



The power of performance management

Success in primary and secondary education

Overview

From the highest level of government down through boards and districts, teachers, parents and students themselves, everyone with a stake in education wants to see good results. They want to know how well schools are delivering education and how they can improve. They want to know why some students fail where others excel. Parents are more empowered than ever to ensure their children receive the education they need and deserve.

Technology is now supporting the intuition and experience of educational experts and helping schools spot patterns, identify critical thresholds and monitor for signs of struggle. Performance management software is helping schools, boards, districts and education departments take advantage and make sense of their rich data to monitor performance levels against scarce funds, all the while freeing up principals to lead and teachers to teach.

IBM® Cognos® performance analytics software provides an integrated platform for education performance management. It aggregates and leverages critical data, and delivers the scorecarding, reporting, analysis and planning tools to optimize performance and accountability. With our software, educational organizations can make timely, informed decisions in all areas—student results, attendance and interventions, curriculum, teacher performance, facilities, operations and more.

Cognos software and services help the education sector to:

- Calculate curriculum costs against performance
- Monitor student headcount and achievement, school reputation, national agendas and other key performance indicators (KPIs)
- Spot high- and low-performance schools or programs
- Map enrolment to attendance and attendance to performance
- Speed compliance reporting
- Share secure Web-based information with all stakeholders



Read on to find out how leaders in primary and secondary, or K-12, education are using Cognos software to turn a rich field of data into insight they can use. Learn how:

- **Miami-Dade Public Schools** is using Cognos 8 Planning to help eliminate low-performing schools, increase academic achievement for all students and bring cost-efficiency to the district's construction and business practices.
- **Mobile County Public Schools**, the largest school district in Alabama, was battling a dropout rate of 48 percent. IBM and partner DecisionEd Group created a reliable, real-time student data source that alerts staff when students cross "at-risk" thresholds, enabling them to quickly move to resolve issues.
- **School District of Palm Beach County** in Florida provides staff with consistent data, student reports based on multiple sources of data and a data-rich, interactive, user-friendly, just-in-time reporting solution based on Cognos software.

Miami-Dade County Public Schools

Miami-Dade County Public Schools (M-DCPS) is the fourth-largest school district in the U.S. With an annual budget of \$6.1 billion, the school system has approximately 350,000 students, 50,000 employees, 367 schools and 150 school administrative support sites. The M-DCPS is committed to providing educational excellence for all by providing the highest quality education so that students are empowered to lead productive and fulfilling lives as responsible citizens. In support of its vision, the M-DCPS pursues the highest standards in academic achievement and organizational performance.

To help build a better foundation for higher performance across the district, the M-DCPS decided to deploy an enterprise planning solution for its 150 school administrative support sites. The M-DCPS selected Cognos 8 Planning to enable it to integrate its budgeting and strategic planning processes in real time, gaining immediate insight into resource requirements and future business potential.

Challenges faced

Each of the district's 150 administrative support locations managed its budgets and strategic planning using separate Microsoft Excel spreadsheets. Not only was it difficult for users to gain a quick understanding of how these two processes related, but as a result of this piecemeal procedure, 300 reports were being generated every time budgets needed to be closed. In addition, each report needed to be manually consolidated, a time-intensive task.

"We needed more flexibility when it came to budgeting and strategic planning. We wanted a solution that could combine the two processes and would be easy for end-users," explains Eugenia Sanchez de Fuentes, Executive Director, Budget, Miami-Dade County Public Schools. "Our previous structure also made it very difficult to track and keep a proper audit trail."

The M-DCPS was looking for a flexible enterprise planning solution that could combine its budgeting and strategic planning processes. The organization also needed a solution that could be rapidly deployed and was easy to use.

Strategy followed

When M-DCPS was considering solutions, the IBM Cognos solution was at the top of its list. The district had recently standardized on Cognos 8 BI, and was impressed by its scorecarding capabilities and the strong results achieved since the implementation. After a rigorous evaluation of enterprise planning solutions by the district's Information Technology Services (ITS), M-DCPS decided to move forward with Cognos 8 Planning.

