COLORADO DOT & CONNX CASE STUDY

The Colorado Department of Transportation. CDOT is the state agency responsible for planning, constructing, and maintaining Colorado's 9,122-mile highway system, which includes 3,698 bridges. The Division of Aeronautics is also part of the department.

Industry
Government/Transportation

Location
Colorado

Solution
CONNX for RMS/Data Access

Driving Toward Greater Efficiencies

Faced with managing increasingly larger and more complicated highway and bridge construction projects and expecting its employees to "do more with less," the Colorado Department of Transportation (CDOT) needed to substantially change its technology environment. For contractor payments, it needed to replace an antiquated DOS-based system that was slow, inefficient, and incompatible with newer personal computers. For financial reporting, it needed to standardize on one system and provide timely information. Given budget constraints, the department wanted a solution that would preserve its considerable investment in its mainframe and the software running on it. It also needed to put modern, usable tools into the hands of engineers and technicians on construction sites and employees at the offices. The solution to these challenges came through CONNX, a data access engine developed by SolutionsIQ.

Using CONNX for RMS, the department developed two interdependent applications: pcPAL (Personal Computer Project Administration Link) and ProBE (Project Budget and Expenditures), both of which integrate with the department's OpenVMS Alpha cluster. Users

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- **Paul Neumann** | pcPAL Manager at CDOT

2039 152nd Avenue NE
Redmond, WA 98052

Phone: 425.519.6600
Email: info@connx.com

now have easy, reliable, standards based tools running on Intel PCs under Windows NT and Windows 95 to track construction project information and financial status.

The department's 250-300 field engineers use pcPAL to follow work completed on highway construction projects and to pay contractors. According to Paul Neumann, who manages the application, "We have drastically reduced the time spent on these tasks. Contractor payment processes that used to take hours are now finished in minutes." During 1998 alone, CDOT used pcPAL to process over $400 million in contractor payments.

The second CONNX-enabled application, ProBE, tracks the financial status of construction projects, from pre-award to post award and completion, a cycle that can span one month to six years. The application uses data from pcPAL, sent to the mainframe monthly, as well as data from a Sybase data warehouse and the Colorado Financial Reporting System (COFRS). "Producing a detailed project financial report previously took days, and the information was a week to 10 days out of date by the time we completed the report," John Mascarenas, manager of the ProBE application, says. "We can now generate reports in minutes with current information. The real-time availability of data improves decision-making because we know where we stand on project budgets so we can make the most efficient use of the money available. Plus, no one has to depend on anyone else for information."

Neumann learned about CONNX from an advertisement in a computer magazine. "What caught my attention was the unique Remote Procedure Call (RPC) functionality of the product. RPC would give us the ability to execute VMS programs that act on our mainframe data and get results back on the PC," he says. "That was the critical functionality for us and we thought we might have to write our own solution to get it. But I disliked the costly and time-consuming prospect of rewriting a number of programs that were working perfectly well on the mainframe."

Before making its decision, the department evaluated CONNX and several other products that could enable users to work with the legacy data on the mainframe from their PCs. "In our testing, CONNX handled such tasks faster than the other products,"

Neumann says. "And when you added its ability to run mainframe programs, thanks to its RPC feature, there was no contest.

"With CONNX, we can give our users modern Windows applications to perform their jobs more efficiently, while still maintaining our investment in our VMS data and programs," he continues. "Because CONNX lets us work with VMS data via ODBC, we saved many months, if not years, of development time. The product lets us employ rapid application development techniques, and as a result, we were able to incorporate features that would otherwise have been cost prohibitive." Additional time and money savings result from the ability CONNX gives the department to enforce business rules using the existing mainframe code. "The application lets our PC programs and mainframe programs run cooperatively, so we don't need to rewrite existing code to update existing data," Neumann explains.

CONNX also delivered the investment protection CDOT sought. "Our mainframe has done quite well, thanks to CONNX," says Neumann. "Because we can continue to get value out of it, we can retire it at a slower pace than we would have had to do without the product."

Moreover, pcPAL and ProBE require far less support than CDOT's older systems. "There's a world of difference," according to Neumann.
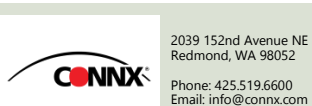
The department has found ways to use CONNX beyond its original purpose, for example, as a data maintenance tool. "In the past, we would write a custom program for data maintenance — a lengthy process," says Neumann, "CONNX makes it a snap." The product helped streamline a recent departmental reorganization when all accounting codes changed. "Many mainframe files needed updating," he explains. "Without CONNX, we would have had to write and test all the files, a process that could take weeks. "With CONNX we had the whole thing done in less than a day."

According to Mascarenas, the department is now working on a new application that uses CONNX in a client/server environment. The application will access data stored in RMS files on the Alpha cluster to pull in summaries of quantities of materials, such as the number of steel girders used in a job.

In addition to the improved efficiencies, better resource deployment, investment protection, and streamlined support, CDOT employees are "much happier," according to Neumann and Mascarenas. "Both pcPAL and ProBE are much easier for them to use than our previous systems," says Neumann, and Mascarenas adds, "I am getting good feedback. People like the easy-to-use interface. Plus they appreciate having accurate, up-to-date information so they can get the whole picture on a project."

About CDOT

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