

# Customer success in education



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Increasing enrollments and decreasing funding are realities for many academic institutions. And student expectations are changing—their technical requirements are high. K-12 schools struggle with high dropout rates and accountability mandates. For higher education, the challenges include institutional differentiation and an emerging focus on student outcomes.

Cognos, an IBM company, helps universities and colleges transform mountains of data into clear, actionable information for higher performance in these areas:

## Enhanced student management

- Identify and accelerate recruitment of the right students to achieve your goals.
- Measure in-class performance and curriculum management against plans.
- Compare student aid requests with grants and outcomes.
- Track and manage student performance across courses and disciplines.
- Deliver secure information services to staff, faculty, and students via the Web.

## Improved financial performance

- Collect, analyze, and report on revenue and expense data from different departments and systems.
- Track compliance with institutional, state, and national regulations.
- Measure the effectiveness of research funding against results achieved.

## Increased overall organizational performance

- Align institutional strategy with execution.
- Monitor ongoing performance against stated goals, and track critical performance metrics.
- Understand and manage organizational HR requirements, now and in the future.
- Consolidate student and administrative information across applications and databases into a single source.

## Superior advancement and alumni management

- Track state and other public grants, gifts, pledges, and endowments from alumni, corporations, and others.
- Identify your most effective fund raising programs.
- Analyze donor and alumni information based on geography, education level, occupation, and timing.

Cognos education performance management helps data rich, information-poor education organizations harness the full potential of their data. By streamlining the reporting and analysis process, DOEs, districts, and schools can create multi-variable reports with consistent data all from one data storage system. A balanced scorecard will aid education organizations in mitigating the multiple factors that impact targets and goals. And budgeting and planning allows DOEs, districts, and schools define, model, coordinate, and adjust targets and goals. Read on to discover how:

- The University of Minnesota saved \$5 million and identified a new revenue stream estimated at \$187 million with Cognos business intelligence.
- The NOEL York Collaboration is developing projects and optimizing budget resources for student benefit.
- The Zurich University of Applied Sciences Winterthur has streamlined the whole planning and budgeting process with Cognos 8 Planning.
- The University of North Texas used Cognos to reduce a 500+ hour reporting process to only a few minutes.
- The Burke County Board of Education uses Cognos to get a fuller assessment of student progress, analyze test results, understand attendance patterns, and create a full view of student performance across the many schools they serve.

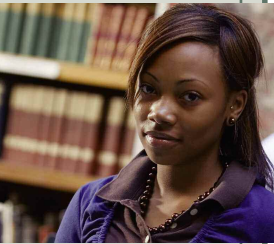
*Cognos was acquired by IBM in January 2008. Customer success stories written prior to that date may not reflect the new product naming conventions stemming from the acquisition.*

# NOEL York Collaboration



“Our collaboration has enabled all of the school boards, big and small, suburban and rural, to move forward and access important data through the Cognos tool. That’s a significant success story. Cognos is the known world leader in BI tools, and these school boards have teamed up with the Ministry to offer a revolutionary collaboration.”

*Diane Findlay, Project Lead for NOEL*



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NOEL (Northern Ontario Education Leaders) is an alliance comprising the leaders of educational organizations from eight northwestern Ontario school boards. The alliance is a collaborative forum in which directors, principals, teachers, and school boards from eight northern Ontario boards unite to develop projects and optimize budget resources to benefit students directly.

In 2006, NOEL teamed up with the York Region District School Board, just north of Toronto, to form NYC. NYC’s goal was to pool resources and share ideas on how best to use business intelligence (BI) and other technologies within the nine educational entities to increase and encourage student achievement. With funding from the Ontario Ministry of Education, the school districts merged ideas and technological expertise to deploy a solution from Cognos, an IBM company. With a common objective and platform for producing a data set for student enrollment and accomplishments, the group is changing learning practices for tomorrow’s classrooms.

## Challenges faced

As the NYC was formed, the members determined that they needed a solution that granted principals and senior management in Ontario schools timely access to critical student information. NYC needed to develop tailored school plans for continuous improvement, and enable administrators to direct more resources towards the students.

“There’s a culture here at NYC. I think that’s the key. The philosophy within these organizations is to use data to inform administrators and improve achievement. All of the boards are committed to continuing down this path,” says Diane Findlay, project lead for NOEL. “Historically, a lot of

**Industry:** Education

**Geography:** Canada

**Information needs:**

- Standardized reporting system
- User-friendly, intuitive tool
- Tracking tool for student success and progression

**Platforms:**

- Windows
- SQL Server

**Users:** 550

**Solutions:**

- IBM Cognos 8 BI
- Cognos Professional Services

**Benefits:**

- Easy access to information that is more accurate and timely
- Better informed decision-making
- Powerful analytics
- Flexible reporting
- Better collaboration among school districts

the educational data is old, snapshot information still used and recycled for decision-making. We are moving into a different era where we need to capture data immediately.”

Another challenge was the act of combining different data sources as NOEL and York fused together. As they began working together, the school districts needed a system to standardize the massive amount of disparate data formats that made it difficult to share information. By deploying a common BI platform, data would be shared and accessed communally.



