Building a culture of analytics on campus:

Leveraging data in higher education

By Robert Dolan Jr., Market Segment Director, Public Sector

Change isn't coming. It's here.

In a time when data-driven decision-making is expanding on university campuses, administrative needs and business systems are constantly shifting. University leaders and educators contend with managing student success and improving graduation rates, advancing research, attracting donors, and cultivating fiscal responsibility with greater transparency.

As a result of changing priorities from the institution, IT teams often struggle to balance the increasing demands for information with the need for data governance. That's why a culture of self-service analytics starts with a scalable, secure data infrastructure. With this foundation, educators and administrators can explore their own data without the risk—paving the way for further collaboration and innovation.

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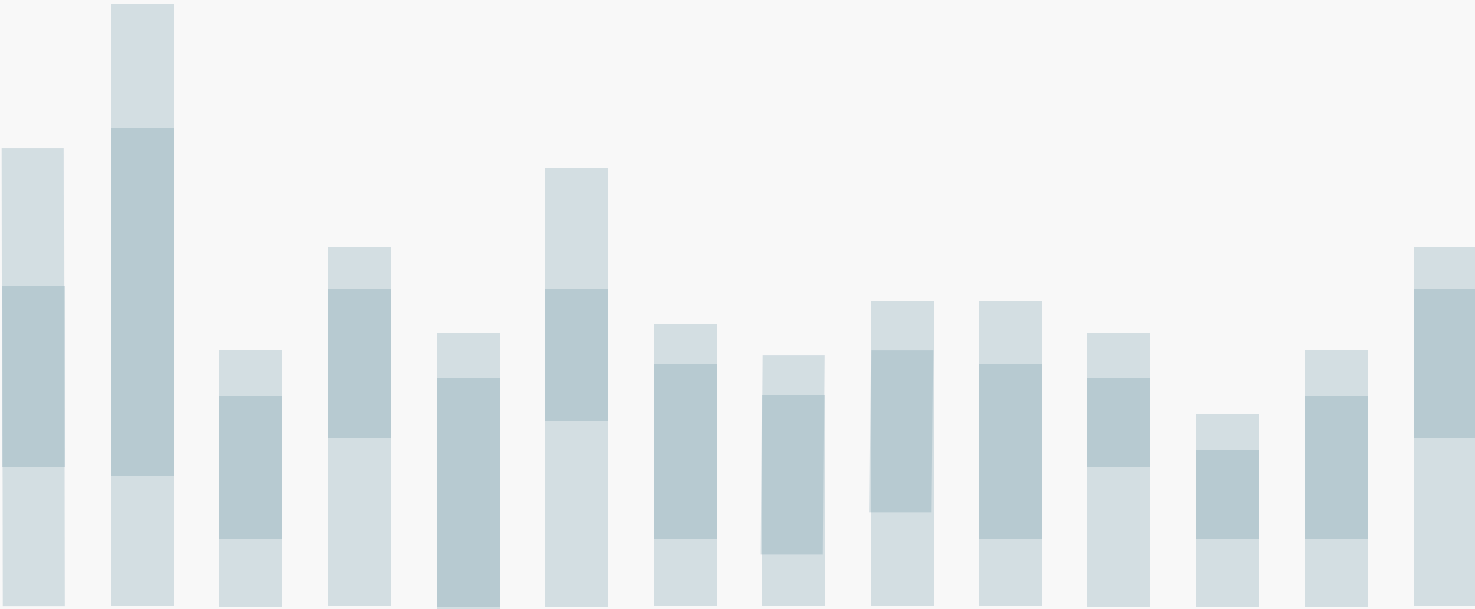
The old way

People within educational organizations have traditionally gained data insights through static reports generated from enterprise applications and business intelligence tools. IT spends dozens of hours churning out reports that often lead to more questions and ultimately, a long and inefficient reporting queue. As a result, "shadow IT" emerges with people relying on inaccurate, ungoverned data for faster decision making.

This "traditional BI" process is complex, inflexible, and time-consuming—and the repetitive processes restricts IT from focusing on more strategic tasks.

With increasing data volumes and limited IT resources, this model is no longer sustainable for organizations looking to make the most of their data.

> **"**
> It used to be that we couldn't even put all of the data into one visualization or one spreadsheet because it would completely go off of the screen...We can now answer almost any enrollment question over the past seventeen years with a few clicks of a mouse. This sort of thing generates a lot of interest within the university and causes people to ask interesting questions, allowing staff to save time by sending people to do their own self-service.
>
> —JON BOECKENSTEDT, ASSOCIATE VICE PRESIDENT
> ENROLLMENT POLICY & PLANNING DEPAUL UNIVERSITY

The new way

A new generation of data technologists are emerging, moving beyond traditional BI frameworks and empowering individuals to explore their own data. This yields faster, more insightful decisions that benefit both students and the institution. It also allows IT leaders to return their focus to their central task of maintaining a secure and reliable data infrastructure.

