Employment Development Department of California

Legacy IDMS Database and Application Migration to Modern DB2 Platform for Enhanced Customer Response

Challenge:

Respond to new legislative mandates, continue to serve a growing population, and use available resources for future modifications

Solution:

ATERAS DB-Shuttle® Automated Modernization Technology, patent pending

Success:

Full migration from IDMS to DB2 and COBOL CICS with 6 billion unique transactions processed immediately after switch over

Key Benefits:

· Enhanced responsiveness to current and future business needs

· Complied with Federal legislative mandates to qualify for stimulus funds

· Reduced technical complexity and risk

· Improved data integrity

· No manual changes applied to any code

The Modern Systems solution provides a complete replacement for all IDMS database functionality including multi-member sets, chained and sorted sets, bill-of-material structures, group and occurring fields, DBKEY usage, and more.

The Employment Development Department (EDD) of California manages the unemployment and disability insurance benefit programs for over 18 million residents. The economic downturn that began in 2007 brought more residents into an active status in the already strained Single Client Database (SCDB) that housed data for the benefits system.

Federal legislative changes mandated additional features in the system that could not be implemented in the existing IDMS COBOL structure. An aging system also meant that skilled employees were retiring, leaving the technical support department without the required knowledge to maintain the legacy system.

EDD needed to migrate to a modern platform that could be adjusted to meet the Federal mandates, grow with the future needs of the State, and be supported by available employees. Modern Systems used automated DB-Shuttle technology to seamlessly migrate EDD to a DB2 CICS COBOL system that is flexible and responsive to the State of California's needs.

M Corp, the project's prime contractor, used their custom tools to test and deliver the new platform. The entire project was completed on time and under budget, enabling the State to receive over $1 billion in stimulus funds from the Federal government.

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Increased Demand Strained the Existing System

The influx of new claims increased the size of the database that already contained thirty years of unemployment and disability insurance claims information. The IDMS database at EDD was the largest in the USA, and was already reaching the limits of the legacy database structure. The system scope had been modified over the years to handle unemployment and disability insurance claims, pay the taxes related to those claims, and interface with many other State and Federal governmental departments to provide beneficiary information.

Change, when it was possible, was slow, awkward, and prone to errors that radiated throughout the system. EDD needed to migrate to a new system and the migration had to be performed without interruption to the millions of dollars that flow to the dependent residents every month. Modern Systems and M Corp provided the solution.

ETS Proof of Concept

The scope of the project was daunting so Modern Systems first performed a Proof of Concept pilot project on the Encumbrance Tracking System (ETS) at EDD. This smaller project familiarized the technical team at EDD with the methods and experience of Modern Systems, and allowed Modern Systems to guide EDD through the decision making process for automating the larger migration. The ETS project also included the refactoring of ADS/Online to CICS COBOL DB2.

The POC highlighted initial issues that had to be resolved and gave EDD the confidence to proceed with the SCDB migration. An issue resolution environment was developed to address items that had to be fixed in the legacy system before the migration could occur. As a result of the POC, DB2 database design changes were implemented prior to migration. The ETS migration went live in October of 2009 and performed well in the production environment.

The success of the proof of concept project resulted in Modern Systems being awarded the SCDB migration project. Dale Jablonsky, the Deputy Director of the Information Technology Branch of EDD, was very pleased with the results of the ETS migration. Dale's recommendation was strong incentive for EDD to continue the migration process with Modern Systems.

> " The new application is standard COBOL and DB2 SQL, contains no proprietary code or 'black boxes', is easy for our teams to maintain, and requires no on-going license fees from Modern Systems. The application architecture design is solid and the application performs well. "
>
> **Dale Jablonsky**

Migration from IDMS to DB2

The fully automated migration began with a source code load of EDDs database definitions and application source code into Modern Systems DB-Shuttle technology. The DB-Shuttle software combs through the legacy system and determines if every source code component is present that is needed for the system to function. It also highlights components that do not appear to be in active use. This initial review of the system yielded a total count of 47,605 components but an active count of 18,546 components. Narrowing the scope of the modernization to only required components reduces the complexity of the migration and increases the efficiency of the migrated system.

Following the initial review Modern Systems worked with EDD personnel to determine naming conventions, DB2 structure requirements, and refactoring rules. The groundwork laid during the proof of concept project provided a solid foundation for determining the direction to take for the SCDB migration. Timelines and tasks were set for each of the teams so that the project could proceed on schedule.

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The Modern Systems migration process using DB-Shuttle reduces the migration timeframe to months instead of years. The legacy system components are passed through the DB-Shuttle software and processed into the new platform. Migration provides like for like functionality that processes against a new relational database and the resulting system performs just as well, if not better, than the legacy system. The delivered components are easily maintained and modified by the existing team and do not require any proprietary framework from Modern Systems.

Success

EDD was able to review the migration process as the iterations commenced. An acceptance program was developed to ensure that the migrated components were conforming to EDD coding standards. EDD was able to provide input into details such as the order in which comments appeared in the Environment Division. The refinement capabilities of DB-Shuttle meant that these details could be easily addressed. The delivered components met the needs and established coding standards of EDD.

Delivery of the migrated DB2 CICS COBOL system occurred in November of 2011. The first night after implementation transactions totaling $135 million were processed without error. During the following week over 6 billion unique transactions were processed smoothly. The migration was a complete success.

More than 3.8 million lines of code were converted from IDMS COBOL to CICS COBOL, containing over 18,500 components. Ten IDMS databases were combined into a single relational DB2 database. The migrated system is working more efficiently than ever before and the EDD development staff is able to implement improvements in days instead of weeks.

EDD continues to improve their migrated DB2 CICS COBOL system. Their ability to respond to customer needs has been enhanced and their capacity to meet future growth has been met.

About Modern Systems

Modern Systems has supported global enterprises for over 28 years, offering state-of-the art services that exploit automation for transforming legacy applications and databases into modern technologies using patent-pending automated refactoring, modernization, and replatforming technologies (DB-Shuttle® & eav® suite, ATP®). Modern Systems' Application Portfolio Management (APM) solutions and Application code understanding range from Portfolio Analysis of existing IT environments, enterprise field expansion, and COBOL/ Natural workbenches to automated documentation tools.

About M Corp

M Corp has successfully helped state government agencies and private industry clients improve, expand and maximize the value technology investments bring to the business. M Corp uses best-practice methods for strategic planning, assessments, business process analysis, requirements definition, project management, change management, system maintenance and testing.