

Where Performance Matters Most: *In the Miami-Dade County Public Schools, BI and planning enable educators*

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R E S E A R C H

Aligning Business and IT To Improve Performance

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In the course of our market research and consulting, Ventana Research occasionally encounters end-user organizations that have made breakthroughs in performance management. We solicit their participation in telling members of our research community about these efforts. With their approval, we create profiles that describe real-world examples of innovation in action. We hope that professionals reading them will find not only situations relevant to their own but also new ways of thinking about how to address the challenges they face in striving to improve their organization's performance.

Where Performance Matters Most

Public education in the United States is always contentious. Parents, educators, politicians and seemingly everyone else have strong opinions about how children should learn and be prepared for life as adults. But today the emphasis from all sides is on performance: of the students most of all but also of school systems and personnel, from top administrators to teachers in the classroom. Accompanying this emphasis is a demand for accountability from everyone who works in education.

This demand exerts great pressure on school districts. Like others, as the Miami-Dade County Public Schools (M-DCPS) strives to fulfill its mission, it also must demonstrate how well it is performing, at every level. To help manage both these requirements, it adopted tools for business intelligence (BI) and planning and budgeting from Cognos.

These are challenges on a large scale. With nearly 2.5 million residents, Miami-Dade County is the most populous county in the state of Florida. Its public school system is the largest in the state and the fourth-largest in the U.S., instructing about 345,000 students in 376 schools. In many ways it resembles a large corporation. The district has an annual budget of almost \$6 billion and 53,000 employees, roughly 24,000 of whom are teachers. And although it does not report to shareholders, M-DCPS must answer to the state legislature, the federal government and the taxpaying public.

To be able to do so, district personnel need information about performance, and particularly student performance. The district has a long history of using computers to assist its processes and had built data warehouses for storage. But until recently most employees weren't able to get the information they needed easily and when they needed it. "Only power users with ODBC connections could access that data," says Victor Diorio, executive director of enterprise architecture for M-DCPS.



Getting the Information Out

As a result, teachers rarely had access to useful information about new students who were placed in their classes. "We were, as our superintendent Rudy Crew said, data rich but information poor," Diorio recalls. Lacking ready access to information about the new student's capabilities or scores on standardized tests, for example, the teacher was limited in being able to suggest programs that might help the student do better.

Principals evaluating teachers and administrators assessing whole schools' performance were similarly encumbered. "We needed a tool that made information available to all consumers across the spectrum of the organization, which includes the education, business and support divisions," Diorio says. The district also wanted to track key performance indicators (KPIs) – particularly those related to scores on the standardized Florida Comprehensive Assessment Test (FCAT) – against performance improvement goals it had set.

In 2005 it issued a request for proposals for business intelligence tools that would enable users to access easily and analyze data and turn it into information that would guide action. A cross-functional committee of administrators, technologists, business users, school principals and teachers evaluated the proposals; after selecting four finalists, committee members spent two weeks performing a proof of concept using actual district data. In the end, M-DCPS chose Cognos BI as the tool of choice for both educators and business users.

As part of the deployment, the BI team built a portal to provide information access through the Web for each administrator and teacher. Users, whether they are teachers, administrators or on the business side of operations, can drill down to find information related to their jobs. "All our reports are dynamic," Diorio explains. "They go to the data source every time you invoke the report." Thus, the user can easily find as much detail as needed to answer questions or develop specific plans or reports.

As well, the IT team keeps that information up to date so users can respond quickly to changes in their environment. "We refresh our data warehouse every night, and that refreshes our data model in Cognos, so the information is always timely," he adds.

Having that context can make an immediate difference, as in the case of students who transfer. "Now when a child

AT A GLANCE



Miami-Dade County Public Schools

Headquarters: Miami, Florida

Employees: 53,000; 24,000 are classroom teachers

Students: 345,000

Projects:

The school district needed to facilitate access to information that can help school district employees and students improve performance. Using BI tools, a cross-functional team built a portal and established performance scorecards. Later, as the district adopted zero-based budgeting, it used planning software to bypass its antiquated budget system and tie funding to school-based activities.

Outcomes:

People: Teachers use the portal to access information about students. Principals use it to track their teachers' and schools' performance. Budget planners associate budget figures to activities at schools.

Process: Reports enable users to drill down to details. Scorecards track performance against KPIs. The planning and budgeting system links to a strategic planning system.

Information: The enterprise data warehouse, refreshed nightly, provides up-to-date information to users. The in-house-developed Strategic Management System and planning tool provide information for activity-based costing.

Technology: The Web-based portal is much easier for budget analysts and school personnel to use. Cognos Metric Studio enables scorecards for performance management. Cognos Planning draws information from the mainframe finance application to support the new approach to budgeting.

Business Benefits:

Miami-Dade County Public Schools is able to provide easy access to needed information and user-friendly tools that help teachers and administrators manage their own performance and help teachers guide students to improve. Its planners can create budgets that derive more value from scarce resources.

shows up in a new class, that information is already there in the class roster in the portal, just mouse clicks away,” says Diorio. The student’s profile includes personal and contact information as well as three years of grades in all courses, prior school history and FCAT test scores and comparisons. After reading these reports, he notes, “a teacher can do targeted instruction or implement prescriptive teaching to help that child” improve where needed.

