

School District of Philadelphia improves performance with data-driven decision making.

Overview

■ **Business Challenge**

As the School District of Philadelphia collected increasing amounts of data intended to measure student progress and school effectiveness, they realized that data alone was not the answer. To transform and improve overall school operations and student achievement, the school district needed to integrate the use of the data into their day-to-day operations and enable data-driven decision making across the district.

■ **Solution**

The University of Pennsylvania, IBM and the school district teamed to implement a first-of-its-kind performance management system. The system leverages investments made by the district in information technology by incorporating leading-edge management techniques to use data to drive school improvement. The school district's new data warehouse now provides integrated information to create a monthly dashboard report for use across the school district. The report summarizes performance for over 700 key indicators, and provides the basis for ongoing collaborative improvement efforts at school, region and district-wide levels.



■ **Key Benefits**

- *Decreased teacher absence rate by two percent*
- *Increased student attendance rate by .57 percent*
- *Decreased suspensions by 23 percent*
- *Decreased serious incidents by 18 percent*

Transforming business processes to increase safety and create efficiencies

In the climate of compliance and increasing reliance on empirical data created by initiatives such as No Child Left Behind, school districts nationwide are collecting ever-increasing amounts of data in order to measure and increase student achievement and school performance. With more than 270 schools divided into 11 regions, the School District of Philadelphia is the seventh largest school district in the United States.

Business Benefits

- Provide an efficient and standardized method for data collection from various data sources
- Enable monthly meetings with data-driven discussions between principals, superintendents and the chief academic officer
- Automate 150 compliance reports ranging from attendance to special education reporting, creating a substantial saving in labor costs
- Decreased teacher absence rate by two percent
- Increased student attendance rate by .57 percent
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The school district was faced with trying to manage and understand data from over 50 disparate legacy applications. The district realized it needed to re-examine its business processes—as well as its data management processes—if it was to be successful in driving its administration toward a more data-driven decision-making culture.

Philadelphia teamed with researchers from the Fels Institute of Government at the University of Pennsylvania to implement SchoolStat, a performance management solution aimed at improving and better understanding the usage of data.

Using change management to enable cultural changes

In order to fully exploit the planned data warehouse solution that would fuel SchoolStat, IBM Global Business Services consultants worked closely with the school district to help guide it through the transformation in business processes that would be necessary for a successful implementation. Consultants helped the district develop processes for proper input of data. Specifically, IBM helped identify how to best outsource some tasks, assign key personnel to “data champions” roles to insure that data was entered properly, and hold weekly meetings to constantly promote proper usage of the warehouse data. One result of the transformation in business processes was that the team discovered that 150 compliance reports could be fully automated. These reports, ranging from attendance to special education reporting, were previously assembled by hundreds of employees.

Dr. Greg Thornton, the district’s chief academic officer, also established a SchoolStat committee comprising district officials, the Fels Institute and IBM, which collaborated in designing the graphs and reports to be used by SchoolStat. IBM consultants took the lead in defining the requirements and providing the data in usable formats.

“Like most school districts, we’re in the middle of a very aggressive reform. The IBM K-12 Education Data Warehouse will enable us to look at the impact of our strategic deployment of resources, in a data-driven fashion.”

—Dr. Gregory Thornton,
Chief Academic Officer,
School District of Philadelphia

Integrating robust data to monitor performance

The SchoolStat process has two integrated components: a performance management component and a robust data component powered by the school district’s data warehouse. The management component consists of monthly meetings where key performance indicator data is analyzed and discussed. In each of the school district’s 12 regions, regional superintendents meet with principals in small groups to discuss key data, performance and opportunities for improvement. The performance indicators include six-week

benchmark tests, teacher and student absence rates, suspensions and serious incidents, and other measures that underscore how well a school is performing. The principals and administrators identify trends, brainstorm strategies, monitor progress toward goals and share best practices. The district has seen improvement in absence rates for both teachers and students due to closer tracking, and suspensions and serious incidents have decreased, as administrators can now better identify warning signs and respond proactively. Month after month, the SchoolStat meetings proceed in a continuous cycle that aims to drive improvement.

Unifying data pulled from disparate systems

Because of its work with K-12 school districts over the years in building custom decision support systems and data warehouses, Philadelphia chose IBM as its partner to build the data component—a data warehouse, designed to access and organize data from the district’s disparate legacy data systems. “We have over 50 different applications in the school district, and from them we now track over 700 data variables in the IBM K-12 Education Data Warehouse,” says Pat Renzulli, vice president of information technology, School District of Philadelphia.

The data warehouse provides the data used to create the monthly dashboard report that summarizes performance for a number of key indicators such as benchmark tests scores, reading levels, suspension rates, and student and teacher absence rates. Principals and other district officials access the dashboard report through a portal, where they can also view curriculum, instructional resources, and student academic and demographic records.

Leveraging Philadelphia’s existing technology investment

All application development was done using technology already licensed by the district, thus eliminating the need for a major software purchase. The core of the data warehouse is a relational database management system (RDMS). It serves as the repository of detailed and historical information.

In designing this solution, IBM leveraged the existing system components and environments as much as possible. This was a natural choice, given the short time frame and existing strategic vendor partners, in-house skill sets, current team members and pricing advantages. IBM Global Business Services’ experience with a wide range of diverse platforms was key to the consultants being able to take advantage of Philadelphia’s existing environment.

Key Components

IBM Global Business Services

- Project Management
 - Business Process Reengineering
 - Change Management
 - Data Validation and Cleansing
 - System Development
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Why it matters

The School District of Philadelphia is pursuing aggressive reforms in business and educational processes to fuel student achievement. The district teamed with IBM and researchers at the University of Pennsylvania to develop a unique monthly dashboard report that accesses accurate and timely information from a data warehouse that extracts information from the district’s 270 schools. The new data-driven decision capabilities are the first of their kind in a school district, and this replicable solution will help drive a new level of collaboration between educators and administrators, and spur continuous educational improvement.

Opening up new ways to access data

By being able to track many different variables and combine that information, Dr. Thornton believes that the district will be able to sharply improve its organizational processes. "What the IBM data warehouse lets us do is isolate a specific academic intervention, and see if that made a difference for the student. We can determine the cost of intervention per student, and the effectiveness of that program," explains Dr. Thornton. "It's taking data, and creating a knowledge base from which we can build an action plan. It will allow me to focus more closely on budget and program selection, by combining and interfacing data that we already had. The warehouse enables me to look at factors across the whole district, and think about better resource deployment strategies."

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