PARKWAY SCHOOL DISTRICT

From data snapshots to full-length videos

CLIENT SUCCESS STORY >>

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Technology solution gives school district full view of every student

Parkway School District in Chesterfield, Mo., has 18,787 pupils in 29 schools. Students from 18 elementary schools feed into five middle schools and finally to one of Parkway's five high schools.

But with just a few keystrokes, teachers will soon be able to bring to their computer monitors a single high school sophomore's results from a standardized test taken in the third grade, alongside a record of his attendance for his 11 years of school and a list of his extracurricular activities. And not only will they be able to gather all this information in one place, they will be able to view it in a report format that compares and analyzes data—helping them make decisions that will improve student performance.

"This gives us multiple indicators about our students, at our fingertips. It really is looking at the whole child," says Kathy Blackmore, Executive Director of Curriculum, Instruction & Assessment, Professional Development, Technology Integration and Pupil Personnel. "It's a videotape of a child going through the Parkway School District. It's not just snapshots stored in a box at the central office, or in a particular school. It's all in one place."

The Problem: Information Overload

School districts like Parkway have long struggled with too much student information in too many locations and no easy way to manage it, provide access to it, and most importantly, use it to help improve individual student achievement.

Paper copies of standardized test results may be kept at administrative offices or individual schools. Electronic copies may be available, but are accessible only by a few administrators. Likewise, student permanent records, demographic information, grade-level tests, and other important student data can be located in any number of places throughout the district.

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"This is a guarantee to our students"
—Superintendent Robert Malito

At Parkway we have the three F's: 1. Find out which students are not learning. 2. Fix the problem. 3. Figure out a solution that will permanently allow us to better teach all students. We always want to improve teaching and learning at Parkway. This system allows us to actually begin to guarantee that all students will be given our curriculum—and that all students will learn it. It won't just be a guess. This will allow us to actually pinpoint and diagnose, looking at our district, our schools, the grade level, and the individual student.

Diagnostically, this system is very good for our students. It will allow our teachers to find out who's doing well, who is having some problems. And we can correct it early in their lives rather than wait until they're in high school and not having success.

Technology spotlight

The storage and retrieval system at Parkway was built using the Microsoft Business Intelligence (BI) tools provided with the SQL Server 2005 database solution. SQL Server 2005 provides an enterprise-ready and proven relational engine that can store a large amount of data, support high query loads, and scale from the smallest to the largest school district. The integrated BI tools allow data from any system to be consolidated into an enterprise data repository for easy access by end-users. More importantly, SQL 2005 is a low-cost BI solution that any school district can afford.

Parkway School District's student data was stored in an IBM AS/400-based solution called the Comprehensive Information Management System/ Student Management System (CIMS/ SMS). BI tools within SQL 2005 were used to extract this data from CIMS/SMS and other student achievement test data sources. The data was then transformed and loaded into a data model in the SQL Server 2005 repository. Data that was inaccessible in the past is now accessible via a Web browser, analytical tools, graphs, scorecards, or any Microsoft Office tools. Integrated security ensures that data is only accessible for the right users within the school districts.

SQL Server 2005 provides the following BI capabilities:

SQL Server 2005 Database
Standard with SQL Server 2005 is a secure, reliable, scalable, highly available relational engine that supports mission-critical around-the-clock BI applications.

SQL Server Integration Services
The core of any BI solution is the data integration process. New in SQL Server 2005, SQL Server Integration Services (SSIS) provides the features and performance necessary to build enterprise-class data integration applications.

SQL Server Reporting Services
SQL Server 2005 Reporting Services is a server-based enterprise reporting environment, managed through Web services, that delivers a variety of printed and interactive reports. In Reporting Services, the requirements of different types of users who want to interact with reports can, for the first time, be addressed with one reporting solution.

SQL Server Analysis Services
Combining the best aspects of traditional online analytical processing (OLAP) analysis and relational reporting, SQL Server 2005 Analysis Services (SSAS) is a comprehensive and integrated business intelligence, data mining, analysis, and reporting solution.

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"Everyone has embraced this."
—Sharon Hennessy, Information Systems Manager

Ever since I've been with Parkway, we've been searching for a solution to provide easy access to student information residing in various locations and formats. Our requirements included a solution that could be easily maintained, user-friendly, accessible and secure, yet low cost. We found the solution after attending an ASD Business Intelligence event. The light bulb went on—Wow, this is what we needed and could do.

For me as a technology person, to be able to provide this solution is just phenomenal. I do technology because I love it, and the fact that everybody has embraced this is a wonderful feeling. I feel like the hero on this project.

