



Collaborative Portal Improves Education for Fourth-Largest U.S. School District

Overview

Country or Region: United States

Industry: Education

Customer Profile

Florida's Miami-Dade County Public Schools (M-DCPS) includes more than 400 schools, encompassing roughly 345,000 students and 50,000 employees.

Business Situation

M-DCPS needed to provide more than 1 million potential users with improved access to the disparate information systems and applications used to educate Miami-Dade children.

Solution

The school district is building an enterprise Web portal that will provide students, parents, teachers, and administrators with a single point of access to district technology resources.

Benefits

- Improved access to information
- Enhanced productivity and decision making
- Improved collaboration
- Rapid time-to-benefit, with phase one developed in eight weeks
- Reduced cost, compared with competitive solutions

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Deborah Karcher, Chief Information Officer, Information Technology Services, Miami-Dade County Public Schools

When the fourth-largest public school district in the United States needed to communicate with its more than 1 million students, parents, teachers, and administrators, Miami-Dade County Public Schools found that it had no consistent way to deliver information. To answer that challenge, the district is building an enterprise Web portal that will provide all stakeholders in the education of Miami-Dade children with a single point of access for relevant information, services, and applications. Based on the 2007 Microsoft® Office system, the portal will improve learning potential for children, enhance parents’ ability to participate in the education of their children, and improve the effectiveness and productivity of teachers and school administrators.

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Superintendent, Miami-Dade County
Public Schools

Situation

Miami-Dade County Public Schools (M-DCPS) is the fourth-largest school district in the United States, with some 367 public schools and 40 charter schools. Serving an area of more than 2,400 square miles, M-DCPS has 345,000 students, 50,000 employees, and an annual budget of more than U.S.\$6 billion.

Published in December 2005, the M-DCPS Comprehensive IT Blueprint provides a framework, guidelines, and a plan of action for harnessing information technology to help provide the highest-quality education for students. Based on establishing increased student achievement and greater business efficiency as the driving forces for all IT decisions, the five-year plan includes these specific objectives:

- Encouraging students to use technology to direct, assess, and manage their own learning.
- Providing parents with the opportunity to actively participate in their children’s education.
- Giving teachers the tools and information needed to maximize their effectiveness as educators, providing instruction aligned with district standards while honoring students’ individual learning styles.
- Providing administrators and operations/support staff with the tools and information needed to make informed decisions, communicate effectively, and optimally deploy resources.
- Making educational technology resources available (with appropriate security) for round-the-clock access over the Internet by all stakeholders, in support of greater parent, student, and community involvement.

To realize those objectives, the school district needed a more consistent way to deliver the information in its many systems and applications to stakeholders. “In the past, people had to look in many different places to get information,” says Deborah Karcher, Chief Information Officer for Information Technology Services at M-DCPS. “Teachers used one system to access e-mail and calendars, and another for teaching resources, and had to ask someone in the school office for data from our Student Information System running on the mainframe. Similarly, school principals had to use five or six different systems in a normal day’s work. We have several very good systems and applications, but we needed to give people a better way to take advantage of them.”

Solution

Miami-Dade County Public Schools is building a districtwide Web portal that will improve learning potential for children, enhance parents’ ability to participate in the education of their children, and improve the effectiveness and productivity of teachers and school administrators. Based on the 2007 Microsoft® Office system and other Microsoft software, the district’s new enterprise portal will provide all stakeholders in the education of Miami-Dade children with a single point of access for relevant information, services, and applications.

“We realized that to communicate effectively with parents and the community, we would need tools that permit our stakeholders to move decisively in support of their children—our students,” says Rudolph F. “Rudy” Crew, Ed.D., Superintendent of M-DCPS. “These tools must work together in such a way as to convert a parent’s need to know into the ability to act, and we now find ourselves moving decisively in that direction.”

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Victor Diorio, Executive Director,
Technical Architecture, Miami-Dade County
Public Schools

Adds Karcher, “An enterprise Web portal will allow us to push relevant information to all users through one communication channel rather than having those users navigate a maze of stand-alone resources to find what they need. We’re making all our applications and data sources available in a single place, and presenting that information in a way that’s tailored to each user’s role.”

