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Administrative IT Summit Resources

Resources from the meeting, including slide presentations, can be found online.

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Summary

In June 2015, nearly 200 higher education thought leaders representing information technology, business operations, institutional research, and business intelligence and analytics met in Seattle, Washington, to discuss ways to enhance their institutions’ analytics strategies. In this collaboration between EDUCAUSE and NACUBO members, several key takeaways emerged as areas where institutions should focus their efforts as they build analytics maturity. Colleges and universities need to develop support from senior institutional leaders, hire or develop staff members with the right combination of technical and communication skills, use a collaborative approach to build an analytics strategy and vision, and make the analytics program part of the institution’s strategic plan.
Introduction

Higher education is data rich but information poor. Colleges and universities collect data about everything from students and academic activities to administrative and operational functions, but many institutions still struggle with how to turn those data into useful information. An enterprise-wide analytics strategy can help an institution use data to answer hard questions related to mission and plan and to make decisions that help further institutional goals.

A mature analytics strategy is becoming more and more critical to institutional decision making. IT and business leaders are recognizing the importance of making progress in this area, with drivers both from within the institution and external to it. Results of a recent ECAR study on analytics in higher education show that the top driver for developing an institutional analytics program is the attempt to optimize resources. Looking at institutional analytics and learning analytics together, important drivers include the desires to improve student retention and completion rates and to demonstrate effectiveness and efficiency to external audiences.

With these concerns setting the stage, the higher education leaders met in Seattle to discuss ways to build and enhance their institutions’ analytics initiatives. A broad mix of attendees reflected the multiple institutional stakeholders involved in a successful analytics program, with representation from information technology (IT), business operations, institutional research (IR), and data management. The diversity of summit attendees presented the opportunity to hold cross-functional as well as cross-institutional conversations about ways to increase analytics maturity at each attendee’s institution.

As with the 2014 Administrative IT Summit, NACUBO, the National Association of College and University Business Officers, cosponsored this event. Several sessions were copresented by leaders from IT and from business, reflecting the importance of the collaboration between these two areas. Participants were encouraged to attend as teams to represent different viewpoints around analytics and to take advantage of the opportunity for knowledge sharing and collaboration among different job functions. Twenty-three percent of attendees came as parts of institutional teams.

Top 5 areas where data are used to monitor, project, or predict:

1. Enrollment management
2. State/federal/accreditation reporting
3. Undergraduate student progress
4. Finance and budgeting
5. Time to complete a degree

Top 5 areas where data are not collected or are collected but rarely used:

1. On-demand assessment of student learning
2. Faculty research performance
3. Facilities
4. Institutional strategic plan
5. Cost to complete a degree

—The Analytics Landscape in Higher Education, 2015
The theme for this year's event, Analytics as a Strategic Asset, grew directly out of the 2014 Administrative IT Summit. That inaugural summit examined ways that higher education can maximize the value of administrative systems and services, and it focused largely on operational ways to increase efficiency. The report from the 2014 event stated, “To support the continuing evolution and success of our colleges and universities...IT and business leaders need to make our institutions as efficient as possible, use administrative systems to drive institutional strategy and value, and act as institutional leaders for those efforts at our campuses.”

The 2015 Administrative IT Summit closed the loop on that call to action. Whereas the 2014 event focused on efficiency, this year’s summit moved on to (1) examine ways institutions can enhance their analytics maturity to help drive institutional strategy and (2) further discuss the leadership implications of this work, including the important relationship between IT leaders and business leaders. The summit sought to build on the recommendation from 2014 that in order to increase the benefits provided by administrative systems and services, institutions must use data strategically for analytics and business intelligence, and they must build relationships between IT leaders and business leaders. This document provides a summary of speaker contributions and attendee comments.
The ECAR Analytics Maturity Index for Higher Education

The ECAR analytics maturity index[^1][^2] provided the focal point for many of the summit discussions. ECAR used the results of its 2012 analytics study to create the analytics maturity index and an accompanying set of recommendations. Summit attendees completed the index prior to the event to gain a better understanding of their own institutions’ strengths and weaknesses and to catalyze discussions around how institutions can make progress in analytics. EDUCAUSE staff, in presenting the analytics maturity index, outlined the following recommendations from the study findings for making progress in analytics maturity within six dimensions:

- **Data.** Don’t wait for the perfect data. Institutions may delay an analytics program because of concern that their data are unreliable or incomplete. If data are good enough to make predictions, then they are good enough to begin an analytics program.