To ensure a smooth and rapid deployment, M-DCPS called on Cognos Professional Services. "We had an aggressive schedule—about six months to get up and running. It was amazing what was accomplished by Cognos Professional Services so quickly and so well," states Worthy Fuentes, Budget Supervisor, Miami-Dade County Public Schools.

In addition to its technical expertise, Cognos Professional Services provided M DCPS with extensive knowledge transfer. "There was constant communication every step of the way," states Fuentes. "Augmenting its one-on-one dialogues, Cognos Professional Services provided the district with detailed documentation on how its solution was built, best practices and troubleshooting tips."

The M-DCPS was also pleased with project management expertise it received from Cognos services. “We were thrilled with Cognos Professional Services,” stresses Sanchez de Fuentes. “From start to finish, we received excellent customer service. During the designing, building, and testing of our Cognos 8 Planning solution, Cognos Professional Services was always there for us.”

With the goal of accelerating end-user adoption, the district partnered with Cognos Education for on-site training of its 150 users. “The end-users got incredible support from Cognos Education,” comments Sanchez de Fuentes. “The trainers made sure we felt comfortable using our new solution, and had an amazing knowledge of Cognos which they conveyed very well.”

During its rollout, the M-DCPS also had the opportunity to work with Cognos Support. As well as using the Cognos Knowledgebase, M-DCPS often relied on phone support. “Cognos Support would always take the time to understand our issue, research it and then quickly call us back with the best possible solution. Cognos Support always nipped the problem in the bud,” praises Fuentes.

Another integral component to the project’s success has been the ongoing support Sanchez de Fuentes and Fuentes received internally. In addition to the executive sponsorship from Ofelia San Pedro, Deputy Superintendent, Business Operations, it received constant assistance from Kevin Davis and Carol Hsiao from ITS.

Benefits realized

“We are thrilled with Cognos. At the beginning, end-users worried that the budgeting and strategic planning processes would be a nightmare like last year. When they started working with Cognos 8 Planning, we were showered with praise. In addition to finding the new process painless, our end-users were impressed by the solution’s flexibility and user-friendliness,” explains Fuentes.

With Cognos 8 Planning, operational budgets from the M-DCPS can now be tied to strategic initiatives and the detailed activities that support those initiatives. By integrating these processes, end-users can now easily access a complete, consistent and real-time view of their information, enabling

them to make better decisions in a more timely manner. The transparency obtained through Cognos 8 Planning also makes it easier to keep an audit trail.

With its new solution, the district’s administrative support staff have helped to drive the strategic agenda. With Cognos 8 Planning, end-users have completed milestones in eliminating low-performing schools, increasing academic achievement for all students and bringing cost-efficiency to the district’s construction and business practices.

Another key benefit of Cognos 8 Planning has been its ease of use. “Many of our employees are not finance people. They are curriculum people. Cognos 8 Planning made it a lot easier for them to get information the way they needed it,” explains Sanchez de Fuentes. “Our end-users also love the Microsoft Excel feature in Cognos 8 Planning because of their familiarity with the interface. This capability helped with the transition to the new solution.”

Additionally, the solution’s ability to provide pre-populated information gives users more guidance and saves them time. Equally important, the solution makes it is easier for the Budget Department to manage the overall process. “With Cognos 8 Planning, we are able to give end-users a target, see if they are over the target and conduct deeper analysis to provide the Deputies with updates at a much faster pace,” says Fuentes. “Users also get immediate feedback by seeing the direct effect of their entries, relative to their target. Plus, the dollar values are shown for the initiatives now.”

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Miami-Dade County Public Schools*

Furthermore, the Budgeting Department has increased the integrity of the data and overall efficiency. “Last year, it was a lot of manual labor to get the numbers right. We plugged in data by hand, report after report,” notes Fuentes. “And every time you manipulate data, there is a chance you’ll make mistakes,” adds Sanchez de Fuentes. “This year, with Cognos 8 Planning we were able to receive a file from ITS, upload it and have the updated information the next day.”

Sanchez de Fuentes sums up the district’s Cognos experience, “Cognos 8 Planning has made the budgeting and strategic planning process a hundred times better than it was before. This has made 150 sites very happy.”