## Strategy followed

Both NOEL and York already used BI solutions from Cognos, but the NYC project initiative called for an all-encompassing BI solution that would incorporate new reporting and analysis for school principals and senior board management. Pleased with its existing Cognos solutions, the collaboration chose to continue its joint relationship with the company by embarking on a project to standardize all BI configurations in the NYC, and establish best practices for viewing and analyzing student information.

The Ontario Ministry of Education launched a province-wide initiative, entitled Managing Information for Student Achievement (MISA), which provided funds to assist boards to develop local capacity to use data for reporting and analysis. As a result, the Ministry provided NYC with three years' funding towards its Cognos BI project.

As the first phase of NYC's Cognos project, NOEL analyzed the York BI configuration and was pleased with the benefits achieved from the individual school district's setup. NOEL contracted Cognos Professional Services to implement IBM Cognos 8 BI and configure it similarly in its eight school districts.

The second phase of the project was the development of the system for NYC, merging York and NOEL. In order to move forward, NOEL and York had to compare configurations, determine the challenges and differences, and collaborate on best solutions. The final phase consisted of adding more data sets into the shared system, including new student information, and most importantly, new report developments and enhancements. Since the information was pooled together to be managed across nine different school boards, the data rules and policies needed to align to the same objectives.

"What we've created is a common data warehouse design. A common set of extraction transformation load protocols. A shared set of reports that deliver data to school principals that will actually move the needle on student achievement," says Russ Coles, Senior Manager for Computer Applications at York Region District School Board. "As a result of the ability to analyze data and create interventions, we can increase student achievement and therefore augment our bottom line—student accomplishment."

Furthering their relationship, NYC worked with Cognos to develop a tool to support principals in their school planning process for continuous improvement. The next step of the project will be to put this data into the hands of teachers, which will expand the number of users from 550 to 8,000.

IBM Cognos 8 BI gives users constant access to the data for analysis and planning, allowing them to go into a report, bring up an individual student file, and view their complete history. Cognos allows school administrators to view student history instantly, and develop progress reports and strategies for students on a daily, weekly, or monthly basis.

"NOEL and York have been implementing a more comprehensive suite of reports and as a result, the principals are happy with the changes and continuing to ask for more," states Findlay. "So, we're working with Cognos to anticipate additional user requests and modify and tailor the reports as needed."

## Benefits realized

Since deploying and standardizing its joint Cognos development, NYC has achieved better school planning and access to student records with the ability to look into both organizations and demonstrate the value of the collaboration.

"Cognos has improved teaching strategies and helped students. We are all very distinct school boards and our Ministry funding is based on student enrollment," notes Findlay. "Our collaboration has enabled all of the school boards, big and small, suburban and rural, to move forward and access important data through the Cognos tool. That's a significant success story. Cognos is the known world leader in BI tools, and these school boards have teamed up with the Ministry to offer a revolutionary collaboration."

"Part of what has made us successful is just the relationships we've developed through this partnership," says Findlay. "There's something about Cognos not regarding this only as a job, but rather as cultivating relationships. They've demonstrated that they have an interest. Many have kids in education—and they've all paid special attention to this passion because we are forging new ground in Canada."

Coles sums up NYC's collaboration using Cognos tools and expertise by noting that, "Essentially, the collaboration has eliminated the notion of 'size matters' in the utilization of world class technology."

# University of Minnesota



“To say we have been shocked by the results of the business intelligence software would be an understatement.”

*Susan Grotevant, Director, Information Management Systems, University of Minnesota*



With higher education funding from states and municipalities hitting record lows, public colleges and universities are looking internally to identify new revenue models and improve efficiencies.

The need for academic “belt-tightening” calls for easy-to-use IT solutions that provide accurate analysis and forecasting, enabling more strategic decision-making to ensure schools and students continue to make the grade.

## The organization

The University of Minnesota (U of MN) has a long history as a top academic research institution, receiving international acclaim for invention, from the heart pacemaker to the aircraft flight recorder (“black box”) and the retractable automotive seat belt. Since its inception in 1851, Minneapolis-based U of MN, has grown to encompass four campuses, a collaborative center in Rochester, extension offices, research, and outreach centers throughout the state.

As Minnesota’s only research university, U of MN is home to world-renowned professors and researchers, and more than 60,000 students. The school ranks among the top 25 public and private research university campuses. It has in the past five years alone received in excess of 230 patents for its innovative work, in addition to being credited for establishing more than 30 area start-up companies.

## The challenge

- Funding cutbacks
- Increasing administrative inefficiencies
- Need for data accessibility, integration, and analysis

State funding for higher education in Minnesota has been declining for nearly three decades, dropping from sixth to 26th among the states for its percentage of state budget support received. Consequently, one of the greatest financial challenges U of MN faces is developing

### Industry

- Higher Education

### Geography

- Minnesota; satellite locations state wide

### Information needs

- Data integration across multiple platforms
- Self-service data availability for multiple users/skill levels, in distributed locales
- Powerful analysis and reporting capabilities

### Solution

- Cognos PowerPlay

### Benefits

- Identification of new revenue potential, estimated at \$187 million
- \$5 million cost recovery
- Information-rich decision-making environment
- Higher quality student experience

new and sustainable revenue streams to ensure its future during a period of unprecedented change.

