and increase productivity. “We have the integrated scheduling and tracking system that we envisioned, and it is delivering phenomenal savings to us,” says Stewart Jardine, Head of Operations, EDI.

### Saves £1.4 Million in SAP Licensing and on-going Consultancy

The new .NET application will eventually lead to complete elimination of a costly SAP implementation and allow the business to grow efficiently. SAP licensing costs EDI £1 million. Consultancy costs are also high, with over £400,000 quoted to customise the SAP implementation to EDI’s needs. Even then, there were many problems and significant areas across the business where SAP could not provide the necessary functionality.

### Reduces .NET Development Costs

Prior to the introduction of Aspire technology, estimates stood at 50 days to complete the application architecture, plus 200 days to implement the business functionality. Ridgian cut the total estimate to complete the project by 50%. The 50 days remaining work on the application architecture was eliminated, and the time to develop the business functionality was reduced from 200 days to 125. On going savings are anticipated as the project grows to encompass further areas of the business.

### Greater Integration With Other Strategic Tools

EDI employs a number of 3<sup>rd</sup> party tools to deal with specific areas of its business, for

example accountancy and CRM packages. The open architecture provided by .NET allows for integration with these systems on a level that was simply not possible using SAP.

### Flexibility

The .NET approach provides for a custom solution that can exactly model EDI’s requirements, whilst keeping development costs manageable. EDI discovered that the complexity of its requirements could not be accommodated by an off the shelf package such as SAP, even after heavy customisation of the product. It is common sense that a computer system must facilitate efficient growth of an organization, not hamper it.

### Increases Morale and Customer Satisfaction

Increased automation and integration has provided a reduction in repetitive manual processing. This has provided a welcome boost to employee morale, following disillusionment with the SAP system. Staff can now focus on carrying out analysis of the information and making important business decisions - more rewarding for them and adding more value to the business. Lastly, and most importantly, customers are seeing increased efficiencies in the examination management process, reaffirming their choice of EDI as a market leader in providing vocational qualifications.

## For More Information

For more information about Ridgian products or services, call Ridgian on 0121 233 7200. To access information via the World Wide Web, go to:  
[www.ridgian.co.uk](http://www.ridgian.co.uk)

For more information about Microsoft products or services, call the Microsoft UK contact centre on 0870 60 10 100. To access information via the World Wide Web, go to:  
[www.microsoft.com/uk](http://www.microsoft.com/uk)

For more information about EDI products and services, visit the Web site at:  
[www.ediplc.co.uk](http://www.ediplc.co.uk)

## Architecture Synopsis

Campus is a Web-based solution built on the Microsoft .NET Framework and taking advantage of Windows Server system. Presentation, application logic, and database layers are separated to support scalability and growth.

The presentation layer delivers HTML pages generated server-side. The application tier provides business logic via .NET components written using Microsoft Visual Basic. The databases are Microsoft SQL Server 2000 and Oracle 10g. All servers run Microsoft Windows Server 2003.

## Microsoft Visual Studio .NET

The Microsoft .NET Framework is an integral Windows component for building and running the next generation of applications and Web services.  
[msdn.microsoft.com/netframework](http://msdn.microsoft.com/netframework)

Microsoft Visual Studio .NET is the rapid application development (RAD) tool for building next-generation Web applications and Web services. Visual Studio .NET empowers developers to rapidly design broad-reach Web applications for any device and any platform.  
[msdn.microsoft.com/vstudio](http://msdn.microsoft.com/vstudio)

Acquire Visual Studio .NET:  
[msdn.microsoft.com/vstudio/howtobuy](http://msdn.microsoft.com/vstudio/howtobuy)

MSDN Subscriptions:  
[msdn.microsoft.com/subscriptions](http://msdn.microsoft.com/subscriptions)

## Software and Services

- Microsoft Visual Studio .NET 2003
- Microsoft Windows Server System
  - Microsoft Windows Server 2003 Enterprise Edition
  - Microsoft SQL Server 2000
- Technologies
  - Internet Information Services
  - Microsoft .NET Framework
  - Microsoft ADO.NET
  - Ridgian Aspire Productivity Library
  - Ridgian Aspire Executive

© 2005 Ridgian. All rights reserved.  
This case study is for informational purposes only. RIDGIAN MAKES NO WARRANTIES, EXPRESS OR IMPLIED, IN THIS SUMMARY.

Microsoft, Visual Basic, Visual Studio, the Visual Studio logo, Windows, the Windows logo, Windows Server, and Windows Server System are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. ASPIRE is a trademark owned by Ridgian. All other trademarks are property of their respective owners.