At Parkway, if a teacher wanted to look at standardized test data, he would wait until it was posted online or delivered in paper form from the central office—usually several months after the actual test date. Then he would print copies and highlight information on each individual student's test, searching for patterns and trends. Comparing that test to another exam, school assessment, or report card was time-consuming and cumbersome, with a high margin of error.

By the time teachers had collected and studied all the data, months had passed, leaving little time before the next test to use that important information to improve curriculum, adapt lessons to enhance areas where students under-performed, or work with students to improve individual performance in a given area.

On top of the lack of access and usability of student data, schools districts face new requirements stemming in part from the reporting mandates set forth by the federal No Child Left Behind Act. Data collection, management and reporting no longer are just for the benefit of school districts and their students; they are now a government mandate. The addition of these regulations led Parkway in search of an answer.

The Solution: Enhanced Storage And Retrieval

With data in different formats, housed in silos all over the district, Parkway's Sharon Hennessy, Information Systems Manager, was in search of an inexpensive data warehouse that district employees could understand, maintain, and put to use. She found her solution at a Business Intelligence event hosted by Advanced System Designs, Inc. (ASD) of Morton, Ill.

After ASD completed a successful proof of concept for Parkway that focused on meeting requirements of the No Child Left Behind Act, the district got buy-in from the superintendent and other administrators to expand the solution.

Working alongside Parkway's IT department, ASD developed a procedure to retrieve data from the district's existing data management system and various other sources and to store that information in a data repository. Information is retrieved and made accessible and useful with tools Parkway already uses—like Microsoft SQL Server 2005 and its Business Intelligence tools, Microsoft Excel and Reporting Services.

Parkway administrators and principals are now taking advantage of this unique solution, which soon will be rolled out district-wide—delivering to teachers' desktops the right data, when they need it, and in a format that allows them to use that information to make better decisions for their students.

"We call it the Parkway Access and Reporting System," says Blackmore. "And that's really what it is. It's for everybody. It's descriptive and detailed. The level into the data is amazing. It's robust, responsive, and fast."

"It's about moving forward."
—Kim Brandon, Principal, Northeast Middle School

Not only can it access all the data that I want, but I can fine-tune it specifically to an individual student's needs. And it frees up so much time that instead of sitting there trying to muddle through the information, we can start moving forward. My hope is now that we have this, we can start to redirect our energy and begin to see significant changes in students' academic growth.

I believe the dialogue between teachers and parents will be much more explicit. My ability to communicate with parents through open forums or through e-newsletters also will be more explicit in terms of what this means for the individual child. "This is how you can understand your child's development and level of understanding. And here's how you can help your child."

"Before, I could only see the trees. Now I can see the whole forest."
—Dr. Chialen Hsieh, Coordinator of Assessments

I spent so much time producing individual student reports for almost all of the schools. Now I can use that time for my analysis. I can analyze what our district looks like in different ways, on different tests, and in different sub-groups. That analysis will help our intervention and prevention programs really see what the differences are and what changes we can make.

If people are rich in data, but don't know what it means, how does it help teachers or principals move forward? The data tells us something, but it's not clear-cut. We need to interpret that. This helps me think more systematically. I can look higher, summarize, make sense of the data, and make sense to someone who can make the right decisions for our kids. That's my role.

"It gives me hope."
—Jennifer Sisul, Coordinator of Staff Development

I'm thrilled with what we've come up with. It's user-friendly and accessible, which are two key pieces. When I'm rolling this out to principals, counselors and teachers, it has to be user-friendly. They cannot spend a lot of time trying to figure out the system. We have it set up with simple links and very clear headings. They can open it up, look at it, find what they want—and go.

This system just gives us so much hope. It felt so disconnected when we had data sitting in the assessment office and teachers working so hard every day without the benefit of that data. Imagine what they could do if we give it to them. Our kids need it. We need to be thinking differently and teaching differently.

"Imagine the possibilities."
—Bonnie McCracken, Principal, River Bend Elementary School

We received lots of information from assessments, but I don't know that it was consistently used to make meaningful changes in instruction and strategies and a definite planned approach to achievement. Now we can see the bigger picture through a more focused lens. Of course, our goal is to improve student achievement. That's always a goal. But I think the strategies we're putting in place in order to do that are helpful across the board, with the end result being improved test scores.