- **Governance and infrastructure.** Implement an analytics infrastructure that supports analytics across the institution. This entails information security policies and practices, as well as an ability to store and manage large amounts of data without unnecessary silos.

- **Investment.** Demonstrate through examples that analytics should be viewed as an investment rather than an expense. Invest first in staffing and training over tools. Tools come after the right questions have been developed, and the right expertise is necessary in order to ask the right questions.

- **Expertise.** An institution should have professionals dedicated to analytics who are able to present findings to stakeholders in ways that convey the value of analytics. Initial and ongoing professional development is important.

- **Culture.** To help develop an analytics-driven culture, prepare for a quick big win or a series of small wins to convey the value of analytics and map out a communications strategy. Support from senior leaders, administrators, and faculty for an analytics program and for data-driven decision making is key to success. Use people who are already invested in analytics to communicate the value of analytics to stakeholders at your institution.

- **Process.** Remember that questions, not tools, should drive analytics. Institutions need to identify strategic outcomes and create analytics questions that connect to the institution’s mission. Analytics endeavors should be part of the institution’s strategic plan.
Based on their outcomes from the maturity index, as well as their own assessments, many summit attendees felt that their institutions are not as mature as they would like them to be in the use of analytics for strategy and decision making. The summit provided an opportunity for them to discuss strategy with leaders from other institutions and other functional areas, to network and learn from each other, and to develop ideas and plans to take back to their institutions.

The Analytics Maturity Index

ECAR released the first stand-alone analytics maturity index in 2012. This first-generation version of maturity modeling served as a basis for the analytics maturity index that is now part of the EDUCAUSE Core Data Service. The current index measures 32 factors contributing to analytics maturity and is organized into six categories or dimensions. A score on a scale of 1 (low) to 5 (high) is calculated for each of the dimensions, and the mean of those scores is the overall institutional maturity score.

The current dimensions of analytics maturity are as follows:

- **Decision-making culture**, including senior leadership commitment, and the use and cultural acceptance of analytics
- **Policies**, including data collection, access, and use policies
- **Data efficacy**, relating to quality, standardization, and “rightness” of data and reports and the availability of tools and software for analytics
- **Investment/resources**, consisting of funding, an investment versus an expense mentality, and the appropriateness of analytics staffing
- **Technical infrastructure**, consisting of analytics tools and the capacity to store, manage, and analyze data
- **IR involvement**, capturing interaction between IT and IR

The six dimensions above vary from the original five used in the 2012 maturity index. This second-generation model adjusts the dimension names and contributing factors to better align with institutional practices. This updated analytics maturity model is part of a new EDUCAUSE Benchmarking Service that will launch in early 2016.
Enhancing Analytics Maturity

Throughout discussions and presentations, these themes emerged repeatedly as important factors for enhancing institutional analytics maturity:

- Executive leadership sponsorship and support
- Staff resources and expertise
- Collaboration, teamwork, and relationship building
- Governance and communication
- Culture that values analytics-driven decision making

Executive Leadership Sponsorship and Support

Because of the cross-enterprise nature of analytics, senior leadership support is particularly important to the success of an analytics initiative, an idea that emerged in several presentations and group discussions. Neither IT nor business can drive this on its own. Executive sponsorship is necessary for making tough institutional decisions and fostering a culture change. Charlie Moran, senior partner and CEO of Moran Technology Consulting, described the situation at Arizona State University (ASU), known to have a mature analytics strategy with strong support from its president. At ASU, the president is more likely to support ideas and plans if they are presented with appropriate data. Even though the presented solution might not be the only road forward, the fact that it is backed by data gives it more credence in a data-driven culture.