Recognizing that long term structural changes in the public financing of higher education would place more reliance on tuition and other revenue to offset changes in state appropriations, U of MN implemented a budgetary and management model designed to provide financial incentives to enhance revenues and control costs beginning July 1, 1997.

U of MN’s Susan Grotevant oversees the school’s Information Management System department, which is responsible for academic, financial, and human resources data across the school’s four campuses “In 1997,” she recalls, we implemented PeopleSoft as our Enterprise Resource Planning platform to assist with a new management focus—known internally as “Incentives for Managed Growth (IMG).”

IMG called for a more equitable reorganization of responsibilities for day-to-day decisions across campuses, colleges, and departments. The objective was to reduce resource and programmatic redundancies, achieve cost savings, and streamline administrative operations.

This management model placed responsibilities for day-to-day decisions affecting revenue and expenditures at the collegiate and departmental level and represented a significant change from the previous budgeting model where revenues and costs were not directly linked. This change, along with steadily increasing demands for accountability and productivity and improved academic and student outcomes, drove a dramatic increase in the need to transform data into business intelligence and to improve U of MN's strategic decision-making capabilities.

According to Grotevant, "the implementation of IMG and the financial incentives it offered to colleges was the first and perhaps single greatest driver for encouraging interest in issues related to: developing better models for understanding the supply and demand for courses; recognizing the complex financial cross subsidies and dependencies that exist within colleges and campuses; and understanding and managing the factors influencing instructional costs."

These objectives demanded the creation of an information-rich decision-making environment that could also reach all levels of the organization.

In order to make sense of the full breadth of its data stores and realize a return on investment from its existing enterprise resource planning investments, while lowering total cost of ownership for these systems, the University decided to invest in a business intelligence solution from Cognos.

Grotevant selected the Cognos BI solution because of its robustness. The ability to handle large amounts of complex data, enterprise scalability, powerful analytic capabilities, the ease of use of its graphical user interface, and attractive return on investment made it a winning choice.

Cognos PowerPlay specifically has proved to be a cost-effective tool for delivering the enterprise-level analytical information required to support the increasingly entrepreneurial, competitive, and privatized financial environment faced by U of MN. Coupled with U of MN's PeopleSoft-based Student Records and Student Financial solution, PowerPlay helps administrators

understand the supply and demand for courses; providing information on how tuition is generated, the corresponding costs of instruction, and understanding the complex cross-subsidies that exist among and within colleges and professional schools.

"Cognos PowerPlay is one of the most powerful and cost-effective solutions to deliver enterprise-level analytical information throughout the organization," said Grotevant.

PowerPlay has also helped make evident to academic administrators the large differences in revenue contributions made by different programs based on academic disciplines, levels of instruction (for example, graduate versus undergraduate models for the delivery of instruction), and the cost of faculty and instructors.

According to Grotevant, "PowerPlay will be an important asset in integrating data from the PeopleSoft Admissions and Student Records systems in order to gain a clearer picture of student performance." PowerPlay is also expected to play a key role in analyzing data from U of MN advisement and academic progress system to reduce the cost of instruction and time to graduation by more accurately forecasting course demand. It will also improve student retention rates through the identification of early warning indicators of academic difficulty, and support timely and effective advising interventions.

This multidimensional analysis made possible through U of MN's Cognos-based BI solutions allows colleges to see that even where credit hours are equal, tuition outcomes can vary widely depending on the student's college of enrollment, tuition discounting, and differences in tuition rates due to residency or other factors. Using this information, colleges now have a wider range of alternatives for increasing tuition revenue other than just admitting more students. Some of these options include adjusting recruitment strategies to change the mix of students paying different rates, or calculating the net return on investment to discount tuition through the use of scholarships to attract highly qualified students who would otherwise not attend the University.

### **Benefits**

- Identification of new revenue potential, estimated at \$187 million
- \$5 million cost recovery
- Information-rich decision-making environment
- Higher quality student experience

The return on investment in the purchase of Cognos Business Intelligence tools has been both immediate and long term. ERP systems provide information one person and one transaction at a time. Business intelligence tools such as PowerPlay can quickly aggregate and organize information from multiple sources to facilitate analysis, permitting the University to identify approximately

\$5 million in unbilled tuition during the initial implementation of the new student financial system.

Since implementing Cognos, the University has identified several additional opportunities to increase revenue, including: strategic tuition funding and discounting; student progress tracking (and flagging potential issues areas); minimum course loads increases; and more manageable class-size-to-instructor ratios.

“To say we have been shocked by the results of the business intelligence software would be an understatement,” said Grotevant.

Today, using its tuition cube to analyze patterns and behaviors within the student population and historic and current course enrollment activities, U of MN has been able to identify new revenue generators that have already accounted for an increase in operational income totaling more than \$187 million; a 76 percent, largely organic, increase over earnings in 2000.

