In an era of Big Data and pressing problems, CIOs recognize that they must help grow their institutions’ analytic capabilities to benefit both academic and operational goals. But how does analytics differ from data-warehouse reporting? Where and how does effective implementation begin? Based on other businesses’ experience, what critical success factors apply? How can CIOs assess where they stand in terms of readiness for the analytical journey?

Key Takeaways

Analytics is much more than statistical reporting.

CIOs are already familiar with collecting data, organizing databases, and reporting results. While this process has obvious value, it generally looks back, asking “what” questions like:

- What happened? (dashboards)
- What was unexpected? (exception reports)
- What do I need to know now? (real-time alerts)

Analytics, on the other hand, attempts to extract more value from data by asking insight-oriented questions that focus on the future, such as:

- Why is this happening? (statistical analysis)
- What is likely to happen next? (predictive modeling)
- How can we improve what happens? (optimization)
- What does this pattern look like? (visualization)
- Based on what the data say, what steps should we take? (prescriptive analysis)

What steps should be taken automatically? (embedded analytics)

“The Holy Grail of analytics is to use real-time information to make dynamic decisions that optimize a business or organization.”

—Jerrold Grochow

Done well, this type of future-facing business-intelligence analytics produces a deeper understanding of a university, its students, and other stakeholders on multiple dimensions:

- Operations. The goal of operational analytics is to reduce costs through analysis of where the organization can save.
- Growth. Product analytics is geared to increasing revenues by analyzing where programs, departments, and schools can efficiently enhance growth.
- Outcomes. The purpose of learning analytics and research analytics is to improve the results delivered by teaching and research. This involves looking at and measuring what students are learning and then intervening appropriately. The goal is to improve outcomes, such as course completion and graduation rates.
- Innovation. Analytics can be used to think about new ways of delivering services and new sources of revenue.
Every organization must evolve its analytical capability.

Professor, researcher, and author Thomas Davenport has observed that business organizations go through predictable stages on their path to analytical maturity. These stages are:

1. **Analytically impaired**, where there are major barriers to using analytics.
2. **Localized analytical activities**, which are not institution-wide.
3. **An analytical vision that is not yet realized**.
4. **Almost there**, as organizations understand the value of analytics and are working to incorporate analytics into decision making.
5. **Being an analytical competitor**, where all decisions are made with analytical input.

CIOs can help take their IT departments through this evolution by assessing what people, processes, governance, and technology will be required at each step to become more analytically mature:

- **Visioning**. This step involves envisioning what a robust analytics program will look like.
- **Launching**. This step requires carefully deciding on an organization’s first limited-scale analytics project and then getting started.
- **Implementing**. This is the “under construction” phase in which data governance models are investigated and technology is architected and acquired.
- **Transforming**. In this phase, an institution fully matures and becomes an analytical organization.

In the transforming stage, an IT department would have all necessary analytical talent on board (people); a high-functioning partnership between IT and the administrative business units to measure value (process); a steering committee to define and enforce standard operating procedures (governance); and tools to fully integrate and evaluate analytics in operations (technology).

Although academic and administrative business units typically take the lead in specifying their analytical needs, IT departments have the opportunity to go beyond infrastructure and champion the liberal and effective use of analytics throughout the organization, including finance and student services. When IT is working closely with these units, it doesn’t really matter where the institutional analytics unit sits on the organizational chart—it can report directly to the provost, be part of IT, or even split into two groups, one responsible for academic analytics and the other for operational matters.

“**IT’s role in analytics goes well beyond providing just the technology infrastructure. It can perform a catalytic function in working with different groups within the institution.**”

—Jerrold Grochow

**Organizational success with analytics requires committed leadership—and a quick win.**

Every journey toward analytics competency must start somewhere. A common mistake is to attempt too much, too soon—“boiling the ocean.” A more successful strategy would be to tightly define a high-value, critical business problem to be solved, demonstrate the successful application of analytics, and then educate the organization about the approach employed. Backed by strong executive sponsorship, this tactic provides the groundwork to shift the entire organization toward analytics.

However, as implementation matures from initial projects to a sustained program, the relative importance of various success factors shifts:
Investing too much or too little in one dimension of analytical capability, relative to impact or demand, is a negative factor. Similarly, choosing the wrong problem, analytical technique, or software tools will jeopardize an organization’s success. Moreover, CIOs can fail by automating decision-based applications without monitoring outcomes and external conditions to modify initial assumptions.

In broad terms, introducing analytics isn’t substantially different from introducing any other new management process or way of thinking. It requires careful planning, change management, and ongoing assessment of program value compared with goals. Going forward, CIOs will have to deal with the implications of unstructured Big Data stored in the cloud with ubiquitous access.

The questions below can help measure the CIO’s readiness for analytics.

Being ready for analytics involves business and IT readiness. The following “yes” or “no” questions will help you assess your organization’s level of readiness.

**Business Questions**

- Can you articulate how analytics will help the organization?
- Do you have good relationships with the business leaders whose groups will most benefit?
- Do you know what your peers are doing with analytics and how it is helping their organizations?
- Are you passionate about analytics? (Have you been to an analytics conference or symposium recently?)

**IT Questions**

- Does the IT department understand the key analytics issues for the enterprise?
- Do you understand what the key analytics issues are for the IT department?
- Does your department have the skill sets necessary for success with analytics?
- Do you encourage experimentation? Is your development methodology flexible enough to accommodate analytics projects?
- How good are the organization’s data? Are definitions consistent? Are data “scrubbed”?
- Do you know who the vendors and integrators are in analytics IT and what they can do for your organization?
- Are you prepared for Big Data, high-performance computing, and real-time analytics?

Scoring your readiness assessment (number of “yes” responses):

- 1–4: Lots of work to do
- 5–8: On the way
- 9–11: Ready to get moving

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