It’s also important to have someone to lead and own the analytics program, although where this responsibility falls varies from institution to institution. The 2015 ECAR survey on analytics in higher education explored the issue of leadership for analytics programs (figure 1). The survey, which primarily surveyed CIOs, shows CIOs, chief academic officers (CAOs), presidents/chancellors, and IR leaders in key leadership positions for both learning analytics and institutional analytics. Chief business officers (CBOs) and chief financial officers (CFOs) were more commonly cited as having supporting or contributing roles, rather than leadership roles. Within the survey data, the CIO role and the director of IR show similar patterns of leadership.
Figure 1. Analytics leadership and support

This spread of responsibility reinforces the point made throughout the summit that analytics work needs to be a partnership. It is reflected also in analytics service delivery practices. Forty-three percent of respondents to the 2015 ECAR analytics survey said that their analytics services and activities are delivered through a program run jointly by IT and IR. Some institutions are also investing in leadership in data and analytics by hiring chief analytics officers or chief data officers as part of their analytics initiatives.

19% of institutions have a dedicated learning analytics leader

37% of institutions have a dedicated institutional analytics leader

—The Analytics Landscape in Higher Education, 2015
**Staff Resources and Expertise**

Every analytics program needs qualified and trained people. Summit presenters and attendees agreed that having adequate and appropriate staff expertise was necessary for success. Even though an analytics strategy needs tools, Jack Phillips, CEO of the International Institute for Analytics, cautioned against underestimating the value of talent to developing a successful analytics initiative and to fostering the cultural change it requires. He suggested that the ideal skill set is a combination of quantitative methods training, technology understanding, and communication. Throughout the summit, attendees and presenters referred to the importance of communication skills for analytics-oriented staff and of having people on staff who can tell the story of analytics and help other people see the vision.

Kathryn Gates, chief information officer at the University of Mississippi, polled attendees during her presentation to get a sense of the state of analytics staffing at institutions represented in the room. Of the 56 poll respondents, 21 (38%) agreed or strongly agreed that their institutions have IT professionals who know how to support analytics. The news was less encouraging when attendees were asked about specific types of positions required for supporting an analytics strategy. In response to whether their institutions have an appropriate number of data analysts, only 4 (7%) agreed—and none strongly agreed—that they did. Regarding business professionals who know how to apply analytics to their areas, 7 (13%) agreed or strongly agreed that they have these at their institutions.

Slides from Gates's presentation show the poll results (figure 2).
We have IT professionals who know how to support analytics.

We have an appropriate number of data analysts.

We have business professionals who know how to apply analytics to their areas.


Figure 2. Staff resources and expertise
Gates cautioned that skill shortages in data, business intelligence, and analytics create a difficult challenge in developing analytics maturity. Institutions need people who understand the potential of analytics as well as the tools and technology in order to build an effective analytics program.

Summit participants stressed that an investment in expertise is critical to allowing other aspects of maturity to evolve. However, most institutions have not yet made this investment. The ECAR analytics study showed that institutions need more people. Of the more than 200 survey respondents who indicated they need more analytics staff, the median number of additional FTEs needed to optimally provide analytics services and support was three. Needed skills included the creation of predictive models, analytics tool training, visual data communication, data analysis, and the development of user experiences and interfaces, all of which were rated by more than 85% of respondents as areas where their institutions need more staff (figure 3).

![Figure 3. Extent of positions needed](image-url)
This echoes the results of Kathryn Gates’s on-site poll. Summit attendees expressed concern that their institutions will be at a strategic disadvantage if they are unable to afford the staffing resources they need.

In describing the types of skills required for this work, Susan Grajek, vice president of data, research, and analytics at EDUCAUSE, suggested that the talent to populate institutional analytics initiatives might exist on campuses already. These people may not be in IT or IR shops but could be amid the faculty, researchers, and graduate or graduating students. She challenged attendees to work with faculty to find those people and engage them in their analytics work.

**Collaboration, Teamwork, and Relationship Building**

Summit presenters and attendees emphasized the importance of an institution-wide analytics strategy, not one that is focused only on IT or on business. Analytics is an enterprise-wide function that requires collaboration and teamwork across several different areas.

Grajek suggested that existing partnerships could be leveraged to create possibilities for effective collaboration among departments that manage learning strategy, analytics and institutional effectiveness, and academic or administrative functions. These existing partnerships are in the same areas that need to collaborate for effective analytics strategy development, and institutions should make use of these existing relationships to help speed up analytics maturity initiatives.