Mobile County Public Schools

Which students are at risk of dropping out? Which intervention programs work, and for whom? With a dropout rate of 48 percent, far higher than the national average, Mobile County Public Schools needed to know. Mobile is the largest school district in Alabama, USA, with more than 63,000 students in 95 schools.

Unfortunately, attendance, test and student data was disconnected, and reports were out of date by the time they were received. Without advance warning to identify at-risk students and lacking good information on what types of interventions would help individual students, teachers and administrators were struggling to intervene effectively.

Transforming its information architecture

The Mobile County Board of Education was inspired by a vision of a single, reliable source of information. Its first step was to engage IBM to help understand the gap between the existing environment and its vision. IBM’s recommendation was to develop an integrated data warehouse and a reporting infrastructure. The next step was to develop a workable plan to effect a transformation of its information architecture. But Mobile County had limited experience in data warehousing, so the district engaged IBM to conduct a detailed engineering case study. This study gave Mobile County invaluable information on the best way to integrate disparate data sources, a projected implementation timeline, an estimate of the human resources needed to maintain the system and the likely system costs.

With this information in hand and budget approved, Mobile County engaged IBM and IBM Business Partner DecisionEd Group to implement a comprehensive business intelligence (BI) and performance management solution. DecisionEd’s solution is built on leading-edge IBM Cognos analytics technology, and thanks to detailed advance planning and DecisionEd Group’s experience in K-12 or primary/secondary education, the system was installed and configured in just seven weeks.

“We needed a smart system where we could share real-time student information and identify where we are successful, and where we are not,” says David K. Akridge, Executive Manager, Information Technology Services, Mobile County Public Schools.

Improving school performance with analytics

This first phase integrated the various sources of Mobile County’s data into a single trusted source, based on DecisionEd Group’s proven data model. Predefined extract-transform-load (ETL) architecture and code along with pre-built extractors for common K-12 systems brought all the data together, while metadata management helped to ensure that this information could be trusted. This framework and more than 240 predefined dashboards, reports and analytical routines made it possible for Mobile County to be up and running quickly and effectively.

With horizontal integration and rapid, accurate reporting, Mobile County met its initial objective. But after the system was operational Mobile County managers realized how much more was possible. Instead of just using the data they had collected for compliance reporting, they saw the opportunity to transform their day-to-day operations. Mobile County is providing district and school administrators with accurate, timely information and analytics on operational effectiveness so they can gauge how well their schools are delivering education programs and monitor the entire academic life cycle of each student. More strategic use of information is now driving operational improvement throughout the district—helping administrators, principals and teachers to improve schools, not just to report on them.

Going forward Mobile County sees even more potential for analytics to change its operations. Whether it is using past budgeting trends to make better budget decisions, helping teachers find their strengths, or linking the district's KPIs more directly to operations, information is going to continue to transform Mobile County Public Schools.

Reducing dropout rates

Rapid access to information and analytics means school administrators and principals can make more informed decisions and take appropriate and timely action. Proactive alerts are sent when a student crosses “at-risk” thresholds. With this advance warning, school officials can intervene to keep students in school—preventing or resolving issues before they escalate. They can develop an individualized response to each student’s problems and monitor progress. Timely intervention based on real-time information is helping Mobile County keep students on the right path and drive down dropout rates.

School districts like Mobile County don’t measure benefits the way commercial organizations do. “The real benefit will come as Mobile County puts its information to work, driving down dropout rates and improving academic outcomes for its most at-risk students,” says Akridge. “We can show a financial return from reduced costs just by improving our reporting process. But the real return for a school district comes from graduating more and better-prepared students.”

School District of Palm Beach County

The School District of Palm Beach County, in West Palm Beach, Florida, is the eleventh-largest district in the United States. With a budget of \$3.3 billion in the 2009 fiscal year, the district has 227 schools, including charter and alternative schools, serving 168,751 students and supported by 21,781 employees. School grades within the district are among the highest in the state.

