

# Fidelity Information Services Creates Leading-Edge Loan Origination Platform

Avanade Expertise and Tools Reduce Development Time, Build Versatile Product for the “Top 25” Market

Fidelity Information Services (FIS) improved its Borland Delphi-based loan origination platform when it partnered with Avanade to redevelop the system using the Microsoft® .NET Framework. Developers can easily integrate new services and features into the product to meet changing customer needs.



**▲ COMPANY DESCRIPTION:** Fidelity Information Services provides IT consulting, information management solutions, and software applications to leading financial institutions in more than 50 countries and territories worldwide.

## ▶ SNAPSHOT

<b>Industry</b>	Finance	<b>Size</b>	40 full-time developers, 18 contractors.	<b>Avanade Assets</b>	ACA® .NET Avanade Development Architecture Asset
<b>Geography</b>	United States	<b>Solution Summary</b>	Avanade helped FIS migrate its Delphi-based Empower! application to the Microsoft .NET Framework		
<b>Partnerships</b>	Avanade				
<b>Technology</b>	Microsoft® .NET Framework Microsoft Visual C#® .NET 2003				
<b>Team</b>	15 from Avanade, 35 from customer				

## Customer Background

Fidelity Information Services

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Fidelity Information Services (FIS) provides integrated technology solutions and services to financial industry leaders worldwide. A division of Fidelity National Financial, the company draws on 40 years of experience in the banking, financial services, and outsourcing industries. Forty-six of the top 50 financial services organizations in the United States, and 35 of the top 50 financial services organizations in the world, rely on FIS financial software, information management, and IT consulting services.

## Business Challenge

Reinventing a successful product to meet a changing technology landscape

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FIS acquired Eastern Software Corporation in 2002. Renamed FNIS Empower, Eastern brought many valuable assets to the company, including its Empower! software solution. Empower! is a highly customizable loan origination software (LOS) platform that helps mortgage lenders streamline their business processes and increase efficiency. Banks, savings and loans, mortgage bankers, and subprime lenders use Empower! to accommodate every aspect of lending, from the point of sale through secondary marketing. With Empower! they can create software interfaces for services such as appraisal, tax, title, and compliance.

The Empower! 32-bit client/server application, released in 1998, was written using the Borland Delphi development environment and Turbo Pascal programming language. Empower! consists of core software and a set of development tools that businesses use to customize the suite to meet their needs. These proprietary tools were all written in Delphi and relied on script-based presentation and execution. They included form, workflow, and document design tools, as well as a proprietary scripting language to support them.

When FIS acquired Empower!, it was one of the leading client/server LOS products on the market. The company wanted to ensure that it would remain competitive in a changing technology landscape. "FNIS Empower had a good business model in place," says David Spies, SVP and Chief Software Architect for FIS. "What we felt we needed to reevaluate was the technology used to build the Empower! platform. It's been our experience that you have to upgrade your technology after a certain number of years in order to take advantage of features in the newer operating systems that an older development environment can't address."

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## New open standards provide more flexibility

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The proprietary nature of the Empower! development environment presented an obstacle to sales. In some cases, potential customers were hesitant to use the product because their developers had no previous experience with the Empower! Scripting Language. Once they learned it, there was no way to use that knowledge to add value to applications other than those created by FIS. In contrast, new open standards such as XML, Web services, and SOAP provide developers with a foundation for building more-flexible, scalable applications using a service-oriented architecture. With this architecture, customers can create a system whose resources are shared by means of loosely coupled, independent, reusable application services that do not depend on other components of the system in order to function.

## The Web connects a mobile workforce and lowers TCO

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FIS customers also wanted features that would enable them to access data and services using the Internet and their corporate intranets. An increasingly mobile workforce required anytime/anywhere connectivity to company systems from remote locations. A Web-based model would also help customers lower their total cost of ownership (TCO) by enabling IT departments to deploy new software to users through their Web browsers.

## Mainframe and midrange integration opens a pathway to the enterprise market

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FIS also wanted to develop a product that would help it penetrate a difficult market for software companies to enter: the top 25 mortgage lending companies and banks. These institutions rely heavily on legacy mainframe and AS/400-based applications written by their own internal developers, along with ancillary software programs using either the Java 2 Platform Enterprise Edition (J2EE) or the Microsoft® .NET Framework. These customers need applications that will easily integrate with their existing systems. A redeveloped version of Empower! would have to meet this need in order to appeal to this market segment.

