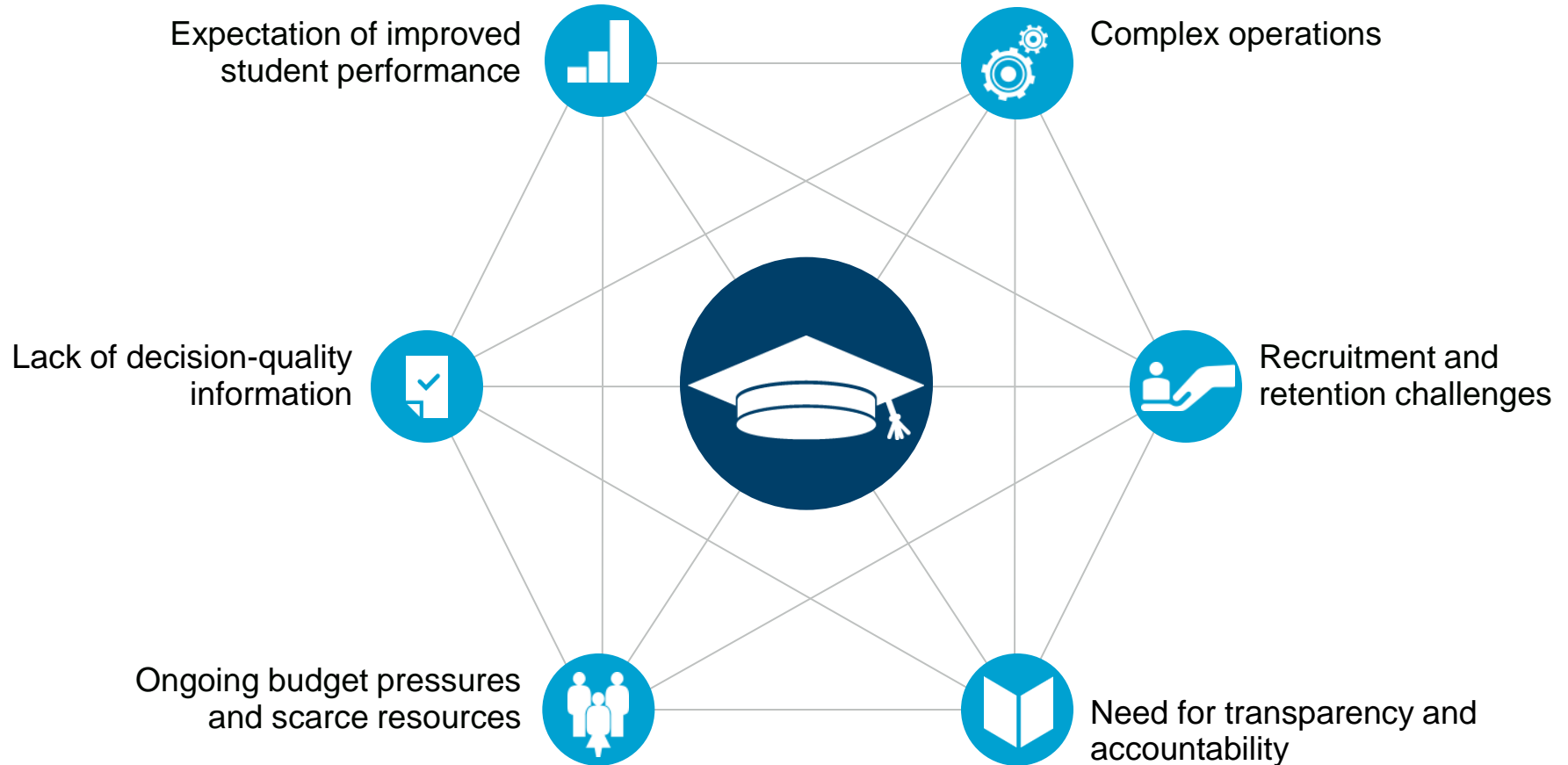


IBM Business Analytics for Higher Education



The external pressures on higher education institutions aren't subsiding



The need for progress is clear



7.7%

of college students

... attended more than one institution in 2010-2011.¹



84.7%

of first-year students

... cited “to be able to get a better job” as the top reason for attending college.²



20.7%

of students

... seeking a bachelor’s degree require remediation.³

¹ National Student Clearinghouse Research Center, *Snapshot Report*

² Higher Education Research Institute (HERI), *The American Freshman: National Norms Fall 2010*

³ Complete College America, *2011 College Completion Data*

Higher education institutions are turning to analytics to deliver smarter outcomes

What if ...

Admissions Departments

Could attract and retain top-performing students by understanding drivers of performance and satisfaction?



Presidents, Chancellors, Deans

Could gain critical insights to manage and maximize resources—people, capital and processes—across their institution?



Curriculum Departments

Could offer tailored course offerings by learning styles?



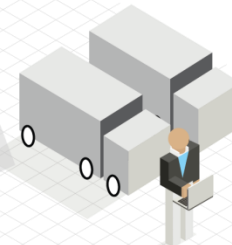
Students & Teachers

Could predict student success, identify at-risk students and reduce transfer and attrition rates?

