Institutional Analytics Is Hard Work: A Five-Year Journey

Higher education leaders have been faced with competing and conflicting challenges for years. Increasing competition for students, a continuous decline in funding, and greater accountability amid rising operational challenges stand out as consistent themes. This confluence has created a sense of urgency to leverage data to inform decision making like never before. The number of colleges and universities implementing business intelligence and analytics initiatives has been on the rise. Simultaneously, an increasing number of companies have introduced or expanded their technology and services portfolios, offering analytics “solutions.”

Yet as Bridget Burns, executive director of the University Innovation Alliance, observed in January 2016: “Despite the hype, the [data-driven decision-making] field remains nascent, the implications uncertain.” Burns’s perspective on the infancy of the field of analytics can be attributed to one simple truth: institutional analytics is hard work.

An important theme, often absent from the dialogue, is an acknowledgment of the heavy lifting required to leverage analytics as a strategic enabler to transform an institution. There is no “easy button” for improving the financial, educational, and operational outcomes across an institutional enterprise. Doing so requires a combined commitment of technology, talent, and time to help high-performing colleges and universities leverage analytics not only for one-time insights but also for ongoing performance management and improvement guided by evidence-based decision making.

A growing number of senior administrators and presidents believe that analytics will play a key role in the success of their institutions. Even though the work required to yield significant results in institutional analytics is hard and the journey long, the cost of doing nothing is no longer an option for most higher education institutions.

Lessons from a Five-Year Journey to Advanced Institutional Analytics

In 2011, the University of Maryland University College (UMUC) had reached an inflection point in its use of data. The university had a data warehouse in place primarily to support operational reporting needs across the institution. The decision was made to bring in private-sector analytics expertise to help get more value from the data and to introduce the competency of business analytics and financial planning to the university setting. Our focus was on increasing the amount of time spent on high-value analysis while introducing greater efficiencies in preexisting operational reporting. We thus began what would be a multiyear journey to effectively leverage data to inform decisions, impact business outcomes, drive policy, and guide the university along a continued path of stability and growth. During this time, we experienced an organizational and cultural transformation into a state of advanced, institution-wide analytics.

We learned four fundamental lessons from this experience—lessons that are relevant for any institution looking to jumpstart or accelerate its path to advanced analytics.

Lesson 1. Centralize: Prioritize Data Collection, Quality, and Transparency

The Challenge: Decentralized institutional data introduces a whole host of challenges, from the absence of common data definitions to the inability to conduct cross-functional data analysis. The implications of these challenges, highlighted in KPMG’s 2015–2016 Higher Education Industry Outlook Survey, include (1) limited strategic and operational use of data, and (2) absence of best practices to effectively use data residing across different functions.

Best Practice: Analytics can and should be centralized, providing a single point of entry for all stakeholders to access insights across the university. To achieve this, we designated a leader who had the authority to refine and broaden scope, embrace transparency and communicate objectively, and institute best practices to use data across different functions.

Results: Focusing on integrating and validating institutional data in a central location created a single point of truth at the university.

Lesson 2. Optimize: Focus on Building Data Models, Not Reports

The Challenge: When the majority of time is spent on operational reporting, data stewards have little time to dedicate to high-value analyses. Time-consuming and manual processes for reporting introduce both inefficiencies in daily operations and implications for the strategic use of data to monitor and improve overall institutional health.

Best Practice: UMUC “doubled down” on its spend on analytics through a combination of investments in high-performance cloud computing, data integration and modeling, and an intuitive data-visualization platform. The models accelerated the ability to prototype and quickly answer ad hoc requests.

Results: Data that was once considered complex and inaccessible could now be consumed, understood, and analyzed by both power and casual users across the university. This invest-
ment increased access to actionable information for a broader set of stakeholders, introduced efficiencies in reporting, and created opportunities for sophisticated, high-value analysis.

Lesson 3. Communicate: Invest in Data Analysis and Storytelling Expertise

The Challenge: Although providing access to actionable information is a critical step, there are often varying degrees of resources and fluency across university units in data analysis and storytelling. As noted in the KPMG survey, only 29 percent of respondents “have sufficient access to data and resources to analyze and use it for strategic and operating decisions.” Thus, many departments are still not able to uncover insights and translate them into actions or business outcomes on their own. As Brent Dykes has noted: “Unless we can improve the communication of these insights we will also see a poorer insight-to-value conversion rate. If an insight isn’t understood and isn’t compelling, no one will act on it and no change will occur.”

Best Practice: We overcame this challenge by investing in building up data science and storytelling expertise within the Office of Analytics to communicate data insights across the university. Using the centralized data platform, staff in this office started by identifying core questions that the university needed to answer. The team quickly realized the need to be proactive and engage the university community in a significantly different way in order to facilitate meaningful conversations. Evolving into an internal professional services arm, the analytics team provided ongoing data analysis, visualization, and storytelling services to internal constituents. The team’s job was to take the complexity out of the data and present it in an easily understood and consumable fashion.

Results: The combination of platform and services introduced significant efficiencies in reporting while also increasing opportunities to facilitate meaningful and strategic conversations across the institution. The Office of Analytics became an objective, independent actor, serving a broad set of stakeholders across the university.

Lesson 4. Connect: Implement “Educational Intelligence” to Address Institution-Wide Challenges

The Challenge: Although an increase in access to actionable data and sophisticated high-value analysis contributes to progress on the path to institutional analytics, silos persist. Departments evolve at varying paces, and institutional inertia is still one of the greatest hurdles. How does an institution reach a point where data is critical both within and across traditional departments?

Best Practice: The unified data layer at UMUC allowed the Office of Analytics to demonstrate the potential of cross-functional analysis to stakeholders and implement “educational intelligence™” across the institution. By combining data sets, the Office of Analytics was able to answer questions such as the following:

- How can we segment students into subpopulations to better serve them?
- What variables are predictive of enrollment growth or decline?
- What impact do financial aid changes have on enrollment and bad debt?
- Are there significant opportunities to improve student persistence?
- How does student activity in the classroom correlate with student success?
- Which degree programs are driving demand, degree production, and revenue?

Results: Through increasing visibility into the connections across units, the university has reached a state of advanced institutional analytics. As data drives decisions across the university, stakeholders continue to see positive results—from improving persistence and retention rates to increasing enrollments while reducing expenditures on recruitment.

The Path Forward

UMUC has made great progress on the path to institutional analytics. In 2015, the University System of Maryland Board of Regents approved a plan to spin off the UMUC Office of Analytics into a new company, HelioCampus. Yet the journey continues, and these lessons remain core to the university mission. Regardless of type of institution or its stage in the journey, these lessons represent fundamental pillars for providing leaders with greater visibility into the connections between student outcomes, tuition revenue, and expenses—and with guidance on how to take action.

Notes

3. Ibid., 12.
5. The Office of Analytics was led by Darren Catalano.
7. Darren Catalano, who had been brought in from the private sector in 2011, is CEO of the new company, leading a growing team of data scientists, engineers, and analysts dedicated to furthering institutional analytics at UMUC and at other colleges and universities nationwide.

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