Many campuses have already adopted a self-service model. But even with new data-driven decision-making framework, universities sometimes fall short in their analytics strategies.

New approaches demand a new methodology

Proven deployment methods adapt quickly to changing requirements. These methods allow IT and university employees across all departments to work together as partners.

The four attributes of the new way to approach higher education analytics are:

1. Enabling Self-Reliance
2 Flexible, Secure Infrastructure
3. Broader Adoption and Deeper Insights
4. Creating a Culture of Analytics

Enabling self-reliance

A business analytics platform should empower people of all skillsets to explore their data. The iterative nature of self-service analytics yields huge dividends for individual administrators, educators, and student outcomes, increasing productivity across an organization.

The self-service analytics model is most successful when user-generated dashboards run on top of an IT-managed infrastructure. The IT team can ensure data accuracy while maintaining and protecting the privacy of data assets.

The University of Washington (UW) has rich data sets with more than five billion records, 36 databases, and seven SSAS cubes. The school generates more than 300 reports to fuel thousands of daily decisions within its network. For UW, dated, basic reporting tools were simply not enough to truly harness the power of the data at scale.

At the time, Bart Pietrzak, Senior Technology Manager at UW, saw an immediate need for self-service data discovery. Pietrzak recognized the critical role for the UW IT leaders.

"Our main job on campus is to bring the data from all the systems, integrate this data to make it easier for consumption, and then deliver it through the BI platforms that we've had for some time," Pietrzak said.

UW wanted to have greater self-service. UW needed to foster collaboration. "Collaboration for us means a lot of different things—we've got three campuses, seven medical centers, we work with partners—we want to have a way to share data across the enterprise. We want to promote and continue what our leadership started, which is data-driven culture. We want to focus on enabling analysts, not developers. We want people to be empowered to use the tool to start interacting with data," he said.

UW is primarily a Microsoft shop. The school uses an SQL server to store and manage data, T-SQL and integration services for ETL, reporting services for reports, and analysis services for cubes. As you can imagine, Excel and Access are widely used on campus.

"We really did not want to replace any of the existing tools that we have at UW. We wanted to expand and provide what we were lacking, which is really a [visual analytics] tool that became essential for ad hoc analysis and ease of use," Pietrzak said.

Watch to learn
more about how DePaul University democratized their data for better insights.

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>
> — BART PIETRZAK, SENIOR TECHNOLOGY MANAGER
> THE UNIVERSITY OF WASHINGTON

In the fall of 2012, the university launched a program called UW Profiles in an effort to empower administrators to see, understand, and make better decisions with student data. UW Profiles is a set of 23 dashboards that visualize data about student enrollment per quarter, number of degrees granted every year, retention, and graduation rates.

The University of Washington has one of the largest higher education self-service analytics installations in the world. Watch this presentation to learn how UW IT leadership partnered with departments to deploy enterprise self-service analytics. Hear about their journey from charter to pilot, with approvals, roll out, training and ultimately institutional change.

This idea came from the office of planning and budgeting, but the team relied on a partnership with IT leaders for execution.

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The best way to build adoption is to make the transition easy for users. UW's portal is integrated with single sign-on solution, and users don't have to rely on IT to find their answers. It is all made possible by what administrators and educators don't see: the data sources that have been set up and managed by IT. This is a key concept: to make the most of a self-service analytics strategy, users need to be able to access data.

Flexible, secure infrastructure

An analytics platform needs to support all stages and phases of growth. This starts with security and governance capabilities that help scale self-service analytics without the risk. The platform should also be flexible enough to meet existing and changing requirements.

The foundation phase involves building the processes, organizational structures, and technical infrastructures to support scalability and broad adoption without sacrificing data quality. Data governance is not just about security; it is also about making sure data is accurate, available, and audited:

Accurate: Any analysis or visualization is meaningless unless people are working with current data drawn from approved and managed sources.

Available: Data must be democratized, open to everyone under specific guidelines. Not everyone needs access to all the data. For example, analysts may have access to all underlying data sets, while some roles may only have access to high-level dashboard views.

Audited: Most organizational data, especially at universities, has some level of confidentially. And it is important, and often legally required, to keep a full record of who has had access to data and at what level.

The University of Notre Dame is a private research university with more than 10,000 undergraduate, professional, and graduate students.

