

## Case Study: A K-12 Portal Project at the Miami-Dade County Public Schools

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The Miami-Dade County Public Schools — a school district of more than 345,000 students — used Microsoft SharePoint technology to configure a portal that provides tools, information and other resources customized to targeted segments of the educational community.

### Key Findings

- School districts have disparate sources of information and services that are important to stakeholders.
- Portals can provide all segments of an educational community with a single point of access to appropriate levels of school district resources.
- Stakeholders will use portals that provide resources that they value.

### Recommendations

Education CIOs:

- Put the technical environment in order before tackling a portal project — integrating the disparate systems is challenging enough without having to fix them at the same time.
- Promote stakeholder ownership by getting stakeholders' input to configure the portal with resources that are valued.
- Establish a robust and ongoing communication plan with IT staff and representatives of other business units to overcome technical and organization silos of effort.

## WHAT YOU NEED TO KNOW

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Providing information and services to internal and external stakeholders is integral to the mission of a kindergarten-to-12th-grade (K-12) school district. In an increasingly connected society, school districts are turning to Web-based portals to provide students, parents, teachers and staff with access to pertinent resources, as well as provide an outreach to the general community. The benefits include greater parental participation in the education of students — a strategy that educational leaders believe positively impacts student success.

## CASE STUDY

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### Introduction

The Miami-Dade County Public Schools (M-DCPS) is the fourth largest school district in the United States, with 345,000 students and 50,000 employees spread among 376 schools — plus 40 charter schools — and offices. The school district is spread over 2,400 square miles and serves a population of 2.5 million in south Florida. Despite a magnitude of scale that few school districts face, the M-DCPS deployed an enterprise portal configured to provide stakeholders with access to information and services based on their roles and recognized needs.

### The Challenge

The fundamental mission of M-DCPS — and every other school district — is to provide students with a high-quality education. Three key elements in fulfilling that mission were identified:

- Providing parents the opportunity to participate in the education process
- Encouraging routine student use of technology to support their educational progress
- Giving teachers the tools and information to plan and deliver instruction

The M-DCPS portal project was designed to: 1) identify the right online tools and resources for each stakeholder group; and 2) configure a solution that integrated business, administrative and instructional resources. The typical technical and process challenges of deploying an electronic means of connecting school district stakeholders to such resources are exacerbated in large school districts, but the scale to which the M-DCPS portal extends shows that school challenges can be overcome.

### Approach

Overall, the portal was configured to connect silos of data and resources and to reduce dependence on paper-based systems and face-to-face meetings. The M-DCPS took these steps:

- *Identify and work on components.* Preliminary work started long before the portal technology was identified and deployed. The M-DCPS first identified and addressed data, infrastructure and procedural needs in several areas. For example, an educational data warehouse solution, a single sign-on for disparate network services, a password reset procedure and a network-savvy security policy were all part of the general preparation of the technology (and business and instructional) environment.
- *Identify stakeholder needs.* Business and technology leaders first conferred to identify the goals for a single point of distribution for information and services for each of the

identified stakeholder groups. Focus groups of various stakeholder segments were used to gather, as well as to confirm, the list of desired portal deliverables.

- *Use a Portal Lite.* Calling it Portal Lite, M-DCPS used Windows SharePoint Services (WSS) in May 2006 to test the technology and to show users a portal and how it can be used. Students were the initial target audience.
- *Scale to full production.* The enterprise portal was put online in November 2006. By April 2007, M-DCPS had provided students and employees with access (see Figure 1). It did not extend portal access to the general community until August 2007, using the time in between to develop the next steps, as well as to continue testing and confirming the progress of the portal.

## Results

### M-DCPS Portal Deliverables

The key portal deliverables for each major subset of stakeholders are listed in Table 1.