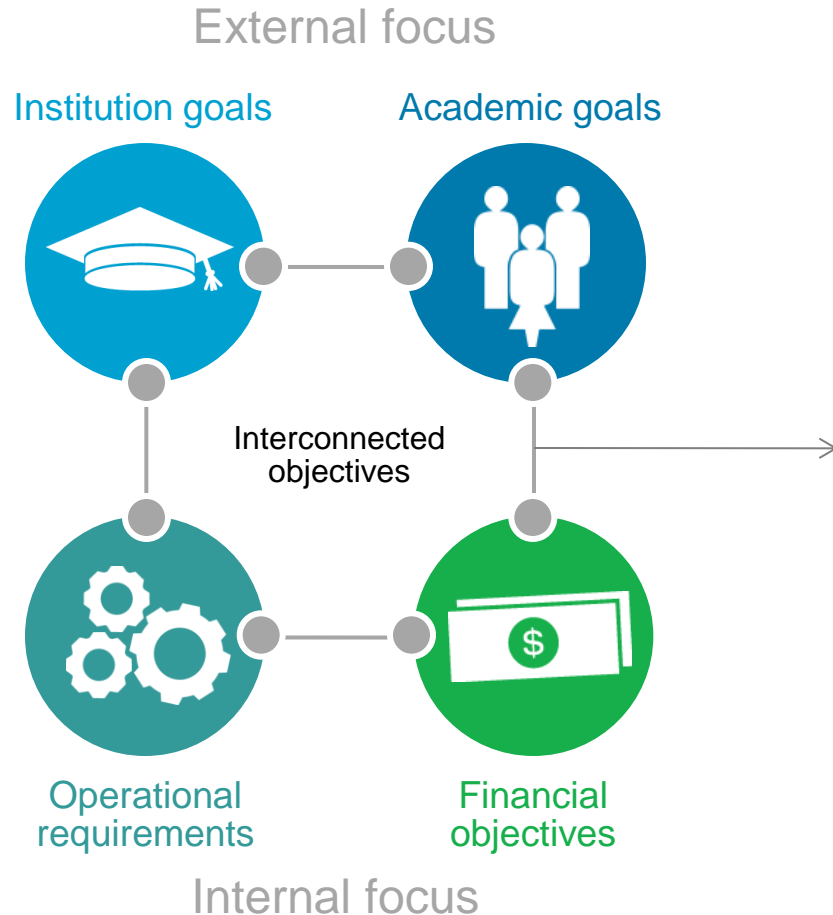


Budgeting and finance

Could have real-time insights into budgets and could quickly determine trade-offs?



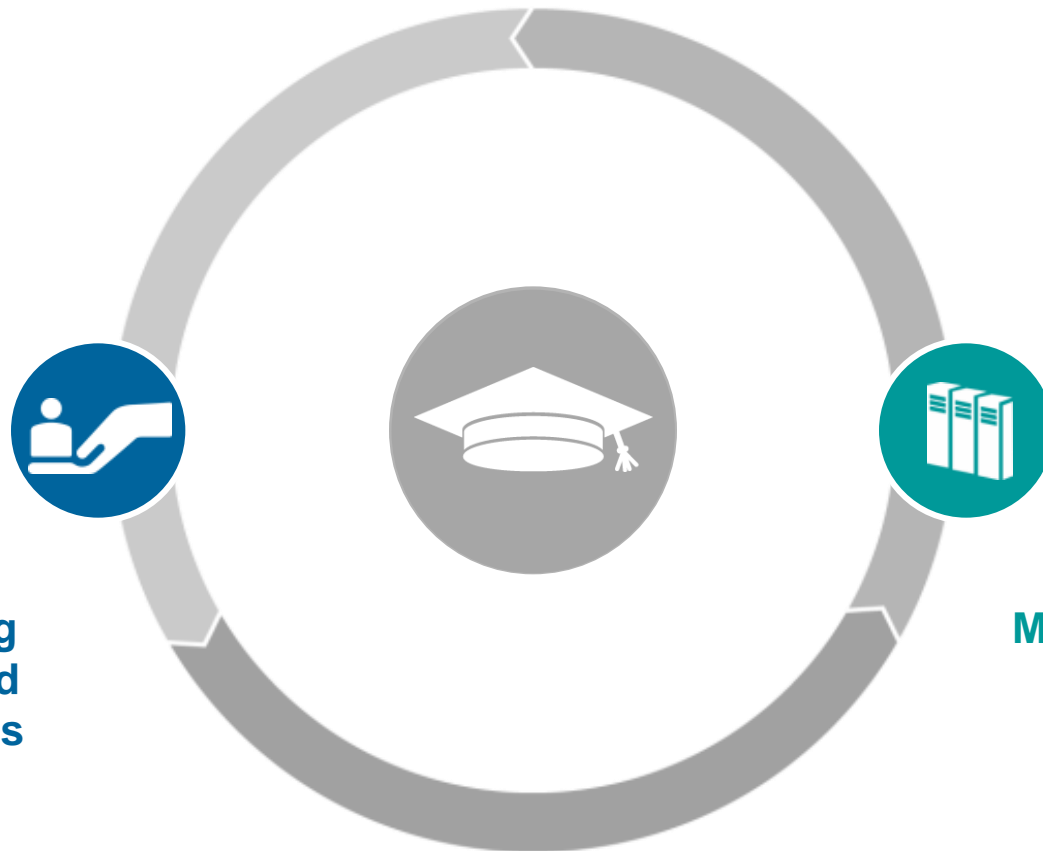
Analytics unites information to help achieve better outcomes in higher education



Objectives

- Leave a strong academic and financial legacy.
- Attract and retain the best students.
- Achieve specific outcomes from all divisions, departments and workgroups.
- Tie institution, academic, operational and financial performance together.