Although past analytics initiatives have often been driven by IT, Lisa Kart, research director at Gartner, pointed out that a shift is under way. Interest in analytics programs and initiatives is starting to come from business leaders instead and from stakeholders who need to make informed institutional decisions. Institutional leaders can take advantage of this new interest by bringing these stakeholders into collaborative relationships around analytics strategy issues.

The relationship between IT and IR, in particular, can be a powerful collaboration. IR teams already know how to use data to support external reporting requirements. It might be possible to take advantage of the existing analytics staff skill sets and tools to focus on internal problems, as well, or at least to inform analytics strategy setting.
Another poll conducted by Gates showed that 36 respondents (65%) agreed or strongly agreed that there is effective communication between their institutions’ IT and IR departments (figure 4).

![Bar chart showing responses to the statement: There is effective communication between our IT and IR departments.]

This ability to collaborate and work across functions is an important part of a successful analytics strategy. Mark Saine, senior director of executive and leadership development at TIAA-CREF, described the importance of what he called “the human system” in bringing about the institutional change that may be required to become a more data-driven organization. According to Saine, the human system causes or enables nearly every institutional success, and he challenged attendees to partner with other departments throughout their organizations as they work to mature their analytics strategies.
Summit attendees also considered the importance of collaboration with institutional corporate partners. Mark Armstrong, vice president of Oracle higher education products, pointed to a need for transformation in the vendor-institution relationship. He suggested that higher education has the potential to move ahead of other industries in terms of embracing analytics because of our ability to collaborate openly. A collective group of institutions working together could more effectively create a focus for the work of analytics vendors than one institution could create on its own. Representatives from all of the summit’s sponsors agreed that there is opportunity for institutions and vendors to collaborate more closely to turn analytics problems into solutions.

Data from the 2015 ECAR analytics study point to a related issue. Eighty-eight percent of respondents expressed concern about having an exit strategy or a contingency plan for when their analytics needs change to an extent that a change in vendor becomes necessary. Survey data suggest that vendors need to be transparent about their long-term plans so that institutions can develop possible exit strategies.

**Governance and Communication**

Enterprise data have the potential to be valuable strategic assets, and they must be managed effectively to achieve their potential strategic benefits. Data governance helps ensure that the data are used for an analytics strategy that connects with the institutional mission and strategic plan, and it provides people with access to the information they need to make good decisions and to do their jobs well. Data governance also prevents data misuse and facilitates best practices for stewardship. The process of developing data governance provides an opportunity for the kind of collaboration and communication that the larger analytics effort requires. All stakeholders should be involved so that the institution can be sure its data needs are met.⁴

The ECAR analytics survey results show that **75%** of respondents need more staff with data governance capabilities.
Building a Shared Understanding

Communicating clearly about data governance requires a shared vocabulary, which helps enable a common understanding about analytics and the institution’s analytics strategy. Mike Chapple, senior director of IT service delivery at the University of Notre Dame, described his institution’s process for building a data dictionary as part of its data governance development and listed these lessons learned from that process:

- **Top-level support is critical.** Building data governance is a tremendous amount of work across the entire institution, involving every administrative function. Top-level support ensures commitment to an outcome and helps foster buy-in and participation.

- **Show value across the institution.** Don’t approach data governance as an IT initiative. It is an institutional effort, and institutional constituents need to understand that all will benefit from data governance.

- **Building a data dictionary requires communication and conversations.** Each item in Notre Dame’s data dictionary involved at least one conversation with interested stakeholders, and each conversation was an opportunity for relationship building in addition to collaboration. Every stakeholder became a potential collaborative partner.

- **Ban jargon and acronyms.** Both encourage silos by using department-specific language. The data dictionary should use words that any competent leader can understand, regardless of background.

- **Get the data out of silos so it can be managed more readily and made available to those who need it.**

The work to create common data definitions shifted Notre Dame’s focus. Before this effort, existing systems drove data governance and thereby drove the analytics work. After developing a shared understanding of both vocabulary and need, the analytics initiative was intentionally driven by institutional needs rather than system capabilities.