Other cubes have yielded similarly remarkable results, for example: the course enrollment cube offers colleges the opportunity to tailor course offerings to meet changing student demand. With increased data accuracy and a more complete view of operations, colleges and individual departments can also eliminate courses with declining interest, helping to reduce administrative and resource costs.

In the forecasting realm, the University is continuing to improve its ability to plan the type and timing of courses offered and using its advisement and academic progress cube to streamline operations and improve efficiencies.

The continuing return on investment to the University is measured by the dramatic increase in the availability of operational and management information and analytic capacity made available by tools like PowerPlay during a period of significant change in both the financial support for higher education and the expectations of students and stakeholders.

The magnitude of that change is reflected by the significant increases in tuition rates and revenues — totalling \$187 million — and the dramatic expansion in the demand for information reflected by the growth of the enterprise reporting customer base to more than 10,000 employees and 2 million reports annually.

### **Focus on the future**

“Today, I don’t see my job as providing reports, but instead providing people with the information they need to make informed decisions,” said Grotevant.

In addition to expanding its use of PowerPlay to all types of administrative data, the University plans to implement Cognos’ most recent release of ReportNet to provide greater reporting functionality and graphical capabilities to both report users and the data warehouse user community.

The University also plans to use Cognos PowerPlay, NoticeCast, and ReportNet to take advantage of the near real-time data available in its data warehouse to support an even broader range of operational reporting needs.

Finally, ReportNet is also expected to play a role in responding to heightened interest in the development of performance-based management and scorecarding initiatives brought about by a major strategic positioning initiative currently underway.

The University also plans to expand its enterprise-level performance-based management and scorecarding initiatives by deploying Cognos Visualizer along with ReportNet, and Cognos NoticeCast.

“Funding will always be a challenge within higher education. By having a grasp on our data, we have been able to make the most out of a potentially discouraging financial situation,” said Grotevant.

“We’re really happy with our decision to deploy Cognos 8 BI. We’ve already experienced a strong, positive response with Cognos and we anticipate so much more. We plan to continue expanding the functionality of our solution and making it available to more users.”

— Robert Jones, Application Team Manager for EIS (Enterprise Information Systems) Tools and User Services, University of North Texas

The University of North Texas (UNT) is a recognized student-centered public research university that harnesses the power of ideas through a culture of learning based on diverse viewpoints, interdisciplinary endeavors, creativity, and disciplined excellence. With more than 33,500 students, UNT is one of the largest universities in Texas and is the flagship of the UNT System, which consists of UNT, UNT Health Science Center at Fort Worth, and the UNT Dallas Campus. It has 11 colleges and schools offering 96 bachelor’s, 111 master’s and 50 doctoral degree program in the Dallas-Fort Worth region. UNT is in its 11th consecutive year on the list of America’s 100 Best College Buys, compiled annually by Institutional Research & Evaluation, Inc.

UNT’s mission is to be known for its educational, intellectual, research, public service, and cultural achievements. In support of these objectives, UNT wanted to provide employees with the IT foundation necessary to help improve the quality of its education and overall student experience. In pursuit of these goals, UNT decided to overhaul its IT environment. It began by moving its mainframe legacy system to PeopleSoft ERP and then selected an Oracle data warehouse. With its new IT environment in place, the time was right for UNT to deploy a BI solution. UNT selected Cognos 8 BI so that it could easily provide employees with information needed to do their jobs more efficiently and effectively.

## Challenges faced

“We wanted an easy-to-use tool that would provide our employees with quick access to the information they needed to do their jobs effectively,” explains Robert Jones, Application Team Manager for EIS (Enterprise Information Systems) Tools and User Services, at the University of North Texas.

With its legacy system, UNT had struggled with delivering information to decision-makers in a timely and easy-to-read manner. Using a cumbersome reporting method that pulled data from their legacy mainframe system slowly, the reports delivered results in a format that was difficult to analyze.

### Industry:

- Higher Education

### Geography:

- North America

### Information Needs:

- Ease-of-use
- Scalability
- Flexibility
- Seamless integration across PeopleSoft ERP and Oracle Data Warehouse
- Web-based reporting

### Platforms:

- Oracle
- Unix
- PeopleSoft ERP

### Solutions:

- Cognos 8 BI

### Benefits:

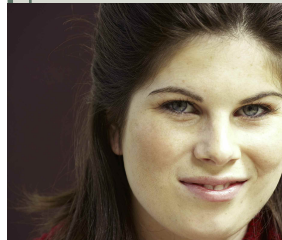
- Tight integration with PeopleSoft and Oracle
- Access to information that was previously unavailable
- Instant access to reports that used to take 500+ hours to create
- Streamlined budgeting and increased accountability
- Ability to integrate with home-grown security system
- Minimal training

These issues often hindered users from securing data needed to make the best decisions possible.