Platform Selection

The school district considered multiple options in selecting a technology platform upon which to build its new portal, using research from Gartner Group to identify the strongest players. “We solicited presentations and informal proposals from Microsoft and IBM, and the Microsoft option was selected from both a cost perspective and its ability to fit with our existing IT infrastructure and skill set,” says Victor Diorio, Executive Director for Technical Architecture at Miami-Dade County Public Schools. “We were already using Microsoft .NET for software development and Active Directory® as a directory service, and had a data warehouse based on Microsoft SQL Server™ database software, making the Microsoft option a best-fit solution that let us leverage our existing infrastructure and staff. Had we chosen IBM WebSphere, we would have had to adopt a new tool set and retrain our IT staff.”

Another factor in the district’s decision to use Microsoft software was the success of a similar portal project at Miami Dade College. “The collaborative portal that the college built wasn’t all that different from what we wanted to create, and we took the college’s success as another indicator that our decision to go with Microsoft was the right one,” says Karcher. “In addition, we had already done a small pilot project with a group of 14 teachers to help refine the list of features that we thought were needed, and the overwhelming enthusiasm exhibited by the

teachers told us that our vision was on the right track.”

Rapid Results

In preparing to develop its new portal solution, M-DCPS partnered with Microsoft Enterprise Services for solution design and implementation and selected HP as a hardware vendor. The school district adopted a phased delivery schedule, with the goal of phase one being to start delivery of useful functionality as soon as possible, as well as to validate an architectural approach and help obtain the necessary funding.

“We knew it would be better if we had something tangible to show the school board when we made our funding request,” says Karcher. “During the summer of 2006, we built a ‘light’ portal targeted at four key user roles: children, parents, teachers, and principals. In eight weeks, we had what we needed to validate our design and demonstrate the potential value of such a portal.”

By the second week of school, the portal had received visits from 5,153 teachers, 15,338 students, 1,282 parents, and 263 principals. “We conducted a survey, and the results were very positive from all user groups,” says Karcher. “Based on the success of our initial efforts, which cost less than \$100,000, the school board approved the \$3.4 million needed to fund the entire project—a number that included all hardware, software, and contracted services.”

Phase two of portal development is now in progress, with an expected completion date of fall 2007. In the meantime, the portal’s existing functionality is being well received by users:

- **Students.** Students are provided with a view of personal data, a class list by period (including grades), a MyBackpack space for

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storing documents, school announcements and events, and a district calendar. The portal also links to the district's Riverdeep Learning Management System (instructional content), Florida Academic Counseling and Tracking for Students (an online student-advising system), and FCAT Explorer (an online resource that reinforces reading and math skills outlined in state standards and covered by the Florida Comprehensive Assessment Test). Other links point to a student code of conduct, career preparation resources, and several other valuable sources of information.

■ **Parents.** Parents are provided with a view of their child's student information, class list (including grades), MyBackpack, and school bus information. The portal also links to an online grade viewer, state graduation requirements, Florida sex offender data, immunization guidelines, state and national parent-teacher associations, the Web site for the No Child Left Behind Act, the district's Parent Academy, relevant school district forms, and several other resources.

■ **Teachers.** Teachers are provided with a view of their personal information, their e-mail and calendar (running on Microsoft Exchange Server 2003), and a MyBackpack space to store files. The portal also provides a list of classes; a roster of students in each class; detailed data from the Student Information System; and a graphical “student scorecard” that shows each child's current performance and whether that performance is improving, holding steady, or decreasing over time. Instructional content and lesson plans from the Riverdeep system are made available directly on the portal, in a manner tailored to the grade levels taught by each user. The portal also links to many other useful resources and applications,

including the district's electronic grade book and FCAT Explorer.

■ **Principals.** Principals are provided with a view of personal information; calendars; weekly district briefings; a MyBackpack space; reports from the district's data warehouse and other systems; and links to other relevant resources, forms, and administrative tools.