Lisa Kart concurred with the importance of developing collaborative data governance, adding that governance models should not be about power, ownership, and control of the data but rather about being stewards of the data. She suggested that institutions foster a data governance mind-set that enables people to access the data they need to solve problems and make decisions.
Innovation through Collaboration

Roger Bruszewski, vice president for administration and finance at Millersville University of Pennsylvania, described a different road to an analytics strategy, but one that also relied on communication, governance, and collaboration to get there. Millersville University’s task was to change its tuition model within a very short time frame to address pressing financial issues. Millersville developed a three-team approach to address the problem quickly, with each team bringing in representation from important stakeholders:

- **Development.** Made up of finance, institutional assessment and planning, enrollment management, financial aid, and admissions, this team brainstormed and created a new tuition model.

- **Implementation.** Including many of the same players, plus IT and marketing and communications, this team developed a plan for implementing the model created by the development team.

- **Monitoring.** Composed of a subset of the development group, this team kept track of the work and provided important communication by responding to the board’s questions and concerns.

The teams began their work with a data-driven culture and mind-set already in place. That, combined with their collaborative approach and clear communication channels, fostered the development of a novel solution. The development team worked with the available data and developed a model that generated additional tuition revenue for the institution while saving some students money. As Bruszewski described it, the data itself drove the team to the end product. Their collaborative communication made it easier for them to take a different look at the data, develop a brand new concept, and build a solution to fit that new idea.

Bruszewski emphasized that asking the right, precise question is critical and very difficult. People tend to frame questions related to the way they are accustomed to perceiving the data. Changing that mind-set to one of openness and collaboration can lead to more creative and innovative solutions.
Culture That Values Analytics-Driven Decision Making

In his keynote, Jack Phillips said that half of all analytics projects fail and that only 30–35% are rated as successful or very successful. He put the blame on culture rather than technology. A successful analytics strategy requires a change from a culture of gut decisions, often based on anecdote and past experience, to data-supported decisions, based on information and evidence. One way to advance this transition is to start with one stakeholder. Phillips suggested that leaders can show success in one area and let a stakeholder from that area spread the word to help build interest elsewhere.

During a shift to a data-driven culture, people need to develop a deep understanding of the value of analytics. They need to see the connection between their day-to-day work and the institution’s analytics strategy. Having an analytics strategy that is clearly embedded in the institutional strategic plan makes this connection easier to see. Kart suggested that one of the hardest parts of developing an analytics strategy is convincing people of analytics’ value. A proof of concept and a quick win can help pave the way for better buy-in and a quicker adoption of culture change. Buy-in and support from executive leadership is also important. Leaders can help set the tone for the kind of culture that values data-driven decision making.

As IT and business leaders strive to gain support from other campus leaders, it is helpful to understand their institutions’ existing culture and values and to position their analytics efforts within that environment. Gates polled attendees about the state of the analytics culture at their institutions. Results showed that development of an institutional culture seems to be ahead of the staffing situation described above, with 28 respondents (51%) agreeing or strongly agreeing that their institution has a culture that accepts the use of data to make decisions (figure 5).

80% of respondents to the ECAR analytics survey are concerned that the higher education community doesn't know how to use data to make decisions.

94% are concerned that the data will be misused and the wrong conclusions will be drawn.

—The Analytics Landscape in Higher Education, 2015
We have a culture that accepts the use of data to make decisions.

Slide from Kathryn F. Gates and Mark Saine, Analytics Strategies: Talent Management and Staff Development, Poll 2: Analytics Maturity

Figure 5. Institutional culture

For institutions still struggling with culture issues, Saine suggested that linking the analytics strategy to the bigger organizational vision and mission helps people see the value of change. He suggested several techniques to help colleagues move toward a new culture: Provide people with a vision of the future that they can connect to, communicate the rationale for the vision, focus on short-term wins, and give stakeholders opportunities to talk about the future. Saine believes that change happens for one of two reasons: out of fear or from buy-in to a future vision. Institutional leaders play an important role in ensuring that analytics culture change happens due to a well-planned, articulated, and shared vision.

To get started, identify high-value targets, which are the places where analytics can make a big impact, and build analytics capability there. Use that experience to define and communicate a vision of the future. Frederick Richards, vice president of product management for analytics at Ellucian, agreed with the
importance of demonstrating value by starting with just one project. He suggested picking a project for a quick win that involves stakeholders from across the institution. Having a shared experience with the project will help build a shared culture. Elizabeth Dietz, vice president for product management and strategy for Workday Student, gave an example from Broward College, which mapped specific, measurable results to its new five-year strategic plan, helping to align everyone at the institution with the plan.