## Strategy followed

UNT reviewed business intelligence solutions from Cognos, Business Objects, SAS, and Hyperion. The University was looking for a solution that would integrate with its Oracle data warehouse and PeopleSoft ERP portals that housed student information, financial accounting, and HR systems. Additional requirements included Web-based access, ease-of-use, flexibility, and scalability.

UNT was drawn to Cognos due to its best-of-breed offering and tight integration with PeopleSoft and Oracle.



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“Cognos is the recognized market leader so it was an easy choice. We were also able to talk to other higher-education users that had deployed Cognos. These references made us confident about moving forward with Cognos,” explains Jones.

With the help of Cognos Technology and Consulting partner, Focus Technologies, LLC, UNT went live with Cognos 8 BI in April 2006. UNT also tapped Cognos Consulting to help on performance tuning of specific reports. “Cognos Consulting, along with Focus Technologies, was incredibly helpful during our deployment and implementation process,” states Jones.

The University also leveraged Cognos phone support services and was pleased with the quick response time. In addition, UNT invested in public classroom training from Cognos as a way to make sure report authors and data modelers, as well as users, were employing the best practices and procedures for using the system right from the start.

The University was up and running in only four months, a success attributed to the assistance provided by Cognos Consulting and Focus Technologies, the knowledge gained from Cognos Training, the help from Cognos Support, the ability to seamlessly integrate with its Oracle data warehouse and PeopleSoft ERP portals, and the intuitive ease-of-use of the solution. Standardizing on Cognos for all of its reporting and business intelligence needs, UNT has rolled out the solution to its finance and Institutional Research (IR) departments. Between these departments, the University runs approximately 60 reports that are accessed daily by 1,200 users.

The strong functionality of Cognos 8 BI has created excitement within the University community. As a result, many departments have requested Cognos, with the Admissions department slated to deploy the solution next. “Cognos generates its own interest,” stresses Jones. “Employees clearly see the benefits and want to use Cognos for their own reports.”

Moving forward, UNT is investigating Cognos 8 BI to develop an executive dashboard. It also plans to round out its solution by deploying a Cognos Planning solution to help with planning, budgeting and forecasting.

### **Benefits realized**

“We’re really happy with our decision to deploy Cognos 8 BI. We’ve already experienced a strong, positive response with Cognos and we anticipate so much more. We plan to continue expanding our solution and making it available to more users,” emphasizes Jones.

The tight integration between Cognos and UNT’s PeopleSoft portal has been the most important feature for the University. Cognos 8 BI offers a common interface to UNT’s portal, which allows users to operate in a familiar setting and gain access to all data from one central location. In addition, users are able to log on from a single sign-on point, saving them time while eliminating the hassle of remembering multiple passwords and sign-on procedures.

Another key benefit has been the flexibility to work within the University’s home-grown security system, a decentralized function controlled by each department. Cognos was one of the only solution providers that offered this integration. Leveraging Cognos, UNT minimized training, eliminated the need to re-train users on additional security administration process.

With Cognos 8 BI, the IR department has saved time reporting and has been able to identify trends in the student body. Prior to Cognos, IR had to manually develop and print Microsoft Word reports that took between 500 – 600 hours to produce. With Cognos 8 BI, these reports are done automatically, allowing Deans to easily monitor enrollment periods in real-time. In addition, the IR department is responsible for developing *The University Fact Book*, which was honored with the “Best Electronic Fact Book” award by the Texas Association for Institutional Research for its 2004 – 2005 edition, based on its effectiveness and ease of use. *The University Fact Book* provides statistics on enrollment data to the public, which previously took hundreds of hours to complete each semester. Now, UNT is able to produce this information instantly.

“With Cognos, we can drill down into student data, identify student preferences, and develop programs that are attractive to current and future students,” states Dr. Allen Clark, Institutional Research Director, UNT. “Cognos is helping us provide a more positive experience and attract students that will thrive at UNT.”

Cognos has significantly streamlined the Finance department’s budgeting process while increasing accountability. With Cognos, users now have instant access to account information, eliminating previous calls to the Budgeting office for help securing this data. Cognos also provides UNT management with an easy audit check by allowing them to track department budget expenditures and ensure money is being allocated correctly.

Jones sums up UNT’s Cognos experience, “With Cognos, information is always at users’ fingertips. The solution has replaced processes that were inefficient, or weren’t even there before. This has thrilled our user community and we have heard nothing but strong, positive feedback.”

“Increasing complexity, combined with time-consuming adjustments and consolidations, stretched our traditional spreadsheet system for annual budgeting to its limits. Cognos Contributor and Cognos Analyst now allow us to plan our resources rapidly and reliably, while offering the capacity to cope with our future growth.”

*Martin Stocker, Finance and Controlling Manager, ZHW*

The Zurich University of Applied Sciences Winterthur (ZHW) is one of the biggest multi-disciplinary universities of applied sciences in Switzerland and is a member of the Zürcher Fachhochschule ZFH. It has five faculties – Architecture, Economics, Technology, Communication, and Health – offering 18 Bachelor’s degree courses (3,400 students), a Master’s degree program and continuation course, 14 continuing education Master’s courses, and around 150 certificate programs and further education courses (2,600 students). Its 20 institutes and 36 centers and departments research topical and practical issues in cooperation with partners from business and industry.

