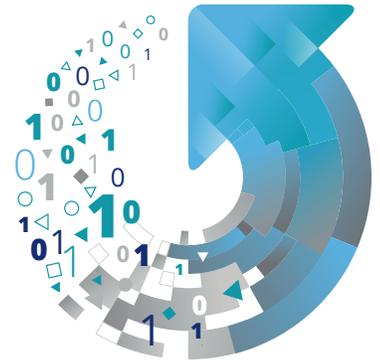




Modernizing the Department of Motor Vehicles (DMV)

Deloitte Application Modernization

Transportation agency tackles Application Modernization



The challenge

With hundreds of employees and millions of registered vehicles to account for, a state department of motor vehicles naturally relies on high-volume information systems to do its job. In one of the largest states, many of the systems the DMV relied upon were out of date and out of sync with each other—including a 20-year-old system coded in ADABAS/NATURAL and COBOL with a Java Swing point-of-sale application that handled registrations and titles.

Age alone doesn't make a system unworkable. But, in this case, the multiple complex platforms had become costly to maintain. They were inflexible. And they didn't support the agility and analytics operations the department needed to develop. The DMV needed to modernize to a common architecture to meet stakeholder demands.



The Application Modernization approach

Faced with declining performance but unwilling to take on operational risks and saddle taxpayers with the cost of a ground-up rebuild or customized package implementation, the department chose Application Modernization. This process focused on keeping what works and spending effort on the areas requiring improvement. To get there, the technology required modernization first. Targeted improvements with demonstrable ROI would let the department retain its core systems while also building on those systems' functionality by replacing, or "refactoring," dated code with modern code.

Deloitte and innoWake worked with the DMV to map out an incremental approach to modernizing the systems required to process registrations and titles. First, the team prioritized the real-world needs the upgraded system had to handle: service enhancements, legislative changes, ad hoc reports, and other business needs. They determined how much effort, time, and resources the necessary changes would require, and they defined the roles and responsibilities of the team that would carry them out. Only then did they develop a release schedule for the progressive changes to be implemented.



The Application Modernization process

In the first year of the project, 10 scheduled releases unveiled different stages of improvement. The first application modernization pilot was ready for system testing in only six weeks. This quick demonstration of improvement was a tangible outcome that helped the DMV show governing stakeholders the progress that was being made.

The project refactored millions of lines of code to a new Java-based platform. It updated more than 700 screens, 3,000 batch jobs, and 120 ADABAS Database System files. Core mainframe data structures were refactored from ADABAS to a relational database, which boosted enterprise reporting capabilities. Other technologies, such as PL/1, Assembler, and COBOL, were also migrated to the new Java-based platform and established a common enterprise architecture.

The scalable, affordable change the department needed

"It was as if our system was driving our processes rather than the other way around. We realized that—in order to make the changes needed to serve our customers better—we were going to need a more agile system."

— DMV Executive Director



Results

In IT terms, the DMV's Application Modernization project met or surpassed all technical objectives. But "IT for IT's sake" is not the reason organizations invest in a process like this. As a result of the process Deloitte helped implement, the department has realized a number of tangible business benefits:

Enhanced customer-centric capabilities

Before, users could search for a registration by vehicle identification number (VIN) but not by the owner's name or address. Using the new modern Java-based architecture and modernized screens, the refactored system allows DMV employees to search by name, receive search results, select the person, and even drill down to view additional details. To achieve this, the legacy business code was refactored to modern Java code, and new queries were added to support the search-by-name functionality—again, keeping what worked and adding what was needed.

Implementation of legislative changes

The state enacted a single-sticker system that replaced separate inspection and registration stickers—but on the DMV's old platform. As part of the phased modernization, the upgraded

platform incorporates the required changes to business rules, fees, and the renewal notice sent to motorists. Because refactoring is fully automated, our technology allowed these changes to be made in the legacy environment and refactored to Java as they were implemented by the DMV.

Automation of business processes

The DMV's legacy core system relied on imaging and indexing paper forms. It even acquired some data via a "screen-scraping" tool that was no longer supported. Application Modernization replaced those functions with an automated FTP program that eliminated human intervention while providing data validation and error handling.

Enhanced agency reporting

The DMV wanted the first year of modernization to enhance its abilities to deal with point-of-sale fraudulent transactions and financial reporting. Deloitte used the IBM Cognos reporting platform to condense more than 1,000 legacy reports primarily written in COBOL into 27 customizable, parameter-based reports, easing the overall maintenance load and directly providing the business flexibility to the end user. As a result, the DMV has been able to address losses from theft

or misconduct, and it has remedied decades-old deficiencies in the way it accounts for money collected at branch offices.

Improved system reliability

The DMV's system was moved from a mainframe to a modern, scalable, Linux-based environment that allowed the department to incorporate open-source third-party products, to migrate to the cloud, and to set up its application lifecycle management structure in a way that would permit iterative, agile releases.

Modernization inventory

What modernization needs will emerge next for the department? This project addressed the future by developing a modernization inventory to identify segments of the refactored code that should be considered for streamlining—such as repetitive code segments that might be consolidated into reusable components, or business rules that could be extracted into a rules engine for simplified configuration. The contents of the inventory are prioritized and added to upcoming Agile-based release schedules.

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