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Case Study

Nottingham Trent University

Sophisticated data analytics from help enhance programs to reduce dropout rates of students.

Overview

Nottingham Trent University has an excellent reputation for preparing students for post graduation employment. But the university wants to keep improving its graduation rate, even as it increasingly recruits students that are at greater risk of dropping out. So it implemented a sophisticated data analytics application from OpenText™ IDOL Information & Data Analytics Platform that allows it to more quickly detect issues with student engagement, which in turn enables the university to intervene in time to keep its students on track.

With around 28,000 students, Nottingham Trent University (NTU), located in the Midlands region of Central England, is one of the largest universities in the United Kingdom. It also has one of the U.K.'s best employability records. Nearly 93 percent of NTU's students earn their degrees; 94 percent of its graduates either find full-time work or continue their education within six months of completing their NTU studies.

"IDOL is helping us improve student engagement—which makes us an even better university."

MIKE DAY
Director of Information Systems
Nottingham Trent University

NTU's success in launching students' careers is partly a reflection of its history, focus, and culture. The university has a strong history in the fields of design and polytechnic studies. Its manifesto, Creating the University of the Future, states that every NTU course should reflect strong links to employers; NTU meets this objective by cultivating strong, collaborative relationships with the business community.

But NTU relies on more than manifestos and relationships to serve its students. It also leverages technology—including a cutting-edge analytics application powered by OpenText™ IDOL.

Challenge

Expanding Enrollment Includes More at-Risk Students

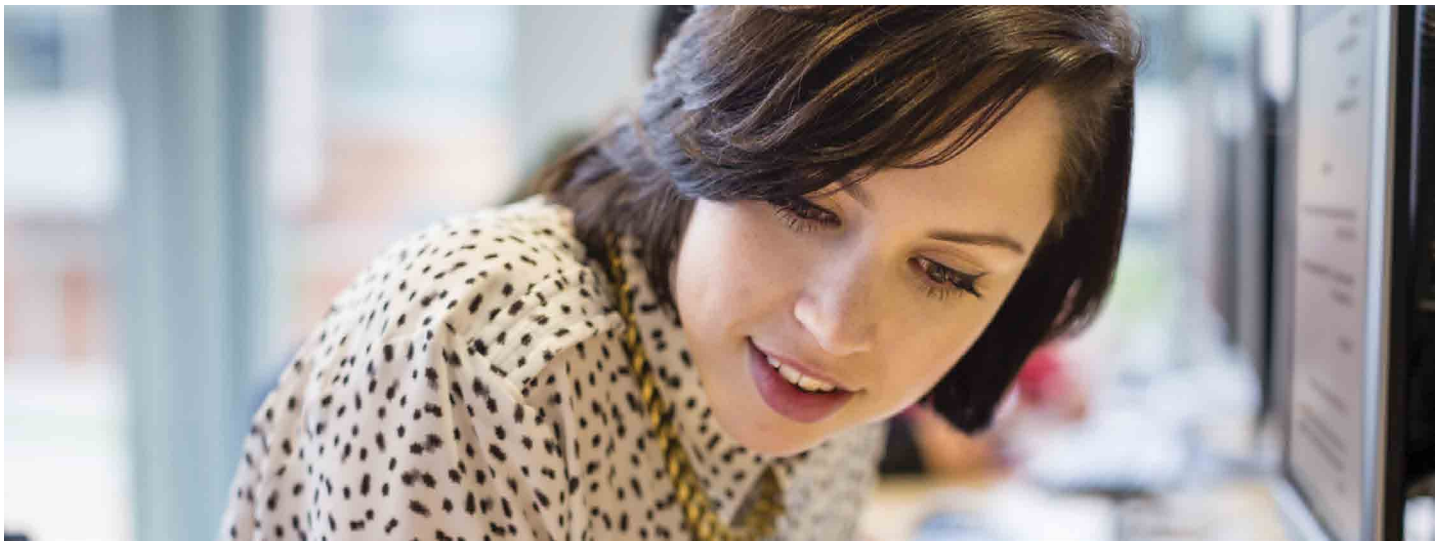
NTU has always had a low drop-out rate, notes Mike Day, the university's Director of Information Systems. At about 7 percent, Day says, the university dropout rate is "better than sector average."

But NTU knows better than to assume that its current success will continue—particularly as its student body demographic evolves. NTU's

NOTTINGHAM TRENT UNIVERSITY

At a Glance

- **Industry**
  Education
- **Location**
  England
- **Challenge**
  Improve the ability to reduce student dropout rates.
- **Products and Services**
  IDOL Information & Data Analytics Platform
- **Success Highlights**
  + Able to detect when students become disengaged from studies one to two months earlier than was possible before
  + In 90 percent of cases, early intervention resulted in upturn in student engagement
  + Reducing dropout rates helps protect student investment in tuition (£9,000 annually) and board
  + Successfully paired and correlated 600TB of structured and unstructured data to support robust and comprehensive analytics



enrollment is growing. It expects to add around 2,000 students over the next few years.

