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Migrating a Legacy of Tradition

Seagram Americas Migrates to Client/Server with Help from UNICON Conversion Technologies

By Jon William Toigo

Migrating business-critical applications from legacy systems to client/server platforms has always been a dicey proposition. Those IT professionals who haven't personally endured an application migration effort have probably read the horror stories about projects that ended in costly failures – or equally-costly successes. Like bad B-movies, application migration projects tend to share several plot points in common. For one, many projects get mired down with up-front "re-engineering" steps.

Seagram's Joe Horlander looks to identify and resolve potential legacy application migration problems before they start.

Business re-engineering enthusiasts make the case that application migration provides an excellent opportunity to change the processes that have grown up around a legacy application. Why not, they ask, use the application migration project as a vehicle for changing business processes so that they are more efficient?

While there may be merit to this position, adding business re-engineering activity to an application migration project will have the result of further complicating an already technically complex effort. End users are polled and business managers consulted to arrive at a new set of business processes. These inputs to the project may cause the scope to shift from migration to new application development.

In some cases, databases used for applications in legacy environments are not transferable to distributed platforms – even when the database product vendor offers products with the same name for both legacy and server environments.

In other cases, software routines, provided as a function of CICS or other legacy environment facilities, are not natively provided in the client/server operating system environment. Despite the availability of off-the-shelf work-alike products for CICS on UNIX or NT, these may not support ported application software or databases. The only alternative is to recreate these functions in the client/server environment by creating custom code.

In the end, many legacy-to-client/server migrations end up as projects that everyone would like to forget. End users may complain that productivity is suffering because of the need to adjust to new input screens. Managers may complain that new applications and business rules are mandating expenditures for employee retraining that are not in their departmental budgets. Senior management may bristle at costs that dramatically exceed estimates. Ultimately, IT may be tagged as the architect of the whole mess.

Migration at Seagram Americas

To Joe Horlander, North American Manufacturing Systems Manager for Seagram Americas (Lawrenceburg, Ind.), the best method for succeeding in a legacy application migration project is to identify and resolve potential problems before you start. It also helps to have the services of a recognized conversion company to assist in the actual migration effort.

Horlander reports that the strategic direction for the business-critical Seagram Americas Manufacturing System (SAMS) was, since 1995, to migrate the application onto a distributed, client/server platform. SAMS originated as a manufacturing application purchased from Martin Marietta, then modified by Seagram Americas to support internal Seagram and beverage alcohol industry control requirements.

Previously on an IBM mainframe, SAMS provides integrated planning, production and inventory control for Seagram Americas' North American manufacturing and plant-based distribution activities.

According to Horlander, data processing support for Seagram production sites requires end user access, while each plant is operating. "SAMS must be available whenever the plant is operating, up to three shifts per day, and sometimes six or seven days per week." The "online up, batch down" nature of mainframe processing made the transition to client/server computing very desirable, he says.

Another motivation for change was the requirement to maintain constant communication links between the California data center and plants throughout the North American continent. Connectivity and availability business requirements meant that site server-based computing would be the optimal strategic solution.

Notes Horlander, "Because we knew we would eventually migrate SAMS to a client/server environment, we first migrated SAMS to a highly-portable, ODBC-compliant, relational database management system: SUPRA, from Cincom Systems (Cincinnati)."

SUPRA supports the identical database on the IBM mainframe and in all UNIX-based server environments. Horlander depended on this product feature to facilitate the transition to a UNIX client/server architecture.

Who Supports What

A dilemma arose, however, in 1997, as Horlander began to define a migration project, "Basically, we wanted to move the database, our application software, CICS and VSAM files to a new platform. We had selected a Hewlett-Packard HP 9000 platform to host the works in each of our five plants. At first, it seemed easy: Port the application software to MicroFocus COBOL and run the HP-UX version of the SUPRA Server on the HP platform.

"MicroFocus sent us to UniKix Technologies (Phoenix) to handle the CICS emulation aspect of the project. We were told that emulation would work, but that we would need to abandon SUPRA, because they didn't support that database."

Horlander was reluctant to abandon the database product from Cincom because "it was outstanding software with good technical support. I just couldn't see why I would want to pay for another database, when this one works fine."

Horlander's concern for the cost of such a change to the SAMS application led him to pursue alternatives. Understanding that the database was proving to be the center of the difficulty in defining a migration strategy, he discussed the problem with Cincom.

"Cincom told us that another of their customers, an Alaskan long-distance telco with a proprietary application and a SUPRA database, had just been migrated to a client/server platform by Unicon Conversion Technologies (Mission Viejo, Calif.)," Horlander said.

Mike Howard, Vice President of Operations for Unicon, recalls, "Seagram Americas communicated their problems to us pretty clearly. They wanted the corporation to dictate to the system instead of the system dictating to the corporation. Each business unit in their North American operation needed to be the master of its own destiny and needed the necessary management application resources to be located at its own facility. They wanted to move the mainframe application in its entirety to a new platform."