The high number of service providers and an extremely variable annual intake of new students raise significant challenges when it comes to planning resources. With a cost budget of around 150 million Swiss francs (80-85 percent of which is accounted for by staff expenses for around 1000 employees), prompt and accurate budgeting is essential. The university’s existing spreadsheet-based data entry and consolidation system had become so large and complex it was almost unmanageable.

In addition to this, the cost of maintaining and adapting the solution made the conversion to a professional tool a necessity. The objectives for the new solution were simplified and streamlined data entry in all of the 115 or so budget/organizational units, and rapid consolidation. Furthermore, the solution also had to be capable of handling budget modifications and performing the required recalculations. Cognos Contributor and Cognos Analyst have achieved these objectives and established reliable and expandable foundations for planning and consolidation, in addition to providing a far clearer overview.

#### **Sector:**

- Education

#### **Geography:**

- Switzerland

#### **Information requirements**

- Planning and budgeting system

#### **Platform:**

- Abacus, Evento

#### **Users:**

- Around 110 users in all faculties, at the rectorate, and in the administration department

#### **Solution:**

- Cognos 8 Planning

#### **Benefits:**

- Simplified, secure, and rapid entry of data
- Consolidated, prompt provision of information
- Significantly improved process for daily resource planning

### **Challenges faced**

ZHW’s budgeting procedure involves all organizational units. On the one hand, it follows a top-down approach, with management setting contribution targets for the faculties, taking cantonal requirements into consideration. As a funding body of the university, the canton of Zurich approves contributions and also specifies the maximum contribution per course of study. On the other hand, the faculty institutes, departments, and centers report their requirements in a bottom-up process. These figures are consolidated and any required adjustments made to ensure



they are in line with management's contribution targets. These two processes produce a consolidated budget which management and the education inspector then approve. Corrections and amendments are common, in which case the calculation process begins again.

Over the years, the traditional spreadsheet-based solution, with a file for each of the 115 budget/organizational units, had grown to such a size it was no longer capable of handling all requirements. The process for selling and purchasing hours (internal billing of services) – a core element of budgeting – was becoming increasingly complex and unclear. Faced with growing volumes of files, the existing solution struggled to cope with consolidation, in particular in the event of budget modifications. In addition, maintenance and modification costs were rising inexorably.

### **Strategy followed**

After some initial discussions, the university decided in favor of Cognos Contributor and Cognos Analyst, with the implementation partner ENTECH Enterprise Technology AG. The fact that the Cognos user interface operated on a similar principle to the existing spreadsheet system was an important factor in the decision, encouraging user acceptance and reducing training costs. The selected procedure was extremely practical, starting with the creation of a prototype as proof of concept. This was followed by final confirmation of the decision for Cognos and implementation of the complete solution, including a connection to Evento, the university's management system, and the Abacus financial solution.

Cognos partner ENTECH handled the implementation, completing it within the budgeted cost framework and on schedule, within just two months.

Managers of the organizational units now use Cognos Contributor to enter their data decentrally, with the entry status monitored centrally by the Finance and Controlling department. The figures are consolidated regularly during scheduled processes and transferred to Abacus.

### **Benefits realized**

The Cognos solution now allows rapid consolidation across individual hierarchy levels, enabling faster comparison with targets. It has also simplified continuous monitoring over all budget stages, bringing a clearer view of results for the individual areas (contribution margins for courses of study, continuing education, research and development, services for external customers, and consulting, for instance) and overheads. Data imports from the Evento and Abacus downstream systems and data exports to the Abacus finance solution run smoothly.

The integrated workflow management ensures that the central finance department is aware of the status of planning activities at all times. An integrated email function streamlines communication. For example, if a budget is rejected, budget managers can find out allowing efficient calculation and posting of internal sales of hours with no need for time-consuming manual adjustments. Shorter processing times have boosted the efficiency of the budgeting process, eliminating discrepancies between hours purchased and hours sold.

# Burke County Board of Education



“Education is a data rich environment, but it lacks a lot of the business practices that are formalized in business and industry. We’ve always focussed on educating students. With the Cognos system in place, we can now also focus on the business of education.”

*Allen Kicklighter, former assistant principal, school psychologist and statistician,  
Burke County Board of Education*

For many school boards and districts, the amount of data related to student performance has doubled over the last decade.

In the United States, simply complying with federal regulation has created a layer of testing results that is often difficult to justify with local classroom grades. This is not to speak of attempts to move beyond compliance to using technology to make the operational, monetary, and educational choices that will have the maximum impact on student performance.

Aligning and focussing this kaleidoscope of data to get the complete performance picture has been the challenge of American districts and boards, large and small. Sooner or later, every educational organization makes the move from paper-based and manual processes to some level of automation.

The Burke County Board of Education in rural Georgia made that move three years ago.

At first, the board thought its relatively small size kept it out of the running for a comprehensive business intelligence or performance management system. Serving 4,600 students, the board simply did not have the budget available to larger boards.

