



Insurer Meets Mission-Critical Needs and Saves \$2.7 Million Yearly with SQL Server

Overview

Country or Region: United States

Industry: Financial services—Insurance services

Customer Profile

Generali USA Life Reassurance Company is a subsidiary of Assicurazioni Generali S.p.A., one of the world's largest insurance companies. Generali USA provides reinsurance services.

Business Situation

Generali USA ran its mission-critical systems on an IBM mainframe. After 15 years, the system couldn't be updated, was difficult to use, and was becoming an impediment to business growth.

Solution

The company migrated applications and data to Microsoft SQL Server 2008 data management software running on the Windows Server 2008 operating system.

Benefits

- Annual total cost of ownership drops by U.S.\$2.7 million, 23 percent of IT expenses
- Greater choice puts company in control
- Democratization of data expected to boost revenues

"To stay competitive, we have to actually reduce costs while increasing the returns they generate. Moving our mission-critical systems from the mainframe to SQL Server is an important way for us to do this."

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Generali USA Life Reassurance Company

Generali USA Life Reassurance Company ran its mission-critical applications and data on an IBM OS/390 mainframe that was increasingly difficult to update, use, and rely on. The company evaluated several database options: DB2 on a contemporary mainframe, Linux, UNIX, and Windows; Oracle; and Microsoft SQL Server. All provided mission-critical reliability and scalability, but SQL Server provided the lowest total cost of ownership. Generali USA then rewrote its applications and migrated its data to SQL Server. The results: The company expects to save U.S.\$2.7 million a year; it now has both more choice and more control over mission-critical systems; and the democratization of data gives business users more and faster information for better risk analysis and pricing. The company envisions extending data access to its customers, helping to enhance customer relationships and increase revenues.



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Situation

Ask Tammy Kapeller if she’s willing to take big risks, and she’ll likely answer “yes.” Ask her a second time, and you’re liable to get a “no.”

No, Kapeller—the Senior Vice President for Technology and Administration at Generali USA Life Reassurance Company—isn’t indecisive. The risks that she’s willing to take—actually, the risks she’s happy to see her company take—drive the revenues for Generali USA, one of the leading reinsurance companies in the United States. The company sells insurance—covering life, accident, and health—to the companies that sell insurance to consumers and businesses. By covering some of their risk in the event of large payouts, Generali USA enables those other insurance companies to sell the policies that drive their own revenues. Think of Generali USA as the insurer’s insurer.

Kapeller is, however, discriminating in her affection for risk. For example, she’s risk averse regarding the technology infrastructure she oversees for her company. Until recently, that infrastructure was based largely on an IBM OS/390 mainframe running the DB2 database, Cognos reports, and applications written in Dephi, COBOL, and Java. A data warehouse ran IBM DB2 on the Linux operating system.

The mainframe, along with its applications, data, and related infrastructure, was mission critical to Generali USA. Actuarial analyses, sales quotes, policy contracts (called “treaties”), and more—about 10 applications in all—were hosted on it. “We are absolutely a data-driven business,” says Kapeller. “Understanding all of the information concerning the risks we reinsure is the way to respond rapidly to

the marketplace with new products and pricing.”

Unfortunately, the mainframe, which had been state-of-the-art when it was put into service at Generali USA 15 years before, was becoming outdated. The separate databases for the various applications forced people to rekey data whenever it was needed elsewhere, increasing the potential for manual error, putting data integrity at risk.

The data system had been hard-coded and extended with customizations over the years, which made architectural changes impractical if not impossible. Even minor changes, such as adding or changing fields, were increasingly beyond reach. “Business users would come to us for small changes, and we couldn’t implement them because we didn’t know what else in the system might break as a result,” says Kapeller.

Working with the various databases and applications was also a challenge for business users. The user interface was based on obsolete green-screen technology, which was difficult to navigate and unfamiliar to a generation of users reared on graphical interfaces. To get reports, business users had to solicit them from the IT department, and the requests sometimes took months to fulfill. Only a handful of business users, out of a population of 100, knew how to set up their own data cubes and run Cognos reports themselves—and those cubes and reports were indeed their own. “If one of these employees had gotten hit by a bus, we wouldn’t have known what they did to make their area work,” says Kapeller.