A pilot project was quickly initiated, Horlander says, that "made everybody happy," and a six-month project was contracted on "a fixed price basis with a money-back guarantee." Al Halligan served as Seagram Americas' Technical Project Manager for the conversion. He reports that the project entailed, "the conversion of nearly 1.8 million lines of code into ACUCOBOL (Acucorp Inc.; San Diego) and a number of VSAM files into Acucorp Vision files. The database and batch jobs were installed on an HP 9000 server, while the application online programs were ported to Windows 95 and NT client desktops."

With the assistance of Unicon Conversion Technologies, Seagram Americas now enjoys a client/server platform-based manufacturing system that Joe Horlander describes as "rock-solid, dependable, robust and tightly integrated.

An enhancement to the application was the addition of Windows-compliant screens to replace the text-based screens of the legacy application. Unicon converted more than 300 SAMS screens to pure ACUCOBOL screen sections, providing a Windows GUI.

To Horlander, SAMS screens hint at the underlying complexity of the application, which supports not only U.S. sites, but also Seagram Americas operations in Mexico and Canada.

"The system contains over 300 screens. Language variants are the multiplier," says Horlander. "We have screens with alternate word spellings, volumes and measures for our Canadian plant and Spanish language screens for our tequila plant in Mexico. We are in the process of adding French language screens to meet the needs of our Montreal plants."

Additionally, SAMS screens also reflect the key role that the system plays in keeping Seagram Americas compliant with multinational rules and regulations on spirits production.

"We are in a highly-regulated industry," Horlander explains, "and the system provides all of the regulation and reporting functions we require. This varies by the country where the business unit is located. Travel to any of our sites in the U.S., Canada or Mexico and you will be using the exact same application. However, in the U.S., alcohol content is measured in proof gallon, versus a litre of absolute alcohol in Canada and Mexico, and this difference shows up on the screens. The system also accounts for the taxes due for the number of cases of alcohol produced."

Halligan notes, "First, Unicon provided a character to character conversion of all the screens. The users couldn't tell the difference between the old system and the new one, except that the new system ran much faster. Then, Unicon provided the Windows GUI screens. All of the same fields are there and the PF keys are all mapped the same way so navigation is the same. The only exception was the HOME key: Bill Gates owns that. So they mapped the HOME function to the PAGE UP key instead. Our users use the GUI now. Once they learned to use the mouse, they were ready to go."

Defining a Successful Migration

With the assistance of Unicon Conversion Technologies, Seagram Americas now enjoys a client/server platform-based manufacturing system that Joe Horlander describes as "rock-solid, dependable, robust and tightly integrated." At the conclusion of acceptance testing in late 1998, the converted system was rolled out to all of Seagram Americas' plants in North America. SAMS was in production at the first plant site only 11 months after Unicon began the conversion process.

"Each plant has its own data server now," Horlander observes, "and the hosts are processing for the users." The promise of client/server has been delivered.

Says Horlander, these servers are not data processing islands, "Once a day, the systems communicate with Seagram Corporate order billing systems that are still mainframe-based in Hollywood. The systems also communicate financial information to AS400-based Seagram Corporate financial systems based in the

company's Del Ray Beach, Fla., Services Center.

Unicon's Howard explains that Seagram Americas received nothing less than a company should expect from its conversion partner. Having performed numerous conversions for companies as diverse as British Oxygen, Guardian Insurance, OfficeMax and Detroit Diesel Allison, Howard says that some basic steps are vital to success.

He emphasizes client communication and the importance of code review, "We heavily review the code that is to be converted. We want to ensure that it follows mainstream programming conventions and that there is no left field technology in the program. That way we can estimate the time required to convert more accurately and fix a price."

Some decisions about the outcome of conversion efforts need to be defined by the client, says Howard. He notes that Unicon can deliver pure COBOL code for the target environment in most cases, "We don't add screen drivers or file handlers unless the client specifically requests those additions."

With the scope of the project set, Howard says that Unicon uses its own set of conversion tools – built and refined through many conversion efforts – to process the client's application code. "If the conversion can be automated in any way," he notes, "we find it. That saves time, labor and money."

Finally, says Howard, the client must be closely involved in the testing of the outcome, "We demand heavy client involvement in user testing. Usually, we set up two terminals, one with the CICS screen, the other with the Windows GUI screen. They work through every single operation they would perform with the old system to ensure that everything is identical before the test is complete."

Howard says that if these steps are fulfilled, most projects will be completed on time and within budget. He recalls that one client turned to Unicon as a last resort, having spent $33 million and four years of effort in writing a new client/server application to replace a critical legacy application. "They came to us and asked us to get them to a middle point – migrate their legacy application off the mainframe and onto an open systems platform. We got them to that stage in six months and $3 million."

"Using a conversion partner means that you can proceed in little steps from legacy to open systems platforms," says Howard, "Migrate just one application at a time instead of taking a big bang approach. This is the best insurance policy you can have that you will succeed."

Unicon Conversion Technologies appears to be the best-kept secret in the industry, as the company frequently serves as a subcontractor to large integrators and vendor service organizations. According to Howard, this reflects the approach that the company takes to conversion and migration projects, "We are not an integrator. An integrator is the custodian of many general issues in a project. Unicon specializes purely in conversion."

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