Performance Management Across the Board

Performance management is a concept rarely applied to children, but it’s not inappropriate to do so. The techniques for helping a student improve performance may differ from those used for business, but the goal is similar: to empower people to do their best.

M-DCPS seeks to do the same for its employees at all levels, and the BI system provides similar performance

‘Now when a child shows up in a new class, information is already there in the class roster in the portal.’

-Victor Diorio, executive director of enterprise architecture, Miami-Dade County Public Schools

management resources for principals, operations supervisors and administrators. To extend Cognos BI, in 2007 the district brought in Cognos Metric Studio to make it possible to develop performance scorecards. Now, principals can view KPIs tracking student attendance, staff attendance and student suspension rates, all of which affect student performance, school performance and the budget.

“We present to principals their actuals against the target the district has set for that KPI,” Diorio explains. He notes that the system

highlights in red, green or yellow, “like a stoplight,” the school’s performance against the target, along with a trend arrow. Principals have an additional incentive to use the tool: Their bonus pay is tied to success on the scorecard KPIs.

Tying Budgets to Strategy

Setting school budgets is as complex and contentious a matter as student performance. Having accurate, consistent information is indispensable for understanding what resources are needed and available, and for distributing them strategically and fairly.

The administrative budgeting process at M-DCPS was complicated by the nature of its core finance budget system: It runs on a mainframe, was developed in-house in the 1970s using COBOL and hasn’t been upgraded in almost a decade. The budget for which it stores data is based on the number of teachers needed, which in turn is derived from student enrollment. To develop the budget numbers, budget analysts had to consult numerous different paper reports – from HR, payroll, the various schools and other sources – and spent many hours manually entering data into the system.

This process was inefficient and error-prone; the application also was difficult to use. “You had to understand those specific reports,” Diorio explains. “If you couldn’t understand them, you couldn’t budget. When a new budget officer or analyst came in, there was a long learning curve.”

The antiquated system also couldn’t integrate with the district’s planning efforts. The IT Services department had developed in-house and deployed in 2005 a modern, Web-based strategic planning application, called the Strategic Management System, and wanted to be able to link not only strategic objectives but ongoing activities with their costs. Toward this end, M-DCPS switched to zero-based budgeting, which requires each new year’s budget to begin from zero and justify all requests for funds. It also adopted activity-based costing, which ties budget numbers to strategic initiatives; thus, in budgeting, each location has to tie staff members’ time (as portions of their salaries) to activities that have been developed for that location. “In this way there are dollar amounts assigned to each activity,” explains Jorge Fernandez, director of program management and process engineering.

Unfortunately, activity-based planning occurs in the Strategic Management System, while budget data still resides in the old mainframe application. “Because the two systems don’t merge, we could not have one report that shows how many dollars are spent on each activity,” says Carol Hsiao, project manager for business solutions. “That was a very frustrating situation.”

Therefore, IT Services began to look for software that could address the disconnect. With Cognos BI working well, in 2006 the team invited Cognos to demo its complementary Enterprise Planning application, found it both easy to use and compatible with the planning system, and moved to deploy it.

Enterprise Planning relieves the analysts and contributors who build the budget of dealing with inflexible mainframe reports. Its reports, Diorio says, are “spreadsheet-like, the kind of stuff budget analysts are used to dealing with, unlike that esoteric, 30-year-old technology and paper reports.” And, he adds, doing it all online in a Web-based environment is a more efficient and streamlined process.

Budgeting by the School

M-DCPS implemented strategic budgeting first for the non-school-site departments, which include administrative and support services such as IT, transportation, food service, maintenance and police, going live in April 2007. For the schools themselves, the district is moving to school-based budgeting. In this system, after the actual amount of funding is set according to the number of students enrolled, each principal can determine how to spend that money at the school. If a school will have many more third-graders in the coming year, for example, the principal can choose to hire an additional teacher for that grade and reduce expenditures elsewhere to compensate.

‘Budgeting online in a Web-based environment is a more efficient and streamlined process for the analysts.’

–Victor Diorio, executive director of enterprise architecture, Miami-Dade County Public

Having the Cognos tools in place makes this approach feasible. The mainframe system generates the budget for each school, then IT feeds those budgets into Cognos Enterprise Planning, which the principals use to model what-if changes and adjust their budgets. Because M-DCPS principals and teachers already use computers for many processes, IT Services was able to train principals and their assistants to perform these budgeting tasks without much difficulty. The School Based Budget System was implemented in April 2008.

The BI and planning systems have contributed to major positive outcomes. M-DCPS as a whole has a better grasp of conditions, whether educational, operational or monetary, and stays abreast of changes. The district is able to satisfy the various demands for accountability more easily and fully. And it has empowered individuals at each level by providing up-to-date information they can understand and analyze to improve their own performance and that of the people who matter most: the students of Miami-Dade County.

About Ventana Research

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