As it happens, the state of Georgia had already turned to Cognos, an IBM company, for a comprehensive system for educational performance management. Burke County Board officials were satisfied to find that while Cognos serves larger organizations well, it also scales to very small applications without losing any of its functionality.

The Board found in Cognos a solution that could get them started with student performance data, and then grow with them as they matured into other realms of performance management.

#### **Location:**

Waynesboro, rural Georgia

**Students:** 4,600

#### **Schools:**

- 1 high school
- 1 middle school
- 1 grade 3 to 5 elementary school
- 1 pre-K to grade 2 primary school
- 1 outlying school for pre-K through high school students
- 1 alternative middle/high school

#### **Product:**

IBM Cognos 8 BI, version 8.2

#### **Current application:**

Student performance

#### **Future application:**

Teacher certification, expenditures

Read on to find out how the Burke County Board of Education uses Cognos to:

- Get a fuller assessment of student ability and progress.
- Identify students at risk and take proactive steps to remedy the situation.
- Deeply analyze overall criterion-referenced competency test results.
- Tie together multiple data sources, including end-of-course test (EOCT) and Georgia High School Graduation Test (GHSGT), for a better understanding of results.
- Conduct more sophisticated rostering.
- Understand attendance patterns and create intervention strategies to address issues.



- Create a full view of student performance across the high school, middle school, elementary schools, and primary schools they serve.
- Analyze the impact of behavior on achievement and spot trends in discipline patterns.

### Testing, testing

How do we know that students are learning? Their teachers can tell us. Their course grades give us a good indication. But testing, especially standardized across a county, state, province or country, is a favoured way of measuring student progress.

#### *Layers of inconsistent data*

However, at the Burke County Board of Education, the proliferation of test data was actually muddying the picture of how their students were doing. There was often inconsistency between state and federal test data and local classroom marks. Which set was a better reflection?

While it's true that students perform differently in a range of evaluation types, integrating this data can provide a broader picture of each student and highlight unacceptable variations caused by inaccurate data.

#### *Integrating for a complete picture*

Allen Kicklighter was tasked with bringing performance management to Burke County. His first—but by no means simple—job was to integrate state and federal testing programs and local benchmark testing to give the board a complete picture of student performance.

“The board had reams of different data and many piecemeal ways of looking at it,” says Kicklighter, former assistant principal, school psychologist and statistician.

On one side was the required state and federal testing data. On the other were the local course grades contained in the student information system. The only way to put it all together was through painstaking manual, paper-based or CD-based comparisons. With no data warehouse, school officials had no way of combining these sets of data.

“Education is a data rich environment,” says Kicklighter. “But it lacks a lot of the business practices that are formalized in business and industry. We’ve always focussed on educating students. With the Cognos system in place, we can now also focus on the business of education.”

### Find patterns, fix problems

While standardized testing focuses on math and reading, many agree that student success and eventual economic well-being result from success in many different areas. Burke County combines various types of testing to get a fuller assessment of student ability and progress.

“Grades are not always the best indicator of student success,” says Kicklighter. “So in the last couple of years we have started developing and using benchmark or formative assessments. We use Cognos to compare these formative assessments back to standard and other results. This gives us a full picture of student progress throughout the year. Historical test results let us identify students that are at risk and drill down on their individual results.”

#### *CRCT growth reports*

In Georgia, the primary vehicle for state testing and accountability for grades one through eight is the criterion-referenced competency test, or CRCT. Under the No Child Left Behind act, school funding depends on students’ annually yearly progress (AYP) shown in these tests.

Given its importance, CRCT growth has become the Burke County Board’s primary report. Through the Cognos report, school officials can see overall CRCT growth. They can drill down to the student level to see how they are growing over time. They can see how teachers are contributing to that progress, how schools are growing as a whole, and how different groups of students are trending over time.

#### *High school results*

For high schools, the system is more complicated.

The district measures progress using end-of-course test (EOCT) results, which are the teacher grades and test scores students receive in particular courses. But the state measures progress through the Georgia High School Graduation Test (GHSGT), a cumulative assessment that is hard to correlate back to particular courses. Tying the results together has always been challenging and often results in inconsistency between the two data sets.

Using Cognos, the Burke County Board created a report that ties the two sets of data together. This provides two advantages. Officials can see student profiles based on both testing situations for a fuller understanding of progress. And analyzing the differences between the two testing situations lets officials investigate where the grading inconsistencies might be originating.

## Performance management for student results

Performance management systems let education organizations analyze and ask the right questions of a complex set of data. They can report on regular performance events or the results of a specific analysis. Historical data tracking shows how results are trending over time.

By combining multiple dimensions from different realms and analyzing, querying and reporting on findings, school officials can start to see the cause and effect behind performance results. While analysis and query open the door to deeper understanding, scorecards and dashboards are a way of combining different kinds of high-level information for monitoring goals and tracking results at a glance.

## Rostering students

At the beginning of every year in Burke County schools, teachers must re-roster their students based on previous performance results and place them in appropriate learning groups.

Historically, teachers would re-roster students using only the prior year's paper-based state assessment. Then they would later enter the changes manually into the student information system.