“Adoption of the portal among the various user groups is ramping up nicely,” says Karcher. “More than 75,000 people used it last month, including 57,498 students, 11,065 teachers, 7,637 parents, and 895 principals. We just added a new user role to include all 50,000 district employees, giving everyone from janitors to bus drivers online access to information such as sick leave days, vacation days accrued, and pay stub data.”

Phase one portal functionality is based on Microsoft Windows® SharePoint® Services in Windows Server® 2003 R2 (the second release of the Windows Server 2003 operating system) and was developed using the Microsoft Visual Studio® .NET 2003 development system. The solution takes advantage of the district's existing Active Directory directory service infrastructure and data warehouse, which is based on Microsoft SQL Server 2005 Enterprise Edition database software and Cognos analytical software.

Enterprise Capabilities

Remaining portal development will further segment the solution's target user base to include numerous new roles that range from bus drivers to school counselors and administrative staff, as well as content for the Miami-Dade community as a whole. When development is finished, key capabilities provided by the portal will include:

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Lauren Graper, First Grade Teacher, Miami Heights Elementary School

- **Content aggregation.** Data and information will be gathered from multiple sources and presented to users in a unified, role-based view.
- **Application integration.** Separate back-end systems will be connected through data-sharing and automated transactions, reducing the need to maintain copies of the same information in more than one place.
- **Personalization.** Content will be customized based on user role. Individuals will be able to further customize the appearance of their portal pages—for example, teachers will be able to include links to video and text used in lessons, and students will be able to add content for research and homework assignments.
- **Collaboration.** Extensive collaboration features will enable staff, educators, parents, and students to work together more closely. Key features will include meeting spaces, team sites, document posting and versioning, discussion groups, real-time communication, subscriptions, and customizable alerts.
- **Content management.** Authorized users will be able to create, store, manage, and publish content on the portal without the need for technical assistance, providing departments and organizations across the district with an easy way to push out information.
- **Workflow.** Prepopulated forms will be available on the portal, along with the capability to route those forms and other documents for review and approval based on defined business rules. Automated alerts will notify users when an item needs their attention.
- **Search.** Extensive search capabilities will enable users to quickly and easily

find the information that they need, regardless of how that information resource is categorized within the portal’s navigational structure.

- **Single sign on.** Users will need to sign in only once to the portal, enabling them to access the systems to which the portal connects without having to maintain multiple user names and passwords.

The portal architecture is based on the Microsoft Learning Gateway framework, which provides guidance and directions for implementing Microsoft software in a way that is educationally relevant. The completed portal will use the 2007 Microsoft Office system, including the Office InfoPath® 2007 information-gathering program for online forms and Office SharePoint Server 2007 for core portal capabilities such as collaboration, search, and content management. Microsoft BizTalk® Server 2006 will help support workflows and application integration, and Identity Integration Server 2003 will handle the provisioning of user accounts. Microsoft Internet Security and Acceleration Server 2006 will help safeguard the portal from unauthorized access and security threats, and software from Version3 will provide single sign on functionality for other systems and applications.

In parallel with solution development, M-DCPS is working to help ensure that all users will have the means to access the portal. “We’re reaching out in several ways to help provide all community members with access to the necessary technology and skills,” says Karcher. “For example, we’re using our Parent Academy to raise awareness and help provide training. In addition, larger schools have parent resource centers. In our education compacts with local government, we have requested that parents be provided with access to computers at their places of employment. The next step is to work with other local businesses.”

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Benefits

With its new Web portal, Miami-Dade County Public Schools is providing all stakeholders in the education of Miami-Dade children with an increased ability to influence student achievement, giving users the tools and information needed to collaborate more effectively, work more productively, and make more informed decisions. “An integrated portal is helping change the way that people work, communicate, and learn across the district, providing for an unprecedented level of collaboration and information sharing,” says Karcher. “As a result, teachers and administrators can be more productive and effective; parents can participate more actively; and students are more empowered to help manage, influence, and direct their own education. When combined, those capabilities will lead to a strong, positive impact on student achievement.”