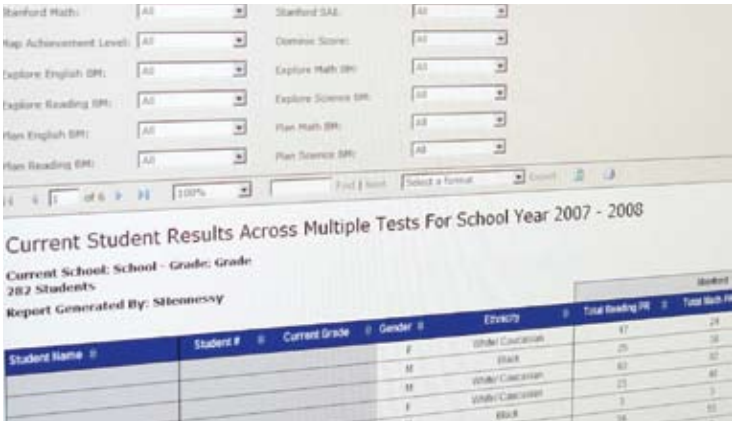
There have been a lot of "ah-ha" moments. The amount of information you can access is almost overwhelming. But the possibilities override that feeling. You realize what is possible and that you can make a difference.

The Process: A Collaborative Partnership

The Parkway project was a true partnership, combining Parkway and ASD expertise to create a solution customized to meet the needs of the district.

"We're working on this together," says Hennessy. "We're constantly talking to each other. They have a lot of information, and they're willing to share their knowledge with us. But they're also working to turn this over to us so we can do it by ourselves. That's the real power. Now we can respond to the questions and the requests people have. We were able to get to that point with ASD's help."

Hennessy has hired several people in her department who are dedicated to the project, including one who did not have a background in IT. "I brought him in, taught him how to do a few things, and he's just run off with this," she says. "Not that it's simple, but it's not so complex that somebody couldn't learn how to do it. We have a lot of technical knowledge in this district. But you don't necessarily have to have that to do what we're doing."



This new system brings detailed information directly to teachers' desktops.

Hennessy says the most difficult part of the project was not the development of the technology—it was deciding which data to include in the repository. "There is so much information and deciding what was important and wasn't important was difficult. So we asked people in the district and what we heard was, 'I need everything.' We finally got it narrowed down."

The Result: Improved Student Performance

The response from Parkway employees has been overwhelmingly positive—to the point that Hennessy was met with a round of applause after one presentation to a group of counselors.

"You see eyes popping out of their heads and their chins are dropping," she says. "It's phenomenal. Everybody has embraced this and they're so excited. They can see that we're definitely listening to them and working to provide something they can be happy with."

And while teachers, counselors and administrators are excited by the time and effort they'll save by having all the right data at their fingertips, they're most excited by what it will mean to the students in Parkway School District.

"It's our belief at Parkway that we never want to look at a child with just one score," says Blackmore. "Prior to this, that was the only way we could look at them. We owe this to our kids because it's not fair to judge them on one single picture of who they are. Multiple indicators, with access for all, are what teachers need to make good instructional decisions."

"It's relevant and empowering."
—Timothy McCarthy, Assistant Principal, Parkway West High School

One of the initiatives we've taken on is to really look at, think about, and analyze how we respond when students don't learn. We need data that's easily accessible and that's substantive to help us 1) trigger a response when that learning is not happening, and 2) monitor the progress of the student as we begin to try different interventions.

Next year I'll be responsible for the incoming freshmen. And I've already accessed the data on these students and downloaded it into a very user-friendly spreadsheet so I can be proactive in understanding the student population coming in and what interventions or support they might need to be successful here. I'm very excited about it as I anticipate the arrival of 300-plus students and my own ability to have a head start on recognizing who they are and what their needs might be.

I think a lot of times with technologies and initiatives, we're left telling ourselves, "It's cool and it's fancy, but is it relevant?" I think the greatest compliment I can give to the system and technology folks who have helped bring it online is that it's relevant to me as a grade level administrator. And I think I'm only beginning to skim the surface of how it's going to impact what we do and how we help kids.

"We knew there was a better way."
—Kathy Blackmore, Executive Director of Curriculum, Instruction & Assessment, Professional Development, Technology Integration and Pupil Personnel

We were spending more time putting data together than doing our jobs and we knew there had to be a better way. It became critical that we get data to teachers at their fingertips so they could look at it at any second. We knew that an off-the-shelf product wouldn't meet our needs, so we built our own. This system came from a vision we had, and Sharon Hennessy and ASD had the expertise and the tools and the technology know-how to make it happen.

This system affects everybody I work with. There's not one person who isn't going to be touched by it because we all have to have data in some way, shape or form. Whether you're a curriculum coordinator or director of counseling or assessment coordinator or me—we all have equal access to the data.

This system is intelligent, it's responsive, and it's like nothing you've seen before. It gives multiple indicators on a student. And it creates a data democracy—where everyone has access. It's really about teachers. This honors them as professionals. It gives them the data and lets them make decisions."

"We owe this to our kids because it's not fair to judge them on one single picture of who they are. Multiple indicators, with access for all, are what teachers need to make good instructional decisions."
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