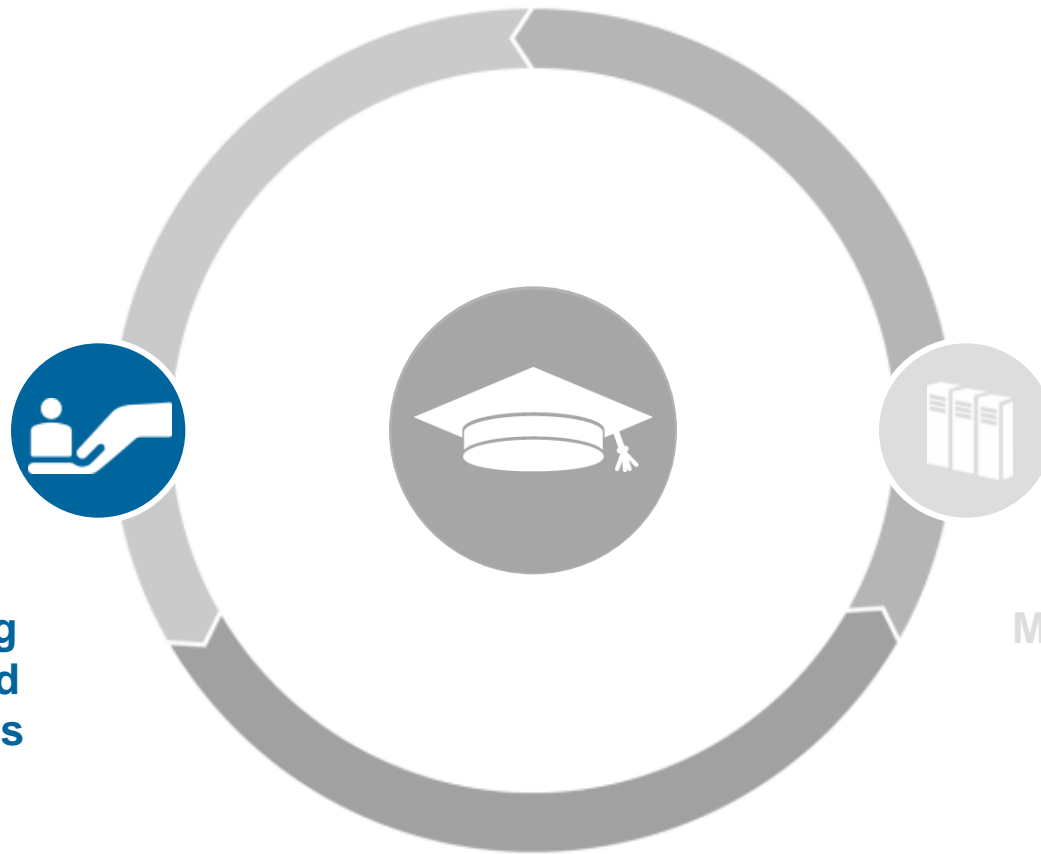
Academic analytics is focused in two key areas



