

The School District of Palm Beach County harnesses the power of an IBM Cognos system to continue high performance

Overview

■ Challenge

Aggregate data from disparate data sources and external applications and obtain real-time, highly accurate consolidated views of student, school and district-wide academic information so teachers and administrators alike can have more insight when making decisions

■ Why IBM?

The School District of Palm Beach County upgraded to IBM® Cognos® 8 BI because of its robust functionality and flexibility, and the scalability that would handle the large amount of data the District keeps in its database

■ Solution

The IBM Cognos 8 BI solution enabled a streamlined approach for the District to view the student, school and district-wide data from a single EDW access portal

■ Key Benefits

Real-time line of sight for teachers' and administrators' reports; continuous access to key data; rich integration with multiple different data sources



The School District of Palm Beach County, in West Palm Beach, Fla., is the eleventh-largest district in the United States and the fifth largest in Florida. In area, it is the largest school district east of the Mississippi River – the county encompasses an area larger than some 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 in K-12 education, supported by 21,781 employees, including more than 12,000 teachers. The organization has nearly 40,000 computers (five years old or newer) available to

teachers and students arranged in a combination of networked computer labs, distributed workstations and stand-alone computers.

Seventy-two teachers earned National Board Certification during the 2007-2008 school year, bringing the total number of nationally certified teachers in the district to 569. Three of the district's schools were recently ranked among the top 100 schools in the US by *U.S. News and World Report*. School grades within the district are among the highest in the state, with 104 schools earning A ratings,

25 schools earning Bs, and 25 schools earning Cs (excluding charter schools). In addition, the District has earned an A rating from the Florida Department of Education for the fifth consecutive year based on student performance on the Florida Comprehensive Assessment Test (FCAT). Headquartered in West Palm Beach, the District has built 81 new schools and 34 charter schools in the past 10 years. There are 155 Choice Programs, which include magnet schools, career academies and choice schools and programs in 63 elementary, middle and high schools throughout the county, and more than 32,000 students participate yearly.

Challenges Faced

Both strategic and operational factors drove Palm Beach school officials to implement a BI solution. School officials were faced with a situation in which 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. Additionally, School Superintendent Dr. Arthur Johnson supported this business intelligence (BI) initiative for an Educational Data Warehouse (EDW) system.

Operationally, reports made available to various users lacked enough granular data for meaningful root-cause analysis. The reports were created using outdated analytic applications that were developed independently over time without an integrated data model. In some cases, because there were multiple sources for reports, different results were produced. More importantly, although paper reports were produced and contained extensive historical data and trend analysis, the reports lacked interactivity that would allow administrators to drill down into the detail of a metric or key performance indicators (KPIs). The user also needed to go to multiple reports with different information about the same student to make informed decisions. Thus, there was a need to consolidate the development and maintenance efforts and provide a single source for all data, so the District could provide just-in-time data in an easy to use format.

“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, the EDW provided the ability to produce the data required to make informed decisions” says Diane Conley, Educational Data Warehouse

“The development and implementation of the Educational Data Warehouse using the IBM Cognos application has been critical to the success of our District in improving our students’ achievement, as demonstrated by the District having earned an A rating from the Florida Department of Education for the fifth consecutive year based on the Florida Comprehensive Assessment Test.”

*Diane Conley,
Educational Data Warehouse Director,
School District of Palm Beach County*

Director for the School District of Palm Beach County. “Not only that, but for some information, we needed to be able to aggregate and report data at different levels, such as District, school and classroom levels. We also needed to make comparisons at those levels. The EDW now provides the 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. EDW provides this seamlessly with the IBM Cognos system.”

The IBM Cognos solution was chosen over several other competing vendors. Before the District selected the IBM Cognos solution, the organization was using Microsoft® Access® for some of its reporting needs, but administrators quickly realized that the tool had some shortcomings. Tracking trends was problematic, and the 2-gigabyte limit for databases became an issue due to the large amount of data the school system needed for reports. The District also needed easier navigation and wider availability to teachers and administrators.

Strategy Followed

In January 2003, School Superintendent Dr. Arthur Johnson launched an initiative to change the

way the District did its reporting, based on his vision that data analysis should be at the core of ongoing decision-making by district employees. From the outset, administrators knew that harnessing trusted information could strategically transform the District's already remarkable performance.

That vision took shape through a strategy of pervasive BI in support of the District's educational mission and improved student results. The District's BI initiative, the Educational Data Warehouse (EDW), was first deployed to administrators at the District, area and school levels, followed by the pervasive BI rollout throughout the organization, which included access to summary information for School Board members. EDW now provides the District with one reporting solution, eliminating the possibility of different results from different data sources, which is vital.

“Dr. Johnson provided leadership in our District's creation of the EDW, a single-source environment for all of our data needs,” says Conley.

The District's initial BI solution (IBM Cognos Impromptu® client-based report authoring software) was used primarily for operational reporting

prior to the deployment of the full EDW solution. The subsequent need for cross-system data integration and historical data analysis resulted in the development and deployment of the EDW, the deployment of IBM Cognos PowerPlay® multi-dimensional analysis software, and an upgrade of the reporting software to IBM Cognos ReportNet® for reporting and analysis. During 2008, the District began the upgrade of its various BI tools to IBM Cognos 8 BI, and school officials are now upgrading to the latest version of the software.