FIS determined that its key requirements for the new system were:

- ➔ Increased market penetration
- ➔ Improved flexibility
- ➔ Lower TCO
- ➔ Increased efficiency
- ➔ Enterprisewide integration

## Microsoft .NET, a natural choice for Fidelity Information Solutions

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FIS considered both J2EE and the .NET Framework to redevelop Empower! “We decided not to move to Java because, even though we were using Delphi, we’re basically a Microsoft shop,” says Spies. “For instance, Delphi writes to the Microsoft Windows® XP operating system. Also, the original chief architect of Delphi is the author of the Microsoft Visual C#® .NET 2003 development tool and a major contributor to the .NET Framework, so the object model in Delphi is similar to Visual C# .NET 2003. Switching to Java would have meant a total paradigm shift for our developers.”

FIS was also attracted to the built-in security features of Microsoft .NET-connected software. Mortgage lending companies increasingly express the need for more secure applications that will help ensure the safety and integrity of their financial data. “We felt it was important to use a development framework that supports building security into the application itself, rather than just adding it on externally,” says Spies.

## Avanade provides an experienced .NET partner

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When FIS decided to redevelop Empower! using the .NET Framework, a senior FIS executive with experience at Microsoft recommended that the project team meet with consultants from Accenture. Accenture suggested to FIS that the best way to achieve its vision of an enterprise-grade .NET product was to enlist the help of the .NET experts at Avanade.

“The long-term goal of FIS was to establish a common development platform for all

### ▶ QUOTE

“Avanade is about bringing .NET into the enterprise. That was exactly what we wanted to do, and it showed us that it had the deep technical skills and experience to support us.”

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SVP and Chief Software Architect  
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30 of its divisions. We showed FIS how we would go about migrating its software companywide to take advantage of the latest Microsoft technologies,” says Bob Erickson, Senior Director at Avanade.

Spies says, “Truthfully, when I first started looking at what I wanted to do with our development environment, I didn’t think we needed a partner. I wasn’t looking for help with reengineering our business processes; I was looking for deep technologists. But when I met with Avanade, I came to understand what Avanade was all about, and I saw the value it could bring to our projects.

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## The Solution

### Empower! .NET

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Avanade worked closely with FIS to redevelop Empower! using the .NET Framework and Avanade development tools, while helping the company take better advantage of its existing investments in the Microsoft technology stack.

“During the first nine months to a year, we focused on establishing a robust, highly scalable architecture that would support the needs of the very large mortgage originators FIS does business with,” says Erickson. “Then we started building the Empower! platform from there.” The new version of Empower! retains the highly customizable nature of the “classic” product, enabling developers—whether at FIS or its customers’ in-house IT departments—to create custom screens, forms, documents, and reports. However, FIS and Avanade used the built-in functions available in .NET development tools to provide customers with many ready-made screens that they can use right out of the box.

FIS and Avanade also added new functionality to the product that customers had frequently requested. One of these is the Correspondent function, which serves a specialized segment of the loan-origination market. Correspondents are members of a network of banks that buy and sell loans to each other. By exposing many of the product’s business services through XML, SOAP, and Microsoft Web Services Enhancements within the .NET Framework, Empower! .NET can support enterprisewide data interchange between correspondents.

The user interface for the previous version of the product was limited to fat-client software installed on workstations. Empower! .NET provides customers with three client-side options:

- ➔ A Web-based client that offers anytime, anywhere access to Empower! .NET on the Internet
- ➔ A smart client, which provides a rich user interface, with the added advantage of “no touch” installation and offline functionality
- ➔ An enterprise services layer that enables data sharing and cross-platform integration using SOAP-based business services

The service generation architecture of Empower! .NET enables enterprise customers that rely on legacy mainframe and AS/400 server applications to develop their own services and add them to Empower! .NET. For example, if a customer needs to interact with its mainframe accounting system during the funding stage of lending, the company’s developers can easily define a component that interacts with the mainframe service. Then, using the FIS service generation framework, they can generate a service that can be linked to Empower! .NET or any other software that uses Web services.