Improve teaching effectiveness and student outcomes

Maximize operational efficiency and effectiveness

Improve teaching effectiveness and student outcomes

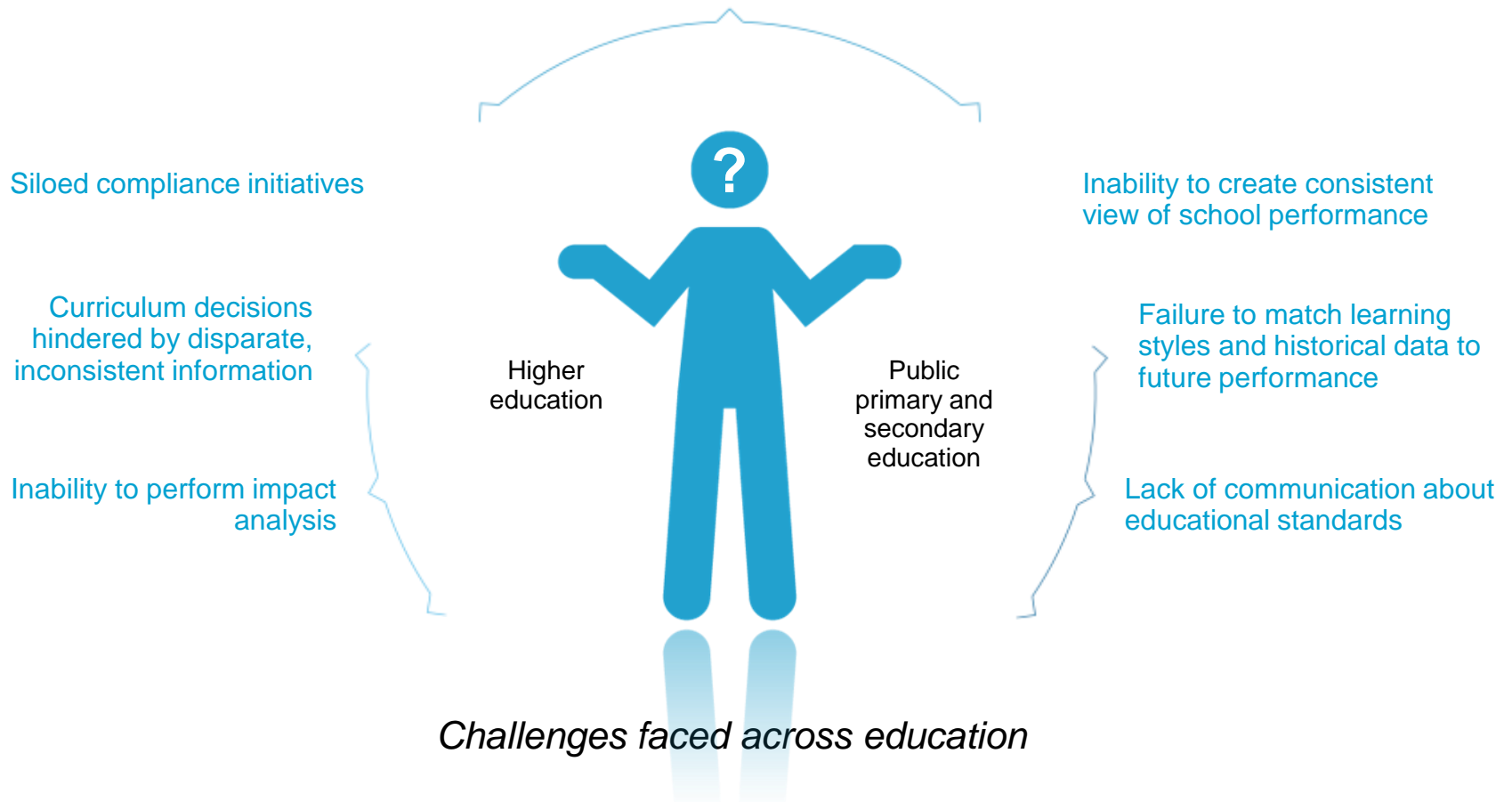


Improve teaching effectiveness and student outcomes

Maximize operational efficiency and effectiveness

Analytics for improving teaching effectiveness and student outcomes

The goal: create successful and satisfied students ready to contribute at their highest potential to their communities



Analytics for improving teaching effectiveness and student outcomes

Learning and teaching analytics

- Use advanced analytics to help uncover unexpected patterns and associations to guide front-line interactions and improve results.
- Identify drivers of student behavior via survey analysis and predictive modeling
- Predict student success through each stage of the student academic lifecycle
- Manage teacher success by understanding learning/teaching gaps.
- Prioritize empirical knowledge of curriculum and programs into real-time decision processes.

What If...


Simulation Data Source: sdbank claims data | Simulation Date: 2010-04-26 10:42:37 | Claim Area: Auto

Combine matrix	Model actions			Results		
	Refer	Standard	Fast Track	Action	Count	Percent
Refer	Refer	Refer	Standard	Fast Track	710	91.03%
Standard	Standard	Standard	Standard	Refer	3	0.38%
Fast Track	Fast Track	Fast Track	Fast Track	Standard	67	8.59%
					780	100%

Name: Run 3 [Run] [Update Settings] [Close]

Total Simulation Records: 975

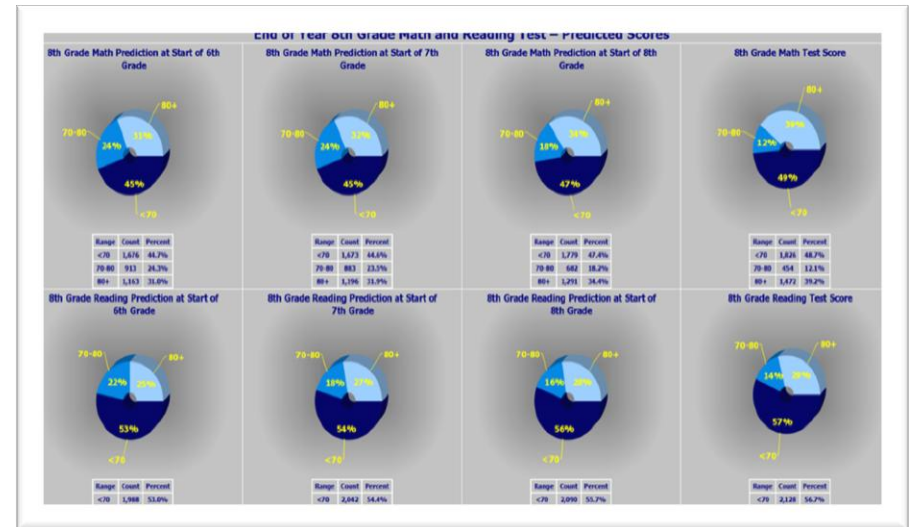
Display: Count | Number of runs retained: 2

Action	Run1	Run 2	Distribution
Fast Track	680	710	
Refer	62	3	
Standard	38	67	
Total	780	780	