**Table 1. Key M-DCPS Portal Deliverables**

Stakeholder	Goals
<b>Students</b>	The portal provides access to: <ul style="list-style-type: none"> <li>• Classroom assignments</li> <li>• Instructional resources (for example, homework help links)</li> <li>• Viewing schedules and grades</li> <li>• E-textbooks</li> <li>• Storing documents</li> <li>• Teacher and student collaboration site</li> <li>• School announcements and events</li> <li>• Creating their own "my site" (in the future)</li> <li>• Single sign-on</li> <li>• SPOTS (spotlighting student success)</li> </ul>
<b>Parents</b>	For each child in every class or grade, the portal provides access to: <ul style="list-style-type: none"> <li>• Attendance</li> <li>• Classroom assignments and grades</li> <li>• Teachers and staff in lieu of face-to-face meetings</li> <li>• Service options (for example, cafeteria and lunch payments)</li> <li>• Student schedules</li> <li>• E-textbooks</li> <li>• School bus information</li> <li>• Free and reduced-price meal application process</li> <li>• A way to ask questions</li> </ul>

Stakeholder	Goals
<b>Teachers, administrative staff and employees</b>	The portal provides access to: <ul style="list-style-type: none"> <li>• Student data as appropriate to the role (for example, demographics, grades, achievement scores, attendance, homerooms and birthdays)</li> <li>• Curriculum resources</li> <li>• Professional development sign-up and/or delivery</li> <li>• Employee self-service (for example, payroll information and benefits selection)</li> <li>• Single sign-on</li> </ul>
<b>Community</b>	The portal provides access to: <ul style="list-style-type: none"> <li>• M-DCPS news and initiatives</li> <li>• Business internships</li> <li>• Supplemental educational services</li> </ul>

Source: Gartner (December 2007)

## Educational Value Points

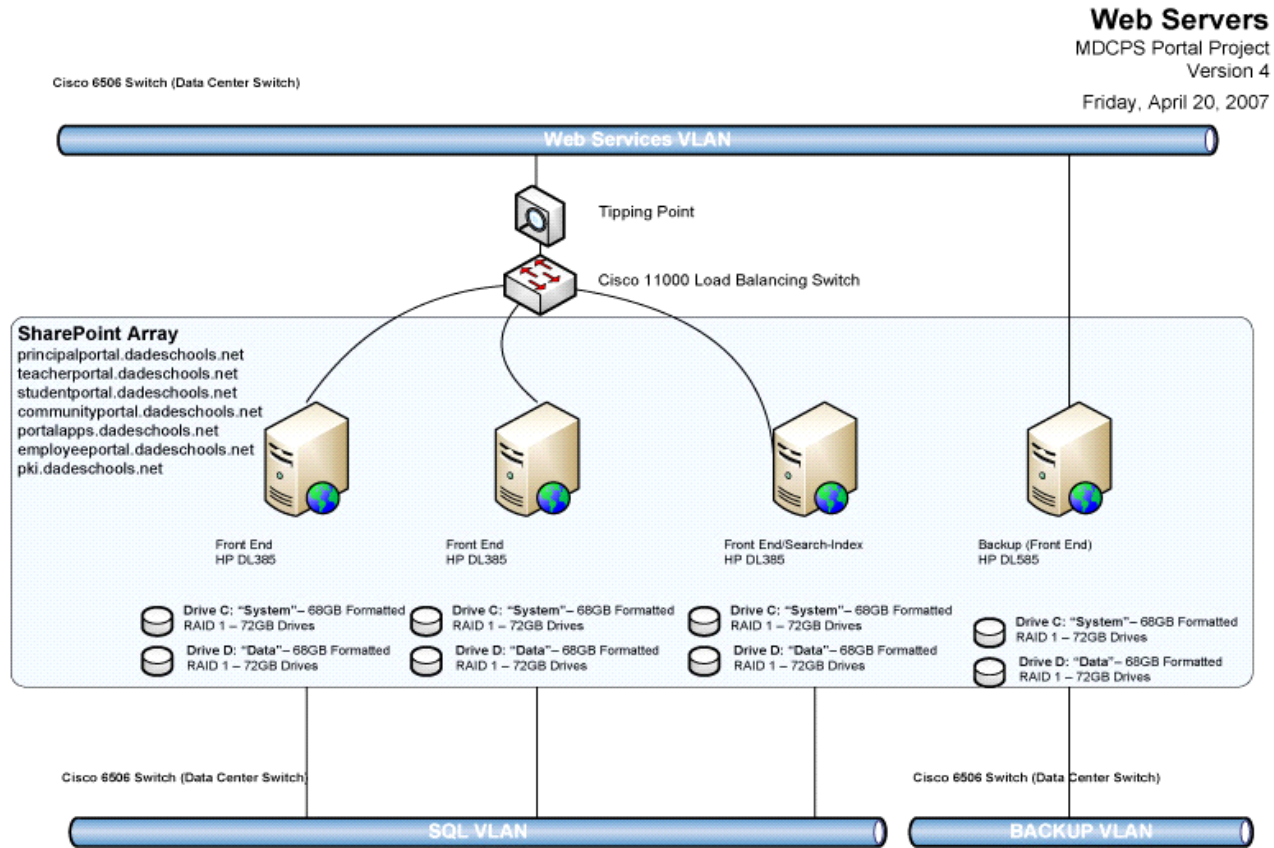
The M-DCPS portal realized these educational value points:

1. Students are using the easy access to grades to monitor their progress and are using the portal to take additional classes. M-DCPS has seen an improvement in attendance since the portal came online.
2. Parents are taking a more active role in the educational process. Information is available to them on a 24/7 basis; they are no longer dependent on scheduling conferences with school personnel if they want to keep up with their children's educational progress and activities.
3. Teachers have immediate access to student information and curriculum resources for planning instruction. All employees have easy access to payroll information and professional development information. There has been a general improvement in the communication between school district departments.
4. M-DCPS also reported improved community involvement. This is in addition to (if not because of) more visibility of innovative district programs and other news.

## Technical Schematic

The technical schematic in Figure 1 shows how the M-DCPS portal is configured to scale out to the community.

**Figure 1. Configuration of the Miami-Dade County Public Schools' Portal**



Source: Miami-Dade County Public Schools (April 2007)

The Web services VLAN is a "virtual LAN" set up explicitly to isolate portal-bound traffic from other core network traffic, such as to the mainframe computer. The TippingPoint device is an intrusion prevention system device designed to prevent hacking or other unauthorized use. It blocks any and all traffic that is not a legitimate portal transaction. From the TippingPoint, all traffic flows into the Cisco 11000 switch — a high-performance, load-balancing device that distributes portal traffic to one of three portal front-end Web servers. The fourth server below the Cisco 11000 is designated a backup device. The various disk space allocations defined for the servers are represented just above the redundant connection points to the ITS core network (Cisco 6506 switch) VLAN and backup as shown at the bottom of the diagram.

## Critical Success Factors

The pilot program provided valuable information on the viability of the technology. It also served as a platform for involving target audiences in identifying portal deliverables that were of value. Finally, it resulted in stakeholder ownership — an important factor in gaining and maintaining support of the initiative. Critical success factors for the program include:

- **Focus group meetings with parents, teachers, principals and district administrators.** The meetings served much the same purpose as the pilot program and were used to ensure that the needs of all the areas were heard and understood.
- **A phased approach.** This permitted M-DCPS to test the system, as well as to ensure that stakeholder expectations were held in check. Had it enrolled all three major stakeholder groups (students, employees, parents and community) at once, it would have overloaded its ability to onboard the user groups, or to respond to whatever problems that may have arisen with the resources or interface provided to any one group.
- **Infrastructure improvements — including single sign-on and password reset projects.** This erased potential roadblocks to a positive portal user experience. Attending to the infrastructure also ensured that it had the skill sets necessary to support a portal across the enterprise.
- **A mature business and technical relationship with the technology platform — in this case, Microsoft.** The school district's experience and partnership with the provider was instrumental in making the portal deployment successful.
- **A data warehouse strategy.** Prior to the portal project, the school district had implemented a data warehouse strategy for personnel and student data. The project team was able to spend time building access to much of the desired data from that source, rather than from multiple sources.

## Lessons Learned

School districts or other educational agencies initiating their own portal projects should note these lessons from the M-DCPS project:

- M-DCPS realized that it had overestimated the number of services it had at its disposal, and it had underestimated the number of staff necessary to design, build, deploy and service the portal.
- Mapping and establishing the portal environments for each user category before the project would have been a more economical use of time and staff.

- Initially (at least), the absence of a formal change control strategy slowed progress.
- The time and effort required to get staff working together to integrate existing technologies with the portal technology should not be underestimated. Getting all the parts to work together was more challenging than anticipated and required an increased number of meetings of staff from different M-DCPS IT departments. This was in part because of the relative newness of SharePoint, as well as IT staff coming from a number of M-DCPS IT departments and their corresponding areas of responsibilities — for example, the infrastructure, portal development, Microsoft Exchange, data warehouse and so forth.

## **RECOMMENDED READING**

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"Case Study: A K-12 School District Portal Project for Student and Teacher Collaboration"

"Case Study: The Wake County Teacher Portal Project Shows the Value of Grounding IT Solutions in User Characteristics"

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