Allen Kicklighter highlights this area as a major improvement. Through Cognos, teachers can look at results from multiple years. This rich picture supports more sophisticated rostering decisions. And updating changes becomes automatic.

“For the first time this fall, our teachers will be able to see accurate student results from multiple summative assessments,” he says. “Real time information and integration with our student information system means that teachers will not have to do any manual re-rostering. As students change classrooms, that information is automatically updated in the SIS.”

## Attendance patterns

Repeated absences and disciplinary actions can be leading indicators of falling performance results.

The ability to analyze these patterns in individuals, classes, schools or districts can help officials take immediate remedial action to address what could become a serious problem. They can plan for and put in place proactive intervention strategies to restore students' attendance and get them back on track for learning.

For Burke County Board, being able to see attendance patterns was revelatory.

“While a teacher may notice a pattern,” says Kicklighter, “the performance management system spots it definitively. If a student often misses school on Wednesdays, teachers, principals and counsellors can begin to find out why. What is happening on Tuesday night that is keeping them up late? Or what does Wednesday hold for the student that he or she might be trying to avoid?”

Now the Burke County Board can see these patterns in a few clicks. Being able to spot, analyze and reverse negative attendance patterns is critical in a district that is partially graded on whether kids come to school or not.

Spotting absence problems can also help schools alert parents or guardians who may be unaware of the growing absences of their children. Remedial actions that involve parents tend to be stronger.

## The big performance picture

While teachers are most interested in individual student performance or classroom level results, schools principals want to see school growth as a whole, perhaps slicing these results by different student grade-level, program or demographic groups.

### *School-wide view*

Burke County uses pre-defined reports from Cognos to keep principals informed. Principals can add and change variables in the report to view the data as they need to.

“The growth reports have been the biggest eye-opener for principals so far,” says Allen Kicklighter. “Any good principal knows that student performance—good or bad—does not depend entirely on any given variable, such as curricula or teacher performance. But being able to tie these factors together can still provide valuable information on the effect that teachers and curricula are having.”

### *Classroom view*

Security features in the Cognos system will let the board roll reports and dashboards out to teachers. Teachers will be able to see individual performance for their students across all testing situations, against a combined whole for their grade level or group. They will be able to follow exceptions and begin to evaluate what is working in the classroom and what isn't.

“These reports are not just saving us time gathering information we used to gather manually,” he says. “We simply could not have had this information before. If a teacher couldn’t see it, certainly no one else could. Nobody had the time.”

### **Broadening the view**

The first phase of performance management at Burke County has focussed on student results. But the district plans to go beyond this to tie program results to teachers, to see the effect of teacher training, to follow expenditures and to determine how to improve future results.

In fact, Burke County sees the potential for managing the entire education process through performance management.

“With the system now in place, we can look at monitoring, measuring and improving any aspect of what we do at the district,” says Kicklighter. “We can track expenditures and evaluate the effect of the spending. We can analyze curricula. We can focus teacher training.”

Rich historical student performance information on a particular lesson plan, or a course, or a curriculum, across all district schools can shed light on what is working and what is not working. Are students underperforming in algebra in one particular school or all across the district?

This analysis may extend to training courses for teachers. Which ones are the most effective? Across a standard curriculum, which teachers are performing at the highest level? What qualities or qualifications help them do this, and how can other teachers benefit from this knowledge?

“The problem with only looking at test results is that they’ve already occurred,” says Kicklighter. “Having a broader view that includes other data helps us look into the future and develop proactive interventions that help students.”

### **Choosing Cognos for early success**

Burke County looked at a wide range of products to solve their initial data warehousing challenge. Kicklighter first evaluated Cognos because the state of Georgia was using the software for educational purposes.

Given the board’s budget, it needed to start small. Kicklighter was seeking a warehouse as well as reporting and analysis to solve the student performance dilemma initially. But because he was looking beyond tomorrow, he needed this initial system to grow as the board’s needs and abilities expanded.

The Cognos solution, well-suited for early successes in small areas and scalable to any size, was ideal. The board set up their student performance data warehouse and business intelligence features using IBM Cognos 8 BI.

“I have a dashboard showing the integrated student results,” says Kicklighter. “I’ve developed reports for principals and teachers, and use query and analysis to answer any question on student performance.”

### **About Cognos, an IBM company**

Cognos, an IBM company, is the world leader in business intelligence and performance management solutions. It provides world-class enterprise planning and BI software and services to help companies plan, understand and manage financial and operational performance. Cognos was acquired by IBM in January 2008. For more information, visit <http://www.ibm.com/software/data/> and <http://www.cognos.com>.

### **For more information about education**

The Cognos solution empowers over 1,000 institutions of higher education. Over 530 K-12 school districts and over 20,000 schools rely on Cognos to deliver optimal education programs and improve student performance for over 12 million American children and young adults. Thirteen state departments of education and the U.S. Federal Department of Education trust their performance to Cognos.

For more information on Cognos solutions for education, please visit [www.cognos.com/education](http://www.cognos.com/education).



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