Analytics for improving teaching effectiveness and student outcomes

Analytics for recruitment and retention

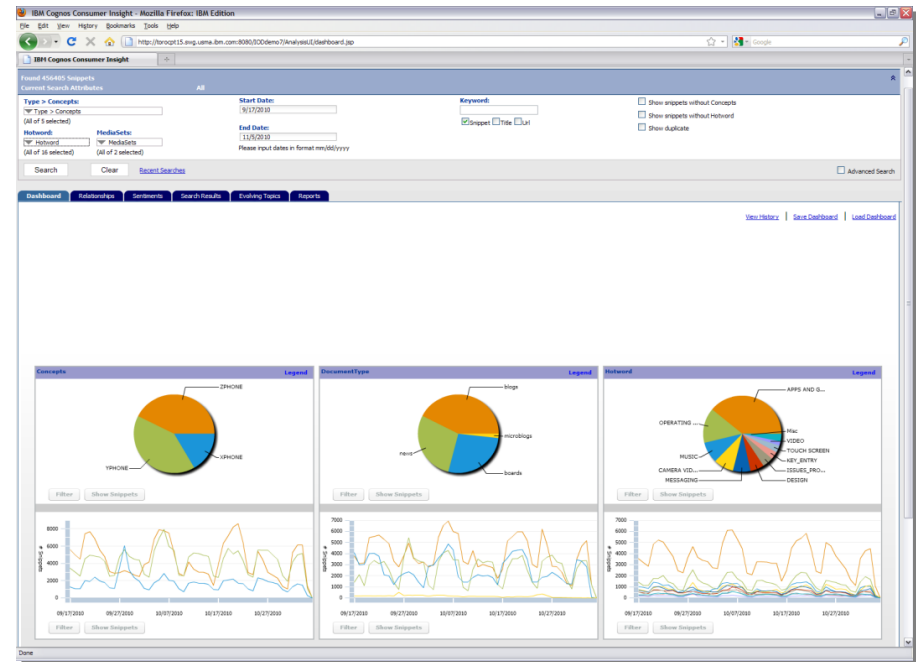
- Use advanced analytics to help uncover unexpected patterns and associations to guide front-line interactions and improve results
- Identify drivers of student behavior via survey analysis and predictive modeling
- Identify KPPs, including student retention and recruitment
- Better predict the outcome of student actions — drop out, performance interactions
- Predict student success through each stage of the student lifecycle
- Understand unstructured data across myriad sources—from email communications, notes and blogs to open-ended survey questions
- Prioritize empirical knowledge of curriculum and programs into real-time decision processes.



Analytics for improving teaching effectiveness and student outcomes

Social media sentiment analytics

- Pull snippets from multiple social media channels, such as blogs, posts and discussions forums, Twitter, Facebook and LinkedIn
- Specify attributes for analysis, while modifying sentiment to analyze the same content from a different perspective
- Engage students and others on specific subject areas with the words and messages that resonate with and are specific to their interests and perspectives
- Incorporate other discussion contexts by analyzing evolving topics related to hot word sentiment and by targeting other social media communities or communication channels
- Make evidence-based messaging decisions with analysis into consumer and stakeholder sentiment
- Leverage natural language processing (NLP) algorithms used in IBM Watson



Analytics for improving teaching effectiveness and student outcomes



80% accuracy identifying at-risk students

The need:

To boost student retention and academic excellence by identifying the factors driving student behavior and predicting the likelihood of an individual student staying on course or dropping out.

The solution:

IBM Business Analytics is used to identify the variables crucial to student retention and to identify at-risk students and build intervention strategies, including better course designs.

What makes it smarter:

- Data-driven analysis of student behavior and course surveys give university administrators a solid basis for understanding student retention, improving intervention strategies designed to keep students in school.
- 80% accuracy in identifying at-risk students.



Using attendance data to predict student success

The need:

Edinburgh's Telford College wanted to find a way to track learner attendance more effectively to form the basis of a new predictive analytics solution to boost retention rates by identifying learners who are at risk of dropping out.

The solution:

Telford College designed and deployed a solution that interacts with the College's student records system and provides managers and lecturers with dashboards and timetables that track attendance.

What makes it smarter:

- Provides a basis for analysis of learners who are at risk of dropping out, and prompting staff to intervene before it is too late.
- Highlights the importance of attendance to staff and learners, leading to improved attendance rates.

Analytics for improving teaching effectiveness and student outcomes



21% annual increase in transfer students

The need:

Baruch College was looking at how to attract and retain students most likely to thrive and succeed at an institution in an urban setting.

The solution:

The school uses IBM predictive analytics to recruit students who were most likely to register, models to better identify at-risk students, effectively award scholarships, determine course placements and predict retention.

What makes it smarter:

- Increased applications to their business school by 7.1%
- Achieved a 21% annual increase in transfer students
- Decreased dropout rate significantly by using predictive analytics placing first-year students in introductory classes



15% increase in registration yields

The need:

Wichita State University needed to understand the costs of each course and faculty, allocate the fees generated, and ensure students successful academic careers.