Challenges faced

Both strategic and operational factors drove Palm Beach school officials to implement a BI solution. Fact-based decision-making across the district relied on outdated, siloed analytic applications that produced reports with inconsistent and sometimes conflicting data, at high cost. Reports were often too late to be effectively acted on to make decisions to support student achievement. They lacked enough granular

data for meaningful root-cause analysis, as well as the interactivity that would allow drilling down into the detail of a metric.

“Our administrators and teachers needed more information than they had access to before, and whether it was the day-to-day trends, or period-to-period data,” says Diane Conley, Educational Data Warehouse Director for the School District of Palm Beach County. “We needed to be able to aggregate and report data at different levels and make comparisons.”

Strategy followed

Based on School Superintendent Dr. Arthur Johnson’s initiative to transform reporting and ensure that data analysis is at the core of decision-making, the district pursued a

strategy of pervasive BI. The district's BI initiative, the Educational Data Warehouse (EDW), gave more than 12,000 teachers access to their students' achievement, attendance and behavioral data. Administrators at the district, area and school levels could access critical information, and School Board members had access to summary information. EDW now provides the district with one reporting solution, eliminating the possibility of different results from different data sources.

To encourage user adoption, the EDW team provided extensive training on the new query, reporting and analysis functionality. In terms of access, there are three distinct tiers based on a strict security controls. The first level is teacher access, which allows access to reports only for the students they instruct. The second level is school-based, which allows access to reports only for the students enrolled in that school. The third level is full district access for administrators with unfiltered access to reports for all students in the district.

Benefits realized

Based on Cognos software, the district's EDW now provides users with consistent data, single reports with multiple sources of data regarding one student and a data-rich, interactive, user-friendly and just-in-time reporting solution.

To say the district is getting good use of its investment in BI would be an understatement. Since July 1, 2008, almost one million reports have been run (mostly by teachers). The reports grant users quick access to data in the format they require. The data is used by administrators throughout the district, including School Superintendent Johnson, whose executive scorecard includes KPIs such as literacy and proficiency, state-wide testing scores, graduation and drop-out rates, and safe school environment data.

BI has played a key role in Dr. Johnson's and the district's vision. With the Cognos system, users are able to measure performance against a number of internal and external benchmarks and directly link the EDW to a number of quantifiable business benefits, including:

- A cultural transformation has taken place in the district with educators making data-driven decisions to guide educational programming and set measurable performance objectives.

- Pervasive EDW applications in the district have empowered principals and teachers with a wealth of information to change instruction to improve student performance.
- Significant improvements on Florida Comprehensive Assessment Test (FCAT) have occurred. The district's high performance has been directly linked to the extensive use of the EDW by district employees.
- EDW was identified as a key contributing factor in the awarding of District Accreditation as a Quality School System through SACS CASI and Advance ED.
- The use of the EDW is a major contributing factor in the district being the only urban school district in Florida to earn a District Grade of A for five consecutive years.

One specific area where the solution proved its mettle is with standardized testing. With the FCAT, administrators can not only see how students at individual schools scored on the annual tests, but they can also measure specific performance indicators within state and federal accountability groups at specific schools based on race and other demographics. Those scores can then be compared to the same sub-groups at other schools in the district, and with similar schools across the state. Students' rate of improvement or decline is also measured on many levels. The state's seven largest urban school districts are compared to each other and reviewed based in large part on these test results.

Based on this success with Cognos 8 BI, the district has plans to significantly expand its reporting capabilities to include data from the HR department and transportation systems. The potential is there for parents to be notified if a child's bus is going to be late because of any delays encountered, such as the occasional breakdown or heavy traffic conditions. In another initiative, more extensive dashboards are being eyed, in order to provide Superintendent Johnson with even more insight into operations.

To find out more about IBM Cognos solutions for education, visit www.ibm.com/cognos/education.

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IBM Cognos business intelligence and performance management solutions deliver world-leading enterprise planning, consolidation and BI software, support and services to help companies plan, understand and manage financial and operational performance.

IBM Cognos solutions bring together technology, analytical applications, best practices and a broad network of partners to give customers an open, adaptive and complete performance solution. Over 23,000 customers in more than 135 countries around the world, including 9 of the top 10 high tech manufacturers in the world, choose IBM Cognos solutions.

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