



Sun Mainframe Rehosting at Transamerica Life Canada

Part 2 — The Migration

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INTRODUCTION

This white paper is the second of three snapshots of the migration of a key business system from a mainframe computing environment to a Sun environment. The first snapshot captured the planning and decision-making process. This snapshot focuses on the migration process. An acceptance testing snapshot will follow.

A successful migration depends on durable technology, accurate project planning, and skilled, committed people. The server operating environment and software tools to automate migration of application software and enterprise data are put to the test. Extra time is rarely available for completing a migration. In the end, the members of the professional staff for the enterprise and its suppliers and consultants have to solve problems and get the job done.

This study is based on conversations with a customer identified by Sun Microsystems. IDC interviewed the customer just as the migration effort was nearing its end. Subsequent investigation of system testing will reveal just how successful the migration was.

TRANSAMERICA LIFE CANADA

Transamerica Life Canada (Transamerica) is a market leader in the sale of life insurance and investment products in Canada.

Transamerica Life Canada is a member of the AEGON Group, a leading international financial services group. The Group's businesses offer a diverse portfolio of products: principally life insurance, pensions, and related savings and investment products but also accident, health, and general insurance. With close to 1,000 employees across the country, AEGON Canada Inc. is headquartered in Toronto, Ontario, and provides Canadians with wealth management solutions through its companies: Transamerica Life Canada, AEGON Capital Management Inc., AEGON Dealer Services Canada Inc., Money Concepts (Canada) Ltd., and AEGON Fund Management Inc. Through its holdings, AEGON Canada has over \$10 billion in assets under management.

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In December 2000, Transamerica and NN Life Insurance Company of Canada (NN) amalgamated.

In December 2000, Transamerica and NN Life Insurance Company of Canada (NN) amalgamated and continued to operate as Transamerica Life Canada (Transamerica). NN's IT systems, hosted in a mainframe computing environment, are now under the direction of Naj Hirani, vice president, information technology and chief information officer.

The Task at Hand

An IT system that supports one of NN's life insurance and investment products is outsourced and runs in a mainframe environment. Transamerica analyzed the options for migration, including help from Sun Microsystems, which provided an audit of the existing application, and decided to undertake a migration to a Sun server primarily to reduce expensive mainframe outsourcing costs.

The software that administers the investment products comprises administrative functions. Part of the administrative function is an interactive system used about 12 hours each business day in support of a back-office operations and call center business unit. A collection of daily, weekly, monthly, quarterly, and annual batch operations serves other administrative functions.

From a technical perspective, the administrative system is a series of COBOL programs and associated utilities. Some COBOL programs run under Customer Information Control System (CICS) to provide the interactive online transaction processing (OLTP) functions. All the applications use data stored in a VSAM database. In addition, Transamerica must migrate the functionality expressed in job control language (JCL), a 4GL called FOCUS, a report writer called EASYTRIEVE, and sort utility called CoSORT.

THE MIGRATION PROCESS

IDC spoke with Transamerica's IT leadership and the migration project manager. Transamerica explained how it planned and managed the migration, what tools and technologies came into play, and what typical issues and challenges arose along the way.

According to Hirani, Transamerica was confident that the use and application of its project management discipline would enable strong management and control as well as provide an effective means for reporting and communication.

Planning and Managing the Work

"When we planned the migration, we divided the application's online and batch programs into categories that we called Day 1 and Day 2," explained Grace Kennedy, assistant vice president, investment products systems. "Day 1 programs are the online programs and the

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daily batch processes — functionality that we absolutely had to have converted, tested, and live in production on the new Sun platform. Of course, all of the data needed to be in place in the new environment."

Transamerica divided the migration tasks with Sun mainframe rehosting consultants. Transamerica took primary responsibility for the conversion of data from mainframe VSAM files to a VSAM environment that Sun provides for Solaris, Sun's Unix operating environment. Sun took primary responsibility for converting the code, which consists of COBOL, JCL, and calls to utilities such as CoSORT and EASYTRIEVE.

Table 1 shows the major milestones for the Transamerica migration, which began on May 14. All online programs and data were converted and running in the Sun test environment by May 31. By June 15, Transamerica and Sun completed the migration of the daily batch operations and associated JCL and utilities. All migration should be finished by June 30, and the system testing should begin on July 1.

Table 1: Transamerica's Migration Milestones		
Target Date	Migration Milestone	Successful?
May 14	Migration began	On target
May 31	Online programs and data completed	On target
June 15	Batch programs and associated utilities for daily use completed	On target
June 30	Weekly and all other batch programs completed	On target
July 1	Migration ends/system testing begins	

Source: Transamerica, 2002

"Communication was a high priority for us," Kennedy emphasized. "Transamerica project team members were constantly in communication with Sun advisors and other suppliers to ensure nothing fell through the cracks. Project status meetings were held each week, and project status was documented and issued via written status reports distributed to all players. Additionally, project steering committee meetings were held biweekly, which included IT leadership at Transamerica and key players at Sun." Communication and reporting were essentially the glue that enabled the synergy and helped solidify the partnership between Transamerica and Sun.

Environments and Tools

Transamerica's migration efforts were assisted by software environments and transition tools from Sun. In addition, independent software vendors (ISVs) worked through the certification process to ensure that their products operated correctly in the Solaris environment and were

available and helpful when Transamerica encountered challenges. These environments, tools, and ISVs supported the migration efforts as follows:

- Sun's software environments support the application as it executes and remain in place when the application is put into production. The two primary environments are Sun Mainframe Transaction Processing (MTP) and Sun Mainframe Batch Manager (MBM).
- Sun's translation tools are useful in reconfiguring existing code and are used only during the migration process. Sun provides a mainframe migration tool kit (MTK), which contains specific tools for importing mainframe files, auditing COBOL code and JCL, and converting tables and data.
- ISVs must certify their products for different operating environments. For the Transamerica migration, products from MicroFocus (COBOL 3GL), IRI Inc. (CoSORT sort utility), and Information Builders (FOCUS 4GL) were on the critical path.