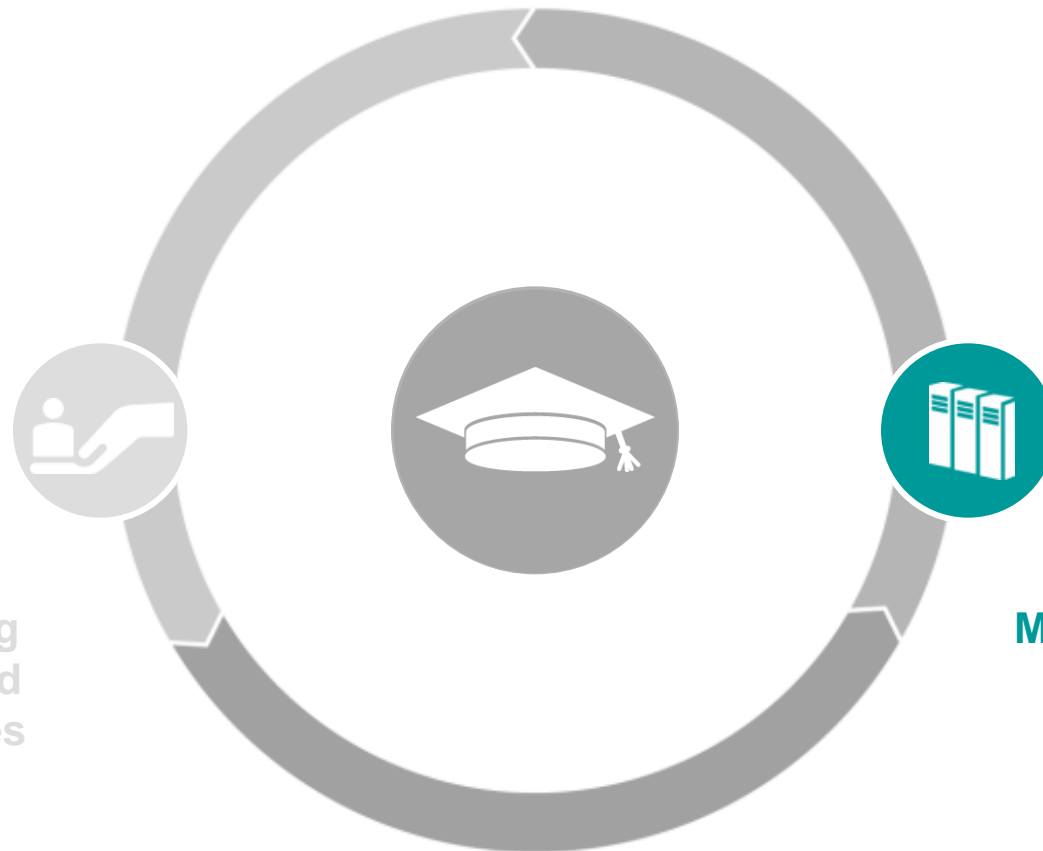
The solution:

WSU implemented a suite of IBM business analytics software to collect data from multiple source systems and deliver consolidated information and predictive analysis to key decision-makers.

What makes it smarter:

- Predicts the chances of success for potential students, enabling marketing teams to focus on high-quality applicants.
- Boosted registration yields by 15 percent.
- WSU's recruitment model provides a 96% accuracy in identifying high-yield prospects.

Maximize operational efficiency and effectiveness



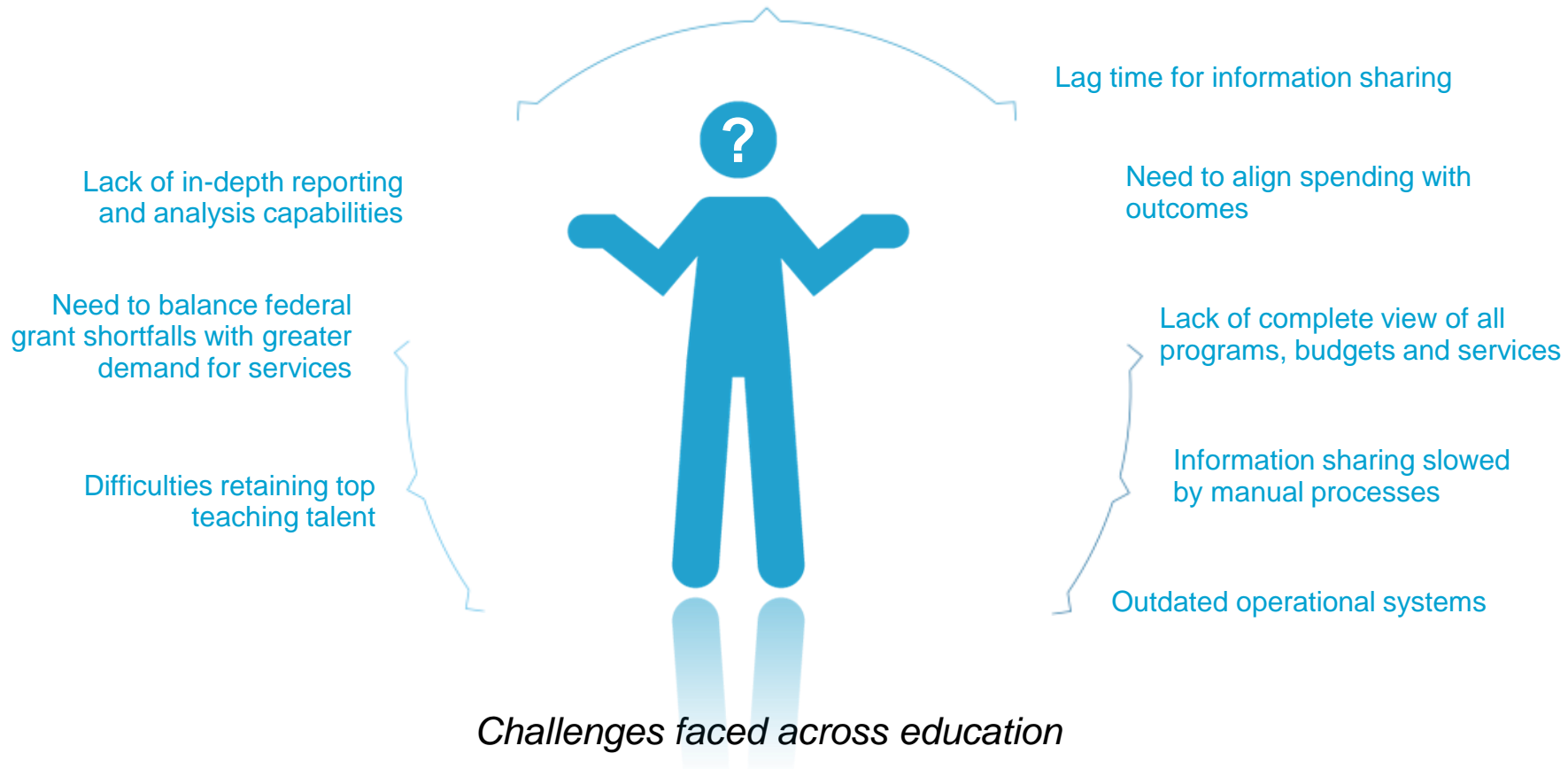
Improve teaching effectiveness and student outcomes