This EDW initiative gave more than 12,000 teachers access to their students' achievement, attendance and behavioral data, thanks to IBM Cognos ReportNet. To accomplish this project, two separate pilot programs were implemented, using a strong sampling of teachers and administrators across the district, to test the solution's parameters and capabilities. The first pilot program involved 201 teachers (three teachers with varying degrees of technological experience from each of 67 schools), and was done to monitor the system's performance and ensure an efficient roll-out to all teachers. The teachers chosen were given training and support ahead of time so that they could fully understand the system and

then provide valuable feedback. With their input, the EDW team improved and customized reports.

The second pilot involved all teachers at five prototype schools, where instructors were given training and support, then access to the system. Both pilots not only were seen as a success, but also provided a trial for hundreds of users before full implementation, so any issues could be addressed early on in the process.

To encourage user adoption, the EDW team provided extensive training on the new query, reporting and analysis functionality. The initial training was for three liaison teachers from each individual school, who then, along with EDW specialists, trained colleagues from the rest of their schools on the use of the solution's new reports. This collaborative approach assured smooth acceptance of the EDW, and seamless implementation across a large user base.

Once the introduction took shape, more than 1,000 users were added to kick off the implementation in August 2007. Groups of schools were rolled

out in stages, and three months later, the entire rollout was completed. Now, there are 16,000 active users across the entire district, the vast majority being teachers. Of that amount, roughly 2,000 users are administrators. In terms of access, there are three distinct tiers: 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; and the third level is full district access with unfiltered access for reports for all students in the District. This third level is used by administrators.

Because of the varying levels of access, school officials had to be very cognizant of privacy issues, so the District controlled access strictly through a security scheme that ensures people can only see the information to which they are entitled. Report data security is governed by IBM Cognos Framework Manager, and special database sign-on accounts eliminate the need for users to log into the database. Once users log on, a custom-access Web page appears. From there, users may select from a

number of student listings, graphs and summary reports, and within each report, select filter and sort options to meet their needs.

Several IBM Cognos consultants helped with ramp-up, and one consultant was kept on for some time to provide support to the EDW Team. The consultant's expertise expedited the full implementation of the EDW for Teachers project.

Benefits Realized

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. In most cases, a 10-page report is generated in less than 20 seconds. The system was upgraded to handle 670 concurrent users, a huge improvement from previous limits.

The data is used by administrators throughout the District, including School Superintendent Art Johnson, whose executive scorecard includes KPIs such as literacy and proficiency, state-wide testing scores, graduation/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 IBM 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.*

"The development and implementation of the EDW using the IBM Cognos application has been critical to the success of our District in improving our students' achievement, as demonstrated by the District having earned an A rating from the Florida Department of Education for the fifth consecutive year based on the FCAT," says Conley.

The District not only uses the IBM Cognos solution to analyze and report on its own data, but also to compare itself to other school districts around the state. That, coupled with the ability that administrators have to see pertinent information in one report – generated in seconds and in the way they want to view it – has saved both teachers and administrators countless hours. In fact, the District's entire roster of roughly 50 departments are rated yearly by principals. The EDW department was rated number one in 2008, and was in the top five in the previous two years, in large part because of the service EDW provides to its users. It was only a matter of time until users, regardless of their role, realized that the performance management solution was providing them the tools they need to produce great results in a dynamic, competitive environment.

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, and it's important to capture the resulting trends for analysis. The state's seven largest urban school districts are compared to each other and reviewed based in large part on these test results.

Within the EDW IBM Cognos solution, administrators have built in a prompt page that allows users to filter information by items such as student groups, performance, participation in services and programs, or grade levels. The EDW department works closely with the entire Information Technology (IT) department to collaborate on its goals and objectives, and meets weekly to discuss these items. The department does all the report writing, to ensure users can focus on student performance. Reports can be viewed in HTML, PDF or even CSV formats, and regardless of the format, all are interactive.

Based on this success with IBM Cognos 8 BI, the District has plans to significantly expand its reporting capabilities to include data from the HR department and transportation systems in winter 2009/2010. 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.

About IBM Cognos BI and Performance Management

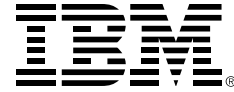
IBM Cognos business intelligence (BI) and performance management solutions deliver world-leading enterprise planning, consolidation

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 choose IBM Cognos solutions.

For further information or to reach a representative: www.ibm.com/cognos

Request a call

To request a call or to ask a question, go to www.ibm.com/cognos/contactus. An IBM Cognos representative will respond to your enquiry within two business days.



© Copyright IBM Corporation 2008

IBM Canada
3755 Riverside Drive
Ottawa, ON, Canada K1G 4K9

Produced in Canada
August 2009
All Rights Reserved.

IBM, the IBM logo, ibm.com, Cognos, ReportNet, PowerPlay and Impromptu are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries, or both. If these and other IBM trademarked terms are marked on their first occurrence in this information with a trademark symbol (® or ™), these symbols indicate U.S. registered or common law trademarks owned by IBM at the time this information was published. Such trademarks may also be registered or common law trademarks in other countries. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at www.ibm.com/legal/copytrade.shtml.

Microsoft and Access are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product and service names may be trademarks or service marks of others.

This case study is an example of how one customer uses IBM products. There is no guarantee of comparable results.

References in this publication to IBM products or services do not imply that IBM intends to make them available in all countries in which IBM operates.

Any reference in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.