After success within the Office of Strategic Planning and Institutional Research, Notre Dame's business intelligence team (BI) decided to open up self-service analytics to the entire institution. The team created DataND—a governed, campus-wide data portal. Keeping data security top of mind, the BI team provides governed access to the institution's enterprise data warehouse.

"The goal for DataND was to share information more broadly with campus and to make it as easily accessible as possible," says Chris Frederick, Business Intelligence Manager at Notre Dame. "DataND allows us to spend less time on finding and extracting data and more time on analyzing and understanding its implications."

With DataND, Notre Dame's offices now have a central source of truth for data, with pre-built dashboards for quick answers and downloadable workbooks for further exploratory analyses. Instead of working in silos, offices can securely share dashboards, leading to better data accuracy.

As a result, Notre Dame's BI team reduced costs and allowed for deeper analysis with less development effort.

Broader adoption and deeper insights

For a business intelligence platform to drive value, people need to have the ability and the desire to use it.

Ask yourself:
- Does your BI solution require weeks of training before new users can build and publish their first dashboard or report?
- Does your business intelligence solution allow for both unlimited exploration and advanced analytics?

The platform should be intuitive for every level of user. This leads to faster onboarding and broader adoption.

Secondly, everyone across an organization should be able to quickly derive insights from their data—inspiring action and enhancing its value. This means that users should be able to explore the data on every level, unrestricted by predefined visualization types.

Your administrators, researchers, and educators, everyone using data to drive better decisions, are thinking about the questions they need to ask of their data—not about how to use software. They should be able to easily combine data sets from different parts of the institution to answer more and more questions. This leads to faster, more-informed decision making.

Enrollment and recruiting officers from Indiana University (IU), a big Midwestern university, are no strangers to this new, faster methodology. At IU, technology and education go hand-in-hand.

Watch and learn how universities big and small are using data faster to improve student success.

With thousands of recruits each year, applications, surveys, and test scores add up to a lot of data and many questions that need fast answers. "My job is monitoring and, ultimately, proposing courses of action to help IU become a more amazing place. Ideally we're recruiting and enrolling a great class that then graduates," said Bridgett Milner, Senior Associate Director in UI's office of enrollment management.

"Uncovering trends easily, things that used to take us hours, now often take us mere seconds. I attend weekly meetings with our leadership team; having a tool where we can easily break things apart when we're making decisions is powerful. We're uncovering new ideas all of the time about how we might do things better," she said.

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Creating a culture of analytics

Enablement doesn't stop at adoption. Expanding self-service analytics across an organization requires consistent collaboration.

A "culture of analytics" stems from a commitment to educate people on processes and technology. Partner with administrators, researchers, and educators to understand their needs and to teach them best practices around accessing, requesting, and sharing data.

This may appear in the form of enablement programs, where users can share tips, ask questions, and curate resources for additional learning.

The University of Birmingham is a public research university located in Edgbaston, Birmingham in the United Kingdom. The university encourages bold, independent thinking from both its students and staff.

Rob Andrew, Head of Business Intelligence, shares how self-service analytics has led to a productive feedback loop between departments. Now that the BI team has more insight into the needs of its staff, they're seeing more people engage with the data in regular decision making.

"[When] people start to engage with the data and appreciate what it looks like, then they'll start using it," says Andrew. "We ourselves are learning how to actually increase that user engagement."

The bottom line

Data-driven decision-making is a change that is sweeping through universities and institutions of higher learning. Many colleges and universities no longer have the luxury of tying up valuable IT resources to dedicate to report creation. A faster, smarter adoption of a self-service analytics platform will improve speed to action and foster discovery of the "unknown unknowns."

For leadership, today's insights could influence tomorrow's mission and financial outcomes. For educators, today's data could drastically improve student success and lead to lower attrition rates and higher graduation rates for all of their students.

> Before when we were doing the math, we were trying in our mind to create the picture, to view it. But here in Tableau, it is ahead of you. It's already in a picture. It's so far ahead of our old concept of dashboards.
>
> — CINDY SEDLACEK, DIRECTOR OF DATA ADMINISTRATION REPORTING
> CORNELL UNIVERSITY

About Tableau

Tableau Software (NYSE: DATA) helps people see and understand data. Tableau offers a new approach to self-service data discovery and collaboration for higher education campuses. Get the most out of vast amounts of university data, with no programming skills required. More than 21,000 customer accounts, including top universities, get rapid results with Tableau in the office and on-the-go. Empower all roles across your institution with self-service analytics by downloading a free trial at www.tableausoftware.com/trial.

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