Maximize operational efficiency and effectiveness

Maximize operational efficiency and effectiveness through better resource analysis and finance tools

The goal: do more with less

Drive efficiencies for lower-cost service delivery | Make sure resources are in the right place at the right time

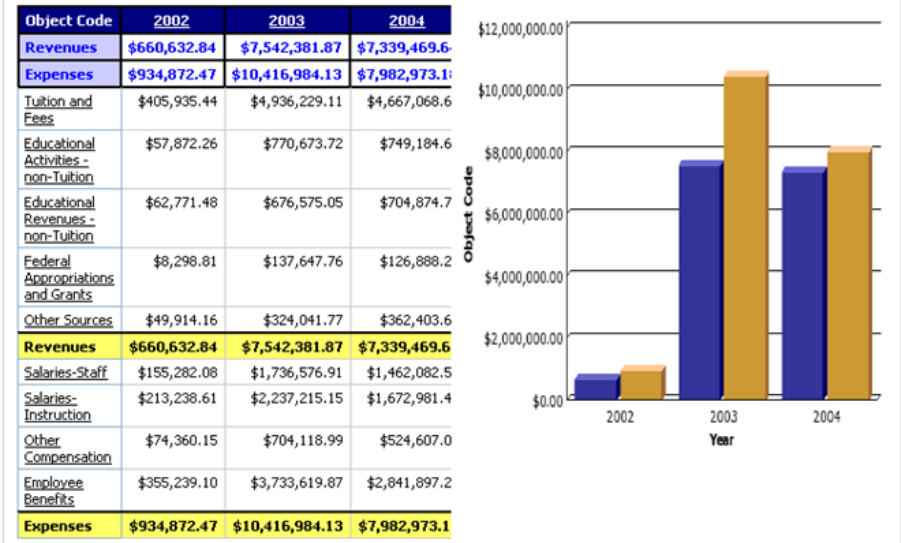


Analytics for maximizing operational efficiency and effectiveness

Analytics for financial performance

- Gain a strategic view of revenue streams, budgets, costs and expenses at the regional, district and school level.
- Perform collaborative budget preparation and execution.
- Benefit from more effective measurement and monitoring of financial performance across regions, districts and schools.
- Leverage financial reporting capabilities that support compliance with internal and external requirements.
- Realize a transparent budgeting process.
- Perform what-if modeling and scenario analyses to compare alternatives.

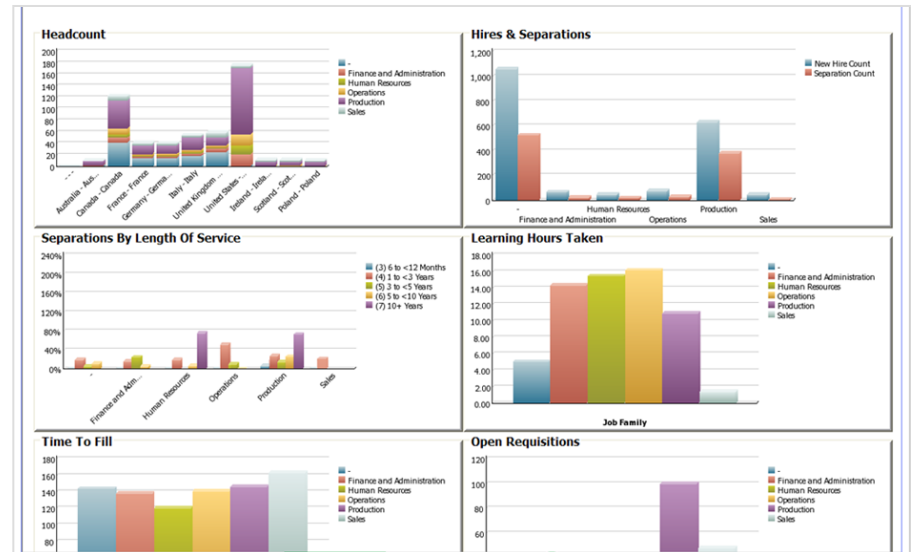
University Financial Summary
Historical Comparisons