Many mortgage lending customers of FIS have developed consumer-based Web sites or business-to-business Web sites that feature calculation and pricing modules. With the services in Empower! .NET, the lenders can plug in preset calculations, disclosures, and product and pricing information to provide consistent data across different channels of delivery. This helps prevent situations where a payment quote that’s calculated on a consumer-based Web site might produce a slightly different figure than a quote done on the main processing system.



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## Avanade Value

Knowledge sharing, tools, and a strong methodology build a capable .NET development group

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FIS reports that the Avanade technicians were a great asset to the Empower! .NET project. "In addition to their personal knowledge and expertise, they could draw on the resources of the entire Avanade community to answer questions quickly and overcome development challenges," says Spies.

### Enhancing productivity through ACA.NET and Microsoft's Enterprise Library

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Avanade also provided FIS with tools and assets that helped make its developers more productive. The Avanade Connected Architecture® for .NET (ACA® .NET) software tool contains many of the frameworks that need to be implemented in an enterprise-grade application.

Because developers do not have to create these components themselves, the development process becomes easier and more consistent. When the production version of Empower! .NET is released in March 2006, FIS customers will use ACA.NET to create their own customized components for the product.

"The components available in ACA.NET represented nearly 15,000 hours of development work that was already done for us," says Spies. "Add in the fact that those components have all been tested and used in production, and we're seeing a considerable savings in both time and money."

FIS plans to develop future versions of Empower! using the ACA.NET 4.0, which provides consistent design patterns and guidelines to help organizations establish consistency throughout their applications. ACA.NET includes core services based on application blocks from the Microsoft patterns & practices Enterprise Library for .NET Framework. Avanade collaborated with Microsoft to develop the vision for Enterprise Library and assisted with its architecture, design and development.

During the Empower! project, FIS provided Avanade and Microsoft with input that went toward the development of Enterprise Library. Spies says, "We're using several aspects of ACA.NET in our development environment now: address logging, credentials, services, and caching, plus the user interface process and applications update. If we can avoid writing that code, we can concentrate more on the business need at hand."

### Keeping pace with rapid technology changes

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"ACA.NET has helped us overcome one of the biggest challenges of this project: the lengthy development cycle," says Blake Dong, Director at Avanade. Service-oriented architecture is a fairly new standard and is still evolving. During the three years of development time for Empower! .NET, the project staff went through two generations of development tools. ACA.NET enabled them to adapt easily to changing technology using code generation. When developers incorporate new technology into their software with capabilities that weren't present in earlier versions, the code generator in ACA.NET recognizes those new capabilities and automatically generates the code to support them. This greatly reduces the amount of manual coding needed.

## ▶ QUOTE

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Avanade also helped FIS create an experienced, skilled, knowledgeable in-house staff of .NET developers. By adopting Avanade methodology, including an automated build process, thorough documentation, and a standardized environment, FIS can quickly provide a developer with the tools and knowledge needed for a specific .NET project, and train new developers in order to expand its organization.

"When we joined the FIS project group, it consisted of Delphi coders with no experience with NET technology," says Dong. "Now 75 percent of their developers know Visual C# .NET 2003, can develop software on the .NET Framework, and have a flexible skill set that enables them to rotate in and out of different development teams within the company. That was never possible before. Not only do we help our customers develop a product, we also help build a very confident, very capable, in-house .NET organization."

## Results

### Empower! .NET confirms FIS as a leader in loan origination technology

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When Empower! .NET reaches the market, it will fulfill the requirements FIS set out for its new platform in 1998:

- ⇒ Interoperability with legacy mainframe and midrange server applications makes Empower! .NET a strong enterprise-grade solution for the top 25 mortgage lending institutions.
- ⇒ Empower! .NET can serve a variety of different business needs by providing multiple client-side interfaces and many prebuilt, customizable forms, screens, and reports.
- ⇒ Empower! .NET helps increase developer productivity because it is based on a standardized (rather than proprietary) architecture and programming language.
- ⇒ The Empower! .NET service-oriented architecture, enabled by Microsoft .NET and ACA.NET, streamlines data exchange across the enterprise by exposing functions in the form of services and automated processes. In this way, Empower! .NET can provide a stable and efficient loan origination solution, and lower customers' total cost of ownership by reducing operational costs.

## About Avanade

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Avanade is the leading technology integrator specializing in the Microsoft enterprise platform. Our people help customers around the world maximize their IT investment and create comprehensive solutions that drive business results. For more information about our services, please visit: <http://www.avanade.com>.