Technology options for the mainframe were increasingly limited, as well. New applications, third-party support and resources, even staffing, all became more

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difficult to find and afford as the mainframe-related market eroded.

“We needed an infrastructure that would support our business and help drive competitiveness—without driving up costs,” says Kapeller.

Solution

To achieve its new infrastructure, Generali USA first had to identify and evaluate its options. To help it do so, it engaged Celeritas, a member of the Microsoft Partner Network with multiple Gold competencies. “We chose Celeritas because they had expertise in large-scale system development, and because we felt they would give us an objective recommendation based on our needs, not on what they were trying to sell,” says Greg Clinton, Vice President for Information Technology at Generali USA Life Reassurance Company.

The company was looking for a solution that would give it feature and performance parity with its existing mainframe-based system, but with broader extensibility and at lower cost. Application support was important—and database support was even more so. “Our data—accessing it, maintaining it, and analyzing it—is mission critical, so we needed database technology that would provide a mission-critical level of support,” Clinton says.

The year was 2007, and Generali USA considered a thorough range of database options: DB2 on a current-generation mainframe (IBM z/OS), DB2 on various operating systems (Linux, UNIX, and Windows), Oracle (on Sun), and Microsoft SQL Server 2005 data management software (on the Windows Server 2003 operating system). The company’s evaluation was just as thorough, comparing the systems on accessibility, administration

and manageability, application support, availability, total cost of ownership (TCO), integrity, performance, relational capabilities, standards compliance, extensibility, scalability, and security.

Some people at Generali USA—particularly those in the IT department who would eventually manage the new system—were concerned about whether SQL Server could provide enterprise-level, mission-critical availability and scalability. The system’s production database would have to support 2.6 terabytes of data, and its analysis data mart would have to support another 1.6 terabytes. Throughput was also a concern; the system would have to support about 35 million transactions per month. In response, the company conducted benchmark tests that showed that SQL Server performed within the thresholds that Generali USA required—and so did the others.

“All of the systems we tested met our requirements,” says Clinton, “but Microsoft met our requirements and offered the lowest total cost of ownership.” For example, SQL Server included crucial capabilities—such as extract-transform-load processes, data analysis, and report writing—that would have required extra licenses with Oracle or the other choices. It also offered easy interoperability with the Microsoft Visual Studio 2010 development system that the company already used.

The company decided to adopt SQL Server and, during the development cycle, chose SQL Server 2008 Enterprise, which had just become available. It also adopted SQL Server Integration Services, SQL Server Analysis Services, and SQL Server Reporting Services, and it augmented the new data system with Microsoft .NET components, such as Windows Workflow Foundation and Windows Communication Foundation. To

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run its production and development environments, the company selected HP ProLiant DL360 and DL785 computers.

With the database decision made, Generali USA next had the typical mainframe-to-Windows migration questions to consider. Would it build or buy its applications? If the former, would it port its existing code or rewrite the applications? Solution provider Celeritas supported Generali USA in this phase of the project as well. Off-the-shelf software would not begin to support the customizations that the company required. Porting code would likely be faster than rewriting it, but would leave the company with the same dysfunctional software it was trying to leave behind on the mainframe. Rewriting the system—a multiyear project, given the size and complexity of the Generali USA software environment—was the company's best option.

Celeritas helped Generali USA identify the software development tools and processes that would be needed. The reinsurer's in-house developers had previously relied on COBOL, Delphi, and Java for development languages and platforms. Now, on recommendation from Celeritas, Generali USA adopted then-current Microsoft Visual Studio development tools, which it has since upgraded to Microsoft Visual Studio 2010 Ultimate. It also plans to adopt Microsoft Visual Studio Team Foundation Server 2010 with Lab Management capabilities, which it plans to adopt for testing as well as development. The Microsoft .NET Framework 3.5 code was written with Microsoft Visual C# and Microsoft ASP.NET. "We like Visual Studio because it's built on a solid, extensible platform," says Clinton. "We were also able to take advantage of the work done by the Microsoft patterns and practices group in the form of the Web Client Software Factory. It made it easy for us to set up

standards and to quickly implement additional models into the application."