Attendees and presenters agreed on the importance of articulating a common mission and a set of common goals as part of developing an analytics-driven culture. Leaders and stakeholders should cocreate a vision of the future that all stakeholders want to be part of and then clearly articulate and communicate that vision across the institution.
Recommendations

The days of trusting one’s gut are over. Higher education has access to vast data resources. To stay relevant and competitive, institutions must develop analytics strategies that foster and enable a data-driven approach to institutional decision making and goal setting. The following recommendations emerged from the summit as ways to enhance maturity in this area:

- **Develop support from senior institutional leaders** who can help set the tone for a data-driven culture. Support from executive leaders is a key component of a successful analytics program.

- **Either develop or hire the right staff members** who can understand the potential of analytics and who have a combination of technical and communication skills.

- **Start with a visible but easy first win.** Pick an initial analytics target where there is already interest and support, and use that experience to demonstrate value and potential for the future.

- **Use a collaborative approach to build data governance** that enables data access where needed and supports the institutional mission while also protecting sensitive data from misuse.

- **Make the analytics program part of the institution’s strategic plan.** Identify strategic outcomes and create analytics questions to connect to the institution’s mission. Linking the analytics strategy to organizational vision and mission helps people see the value of change and understand the connection between the work they do and the institution’s overall strategic plan.

- **Collaborate with stakeholders to create an analytics strategy and vision** and then clearly articulate that vision and communicate it across the institution.

A mature analytics strategy enables an institution to use its data to answer hard questions related to mission and plan and to make decisions that help further institutional goals. IT and business leaders have the opportunity to act as institutional leaders with regard to building that analytics strategy. Attendees and presenters at the 2015 Administrative IT Summit suggested that colleges and universities could enhance their analytics maturity by gaining support from executive leaders, developing staff resources and expertise, collaborating and building relationships across the institution, building and communicating about effective data governance, and fostering a culture that values analytics-driven decision making.

In his keynote, Phillips said that analytics is a journey that never ends. Institutions need to approach the analytics journey as an ongoing program, not as a project with an end date. IT and business leaders are well positioned to help guide their institutions along the way.
Speakers and Sessions

- **Jack Phillips**, CEO, International Institute for Analytics, “Setting an Analytics North Star, in Higher Education and Beyond” (keynote speaker)
- **Jacqueline Bichsel**, Senior Research Analyst, EDUCAUSE, and **Michael D. Erickson**, Chief Information Officer, Colorado School of Mines, “ECAR Analytics Maturity Index”
- **Roger V. Bruszewski**, Vice President for Administration and Finance, Millersville University of Pennsylvania, and **Mike Chapple**, Senior Director, IT Service Delivery, University of Notre Dame, “Analytics Strategies: Culture, Collaboration, and Partnership”
- **Kathryn F. Gates**, Chief Information Officer, University of Mississippi, and **Mark Saine**, Senior Director, Executive and Leadership Development, TIAA-CREF, “Analytics Strategies: Talent Management and Staff Development”
- **Susan Grajek**, Vice President, Data, Research, and Analytics, EDUCAUSE, “Analytics and a Crossroads for Higher Education”
- **Sharon E. Blanton**, Vice President and Chief Information Officer, Hawaii Pacific University; **Michael D. Erickson**, Chief Information Officer, Colorado School of Mines; and **Paul Jenny**, Senior Vice President, University of Washington, “Moving the Needle: How to Make a Difference”
Community Conversations Leaders

- **Jacqueline Bichsel**, Senior Research Analyst, EDUCAUSE, “Benchmarking Analytics Maturity”
- **Lois Brooks**, Vice Provost, Information Services, Oregon State University, “Update on Unizin”
- **Cara Giacomini**, Senior Research Scientist, University of Washington, “Establishing Customer Analytics for IT at the University of Washington”

Notes

2. ECAR Analytics Maturity Index for Higher Education.
3. New maturity models will be released in 2016 as part of the EDUCAUSE benchmarking service.