Analytics for maximizing operational efficiency and effectiveness

Analytics for managing operations

- Better manage curriculum schedules, teaching resources, and learning venues for maximum efficiency.
- Gain critical insights into management of operational resources.
- Help reduce operational costs related to handling of university operations.
- Lower operational costs for program execution.
- Manage suppliers for cost-effective procurement of goods.
- Provide a collaborative application with narrative ability.
- Plan for an entire year, with the ability to submit modification.
- Perform what-if modeling and scenario analyses to compare alternatives.



Analytics for maximizing operational efficiency and effectiveness

Analytics for institutional advancement

- Predict who is most likely to donate, how much they would donate, and when they would donate
- Determine the appropriate marketing message and delivery channel (e.g. email, phone, etc) they are most likely to respond to
- Identify when a staff member should provide additional attention to a specific donor
- Know when is the correct time to ask for more
- Optimize the frequency of contact outreach to avoid saturation.



Analytics for improving teaching effectiveness and student outcomes



Month end close reduced from 14 to 3 days

The need:

Victoria University of Wellington needed an easier way to manage budget preparation throughout multiple faculties, schools, institutes and centres of research in an intranet environment.

The solution:

The University implemented an integrated financial analytics solution from IBM Business Analytics that provides a total package for financial performance management.

What makes it smarter:

- Removal of budget consolidation and calculation errors.
- Support of multiple financial reporting and analysis requirements.
- Reduction month-end process time from a maximum of 14 days down to 3 days.

UNIVERSITY of CALIFORNIA

\$10 million in potential savings by lowering risk

The need:

The University of California's existing reporting and decision-support environment did not address the need of decision makers to understand the system's level of risk.

The solution:

UC engaged IBM to implement an Enterprise Risk Management Information System. The solution integrates previously silo-ed data to provide near real-time information to all levels of the university.

What makes it smarter:

- The system helps UC understand what drives subpar performance and costly losses.
- Senior officials can better understand the ROI associated with various remediation strategies.
- Better risk ratings mean lower interest rates on debt, a 0.1% decrease in interest rates represents over \$10 million in potential savings.

Analytics for improving teaching effectiveness and student outcomes



**21% increase in
class enrollment**

The need:

The Opus College of Business at the University of St Thomas needed a better method of timetabling to offer students the best possible range of courses, reduce costs and make it easier to maintain AACSB accreditation.

The solution:

eCapital Advisors, an IBM Business Partner, developed a course scheduling solution that collects and analyzes data from multiple sources and constructs multiple scheduling scenarios, helping the college make better, faster decisions.

What makes it smarter:

- The college runs the right number of courses, boosting class enrollment rates by 20% and reducing the number of under-enrolled classes.
- The college understands the factors that contribute to students' course selections for more accurate planning of demand.



**Transforms aspects of
its operations**

The need:

The University of Wollongong realized the potential of analytics to monitor, evaluate and transform almost every aspect of its operations.

The solution:

The university created a business analytics competency centre tasked with creating an enterprise data warehouse and building balanced scorecards and reports to assess efficiency across all areas of the university's operations.

What makes it smarter:

- Provided accurate insight into student attrition rates, helping to measure their success.
- Identified groups of students to target in promoting libraries and online resources.
- Improved energy efficiency by monitoring electricity usage at different times across campus.

The IBM Business Analytics portfolio's breadth and platform for higher education

Chancellors,
Presidents, Deans

Academic Staff

Students

Financial planners

Administrators

Assets and
operations



How are we doing?

- Measure performance and deliver outcomes.
- Align institutional strategic goals to desired student and community satisfaction.
- Increase the quality of decisions.

Why?

- Predict and forecast possible outcomes and build a viable intervention strategy.
- Analyze and manage all program costs (direct and indirect), and reduce costs through real-time insight into programs and budgets.

What should we be doing?

- Redeploy financial and operational resources to meet changing objectives.
- Integrate budgets with performance objectives.

Smart phone

PowerPoint

Browser

Excel

Email

Tablet

IBM Business Analytics capabilities



Dashboards



Scorecards



Reports



Queries



Analysis



What-if



Predictive modeling



Planning/
budgeting

Business Analytics solutions for education

Higher Education solutions



Improve student success and skills

- Student performance analytics
- Teacher performance analytics
- Student life cycle analytics



Manage resources effectively

- Budget and operations analysis
- Financial planning
- Salary planning
- Enrollment/tuition planning

For more information
ibm.com/software/analytics/education



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