Improved Access to Information

M-DCPS is improving access to information, which now can be accessed from any location with a Web browser and an Internet connection. Students can monitor their own grades and access a wealth of educational resources ranging from instructional content to the district library system. Parents are presented with similar information, allowing them to easily monitor and get more involved in the education of their children. Teachers are provided with a single point of access to commonly used applications, as well as to information that was previously unavailable. Similarly, school administrators can easily access the forms, tools, and reports that they need to keep everything running smoothly, thereby helping them optimize their use of resources and quickly identify any issues that need their attention.

Enhanced Productivity and Decision Making

Consolidated access to information is improving productivity for the district’s teachers,

enabling them to more easily access and make use of student data. For example, a single mouse click takes teachers from their class list (displayed on their personalized portal home page) to a roster of the students in a class, complete with each student’s FCAT levels and attendance data. Clicking a student’s name displays detailed data on that student, including parent contact information, the student’s class list and grades, and the student scorecard that graphically shows that student’s performance to goals and current trending.

“The portal pulls together everything that I need in one place, eliminating the need to switch between different systems as I work,” says Lauren Graper, First Grade Teacher at Miami Heights Elementary School. “I can read and answer e-mail from parents, prepare a lesson, enter grades, or get ready for a parent meeting without ever having to leave the portal. I have only a few hours in the early morning and late afternoon when students aren’t in class, so the half-hour or so that the portal saves me each day is a huge benefit.”

The portal also improves productivity for school principals by providing one-click access to commonly used reports and other sources of information. “Principals now can easily access operational reports, monitor key performance indicators, and view attendance and suspension data—all things that they’re held accountable for,” says Karcher. “In addition, the portal gives them access to weekly briefings, which are how the district communicates with administrators on issues of importance.”

Improved Collaboration

The information and capabilities that M-DCPS is providing on its portal will enhance the ability of parents, students, and teachers to collaborate on the education of Miami-Dade children. Current portal features offer all parties a personalized view of student

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grades, instructional content, and related resources, providing a foundation for working together to educate each child. “The portal will assist in improving student achievement by facilitating collaboration among parents, students, and teachers, including both the provisioning of student assignments and the dissemination of performance data,” says Karcher. “In addition, it will help drive parent involvement by making parents more aware of the resources that are available to them. Parent use of the portal is greatest in the early morning, when they would otherwise be unable to connect with teachers directly.”

Features provided by Microsoft Office SharePoint Server 2007 will increase the portal’s collaborative benefits even further by providing digital workspaces in which teachers and students can share files, parents can view their children’s homework assignments, and district staff can share documents and prepare for meetings. Similarly, the portal’s built-in workflow capabilities will help people work together more effectively by automating the routing and approval of forms and documents.

Rapid Time-to-Benefit at Reduced Cost

By building its new portal on Microsoft software, M-DCPS is delivering new capabilities to users at an accelerated pace. “Had we chosen to go with IBM technology, we never could have made as much progress so fast,” says Karcher. “We had our initial portal up and running in eight weeks, with a single developer working on the effort. Adding [Office] SharePoint Server 2007 and other Microsoft software will give us a wealth of additional prebuilt capabilities, such as enterprise search, content management, workflow support, and application integration. Everyone is very pleased with how fast things are coming together, and a lot of that is due to the extensive prebuilt functionality provided by Microsoft software.”

The district’s decision to use Microsoft software also is providing significant cost benefits. Other than the work of one Microsoft Services consultant, phase one of portal development was completed with existing district resources at a total cost of \$96,000.

“Not only are we delivering a solution that will serve more than a million potential users at a far lower cost than what many other districts have done, but we’re also doing it with minimal risk—due in part to our decision to use Microsoft technology and services,” says Karcher. “Considering how many users the portal will serve and the many ways in which it’s helping improve the education of Miami-Dade children, we believe that we’re getting an excellent return on our investment.”

Adds Anthony Salcito, General Manager of Microsoft Education, “Rather than implementing technology for technology’s sake, school districts of all sizes can design a technology framework using a customer-service-oriented approach and implement an enterprise architecture that will give them room to grow and change as their constituents grow and as technology changes. This use of technology to address its constituents’ specific needs and support its vision for the future further demonstrates Miami-Dade’s global education leadership and provides a vision for deployment that can be easily replicated globally.”

For More Information

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