Celeritas also helped Generali USA to replace its "waterfall" development approach—in which the solution is developed and deployed in large segments at infrequent intervals—with an "agile" approach, in which there are frequent, small iterations to which test users can provide feedback to help shape continuing development. The agile approach also nicely complemented the service-oriented architecture of the new environment, which is compartmentalized in contrast to the monolithic mainframe. "We would never have gotten this project done with a waterfall approach," says Clinton. "The agile approach helped us to prioritize our work, to give business units a clear view into the development process, and to create a crucial back-and-forth between business users and developers."

The migration from the mainframe has proceeded successfully on what Clinton calls an aggressive schedule. Feature parity with the mainframe was achieved in October 2010, after about two and a half years. The project has continued in response to business-unit requests for expanded functionality. It is expected to be completed in 2011.

In place of the mainframe's green-screen interface, Generali USA and Celeritas created a Windows-based environment that provides access to the various applications (Figure 1). Reports are readily available through SQL Server Reporting Services, and users can download data and work with it in the familiar Microsoft Excel 2010 spreadsheet software. A portal to provide easier and broader access to applications and information, which will be based on Microsoft SharePoint Server 2010, is planned.

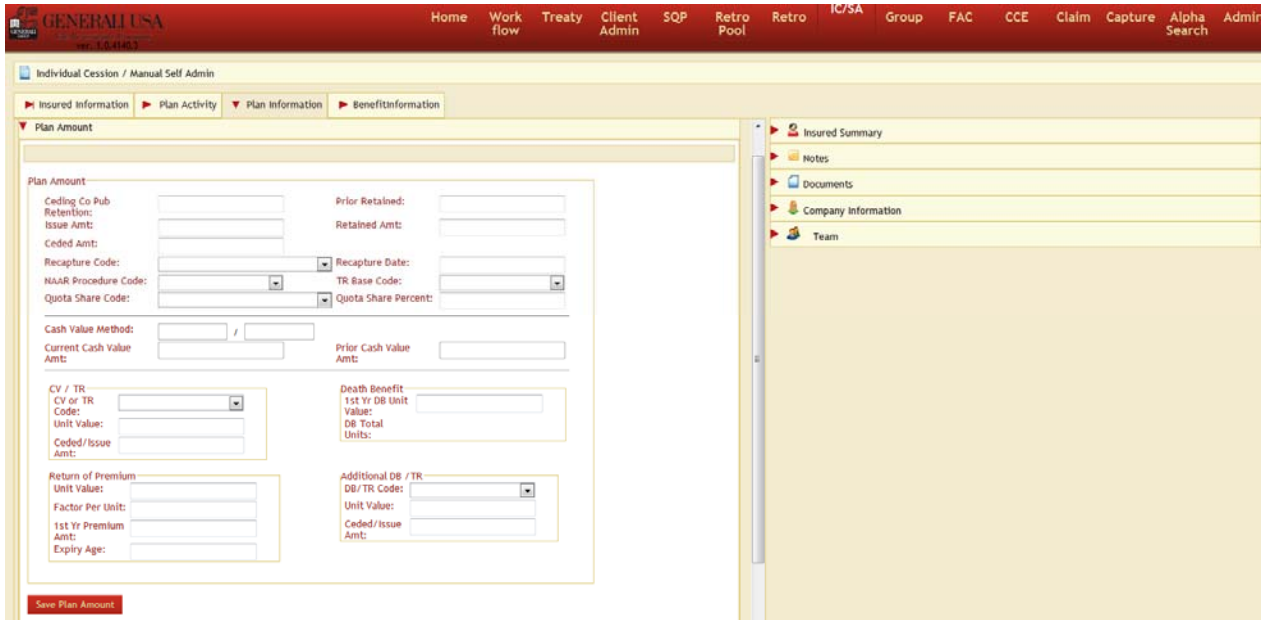
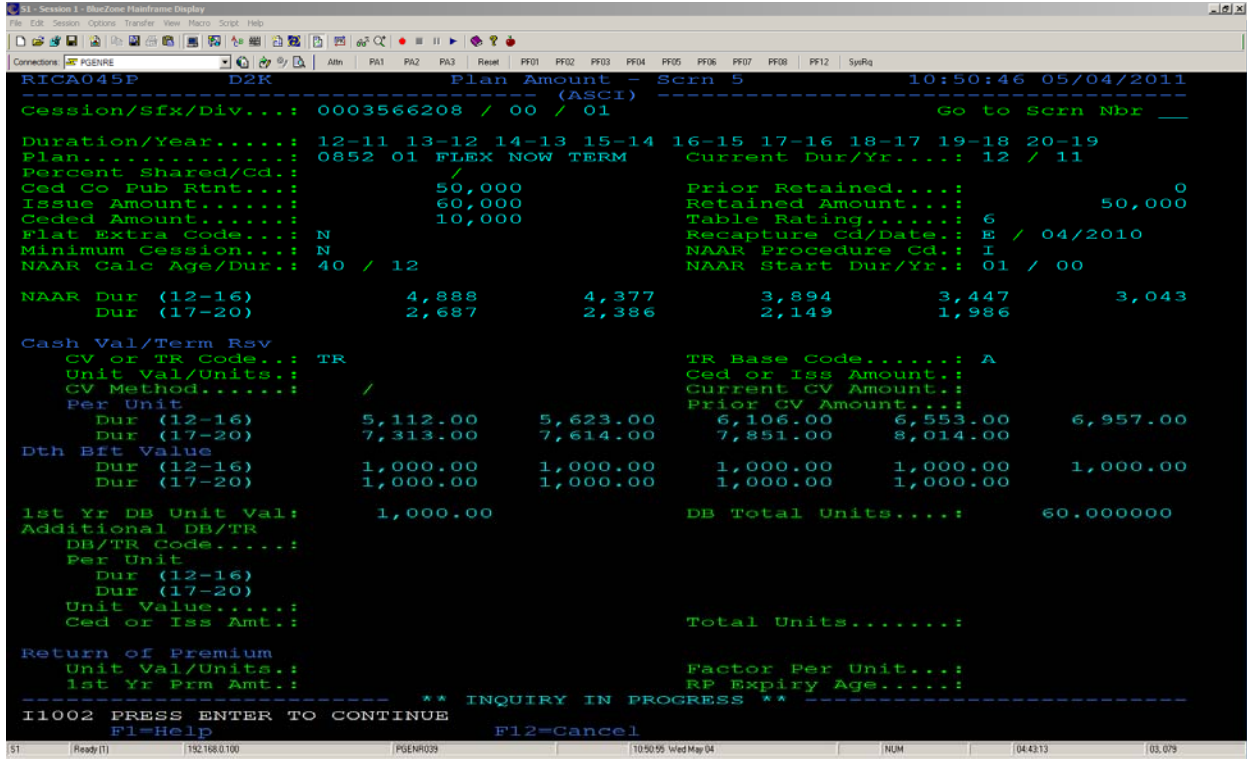


Figure 1. In place of the mainframe's green-screen interface (top), Generali USA and Celeritas created a Windows-based environment that provides access to the various applications (above).

Benefits

With its mission-critical move from the mainframe and DB2 to Microsoft SQL Server, Generali USA has gained a robust, flexible database environment that gives it ample choice for the future, puts the company in charge of that future, and democratizes information access in ways that will likely lead to increased revenues. As a bonus, the company has drastically reduced the TCO of its mission-critical environment.

Annual TCO Drops by \$2.7 million, 23 Percent of IT Expenses

The deciding factor for Generali USA in choosing Microsoft technologies over those from Oracle and others was lower TCO. With parts of the deployment now in production and the rest scheduled for completion soon, the company has a better picture of how much lower that TCO will go. It estimates the following annual savings:

- U.S.\$685,000 from reduced hardware, storage, and software licensing
- \$700,000 from reduced IT support
- \$350,000 from reduced administrative support
- \$1 million from a discontinued mainframe service contract

In all, Generali USA expects to see \$2.7 million in annual savings by migrating from the mainframe to Windows Server and SQL Server. That represents a 23 percent reduction in total IT expenses at the company.