Sun Mainframe Transaction Processing

MTP provides the Solaris environment with an OLTP monitor engineered to be compatible with code written for the mainframe OLTP monitor called CICS. MTP supports the application programming interfaces (APIs) of CICS and is responsible for maintaining the integrity of transactions.

Sun Mainframe Batch Manager

MBM is middleware that provides the Solaris environment with a modern way of accomplishing the tasks that JCL has handled in the past. Like JCL, MBM allocates resources, identifies files to read and write, and sets priorities and scheduling for batch files. MBM utilities translate JCL into MBM format to recreate batch operations as they were on the mainframe. To modify existing jobs or create new jobs, however, users can be provided with a graphical user interface that guides them through the process. In the MBM environment, writing JCL by hand has been eliminated.

The Role of ISVs

"Support from our three ISVs was important to the success of the migration," said Denis Brunke, migration project manager and consultant to Transamerica. "We included these ISVs as members of our migration team, and they eagerly participated and provided the necessary support and assistance. We talked with them before issues arose, which makes efforts later on much more effective."

Sun's Migration Environments and Tools

"Sun is committed to accelerating the migration of enterprise applications from mainframe environments to high-performance Sun servers," said Tony Zigrossi, development manager for Sun's migration products. "Let me propose a simple analogy. When you lift a slice of hot pizza from the pie, there are lots of cheese strands that stretch between your piece and the pie. That's what migration is all about — making all the connections between your application [i.e., your 'slice'] and the new pizza pie."

In 1990, Sun engineers with backgrounds in high-volume transaction processing began constructing the mainframe environments and tools. The objective was to allow mainframe users access to Sun Solaris platforms without the need to reengineer systems. "VSAM files remain VSAM files, COBOL procedures remain COBOL procedures," explained Zigrossi. "And it's an easy migration for online applications because we provide the CICS API."

Mainframe transaction processing (MTP) and mainframe batch manager (MBM) are the major environments for hosting mainframe applications on Sun Solaris. While providing these essential components, Sun encourages independent software vendors to compete in providing additional necessary functionality.

For Transamerica, CoSORT provided a necessary sort utility and Maestro was the scheduler. The print spooler was replaced with a simple script. "Our customers typically choose sort, scheduling, and spooling products," Zigrossi explained.

"We have products ready for Transamerica's future interests," said Zigrossi. "On Day 1 Transamerica users will access applications with 3270 emulators running on workstations. Should Transamerica wish to move on to browser-based access, our Pathway product is ready to provide that functionality."

The tactical tools for translating files and auditing COBOL code are collected in a Sun product called Migration Tool Kit (MTK). "MTK comes into play early in the migration process," explained Zigrossi. "MTK was used in the audit process that led to the decision to migrate. When migration begins, we already know which parts of the application will port easily and where our direct attention will be required."

Typical Issues and the Problem Resolution Process

A migration of this magnitude is certain to pose daily challenges. IDC inquired about the nature of typical problems that Transamerica encountered and how it solved them. The following vignettes address the issues and the problem resolution process.

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"Aligning versions of software wasn't fun," confessed Brunke. "We purchased the newest versions of MicroFocus COBOL, for example, and our colleagues at Sun were still using a previous version. As a result, we needed to be in close communication with both Sun and MicroFocus when issues arose.

"One example of a typical issue," Brunke continued, "was a problem with the edit stream from some of our legacy COBOL code. When amounts of money were printed, the integers appeared correctly, but the delimiters [commas and periods] and symbols [dollar and cent signs] did not. We were stumped.

"Issues like this one must be solved by suppliers," concluded Brunke. "Bringing all the players together on the telephone was the first step. It was our good fortune that MicroFocus was willing to escalate the importance of our problems and solve them, usually within 48 hours."

Le Français N'était Pas Nécessaire

"When an issue arose with MBM," Brunke explained, "we began the resolution process by describing the problem and logging it for tracking purposes. Sun engineers then worked to replicate the problem in the exact configuration that we encountered it. Sun technicians then worked the problem and came back to us with a solution.

"We ran into a problem with French characters appearing in our screens. We did not need to employ French characters as the application is not bilingual," said Brunke. "Sun advised a change in environmental variables to align the MBM configuration more precisely to our needs.

"Most of our issues were resolved by adjusting environmental variables," Brunke reflected. "We are working in complex environments with products that are adaptable to different needs. The technology is good. We just needed to set the parameters correctly for our particular needs."

The Migration Results

"The migration effort is on time and on budget," Kennedy summarized. "And we were working with a timeline that was shorter than we would have liked. We knew from the audit process that the effort required was beyond the normal work week, and we shared that with our staff. Our staff signed up for a strenuous effort and so did our partners at Sun.

"Performance has improved," added Kennedy. "Our goal was to meet or beat the mainframe interactive response times and batch turnaround times. We allocated four processors on our Sun E6800, and testing suggests that we will have 20% to 40% faster systems than our mainframe configuration provided."

"Teams across Transamerica have supported our effort," added Brunke. Line-of-business managers took the time to review intermediate results. IT infrastructure staff made adjustments to remove obstacles from our path. Network services and workstation environments have been adjusted to support the effort. This has been an enterprise effort."

Next Steps

Our next white paper will investigate the project's system testing stage as Hirani, Kennedy, and their team prepare to go live.

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