Equally significant, the percentage of students the university classifies as "widening participation" students will likely rise. Students in this category typically come from lower socio-economic areas. Often, they represent the first generation in their families to attend university. As a result, these students may lack confidence in their ability to navigate the university system. They may not take advantage of its academic and counseling support systems. "We've come to call them 'doubter students'", says Day. "When they struggle, they believe it's their fault, and so they typically don't ask for help."

NTU's challenge was to identify which students were either struggling or—better yet—at risk of encountering academic challenges. If it could identify those students quickly enough, it could intervene by proactively reaching out to them to offer guidance and support.

Solution

Structured and Unstructured Data Requires Innovative Approach

The university started by considering the data footprint students leave as they move about the university campuses and use its facilities and services. Students swipe their smart cards to enter buildings, use printers, use libraries, and access learning management systems. "We wanted to see whether those things would give us some indication as to how well students were engaged in their studies and therefore whether they're struggling or not," says Day.

While some of the university's 600TB of student data is structured, much of it is not. The university discovered that it was virtually impossible to integrate its disparate datasets using traditional business intelligence tools. So instead, NTU engaged with OpenText™ partner DTP Solutionpath to implement an IDOL business analytics application. To build the solution, NTU provided DTP Solutionpath with five years' worth of back data. Then, working closely with the university's IT team, the vendor used IDOL analytics to create what Day calls "a model of engagement": data combinations that indicate levels of student engagement—or disengagement. DTP Solutionpath also built a dashboard that lets students visualize their engagement. It is a very simple visualization, Day explains.

"It's two lines on a chart. One of those lines is the average engagements of the cohort on a course-by-course basis. The other line is the individual student's engagement compared to that average engagement in the course."

Student Privacy Paramount

Another, equally important aspect of the modeling was student privacy. The university had to make sure the application was in full compliance with U.K. Data Protection law. In addition, NTU worked with its students and staff to understand how they would view its data collection and analysis procedures. "We worked very hard … to understand what would be acceptable and what wouldn't," explains Day, noting

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that this understanding is "perhaps even more important than the strict legal position." The university found that if students understood that the intent was to help them succeed, they were supportive of the project.

Results

Pilots Validate Project Value within Months

With the model complete and the student body on board, the university launched a series of 12-month pilots. The pilots followed students who enrolled in specific courses. Within six months of beginning the pilots, the university had its answer. The IDOL analytics tool works: it detects that students are disengaging from their studies one to two months earlier than would otherwise be noticeable by teachers or staff.

And earlier detection supports more effective intervention. "In more than 90 percent of the cases we have seen so far," Day says, "early conversations result in an immediate upturn in student engagement. We've seen some very real tangible results and we saw those very early on."

In addition to the quantifiable results, the pilot demonstrated a number of intangible benefits. The university's academic tutors began using the engagement metrics as a starting point to discuss and share best practices. The metrics also prompted tutors to reach out to students who might be in need of academic help. As a result, Day says, the relationships between students and tutors have become more fruitful and positive.

The application has also shown signs of encouraging healthy competition among the students, as they strive to improve their engagement metrics relative to their peers.

The pilots were so successful, in fact, that NTU deployed the program across the entire university six months sooner than it originally planned and is now in its second academic year of operation.

The university is also sharing what it has learned with other U.K. institutions. It is working with DTP Solutionpath to create a model that other universities can replicate.

"It starts with a readiness exercise," Day explains, "because this is not about technology … it's about how ready you are, as an organization, to address things like privacy and ethics."

Day views its program, in fact, as a "kind of bridgehead" that will allow NTU to apply cutting-edge data analytics to other aspects of the university enterprise. For example, NTU might be able to gain a deeper understanding in the factors that predict student success, to help it match its recruiting efforts to its academic programs. IDOL analytics might also help NTU better understand how students fare after graduation, as the basis for refining its job counseling and career advisement services.

Protecting Students' Investment

Even without these future use cases, the IDOL solution delivers clear benefits to Nottingham Trent. Recruiting students costs money; minimizing student dropout rate is therefore good business practice.

Perhaps more importantly, the solution benefits NTU students. The university's yearly tuition is £9,000 (USD 13,760) plus board. If students earn their degrees and find employment after graduation, chances are very high they will recoup that investment. If they drop out, on the other hand, they risk finding themselves trapped in a downward economic spiral of unemployment and debt. "It means perhaps a diminished potential for them over their lifetime of career, monetization of income, and contribution to society," notes Day.

Thanks to IDOL, fewer NTU students face this risk—which is a win for the students, a win for the university, and a win for the economic future of the United Kingdom.

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