"The economics of business have changed," says Kapeller. "It's no longer enough to keep costs from rising while improving the return on those costs. To stay competitive, we have to actually reduce costs while increasing the returns they generate. Moving our mission-critical systems from

the mainframe to SQL Server is an important way for us to do this. It helps to turn IT from a cost center to a true contributor to the business."

Greater Choice Puts Company in Control

The mainframe had put the company's mission-critical applications and data on a dead-end path, with fewer options every year—fewer options for updating and adding to the pool of applications, for adopting new technologies, for hiring new staff, for scaling up and out. Generali USA has now replaced those dead ends with road maps to help guide its continued growth.

For example, Clinton points to the company's history of writing its own applications—a major undertaking for Generali USA, and one that eventually led to ever-higher maintenance costs and fewer upgrade options. Now, with mission-critical applications based on industry standards and with a componentized service-oriented architecture, the company can, for the first time, consider the adoption of commercially available engines to replace existing functionality or to provide additional features. And with a partner ecosystem for SQL Server and related Microsoft technologies that's about 30 times larger than the one for Oracle, Generali USA has positioned itself to take advantage of broader and more cost-effective choices in commercially available products and services.

At the same time, the ever-expanding pool of developers fluent in C# and Visual Studio technologies means that Generali USA will also have more, and more cost-effective, options for writing custom code when it chooses to do so. "The broader choices we gain from a mission-critical environment based on SQL Server mean that we're in control of our future," says

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Clinton. “We’re not locked into restrictive licensing or proprietary technology. We can make the right technology decisions for the right reasons, concerning the systems that matter to us the most.”

Even before it completes the deployment of the new system, Generali USA has already seen the benefits of this flexibility. Although the company’s initial goal was to replicate existing functionality—such as sales quote, treaty, administration, and claim systems—the immediate popularity of the migration project within Generali USA led the company to expand its scope to also include a new data warehouse, mortality and lapse studies, and automated workflow with document capture. The company also plans to implement a customer portal. “Because we adopted Microsoft technologies, we were able to respond to the enthusiasm of our business users and expand on the project direction in a way that we couldn’t have done before,” says Clinton.

Democratization of Data Expected to Boost Revenues

Perhaps the biggest change that business users are seeing from the new system is the faster, fuller access to data that it provides. That change is based on the consolidation of the mainframe’s data silos with a central production database and datamart, and on the replacement of green-screen technology with a graphical user interface and data access through familiar Microsoft Excel spreadsheets.

For example, the company’s actuaries now have immediate and full access to mortality data—data that’s essential in pricing reinsurance products for life insurance. Analysis of that data is no longer limited to the few actuaries adept with analysis cubes and Cognos reports. Nor do actuaries have to wait weeks or months for the IT

department to deliver the reports they want. Anyone on the actuarial staff can access and download data directly into Excel and conduct broad-ranging analyses of it. The data can also be more comprehensive and up-to-date because its importation into the SQL Server database is now a highly automated process aided by a .NET workflow and SQL Server Integration Services.

Data is now not only more comprehensive and more immediately available—it’s also more accurate. Clinton attributes the increase in data integrity to the centralized data system, which eliminates the need to rekey data into multiple databases. The integration of sales and contract, or treaty, data helps to ensure that a customer doesn’t inadvertently make Generali USA responsible for a policy that’s not included in its treaty—a mistake that can both increase the reinsurer’s liability and distort its pricing analyses.

Kapeller envisions ways in which the move of mission-critical data systems to SQL Server will contribute to increased revenues. For example, augmenting the system with an extranet based on SharePoint Server will make it possible for Generali USA to share its data and analyses with its insurance company customers.

“By extending our SQL Server–based data out to customers over a SharePoint-based extranet, we can give those customers faster access to their treaties with us than they can get from their own corporate systems,” says Kapeller. “That will enhance the relationships we have with them, which can only lead to more business—and higher revenues.”

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For more information about Celeritas, call (913) 491-9000 or visit the website at:

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