

## **Minneapolis Public Schools Use SQL Server 2000, DeLani SwiftKnowledge to Extend Legacy Information, Bringing Insightful Data to all Users**

*The Minneapolis Public Schools had all the right data, but decision-makers could only see a small portion of it. These administrators needed real-time analysis and on the fly reporting on up-to-date data to support decisions about the allocation of scarce resources. The legacy mainframe-based system could only provide this detailed information to the most technically trained data specialists. End users couldn't access the data they needed most – until Microsoft® SQL Server™ 2000 and DeLani SwiftKnowledge extended the life of the legacy system and securely delivered information directly to the end users, using a standard Web browser. The district can now obtain better student attendance information, leading to more state funding and the ability to craft targeted and effective intervention strategies to boost attendance and learning.*

Minneapolis, like virtually all school districts around the country, is under pressure to boost many measures of achievement and performance, including school attendance. And, as many school districts around the country continue to do, Minneapolis relied on a mainframe-based system for its data warehousing, analysis and reporting. But mainframe-based analyses and reports were cumbersome to produce, requiring arcane knowledge of programming code. Administrators were forced to rely on full-time database administrators to produce their reports. The reports took several weeks and tens of thousands of dollars of staff time to prepare, could never present real-time data, and could not be altered to present different views of the data or to answer different questions without going through the entire report production process all over again. As a result, end users received only a fraction of the potential value of the database.

“It was impossible for administrators to get any kind of reports out of our mainframe system,” recalls Sheldon Ramnarine, executive director of Strategic Information Services for the Minneapolis Public Schools, one of the nation's larger school districts with 50,000 students, 3,500 teachers and 120 buildings. “We wanted reports on the fly. We wanted administrators to get results to their data queries, and then to be able to build on those answers by asking additional questions. That was impossible with the system we had.”

Getting better reports wasn't merely a matter of convenience. It was also a matter of money. Like many districts around the country, Minneapolis receives state funds based on a formula that includes daily student attendance totals both aggregated and by types of students. Without the ability to produce this information on a timely basis, and to start early intervention programs to retain students and cut the drop-out rate, Minneapolis was in danger of losing some of the state funding to which it was entitled.

### **Looking for Another Solution**

---

So Ramnarine and his colleagues set out to look for another solution – but not, necessarily, another system. Some districts had chosen a rip-and-replace solution to the problems of an antiquated data system, resulting in tremendous costs, delays and headaches. In contrast, Ramnarine was determined to find a way to extend the life and functionality of his existing system.

He found it in talking with Daniel Moloney, president, and Allie Gentry, chief technology officer, of DeLani Technologies Corp., a Bloomington, Minn.-based provider of business intelligence and decision support solutions, with a special focus in helping school districts and other education

clients to tie their legacy systems to state-of-the-art data analysis and reporting solutions. DeLani's SwiftKnowledge solution, based on Microsoft SQL Server 2000, would integrate with the existing mainframe data warehouse, leveraging the district's existing investment in that system. It had an easy drag-and-drop Web interface that education administrators could use with little training to create their own reports.

SwiftKnowledge and SQL Server 2000 were exactly what Minneapolis was seeking. After a series of DeLani presentations to explain the solution to Minneapolis district officials, the district adopted and quickly installed the solution last fall.

## **Building a Two-Server Solution**

---

DeLani installed the SwiftKnowledge data analysis and reporting component of its solution on the district's Web server, and installed the user profile component – which controls user- and field-based security – on the district's SQL Server. The next step was to create the link between the existing mainframe data and the database that would have to exist in SQL Server. Working with the district, DeLani determined what data was necessary for the most relevant analyses and reports, such as attendance data by type, excused/unexcused, age, gender, grade, district, day of week, and so on. SQL Server Data Transformation Services were then used to migrate the mainframe data into the SQL Server tables.

DeLani then used SQL Server Analysis Services to build a multi-dimensional data cube from the tables. Because of enhancements to the newest version of SQL Server, Moloney says a process that would otherwise have taken hours or days was accomplished in fewer than 20 minutes. Next, SwiftKnowledge automatically displayed the cubes so that Minneapolis could set the appropriate security for users and administrators and respond to user requests. Later, Data Transformation Services would be used to automatically update the SQL cube with mainframe data at whatever frequency Minneapolis wished.

## **Web-based Access to an Easy-to-Use Interface**

---

When users want to view, analyze, and interactively explore data, they point their standard Internet Explorer Web browsers at the intranet Web server hosting SwiftKnowledge. The software's simple user interface was a key selling point of the solution for Minneapolis. Visual icons and familiar, plain-English language names for field types and dimensions – instead of arcane coding needed for mainframe solutions – make it easy for users to become self-sufficient by clicking and dragging in the browser to find the data they want and, ultimately, to better understand what is happening in the district's schools.

"Over the years we've looked at different software solutions," says Ramnarine. "What caught my eye about SwiftKnowledge and SQL Server was the ease of the drag and drop interface.

When the user creates his or her request, the relevant data is pulled from the data cube and populated almost instantly into a SwiftKnowledge browser-based report. The administrator can then view and think about the information – and immediately build on that data by asking for more specific information, for a comparison to another time period or part of the school district, or for any other type of follow-up query.

"It used to take two to three weeks to get a requested report. Now with this solution, school principals can create the reports instantly on their own," says Ramnarine.

## **Putting SQL Server and SwiftKnowledge to the Test**

---

The racial or ethnic difference in rates of school absence is an important issue in Minneapolis as it is in many districts. In the past, a paper report could be requested and created showing how absences of one race or ethnic group compared to another grouping of students. It would be difficult to develop a more sophisticated understanding of the absence problem, let alone create effective intervention strategies to address it.

However, with SwiftKnowledge and SQL Server 2000, a Minneapolis district social worker was able to drill down on the racial data by geographic area, identifying the neighborhoods with the greatest absences. As it turned out, there was a particular pattern of absences in specific neighborhoods within the district's ethnic community. He then drilled down further, looking at the absences over time, and confirmed that the absences correlated to certain ethnic observances. SQL Server and SwiftKnowledge had enabled the social worker to discover something he would never have learned from traditional database reports: these students were missing school for cultural reasons. Identifying the situation enabled the social worker to work with community leaders to encourage them to find ways to maintain their cultural practices without keeping their children from attending school.

"It's a result that wouldn't have been possible without the detailed, flexible, real-time analysis made possible by SwiftKnowledge and SQL Server," says Moloney. "We directly empowered the social worker, who now clearly understood the problem and could develop a targeted solution with a much higher success rate."

## **Benefits Both Financial and Non-Financial**

---

Although the solution is still relatively new, Ramnarine can measure its financial benefits to Minneapolis – for example, in the ability to re-deploy a database administrator who's no longer needed to create reports that users can create, much more quickly, on their own. But the biggest benefits to Minneapolis may not be the financial ones.

"Our people were struggling with data analysis," says Ramnarine. "When data analysis is simple, people will be able to look at the bigger issues and ask the better questions. That's how we create the best education system possible. My goal is to enable them to ask those questions. And now they can because, with SwiftKnowledge and SQL Server, we have the tools that allow them to do so."

©2001 Microsoft Corporation. All rights reserved.

This case study is for informational purposes only. MICROSOFT MAKES NO WARRANTIES, EXPRESS OR IMPLIED IN THIS SUMMARY.

Microsoft is a registered trademark of Microsoft Corporation in the United States and/or other countries. The names of actual companies and products mentioned herein may be the trademarks of their respective owners.